ComAp
The heart of smart control

Eletronic Engines Support

SW version 7.0.0

Written by Roman Taragel
Prague, Czech Republic
ComAp a.s., Kundratka 2359/17,
180 00 Praha 8, Czech Republic
Tel: +420 246 012 111, Fax: +420 266 316 647
E-mail: info@comap.cz, www.comap.cz

Global Guide

Table of contents

1 Document information

1.1 Clarification of notation

Note: *This type of paragraph calls readers attention to a notice or related theme.*

IMPORTANT: This type of paragraph highlights a procedure, adjustment etc., which can cause a damage or improper function of the equipment if not performed correctly and may not be clear at first sight.

Example: This type of paragraph contains information that is used to illustrate how a specific function works.

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2 Principle of ECU support

Since the engines with electronic fuel injection became commonly used, ComAp has introduced a convenient solution for monitoring and management of such engines based on existing controllers InteliLite and InteliGen. These used to be fixed programmed and dedicated to a specific engine type, ECU or communication protocol. A separate module – I-CB (Communication Bridge) – was designed to interface InteliSys controller and ECU unique for its hardware or software features (e.g. communication speed).

Due to great development on the side of the engine manufacturers regarding electronic equipment and amount of transmitted data from the ECU/engine, ComAp had to react promptly and launched new system of ECU support in the controllers. This new approach described below was started by the InteliDrive DCU controller. Later on it was adopted by the InteliLite controller (since version 2.0) and nowadays is integrated into all ComAp controllers.

The new way of ECU support provides above all an easy and fast way how to integrate a new type of ECU. Although the engine manufacturers often declare that the unit provides standard J1939 communication, after deeper analysis many of them appear to use proprietary data frames. Therefore ComAp controllers are simply reconfigurable for such specific units using an external file – Engine Specific Code (ESC) – which contains all necessary information about transmitted values, commands and diagnostic messages. The contents of this file are downloaded to the controller which can afterwards provide complete data monitoring and engine control over the CAN bus.

The above described procedure of implementation of an ECU support ensures easy to use and fast configuration however it doesn't reduce the controller's flexibility. The user should be aware that ComAp provides default configuration and the controller must be adapted and configured to particular application. Providing the most common adjustment doesn't eliminate the need to thoroughly test the functionality of the installed controller in conjunction with the gen-set and other equipment and advice the end user about the way of its operation.

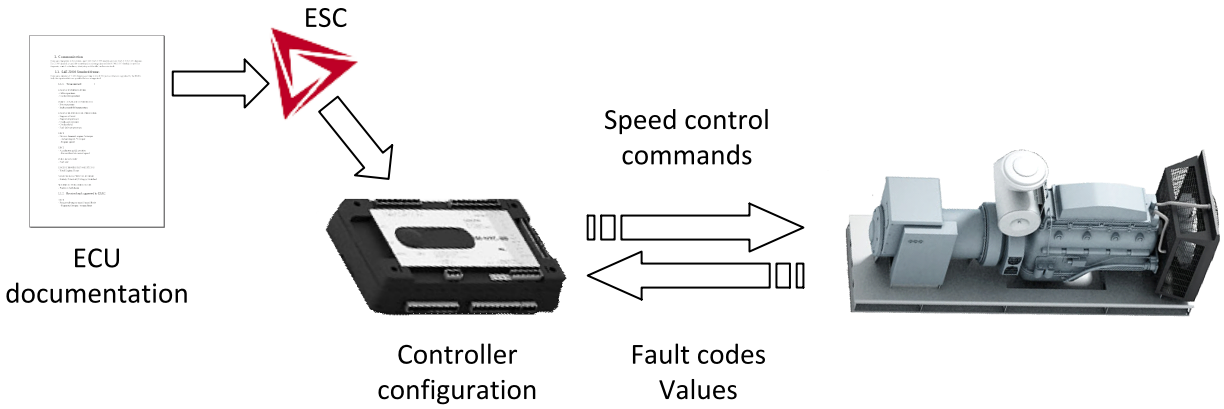
Due to quick development in this area it is strongly recommended to check up ComAp web pages (www.comap-control.com) for software and documentation updates ahead of carrying on with projects comprising electronic engines.

2.1 What must be done to support a new ECU?

Let's say about units communicating over CAN bus and using J1939 protocol (we will leave out specific units - using RS232/RS485 or their own CAN bus lines, Modbus). As mentioned above we cannot rely on ECU brief specification which states that the unit supports J1939 protocol but we have to study a comprehensive specification describing all details of data communicated by the unit. Only then it is possible to create an ESC and test it with the engine. So the necessary steps are in brief:

Study ECU documentation

- If the ECU is fully compatible with SAE J1939-71, an ESC for "Standard J1939 engine" can be used
- If the ECU is sufficiently but not fully consistent with SAE J1939-71, a new ESC has be created in ComAp
- The controller with new ESC has to be tested with the engine/ECU (without testing the functionality is only theoretical – operating conditions of ECUs can vary a lot (for example sequence of activating/deactivating of ECU inputs during starting/stopping of the engine))



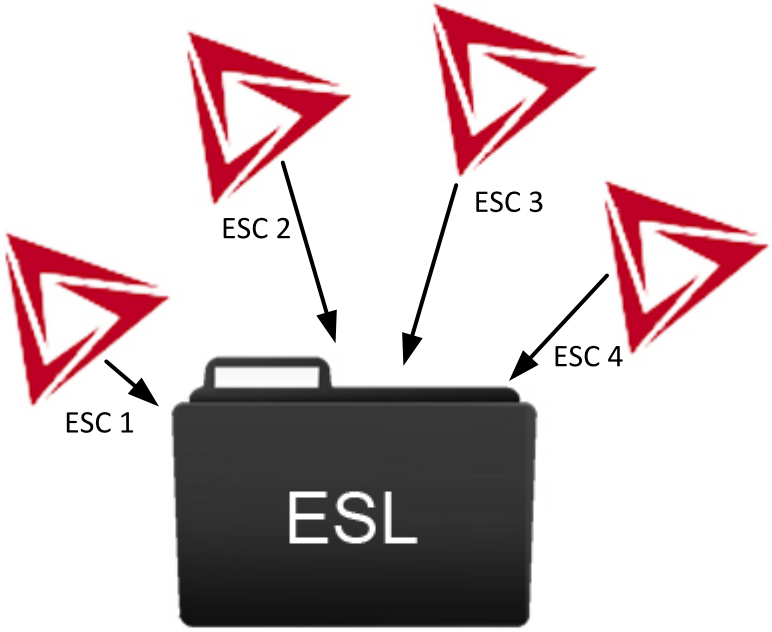
2.2 What data can be transmitted to / from ECU?

There are generally four types of data communicated between the controller and ECU:

- Values read from the ECU (e.g. Engine coolant temperature, Lube oil pressure)
- Values/parameters written to ECU (e.g. Speed control, Frequency select)
- Commands written to ECU (e.g. Start/Stop, Fault reset)
- Fault codes

2.3 What is an ESL file?

ESL (ECU Specification List) file contains list of all supported ECUs for a given controller. The particular list appears in LiteEdit, LiteEdit 2015, DriveConfig, GenConfig, NanoEdit, ECUDiag as a list of available engine/ECU types. The ESL file also defines communication/diagnostic protocol used in the ECU.



2.4 What is the default ESL setting?

ComAp offers many kinds of controllers for various applications. Almost each of our controllers supports electronic engines, but the configuration PC software and its settings are different. Therefore we have various ECU lists designed for each controller's family. In the table below there is a description of recommended ESL across our standard controller's family.

ECU list (ESL) name	Controller's Family			
ECU list - Allspeed.esl	InteliDrive DCU	InteliDrive Mobile	InteliDrive Lite	InteliDrive Nano
ECU list - Gensets.esl	InteliGen^{NT}	InteliGen^{NT}		
ECU list - InteliLite 2015.esl	InteliLite			
ECU list - InteliLite.esl	InteliLite^{NT}[1]	InteliCompact^{NT}		
ECU list - InteliNano.esl	InteliNano^{NT}			

Note: *It is possible to use a different than a default ECU list in PC software (e.g. ECU list - Allspeed.esl for InteliGen^{NT} or InteliSys^{NT} controller's family in GenConfig). In that case the default configuration may not work properly and/or some values (fault codes) might be unavailable.*

2.5 How to import ESC - ESL package?

The "ECU list-x.y" package can be downloaded from ComAp website (www.comap-control.com) and imported into a PC software in the same way as a standard controller firmware package.

It can also be a part of an installation package, in this case it is not necessary to import it separately.

2.6 Configuration

2.6.1 InteliNano^{NT}

- Open NanoEdit PC software
- Open controller configuration
- Go to ECU configuration window (Miscellaneous > Engine control unit)
- Choose the ECU from the list
- Write the configuration to the controller

Note: *InteliNano^{NT} controller does not provide configurable inputs/outputs for engine parameters or commands. The parameters are fixed and cannot be changed.*

Default parameters for ECU (J1939 only)				
NO.	**ANAIN from the ECU**	**BININ from the ECU**	**ANAOUT to the ECU[2]**	**BINOUT to the ECU[3]**
1	Engine speed		Speed control	Start / Stop command
2	Coolant Temperature			Idle / Nominal command
3	Oil Pressure			Frequency selection
4	Fuel Level			
5	Total Engine Hours			

[1] except InteliLite^{NT} MRS3, MRS10, MRS11 and InteliLiteNT AMF8, AMF20
[2] Depends on the ECU capability
[3] Depends on the ECU capability

Speed control

InteliNano^{NT} is an easy to use AMF or MRS controller with no capability to speed variation. The requested speed or accelerator pedal position is steady based on the Nominal Frequency setpoint.

	ANAOUT to the ECU	
Nominal Frequency	**Requested Speed**	**Accelerator Pedal Position**
50Hz	1500RPM	50%
60Hz	1800RPM	50%

Note: *The speed control over the CAN bus (J1939 protocol) has to be supported by the engine ECU. Without it supporting ComAp controllers cannot adjust the engine speed.*

2.6.2 InteliDrive Nano

- Open DriveEdit PC software
- Open controller configuration
- Go to ECU configuration window (Miscellaneous > Engine control unit)
- Choose the ECU from the list
- Write the configuration to the controller

Note: *InteliDrive Nano controller does not provide configurable inputs/outputs for engine parameters or commands. The parameters are fixed and cannot be changed.*

Default parameters for ECU (J1939 only)				
NO.	**ANAIN from the ECU**	**BININ from the ECU**	**ANAOUT to the ECU[1]**	**BINOUT to the ECU[2]**
1	Engine speed		Speed control	Start / Stop command
2	Coolant Temperature			Idle / Nominal command
3	Oil Pressure			Frequency selection
4	Fuel Level			
5	Total Engine Hours			

Speed control

InteliNano^{NT} is an easy to use engine controller with a capability to speed variation. The requred speed is based on the configuration and application. Please refer to controller manual for more information about.

Note: *The speed control over the CAN bus (J1939 protocol) has to be supported by the engine ECU. Without it supporting ComAp controllers cannot adjust the engine speed.*

2.6.3 InteliLite^{NT}, InteliCompact^{NT}

Note: *Controllers InteliLite^{NT} MRS3, InteliLite^{NT} MRS10, InteliLite^{NT} MRS11, InteliLite^{NT} AMF8, InteliLite^{NT} AMF20 don't support electronic engines (engines equipped with ECU).*

- Open LiteEdit PC software
- Open controller configuration

[1] Depends on the ECU capability
[2] Depends on the ECU capability

- Enter controller password (controller > enter password)
- Open the modify window (controller > configuration > modify…)
- Click on ECU icon Check the “electronic engine is connected” check button
- Choose the ECU from the list below
- Confirm OK
- Write the configuration to the controller

Note: *InteliLite^{NT} and InteliCompact^{NT} controllers do not provide configurable inputs/outputs for engine parameters or commands. The parameters are fixed and cannot be changed.*

Default parameters for ECU (J1939 only)				
NO.	**ANAIN from the ECU**	**BININ from the ECU**	**ANAOUT to the ECU[1]**	**BINOUT to the ECU[2]**
1	Engine speed	Yellow Lamp	Speed control	Start / Stop command
2	Fuel Rate	Red Lamp		Idle / Nominal command
3	Coolant Temperature	Wait to Start Lamp		Frequency selection
4	Intake Temperature	Tier4 information		Tier4 control
5	Oil Pressure			
6	Percent Load			
7	Boost Pressure			
8	Total Engine Hours			
9	Total Fuel Used			

Speed control

InteliLite^{NT} is an easy to use AMF or MRS gen-set controller with a limited capability to speed variation. The required speed is calculated from ECU FreqSelect and ECU SpeedAdj setpoints.

InteliCompact^{NT} is an easy to use parallel (SPtM or MINT) controller with a full capability to speed variation. The required is calculated from ECU FreqSelect and ECU SpeedAdj setpoints or based on load share or base load demand.

	ANAOUT to the ECU (*ECU FreqSelect* setpoint = PRIMARY (DEFAULT))	
ECU SpeedAdj	**Requested Speed**	**Accelerator Pedal Position**
0%	1350RPM	0%
50%	1500RPM	50%
100%	1650RPM	1000%
	ANAOUT to the ECU (*ECU FreqSelect* setpoint = SECONDARY)	
ECU SpeedAdj	**Requested Speed**	**Accelerator Pedal Position**
0%	1620RPM	0%
50%	1800RPM	50%
100%	1980RPM	1000%

Note: *The speed control over the CAN bus (J1939 protocol) has to be supported by the engine ECU. Without it supporting ComAp controllers cannot adjust the engine speed.*

[1] Depends on the ECU capability
[2] Depends on the ECU capability

2.6.4 InteliLite

- Open InteliConfig PC software
- Open controller connection
- Enter controller password (controller > enter password)
- Open the controller configuration window (controller > controller configuration)
- Select modules folder
- Click on + add new module in ECU section
- Choose the ECU from the list on right hand side
- Click on Add module
- Confirm by OK and Restart

Note: *InteliLite controller does not provide configurable inputs/outputs for engine parameters or commands. The parameters are fixed and cannot be changed.*

Default parameters for ECU (J1939 only)				
NO.	**ANAIN from the ECU**	**BININ from the ECU**	**ANAOUT to the ECU[1]**	**BINOUT to the ECU[2]**
1	Engine speed	Yellow Lamp	Speed control	Start / Stop command
2	Fuel Rate	Red Lamp		Idle / Nominal command
3	Coolant Temperature	Wait to Start Lamp		Frequency selection
4	Intake Temperature	Tier4 information		Tier4 control
5	Oil Pressure			
6	Percent Load			
7	Boost Pressure			
8	Total Engine Hours			
9	Total Fuel Used			

Speed control

InteliLite is an easy to use AMF or MRS gen-set controller with a limited capability to speed variation. The required speed is calculated from ECU Frequency Select and ECU Speed Adjustment setpoints.

	ANAOUT to the ECU (*ECU Frequency Select* setpoint = PRIMARY (DEFAULT))	
ECU SpeedAdj	**Requested Speed**	**Accelerator Pedal Position**
0%	1350RPM	0%
50%	1500RPM	50%
100%	1650RPM	1000%
	ANAOUT to the ECU (*ECU Frequency Select* setpoint = SECONDARY)	
ECU SpeedAdj	**Requested Speed**	**Accelerator Pedal Position**
0%	1620RPM	0%
50%	1800RPM	50%
100%	1980RPM	1000%

Note: *The speed control over the CAN bus (J1939 protocol) has to be supported by the engine ECU. Without it supporting ComAp controllers cannot adjust the engine speed.*

[1] Depends on the ECU capability
[2] Depends on the ECU capability

2.6.5 InteliGen200, InteliGen500

- Open InteliConfig PC software
- Open controller connection
- Enter controller password (controller > enter password)
- Open the controller configuration window (controller > controller configuration)
- Select modules folder
- Click on + add new module in ECU section
- Choose the ECU from the list on right hand side
- Click on Add module
- Confirm by OK and Restart

Note: *InteliGen200, InteliGen500 controller does not provide configurable inputs/outputs for engine parameters or commands. The parameters are fixed and cannot be changed.*

Default parameters for ECU (J1939 only)				
NO.	**ANAIN from the ECU**	**BININ from the ECU**	**ANAOUT to the ECU[1]**	**BINOUT to the ECU[2]**
1	Engine speed	Yellow Lamp	Speed control	Start / Stop command
2	Fuel Rate	Red Lamp		Idle / Nominal command
3	Coolant Temperature	Wait to Start Lamp		Frequency selection
4	Intake Temperature	Tier4 information		Tier4 control
5	Oil Pressure			
6	Percent Load			
7	Boost Pressure			
8	Total Engine Hours			
9	Total Fuel Used			

Speed control

InteliGen200, InteliGen500 is an easy to use parallel gen-set controller with a full capability to speed variation. The required speed is calculated from ECU Frequency Select and ECU Speed Adjustment setpoints.

	ANAOUT to the ECU (*ECU Frequency Select* setpoint = PRIMARY (DEFAULT))	
ECU SpeedAdj	**Requested Speed**	**Accelerator Pedal Position**
0%	1350RPM	0%
50%	1500RPM	50%
100%	1650RPM	1000%
	ANAOUT to the ECU (*ECU Frequency Select* setpoint = SECONDARY)	
ECU SpeedAdj	**Requested Speed**	**Accelerator Pedal Position**
0%	1620RPM	0%
50%	1800RPM	50%
100%	1980RPM	1000%

Note: *The speed control over the CAN bus (J1939 protocol) has to be supported by the engine ECU. Without it supporting ComAp controllers cannot adjust the engine speed.*

[1] Depends on the ECU capability
[2] Depends on the ECU capability

2.6.6 InteliDrive Lite

- Open LiteEdit PC software
- Open controller configuration
- Enter controller password (controller > enter password)
- Open the modify window (controller > configuration > modify…)
- Click on ECU icon Check the “electronic engine is connected” check button
- Choose the ECU from the list below
- Confirm OK
- Write the configuration to the controller

Note: *InteliDrive Lite controller does not provide configurable inputs/outputs for engine parameters or commands. The parameters are fixed and cannot be changed.*

Default parameters for ECU (J1939 only)				
NO.	**ANAIN from the ECU**	**BININ from the ECU**	**ANAOUT to the ECU[1]**	**BINOUT to the ECU[2]**
1	Engine speed	Yellow Lamp	Speed control	Start / Stop command
2	Fuel Rate	Red Lamp		Idle / Nominal command
3	Coolant Temperature	Wait to Start Lamp		Frequency selection
4	Intake Temperature	Tier4 information		Tier4 control
5	Oil Pressure			
6	Percent Load			
7	Boost Pressure			
8	Total Engine Hours			
9	Total Fuel Used			

Speed control

InteliDrive Lite is an easy to use engine controller with capability to a full speed variation. The required is calculated base on the configuration. For more information please refer to controller manual.

	ANAOUT to the ECU (*ECU FreqSelect* setpoint = PRIMARY (DEFAULT))	
ECU SpeedAdj	**Requested Speed**	**Accelerator Pedal Position**
0%	1350RPM	0%
50%	1500RPM	50%
100%	1650RPM	1000%
	ANAOUT to the ECU (*ECU FreqSelect* setpoint = SECONDARY)	
ECU SpeedAdj	**Requested Speed**	**Accelerator Pedal Position**
0%	1620RPM	0%
50%	1800RPM	50%
100%	1980RPM	1000%

Note: *The speed control over the CAN bus (J1939 protocol) has to be supported by the engine ECU. Without it supporting ComAp controllers cannot adjust the engine speed.*

[1] Depends on the ECU capability
[2] Depends on the ECU capability

2.6.7 InteliDrive DCU , InteliDrive Mobile

- Open DriveConfig PC software
- Open controller configuration
- Add ECU to the configuration (modules card > ECU, check the ECU-1 Used check box)
- Choose the ECU from the list
- Write the configuration to the controller

Note: *InteliDrive DCU and InteliDrive Mobile controllers provide configurable inputs/outputs for engine parameters or commands. These lists of supported parameters are available in I/O card of DriveConfig. For list of supported parameters or commands refer to particulate ECU type in this manual.*

Note: *It may happen that some commands as Start request, Stop request have a red background. It means that these ECU commands do not have assigned a source value from the controller e.g. Starter, Stop pulse.*

Note: *The default configuration of ECU I/O is different for each particular ECU.*

Speed control

InteliDrive DCU , InteliDrive Mobile are engine controllers with a complex speed control capability. Please refer to InteliDrive DCU or InteliDrive Mobile manual for further information about engine speed control over CAN bus.

	ANAOUT to the ECU	
Speed Request	**Requested Speed**	**Accelerator Pedal Position**
0%	1350RPM	0%
50%	1500RPM	50%
100%	1650RPM	1000%

Note: *The speed control over the CAN bus (J1939 protocol) has to be supported by the engine ECU. Without it supporting ComAp controllers cannot adjust the engine speed.*

2.6.8 InteliGen^{NT}, InteliSys^{NT}, InteliSys Gas

- Open GenConfig PC software
- Open controller configuration
- Choose the ECU from the list (modules card > ECU)
- Click on Insert
- Write the configuration to the controller

Note: *InteliGen^{NT} and InteliSys^{NT} controllers provide configurable inputs/outputs for engine parameters or commands. These lists of supported parameters are available in I/O card of GenConfig. For list of supported parameters or commands refer to particulate ECU type in this manual.*

Note: *It may happen that some commands as Start request, Stop request have a red background. It means that these ECU commands do not have assigned a source value from the controller e.g. Starter, Stop pulse.*

Note: *The default configuration of ECU I/O is different for each particular ECU.*

Speed control

InteliGen^{NT}, InteliSys^{NT} are paralleling gen-set controllers with an essential speed variation capability. The required speed is calculated from Nominal RPM setpoint and SpeedRegOut value.

	ANALOGUE to the ECU	
Speed Gov Out	**Requested Speed**	**Accelerator Pedal Position**
0.000V	1350RPM	0%
5.000V	1500RPM	50%
10.000V	1650RPM	1000%
	ANALOGUE to the ECU	
Speed Gov Out	**Requested Speed**	**Accelerator Pedal Position**
0.000V	1620RPM	0%
5.000V	1800RPM	50%
10.000V	1980RPM	1000%

Note: *The speed control over the CAN bus (J1939 protocol) has to be supported by the engine ECU. Without it supporting ComAp controllers cannot adjust the engine speed.*

2.7 Proprietary (non J1939) ECU/protocols

Some ECUs do not offer J1939 communication protocol and so it is necessary to have a solution dedicated to each of these units. We recognize two groups:

- ECU communicating via Modbus protocol (e.g. some Cummins engines). It is possible to connect such ECU directly (without I-CB unit)
- ECU with proprietary communication protocol (e.g. MTU/MDEC CAN bus). These units are supported with the use of an I-CB unit.

Note: *For more details about configuration and available parameters of I-CB refer to I-CB Reference Guide.*

2.8 SAE - J1939 diagnostic connector

A Description of Off-Board diagnostic connector supposed to be used on engine to get the access to the engine communication links.

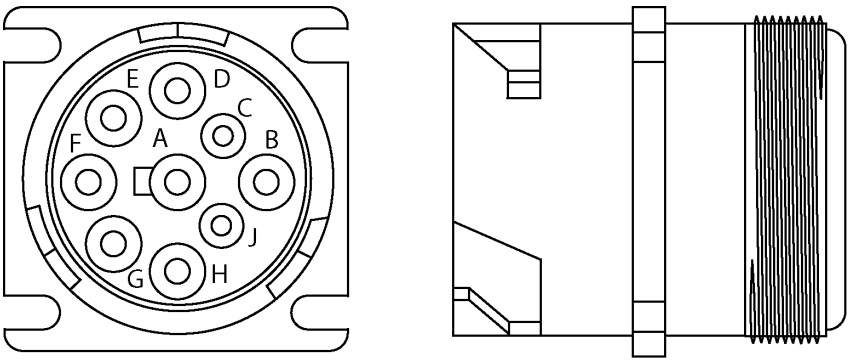


Image 2.1 SAE - J1939 diagnostic connector

Pin label	Meaning
A	Battery negative
B	Battery positive - unswitched
C	CAN H
D	CAN L
E	CAN SHLD
F	SAE J1708 +
G	SAE J1708 -
H	Proprietary OEM use
J	Proprietary OEM use

2.9 Fault codes – FMI table

To inform a service about engine failure sends the ECU a fault code to the controller (e.g. SAE J1939-73 protocol). The Fault codes are shown as a code and/or as a text. The code consists of:

- SPN number (suspect parameter number) – is a particular code for each fault,
- FMI number (failure mode) – is a particular code for each cause of fault,
- OC number (occurrence count) – is an ECU internal counter for each combination of SPN and FMI.

The table describes the cause of fault base on the FMI code:

FMI	Meaning	FMI	Meaning
0	Data valid but above normal operational range – most severe level	16	Data valid but above normal operating range – moderately severe level
1	Data valid but below normal operational range – most severe level	17	Data valid but below normal operating range – least severe level
2	Data erratic, intermittent or incorrect	18	Data valid but below normal operating range – moderately severe level
3	Voltage above normal or shorted to high source	19	Received network data in error
4	Voltage below normal or shorted to low source	20	Data drifted high
5	Current below normal or open circuit	21	Data drifted low
6	Current above normal or grounded circuit	22	Reserved for SAE assignment
7	Mechanical system not responding or out of adjustment	23	Reserved for SAE assignment
8	Above frequency or pulse width or period	24	Reserved for SAE assignment
9	Abnormal update rate	25	Reserved for SAE assignment
10	Abnormal rate of change	26	Reserved for SAE assignment
11	Root cause not known	27	Reserved for SAE assignment
12	Bad intelligent device or component	28	Reserved for SAE assignment
13	Out of calibration	29	Reserved for SAE assignment
14	Special instructions	30	Reserved for SAE assignment
15	Data valid but above normal operating range – least severe level	31	Condition exists

2.10 How to create a constant for ECU control

There are at least two ways in **GenConfig** software:

1. By math function ADD in PLC where first input is a required analog value (constant) and the second input is value 0. The output of the function is a constant which can be used as a source for ECU control. In this example is created constant = 2.

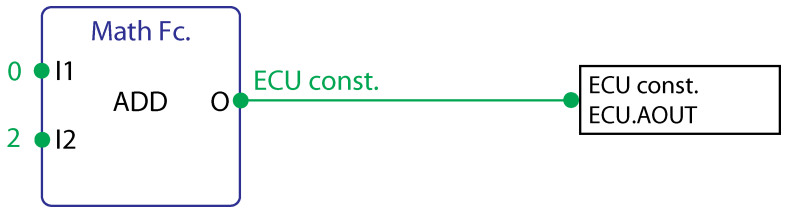


Image 2.2 PLC constant for ECU control

2. By any of not used ExtValue1defIt - ExtValue4defIt setpoint. The value of an ExtValueXdefIt setpoint can be used as a source for ECU control. It is recommended to use a source Logical 1 for a particular ExtValueXreset (in LBI card).

There is a recommended way in **DriveConfig** software:

3. By math function ADD in PLC where first input is a required analog value (constant) and the second input is value 0. The output of the function is a constant which can be used as a source for ECU control. In this example is created constant = 2.

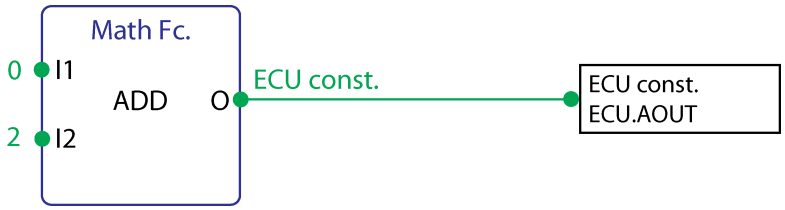


Image 2.3 PLC constant for ECU control

2.11 After-treatment support

Emission standards are requirements that set specific limits to the amount of pollutants that can be released into the environment. Many emissions standards focus on regulating pollutants released by power plants, small equipment such as lawn mowers and diesel generators.

The U.S. Environmental Protection Agency (EPA) and the European Parliament and the Council (EU) began to enforce limits on diesel exhaust emissions from non-road mobile machinery engines in a series of steps called “Tier” levels or “Stage” levels respectively. These regulations have introduced successively more strict limitations on carbon monoxide (CO), nitrogen oxides (NOx), particulate matter (PM) and non-methane hydrocarbons (NMHC). In response to these regulations, engine manufacturers began introducing innovative design changes and sophisticated engine control systems that have successfully reduced the major pollutants in diesel exhaust to comply with each successive “Tier” or “Stage” level. Emission standards to be applied nowadays (2019) for machinery placed to the market are mainly Tier 4 Final /Stage V standards.

The aftertreatment technologies include e.g. selective catalytic reduction (SCR) to control NOx and diesel particulate filters (DPF) to capture the remaining carbon particles. While most diesel engines will require SCR to meet the NOx limits for both Tier 4 Final / Stage V, some engine models will be able to meet the emission regulations for PM without a DPF. In addition, exhaust gas recirculation (EGR) combined with a DPF may be used in some engine platforms to reduce NOx in place of SCR to meet Tier 4 Final / StageV.

ComAp is continuously following this new emission trends. The investigation brings to ComAp controllers the ability to read the parameters related to the both emission standards as well as to control the engine aftertreatment subsystem directly by the controller or by service if needed. (In general, the aftertreatment system is primarily driven by the engine itself and does not require any external control.) The build-in displays as well as external displays offer in context with Tier 4 Final /Stage V icons to display the state of the engine and

aftertreatment system. It is even more intuitive for the service or maintenance of the engine. Particular products provide different level of aftertreatment support. See the table below for details.

Note: *Aftertreatment has to be supported by the engine ECU. Without its support ComAp controllers cannot read related data, show the icon on displays nor control the after-treatment.*

For complete support of aftertreatment functions there are three parts with Tier4 support needed: controller firmware, display firmware and ECU list.

Please refer to **Comparison table (page 23)** for more details. Follow the particular New Features List for most recent information.

Following table shows list of available icons (symbols) related to after-treatment support. There are often more inputs for control the icons than stated in SPN column, this table serves just as overview.

SPN	Icon name	Displayed Icon	Note
3697 6915	Diesel Particulate Filter Lamp Command SCR System Cleaning Lamp		Indicates Regeneration / Cleaning of Aftertreatment subsystems is needed, is ongoing or will be initiated soon.
3703 6918	DPF Active Regeneration Inhibited Due to Inhibit Switch SCR System Cleaning Inhibited Due to Inhibit Switch		Indicates Regeneration / Cleaning of Aftertreatment subsystems is inhibited by user intervention.
3698	Exhaust System High Temperature Lamp		Indicates High exhaust system temperature. Usually due to active DPF rebeneration.
5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Lamp		
5246	Aftertreatment SCR Operator Inducement Severity		Indicates issues with SCR system user should be aware of. (DEF Level, DEF Quality, SCR tampering or other SCR technical failures).

624	Amber Warning Lamp		
623	Red Stop Lamp		
1081	Engine Wait to start Lamp (Glow Lamp)		

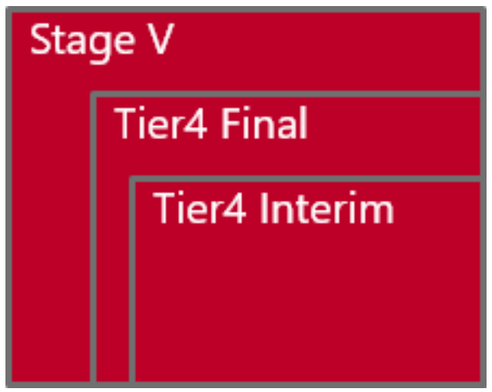
Beside icons there are few other signal that are crucial for aftertreatment support. These are summarized in following table.

SPN	Name	Description
3719	DPF1 Soot Load	Indicates the soot load percent of diesel particulate filter in per cent. Read by ComAp controller.
1761	DEF Level	Indicates Aftertreatment 1 Diesel Exhaust Fluid Tank Level in per cent. Read by ComAp controller.
3695	Aftertreatment Regeneration Inhibit Switch	Signal used to control the aftertreatment. This switch inhibits aftertreatment regeneration. Transmitted by ComAp controller.
3696	Aftertreatment Regeneration Force Switch	Signal used to control the aftertreatment. This switch force aftertreatment regeneration. Transmitted by ComAp controller.

2.12 Comparison table

This table describes the supported ECUs sorted by the engine manufacturers by particular controller's family and its configuration.

Note: *List of controllers contains only standard branches of controllers. Customized branches usually follow the implementation of relevant standard branch. For more info about customized branches please see http://www.comap.cz/products/ or contact your local distributor.*



	No ECU support
	ECU support – no Aftertreatment support (even if ECU supported in ECU list)
	Basic support of aftertreatment based on J1939 standard (Stage V level/ Tier 4 Final level)
XX/YYYY	Support of aftertreatment based on engine/ECU documentation (Stage V level/ Tier 4 Final level)
	Support of aftertreatment based on engine/ECUdocumentation (Stage V level/ Tier 4 Final level) available from XX/YYYY
XX/YYYY	Aftertreatment solution tested on engine (Stage V level/ Tier 4 Final level)
	Aftertreatment solution tested on engine (Stage V level/ Tier 4 Final level) available from XX/YYYY

Manufacturer / ECU type	InteliSys NT	InteliGen NT	InteliGen GC NT	InteliSys Gas	InteliGen/Sys GSC	InteliCompact NT	InteliLite NT	InteliLite	InteliGen 200	InteliGen 500	InteliNano NT	InteliDrive DCU	InteliDrive Mobile	InteliDrive Lite	InteliDrive Nano	InteliVision 5	InteliVision 5 CAN	InteliVision 8	InteliVision 12T	ID	Selection in PC Software
version	4.0.0	4.0.0	4.0.0	1.3.1	1.1.0	2.5.1	2.6.0	1.8.0	1.2.0	1.0.0	2.2.0	3.4.0	2.5.0	2.5.0	1.9.1	2.2.0	1.4.0	3.0.0	1.4.0		
Agco Power																					
EEM4																				116	Agco Power EEM4
Baudouin																					
WISE15																				179	Baudouin WISE15
Caterpillar																					
CCM module																				N/A	I-CB unit
PL1000 module																				N/A	I-CB unit
ADEM + EMCP																				17	Caterpillar ADEM&EMCP
ADEM																				10	Caterpillar J1939
Cummins																					
CM500																				57	Cummins CM500
CM558																				33	Cummins CM558
CM570																				4	Cummins CM570
CM800																				67	Cummins CM800
CM850																				26	Cummins CM850
CM2150					11/2019			10/2019												134	Cummins CM2150
CM2250																				59	Cummins CM2250
CM2350					11/2019			10/2019												101	Cummins CM2350
CM2880																				154	Cummins CM2880
GCS																				5	Cummins MODBUS
PGI 1.1																				43	Cummins CM850/CM2150/CM2250
Daimler Chrysler																					
ADM2																				24	Daimler Chrysler ADM2
ADM3																				42	Daimler Chrysler ADM3
Detroid Diesel																					
DDEC IV/V																				9	DDC DDEC IV/V
Deutz																					
EMR2																				8	Deutz EMR2
EMR3																				25	Deutz EMR3
EMR4					11/2019			10/2019												70	Deutz EMR4

Manufacturer / ECU type	InteliSys NT	InteliGen NT	InteliGen GC NT	InteliSys Gas	InteliGen/Sys GSC	InteliCompact NT	InteliLite NT	InteliLite	InteliGen 200	InteliGen 500	InteliNano NT	InteliDrive DCU	InteliDrive Mobile	InteliDrive Lite	InteliDrive Nano	InteliVision 5	InteliVision 5 CAN	InteliVision 8	InteliVision 12T	ID	Selection in PC Software
version	4.0.0	4.0.0	4.0.0	1.3.1	1.1.0	2.5.1	2.6.0	1.8.0	1.2.0	1.0.0	2.2.0	3.4.0	2.5.0	2.5.0	1.9.1	2.2.0	1.4.0	3.0.0	1.4.0		
TEM Evolution																				N/A	I-CB unit
Ford																					
E - control																				95	Ford e-control
GM																					
MEFI 4B/5B																				34	GM MEFI4B / MEFI5B
MEFI 6																				71	GM MEFI6
SECM																				35	GM SECM
E - control																				44	GM e-control
E - control LCI																				58	GM e-control LCI
Guascor																					
LECM E6																				147	Guascor LECM E6
Hatz																					
EDC17					11/2019			10/2019												165	Hatz
Isuzu																					
ECM					11/2019			10/2019												36	Isuzu ECM
Iveco																					
EDC					11/2019			10/2019												14	Iveco NEF & Cursor
ADEM III																				28	Iveco Vector
JCB																					
Delphi DCM																				23	JCB Delphi DCM
Jenbacher																					
DIA.NE																				22	Jenbacher DIA.NE
John Deere																					
JDEC					11/2019			10/2019												7	John Deere
Kohler																					
KDI																				178	Kohler Engines
Kubota																					
ECM																				122	Kubota
Liebherr																					
LIDEC1																				135	Liebherr
MAN																					
EDC/MFR																				29	MAN MFR
EDC17																				174	MAN EDC17
DataLogger																				56	MAN data logger
Mahindra																					
Mahindra Diesel																				180	Mahindra
MTU																					
MDEC																				N/A	I-CB unit
ECU7																				N/A	I-CB unit
ECU7																				130	MTU ECU7
ECU7 & SAM																				20	MTU ADEC J1939
ECU7 & SAM																				37	MTU ADEC J1939 P-engines
ECU8 & Smart Connect																				60	MTU SMART Connect
ECU9					11/2019			10/2019												125	MTU ECU9
DDEC 10					11/2019															117	MTU DDEC10
EIM																				120	MTU Engine Interface Module
MIP4000																				166	MTU MIP4000
Perkins																					
A4E2m or ECM					11/2019			10/2019												12	Perkins ECM
A4E2m or ECM																				54	Perkins 1300
Scania																					
S6																				3/16	Scania S6 Singlespeed
S6																				6/11	Scania S6 Allspeed
S8					11/2019															68	Scania S8 Singlespeed
S8																				69	Scania S8 Allspeed
Sisu																					
EEM2																				19	Sisu EEM3 Propulsion

Manufacturer / ECU type	InteliSys NT	InteliGen NT	InteliGen GC NT	InteliSys Gas	InteliGen/Sys GSC	InteliCompact NT	InteliLite NT	InteliLite	InteliGen 200	InteliGen 500	InteliNano NT	InteliDrive DCU	InteliDrive Mobile	InteliDrive Lite	InteliDrive Nano	InteliVision 5	InteliVision 5 CAN	InteliVision 8	InteliVision 12T	ID	Selection in PC Software
version	4.0.0	4.0.0	4.0.0	1.3.1	1.1.0	2.5.1	2.6.0	1.8.0	1.2.0	1.0.0	2.2.0	3.4.0	2.5.0	2.5.0	1.9.1	2.2.0	1.4.0	3.0.0	1.4.0		
EEM3																				18	Sisu EEM3 Gen-set
Steyr																					
M1																				66	Steyr M1
VM																					
EDC																				32/31	VM Industrial / VM Maine
Volvo																					
EDC3/EMS1/EMS2/					11/2019			10/2019												1	Volvo Singlespeed
EDC3/EMS1/EMS2																				2	Volvo Allspeed
EDC7																				114	Volvo EDC7 Allspeed KWP2000
EMS J1587																				163	Volvo EMS J1587
Waukesha																					
ESM																				15	Waukesha ESM
Weichai																					
EDC7/EDC17																				170	Weichai EDC
YaMZ																					
EDC7																				175	YaMZ_EDC7
Yanmar																					
TNV																				89	Yanmar TNV
Yuchai																					
YECU																				156	Yuchai YECU
YC-BCR																				159	Yuchai YC-BCR
ECU2					11/2019			10/2019												168	Yuchai YC-LBR
Generic SAE J1939 support																					
N/A					11/2019			10/2019												255	Standard J1939 engine
N/A					11/2019			10/2019												118	Standard J1939 monitor

3 List of ECU

back to Table of contents

3.1 Agco Power engines support

ECU Type	Engine type
EEM4	All Offroad, marine, land generating engines

3.1.1 EEM4

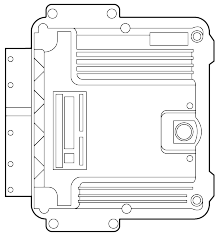


Image 3.1 EEM4

Controllers that support the EEM4:

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		
Wait To Start Lamp	1081	Engine Wait to Start Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
Start Request [1,2,3,4,5,6]	-	Proprietary parameter
Stop Request [1,2,3,4,5,6]	-	Proprietary parameter
DPF Reg. Inhibit Switch [1,2,3,4]	3695	Aftertreatment Regeneration Inhibit Switch
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine speed	190	**Engine Speed**
Actual Torque	513	**Actual Engine - Percent Torque**
SCR Act. dosing reagent quality	4331	**Aftertreatment 1 Diesel Exhaust Fluid Actual Dosing Quantity**

SCR system state	4332	**Aftertreatment 1 SCR System State**
SCR Dosing Reagent Abs. Press	4334	**Aftertreatment 1 Diesel Exhaust Fluid Doser Absolute Pressure**
DEF Tank 1 Level	1761	**Aftertreatment 1 Diesel Exhaust Fluid Tank Level**
Catalyst Tank Temperature	3031	**Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature**
Nominal Friction Torque	514	**Nominal Friction - Percent Torque**
Coolant Temp	110	**Engine Coolant Temperature**
Fuel Temp	174	**Engine Fuel Temperature 1**
Engine Oil Temp	175	**Engine Oil Temperature 1**
Ambient Air Temperature	171	**Ambient Air Temperature**
Boost Pressure	102	**Engine Intake Manifold #1 Pressure**
Intake Manifold Temp	105	**Engine Intake Manifold 1 Temperature**
Percent Load	92	**Engine Percent Load At Current Speed**
Fuel Rate	183	**Engine Fuel Rate**
Battery Potential (Voltage)	158	**Keyswitch Battery Potential**
DEF tank level lamp	-	Proprietary parameter
Fuel Delivery Pressure	94	**Engine Fuel Delivery Pressure**
Engine Oil Pressure	100	**Engine Oil Pressure**
DEF Tank 1 Level	1761	**Aftertreatment 1 Diesel Exhaust Fluid Tank Level**
DEF Tank 1 Low Level Indicator	5245	**Aftertreatment Selective Catalytic Reduction Operator Inducement Active**
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed [1,2,3,4,5,6]	898	Engine Requested Speed/Speed Limit
Engine low idle switch	2883	Engine Alternate Low Idle Switch
Droop percentage request	2881	Engine Droop Accelerator 1 Select
Engine high idle switch	-	Proprietary parameter
Alternative low idle selection	2891	Engine Alternate Low Idle Select State
Alternative high idle selection	-	Proprietary parameter

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite[NT], 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact[NT], 5 - InteliNano[NT], 6 - InteliDrive Nano

Controller's analog output for speed control configuration

Requested speed settings for InteliGen[NT] or InteliSys[NT]		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A
Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring

Function	ECU "K" connector	Tyco 62pin connector (837074045)	Controller
CAN H	54	45	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	76	44	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	1,3,5	57,58,59	N/A
Battery - (negative)	2,4,6	60,61,62	N/A
Key Switch	88	55	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	N/A	SG OUT
Analog Speed Control	N/A	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see EEM4 on page 1**

3.2 Caterpillar engines support

ECU Type	Engine type
CCM (with ADEM or EMCP2)	3500 series
PL1000 (with ADEM or EMCP2)	3500 series
ADEM A3 / ADEM A4 (with EMCP 3.x / 4.x)	C series, 3400 series
ADEM A3 / ADEM A4	C series
ADEM II is not supported!	

3.2.1 CCM with ADEM or EMCP2

Image 3.2 EMCP2 + CCM

Configuration

Note: *For connection to CAT CCM module it is necessary to use an I-CB module. Configuration of the controller and I-CB has to be done separately using GenConfig or DriveConfig and ICBEdit software. For further information see I-CB manual.*

Controllers that support the CCM

Refer to **Comparison table (page 23)**

Available parameters

For more information about available values and signals, please refer to I-CB manual or ICBEdit PC software.

Recommended wiring of CCM module

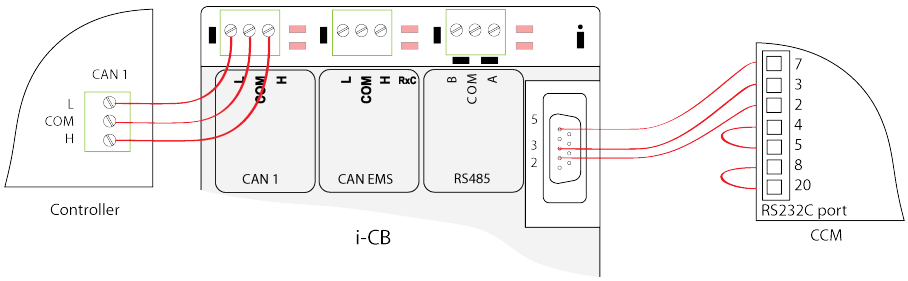


Image 3.3 EMCP2 + CCM recommended wiring

IMPORTANT: Check that CAN bus terminating resistors or appropriate jumpers are connected.

3.2.2 PL1000 with ADEM or EMCP2

Image 3.4 EMCP2 + PL1000

Configuration

Note: *For connection to CAT PL1000 module it is necessary to use an I-CB module. Configuration of the controller and I-CB has to be done separately using GenConfig or DriveConfig and ICBEdit software. For further information see I-CB manual.*

Controllers that support the PL1000

Refer to **Comparison table (page 23)**

Available parameters

For more information about available values and signals, please refer to I-CB manual or ICBEdit PC software.

Recommended wiring of PL1000E or PL1000T

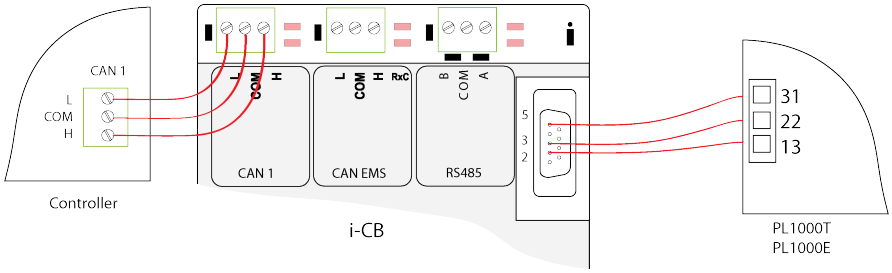


Image 3.5 Recommended wiring of PL1000E or PL1000T

IMPORTANT: Check that CAN bus terminating resistors or appropriate jumpers are connected.

3.2.3 ADEM A3 or ADEM A4

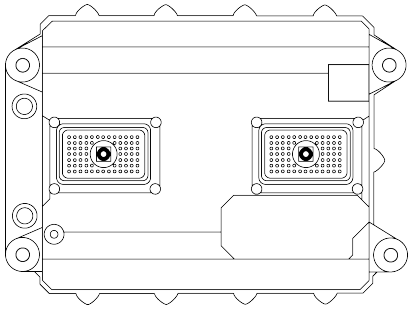


Image 3.6 ADEM A3

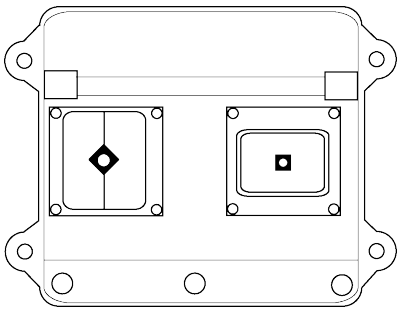


Image 3.7 ADEM A4

Controllers that support the ADEM

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		
Wait To Start Lamp	1081	Engine Wait to Start Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
	ECU analog outputs (controller's inputs)	
Configuration Name	**SPN**	**J1939 Name**
Engine speed	190	Engine Speed
Coolant Temp	110	Engine Coolant Temperature
Fuel Temp	174	Engine Fuel Temperature 1
Oil Temperature	175	Engine Oil Temperature 1
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Exhaust Gas Temperature	173	Engine Exhaust Temperature
Percent Load	92	Engine Percent Load At Current Speed
Fuel Rate	183	Engine Fuel Rate
Alternator Potential (Voltage)	167	Charging System Potential (Voltage)
Electrical Potential (Voltage)	168	Battery Potential / Power Input 1
Battery Potential (Voltage)	158	Keyswitch Battery Potential
Oil Filter Diff.Press	99	Engine Oil Filter Differential Pressure
Fuel Filter Diff.Press	95	Engine Fuel Filter Differential Pressure

Right Exhaust Temp	2433	Engine Exhaust Manifold Bank 2 Temperature 1
Left Exhaust Temp	2434	Engine Exhaust Manifold Bank 1 Temperature 1
Fuel Delivery Pressure	94	Engine Fuel Delivery Pressure
Engine Oil Pressure	100	Engine Oil Pressure
Coolant Pressure	109	Engine Coolant Pressure 1
Coolant Level	111	Engine Coolant Level 1
AuxTemp	441	Auxiliary Temperature 1
AuxPress	1387	Auxiliary Pressure #1
Transmission Output Shaft Speed	191	Transmission Output Shaft Speed
Transmission Current Gear	523	Transmission Current Gear
Aux Valve 15 Fail Safe Mode Command	2345	Aux Valve 15 Fail Safe Mode Command
Auxiliary Coolant Pressure	1203	Engine Auxiliary Coolant Pressure
Engine Auxiliary Coolant Temperature	1212	Engine Auxiliary Coolant Temperature
Engine Intercooler Coolant Level	3668	Engine Charge Air Cooler Coolant Level
Engine Aftercooler Coolant Leve	3676	Engine Aftercooler Coolant Level
Pre-filter Oil Pressure	1208	Engine Pre-filter Oil Pressure
Fuel Leakage	1239	Engine Fuel Leakage 1
Fuel Leakage 2	1240	Engine Fuel Leakage 2
Sea Water Pump Outlet Pressure	2435	Sea Water Pump Outlet Pressure

ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed [1,2,3,4,5,6]	898	Engine Requested Speed/Speed Limit

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite[NT], 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact[NT], 5 - InteliCompact[NT], 6 - InteliDrive Nano

Controller’s analog output for speed control configuration

Requested speed settings for InteliGen[NT] or InteliSys[NT]		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring

Function	**ECU 70pin AMP connector**	**Controller**
CAN H	50	CAN1 (extension modules/J1939) – CAN H
CAN COM	42	CAN1 (extension modules/J1939) – CAN COM

CAN L	34	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	48,52,53,55	N/A
Battery - (negative)	61,63,65,69	N/A
Key Switch	70	Any binary output configured as ECU PwrRelay
Analog Speed Control	66 (38-S-SPD[1])	SG OUT
Analog Speed Control	68 (39-D-SPD[1])	SG COM

Note: *In case of Marine application the settings of the ECU has to be set to "Startboard". It changes the ECU address to 0 which is expected by the ComAp controller. Settings "Port" uses an address 1 and is not allowed.*

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see ADEM A3 or ADEM A4 on page 1**.

3.2.4 ADEM A4 with EMCP3.x or EMCP4.x

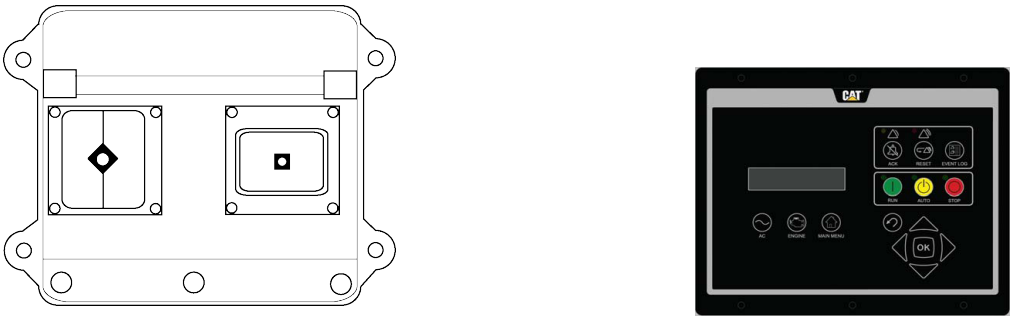


Image 3.8 ADEM A4 with EMCP3.x or ADEM A4 with EMCP4.x

Note: *The configuration and connection is the same on the gen-set equipped with ADEM A4 (ECU) and EMCP 3.x or EMCP 4.x (generator set controller). The ADEM 4.x is the successor of the ADEM 3.x.*

Controllers that support the ADEM with EMCP

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		
Wait To Start Lamp	1081	Engine Wait to Start Lamp

[1] Caterpillar PWM speed contol terminal

Protect Lamp EMCP	987	Protect Lamp - signal of EMCP panel
Amber Warning Lamp EMCP	624	Amber Warning Lamp - signal of EMCP panel
Red Stop Lamp EMCP	623	Red Stop Lamp - signal of EMCP panel
Malfunction Lamp EMCP	1213	Malfunction Indicator Lamp - signal of EMCP panel

ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**

ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine speed	190	Engine Speed
Startup Mode	1675	Engine Starter Mode
Coolant Temp	110	Engine Coolant Temperature
Fuel Temp	174	Engine Fuel Temperature 1
Oil Temperature	175	Engine Oil Temperature 1
IntercoolTemp	52	Engine Intercooler Temperature
Barometric Pressure	108	Barometric Pressure
Air Inlet Temperature	172	Engine Intake Air Temperature
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Air Inlet Pressure	106	Engine Intake Air Pressure
Air Filter Differential Pressure	107	Engine Air Filter 1 Differential Pressure
Percent Load	92	Engine Percent Load At Current Speed
Accelerator Pedal Position 1	91	Accelerator Pedal Position 1
Fuel Rate	183	Engine Fuel Rate
Electrical Potential (Voltage)	168	Battery Potential / Power Input 1
Battery Potential (Voltage)	158	Keyswitch Battery Potential
Exhaust Gas Temp - Right Manifold	2433	Engine Exhaust Manifold Bank 2 Temperature 1
Exhaust Gas Temp - Left Manifold	2434	Engine Exhaust Manifold Bank 1 Temperature 1
Pre-filter Oil Pressure	1208	Engine Pre-filter Oil Pressure
Auxiliary Coolant Pressure	1203	Engine Auxiliary Coolant Pressure
Turbocharger 1 Intake Temp	1180	Engine Turbocharger 1 Turbine Intake Temperature
Turbocharger 2 Intake Temp	1181	Engine Turbocharger 2 Turbine Intake Temperature
Turbo 1 Inlet Pressure	1176	Engine Turbocharger 1 Compressor Intake Pressure
Turbo 2 Inlet Pressure	1177	Engine Turbocharger 2 Compressor Intake Pressure
Air Filter 2 Differential Press	2809	Engine Air Filter 2 Differential Pressure
DesiredOpSpd	515	Engine's Desired Operating Speed
Fuel Delivery Pressure	94	Engine Fuel Delivery Pressure
Engine Oil Pressure	100	Engine Oil Pressure
Crankcase Pressure	101	Engine Crankcase Pressure 1
Coolant Pressure	109	Engine Coolant Pressure 1
Engine speed EMCP	190	Engine Speed - signal of EMCP panel
Coolant Temp EMCP	110	Engine Coolant Temperature - signal of EMCP panel
Fuel Temp EMCP	174	Engine Fuel Temperature 1 - signal of EMCP panel
Electrical Potential (Voltage) EMCP	168	Battery Potential / Power Input 1 - signal of EMCP panel
Battery Potential (Voltage) EMCP	158	Keyswitch Battery Potential - signal of EMCP panel
Oil Filter Diff.Press	99	Engine Oil Filter Differential Pressure - signal of EMCP panel
Fuel Filter Diff.Press	95	Engine Fuel Filter Differential Pressure - signal of EMCP panel
Fuel Delivery Pressure EMCP	94	Engine Fuel Delivery Pressure - signal of EMCP panel

Engine Oil Pressure EMCP	100	Engine Oil Pressure - signal of EMCP panel
Throttle Position	51	Engine Throttle Valve 1 Position 1
Alternator Bearing 1 Temperature	1122	Engine Alternator Bearing 1 Temperature
Alternator Bearing 2 Temperature	1123	Engine Alternator Bearing 2 Temperature
Alternator Winding 1 Temperature	1124	Engine Alternator Winding 1 Temperature
Alternator Winding 2 Temperature	1125	Engine Alternator Winding 2 Temperature
Alternator Winding 3 Temperature	1126	Engine Alternator Winding 3 Temperature
Exhaust Gas Port 1 Temp	1137	Engine Exhaust Gas Port 1 Temperature
Exhaust Gas Port 2 Temp	1138	Engine Exhaust Gas Port 2 Temperature
Exhaust Gas Port 3 Temp	1139	Engine Exhaust Gas Port 3 Temperature
Exhaust Gas Port 4 Temp	1140	Engine Exhaust Gas Port 4 Temperature
Exhaust Gas Port 5 Temp	1141	Engine Exhaust Gas Port 5 Temperature
Exhaust Gas Port 6 Temp	1142	Engine Exhaust Gas Port 6 Temperature
Exhaust Gas Port 7 Temp	1143	Engine Exhaust Gas Port 7 Temperature
Exhaust Gas Port 8 Temp	1144	Engine Exhaust Gas Port 8 Temperature
Exhaust Gas Port 9 Temp	1145	Engine Exhaust Gas Port 9 Temperature
Exhaust Gas Port 10 Temp	1146	Engine Exhaust Gas Port 10 Temperature
Exhaust Gas Port 11 Temp	1147	Engine Exhaust Gas Port 11 Temperature
Exhaust Gas Port 12 Temp	1148	Engine Exhaust Gas Port 12 Temperature
Exhaust Gas Port 13 Temp	1149	Engine Exhaust Gas Port 13 Temperature
Exhaust Gas Port 14 Temp	1150	Engine Exhaust Gas Port 14 Temperature
Exhaust Gas Port 15 Temp	1151	Engine Exhaust Gas Port 15 Temperature
Exhaust Gas Port 16 Temp	1152	Engine Exhaust Gas Port 16 Temperature
Gas Supply Pressure	159	Engine Gaseous Fuel Supply Pressure 1
Engine Intercooler Coolant Level	3668	Engine Charge Air Cooler Coolant Level
Fuel Filter Intake Abs Pressure	5417	Engine Fuel Filter (Suction Side) Intake Absolute Pressure
Fuel Temperature 2	3468	Engine Fuel Temperature 2
Sea Water Pump Outlet Pressure	2435	Sea Water Pump Outlet Pressure
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**

IMPORTANT: Speed control can be done by using PWM from the controller (SG interface) to the ADEM. PWM rate for the controller has to be set to 500Hz. See the SpdGovPWM rate setpoint in the Sync/Load ctrl group of setpoints. This feature has to be enabled in the ECU. Please contact your local distributor to check it.
Start/Stop command can be configured as Remote Start/Stop EMCP input. Use ECU PwrRelay controller output for this purpose.

Recommended wiring

Function	ECU 70pin AMP connector	Controller
CAN H	50	CAN1 (extension modules/J1939) – CAN H
CAN COM	42	CAN1 (extension modules/J1939) – CAN COM
CAN L	34	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	48,52,53,55	N/A
Battery - (negative)	61,63,65,69	N/A

Key Switch	70	Any binary output configured as ECU PwrRelay
Analog Speed Control	66 (38-S-SPD[1])	SG OUT
Analog Speed Control	68 (39-D-SPD[1])	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**. Available list of texts of fault codes **see Caterpillar ADEM A4 with EMCP3.x or ADEM A4 with EMCP4.x on page 1**.

[1] Caterpillar PWM speed contol terminal

3.3 Cummins engines support

ECU Type	Engine type
CM500	Industrial engines QSK19, QSK23, QSK45, QSK60, QSK78
CM558	Gas engines, QST30 (slave ECU)
CM570 (CM876)	Tier2/Tier3 QSM11, QSX15, ISM 400, ISM 435
CM800	ISB, ISBe
PGI1.1 (CM850,CM2150,CM2250)	Tier4i QSB7 and QSL9 Tier 2 QSK50/60, QSK19, QSK38 MCRS Tier 3 QSB5, QSB7, QSL9, QSM11
CM2150	ISDe, ISLe, ISZ (ISX 13)
CM2350	Tier4 QSB6.7, QSL9, QSX15, QSF3.8, QSB4.5, QSG12
CM2250	Industrial engines (ISX, ISB series)
GCS	Tier2 QSK23, QSK45/60/78, QST30

3.3.1 CM500

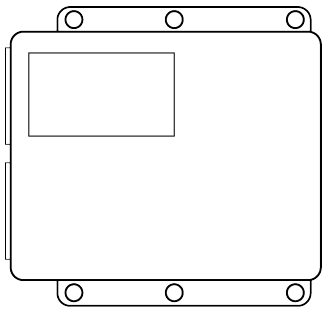


Image 3.9 CM500

Controllers that support the CM500

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		

Flash Red Stop Lamp Fast Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Wait To Start Lamp	1081	Engine Wait to Start Lamp
AP low idle switch	558	Accelerator Pedal 1 Low Idle Switch
Water in Fuel	97	Water In Fuel Indicator 1
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
AP Position	91	Accelerator Pedal Position 1
Percent Load	92	Engine Percent Load At Current Speed
Engine speed	190	Engine Speed
Actual Torque	513	Actual Engine - Percent Torque
Demand Torque	512	Driver's Demand Engine - Percent Torque
Coolant Temp	110	Engine Coolant Temperature
Fuel Temp	174	Engine Fuel Temperature 1
Oil Temp	175	Engine Oil Temperature 1
Engine Oil Level	98	Engine Oil Level
Engine Oil Pressure	100	Engine Oil Pressure
Coolant Pressure	109	Engine Coolant Pressure 1
Fuel Rate	183	Engine Fuel Rate
Barometric Pressure	108	Barometric Pressure
Air Inlet Temperature	172	Engine Intake Air Temperature
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Electrical Potential (Voltage)	168	Battery Potential / Power Input 1
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed [1,2,3,4,5,6]	898	Engine Requested Speed/Speed Limit

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliCompact^{NT}, 6 - InteliDrive Nano

Controller's analog output for speed control configuration

Requested speed settings for InteliGen^{NT} or InteliSys^{NT}		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A
Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring

Function	ECU A2 connector	Controller
CAN H	32	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	33	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	3,4,5	N/A
Battery - (negative)	7,8	N/A
Key Switch	10	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see CM500 on page 1**.

3.3.2 CM558

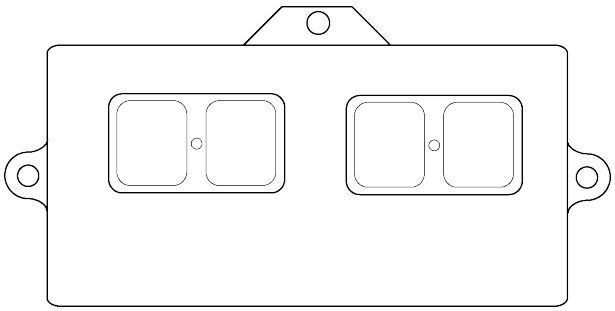


Image 3.10 CM558

Controllers that support the CM558

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**

ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine speed	190	Engine Speed
Percent Load	92	Engine Percent Load At Current Speed
Throttle Actuator 1 Command	3464	Engine Throttle Actuator 1 Control Command
Fuel Actuator 1 Command	633	Engine Fuel Actuator 1 Control Command
Engine Fuel Shutoff 1 Control	632	Engine Fuel Shutoff 1 Control
Aftertreat1 ExhGas Temp 2	3249	Aftertreatment 1 Exhaust Temperature 2
Aftertreat1 ExhGas Temp 1	3241	Aftertreatment 1 Exhaust Temperature 1
Intake Manif. Absolute Press	3563	Engine Intake Manifold #1 Absolute Pressure
Fuel Valve 1 Position	1442	Engine Fuel Valve 1 Position
T-ECU	1136	Engine ECU Temperature
EngTemp	110	Engine Coolant Temperature
EngineOil Temp	175	Engine Oil Temperature 1
Barometric Pressure	108	Barometric Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Air Intake Pressure	106	Engine Intake Air Pressure
Engine Throttle Position	51	Engine Throttle Valve 1 Position 1
Battery Potential (Voltage)	168	Battery Potential / Power Input 1
Engine Oil Pressure	100	Engine Oil Pressure
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**

Controller's analog output for speed control configuration

Requested speed settings for InteliGen^{NT} or InteliSys^{NT}		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A
Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring

No documentation available so far!

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see CM558 on page 1**.

3.3.3 CM570

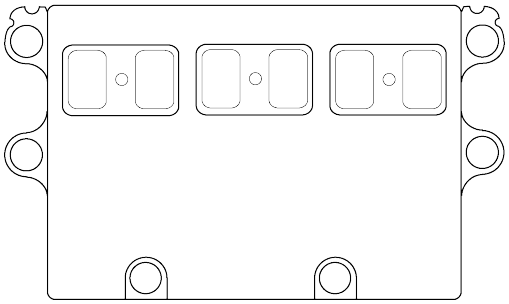


Image 3.11 CM570

Controllers that support the CM570

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Water in fuel	97	Water In Fuel Indicator 1
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		
PTO VarSpdSw	978	Engine Remote PTO Governor Variable Speed Control Switch
Wait To Start Lamp	1081	Engine Wait to Start Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
Run/Stop	-	Proprietary parameter
Idle/Rated	-	Proprietary parameter
Emergency Stop Indication	-	Proprietary parameter
Utility/Isochronous Gain Select	-	Proprietary parameter
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine speed	190	Engine Speed
Coolant Temp	110	Engine Coolant Temperature
EngineOil Temp	175	Engine Oil Temperature 1
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature

Percent Load	92	Engine Percent Load At Current Speed
Fuel Rate	183	Engine Fuel Rate
Engine Oil Pressure	100	Engine Oil Pressure
DesiredOpSpd	515	Engine's Desired Operating Speed
Barometric Pressure	108	Barometric Pressure
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Speed Bias Reference [1,2,4,5,6]	-	Proprietary parameter
Frequency Selection [1,2,4,5,6]	-	Proprietary parameter 0 - 50Hz 1 - 60Hz 2-5 - Reserved 6 - Error 7 - Do not care
Requested speed (TSC1) [3,6]	898	Engine Requested Speed/Speed Limit

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliCompact^{NT}, 6 - InteliDrive Nano

Controller's analog output for speed control configuration

Speed Bias Reference settings for InteliGen^{NT} or InteliSys^{NT}		
Source	SpdRegOut	
Convert	YES	
Limits	-10.000V	-10%
	+10.000V	+10%
Speed Bias Reference settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	-10%
	100.0 %	+10%

Recommended wiring

Function	ECU C-01 50pin connector	Controller
CAN H	46	CAN1 (extension modules/J1939) – CAN H
CAN COM	37	CAN1 (extension modules/J1939) – CAN COM
CAN L	36	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	7,8,17,18,28	N/A
Battery - (negative)	29,30,39,40,50	N/A
Key Switch	38	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see CM570 on page 1**.

Table of tested ECU calibrations

Engine type	ECU calibration
QSX15-G4	N 11959.01
QSX15-G6	N 11960.01
QSX15-G7	N 11961.01
QSX15-G8	N 11962.01 N 11962.05 N12013.00
QSX15-G9	N 11963.01
ISM	L 21103.10

3.3.4 CM800

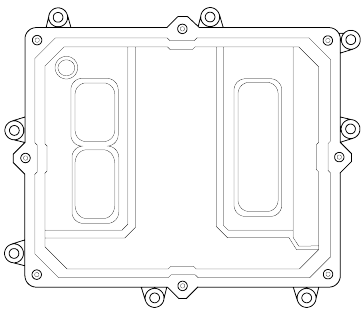


Image 3.12 CM800

Controllers that support the CM800

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		
Water in fuel	97	Water In Fuel Indicator 1
PTO VarSpdSw	978	Engine Remote PTO Governor Variable Speed Control Switch
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
Run/Stop [1,2,3,4,5,6]	-	Proprietary parameter

ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine speed	190	Engine Speed
Coolant Temp	110	Engine Coolant Temperature
EngineOil Temp	175	Engine Oil Temperature 1
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Percent Load	92	Engine Percent Load At Current Speed
Fuel Rate	183	Engine Fuel Rate
Engine Oil Pressure	100	Engine Oil Pressure
DesiredOpSpd	515	Engine's Desired Operating Speed
Barometric Pressure	108	Barometric Pressure

ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed [1,2,3,4,5,6]	898	Engine Requested Speed/Speed Limit

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliCompact^{NT}, 6 - InteliDrive Nano

Controller's analog output for speed control configuration

Requested speed settings for InteliGen^{NT} or InteliSys^{NT}		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source		
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring

Function	ECU 40pin top connector	3pin diagnostic connector	Controller
CAN H	53	2	CAN1 (extension modules/J1939) – CAN H
CAN COM	51	3	CAN1 (extension modules/J1939) – CAN COM
CAN L	52	1	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	1,7,12,13	N/A	N/A
Battery - (negative)	3,9,14,15	N/A	N/A
Key Switch	N/A	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	N/A	SG OUT
Analog Speed Control	N/A	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see CM800 on page 1**.

Table of tested ECU calibrations

Engine type	ECU calibration
6ISBe	90132.05

3.3.5 CM850

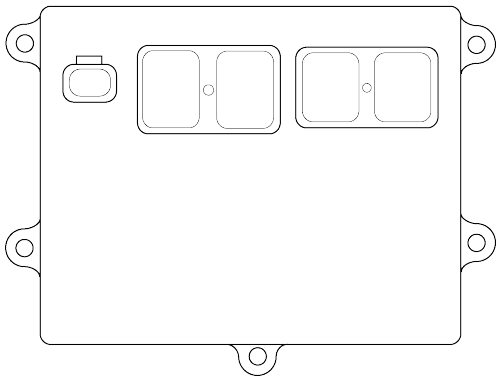


Image 3.13 CM850

Controllers that support the CM850

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		
Water in fuel	97	Water In Fuel Indicator 1
PTO VarSpdSw	978	Engine Remote PTO Governor Variable Speed Control Switch
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
Engine Auxiliary Shutdown Switch [5,6]	970	Engine Auxiliary Shutdown Switch
Run/Stop [1,2,3,4,5,6]	-	Proprietary parameter
Idle/Rated [1,2,3,4]	-	Proprietary parameter
Shutdown Override CC [1,2,3,4]	-	Proprietary parameter

ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine speed	190	Engine Speed
Exhaust Gas Temperature - Right Manifold	2433	Engine Exhaust Manifold Bank 2 Temperature 1
Exhaust Gas Temperature - Left Manifold	2434	Engine Exhaust Manifold Bank 1 Temperature 1
Pre-filter Oil Pressure	1208	Engine Pre-filter Oil Pressure
Coolant Temp	110	Engine Coolant Temperature
Fuel Temp	174	Engine Fuel Temperature 1
EngineOil Temp	175	Engine Oil Temperature 1
Turbo Oil Temp	176	Engine Turbocharger Oil Temperature
Intercooler Temp	52	Engine Intercooler Temperature
Intercooler Thermostat Opening	1134	Engine Charge Air Cooler Thermostat Opening
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Exhaust Gas Temp	173	Engine Exhaust Temperature
Percent Load	92	Engine Percent Load At Current Speed
Fuel Rate	183	Engine Fuel Rate
Engine Fuel Delivery Pressure	94	Engine Fuel Delivery Pressure
Engine Oil Pressure	100	Engine Oil Pressure
Engine Crankcase Pressure	101	Engine Crankcase Pressure 1
Engine Coolant Pressure	109	Engine Coolant Pressure 1
Inj. Timing Rail 1 Pressure	156	Engine Injector Timing Rail 1 Pressure
Exhaust Gas Port 1 Temp	1137	Engine Exhaust Gas Port 1 Temperature
Exhaust Gas Port 2 Temp	1138	Engine Exhaust Gas Port 2 Temperature
Exhaust Gas Port 3 Temp	1139	Engine Exhaust Gas Port 3 Temperature
Exhaust Gas Port 4 Temp	1140	Engine Exhaust Gas Port 4 Temperature
Exhaust Gas Port 5 Temp	1141	Engine Exhaust Gas Port 5 Temperature
Exhaust Gas Port 6 Temp	1142	Engine Exhaust Gas Port 6 Temperature
Exhaust Gas Port 7 Temp	1143	Engine Exhaust Gas Port 7 Temperature
Exhaust Gas Port 8 Temp	1144	Engine Exhaust Gas Port 8 Temperature
Exhaust Gas Port 9 Temp	1145	Engine Exhaust Gas Port 9 Temperature
Exhaust Gas Port 10 Temp	1146	Engine Exhaust Gas Port 10 Temperature
Exhaust Gas Port 11 Temp	1147	Engine Exhaust Gas Port 11 Temperature
Exhaust Gas Port 12 Temp	1148	Engine Exhaust Gas Port 12 Temperature
Exhaust Gas Port 13 Temp	1149	Engine Exhaust Gas Port 13 Temperature
Exhaust Gas Port 14 Temp	1150	Engine Exhaust Gas Port 14 Temperature
Exhaust Gas Port 15 Temp	1151	Engine Exhaust Gas Port 15 Temperature
Exhaust Gas Port 16 Temp	1152	Engine Exhaust Gas Port 16 Temperature
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Intake Manifold 2 Temperature	1131	Engine Intake Manifold 2 Temperature
Intake Manifold 3 Temperature	1132	Engine Intake Manifold 3 Temperature
Intake Manifold 4 Temperature	1133	Engine Intake Manifold 4 Temperature
Intake Manifold 5	1802	Engine Intake Manifold 5 Temperature

Temperature		
Intake Manifold 6 Temperature	1803	Engine Intake Manifold 6 Temperature
Turbocharger 1 Boost Pressure	1127	Engine Turbocharger 1 Boost Pressure
Turbocharger 2 Boost Pressure	1128	Engine Turbocharger 2 Boost Pressure
Turbocharger 3 Boost Pressure	1129	Engine Turbocharger 3 Boost Pressure
Turbocharger 4 Boost Pressure	1130	Engine Turbocharger 4 Boost Pressure
DesiredOpSpd	515	Engine's Desired Operating Speed
Barometric Pressure	108	Barometric Pressure
Electrical Potential	168	Battery Potential / Power Input 1
Battery Potential (Voltage)	158	Keyswitch Battery Potential

ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed (TSC1) [3,6]	898	Engine Requested Speed/Speed Limit
Speed Bias Reference [1,2,3,4,5]	-	Proprietary parameter. Speed bias provides the means to adjust the engine speed set point while the engine is running. It is used for synchronization with the power grid. Once synchronized and paralleled with other power sources the speed bias is used to make the gen-set and engine pick up or shed load. In the case of using speed bias to pick up and shed load the commanded engine speed does change, but the actual engine speed does not change.
Frequency Selection [1,2,3,4,5,6]	-	Proprietary parameter. This feature gives the operator ability to switch the rated speed between 50Hz and 60Hz. This feature will only be enabled and functional on engines that have been rated for dual speed operations. The engine has two speed set points that define the base operating speed of the engine. The system will only react to a state transition while the Engine speed is 0. If datalink is lost during operation the alternate frequency will not be effected until engine reaches 0 RPM. The recommended source value is a constant following the requested function. 0 = 50Hz 1 = 60Hz 2-5 = Reserved 6 = Error 7 = Do not care
Governor Gain Adjustment [1,2,3,4,5,6]	-	Proprietary parameter. For service purpose only! Default value is 5.

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliNano^{NT}, 6 - InteliDrive Nano

Controller’s analog output for speed control configuration

Speed Bias Reference settings for InteliGen^{NT} or InteliSys^{NT}		
Source	SpdRegOut	
Convert	YES	
Limits	-10.000V	-10%
	+10.000V	+10%

Speed Bias Reference settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	-10%
	100.0 %	+10%

Recommended wiring

Function	ECU J2 50pin connector	Controller
CAN H	46	CAN1 (extension modules/J1939) – CAN H
CAN COM	37	CAN1 (extension modules/J1939) – CAN COM
CAN L	47	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	N/A	N/A
Battery - (negative)	N/A	N/A
Key Switch	39	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see CM850 on page 1**.

Table of tested ECU calibrations

Engine type	ECU calibration (G-Drive)
Engine QSB7-G	AZ 90084.02
Engine QSL9	AZ90059.15 AZ 90105.04 AZ 90056.02 AZ 90041.05 (analog speed control)
Engine type	**ECU calibration (Industrial)**
Engine QSK38	AQ 60186.98 AQ 60176.01

3.3.6 CM2150

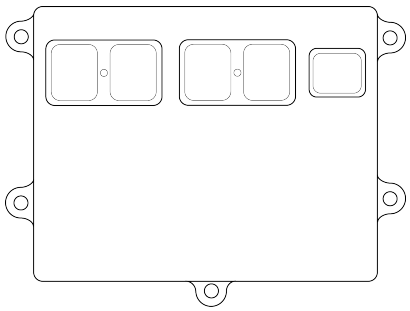


Image 3.14 CM2150

Controllers that support the CM2150

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Water in fuel	97	Water In Fuel Indicator 1
Wait to Start Lamp	1081	Engine Wait to Start Lamp
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		
Auxiliary Shutdown Sw	970	Engine Auxiliary Shutdown Switch
Engine Derate Switch	971	Engine Derate Switch
Remote Accelerator Enable Switch	969	Remote Accelerator Enable Switch

ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
DPF Regeneration Inhibit Switch [1,2,3,4]	3695	Aftertreatment Regeneration Inhibit Switch
DPF Regeneration Force Switch [1,2,3,4]	3696	Aftertreatment Regeneration Force Switch

ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Fuel Rate	183	Engine Fuel Rate
Throttle Position	51	Engine Throttle Valve 1 Position 1
Barometric Pressure	108	Barometric Pressure
Ambient Air Temperature	171	Ambient Air Temperature
Air Inlet Temperature	172	Engine Intake Air Temperature
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Air Inlet Pressure	106	Engine Intake Air Pressure
Air filter differential pressure	107	Engine Air Filter 1 Differential Pressure
Exhaust Gas Temperature	173	Engine Exhaust Temperature
Battery Potential (Voltage)	158	Keyswitch Battery Potential
Coolant Temperature	110	Engine Coolant Temperature
Fuel Temperature	174	Engine Fuel Temperature 1
Oil Temp	175	Engine Oil Temperature 1
Intercooler Temp	52	Engine Intercooler Temperature
Fuel Delivery Pressure	94	Engine Fuel Delivery Pressure
Oil Level	98	Engine Oil Level
Oil Pressure	100	Engine Oil Pressure
Crankcase Pressure	101	Engine Crankcase Pressure 1
Coolant Pressure	109	Engine Coolant Pressure 1

Coolant Level	111	Engine Coolant Level 1
Nominal Friction Torque	514	Nominal Friction - Percent Torque
Desired Operating Speed	515	Engine's Desired Operating Speed
Rated Power	166	Engine Rated Power
Diesel Exhaust Fluid Tank 1 Level	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank Level
Diesel Exhaust Fluid Tank 1 Temperature	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature
Torque Mode	899	Engine Torque Mode
Demand Torque	512	Driver's Demand Engine - Percent Torque
Torque	513	Actual Engine - Percent Torque
Engine Speed	190	Engine Speed
Accelerator Pedal Position	91	Accelerator Pedal Position 1
Percent Load	92	Engine Percent Load At Current Speed
Remote Accelerator	974	Remote Accelerator Pedal Position
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed [1,2,3,4,5,6]	898	Engine Requested Speed/Speed Limit

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliNano^{NT}, 6 - InteliDrive Nano

Controller's analog output for speed control configuration

Requested speed settings for InteliGen^{NT} or InteliSys^{NT}		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A
Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring

Function	9pin diagnostic connector	OEM connector	4pin OEM connector	Controller
CAN H	C	01	N/A	CAN1 (extension modules/J1939) – CAN H
CAN COM	E	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	D	21	N/A	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	B	43,47,53	01,02	N/A
Battery - (negative)	A	N/A	03,04	N/A

Key Switch	N/A	45	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	N/A	N/A	SG OUT
Analog Speed Control	N/A	N/A	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see CM2150 on page 1**.

3.3.7 CM2250 (Industrial calibration)

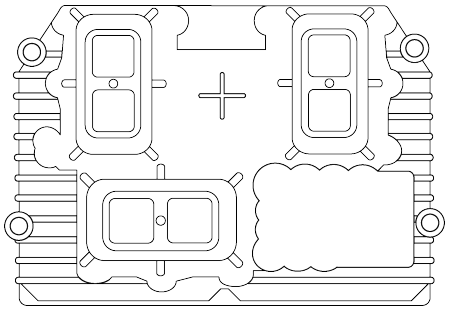


Image 3.15 CM2250

Controllers that support the CM2250

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Water in fuel	97	Water In Fuel Indicator 1
DPF Act. Reg. Inhibit Status	3702	Diesel Particulate Filter Active Regeneration Inhibited Status
DPF ActRegInhibitDueToInhSw	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPF ActRegInhibNotWarmUp	3716	Diesel Particulate Filter Active Regeneration Inhibited Due to Engine Not Warmed Up
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
DPF Reg. Inhibit Switch [3]	3695	Aftertreatment Regeneration Inhibit Switch
DPF Reg. Force Switch [3]	3696	Aftertreatment Regeneration Force Switch

ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Percent Load	92	Engine Percent Load At Current Speed
Engine speed	190	Engine Speed
Engine torque	513	Actual Engine - Percent Torque
Coolant Temp	110	Engine Coolant Temperature
EngineOil Temp	175	Engine Oil Temperature 1
Fuel Rate	183	Engine Fuel Rate
Intake Manifold Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Engine Oil Pressure	100	Engine Oil Pressure
DPF Lamp Command	3697	Diesel Particulate Filter Lamp Command
HEST Lamp Command	3698	Exhaust System High Temperature Lamp Command
DPF Status	3701	Aftertreatment Diesel Particulate Filter Status
Barometric Pressure	108	Barometric Pressure
DEF Tank 1 Low Level Indicator	5245	Aftertreatment Selective Catalytic Reduction Operator Inducement Active
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed [3,6]	898	Engine Requested Speed/Speed Limit
Accelerator Pedal Position	91	Accelerator Pedal Position 1

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliNano^{NT}, 6 - InteliDrive Nano

Controller's analog output for speed control configuration

Requested speed settings for InteliGen^{NT} or InteliSys^{NT}		
Source	SpdRegOut	
Convert	YES	
Limits	-10.000V	-10%
	+10.000V	+10%
Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring

Function	9pin diagnostic connector	Controller
CAN H	C	CAN1 (extension modules/J1939) – CAN H
CAN COM	E	CAN1 (extension modules/J1939) – CAN COM
CAN L	D	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	B	N/A
Battery - (negative)	A	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see CM2250 on page 1**.

3.3.8 CM2350

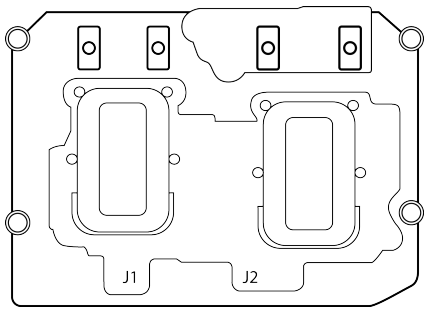


Image 3.16 CM2350

Controllers that support the CM2350

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine Amber Warning Lamp Command	5078	Engine Amber Warning Lamp Command
Engine Red Stop Lamp Command	5079	Engine Red Stop Lamp Command
SCR System Cleaning Status	6916	SCR System Cleaning Status
Water in fuel	97	Water In Fuel Indicator 1
DPF Regen. Status	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPF Act. Reg. Inhibit Status	3702	Diesel Particulate Filter Active Regeneration Inhibited Status
DPF ActRegInhibitDueToInhSw	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPF ActRegInhibNotWarmUp	3716	Diesel Particulate Filter Active Regeneration Inhibited Due to Engine Not Warmed Up
Wait To Start Lamp	1081	Engine Wait to Start Lamp
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
DPF Reg. Inhibit Switch	3695	Aftertreatment Regeneration Inhibit Switch

1,3,4,6		
DPF Reg. Force Switch 1,3,4,6	3696	Aftertreatment Regeneration Force Switch
Override	1237	Engine Shutdown Override Switch
Idle/Rated	-	
Engine Auxiliary Shutdown Switch	970	Engine Auxiliary Shutdown Switch

ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine speed	190	Engine Speed
AccPedal 1 Low Idle Switch	558	Accelerator Pedal 1 Low Idle Switch
Accelerator Pedal Position	91	Accelerator Pedal Position 1
Percent Load	92	Engine Percent Load At Current Speed
Coolant Temp	110	Engine Coolant Temperature
Fuel Temp	174	Engine Fuel Temperature 1
Engine Oil Temp	175	Engine Oil Temperature 1
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp 1	105	Engine Intake Manifold 1 Temperature
Exhaust Gas Temp	173	Engine Exhaust Temperature
Intake Manifold Temp 2	1131	Engine Intake Manifold 2 Temperature
Fuel Rate	183	Engine Fuel Rate
SCR System Cleaning Lamp Command	6915	SCR System Cleaning Lamp Command
Diesel Exhaust Fluid Tank 1 Temperature Bank 2	4427	Aftertreatment 2 Diesel Exhaust Fluid Tank Temperature
SCR Intake Temp	4360	Aftertreatment 1 SCR Intake Temperature
SCR Outlet Temp	4363	Aftertreatment 1 SCR Outlet Temperature
Outlet NH3	4377	Aftertreatment 1 Outlet NH3
DOC Intake Temperature	4765	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature
DOC Outlet Temperature	4766	Aftertreatment 1 Diesel Oxidation Catalyst Outlet Temperature
Engine Fuel Delivery Pressure	94	Engine Fuel Delivery Pressure
Engine Oil Pressure	100	Engine Oil Pressure
Crankcase Pressure	101	Engine Crankcase Pressure 1
DPF Lamp Command	3697	Diesel Particulate Filter Lamp Command
HEST Lamp Command	3698	Exhaust System High Temperature Lamp Command
DPF Act.Reg.ForcedStatus	4175	Diesel Particulate Filter Active Regeneration Forced Status
DPF Status	3701	Aftertreatment Diesel Particulate Filter Status
Interface Version1	-	Proprietary parameter
Interface Version2	-	Proprietary parameter
Electrical Potential (Voltage)	168	Battery Potential / Power Input 1
Barometric Pressure	108	Barometric Pressure
Tank Low Level Indicator	5245	Aftertreatment Selective Catalytic Reduction Operator Inducement Active
Catalyst Tank Level	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank Level
Diesel Exhaust Fluid Tank 1 Temperature	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature
Exhaust Gas Port 1 Temp	1137	Engine Exhaust Gas Port 1 Temperature
Exhaust Gas Port 2 Temp	1138	Engine Exhaust Gas Port 2 Temperature

Exhaust Gas Port 3 Temp	1139	Engine Exhaust Gas Port 3 Temperature
Exhaust Gas Port 4 Temp	1140	Engine Exhaust Gas Port 4 Temperature
Exhaust Gas Port 5 Temp	1141	Engine Exhaust Gas Port 5 Temperature
Exhaust Gas Port 6 Temp	1142	Engine Exhaust Gas Port 6 Temperature
Exhaust Gas Port 7 Temp	1143	Engine Exhaust Gas Port 7 Temperature
Exhaust Gas Port 8 Temp	1144	Engine Exhaust Gas Port 8 Temperature
Exhaust Gas Port 9 Temp	1145	Engine Exhaust Gas Port 9 Temperature
Exhaust Gas Port 10 Temp	1146	Engine Exhaust Gas Port 10 Temperature
Exhaust Gas Port 11 Temp	1147	Engine Exhaust Gas Port 11 Temperature
Exhaust Gas Port 12 Temp	1148	Engine Exhaust Gas Port 12 Temperature
Exhaust Gas Port 13 Temp	1149	Engine Exhaust Gas Port 13 Temperature
Exhaust Gas Port 14 Temp	1150	Engine Exhaust Gas Port 14 Temperature
Exhaust Gas Port 15 Temp	1151	Engine Exhaust Gas Port 15 Temperature
Exhaust Gas Port 16 Temp	1152	Engine Exhaust Gas Port 16 Temperature
NDE Temperature	-	Proprietary parameter
DE Temperature	-	Proprietary parameter
U Phase Temperature	-	Proprietary parameter
V Phase Temperature	-	Proprietary parameter
W Phase Temperature	-	Proprietary parameter

ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed [1,3,4,6]	898	Engine Requested Speed/Speed Limit
Engine Requested Torque	4191	Engine Requested Torque (Fractional)
Frequency Selection	-	Proprietary parameter. This feature gives the operator ability to switch the rated speed between 50Hz and 60Hz. This feature will only be enabled and functional on engines that have been rated for dual speed operations. The engine has two speed set points that define the base operating speed of the engine. The system will only react to a state transition while the Engine speed is 0. If datalink is lost during operation the alternate frequency will not be effected until engine reaches 0 RPM. The recommended source value is a constant following the requested function. 0 = 50Hz 1 = 60Hz 2-5 = Reserved 6 = Error 7 = Do not care
Speed Bias Reference	-	Proprietary parameter. Speed bias provides the means to adjust the engine speed set point while the engine is running. It is used for synchronization with the power grid. Once synchronized and paralleled with other power sources the speed bias is used to make the gen-set and engine pick up or shed load. In the case of using speed bias to pick up and shed load the commanded engine speed does change, but the actual engine speed does not change.

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliNano^{NT}, 6 - InteliDrive Nano

Controller's analog output for speed control configuration

Speed Bias Reference settings for InteliGen^{NT} or InteliSys^{NT}		
Source	SpdRegOut	
Convert	YES	
Limits	-10.000V	-10%
	+10.000V	+10%

Speed Bias References for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	-10%
	100.0 %	+10%

Requested speed settings for InteliGen^{NT} or InteliSys^{NT}		
Source	SpdRegOut	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring

Function	9pin diagnostic connector	96pin OEM connector	Controller
CAN H	C	22	CAN1 (extension modules/J1939) – CAN H
CAN COM	E	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	D	46	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	B	01,25,26,27,28	N/A
Battery - (negative)	A	49,50,51,52	N/A
Key Switch	N/A	05	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	N/A	SG OUT
Analog Speed Control	N/A	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see CM2350 on page 1**.

3.3.9 CM2880

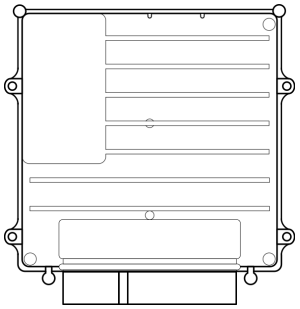


Image 3.17 CM2880

Controllers that support the CM2880

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
WaterInFuel	97	Water In Fuel Indicator 1
StopLamp[1,2,3,4,5,6,7]	623	Red Stop Lamp
WarningLamp[1,2,3,4,5,6,7]	624	Amber Warning Lamp
ProtectLamp	987	Protect Lamp
WaitStartLamp[1,2,3,4,7]	1081	Engine Wait to Start Lamp
MalfunctLamp	1213	Malfunction Indicator Lamp
FlashMalfunct	3038	Flash Malfunction Indicator Lamp
FFlashMalfunct	3038	Fast Flash Malfunction Indicator Lamp
FlashRed[1,2,3,4,7]	3039	Flash Red Stop Lamp (RSL)
FFlashRed[1,2,3,4,7]	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning[1,2,3,4,7]	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning[1,2,3,4,7]	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect	3041	Flash Protect Lamp
AT1IntDewPoint	3237	Aftertreatment 1 Intake Dew Point
AT1ExhDewPoint	3238	Aftertreatment 1 Exhaust Dew Point
SCR InhSwitch[7]	6918	SCR System Cleaning Inhibited Due to Inhibit Switch
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Load[1,2,3,4,5,6,7]	92	Engine Percent Load At Current Speed
P-Oil[1,2,3,4,5,6,7]	100	Engine Oil Pressure
P-Intake[1,2,3,4,7]	102	Engine Intake Manifold #1 Pressure
T-IntManifold[1,2,3,4,7]	105	Engine Intake Manifold 1 Temperature
P-Barometric	108	Barometric Pressure
T-Coolant[1,2,3,4,5,6,7]	110	Engine Coolant Temperature
CoolantLvl	111	Engine Coolant Level 1

Pwr-Rated	166	Engine Rated Power
Battery	168	Battery Potential / Power Input 1
T-AmbientAir	171	Ambient Air Temperature
T-AirIntake	172	Engine Intake 1 Air Temperature
T-Fuel	174	Engine Fuel 1 Temperature 1
T-Oil	175	Engine Oil Temperature 1
FuelRate[1,2,3,4,7]	183	Engine Fuel Rate
Spd-Rated*	189	Engine Rated Speed
EngineSpeed[1,2,3,4,5,6,7]	190	Engine Speed
TorqueDemand	512	Driver's Demand Engine - Percent Torque
TorqueActual	513	Actual Engine - Percent Torque
Torque	514	Nominal Friction - Percent Torque
Spd-Desired*	515	Engine's Desired Operating Speed
APPRemote	974	Remote Accelerator Pedal Position
DEFTnkLevel[1,2,3,4,5,6,7]	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank Volume
TorqueDemand	2432	Engine Demand - Percent Torque
T-DEFTnk	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
SCR IntakeNOx	3216	Aftertreatment 1 SCR Intake NOx 1
AT1IntOxygen	3217	Aftertreatment 1 Intake Percent Oxygen 1
AT1OutNOx	3226	Aftertreatment 1 Outlet NOx 1
AT1OutOxygen1	3227	Aftertreatment 1 Outlet Percent Oxygen 1
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Spd-Requested[1,2,3,4,5,6,7]	898	Engine Requested Speed/Speed Limit

*The parameter requires extended controller's support. Please refer controller's manual for further information.

Supported parameter by the controllers configured by NanoEdit, DriveEdit, LiteEdit PC or InteliConfigsoftware:
1 - InteliLite[NT], 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact[NT], 5 - InteliNano[NT], 6 - InteliDrive Nano , 7 - InteliGen200, InteliGen500

Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for InteliGen[NT], InteliSys[NT] or InteliSys Gas		
Source	SpeedReq RPM[1]	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A
Requested speed (Spd-Requested) settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

[1] If a custom source is used (PLC output, analog input, etc.) the value has to have exactly one decimal point (0.0 - 3000.0).

Recommended wiring

Function	9pin diagnostic connector	96pin OEM connector	Controller
CAN H	C	22	CAN1 (extension modules/J1939) – CAN H
CAN COM	E	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	D	46	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	B	01,25,26,27,28	N/A
Battery - (negative)	A	49,50,51,52	N/A
Key Switch	N/A	05	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	N/A	SG OUT
Analog Speed Control	N/A	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes see **Cummins CM2880 Fault Codes (page 290)**

3.3.10 PGI Interface (CM850 / CM2150 / CM2250)

Controllers that support the Cummins PGI

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		
Water in fuel	97	Water In Fuel Indicator 1
DPF Act. Reg. Inhibit Status	3702	Diesel Particulate Filter Active Regeneration Inhibited Status
DPF ActRegInhibitDueToInhSw	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPF ActRegInhibNotWarmUp	3716	Diesel Particulate Filter Active Regeneration Inhibited Due to Engine Not Warmed Up
Wait To Start Lamp	1081	Engine Wait to Start Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
Idle/Rated [1,2,3,4]	-	Proprietary parameter

Shutdown Override [1,2,3,4]	-	Proprietary parameter
DPF Reg. Inhibit Switch [1,2,3,4]	3695	Aftertreatment Regeneration Inhibit Switch
DPF Reg. Force Switch [1,2,3,4]	3696	Aftertreatment Regeneration Force Switch
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine speed	190	Engine Speed
Percent Load	92	Engine Percent Load At Current Speed
Coolant Temp	110	Engine Coolant Temperature
Engine Oil Temp	175	Engine Oil Temperature 1
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Exhaust Gas Temp	173	Engine Exhaust Temperature
Fuel Rate	183	Engine Fuel Rate
Engine Oil Pressure	100	Engine Oil Pressure
DPF Lamp Command	3697	Diesel Particulate Filter Lamp Command
HEST Lamp Command	3698	Exhaust System High Temperature Lamp Command
DPF Status	3701	Aftertreatment Diesel Particulate Filter Status
Barometric Pressure	108	Barometric Pressure
DEF Tank 1 Low Level Indicator	5245	Aftertreatment Selective Catalytic Reduction Operator Inducement Active
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Speed Bias Reference [5]	-	Proprietary parameter. Speed bias provides the means to adjust the engine speed set point while the engine is running. It is used for synchronization with the power grid. Once synchronized and paralleled with other power sources the speed bias is used to make the gen-set and engine pick up or shed load. In the case of using speed bias to pick up and shed load the commanded engine speed does change, but the actual engine speed does not change.
Frequency Selection [1,2,3,4,5,6]	-	Proprietary parameter. This feature gives the operator ability to switch the rated speed between 50Hz and 60Hz. This feature will only be enabled and functional on engines that have been rated for dual speed operations. The engine has two speed set points that define the base operating speed of the engine. The system will only react to a state transition while the Engine speed is 0. If datalink is lost during operation the alternate frequency will not be effected until engine reaches 0 RPM. The recommended source value is a constant following the requested function. 0 = 50Hz 1 = 60Hz 2-5 = Reserved 6 = Error 7 = Do not care
Generator Governing Bias [1,2,3,4,5]	-	Proprietary parameter. Speed bias provides the means to adjust the engine speed set point while the engine is running. It is used for synchronization with the power grid. Once synchronized and paralleled with other power sources the speed bias is used to make the gen-set and engine pick up or shed load. In the case of using speed bias to pick up and shed load the commanded engine speed does change, but the actual engine speed does not change.

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliNano^{NT}, 6 - InteliDrive Nano

Controller's analog output for speed control configuration

Generator Governing Bias settings for InteliGen^{NT} or InteliSys^{NT}		
Source	SpdRegOut	
Convert	YES	
Limits	-10.000V	-10%
	+10.000V	+10%
Generator Governing Bias for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	-10%
	100.0 %	+10%

Note: *If you have the engine as a part of gen-set package (with PCC panel) the ECU might be delivered with different communication interface (not PGI) which means that speed control doesn't work with ComAp controller. It is necessary to use/order ECU with calibration for G-drive engines (with PGI).Recommended wiring*

Function	ECU J2 50pin connector	Controller
CAN H	46	CAN1 (extension modules/J1939) – CAN H
CAN COM	37	CAN1 (extension modules/J1939) – CAN COM
CAN L	47	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	N/A	N/A
Battery - (negative)	N/A	N/A
Key Switch	39	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see PGI Interface on page 1**.

3.3.11 GCS

Controllers that support the GCS

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Fuel Shut-Off Valve Driver State	-	Is reporting a fuel Shut-Off Valve output.
Red Shutdown Lamp	-	It warrants stopping the engine.
Run/Stop Switch State	-	The command used for engine running. On the occasion of loss of datalink, the engine will not shut down as it is looking for the initial 'run' command and will only shutdown if it was sent 'stop' or if it experienced a shutdown fault. The recommended source value for this command is Fuel solenoid.
Yellow Warning Lamp	-	Is reporting a problem with the engine system but the engine need not be immediately stopped.

ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
Fault Acknowledge	-	Switch signal which indicates the position of the fault acknowledge switch. This switch function allows the operator to acknowledge faults of the engine. The recommended source value for this command is Logical 0.
Shutdown Override	-	Switch signal which indicates the position of the engine shutdown override switch. This switch function allows the operator to override an impending engine shutdown. The recommended source value for this command is Logical 0.
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine Speed	-	Actual engine speed which is calculated over a minimum crankshaft angle of 720 degrees divided by the number of cylinders.
Coolant Temp	-	Temperature of liquid found in engine cooling system.
Oil Pressure QSK23/45/60/78	-	Gage pressure of oil in engine lubrication system as provided by oil pump.
Oil Pressure QST30, QSX15	-	Gage pressure of oil in engine lubrication system as provided by oil pump.
Frequency Adjust Pot	-	A signal output is provided to read the generator set frequency. The frequency is adjustable within ±3Hz of the rated operating frequency.
Running Time	-	Accumulated time of operation of engine.
Final Speed Reference	-	Please contact Cummins representative for further information about this value.
+/- 2,5V Speed Bias	-	This speed bias signal is provided as feedback from compatible speed governing and load share controller.
Fuel Rate (UK)	-	Amount of fuel consumed by engine per unit of time.
Fuel Rate (US)	-	Amount of fuel consumed by engine per unit of time.
Intake Manif. Press (QSX15)	-	Gage pressure of air measured downstream on the compressor discharge side of the turbocharger. If there is one boost pressure to report and this range and resolution is adequate, this parameter should be used.
Intake Manif. Temp (QSX15)	-	Temperature of pre-combustion air found in intake manifold of engine air supply system.
Oil Temperature (QSX15)	-	Temperature of the engine lubricant.
Intake Manif. Press (QSKxx)	-	Gage pressure of air measured downstream on the compressor discharge side of the turbocharger. If there is one boost pressure to report and this range and resolution is adequate, this parameter should be used.
Intake Manif. Temp (QSKxx)	-	Temperature of pre-combustion air found in intake manifold of engine air supply system.
Fuel Pump Pressure (QSKxx)	-	Please contact Cummins representative for further information about this value.
Fuel Rail Pressure (QSKxx)	-	Please contact Cummins representative for further information about this value.
Fuel Inlet Temperature (QSKxx)	-	Temperature of fuel entering injectors.
Timing Rail Pressure (QSKxx)	-	Please contact Cummins representative for further information about this value.
Intake Manif. Press L (QST30)	-	Gage pressure of air measured downstream on the left compressor discharge side of the turbocharger. If there is one boost pressure to report and this range and resolution is adequate, this parameter should be used.
Intake Manif. Press R (QST30)	-	Gage pressure of air measured downstream on the right compressor discharge side of the turbocharger. If there is one boost pressure to report and this range and resolution is adequate, this parameter should be used.
Intake Manif. Temp L	-	Temperature of pre-combustion air found in intake manifold of engine left air

(QST30)		supply system.
Intake Manif. Temp R (QST30)	-	Temperature of pre-combustion air found in intake manifold of engine right air supply system.
Oil Temperature (QST30)	-	Temperature of the engine lubricant.
Battery Potential (Voltage)	-	Battery potential measured at the input of the electronic control unit.
Coolant Pressure	-	Pressure of liquid found in engine cooling system.
Fuel Delivery Pressure	-	Pressure of fuel in system from supply pump to the injection pump.
Fuel Temperature	-	Temperature of the engine fuel.
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**

Recommended wiring

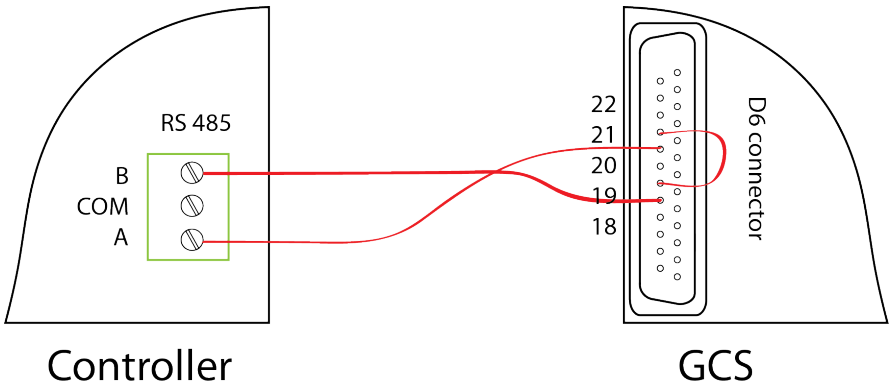


Image 3.18 Recommended wiring of GCS

Function	ECU 25pin D6 connector	ECU 25pin D3 connector	Controller
RS485 A	21	N/A	RS485 – RS485 A
RS485 COM	N/A	N/A	RS485 – RS485 COM
RS485 B	18	N/A	RS485 – RS485 B
Battery + (positive)	N/A	N/A	N/A
Battery - (negative)	N/A	N/A	N/A
Key Switch	N/A	N/A	Any binary output configured as ECU PwrRelay
Service Mode Enable	loop 19 & 22	N/A	N/A
Analog Speed Control	N/A	11	SG OUT Analog Speed Control range 2.5VDC – 7.5VDC
Analog Speed Control	N/A	12	SG COM
Analog Speed Control Shield	N/A	20	N/A

Note: *In case that the GCS doesn't communicate try to activate input Diagnostic mode (pin 07 on connector D6).*

Recommended controller setting

Controller	Setpoint	Value	Interface
InteliGen^{NT}	RS232(1) mode RS232(2) mode	ECU LINK	
	RS485(X)conv.	ENABLED DISABLED	RS 485(1), RS 485(2) RS 232(1)[1], RS 232(2) [2]
InteliSys^{NT}	RS232(2) mode	ECU LINK	
	RS485(X)conv.	ENABLED DISABLED	RS 485(2) RS 232(1)[3], RS 232(2)[4]
InteliLite^{NT}	COM2 Mode	ECU LINK	RS 485[5]
InteliCompact^{NT}	COM2 Mode	ECU LINK	RS 485[6]
InteliDrive DCU	RS485 Mode	ECU LINK	RS 485[7]
InteliDrive Mobile	RS485 Mode	ECU LINK	RS 485 (pin 85(A),pin 87(B),pin 86(COM))
InteliDrive Lite	COM2 Mode	ECU LINK	RS 485[8]

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see GCS on page 298**.

[1]external RS232-485 converter is required
[2]external RS232-485 converter is required
[3]external RS232-485 converter is required
[4]external RS232-485 converter is required
[5]IL-NT RS232-485 communication module is required
[6]IL-NT RS232-485 communication module is required
[7]IL-NT RS232-485 communication module is required
[8]IL-NT RS232-485 communication module is required

3.4 Daimler Chrysler engines support

ECU Type	Engine type
ADM2	series 500, 900, 450
ADM3	series 500, 900, 450

3.4.1 ADM2

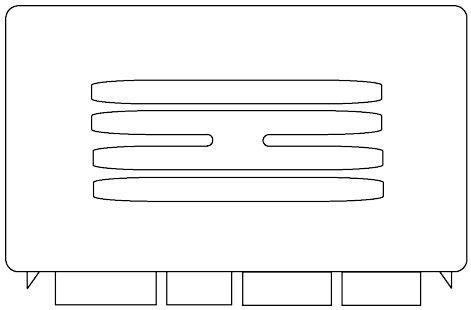


Image 3.19 ADM2

Controllers that support the ADM2

Refer to **Comparison table (page 1)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
Inhibit fuel injection [1,2,3,4,5,6]	-	Proprietary parameter. The command used for engine fuel injection inhibits. The recommended source value for this command is Logical 0.
Engine start [1,2,3,4,5,6]	-	Proprietary parameter. The command used for engine start. The recommended source value for this command is Fuel solenoid.

Inhibit engine start	-	Proprietary parameter. The command used for engine start inhibits. The recommended source value for this command is Logical 0.
TorqueConvLockupEngaged	-	Proprietary parameter
Engine overspeed enable	-	Proprietary parameter

ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine speed	190	Engine Speed
Actual Torque	513	Actual Engine - Percent Torque
Demand Torque	512	Driver's Demand Engine - Percent Torque
Coolant Temp	110	Engine Coolant Temperature
EngineOil Temp	175	Engine Oil Temperature 1
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Accelerator Pedal Position	91	Accelerator Pedal Position 1
Percent Load	92	Engine Percent Load At Current Speed
Fuel Rate	183	Engine Fuel Rate
Engine Oil Level	98	Engine Oil Level
Engine Oil Pressure	100	Engine Oil Pressure

ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed [1,2,3,4,5,6]	898	Engine Requested Speed/Speed Limit
Output shaft speed	191	Transmission Output Shaft Speed

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliNano^{NT}, 6 - InteliDrive Nano

Controller's analog output for speed control configuration

Requested speed settings for InteliGen^{NT} or InteliSys^{NT}		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring

Function	ECU 21pin connector	Controller
CAN H	19	CAN1 (extension modules/J1939) – CAN H
CAN COM	20	CAN1 (extension modules/J1939) – CAN COM
CAN L	21	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	1	N/A
Battery - (negative)	3	N/A

Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see ADM2 on page 1**.

3.4.2 ADM3

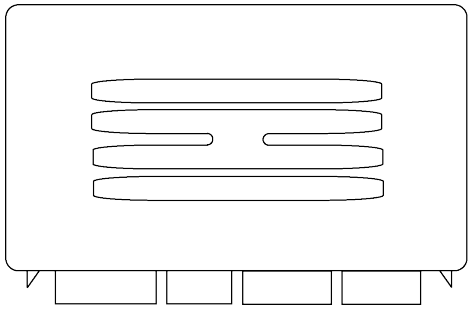


Image 3.20 ADM3

Controllers that support the ADM3

Refer to **Comparison table (page 1)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
Inhibit fuel injection [1,2,3,4,5,6]	-	Proprietary parameter. The command used for engine fuel injection inhibits. The recommended source value for this command is Logical 0.
Engine start [1,2,3,4,5,6]	-	Proprietary parameter. The command used for engine start. The recommended source value for this command is Fuel solenoid.
Inhibit engine start	-	Proprietary parameter. The command used for engine start inhibits. The recommended source value for this command is Logical 0.
TorqueConvLockupEngaged	-	Proprietary parameter
Engine overspeed enable	-	Proprietary parameter

ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine speed	190	Engine Speed
Actual Torque	513	Actual Engine - Percent Torque
Demand Torque	512	Driver's Demand Engine - Percent Torque
Coolant Temp	110	Engine Coolant Temperature
EngineOil Temp	175	Engine Oil Temperature 1
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Accelerator Pedal Position	91	Accelerator Pedal Position 1
Percent Load	92	Engine Percent Load At Current Speed
Fuel Rate	183	Engine Fuel Rate
Engine Oil Level	98	Engine Oil Level
Engine Oil Pressure	100	Engine Oil Pressure

ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed [1,2,3,4,5,6]	898	Engine Requested Speed/Speed Limit
Output shaft speed	191	Transmission Output Shaft Speed

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliNano^{NT}, 6 - InteliDrive Nano

Controller’s analog output for speed control configuration

Requested speed settings for InteliGen^{NT} or InteliSys^{NT}		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	SpeedReq RPM	
Convert	NO	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Controller’s analog output for speed control configuration

Requested speed settings for InteliGen^{NT} or InteliSys^{NT}		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring

Function	ECU 21pin connector	Controller
CAN H	19	CAN1 (extension modules/J1939) – CAN H
CAN COM	20	CAN1 (extension modules/J1939) – CAN COM
CAN L	21	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	1	N/A
Battery - (negative)	3	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see ADM3 on page 1**.

3.5 Detroit Diesel engines support

ECU Type	Engine type
DDEC IV.htm	Series 50, 60
DDEC V	Series 60
DDEC 10	Series DD13, DD15, DD16

3.5.1 DDEC IV

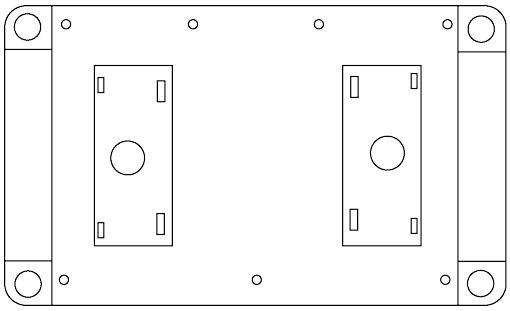


Image 3.21 DDEC IV

Controllers that support the DDEC IV

Refer to **Comparison table (page 1)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		
Wait To Start Lamp	1081	Engine Wait to Start Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine speed	190	Engine Speed
Actual Torque	513	Actual Engine - Percent Torque
Demand Torque	512	Driver's Demand Engine - Percent Torque

Coolant Temp	110	Engine Coolant Temperature
EngineOil Temp	175	Engine Oil Temperature 1
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Air Intake Pressure	106	Engine Intake Air Pressure
Exhaust Gas Temp	173	Engine Exhaust Temperature
Accelerator Pedal Position	91	Accelerator Pedal Position 1
Percent Load	92	Engine Percent Load At Current Speed
Fuel Rate	183	Engine Fuel Rate
Battery Potential (Voltage)	158	Keyswitch Battery Potential
Fuel Delivery Pressure	94	Engine Fuel Delivery Pressure
Engine Oil Level	98	Engine Oil Level
Engine Oil Pressure	100	Engine Oil Pressure
Crankcase Pressure	101	Engine Crankcase Pressure 1
Coolant Pressure	109	Engine Coolant Pressure 1
Coolant Level	111	Engine Coolant Level 1
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed [1,2,3,4,5,6]	898	Engine Requested Speed/Speed Limit

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite[NT], 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact[NT], 5 - InteliNano[NT], 6 - InteliDrive Nano

Controller's analog output for speed control configuration

Requested speed settings for InteliGen[NT] or InteliSys[NT]		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A
Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring

Function	**6pin communication connector**	**Controller**
CAN H	F	CAN1 (extension modules/J1939) – CAN H
CAN COM	D	CAN1 (extension modules/J1939) – CAN COM
CAN L	E	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	N/A	N/A
Battery - (negative)	N/A	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see DDEC IV on page 1**.

3.5.2 DDEC V

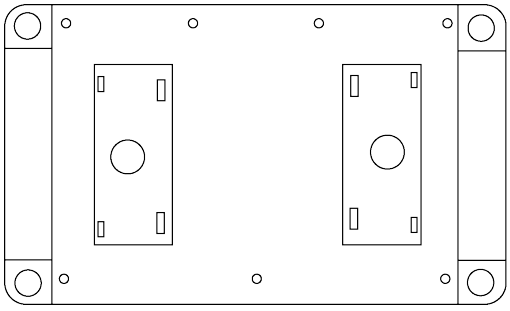


Image 3.22 DDEC IV

Controllers that support the DDEC V

Refer to **Comparison table (page 1)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		
Wait To Start Lamp	1081	Engine Wait to Start Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine speed	190	Engine Speed
Actual Torque	513	Actual Engine - Percent Torque
Demand Torque	512	Driver's Demand Engine - Percent Torque
Coolant Temp	110	Engine Coolant Temperature
EngineOil Temp	175	Engine Oil Temperature 1
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Air Intake Pressure	106	Engine Intake Air Pressure
Exhaust Gas Temp	173	Engine Exhaust Temperature

Accelerator Pedal Position	91	Accelerator Pedal Position 1
Percent Load	92	Engine Percent Load At Current Speed
Fuel Rate	183	Engine Fuel Rate
Battery Potential (Voltage)	158	Keyswitch Battery Potential
Fuel Delivery Pressure	94	Engine Fuel Delivery Pressure
Engine Oil Level	98	Engine Oil Level
Engine Oil Pressure	100	Engine Oil Pressure
Crankcase Pressure	101	Engine Crankcase Pressure 1
Coolant Pressure	109	Engine Coolant Pressure 1
Coolant Level	111	Engine Coolant Level 1
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed [1,2,3,4,5,6]	898	Engine Requested Speed/Speed Limit

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite[NT], 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact[NT], 5 - InteliNano[NT], 6 - InteliDrive Nano

Controller's analog output for speed control configuration

Requested speed settings for InteliGen[NT] or InteliSys[NT]		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A
Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring

Function	**6pin communication connector**	**Controller**
CAN H	F	CAN1 (extension modules/J1939) – CAN H
CAN COM	D	CAN1 (extension modules/J1939) – CAN COM
CAN L	E	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	N/A	N/A
Battery - (negative)	N/A	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see DDEC V on page 1**.

3.6 Deutz engines support

ECU Type	Engine type
EMR2	10xx series
EMR3-E (EDC16, EDC7)	TCD 2012 4V TCD 2013 4V TCD 2015
EMR3-S (EDC16, EDC7)	TCD 2012 2V TCD 2013 2V TCD 2013 4V
EMR4 (EDC17CV52)	TCD 3.6 L4 TCD 4.1 L4 TCD 6.1 L6 TCD 7.8 L6 TCD 12 V6 TCD 16 V8
TEM Evolution	TBG 616/620/632 TCG 2016/2020/2032

Previous engine designation	New engine designation
TCD 20xx L04	TCD 2.9 L4
TCD 2010 L04	TCD 3.6 L4
TCD 2012 L04	TCD 4.1 L4
TCD 2012 L06	TCD 6.1 L6
TCD 2013 L06	TCD 7.8 L6
TCD 2015 V06	TCD 12 V6
TCD 2015 V08	TCD 16 V8

3.6.1 Engine type explanation

Engine Code	Meaning
Txxxxxx	Turbocharged
xCxxxxx	Charge air cooled
xxDxxxx	Diesel engine
xxx12xx	Displacement in liters
xxxxxLx	L – in line engine, V – V-engine
xxxxxx6	Number of cylinders

3.6.2 EMR2

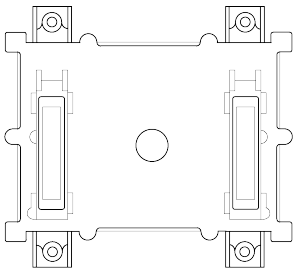


Image 3.23 EMR2

Controllers that support the EMR2

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		
Wait To Start Lamp	1081	Engine Wait to Start Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
Lock status	-	Proprietary parameter.
Stop Request [1,2,3,4,5,6]	-	Proprietary parameter.
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Accelerator Pedal Position	91	Accelerator Pedal Position 1
Percent Load	92	Engine Percent Load At Current Speed
Demand Torque	512	Driver's Demand Engine - Percent Torque
Actual Torque	513	Actual Engine - Percent Torque
Engine speed	190	Engine Speed
Coolant Temp	110	Engine Coolant Temperature
Fuel Temp	174	Engine Fuel Temperature 1
EngineOil Temp	175	Engine Oil Temperature 1
Engine Oil Level	98	Engine Oil Level

Engine Oil Pressure	100	Engine Oil Pressure
Coolant Level	111	Engine Coolant Level 1
Fuel Rate	183	Engine Fuel Rate
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Battery Potential (Voltage)	158	Keyswitch Battery Potential
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed [1,2,3,4,5,6]	898	Engine Requested Speed/Speed Limit

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite[NT], 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact[NT], 5 - InteliNano[NT], 6 - InteliDrive Nano

Controller's analog output for speed control configuration

Requested speed settings for InteliGen[NT] or InteliSys[NT]		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A
Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	Speed Request	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

IMPORTANT: Deutz does not recommend switching off the engine by removing the power supply (battery). It causes fault code SPN=536.

Recommended setting of EMR2 using Serdia PC tool

Note:

Page 30: 4400 = 1 … CAN activation

Page 31: 4412 = 1 … Activate TSC1a receive telegram

Page 31: 4470 = 1 … Activate CAN set point by TSC1a

Page 12: 4829 = 8… Enable stop request telegram

Page 10: 4900 = 8 … Selection of input channel type for nominal speed value sensor

829 = FunctEngineStop – Switch assignment for "Engine stop" function

4424 = TelStopRequestOn – SAEJ1939: Active Engine Stop Request receives telegram

Recommended wiring

Function	ECU 25pin F connector	Controller
CAN H	12	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	13	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	14	N/A
Battery - (negative)	1	N/A

Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see EMR2 on page 1**.

3.6.3 EMR3-E

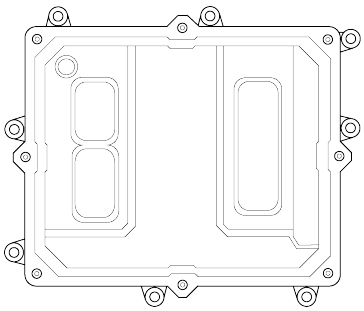


Image 3.24 EMR3-E

Controllers that support the EMR3-E

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		
Wait To Start Lamp	1081	Engine Wait to Start Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
Lock status	-	Proprietary parameter.
Stop Request [1,2,3,4,5,6]	-	Proprietary parameter.
Start Lock [4]	-	Proprietary parameter.
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Accelerator Pedal Position	91	Accelerator Pedal Position 1
Percent Load	92	Engine Percent Load At Current Speed
Demand Torque	512	Driver's Demand Engine - Percent Torque

Actual Torque	513	Actual Engine - Percent Torque
Engine speed	190	Engine Speed
Coolant Temp	110	Engine Coolant Temperature
Fuel Temp	174	Engine Fuel Temperature 1
EngineOil Temp	175	Engine Oil Temperature 1
Fuel delivery pressure	94	Engine Fuel Delivery Pressure
Engine Oil Pressure	100	Engine Oil Pressure
Coolant Level	111	Engine Coolant Level 1
Fuel Rate	183	Engine Fuel Rate
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Battery Potential (Voltage)	158	Keyswitch Battery Potential
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed [1,2,3,4,5,6]	898	Engine Requested Speed/Speed Limit
Torque Map	-	Proprietary parameter. 0 = no modification of torque map 1 = switch to torque map 1 2 = switch to torque map 2
Engine speed droop	-	Proprietary parameter. 0 = no modification of droop 1 = selects droop 1 2 = selects droop 2
High Idle Droop	-	Proprietary parameter. 0 = no modification of high idle droop 1 = selects high idle droop 1 2 = selects high idle droop 2

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite[NT], 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact[NT], 5 - InteliNano[NT], 6 - InteliDrive Nano

Controller's analog output for speed control configuration

Requested speed settings for InteliGen[NT] or InteliSys[NT]		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A
Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

IMPORTANT: It is not allowed by Deutz to control speed over CAN bus on gen-set engines! Use pedal position input on ECU instead. The SG OUT signal MUST NOT exceed the limits otherwise EMR3 blocks speed control via this input. Therefore it is recommended to keep the controller powered on always while the EMR3 is powered on (by Klemme 30). Or it is necessary to switch off this protection in EMR3.

Note: *EMR3-E has internal relay providing power supply to EMR3. As soon as the ignition key is turned off (Klemme 15) the main relay switches off the EMR3 within cca. 10 seconds. The main relay separates the EMR3 from the battery + (Klemme 30).*

Recommended wiring

Function	ECU D2 connector	Controller
CAN H	35	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	34	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	2,3,8,9 (loop 30)	N/A
Battery - (negative)	5,6,10,11 (loop31)	N/A
Key Switch	40	Any binary output configured as ECU PwrRelay
Analog Speed Control	79	SG OUT Range 0VDC to 5VDC, 100kOhm pull-down resistance
Analog Speed Control	78	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see EMR3-E on page 1**.

3.6.4 EMR3-S

Controllers that support the EMR3-S

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		
Wait To Start Lamp	1081	Engine Wait to Start Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
Lock status	-	Proprietary parameter.
Stop Request [1,2,3,4,5,6]	-	Proprietary parameter.
Start Lock [4]	-	Proprietary parameter.
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Accelerator Pedal Position	91	Accelerator Pedal Position 1

Percent Load	92	Engine Percent Load At Current Speed
Demand Torque	512	Driver's Demand Engine - Percent Torque
Actual Torque	513	Actual Engine - Percent Torque
Engine speed	190	Engine Speed
Coolant Temp	110	Engine Coolant Temperature
Fuel Temp	174	Engine Fuel Temperature 1
EngineOil Temp	175	Engine Oil Temperature 1
Fuel delivery pressure	94	Engine Fuel Delivery Pressure
Engine Oil Pressure	100	Engine Oil Pressure
Coolant Level	111	Engine Coolant Level 1
Fuel Rate	183	Engine Fuel Rate
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Battery Potential (Voltage)	158	Keyswitch Battery Potential

ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed [1,2,3,4,5,6]	898	Engine Requested Speed/Speed Limit
Torque Map	-	Proprietary parameter. 0 = no modification of torque map 1 = switch to torque map 1 2 = switch to torque map 2
Engine speed droop	-	Proprietary parameter. 0 = no modification of droop 1 = selects droop 1 2 = selects droop 2
High Idle Droop	-	Proprietary parameter. 0 = no modification of high idle droop 1 = selects high idle droop 1 2 = selects high idle droop 2

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliNano^{NT}, 6 - InteliDrive Nano

Controller's analog output for speed control configuration

Requested speed settings for InteliGen^{NT} or InteliSys^{NT}		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

IMPORTANT: It is not allowed by Deutz to control speed over CAN bus on gen-set engines! Use pedal position input on ECU instead. The SG OUT signal MUST NOT exceed the limits otherwise EMR3 blocks speed control via this input. Therefore it is recommended to keep the controller powered on always while the EMR3 is powered on. Or it is necessary to switch off this protection in EMR3.

Note: *EMR3-S has internal relay providing power supply to EMR3. As soon as the ignition key is turned off the main relay switches off the EMR3 within cca. 10 seconds. The main relay separates the EMR3 from the battery +.*

Recommended wiring

Function	ECU D2 connector	Controller
CAN H	62	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	61	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	1,3,5	N/A
Battery - (negative)	2,4,6	N/A
Key Switch	28	Any binary output configured as ECU PwrRelay
Analog Speed Control	9	SG OUT Range 0VDC to 5VDC, 100kOhm pull-down resistance
Analog Speed Control	30	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see EMR3-S on page 1**.

3.6.5 EMR4

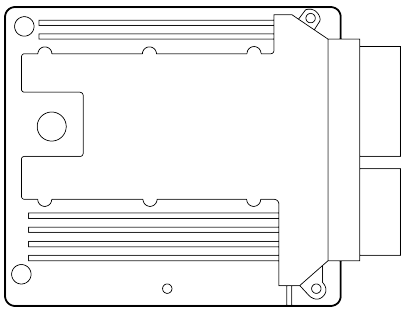


Image 3.25 EMR4

Controllers that support the EMR4

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
APP Low Idle Switch	558	Accelerator Pedal 1 Low Idle Switch
Bank 1 Intake Dew Point	3237	Aftertreatment 1 Intake Dew Point
Bank 1 Exhaust Dew Point	3238	Aftertreatment 1 Exhaust Dew Point

Bank 2 Intake Dew Point	3239	Aftertreatment 2 Intake Dew Point
Bank 2 Exhaust Dew Point	3240	Aftertreatment 2 Exhaust Dew Point
DPF Passive Regeneration	3699	Aftertreatment Diesel Particulate Filter Passive Regeneration Status
DPF Active Regeneration	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPF Inhibited Status	3702	Diesel Particulate Filter Active Regeneration Inhibited Status
DPF ActRegInhibitDueToInhSw	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
Wait To Start Lamp	1081	Engine Wait to Start Lamp
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		

ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
Start Lock EP	-	Proprietary parameter.
Stop Request [1,2,3,4,5,6]	-	Proprietary parameter.
Start Lock [1,2,3,4,5,6]	-	Proprietary parameter.
DPF Regeneration Inhibit [1,2,3,4]	3695	Aftertreatment Regeneration Inhibit Switch
DPF Regeneration Force [1,2,3,4]	3696	Aftertreatment Regeneration Force Switch
DPF Regeneration Request	-	Proprietary parameter.
DPF Inhibit Command	-	Proprietary parameter.

ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Demand Torque	512	Driver's Demand Engine - Percent Torque
Actual Torque	513	Actual Engine - Percent Torque
Engine speed	190	Engine Speed
Starter mode	1675	Engine Starter Mode
Accelerator Pedal Position	91	Accelerator Pedal Position 1
Percent Load	92	Engine Percent Load At Current Speed
Hand Gas Position	974	Remote Accelerator Pedal Position
Nominal Friction Torque	514	Nominal Friction - Percent Torque
Exhaust Gas Mass Flow	3236	Aftertreatment 1 Exhaust Gas Mass Flow Rate
Coolant Temp	110	Engine Coolant Temperature
Fuel temperature	174	Engine Fuel Temperature 1
Engine Oil Temp	175	Engine Oil Temperature 1
Fuel delivery pressure	94	Engine Fuel Delivery Pressure
Engine Oil Pressure	100	Engine Oil Pressure
Coolant Level	111	Engine Coolant Level 1
DPF Inlet Pressure	81	Aftertreatment 1 Diesel Particulate Filter Intake Pressure
Boost Pressure	102	Engine Intake Manifold #1 Pressure

Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Air filter differential pressure	107	Engine Air Filter 1 Differential Pressure
Exhaust gas temperature	173	Engine Exhaust Temperature
Barometric pressure (absolute)	108	Barometric Pressure
Air Intake Temperature	171	Ambient Air Temperature
Battery Potential	158	Keyswitch Battery Potential
Fuel Rate	183	Engine Fuel Rate
DEF Tank 1 Level	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank Level
Urea Temperature	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature
DPF Soot Load Percent	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DPF Ash Load Percent	3720	Aftertreatment 1 Diesel Particulate Filter Ash Load Percent
DPF Lamp	3697	Diesel Particulate Filter Lamp Command
HEST Lamp Command	3698	Exhaust System High Temperature Lamp Command
DPF Status	3701	Aftertreatment Diesel Particulate Filter Status
DPF Differential Pressure	3251	Aftertreatment 1 Diesel Particulate Filter Differential Pressure
Catalyst Intake Temperature	4765	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature
Catalyst Outlet Temperature	4766	Aftertreatment 1 Diesel Oxidation Catalyst Outlet Temperature
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Power reduction	-	Proprietary parameter. Reduces the max. engine torque. The base for the percentage value is the max. torque curve 1. If there is more than one source for power reduction active, i.e. internal power protection by temperature and this message, the lowest value (= the highest reduction) will be used. If there is a timeout of a message the last valid data will be used furthermore for the calculation. 0% causes the EMR4 to switch off the engine. 100% means no power reduction.
Requested speed [1,2,3,4,5,6]	898	Engine Requested Speed/Speed Limit

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliNano^{NT}, 6 - InteliDrive Nano

Controller's analog output for speed control configuration

Requested speed settings for InteliGen^{NT} or InteliSys^{NT}		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A
Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring

No documentation available so far!

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see EMR4 on page 1**.

3.6.6 TEM Evolution

Note: *For connection to Deutz TEM module it is necessary to use an I-CB module. Configuration of the controller and I-CB has to be done separately using GenConfig or DriveConfig and ICBEdit software. For further information see I-CB manual.*

Controllers that support the I-CB

Refer to **Comparison table (page 23)**

Available parameters

For more information about available values and signals, please refer to I-CB manual or ICBEdit PC software.

Recommended wiring of TEME module

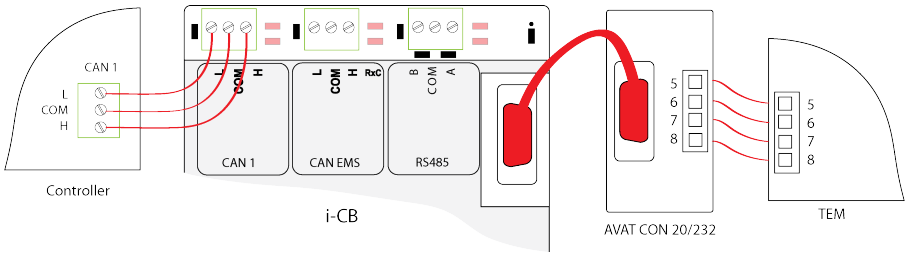


Image 3.26 Deutz TEME recommended wiring

IMPORTANT: Check that CAN bus terminating resistors or appropriate jumpers are connected.

3.7 Ford engines support

ECU Type	Engine type
E-control	DSG-423, WSG-1068

3.7.1 E-control

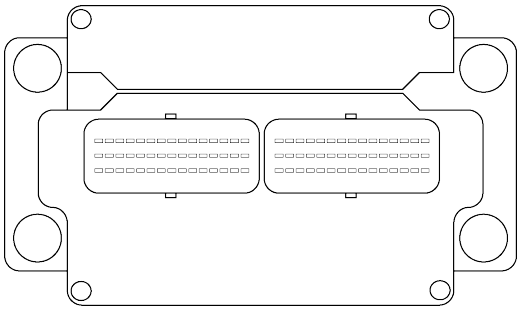


Image 3.27 E-control

Controllers that support the E-control

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		
Wait To Start Lamp	1081	Engine Wait to Start Lamp
Shutdown Engine	1110	Engine Protection System has Shutdown Engine
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine speed	190	Engine Speed
Engine torque	513	Actual Engine - Percent Torque
Coolant Temp	110	Engine Coolant Temperature
Engine Oil Temp	175	Engine Oil Temperature 1
Intercooler Temp	52	Engine Intercooler Temperature

Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Air Inlet Pressure	106	Engine Intake Air Pressure
AccPedal 1 Low Idle Switch	558	Accelerator Pedal 1 Low Idle Switch
Accelerator Pedal Position	91	Accelerator Pedal Position 1
Load At Current Speed	92	Engine Percent Load At Current Speed
Accelerator Pedal Position2	29	Accelerator Pedal Position 2
Fuel Rate	183	Engine Fuel Rate
Throttle Position	51	Engine Throttle Valve 1 Position 1
Electrical Potential (Voltage)	168	Battery Potential / Power Input 1
Battery Potential (Voltage)	158	Keyswitch Battery Potential
Engine Oil Level	98	Engine Oil Level
Engine Oil Pressure	100	Engine Oil Pressure
Barometric Pressure	108	Barometric Pressure
Air Inlet Temperature	172	Engine Intake Air Temperature
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed	898	Engine Requested Speed/Speed Limit

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliNano^{NT}, 6 - InteliDrive Nano

Controller's analog output for speed control configuration

Requested speed settings for InteliGen^{NT} or InteliSys^{NT}		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A
Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring

Function	ECU B connector	customer 42pin connector	Controller
CAN H	14	28	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	15	29	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	60,79	N/A	N/A
Battery - (negative)	4,69,81	N/A	N/A
Key Switch	N/A	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	N/A	SG OUT
Analog Speed Control	N/A	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see E-control on page 1**.

3.8 GM engines support

ECU Type	Engine type
E-control E-control LCI	Natural gas or propane engines: GM 3.0 liter GM 4.3 liter GM 5.0 liter GM 5.7 liter GM 8.1 naturally aspirated GM 8.1 turbo GM 11.1 liter GM 21.9 liter
SECM	Gas engines
MEFI 4B MEFI 5B MEFI 6	Diesel engines

3.8.1 E-control

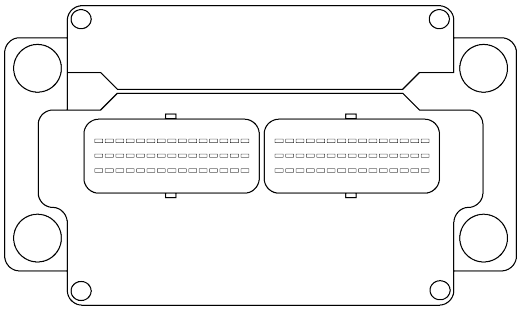


Image 3.28 E-control

Controllers that support the E-control

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		

Flash Red Stop Lamp Fast Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Wait To Start Lamp	1081	Engine Wait to Start Lamp
Shutdown Engine	1110	Engine Protection System has Shutdown Engine
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine speed	190	Engine Speed
Engine torque	513	Actual Engine - Percent Torque
Coolant Temp	110	Engine Coolant Temperature
Engine Oil Temp	175	Engine Oil Temperature 1
Intercooler Temp	52	Engine Intercooler Temperature
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Air Inlet Pressure	106	Engine Intake Air Pressure
AccPedal 1 Low Idle Switch	558	Accelerator Pedal 1 Low Idle Switch
Accelerator Pedal Position	91	Accelerator Pedal Position 1
Load At Current Speed	92	Engine Percent Load At Current Speed
Accelerator Pedal Position2	29	Accelerator Pedal Position 2
Fuel Rate	183	Engine Fuel Rate
Throttle Position	51	Engine Throttle Valve 1 Position 1
Total Engine Hours	247	Engine Total Hours of Operation
Electrical Potential (Voltage)	168	Battery Potential / Power Input 1
Battery Potential (Voltage)	158	Keyswitch Battery Potential
Engine Oil Level	98	Engine Oil Level
Engine Oil Pressure	100	Engine Oil Pressure
Barometric Pressure	108	Barometric Pressure
Air Inlet Temperature	172	Engine Intake Air Temperature
Long-term Fuel Trim - Bank 1	4237	Long-term Fuel Trim - Bank 1
Short-term Fuel Trim - Bank 1	4236	Short-term Fuel Trim - Bank 1
Engine Exhaust Bank 1 O2 Sensor Closed Loop Operation	4240	Engine Exhaust Bank 1 O2 Sensor Closed Loop Operation
Long-term Fuel Trim - Bank 2	4239	Long-term Fuel Trim - Bank 2
Short-term Fuel Trim - Bank 2	4238	Short-term Fuel Trim - Bank 2
Engine Exhaust Bank 2 O2 Sensor Closed Loop Operation	4241	Engine Exhaust Bank 2 O2 Sensor Closed Loop Operation
Engine Actual Ignition Timing	1436	Engine Actual Ignition Timing
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed [1,2,3,4,5,6]	898	Engine Requested Speed/Speed Limit

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliNano^{NT}, 6 - InteliDrive Nano

Controller's analog output for speed control configuration

Requested speed settings for InteliGen^{NT} or InteliSys^{NT}		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring

Function	ECU B connector	Controller
CAN H	14 (N)	CAN1 (extension modules/J1939) – CAN H
CAN COM	(S)	CAN1 (extension modules/J1939) – CAN COM
CAN L	15 (P)	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	N/A	N/A
Battery - (negative)	N/A	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see E-control on page 1**.

3.8.2 E-control LCI

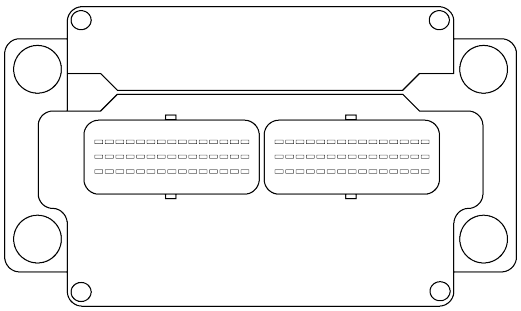


Image 3.29 E-control LCI

Controllers that support the E-control LCI

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Protect Lamp	987	Protect Lamp

Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		
Wait To Start Lamp	1081	Engine Wait to Start Lamp
Shutdown Engine	1110	Engine Protection System has Shutdown Engine
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine speed	190	Engine Speed
Engine torque	513	Actual Engine - Percent Torque
Percent Load	92	Engine Percent Load At Current Speed
Coolant Temp	110	Engine Coolant Temperature
Engine Oil Temp	175	Engine Oil Temperature 1
Intercooler Temp	52	Engine Intercooler Temperature
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Air Inlet Pressure	106	Engine Intake Air Pressure
Fuel Rate	183	Engine Fuel Rate
Throttle Position	51	Engine Throttle Valve 1 Position 1
Electrical Potential (Voltage)	168	Battery Potential / Power Input 1
Battery Potential (Voltage)	158	Keyswitch Battery Potential
Engine Oil Level	98	Engine Oil Level
Engine Oil Pressure	100	Engine Oil Pressure
Barometric Pressure	108	Barometric Pressure
Air Inlet Temperature	172	Engine Intake Air Temperature
Long-term Fuel Trim - Bank 1	4237	Long-term Fuel Trim - Bank 1
Short-term Fuel Trim - Bank 1	4236	Short-term Fuel Trim - Bank 1
Engine Exhaust Bank 1 O2 Sensor Closed Loop Operation	4240	Engine Exhaust Bank 1 O2 Sensor Closed Loop Operation
Long-term Fuel Trim - Bank 2	4239	Long-term Fuel Trim - Bank 2
Short-term Fuel Trim - Bank 2	4238	Short-term Fuel Trim - Bank 2
Engine Exhaust Bank 2 O2 Sensor Closed Loop Operation	4241	Engine Exhaust Bank 2 O2 Sensor Closed Loop Operation
Engine Actual Ignition Timing	1436	Engine Actual Ignition Timing

ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed [1,2,3,4,6]	898	Engine Requested Speed/Speed Limit

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite[NT], 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact[NT], 5 - InteliNano[NT], 6 - InteliDrive Nano

Controller's analog output for speed control configuration

Requested speed settings for InteliGen[NT] or InteliSys[NT]		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring

Function	ECU B connector	Controller
CAN H	A	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	B	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	N/A	N/A
Battery - (negative)	N/A	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see E-control LCI on page 1**.

3.8.3 MEFI4B or MEFI5B

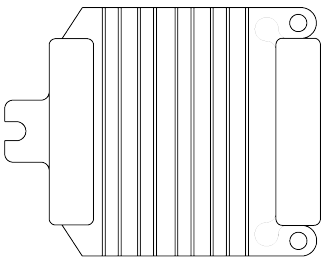


Image 3.30 MEFI4B

Controllers that support the MEFI4B or MEFI5B

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		
Protect Lamp prop	-	Proprietary parameter.
Amber Warning Lamp prop	-	Proprietary parameter.
Red Stop Lamp prop	-	Proprietary parameter.
Malfunction Lamp prop	-	Proprietary parameter.
Wait To Start Lamp	1081	Engine Wait to Start Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine speed	190	Engine Speed
Coolant Temp	110	Engine Coolant Temperature
Boost Pressure (MEFI5B only)	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp (MEFI5B only)	105	Engine Intake Manifold 1 Temperature
Air Intake Pressure (MEFI5B only)	106	Engine Intake Air Pressure
Exhaust Gas Temp (MEFI5B only)	173	Engine Exhaust Temperature
Accelerator Pedal Position	91	Accelerator Pedal Position 1
Percent Load	92	Engine Percent Load At Current Speed
Fuel Rate (MEFI5B only)	183	Engine Fuel Rate
Fuel Level (MEFI5B only)	96	Fuel Level 1
Battery Potential (Voltage)	158	Keyswitch Battery Potential
Fuel Delivery Pressure	94	Engine Fuel Delivery Pressure
Engine Oil Level	98	Engine Oil Level
Engine Oil Pressure	100	Engine Oil Pressure
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed [3,6]	898	Engine Requested Speed/Speed Limit

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliNano^{NT}, 6 - InteliDrive Nano

Controller's analog output for speed control configuration

Requested speed settings for InteliGen^{NT} or InteliSys^{NT}		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring

Function	ECU J1 and J2connector	Controller
CAN H	24 (J2)	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	9 (J2)	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	1 (J2)	N/A
Battery - (negative)	13,28,29 (J1)	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT Range 0VDC to 5VDC, 100kOhm pull-down resistance
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see MEFI4B or MEFI5B on page 1**.

3.8.4 MEFI 6

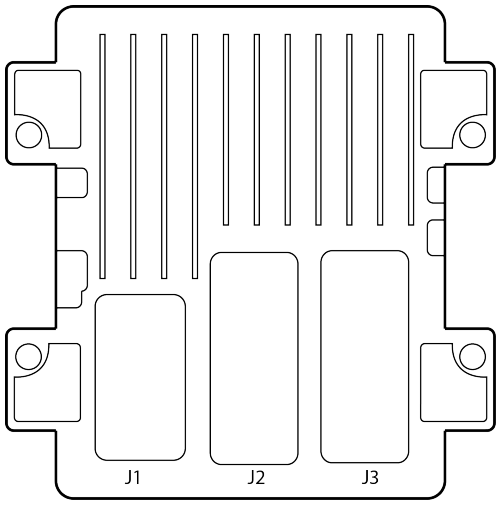


Image 3.31 MEFI 6

Controllers that support the MEFI 6

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		
MEFI6 Protect Lamp	-	Proprietary parameter.
MEFI6 Amber Warning Lamp	-	Proprietary parameter.
MEFI6 Red Stop Lamp	-	Proprietary parameter.
MEFI6 Malfunction Lamp	-	Proprietary parameter.
Wait To Start Lamp	1081	Engine Wait to Start Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine speed	190	Engine Speed
Actual Torque	513	Actual Engine - Percent Torque
StarterMode	1678	Cab Ventilation
AP Position	91	Accelerator Pedal Position 1
Desired speed	515	Engine's Desired Operating Speed
Coolant Temp	110	Engine Coolant Temperature
Oil Temperature	175	Engine Oil Temperature 1
Fuel Delivery Pressure	94	Engine Fuel Delivery Pressure
Oil Pressure	100	Engine Oil Pressure
Fuel Rate	183	Engine Fuel Rate
Barometric Pressure	103	Engine Turbocharger 1 Speed
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Air Intake Pressure	106	Engine Intake Air Pressure
Battery Potential	168	Battery Potential / Power Input 1
Fuel Level	96	Fuel Level 1
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed [1,2,3,4,5,6]	-	Proprietary parameter.
TSC1 Requested speed	898	Engine Requested Speed/Speed Limit

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliNano^{NT}, 6 - InteliDrive Nano

Controller's analog output for speed control configuration

Requested speed settings for InteliGen^{NT} or InteliSys^{NT}		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring

No documentation available so far!

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see MEFI 6 on page 1**.

3.8.5 SECM

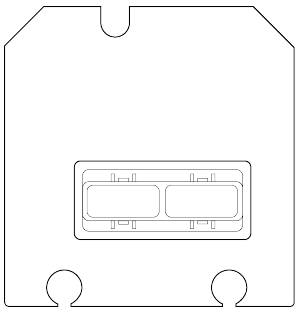


Image 3.32 SECM

Controllers that support the SECM

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		

Flash Red Stop Lamp Fast Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Shutdown Engine	1110	Engine Protection System has Shutdown Engine
Approaching Shutdown	1109	Engine Protection System Approaching Shutdown
System Timer State	1107	Engine Protection System Timer State
System Configuration	1111	Engine Protection System Configuration
Wait To Start Lamp	1081	Engine Wait to Start Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine speed	190	Engine Speed
Coolant Temp	110	Engine Coolant Temperature
Fuel Temp	174	Engine Fuel Temperature 1
Engine Oil Temp	175	Engine Oil Temperature 1
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Accelerator Pedal Position	91	Accelerator Pedal Position 1
Percent Load	92	Engine Percent Load At Current Speed
Engine Throttle Position	109	Engine Coolant Pressure 1
Fuel Rate	183	Engine Fuel Rate
Battery Potential (Voltage)	158	Keyswitch Battery Potential
Engine Oil Pressure	100	Engine Oil Pressure
Barometric Pressure	108	Barometric Pressure
Inlet Air Mass Flow Rate	132	Engine Intake Air Mass Flow Rate
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed [1,2,3,4,5,6]	898	Engine Requested Speed/Speed Limit

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliNano^{NT}, 6 - InteliDrive Nano

Controller’s analog output for speed control configuration

Requested speed settings for InteliGen^{NT} or InteliSys^{NT}		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A
Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring

Function	ECU B connector	Controller
CAN H	20	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	21	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	22	N/A
Battery - (negative)	17	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT Range 0VDC to 5VDC, 100kOhm pull-down resistance
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see SECM on page 1**.

3.9 Guascor engines support

ECU Type	Engine type
LECM E6	SFGLD 480, SFGLD 560, HGM 560

3.9.1 LECM E6

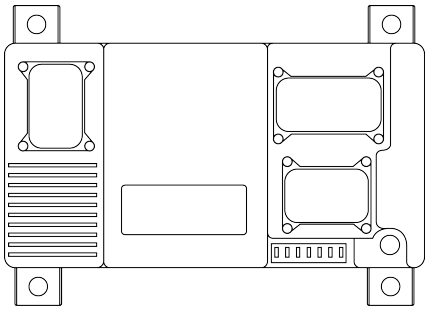


Image 3.33 LECM E6

Controllers that support the LECM E6

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine Speed	190	Engine Speed
Engine Cylinder 1 Ignition Timing Offset	7356	Proprietary parameter
Engine Cylinder 2 Ignition Timing Offset	7357	Proprietary parameter
Engine Cylinder 3 Ignition Timing Offset	7358	Proprietary parameter
Engine Cylinder 4 Ignition Timing Offset	7359	Proprietary parameter
Engine Cylinder 5 Ignition Timing Offset	7360	Proprietary parameter
Engine Cylinder 6 Ignition	7361	Proprietary parameter

Timing Offset		
Engine Cylinder 7 Ignition Timing Offset	7362	Proprietary parameter
Engine Cylinder 8 Ignition Timing Offset	7363	Proprietary parameter
Engine Cylinder 9 Ignition Timing Offset	7364	Proprietary parameter
Engine Cylinder 10 Ignition Timing Offset	7365	Proprietary parameter
Engine Cylinder 11 Ignition Timing Offset	7366	Proprietary parameter
Engine Cylinder 12 Ignition Timing Offset	7367	Proprietary parameter
Engine Cylinder 13 Ignition Timing Offset	7368	Proprietary parameter
Engine Cylinder 14 Ignition Timing Offset	7369	Proprietary parameter
Engine Cylinder 15 Ignition Timing Offset	7370	Proprietary parameter
Engine Cylinder 16 Ignition Timing Offset	7371	Proprietary parameter
Engine Cylinder 17 Ignition Timing Offset	7372	Proprietary parameter
Engine Cylinder 18 Ignition Timing Offset	7373	Proprietary parameter
Engine Cylinder 19 Ignition Timing Offset	7374	Proprietary parameter
Engine Cylinder 20 Ignition Timing Offset	7375	[[[Undefined variable J1939.7375]]]
Aftertreatment 1 Gas Oxidation Catalyst Intake Temperature	4753	Joystick 10 Theta-Axis Neutral Position Status
Aftertreatment 1 Gas Oxidation Catalyst Outlet Temperature	4754	Aftertreatment 1 Gas Oxidation Catalyst Outlet Temperature
Coolant Temperature 2	4076	Engine Coolant Temperature 2
Turbocharger Compressor Bypass Actuator 1 Command	3470	Engine Turbocharger Compressor Bypass Actuator 1 Command
Turbocharger Compressor Bypass Actuator 1 Position	3675	Engine Turbocharger Compressor Bypass Actuator 1 Position
Turbocharger Compressor Bypass Actuator 1 Desired Position	5366	Engine Turbocharger Compressor Bypass Actuator 1 Desired Position
Exhaust Gas Port 1 Temp	1137	Engine Exhaust Gas Port 1 Temperature
Exhaust Gas Port 2 Temp	1138	Engine Exhaust Gas Port 2 Temperature
Exhaust Gas Port 3 Temp	1139	Engine Exhaust Gas Port 3 Temperature
Exhaust Gas Port 4 Temp	1140	Engine Exhaust Gas Port 4 Temperature
Exhaust Gas Port 5 Temp	1141	Engine Exhaust Gas Port 5 Temperature
Exhaust Gas Port 6 Temp	1142	Engine Exhaust Gas Port 6 Temperature
Exhaust Gas Port 7 Temp	1143	Engine Exhaust Gas Port 7 Temperature
Exhaust Gas Port 8 Temp	1144	Engine Exhaust Gas Port 8 Temperature
Exhaust Gas Port 9 Temp	1145	Engine Exhaust Gas Port 9 Temperature

Exhaust Gas Port 10 Temp	1146	Engine Exhaust Gas Port 10 Temperature
Exhaust Gas Port 11 Temp	1147	Engine Exhaust Gas Port 11 Temperature
Exhaust Gas Port 12 Temp	1148	Engine Exhaust Gas Port 12 Temperature
Exhaust Gas Port 13 Temp	1149	
Exhaust Gas Port 14 Temp	1150	Engine Exhaust Gas Port 14 Temperature
Exhaust Gas Port 15 Temp	1151	Engine Exhaust Gas Port 15 Temperature
Exhaust Gas Port 16 Temp	1152	Engine Exhaust Gas Port 16 Temperature
Exhaust Gas Port 17 Temp	1153	Engine Exhaust Gas Port 17 Temperature
Exhaust Gas Port 18 Temp	1154	Engine Exhaust Gas Port 18 Temperature
Exhaust Gas Port 19 Temp	1155	Engine Exhaust Gas Port 19 Temperature
Exhaust Gas Port 20 Temp	1156	Engine Exhaust Gas Port 20 Temperature
ECU Temperature	1136	Engine ECU Temperature
Intake Manifold 2 Temperature	1131	Engine Intake Manifold 2 Temperature
Turbocharger 1 Boost Pressure	1127	Engine Turbocharger 1 Boost Pressure
Turbocharger 2 Boost Pressure	1128	Engine Turbocharger 2 Boost Pressure
Coolant Temperature	110	Engine Coolant Temperature
Fuel Delivery Pressure	94	Engine Fuel Delivery Pressure
Oil Pressure	100	Engine Oil Pressure
Throttle 1 Position	51	Engine Throttle Valve 1 Position 1
Throttle 2 Position	3673	Engine Throttle Valve 2 Position
Barometric Pressure	108	Barometric Pressure
Ambient Air Temperature	171	Ambient Air Temperature
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Air Inlet Pressure	106	Engine Intake Air Pressure
Exhaust Gas Temperature	173	Engine Exhaust Temperature
Electrical Potential	168	Battery Potential / Power Input 1
Battery Potential (Voltage)	158	Keyswitch Battery Potential
Spark Plug Life Indicator cylinder 1	-	Proprietary parameter
Outlet NOx	3226	Aftertreatment 1 Outlet NOx
Outlet O2	3227	Aftertreatment 1 Outlet Percent O2
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed[1,2,3,4,5,6]	898	Engine Requested Speed/Speed Limit
Generator Governing Bias[1,2,3,4,5,6]	3938	Generator Governing Bias

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliNano^{NT}, 6 - InteliDrive Nano

Controller's analog output for speed control configuration

Requested speed settings for InteliGen^{NT} or InteliSys^{NT}		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring

Function	ECU connector	DB9 Pin	Service 3 Pin Connector	Controller
CAN H	J2-007	7	A	CAN1 (extension modules/J1939) – CAN H
CAN COM	J2-015	5	C	CAN1 (extension modules/J1939) – CAN COM
CAN L	J2-008	2	B	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	J1-121	N/A	N/A	N/A
Battery - (negative)	J1-122,123	N/A	N/A	N/A
Key Switch	J1-012	N/A	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	N/A	N/A	SG OUT
Analog Speed Control	N/A	N/A	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see LECM E6 on page 1**.

3.10 Hatz engines support

ECU Type	Engine type
EDC17	

3.10.1 EDC17

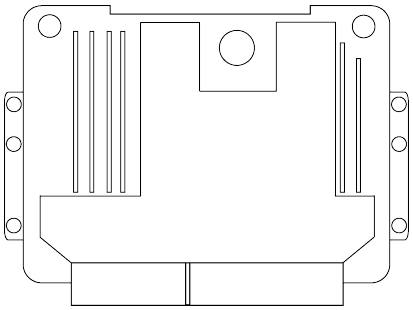


Image 3.34 EDC17C81

Controllers that support the EDC17

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Running		Engine Running
ServiceDelay		Service Delay
Pre-glow		Pre-glow Active
P-OilMissing		Oil Pressure Missing
DiagLamp		Engine Diagnostic Lamp
T-Over		Engine Overtemperature
AirFilterSw		Air Filter Switch
WaterInFuel	97	Water In Fuel Indicator 1
Alternator1	3353	Alternator 1 Status
DPFRegenAct	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPFInhSwitch[1,2,3,4,5,6,7]	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPFInhNeutral	3708	Diesel Particulate Filter Active Regeneration Inhibited Due to Out of Neutral
DPFInhBrake	3710	Diesel Particulate Filter Active Regeneration Inhibited Due to Parking Brake Not Set
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
ParkingBrake	70	Parking Brake Switch
Brake	597	Brake Switch
TranNeutral	604	Transmission Neutral Switch

AutoStartStop[1,2,3,4,5,6,7]	1656	Engine Automatic Start Enable Switch
RegenInhibit[1,2,3,4,7]	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce[1,2,3,4,7]	3696	Aftertreatment Regeneration Force Switch
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
InjectionQty		Phys. Injection Quantity
Phys Torque		Phys. Torque
APP	91	Accelerator Pedal Position 1
Load[1,2,3,4,5,6,7]	92	Engine Percent Load At Current Speed
P-FuelDelivery	94	Engine Fuel Delivery Pressure
P-Oil[1,2,3,4,5,6,7]	100	Engine Oil Pressure
P-Intake[1,2,3,4,7]	102	Engine Intake Manifold #1 Pressure
T-IntManifold[1,2,3,4,7]	105	Engine Intake Manifold 1 Temperature
P-IntakeAir	106	Engine Intake Air Pressure
P-AirFilt1Diff	107	Engine Air Filter 1 Differential Pressure
P-Barometric	108	Barometric Pressure
T-Coolant[1,2,3,4,5,6,7]	110	Engine Coolant Temperature
KeySwitch	158	Key Switch Battery Potential
Battery	168	Battery Potential / Power Input 1
T-AmbientAir	171	Ambient Air Temperature
T-Exhaust	173	Engine Exhaust Temperature
T-Fuel	174	Engine Fuel 1 Temperature 1
T-Oil	175	Engine Oil Temperature 1
FuelRate[1,2,3,4,7]	183	Engine Fuel Rate
EngineSpeed[1,2,3,4,5,6,7]	190	Engine Speed
TorqueDemand	512	Driver's Demand Engine - Percent Torque
TorqueActual	513	Actual Engine - Percent Torque
Torque	514	Nominal Friction - Percent Torque
Spd-Desired*	515	Engine's Desired Operating Speed
TorqueDemand	2432	Engine Demand - Percent Torque
AT1ExhFlowRate	3236	Aftertreatment 1 Exhaust Gas Mass Flow Rate
DPFIntake	3244	Aftertreatment 1 Diesel Particulate Filter Intake Temperature Preliminary FMI
P-DPFDiff	3251	Aftertreatment 1 Diesel Particulate Filter Differential Pressure
HEST Lamp[1,2,3,4,5,6,7]	3698	Exhaust System High Temperature Lamp Command
DPFStatus[1,2,3,4,5,6,7]	3701	Aftertreatment Diesel Particulate Filter Status
DPFSootLoad[1,2,3,4,7]	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
T-AT1CatalInt	4765	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Spd-Requested[1,2,3,4,5,6,7]	898	Engine Requested Speed/Speed Limit

*The parameter requires extended controller's support. Please refer controller's manual for further information.

Supported parameter by the controllers configured by NanoEdit, DriveEdit, LiteEdit PC or InteliConfigsoftware:

1 - InteliLite[NT], 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact[NT], 5 - InteliNano[NT], 6 - InteliDrive Nano , 7 - InteliGen200, InteliGen500

Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for InteliGen^{NT}, InteliSys^{NT} or InteliSys Gas		
Source	SpeedReq RPM[1]	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring

Function	ECU connector	Hatz terminal	Controller
CAN H	K66	aa	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A		CAN1 (extension modules/J1939) – CAN COM
CAN L	K87	bb	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	K01,K03,K05, (K47)		N/A
Battery - (negative)	K02,K04,K06		N/A
Key Switch	K46		Any binary output configured as ECU PwrRelay
Analog Speed Control	K81 (K60)		SG OUT
Analog Speed Control	K67 (K58)		SG COM
Engine Start Switch	K50		
Engine Stop switch	K59		
Starter Request Input	K74		

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes see **Hatz Fault Codes (page 336)**

[1] If a custom source is used (PLC output, analog input, etc.) the value has to have exactly one decimal point (0.0 - 3000.0).

3.11 Isuzu engines support

ECU Type	Engine type
ECM	4HK series 5.2L (140kW-190kW) 4J series 3.0L (46kW-140kW) 6HK series 7.8L (up to 300kW) 6U series 9.8L (up to 400kW) 6W series 15.7L (up to 400kW)

3.11.1 ECM

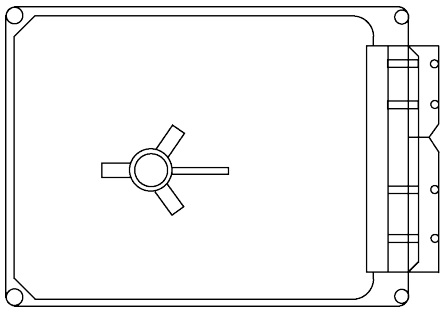


Image 3.35 ECM

Controllers that support the ECM

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Ignition key switch	-	Proprietary parameter.
DPF SwitchKnd	-	Proprietary parameter.
DPF SwitchUns	-	Proprietary parameter.
RegAuxLoadReq1	-	Proprietary parameter.
RegAuxLoadReq2	-	Proprietary parameter.
StartCutRelay	-	Proprietary parameter.
EGRGasTmpWrn	-	Proprietary parameter.
Wait To Start Lamp	1081	Engine Wait to Start Lamp
InAirBstTmpWrn	-	Proprietary parameter.
ExhstGasTmpWrn	-	Proprietary parameter.
IntAirTmpWrn	-	Proprietary parameter.
FuelFltrClogg	-	Proprietary parameter.
EngOilPresDrop	-	Proprietary parameter.
BoostTmpRise	-	Proprietary parameter.
FuelTmpRise	-	Proprietary parameter.
CIntTmpRise	-	Proprietary parameter.
OverrunWrn	-	Proprietary parameter.

EmerSDoperSig	-	Proprietary parameter.
Glow signal	-	Proprietary parameter.
StarterSwitch	704	Auxiliary I/O #04
DPF GrLampMode	-	Proprietary parameter.
DPF RegLampReq	-	Proprietary parameter.
DPF BuzzerMode	-	Proprietary parameter.
DPF RegenFlag	-	Proprietary parameter.
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		

ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
Stop Request [1,2,3,4,5,6]	-	Proprietary parameter. The command for normal stopping of the engine. The recommended source value for this command is Stop solenoid.
EngProtHoldSig	-	Proprietary parameter. Engine Protection System Holding Signal. For more information about this signal contact local Isuzu representative
PreheatStartSg	-	Proprietary parameter. Preheating Start Signal. For more information about this signal contact local Isuzu representative

ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine speed	190	Engine Speed
Actual Torque	513	Actual Engine - Percent Torque
Demand Torque	512	Driver's Demand Engine - Percent Torque
Coolant Temp	110	Engine Coolant Temperature
Fuel Temperature	174	Engine Fuel Temperature 1
EngineOil Temp	175	Engine Oil Temperature 1
Boost temp	-	Proprietary parameter.
Boost Pressure	-	Proprietary parameter.
Intake Manifold Temp	-	Proprietary parameter.
DPF filter Inlet Gas Temp	-	Proprietary parameter.
Catalyst inlet gas temp	-	Proprietary parameter.
EGR gas temp	-	Proprietary parameter.
Accelerator Pedal Position	91	Accelerator Pedal Position 1
Percent Load	92	Engine Percent Load At Current Speed
Remote Accelerator Pedal Position	974	Remote Accelerator Pedal Position
Fuel Rate	183	Engine Fuel Rate
EngOil Filter Diff.Press	99	Engine Oil Filter Differential Pressure

Main relay voltage	168	Battery Potential / Power Input 1
Battery Potential (Voltage)	158	Keyswitch Battery Potential
Fuel Delivery Pressure	94	Engine Fuel Delivery Pressure
Engine Oil Level	98	Engine Oil Level
Engine Oil Pressure	100	Engine Oil Pressure
Crankcase Pressure	101	Engine Crankcase Pressure 1
Coolant Pressure	109	Engine Coolant Pressure 1
Coolant Level	111	Engine Coolant Level 1
Target engine speed	-	Proprietary parameter.
Fuel injection quantity level	-	Proprietary parameter.
Engine percent torque	-	Proprietary parameter.
DiffPressJudg1	164	Engine Injection Control Pressure
Commonrail Pressure	157	Engine Injector Metering Rail 1 Pressure
Instruction engine speed	-	Proprietary parameter.
Commonrail Diff Pressure	-	Proprietary parameter.
DPF AmLampMode	-	Proprietary parameter.
DPF IndiStat	-	Proprietary parameter.
Atmospheric pressure	108	Barometric Pressure
T-Ambient	172	Engine Intake Air Temperature
PCode	-	Proprietary parameter.
Turbo actual opening	-	Proprietary parameter.

ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed [1,2,3,4,5,6]	898	Engine Requested Speed/Speed Limit
EngineModel/SN	-	Proprietary parameter.

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliNano^{NT}, 6 - InteliDrive Nano

Controller's analog output for speed control configuration

Requested speed settings for InteliGen^{NT} or InteliSys^{NT}		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring

Function	ECU 121pin connector	Controller
CAN H	18	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	37	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	2,5	N/A
Battery - (negative)	1,3,4	N/A

Key Switch	24	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT Range 0VDC to 5VDC, 100kOhm pull-down resistance
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see ECM on page 1**.

3.12 Iveco engines support

ECU Type	Engine type
EDC EDC62 or EDC7C1 or EDC7UC31 EDC7 EDC7 EDC7UC31 EDC7UC31 MS 6.2 EDC7UC31 MS 6.3 EDC7UC31	 NEF and Cursor (9, 10, 13) NEF marine NEF tier2 NEF tier3 NEF 560 marine Cursor 8,10,13 tier2 Cursor 9 marine Cursor 9 industrial tier2 Cursor 9 industrial tier3
EDC7	Tier3 gen-set industrial application (Cursor and NEF engines)
ADEM III	Vector

3.12.1 EDC

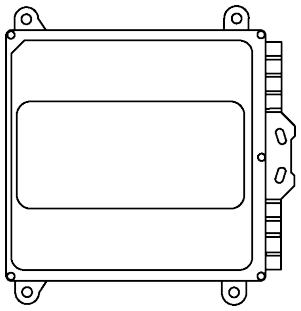


Image 3.36 EDC7 - Cursor

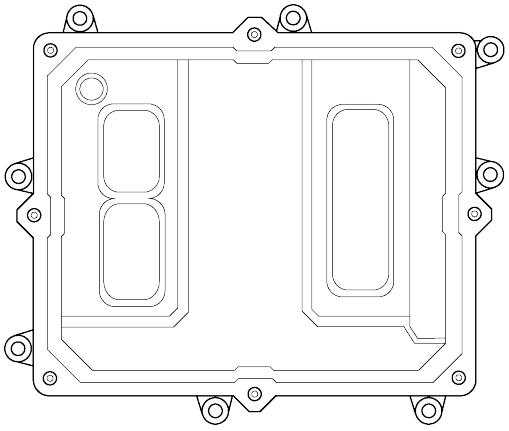


Image 3.37 EDC7 - NEF

Controllers that support the EDC

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
APP Low Idle Switch	558	Accelerator Pedal 1 Low Idle Switch
APP Kick Down Switch	559	Accelerator Pedal Kickdown Switch
Retarder Brake Assist Switch	571	Retarder Enable - Brake Assist Switch
Retarder Shift Assist Switch	572	Retarder Enable - Shift Assist Switch
Cruise Control Active	595	Cruise Control Active
Brake Switch	597	Brake Switch
Clutch Switch	598	Clutch Switch
Wait To Start Lamp	1081	Engine Wait to Start Lamp
Shutdown Engine	1110	Engine Protection System has Shutdown Engine
Immobilizer Fuel Block	-	Proprietary parameter.
Diagnostic Lamp Status	-	Proprietary parameter. This lamp is used to relay trouble code information that is reporting a problem with an engine system that is most probably not electronic subsystem related.
Engine Overspeed	-	Proprietary parameter. This signal is active when the actual engine speed is above the operating range.
Engine Oil Pressure Low	-	Proprietary parameter. Low pressure of oil in engine lubrication system as provided by oil pump.
Water In Fuel	97	Water In Fuel Indicator 1
Fuel Filter Heater Status	-	Proprietary parameter. This signal is active when the fuel filter heater is active.
Engine Oil Temperature High	-	Proprietary parameter. High temperature of oil in engine lubrication system as provided by oil pump.
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine Torque Mode	558	Accelerator Pedal 1 Low Idle Switch
Engine speed	190	Engine Speed
Actual Torque	513	Actual Engine - Percent Torque
Demand Torque	512	Driver's Demand Engine - Percent Torque

Accelerator Pedal Position	91	Accelerator Pedal Position 1
Percent Load	92	Engine Percent Load At Current Speed
Nominal Friction Torque	514	Nominal Friction - Percent Torque
Desired Operating Speed	515	Engine's Desired Operating Speed
Operating Speed Asymmetry	519	Engine's Desired Operating Speed Asymmetry Adjustment
Retarder Torque Mode	900	Retarder Torque Mode
Actual Retarder Torque	520	Actual Retarder - Percent Torque
Coolant Temp	110	Engine Coolant Temperature
Fuel Temp	174	Engine Fuel Temperature 1
EngineOil Temp	175	Engine Oil Temperature 1
Barometric Pressure	108	Barometric Pressure
Trap Inlet Pressure	81	Aftertreatment 1 Diesel Particulate Filter Intake Pressure
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Exhaust Gas Temp	173	Engine Exhaust Temperature
Engine Oil Pressure	100	Engine Oil Pressure
Fuel Rate	183	Engine Fuel Rate
Battery Potential (Voltage)	158	Keyswitch Battery Potential
Cold Start Heater Status	-	Proprietary parameter.
Engine Over Temp Status	-	Proprietary parameter.
Engine Degradation Level	-	Proprietary parameter.
ECM Operational Status	-	Proprietary parameter.
Catalyst Upstream Temp	-	Proprietary parameter.
Catalyst Downstream Temp	-	Proprietary parameter.
Urea Pressure	-	Proprietary parameter.
Urea tank level	-	Proprietary parameter.
Urea Tank Temp	-	Proprietary parameter.
Urea Quantity	-	Proprietary parameter.
DEF Tank 1 Level	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank Level
DEF Warning	-	Proprietary parameter.

ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed [1,2,3,4,5,6]	898	Engine Requested Speed/Speed Limit The speed request is sent from address 3.
Mode without SCI [1,2,3,4,5,6]	897	This output is recommended to be used when there is **no SCI module connected** to the CAN bus. This output is available only in GenConfig or DriveConfig PC software.
Mode with SCI	897	This output must be used when a **SCI module is connected** to the CAN bus. This output is available only in GenConfig or DriveConfig PC software.
Requested speed (VE)	898	Engine Requested Speed/Speed Limit The speed request is sent from address 39.

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliNano^{NT}, 6 - InteliDrive Nano

Controller’s analog output for speed control configuration

Requested speed settings for InteliGen^{NT} or InteliSys^{NT}	
Source	SpeedReq RPM
Convert	NO

Limits	N/A	N/A
	N/A	N/A

Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring for NEF

Function	ECU A2 89pin connector	Controller
CAN H	52	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	53	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	1,7,12,13	N/A
Battery - (negative)	3,9,14,15	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

Recommended wiring for Cursor

Function	ECU A2 89pin connector	Controller
CAN H	11	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	12	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	N/A	N/A
Battery - (negative)	N/A	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see EDC on page 339**.

3.12.2 EDC Tier3 (EDC7)

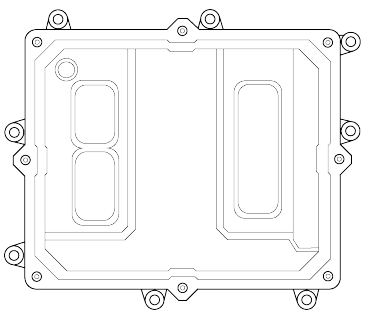


Image 3.38 EDC7

Controllers that support the EDC7

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Wait To Start Lamp	1081	Engine Wait to Start Lamp
Fuel Block Status By Immobilizer	-	Proprietary parameter.
Diagnostic Lamp Status	-	Proprietary parameter.
Engine Overspeed	-	Proprietary parameter.
OBD MIL Status	-	Proprietary parameter.
ECM Fuelling	-	Proprietary parameter.
Status Of Stop Button	-	Proprietary parameter.
Status Of Start Button	-	Proprietary parameter.
Engine Oil Pressure Low	-	Proprietary parameter.
Water In Fuel	-	Proprietary parameter.
Fuel Filter Heater Status	-	Proprietary parameter.
Engine Oil Temperature High	-	Proprietary parameter.
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine Torque Mode	899	Engine Torque Mode
Demand Torque	512	Driver's Demand Engine - Percent Torque
Actual Torque	513	Actual Engine - Percent Torque
Engine speed	190	Engine Speed
Controlling Device Address	1483	Source Address of Controlling Device for Engine Control
Engine Starter Mode	1675	Engine Starter Mode
Accelerator Pedal Position	91	Accelerator Pedal Position 1
Percent Load	92	Engine Percent Load At Current Speed
Remote Accelerator	974	Remote Accelerator Pedal Position
Nominal Friction - % Torque	514	Nominal Friction - Percent Torque
Desired Operating Speed	515	Engine's Desired Operating Speed
Operating Speed Asymetry	519	Engine's Desired Operating Speed Asymmetry Adjustment
Coolant Temp	110	Engine Coolant Temperature

Fuel Temp	174	Engine Fuel Temperature 1
EngineOil Temp	175	Engine Oil Temperature 1
Turbo Oil Temperature	176	Engine Turbocharger Oil Temperature
Intercooler Temperature	52	Engine Intercooler Temperature
Barometric Pressure	108	Barometric Pressure
Cab Interior Temperature	170	Cab Interior Temperature
Ambient Air Temperature	171	Ambient Air Temperature
Air Inlet Temperature	172	Engine Intake Air Temperature
Trap Inlet Pressure	81	Aftertreatment 1 Diesel Particulate Filter Intake Pressure
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Air Intake Pressure	106	Engine Intake Air Pressure
Air Filter Diff. Pressure	107	Engine Air Filter 1 Differential Pressure
Exhaust Gas Temp	173	Engine Exhaust Temperature
Coolant Filter Diff. Pressure	112	Engine Coolant Filter Differential Pressure
Fuel Delivery Pressure	94	Engine Fuel Delivery Pressure
Extended Crankcase Blow-by Pressure	22	Engine Extended Crankcase Blow-by Pressure
Engine Oil Level	98	Engine Oil Level
Engine Oil Pressure	100	Engine Oil Pressure
Ctankcase Pressure	101	Engine Crankcase Pressure 1
Coolant Pressure	109	Engine Coolant Pressure 1
Engine Coolant Level	111	Engine Coolant Level 1
Fuel Rate	183	Engine Fuel Rate
Battery Potential (Voltage)	158	Keyswitch Battery Potential
Cold Start Status	-	Proprietary parameter.
Engine Overtemperature	-	Proprietary parameter.
Engine Degradation Level	-	Proprietary parameter.
ECM Operational Status	-	Proprietary parameter.
Humidity	-	Proprietary parameter.
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed [1,2,3,4,5,6]	898	Engine Requested Speed/Speed Limit

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliNano^{NT}, 6 - InteliDrive Nano

Controller's analog output for speed control configuration

Requested speed settings for InteliGen^{NT} or InteliSys^{NT}		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A
Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring

Function	ECU A2 89pin connector	Controller
CAN H	52	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	53	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	1, 7, 12, 13	N/A
Battery - (negative)	3, 9, 14, 15	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see EDC Tier3 (EDC7) on page 1**.

3.12.3 ADEM III

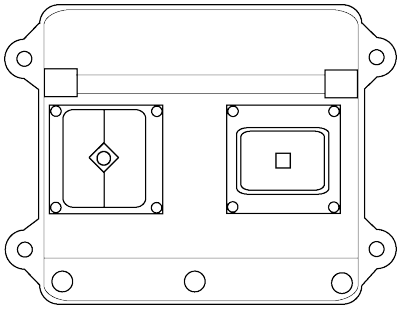


Image 3.39 ADEM III

Controllers that support the ADEM III

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		
Shutdown Engine	1110	Engine Protection System has Shutdown Engine
Wait To Start Lamp	1081	Engine Wait to Start Lamp

ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
Stop Request [1,2,3,4,5,6]	-	Proprietary parameter. The command for normal stopping of the engine. The recommended source value for this command is Stop pulse.
Start Request [1,2,3,4,5,6]	-	Proprietary parameter. The command used for engine running. The recommended source value for this command is Fuel solenoid.
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine speed	190	Engine Speed
Demand Torque	512	Driver's Demand Engine - Percent Torque
Accelerator Pedal Position	91	Accelerator Pedal Position 1
Percent Load	92	Engine Percent Load At Current Speed
Cooling water temp	-	Proprietary parameter. Temperature of liquid found in engine cooling system.
Oil temperature	-	Proprietary parameter. Temperature of the engine lubricant.
Oil pressure	-	Proprietary parameter. Gage pressure of oil in engine lubrication system as provided by oil pump.
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Fuel Rate	183	Engine Fuel Rate
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed [1,2,3,4,5,6]	898	Engine Requested Speed/Speed Limit

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite[NT], 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact[NT], 5 - InteliNano[NT], 6 - InteliDrive Nano

Controller’s analog output for speed control configuration

Requested speed settings for InteliGen[NT] or InteliSys[NT]		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A
Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring

Function	Interface card	Controller
CAN H	J2 - 1	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	J2 - 2	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	116	N/A

Battery - (negative)	117	N/A
Key Switch	J7 - 18,19[1]	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see ADEM III on page 1**.

3.12.4 Iveco EDC7 Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
153	P-Crankcase
158	KeySwitch
168	Battery
172	T-AirIntake
173	T-Exhaust
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN
515	Spd-Desired
620	5VSupply
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor

[1]Emergency stop must open this contact. After power on it has to wait for 10 seconds before start the engine - if ECU PwrRelay output is used to close this contact Prestart time has to be set to at least 10 seconds.

639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
898	Spd-Requested
970	AuxShutdown
971	DerateSw
1109	EPS SDApproach
1110	EPS Shutdown
1485	ECMMainRelay
60717	TSC1Checksum
65579*	PSAirHeater1
65585	T-CoolantSens
65588	P-BoostSens
65589	T-FuelSens
65592	P-OilSens
65594	OilTempSens
65617	Cyl1Error
65618	Cyl2Error
65619	Cyl3Error
65620	Cyl4Error
65621	Cyl5Error
65622	Cyl6Error
65625	PWMPowerstage
65626	AD-Channel
65627	P-High
65633	Cyl1ShortCir
65634	Cyl2ShortCir
65635	Cyl3ShortCir
65636	Cyl4ShortCir
65637	Cyl5ShortCir
65638	Cyl6ShortCir
65639	Cyl1OpenLoad
65640	Cyl2OpenLoad
65641	Cyl3OpenLoad
65642	Cyl4OpenLoad
65643	Cyl5OpenLoad
65644	Cyl6OpenLoad
65645	RailMonitor
65649	Bank1Error
65650	Bank1Error
65651	Bank2Error
65652	Bank2Error

65659	Misfire
65660	ChipError
65662	InjectionLimit
65668	SRA2EDC
65669	Load-IdleRange
65670	V-Supply
65671	PosGovernor
65672	NegGovernor
65673	EGRPowerStage
65674	EGRBypass
65675	ThrottActuator
65677	PosGovernor
65678	NegGovernor
65679	RgnNrmTime
65681	P-Boost
65682	BPA
65683	Spd-Turbine
65684	EPCtl
65685	PCRDeviation
65686	Cyl1Timing
65687	Cyl1Calibr
65688	Cylinder5
65689	P-P2
65690	Spd-Turbine
65691	Spd-TurbineHi
65692	P-P3
65693	T-InnerCtrl
65694	T-OuterCtrl
65695	EGSys-NOxEstIv
65697	LambdaNox
65698	NoxSensor
65699	NoxSensor
65700	NoxSensor
65701	DM1DCUTimeout
65702	SCR1Timeout
65704	LowUreaLevel
65705	T-Gas
65707	VDC1
65708	EGR
65709	T-ExhaustGas
65710	AirHumidity
65711	SPN1Message
131206	AirMassSignal
131208	GovernorCheck
131209	EGRPowerStage
131211	ValveActuator
131218	BPA

131221	PCRCheck
131222	Cyl2Timing
131223	Cyl2Calibr
131224	Cylinder6
131233	LambdaNox
131238	SCR2Timeout
131240	LowUreaLevel
131243	P-GasPipe
131244	GasFlowRt
131247	SPN2Message
196741	DriftLimit
196742	AirMassSignal
196745	EGRPowerStage
196747	TVA
196754	BPA
196758	Cyl3Timing
196759	Cyl3Calibr
196760	Cylinder5
196776	UreaSensor
196783	SPN3Message
262278	Reference
262294	Cyl4Timing
262295	Cyl4Calibr
262296	Cylinder6
262312	WrongUrea
262319	SPN4Message

*Hidden fault code by default

3.13 JCB engines support

ECU Type	Engine type
Delphi DCM	Dieselmax or ecoMAX

3.13.1 Delphi DCM

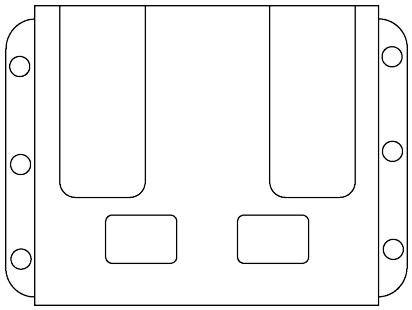


Image 3.40 DCM

Controllers that support the DCM

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
APP Kick Down Switch	559	Accelerator Pedal Kickdown Switch
Idle Shutdown has Shutdown Engine	593	Engine Idle Shutdown has Shutdown Engine
Idle Shutdown Timer Override	592	Engine Idle Shutdown Timer Override
Idle Shutdown Timer State	590	Engine Idle Shutdown Timer State
Idle Shutdown Timer Function	591	Engine Idle Shutdown Timer Function
Wait to Start Lamp	1081	Engine Wait to Start Lamp
Water In Fuel Indicator	97	Water In Fuel Indicator 1
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		

Flash Red Stop Lamp Fast Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Bank 1 Intake Dew Point	3237	Aftertreatment 1 Intake Dew Point
Bank 1 Exhaust Dew Point	3238	Aftertreatment 1 Exhaust Dew Point
Bank 2 Intake Dew Point	3239	Aftertreatment 2 Intake Dew Point
Bank 2 Exhaust Dew Point	3240	Aftertreatment 2 Exhaust Dew Point

ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
DPF Regeneration Inhibit Switch [1,3,4]	3695	Aftertreatment Regeneration Inhibit Switch
DPF Regeneration Force Switch [1,3,4]	3696	Aftertreatment Regeneration Force Switch

ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine Torque Mode	558	Accelerator Pedal 1 Low Idle Switch
Engine speed	190	Engine Speed
Actual Torque	513	Actual Engine - Percent Torque
Demand Torque	512	Driver's Demand Engine - Percent Torque
Engine Demand Torque	5398	Estimated Pumping - Percent Torque
Coolant Temp	110	Engine Coolant Temperature
Fuel Temp	174	Engine Fuel Temperature 1
EngineOil Temp	175	Engine Oil Temperature 1
T-ECU	1136	Engine ECU Temperature
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Accelerator Pedal Position	91	Accelerator Pedal Position 1
Percent Load	92	Engine Percent Load At Current Speed
Remote Accelerator	974	Remote Accelerator Pedal Position
Fuel Rate	183	Engine Fuel Rate
Battery Potential (Voltage)	158	Keyswitch Battery Potential
Engine Oil Level	98	Engine Oil Level
Engine Oil Pressure	100	Engine Oil Pressure
Estimated Percent Fan Speed	975	Engine Fan 1 Estimated Percent Speed
Fan Drive State	977	Fan Drive State
Intake NOx	3216	Aftertreatment 1 Selective Catalytic Reduction Intake NOx
AT1 Intake O2	3217	Aftertreatment 1 Intake Percent O2
Aftertreat1 ExhGas Temp 1	3241	Aftertreatment 1 Exhaust Temperature 1
Outlet NOx	3226	Aftertreatment 1 Outlet NOx
AT1 Outlet O2	3227	Aftertreatment 1 Outlet Percent O2
DEF Tank 1 Level	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank Level
Diesel Exhaust Fluid Tank 1 Temperature	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature
Aftertreatment Lamp Status	517640	Manufacturer Assignable SPN
Inducement Level	517641	Manufacturer Assignable SPN
Refresh Status Byte	517649	Manufacturer Assignable SPN

SCR Monitor	517650	Manufacturer Assignable SPN
Successful Running Refreshes	517651	Manufacturer Assignable SPN
Successful Stationary Refreshes	517652	Manufacturer Assignable SPN

ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed [1,3,4,6]	898	Engine Requested Speed/Speed Limit
Fuel Level	96	Fuel Level 1

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliNano^{NT}, 6 - InteliDrive Nano

Controller's analog output for speed control configuration

Requested speed settings for InteliGen^{NT} or InteliSys^{NT}		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring

Function	ECU X2 62pin connector	Controller
CAN H	27	CAN1 (extension modules/J1939) – CAN H
CAN COM	19	CAN1 (extension modules/J1939) – CAN COM
CAN L	23	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	57,60,53,49	N/A
Battery - (negative)	58,59,61,62	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see Delphi DCM on page 1**.

3.14 GE Jenbacher engines support

ECU Type	Engine type
DIA.NE	Gas engines

3.14.1 DIA.NE

Note: *To enable direct controller communication with Jenbacher DIA.NE, order the engine with Modbus interface!*

Controllers that support the DIA.NE

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Service Selector Switch OFF	-	Proprietary parameter. The feedback from Service Selector Switch. The switch is in OFF position.
Service Selector Switch MAN	-	Proprietary parameter. The feedback from Service Selector Switch. The switch is in Manual position.
Service Selector Switch AUT	-	Proprietary parameter. The feedback from Service Selector Switch. The switch is in Auto position.
GCB Closed	-	Proprietary parameter. This signal indicates closed position of generator circuit breaker.
GCB Open	-	Proprietary parameter. This signal indicates open position of generator circuit breaker.
Operation ON	-	Proprietary parameter.
Operation OFF	-	Proprietary parameter.
Ready for Aut. Demand ON	-	Proprietary parameter.
Ready for Aut. Demand OFF	-	Proprietary parameter.
MCB Closed	-	Proprietary parameter. This signal indicates closed position of utility circuit breaker.
MCB Open	-	Proprietary parameter. This signal indicates open position of utility circuit breaker.
Synchronizing Gen. Activated	-	Proprietary parameter.
Re-synchronizing Activated	-	Proprietary parameter.
Ready for Aut. Demand	-	Proprietary parameter.
Demand for Auxiliaries	-	Proprietary parameter.
GCB Closed 2	-	Proprietary parameter.
MCB Closed 2	-	Proprietary parameter.
Module is Demanded	-	Proprietary parameter.
Operation - Engine is Running	-	Proprietary parameter.
Service Select. Switch MAN 2	-	Proprietary parameter.
Service Select. Switch AUT 2	-	Proprietary parameter.
General Trip	-	Proprietary parameter.

General Warning	-	Proprietary parameter.
Pulse for OperHours Counter	-	Proprietary parameter.
Pulse for Start Counter	-	Proprietary parameter.
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Jacket Water Temperature	-	Proprietary parameter.
Jacket Water Pressure	-	Proprietary parameter.
Engine Oil Temperature	-	Proprietary parameter.
Engine Oil Pressure	-	Proprietary parameter.
ExhstGasTemp-Turbocharger	-	Proprietary parameter.
ExhstGasTemp-HeatExchanger	-	Proprietary parameter.
PlateTempExhstGasHeatExch.	-	Proprietary parameter.
Cylinder Exhaust Gas Temp	-	Proprietary parameter.
Heating Water Return Temp	-	Proprietary parameter.
Generator Power Factor	-	Proprietary parameter.
Generator Frequency	-	Proprietary parameter.
Gener. Current Average	-	Proprietary parameter.
Gener. Voltage Aver. Ph-Ph	-	Proprietary parameter.
Setpoint Power Control	-	Proprietary parameter.
Fuel Mixture Temperature	-	Proprietary parameter.
Excitation Voltage	-	Proprietary parameter.
Generator Voltage L1-L2	-	Proprietary parameter.
Generator Power	-	Proprietary parameter.
Generator Reactive Power	-	Proprietary parameter.
Generator Apparent Power	-	Proprietary parameter.
Generator Neutral Current	-	Proprietary parameter.
Boost Pressure Actual Value	-	Proprietary parameter.
Gasmixer Position	-	Proprietary parameter.
Throttle Valve Position	-	Proprietary parameter.
Turbocharg Bypass Position	-	Proprietary parameter.
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**

Note: *The address of the DIA.NE has to be set to 11 (0x0B).*

Controller's analog output for speed control configuration

There is no speed control over the data bus available for this particular ECU.

Recommended wiring

Function	Siemens connector	Controller
RS485 A	A	RS485 – RS485 A
RS485 COM	COM	RS485 – RS485 COM
RS485 B	B	RS485 – RS485 B

Battery + (positive)	N/A	N/A
Battery - (negative)	N/A	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay

Recommended controller setting

Controller	Setpoint	Value	Interface
InteliGen^{NT}	RS232(1) mode RS232(2) mode	ECU LINK	
	RS485(X)conv.	ENABLED DISABLED	RS 485(1), RS 485(2) RS 232(1)[1], RS 232(2) [2]
InteliSys^{NT}	RS232(2) mode	ECU LINK	
	RS485(X)conv.	ENABLED DISABLED	RS 485(2) RS 232(1)[3], RS 232(2)[4]

[1] external RS232-485 converter is required
[2] external RS232-485 converter is required
[3] external RS232-485 converter is required
[4] external RS232-485 converter is required

3.15 JohnDeere engines support

ECU Type	Engine type
JDEC	Diesel engines

3.15.1 Engine type explanation

Engine Code	Meaning
4xxxxxxxx	Number of cylinders
x045xxxxx	Displacement in liters YY.Z
xxxxHxxxx	T - turbocharger w/o aftercooler H - turbocharger w aftercooler
xxxxxFxxx	F - OEM engine
xxxxxx4xx	Valves/cylinder
xxxxxxx8x	Emissions: 7 - Tier II 8 - Tier III
xxxxxxxx5	0 - no ECU 5 - J1939 ECU 9 - J1939 ECU, Tier II electronic

3.15.2 PowerTech engine type explanation

Engine Code	Meaning
Pxxxxx	Technology : P - Powertech plus E - Powertech E
xSxxxx	Turbocharger : V – Variable geometry turchocharger (VGT) S – Series turbochargers W – wastegate turbocharger
xxSxxx	Aftertreatment : S – Exhaust filter and SCR X – Exhaust filter
xxx6.8L	Displacement

3.15.3 JDEC

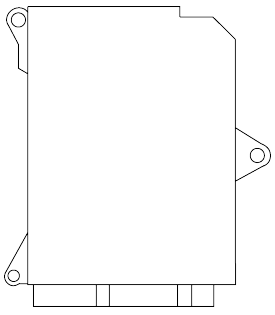


Image 3.41 JDEC

Controllers that support the JDEC

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Wait To Start Lamp	1081	Engine Wait to Start Lamp
Two Speed Axle Switch	69	Two Speed Axle Switch
Parking Brake Switch	70	Parking Brake Switch
Cruise Control Active	595	Cruise Control Active
Cruise Control Enable Switch	596	Cruise Control Enable Switch
Brake Switch	597	Brake Switch
Clutch Switch	598	Clutch Switch
Cruise Control Set Switch	599	Cruise Control Set Switch
Cruise Control Coast Switch	600	Cruise Control Coast (Decelerate) Switch
Cruise Control Resume Switch	601	Cruise Control Resume Switch
Cruise Control Accelerate Switch	602	Cruise Control Accelerate Switch
Idle Increment Switch	968	Engine Idle Increment Switch
Idle Decrement Switch	967	Engine Idle Decrement Switch
Engine Test mode switch	966	Engine Diagnostic Test Mode Switch
DPF Regen. Status	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPF ActRegInhibitDueToInhSw	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPF Pas.Regen.Status	3699	Aftertreatment Diesel Particulate Filter Passive Regeneration Status
DPF Act. Reg. Inhibit Status	3702	Diesel Particulate Filter Active Regeneration Inhibited Status
DPF Inhibit DueTo Clutch	3704	Diesel Particulate Filter Active Regeneration Inhibited Due to Clutch Disengaged
DPF Inhibit DueTo Breake	3705	Diesel Particulate Filter Active Regeneration Inhibited Due to Service Brake Active
DPF Inhibit DueTo Speed	3709	Diesel Particulate Filter Active Regeneration Inhibited Due to Vehicle Speed Above Allowed Speed
DPF Inhibit DueTo Neutral	3708	Diesel Particulate Filter Active Regeneration Inhibited Due to Out of Neutral
DPF Inhibit DueTo Idle	3707	Diesel Particulate Filter Active Regeneration Inhibited Due to Accelerator Pedal Off Idle
DPF Inhibit DueTo PTO	3706	Diesel Particulate Filter Active Regeneration Inhibited Due to PTO Active
DPF Inhibit DueTo Park.Brake	3710	Diesel Particulate Filter Active Regeneration Inhibited Due to Parking Brake Not Set
DPF Inhibit DueTo Exh.Temp	3711	Diesel Particulate Filter Active Regeneration Inhibited Due to Low Exhaust Temperature
DPF Inhibit DueTo SysFault	3712	Diesel Particulate Filter Active Regeneration Inhibited Due to System Fault Active
DPF Inhibit DueTo SysTimeout	3713	Diesel Particulate Filter Active Regeneration Inhibited Due to System Timeout
DPF Inhibit DueTo SysLockout	3714	Diesel Particulate Filter Active Regeneration Inhibited Due to Temporary System Lockout
DPF Inhibit DueTo Peranent Lockout	3715	Diesel Particulate Filter Active Regeneration Inhibited Due to Permanent System Lockout
DPF ActRegInhibNotWarmUp	3716	Diesel Particulate Filter Active Regeneration Inhibited Due to Engine Not Warmed Up
DPF Inhibit DueTo	3717	Diesel Particulate Filter Active Regeneration Inhibited Due to Vehicle Speed

LowSpeed		Below Allowed Speed
DPF Auto Reg.Configuration	3718	Diesel Particulate Filter Automatic Active Regeneration Initiation Configuration
HydrocarbonDoserEna	5504	Hydrocarbon Doser Purging Enable
DPF Inhibit DueTo Exh.Press	5629	Diesel Particulate Filter Active Regeneration Inhibited Due to Low Exhaust Pressure
DPF ConditionNotRegen	3750	Aftertreatment 1 Diesel Particulate Filter Conditions Not Met for Active Regeneration
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		

ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
DPF Reg. Inhibit Switch 1,2,3,4	3695	Aftertreatment Regeneration Inhibit Switch
DPF Reg. Force Switch 1,2,3,4	3696	Aftertreatment Regeneration Force Switch

ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine speed	190	Engine Speed
Actual Torque	513	Actual Engine - Percent Torque
Demand Torque	512	Driver's Demand Engine - Percent Torque
Coolant Temp	110	Engine Coolant Temperature
Fuel Temp	174	Engine Fuel Temperature 1
Oil Temp	175	Engine Oil Temperature 1
Turbo Oil Temp	176	Engine Turbocharger Oil Temperature
Intercooler Temp	52	Engine Intercooler Temperature
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Air Intake Pressure	106	Engine Intake Air Pressure
Exhaust Gas Temp	173	Engine Exhaust Temperature
Accelerator Pedal Position	91	Accelerator Pedal Position 1
Percent Load	92	Engine Percent Load At Current Speed
Remote Accelerator	974	Remote Accelerator Pedal Position
Nominal Friction Torque	514	Nominal Friction - Percent Torque
Desired Operating Speed	515	Engine's Desired Operating Speed
Fuel Rate	183	Engine Fuel Rate
Battery Potential (Voltage)	158	Keyswitch Battery Potential
Fuel Delivery Pressure	94	Engine Fuel Delivery Pressure
Oil Level	98	Engine Oil Level
Engine Oil Pressure	100	Engine Oil Pressure
Crankcase Pressure	101	Engine Crankcase Pressure 1

Coolant Pressure	109	Engine Coolant Pressure 1
Coolant Level	111	Engine Coolant Level 1
DPF Lamp Command	3697	Diesel Particulate Filter Lamp Command
DPF Status	3701	Aftertreatment Diesel Particulate Filter Status
HEST Lamp Command	3698	Exhaust System High Temperature Lamp Command
DPF Act.Reg.ForcedStatus	4175	Diesel Particulate Filter Active Regeneration Forced Status
Fuel Rail Pressure	-	Proprietary parameter.
Manifold Air Pressure	-	Proprietary parameter.
DEF Tank 1 Level	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank Level
DEF Tank 1 Low Level Indicator	5245	Aftertreatment Selective Catalytic Reduction Operator Inducement Active
SCR Operator Inducement Severity	5246	Aftertreatment SCR Operator Inducement Severity

ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed [1,2,3,4,5,6]	898	Engine Requested Speed/Speed Limit

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliNano^{NT}, 6 - InteliDrive Nano

Controller's analog output for speed control configuration

Requested speed settings for InteliGen^{NT} or InteliSys^{NT}		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring

Function	**ECU 21pin connector**	**Controller**
CAN H	V	CAN1 (extension modules/J1939) – CAN H
CAN COM	F	CAN1 (extension modules/J1939) – CAN COM
CAN L	U	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	B	N/A
Battery - (negative)	E	N/A
Key Switch	G	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see JDEC on page 1**.

Note:
Important JDEC settings for speed control via CAN are:
Torque speed control - Enable TSC1 Source 1; Source Address 1 set to 3
Governor droop – Set RPM of droop to e.g. 36 (it will enable controller to vary engine speed its nominal speed)
Throttle – Disable all throttles

3.16 Kohler engines support

ECU Type	Engine type
ECM	diesel engines

3.16.1 ECM

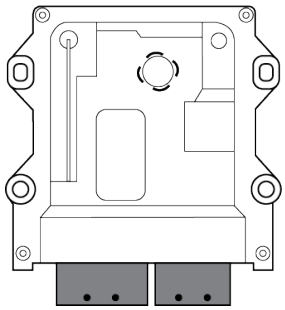


Image 3.42 ECM

Controllers that support the ECM

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
WaterInFuel	97	Water In Fuel Indicator 1
AP LowIdleSw	558	Accelerator Pedal 1 Low Idle Switch
AP KickDownSw	559	Accelerator Pedal Kickdown Switch
StopLamp[1,2,3,4,5,6,7]	623	Red Stop Lamp
WarningLamp[1,2,3,4,5,6,7]	624	Amber Warning Lamp
StartEnbl1	626	Engine Start Enable Device 1
ProtectLamp	987	Protect Lamp
MalfunctLamp	1213	Malfunction Indicator Lamp
RoadSpdLimit	1437	Road Speed Limit Status
DPFRegenAct	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPFInhSwitch[1,2,3,4,5,6,7]	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPFNoMetRegen	3750	Aftertreatment 1 Diesel Particulate Filter Conditions Not Met for Active Regeneration
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
RegenInhibit[1,2,3,4,7]	3695	Aftertreatment Regeneration Inhibit Switch
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
APP2	29	Accelerator Pedal Position 2
ThrottleVlv1	51	Engine Throttle Valve 1 Position 1

T-Intcooler	52	Engine Intercooler Temperature
APP	91	Accelerator Pedal Position 1
Load[1,2,3,4,5,6,7]	92	Engine Percent Load At Current Speed
FuelLevel1	96	Fuel Level 1
P-Oil[1,2,3,4,5,6,7]	100	Engine Oil Pressure
P-Intake[1,2,3,4,7]	102	Engine Intake Manifold #1 Pressure
T-IntManifold[1,2,3,4,7]	105	Engine Intake Manifold 1 Temperature
P-AirFilt1Diff	107	Engine Air Filter 1 Differential Pressure
P-Barometric	108	Barometric Pressure
T-Coolant[1,2,3,4,5,6,7]	110	Engine Coolant Temperature
P-Fuel1Inj1*	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
KeySwitch	158	Key Switch Battery Potential
Battery	168	Battery Potential / Power Input 1
T-AmbientAir	171	Ambient Air Temperature
T-Fuel	174	Engine Fuel 1 Temperature 1
FuelRate[1,2,3,4,7]	183	Engine Fuel Rate
Spd-Idle*	188	Engine Speed At Idle, Point 1
EngineSpeed[1,2,3,4,5,6,7]	190	Engine Speed
TorqueDemand	512	Driver's Demand Engine - Percent Torque
TorqueActual	513	Actual Engine - Percent Torque
Torque	514	Nominal Friction - Percent Torque
TorqMode	899	Engine Torque Mode
P-Turbo1Boost*	1127	Engine Turbocharger 1 Boost Pressure
SourceAddress	1483	Source Address of Controlling Device for Engine Control
P-Hydraulic	1762	Hydraulic Pressure
StartEnbl1Cfg	2899	Engine Start Enable Device 1 Configuration
T-AT1Exh1	3241	Aftertreatment 1 Exhaust Temperature 1
T-DPFIntake	3242	Aftertreatment 1 Diesel Particulate Filter Intake Temperature
P-DPFDiff	3251	Aftertreatment 1 Diesel Particulate Filter Differential Pressure
Operating	3543	Engine Operating State
DPFLamp[1,2,3,4,5,6,7]	3697	Diesel Particulate Filter Lamp Command
HEST Lamp[1,2,3,4,5,6,7]	3698	Exhaust System High Temperature Lamp Command
DPFStatus[1,2,3,4,5,6,7]	3701	Aftertreatment Diesel Particulate Filter Status
DPFSootLoad[1,2,3,4,7]	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DPFAshLoad[1,2,3,4,7]	3720	Aftertreatment 1 Diesel Particulate Filter Ash Load Percent
T-DPFRegPasReq	5281	Engine Charge Air Cooler 1 Precooler Outlet Temperature
	ECU analog inputs (controller's outputs)	
Configuration Name	**SPN**	**J1939 Name**
Spd-Requested[1,2,3,4,5,6,7]	898	Engine Requested Speed/Speed Limit

*The parameter requires extended controller's support. Please refer controller's manual for further information.

Supported parameter by the controllers configured by NanoEdit, DriveEdit, LiteEdit PC or InteliConfigsoftware:

1 - InteliLite[NT], 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact[NT], 5 - InteliNano[NT], 6 - InteliDrive Nano , 7 - InteliGen200, InteliGen500

Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for InteliGen^{NT}, InteliSys^{NT} or InteliSys Gas		
Source	SpeedReq RPM[1]	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring

Function	ECU connector	9pin diagnostic connector	Controller
CAN H	B8	C (D1)	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	B7	D (D2)	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	B1,B2,B47	B	N/A
Battery - (negative)	B3,B4,B5,B6	A	N/A
Key Switch	B9	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	B28	N/A	SG OUT
Analog Speed Control	B32	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes see **Kohler Fault Codes (page 345)**

[1] If a custom source is used (PLC output, analog input, etc.) the value has to have exactly one decimal point (0.0 - 3000.0).

3.17 Kubota engines support

ECU Type	Engine type
ECM	diesel engines

3.17.1 ECM

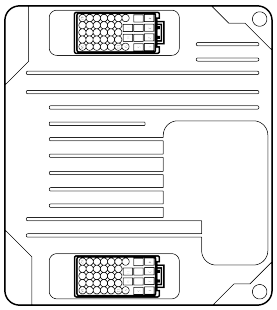


Image 3.43 ECM

Controllers that support the ECM

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Wait To Start Lamp	1081	Engine Wait to Start Lamp
Engine Protection System has Shutdown Engine	1110	Engine Protection System has Shutdown Engine
Engine Emergency (Immediate) Shutdown Indication	3607	Engine Emergency (Immediate) Shutdown Indication
DPF Active Regeneration Status	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPF Active Regeneration Inhibit State	3702	Diesel Particulate Filter Active Regeneration Inhibited Status
DPF Active Regeneration Inhibit Due To Inhibit Switch	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPF Active Regeneration Inhibit Due To Accelerator Pedal Off Idle	3707	Diesel Particulate Filter Active Regeneration Inhibited Due to Accelerator Pedal Off Idle
DPF Active Renegeration Inhibit Due To Out Of Neutral	3708	Diesel Particulate Filter Active Regeneration Inhibited Due to Out of Neutral
DPF Active Regeneration Inhibit Due To Parking Break Not Set	3710	Diesel Particulate Filter Active Regeneration Inhibited Due to Parking Brake Not Set
DPF Active Regeneration inhibit Due To Low Exhaust Gas Temp	3711	Diesel Particulate Filter Active Regeneration Inhibited Due to Low Exhaust Temperature

DPF Active Regeneration Inhibit Due To System Fault Active	3712	Diesel Particulate Filter Active Regeneration Inhibited Due to System Fault Active
DPF Active Regeneration Inhibit Due To System Timeout	3713	Diesel Particulate Filter Active Regeneration Inhibited Due to System Timeout
DPF Active Regeneration Inhibit Due To Permanent System Lockout	3715	Diesel Particulate Filter Active Regeneration Inhibited Due to Permanent System Lockout
DPF Active Regeneration Inhibit Due To Engine Not Warmed Up	3716	Diesel Particulate Filter Active Regeneration Inhibited Due to Engine Not Warmed Up
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		

ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
DPF Reg. Inhibit Switch [1,2,3,4]	3695	Aftertreatment Regeneration Inhibit Switch
DPF Regeneration Force Switch [1,2,3,4]	3696	Aftertreatment Regeneration Force Switch

ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Throttle position	51	Engine Throttle Valve 1 Position 1
Accelerator Pedal Position	91	Accelerator Pedal Position 1
Percent Load	92	Engine Percent Load At Current Speed
Engine Oil Pressure	100	Engine Oil Pressure
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Barometric Pressure	108	Barometric Pressure
Coolant Temp	110	Engine Coolant Temperature
Inlet Air Mass Flow Rate	132	Engine Intake Air Mass Flow Rate
Injector Metering Rail Pressure	157	Engine Injector Metering Rail 1 Pressure
Battery Potential (Voltage)	168	Battery Potential / Power Input 1
Ambient Air Temperature	171	Ambient Air Temperature
Air Inlet Temperature	172	Engine Intake Air Temperature
Fuel Temperature	174	Engine Fuel Temperature 1
Fuel Rate	183	Engine Fuel Rate
Engine speed	190	Engine Speed
Actual Torque	513	Actual Engine - Percent Torque
Engine Starter Mode	1675	Engine Starter Mode
Aftertreatment 1 Diesel	3242	Aftertreatment 1 Diesel Particulate Filter Intake Temperature

Particulate Filter Intake Gas Temperature		
Aftertreatment 1 Diesel Particulate Filter Outlet Gas Temperature	3246	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature
Aftertreatment 1 Diesel Particulate Filter Differential Pressure	3251	Aftertreatment 1 Diesel Particulate Filter Differential Pressure
DPF Lamp Command	3697	Diesel Particulate Filter Lamp Command
HEST Lamp Command	3698	Exhaust System High Temperature Lamp Command
DPF Status	3701	Aftertreatment Diesel Particulate Filter Status
Aftertreatment 1 Diesel Oxidation Catalyst Intake Gas Temperature	4765	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature
Soot Mass	4781	Aftertreatment 1 Diesel Particulate Filter Soot Mass
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed [1,2,3,4,5,6]	898	Engine Requested Speed/Speed Limit

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliNano^{NT}, 6 - InteliDrive Nano

Controller's analog output for speed control configuration

Requested speed settings for InteliGen^{NT} or InteliSys^{NT}		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A
Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring

Function	ECU connector	Controller
CAN H		CAN1 (extension modules/J1939) – CAN H
CAN COM		CAN1 (extension modules/J1939) – CAN COM
CAN L		CAN1 (extension modules/J1939) – CAN L
Battery + (positive)		N/A
Battery - (negative)		N/A
Key Switch		Any binary output configured as ECU PwrRelay
Analog Speed Control		SG OUT
Analog Speed Control		SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see ECM on page 1**.

3.18 Liebherr engines support

ECU Type	Engine type
LIDEC1	Diesel engines series Dxxx

3.18.1 LIDEC 1

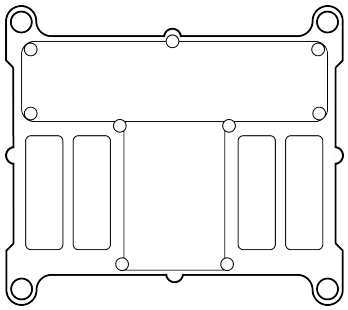


Image 3.44 LIDEC 1

Controllers that support the LIDEC 1

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		
Wait to Start Lamp	1081	Engine Wait to Start Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Accelerator Pedal Position	91	Accelerator Pedal Position 1
Percent Load	92	Engine Percent Load At Current Speed
Engine Speed	190	Engine Speed
Torque	513	Actual Engine - Percent Torque
ECU Temperature	1136	Engine ECU Temperature

Injector Metering Rail 1 Pressure	157	Engine Injector Metering Rail 1 Pressure
Injector Metering Rail 2 Pressure	1349	Engine Injector Metering Rail 2 Pressure
Desired Operating Speed	515	Engine's Desired Operating Speed
Intercooler Temp	52	Engine Intercooler Temperature
Coolant Temperature	110	Engine Coolant Temperature
Fuel Temperature	174	Engine Fuel Temperature 1
Fuel Delivery Pressure	94	Engine Fuel Delivery Pressure
Oil Pressure	100	Engine Oil Pressure
Coolant Level	111	Engine Coolant Level 1
Fuel Rate	183	Engine Fuel Rate
Barometric Pressure	108	Barometric Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Air Inlet Pressure	106	Engine Intake Air Pressure
Battery Potential (Voltage)	158	Keyswitch Battery Potential
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed [1,2,3,4,5,6]	898	Engine Requested Speed/Speed Limit

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliNano^{NT}, 6 - InteliDrive Nano

Controller's analog output for speed control configuration

Requested speed settings for InteliGen^{NT} or InteliSys^{NT}		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	SpeedReq RPM	
Convert	NO	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring

Function	9pin diagnostic connector	Controller
CAN H	C	CAN1 (extension modules/J1939) – CAN H
CAN COM	E	CAN1 (extension modules/J1939) – CAN COM
CAN L	D	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	B	N/A
Battery - (negative)	A	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see LIDEC1 on page 1**.

3.19 MAN engines support

ECU Type	Engine type
EDC Master and MFR interface unit	6 R
EDC Master, EDC Slave and MFR interface unit	8 V, 12 V
DataLogger	Diesel engines equipped with a data logger

3.19.1 Engine type explanation

Engine Code	Meaning
D 0836 LE 201/203	D - Water-cooled four stroke Diesel engine with direct fuel injection E - Water-cooled 4 stroke Otto-gas-engines with spark ignition
	E - naturally aspirated engine TE - turbocharged engine LE - turbocharged and intercooled engine
6 R	R - vertically arranged in-line V - cylinders in 90° V arrangement

3.19.2 EDC7 Master, EDC7 Slave and MFR interface system

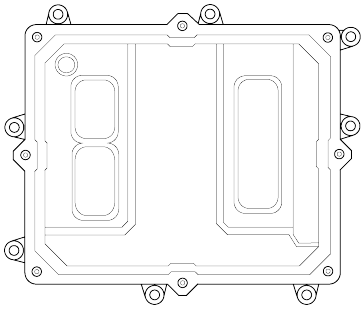


Image 3.45 EDC

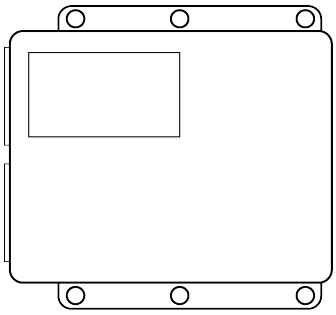


Image 3.46 Interface to the controller

Controllers that support the EDC

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
StopLamp[1,2,3,4,5,6,7]	623	Master Red Stop Lamp
StopLamp[1,2,3,4,5,6,7]	623	Red Stop Lamp
StopLamp[1,2,3,4,5,6,7]	623	Red Stop Lamp
WarningLamp[1,2,3,4,5,6,7]	624	Master Amber Warning Lamp
WarningLamp[1,2,3,4,5,6,7]	624	Amber Warning Lamp
WarningLamp[1,2,3,4,5,6,7]	624	Amber Warning Lamp
ProtectLamp	987	Master Protect Lamp
ProtectLamp	987	Protect Lamp
ProtectLamp	987	Protect Lamp
WaitStartLamp[1,2,3,4,7]	1081	Engine Wait to Start Lamp
MalfunctLamp	1213	Master Malfunction Indicator Lamp
MalfunctLamp	1213	Malfunction Indicator Lamp
MalfunctLamp	1213	Malfunction Indicator Lamp
FlashMalfunct	3038	Flash Malfunction Indicator Lamp
FFlashMalfunct	3038	Fast Flash Malfunction Indicator Lamp
FlashRed[1,2,3,4,7]	3039	Flash Red Stop Lamp (RSL)
FFlashRed[1,2,3,4,7]	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning[1,2,3,4,7]	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning[1,2,3,4,7]	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect	3041	Flash Protect Lamp
SCR InhSwitch[7]	6918	SCR System Cleaning Inhibited Due to Inhibit Switch

ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
StarterMode[1,2,3,4,5,6,7]		Start Request
StopLamp[1,2,3,4,5,6,7]		Stop Request

ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Load		Load
Trq-Quantity		Conversion factor CAN torque -> quantity
WaterInFuel		Water in fuel
CoolantLvl		Coolant level
Load[1,2,3,4,5,6,7]	92	Engine Percent Load At Current Speed
P-FuelDelivery	94	Master Engine Fuel Delivery Pressure
P-FuelDelivery	94	Slave Engine Fuel Delivery Pressure
P-Oil[1,2,3,4,5,6,7]	100	Master Engine Oil Pressure
P-Oil[1,2,3,4,5,6,7]	100	Slave Engine Oil Pressure
P-Intake[1,2,3,4,7]	102	Engine Intake Manifold #1 Pressure
T-IntManifold[1,2,3,4,7]	105	Engine Intake Manifold 1 Temperature
P-Barometric	108	Barometric Pressure
P-Coolant1	109	Master Engine Coolant Pressure 1
P-Coolant1	109	Slave Engine Coolant Pressure 1
T-Coolant[1,2,3,4,5,6,7]	110	Engine Coolant Temperature

Battery	168	Battery Potential / Power Input 1
T-Exhaust	173	Engine Exhaust Temperature
T-Fuel	174	Engine Fuel 1 Temperature 1
T-Oil	175	Engine Oil Temperature 1
FuelRate[1,2,3,4,7]	183	Engine Fuel Rate
EngineSpeed[1,2,3,4,5,6,7]	190	Engine Speed
TorqueDemand	512	Driver's Demand Engine - Percent Torque
TorqueActual	513	Actual Engine - Percent Torque
T-Turbo1Int	1180	Master Engine Turbocharger 1 Turbine Intake Temperature
T-Turbo1Int	1180	Slave Engine Turbocharger 1 Turbine Intake Temperature
T-Turbo2Int	1181	Master Engine Turbocharger 2 Turbine Intake Temperature
T-Turbo2Int	1181	Slave Engine Turbocharger 2 Turbine Intake Temperature
StarterMode	1675	Engine Starter Mode

ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
SpeedRequest[1,2,3,4,5,6,7]		Requested speed
P-Grad		P-Grad
ZDRDef		ZDR

Supported parameter by the controllers configured by NanoEdit, DriveEdit, LiteEdit PC or InteliConfigsoftware:
1 - InteliLite[NT], 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact[NT], 5 - InteliNano[NT], 6 - InteliDrive Nano , 7 - InteliGen200, InteliGen500

Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for InteliGen[NT], InteliSys[NT] or InteliSys Gas		
Source	SpeedReq RPM[1]	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring

Function	ECU X2 connector (MFR)	diagnostic connector	Controller
CAN H	C6	2	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	C5	10	CAN1 (extension modules/J1939) – CAN L

[1] If a custom source is used (PLC output, analog input, etc.) the value has to have exactly one decimal point (0.0 - 3000.0).

Battery + (positive)	N/A	16	N/A
Battery - (negative)	N/A	4	N/A
Key Switch	N/A	(8)	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	N/A	SG OUT
Analog Speed Control	N/A	N/A	SG COM

Note:
Controller ECU PwrRelay output can be used to activate Ignition (Kl.15).

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes see **EDC17 Master, EDC17 Slave (page 144)**

Diagnostic

The controller shows in the alarm list for each fault: Text message or fault code number SPN number on the bottom row OC number on the bottom row which says from where comes this fault:

- 0 - EDC Master
- 1 - EDC Slave
- 39 - MFR FMI number in the right bottom corner

Fault details are displayed in the bottom row when fault is selected with > mark in the list of faults by Up/Down arrows.

3.19.3 EDC17 Master, EDC17 Slave

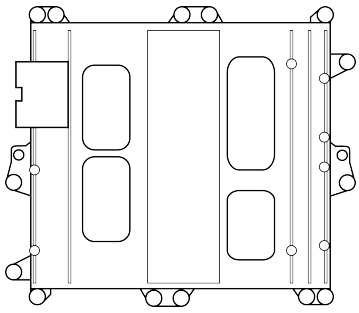


Image 3.47 EDC17CV42

Controllers that support the EDC17

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
WaterInFuel	97	Master Water In Fuel Indicator 1
WaterInFuel	97	Slave Water In Fuel Indicator 1
AP LowIdleSw	558	Accelerator Pedal 1 Low Idle Switch

StopLamp[1,2,3,4,5,6,7]	623	Master Red Stop Lamp
StopLamp[1,2,3,4,5,6,7]	623	Slave Red Stop Lamp
WarningLamp[1,2,3,4,5,6,7]	624	Master Amber Warning Lamp
WarningLamp[1,2,3,4,5,6,7]	624	Slave Amber Warning Lamp
ProtectLamp	987	Master Protect Lamp
ProtectLamp	987	Slave Protect Lamp
WaitStartLamp[1,2,3,4,7]	1081	Engine Wait to Start Lamp
MalfunctLamp	1213	Master Malfunction Indicator Lamp
MalfunctLamp	1213	Slave Malfunction Indicator Lamp
FlashMalfunct	3038	Flash Malfunction Indicator Lamp
FFlashMalfunct	3038	Fast Flash Malfunction Indicator Lamp
FlashRed[1,2,3,4,7]	3039	Flash Red Stop Lamp (RSL)
FFlashRed[1,2,3,4,7]	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning[1,2,3,4,7]	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning[1,2,3,4,7]	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect	3041	Flash Protect Lamp

ECU binary inputs (controller's outputs - commands)

Configuration Name	SPN	J1939 Name
StopStatus		Vehicle Stop Status
Start[1,2,3,4,5,6,7]		Engine Start Request
Stop[1,2,3,4,5,6,7]		Engine Stop Request

ECU analog outputs (controller's inputs)

Configuration Name	SPN	J1939 Name
DPFIntake	81	Master Aftertreatment 1 Diesel Particulate Filter Intake Pressure
DPFIntake	81	Slave Aftertreatment 1 Diesel Particulate Filter Intake Pressure
APP	91	Accelerator Pedal Position 1
Load[1,2,3,4,5,6,7]	92	Engine Percent Load At Current Speed
P-FuelDelivery	94	Master Engine Fuel Delivery Pressure
P-Oil[1,2,3,4,5,6,7]	100	Master Engine Oil Pressure
P-Oil[1,2,3,4,5,6,7]	100	Slave Engine Oil Pressure
P-Intake[1,2,3,4,7]	102	Master Engine Intake Manifold #1 Pressure
P-Intake[1,2,3,4,7]	102	Slave Engine Intake Manifold #1 Pressure
T-IntManifold[1,2,3,4,7]	105	Master Engine Intake Manifold 1 Temperature
T-IntManifold[1,2,3,4,7]	105	Slave Engine Intake Manifold 1 Temperature
P-Barometric	108	Barometric Pressure
P-Coolant1	109	Master Engine Coolant Pressure 1
T-Coolant[1,2,3,4,5,6,7]	110	Engine Coolant Temperature
CoolantLvl	111	Master Engine Coolant Level 1
KeySwitch	158	Key Switch Battery Potential
Battery	168	Battery Potential / Power Input 1
T-Fuel	174	Engine Fuel 1 Temperature 1
T-Oil	175	Engine Oil Temperature 1
FuelRate[1,2,3,4,7]	183	Engine Fuel Rate
EngineSpeed[1,2,3,4,5,6,7]	190	Engine Speed
TorqueDemand	512	Driver's Demand Engine - Percent Torque
TorqueActual	513	Actual Engine - Percent Torque
Torque	514	Nominal Friction - Percent Torque

Spd-Desired*	515	Engine's Desired Operating Speed
TorqMode	899	Engine Torque Mode
StarterMode	1675	Engine Starter Mode
DEFTnkLevel[1,2,3,4,5,6,7]	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank Volume
TorqueDemand	2432	Engine Demand - Percent Torque
T-DEFTnk	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
AT1ExhFlowRate	3236	Aftertreatment 1 Exhaust Gas Mass Flow Rate
TrqMax	3357	Actual Maximum Available Engine - Percent Torque
P-DEFDoser1	4334	Master Aftertreatment 1 Diesel Exhaust Fluid Doser 1 Absolute Pressure
P-DEFDoser1	4334	Slave Aftertreatment 1 Diesel Exhaust Fluid Doser 1 Absolute Pressure
T-SCR1Intake	4360	Master Aftertreatment 1 SCR Intake Temperature
T-SCR1Intake	4360	Slave Aftertreatment 1 SCR Intake Temperature
T-SCR1Outlet	4363	Master Aftertreatment 1 SCR Outlet Temperature
T-SCR1Outlet	4363	Slave Aftertreatment 1 SCR Outlet Temperature
DEFLowLevel[2,3,5,6,7]	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
SCR Severity[7]	5246	Aftertreatment SCR Operator Inducement Severity
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Spd-GovFdb		Speed Governor Feedback Factor Proportional Term
ReqSpeedCC	696	TSC1-TE Engine Requested Speed Control Conditions
ReqSpeedCC	696	TSC1-VE Engine Requested Speed Control Conditions
Spd-Requested[1,2,3,4,5,6,7]	898	TSC1-TE Engine Requested Speed/Speed Limit
Spd-Requested[1,2,3,4,5,6,7]	898	TSC1-VE Engine Requested Speed/Speed Limit

*The parameter requires extended controller's support. Please refer controller's manual for further information.

Supported parameter by the controllers configured by NanoEdit, DriveEdit, LiteEdit PC or InteliConfigsoftware:
1 - InteliLite[NT], 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact[NT], 5 - InteliNano[NT], 6 - InteliDrive Nano , 7 - InteliGen200, InteliGen500

Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for InteliGen[NT], InteliSys[NT] or InteliSys Gas		
Source	SpeedReq RPM[1]	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A
Requested speed (Spd-Requested) settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

[1] If a custom source is used (PLC output, analog input, etc.) the value has to have exactly one decimal point (0.0 - 3000.0).

Recommended wiring

Function	ECU	Controller
CAN H	A48	CAN1 (extension modules/J1939) – CAN H
CAN COM	A35	CAN1 (extension modules/J1939) – CAN COM
CAN L	N/A	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	A01, A03, A05	N/A
Battery - (negative)	A02, A04, A06	N/A
Key Switch	A17	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes see **MAN EDC17 Fault Codes (page 353)**

3.19.4 Data Logger

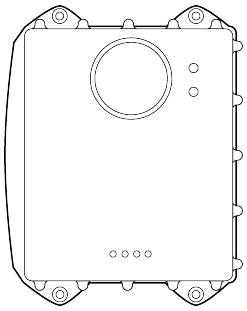


Image 3.48 Data Logger

> **IMPORTANT: Please check the configuration of MAN Data Logger. The only supported configuration is labeled as order number *51.27700-7002* and rear panel label *Config. version: 31.8.2015***

Controllers that support the Data Logger

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Amber Warning Lamp	-	Proprietary parameter.
Malfunction Lamp	-	Proprietary parameter.
Protect Lamp	-	Proprietary parameter.
Red Stop Lamp	-	Proprietary parameter.
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Oil Temp A	-	Proprietary parameter.

Oil Temp B	-	Proprietary parameter.
Boost Pressure	-	Proprietary parameter.
Oil Pressure A	-	Proprietary parameter.
Oil Pressure B	-	Proprietary parameter.
Cooling Water	-	Proprietary parameter.
Cooling Water 2	-	Proprietary parameter.
Exhaust Temp A	-	Proprietary parameter.
Exhaust Temp B	-	Proprietary parameter.
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**

Diagnostic

The ECU does not support any diagnostic protocol.

Recommended wiring

Function	Left (L) or Right (R) 48pin connector	9pin diagnostic connector	Controller
CAN H	R88	N/A	CAN1 (extension modules/J1939) CAN H
CAN COM	R89	N/A	CAN1 (extension modules/J1939) CAN COM
CAN L	R91	N/A	CAN1 (extension modules/J1939) CAN L
Battery + (positive)	R95	N/A	N/A
Battery - (negative)	L12, L36, L48 R60, R72, R84, R96	N/A	N/A
Key Switch	N/A	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	N/A	SG OUT
Analog Speed Control	N/A	N/A	SG COM

3.19.5 MAN Logger Fault Codes

Fault Code (SPN)	Text

3.20 MTU engines support

ECU Type	Engine type
ECU4 (MDEC) ECU7 (ADEC) ECU7 (ADEC) & SAM	Series 2000, 4000
ECU7 (ADEC) ECU7 (ADEC) & SAM ECU8 (ADEC) & SMART Connect	Series 1600
ECU9	Series 4000
DDEC10	Series 4R1000, 6R1000, 6R1100, 6R1300, 6R1500
MIP4000 gen-set controller	Series 4000 - gas engines

3.20.1 ECU4 (MDEC)

Note: *For connection to MTU MDEC module it is necessary to use an I-CB module. Configuration of the controller and I-CB has to be done separately using GenConfig or DriveConfig and ICBEdit software. For further information see I-CB manual.*

Controllers that support the ECU4

Refer to **Comparison table (page 23)**

Available parameters

For more information about available values and signals, please refer to I-CB manual or ICBEdit PC software.

Recommended wiring of ECU4 module

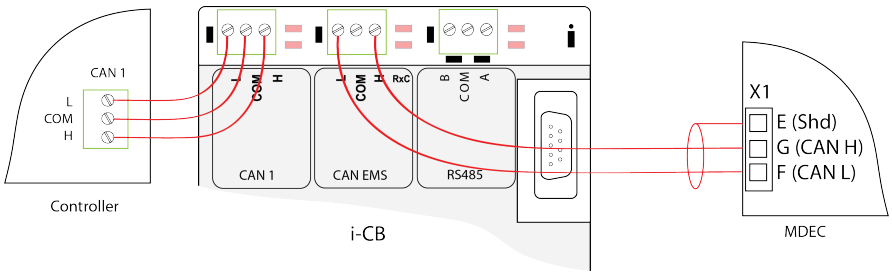


Image 3.49 Recommended wiring MDEC

IMPORTANT: Check that CAN bus terminating resistors or appropriate jumpers are connected.

3.20.2 ECU7 (ADEC)

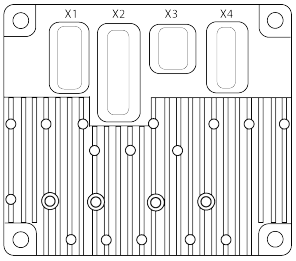


Image 3.50 ECU7

In order to connection to the MTU ECU7 directly (without I-CB module), some extension modules may not be supported due to different baud rate of the ECU7.

(CAN1 message 0x722) is in conflict with MTU protocol, therefore any module on BOUT1 has not to be used!

Note: *For connection to MTU ADEC module it is necessary to use an I-CB module. Configuration of the controller and I-CB has to be done separately using GenConfig or DriveConfig and ICBEdit software. For further information see I-CB manual.*

Note: *In case of **direct connection** to the InteliSys^{NT} or InteliGen^{NT} controllers please use a dedicated controller firmware "IGS-NT-MTU" and dedicated "ECU list – MTU".*

Controllers that support the ECU7

Refer to **Comparison table (page 23)**.

Available parameters for MTU ADEC (non J1939)

Parameter	Description
CANSpdSwitch (E-CAN Speed Demand Switch)	0 = CAN analog 256 = ECU up/down 512 = CAN up/down 768 = ECU analog absolute 1024 = ECU analog relative 3840 = ECU parameter settings

For more information about available values and signals, please refer to I-CB manual or ICBEdit PC software.

Recommended wiring

Function	ECU connector	Controller
CAN H	X1-19	CAN1 (extension modules/J1939) – CAN H
CAN COM	X1-20	CAN1 (extension modules/J1939) – CAN COM
CAN L	X1-35	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	X3-3,6,9,12	N/A
Battery - (negative)	X3-1,4,7,10	N/A
Key Switch	X3-13	Any binary output configured as ECU PwrRelay
Analog Speed Control	X1-31	SG OUT
Analog Speed Control	X1-30	SG COM

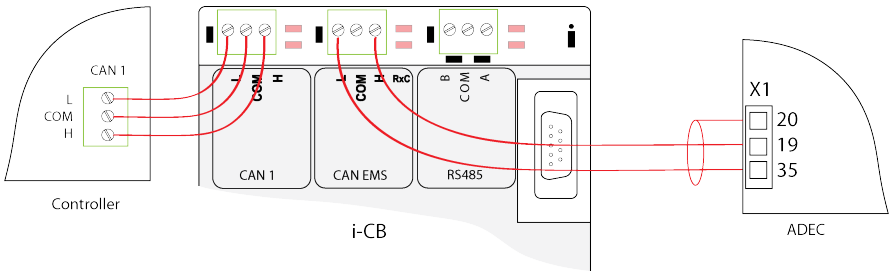


Image 3.51 Recommended wiring of ADEC

IMPORTANT: Check that CAN bus terminating resistors or appropriate jumpers are connected.

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.

3.20.3 ECU7 (ADEC) & SAM module

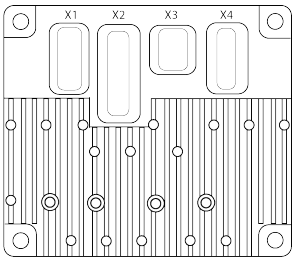


Image 3.52 ECU7

Note: *For communication with the ComAp controller the CCB2 card may be required in the SAM module. Please check this demand with local MTU representative.*

IMPORTANT: Please check the version of SAM module firmware as the ver. 40014_A8 –V5 is not compatible with ComAp controllers. The compatible SAM module firmwares are ver. 40014_A8 –V4 or older or 40014_A8 –V6.

IMPORTANT: No fault codes in DM1 frame are provided by MTU ADEC system. Fault codes are only available as analog input "Failure Codes". ECU binary inputs may be used as fault code representative. Therefore you can use only 16 fault codes – binary inputs (standard ECU size) or 32 (large ECU size)!

Controllers that support the ECU7

Refer to **Comparison table (page 23)**

Available parameters for MTU ADEC J1939

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
AL Water In Fuel Prefilter 1	1239	Engine Fuel Leakage 1
AL Water In Fuel Prefilter 2	1240	Engine Fuel Leakage 2
Automatic Shutdown	1110	Engine Protection System has Shutdown Engine
LO P-Lube Oil	-	Proprietary parameter.
LOLO P-Lube Oil	-	Proprietary parameter.
LO Coolant Level	-	Proprietary parameter.
AL ECU Defect	-	Proprietary parameter.
AL Speed Demand Defect	-	Proprietary parameter.
LO Power Supply	-	Proprietary parameter.
HI Power Supply	-	Proprietary parameter.
HI T-Coolant	-	Proprietary parameter.
HIHI T-Coolant	-	Proprietary parameter.
HI T-Charge Air	-	Proprietary parameter.
HI T-Lube Oil	-	Proprietary parameter.
HIHI T-Lube Oil	-	Proprietary parameter.
HI T-Exhaust A	-	Proprietary parameter.
HI T-Exhaust B	-	Proprietary parameter.
HIHI T-Charge Air	-	Proprietary parameter.
HI T-ECU	-	Proprietary parameter.
SS Engine Speed Low	-	Proprietary parameter.
LOLO ECU Power Supp Volt	-	Proprietary parameter.
HIHI ECU Power Supp Volt	-	Proprietary parameter.
SS Overspeed	-	Proprietary parameter.
Override Feedback for ECU	-	Proprietary parameter.
HI T-Fuel	-	Proprietary parameter.
Ext Stop Activated	-	Proprietary parameter.
Speed Demand Fail Mode	-	Proprietary parameter.
Feedback Increase Speed	-	Proprietary parameter.
Feedback Decrease Speed	-	Proprietary parameter.
Engine Running	-	Proprietary parameter.
Cylinder Cutout	-	Proprietary parameter.
Load Generator ON	-	Proprietary parameter.
Preaheat Temp. Not Reached	-	Proprietary parameter.
Feedback CAN Mode Switch	-	Proprietary parameter.
Priming Pump On	-	Proprietary parameter.

LO Intercooler Coolant Level	-	Proprietary parameter.
HI T-Coolant Intercooler	-	Proprietary parameter.
AL Prelubrication Fault	-	Proprietary parameter.
AL Start Speed Not Reached	-	Proprietary parameter.
AL Runup Speed Not Reached	-	Proprietary parameter.
AL Idle Speed Not Reached	-	Proprietary parameter.
HI Pressure 1	-	Proprietary parameter.
HI Pressure 2	-	Proprietary parameter.
HI Level Day-Tank	-	Proprietary parameter.
LO Level Day-Tank	-	Proprietary parameter.
HI Level Holding-Tank	-	Proprietary parameter.
LO Level Holding-Tank	-	Proprietary parameter.
HI T-Winding 1	-	Proprietary parameter.
HI T-Winding 2	-	Proprietary parameter.
HI T-Winding 3	-	Proprietary parameter.
HI T-Ambient	-	Proprietary parameter.
T-Generator Warning	-	Proprietary parameter.
Wait To Start Lamp	1081	Engine Wait to Start Lamp
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		

ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
Disable Cylinder Cut Out 2	-	Proprietary parameter.
Request Test Overspeed	-	Proprietary parameter.
Alarm Reset [1,2,3,4]	-	Proprietary parameter. The command for Reset ECU Alarms. The recommended source value for this command is FltResButnEcho.
Speed Setting Limit Active	-	Proprietary parameter. For more information about this signal contact local MTU representative.
Mode Switch	-	Proprietary parameter.
Governor ParameterSet Select.	-	Proprietary parameter.
Intermittent Oil Priming	-	Proprietary parameter.
Engine Start [1,2,3,4,5,6]	-	Proprietary parameter. The command used for engine running. The recommended source value for this command is Starter.
50/60Hz [1,2,3,4,5]	-	Proprietary parameter. This feature gives the operator ability to switch the rated speed between 50Hz and 60Hz. The system will only react to a state transition while the Engine speed is 0. The recommended source value for this command is Logical 0 for 50Hz and Logical 1 for 60Hz.

Override	1237	Engine Shutdown Override Switch Switch signal which indicates the position of the engine shutdown override switch. This switch function allows the operator to override an impending engine shutdown. The recommended source value for this command is Logical 0.
Engine Stop	-	Proprietary parameter. The command for normal stopping of the engine. The recommended source value for this command is Stop pulse.
Starter Reset	520845	Manufacturer Assignable SPN For more information about this signal contact local MTU representative.
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine speed	190	Engine Speed
Percent Load	92	Engine Percent Load At Current Speed
T-Charge Air	2629	Engine Turbocharger 1 Compressor Outlet Temperature
T-Exhaust B (20V4000 only)	2433	Engine Exhaust Manifold Bank 2 Temperature 1
T-Exhaust A (20V4000 only)	2434	Engine Exhaust Manifold Bank 1 Temperature 1
T-ECU	1136	Engine ECU Temperature
T-Winding 1	1124	Engine Alternator Winding 1 Temperature
T-Winding 2	1125	Engine Alternator Winding 2 Temperature
T-Winding 3	1126	Engine Alternator Winding 3 Temperature
T-Coolant	110	Engine Coolant Temperature
T-Fuel	174	Engine Fuel Temperature 1
T-Lube Oil	175	Engine Oil Temperature 1
T-Coolant Intercooler	52	Engine Intercooler Temperature
P-Fuel	94	Engine Fuel Delivery Pressure
P-Lube Oil	100	Engine Oil Pressure
Fuel Rate	183	Engine Fuel Rate
T-Ambient	171	Ambient Air Temperature
P-Charge Air	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
ECU Power Supply Voltage	158	Keyswitch Battery Potential
ETC Speed Turbo Charger 1	103	Engine Turbocharger 1 Speed
Failure Codes	-	Proprietary parameter. Number of fault codes. If there is more than 1 fault code, the “Failure Codes” shows are fault codes step by step.
Selected Speed Demand	-	Proprietary parameter.
Effective Speed Demand	-	Proprietary parameter.
Fdb Spd Demand ana.CAN	-	Proprietary parameter.
Fdb Spd Demand analog	-	Proprietary parameter.
Speed Demand Source	-	Proprietary parameter.
Requested Torque	-	Proprietary parameter.
Engine Optimized	-	Proprietary parameter.
Actual Droop	-	Proprietary parameter.
Level Holding-Tank	-	Proprietary parameter.
Level Day-Tank	-	Proprietary parameter.
Start Process 1	520241	Manufacturer Assignable SPN For service purpose only!
Start Process 2	520241	Manufacturer Assignable SPN For service purpose only!

ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Speed Demand Analog 1,2,3,4,5,6	898	Engine Requested Speed/Speed Limit
Speed Demand Switches 1,2,3,4,5,6	-	Proprietary parameter.
Engine alternate droop accelerator 1 select	-	Proprietary parameter.

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliNano^{NT}, 6 - InteliDrive Nano

Available parameters for MTU ADEC J1939 P-engines

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Water In Fuel Indicator	97	Water In Fuel Indicator 1
AL Fuel Leakage	1239	Engine Fuel Leakage 1
LO P-Lube Oil (ECU)	-	Proprietary parameter.
SS P-Lube Oil (ECU)	-	Proprietary parameter.
LO P-Charge Air A-Site	-	Proprietary parameter.
HI P-Oil Filter Difference	-	Proprietary parameter.
HI ETC Speed (Turbo Charger 1)	-	Proprietary parameter.
LO P-Fuel (Common Rail)	-	Proprietary parameter.
HI P-Fuel (Common Rail)	-	Proprietary parameter.
SS ETC (Turbo Charger 1)	-	Proprietary parameter.
AL ECU Defect	-	Proprietary parameter.
LO Power Supply	-	Proprietary parameter.
HI Power Supply	-	Proprietary parameter.
HI T-Coolant	-	Proprietary parameter.
SS T-Coolant	-	Proprietary parameter.
HI T-Charge Air	-	Proprietary parameter.
HI T-Lube Oil	-	Proprietary parameter.
SS T-Lube Oil	-	Proprietary parameter.
HI T-Exhaust A	-	Proprietary parameter.
HI T-Exhaust B	-	Proprietary parameter.
SS T-Charge Air	-	Proprietary parameter.
HI T-ECU	-	Proprietary parameter.
SS Engine Speed Low	-	Proprietary parameter.
SS T-Fuel	-	Proprietary parameter.
LOLO ECU Power Supp Volt	-	Proprietary parameter.
HIHI ECU Power Supp Volt	-	Proprietary parameter.
SS Overspeed	-	Proprietary parameter.
Override Feedback for ECU	-	Proprietary parameter.
Combined Alarm	-	Proprietary parameter.
HI T-Fuel	-	Proprietary parameter.
Engine Running	-	Proprietary parameter.
HI P-Crankcase	-	Proprietary parameter.
SS P-Crankcase	-	Proprietary parameter.

LO P-Coolant After Pump	-	Proprietary parameter.
SS P-Coolant After Pump	-	Proprietary parameter.
HI T-Coolant Intercooler	-	Proprietary parameter.
AL SDAF Closed	-	Proprietary parameter.
AL Barring Gear Engaged	-	Proprietary parameter.
SS T-Exhaust Combined A	-	Proprietary parameter.
SS T-Exhaust Combined B	-	Proprietary parameter.
TD T-Coolant	-	Proprietary parameter.
TD P-Lube Oil	-	Proprietary parameter.
P-DiffFuel ECU	-	Proprietary parameter.
SS T-Coolant Intercooler	-	Proprietary parameter.
Coolant Level Switch HT	-	Proprietary parameter.
Coolant Level Charge Air NT	-	Proprietary parameter.
BO Hi P-Diff. Fuel Prefilter	-	Proprietary parameter.
Crankshaft (EMU)	-	Proprietary parameter.
SS T-Coolant water (EMU)	-	Proprietary parameter.
SS P-Lube Oil Red (EMU)	-	Proprietary parameter.
HI Single cylinder A1	-	Proprietary parameter.
HI Single cylinder A2	-	Proprietary parameter.
HI Single cylinder A3	-	Proprietary parameter.
HI Single cylinder A4	-	Proprietary parameter.
HI Single cylinder A5	-	Proprietary parameter.
HI Single cylinder A6	-	Proprietary parameter.
HI Single cylinder A7	-	Proprietary parameter.
HI Single cylinder A8	-	Proprietary parameter.
HI Single cylinder A9	-	Proprietary parameter.
HI Single cylinder A10	-	Proprietary parameter.
HI Single cylinder B1	-	Proprietary parameter.
HI Single cylinder B2	-	Proprietary parameter.
HI Single cylinder B3	-	Proprietary parameter.
HI Single cylinder B4	-	Proprietary parameter.
HI Single cylinder B5	-	Proprietary parameter.
HI Single cylinder B6	-	Proprietary parameter.
HI Single cylinder B7	-	Proprietary parameter.
HI Single cylinder B8	-	Proprietary parameter.
HI Single cylinder B9	-	Proprietary parameter.
HI Single cylinder B10	-	Proprietary parameter.
WB SaSy Emergency Stop Output	-	Proprietary parameter.
EMU Emergency Stop-Open Circuit	-	Proprietary parameter.
Air Flap A wire break	-	Proprietary parameter.
Air Flap B wire break	-	Proprietary parameter.
ASO Voltage to Lo on Relay	-	Proprietary parameter.
ASO Watchdog Relay	-	Proprietary parameter.
Emergency Stop Input 2	-	Proprietary parameter.
Emergency Stop Input 3	-	Proprietary parameter.

Emergency Stop Input 4	-	Proprietary parameter.
ASO Flap A Feedback Contact	-	Proprietary parameter.
ASO Flap B Feedback Contact	-	Proprietary parameter.
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
Disable Cylinder Cut Out 2	-	Proprietary parameter.
Speed Increase	-	Proprietary parameter.
Speed Decrease	-	Proprietary parameter.
Request Test Overspeed	-	Proprietary parameter.
Engine Start	-	Proprietary parameter.
Alarm Reset [1,2,3,4]	-	Proprietary parameter.
Lamptest	-	Proprietary parameter.
Speed Setting Limit Active	-	Proprietary parameter.
Mode Switch	-	Proprietary parameter.
Governor ParameterSet Select.	-	Proprietary parameter.
Intermittent Oil Priming	-	Proprietary parameter.
Priming Engine Start	-	Proprietary parameter.
50/60Hz [1,2,3,4,5,6]	-	Proprietary parameter.
Override	1237	Engine Shutdown Override Switch
Engine Stop [1,2,3,4,5,6]	970	Engine Auxiliary Shutdown Switch
Starter Reset	520845	Manufacturer Assignable SPN
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Percent Load	92	Engine Percent Load At Current Speed
Failure Codes	-	Proprietary parameter.
Engine Speed Camshaft	-	Proprietary parameter.
Engine Speed Crankshaft	-	Proprietary parameter.
P-Coolant Water Intercooler	1203	Engine Auxiliary Coolant Pressure
ETC Speed Turbo Charger 1	103	Engine Turbocharger 1 Speed
T-Charge Air	2629	Engine Turbocharger 1 Compressor Outlet Temperature
T-Exhaust B	2433	Engine Exhaust Manifold Bank 2 Temperature 1
T-Exhaust A	2434	Engine Exhaust Manifold Bank 1 Temperature 1
P-Lube Oil Before Filter	1208	Engine Pre-filter Oil Pressure
T-ECU	1136	Engine ECU Temperature
T-Bearing DE	1122	Engine Alternator Bearing 1 Temperature
T-Bearing NDE	1123	Engine Alternator Bearing 2 Temperature
T-Winding 1	1124	Engine Alternator Winding 1 Temperature
T-Winding 2	1125	Engine Alternator Winding 2 Temperature
T-Winding 3	1126	Engine Alternator Winding 3 Temperature
T-Coolant	110	Engine Coolant Temperature
T-Fuel	174	Engine Fuel Temperature 1
T-Lube Oil	175	Engine Oil Temperature 1
T-Coolant Intercooler	52	Engine Intercooler Temperature
P-Fuel	94	Engine Fuel Delivery Pressure

P-Lube Oil	100	Engine Oil Pressure
Crankase Pressure	101	Engine Crankcase Pressure 1
P-Coolant Water After Pump	109	Engine Coolant Pressure 1
Fuel Rate	183	Engine Fuel Rate
P-Charge Air	102	Engine Intake Manifold #1 Pressure
T-Intake Air	105	Engine Intake Manifold 1 Temperature
Transmission Oil Pressure	127	Transmission Oil Pressure
P-Fuel After Filter	-	Proprietary parameter.
Crankshaft (EMU) (Engine Speed)	-	Proprietary parameter.
Start Process 1	520241	Manufacturer Assignable SPN
Start Process 2	520241	Manufacturer Assignable SPN
Single Cylinder A1	1137	Engine Exhaust Gas Port 1 Temperature
Single Cylinder A2	1138	Engine Exhaust Gas Port 2 Temperature
Single Cylinder A3	1139	Engine Exhaust Gas Port 3 Temperature
Single Cylinder A4	1140	Engine Exhaust Gas Port 4 Temperature
Single Cylinder A5	1141	Engine Exhaust Gas Port 5 Temperature
Single Cylinder A6	1142	Engine Exhaust Gas Port 6 Temperature
Single Cylinder A7	1143	Engine Exhaust Gas Port 7 Temperature
Single Cylinder A8	1144	Engine Exhaust Gas Port 8 Temperature
Single Cylinder A9	1145	Engine Exhaust Gas Port 9 Temperature
Single Cylinder A10	1146	Engine Exhaust Gas Port 10 Temperature
Single Cylinder B1	1147	Engine Exhaust Gas Port 11 Temperature
Single Cylinder B2	1148	Engine Exhaust Gas Port 12 Temperature
Single Cylinder B3	1149	Engine Exhaust Gas Port 13 Temperature
Single Cylinder B4	1150	Engine Exhaust Gas Port 14 Temperature
Single Cylinder B5	1151	Engine Exhaust Gas Port 15 Temperature
Single Cylinder B6	1152	Engine Exhaust Gas Port 16 Temperature
Single Cylinder B7	1153	Engine Exhaust Gas Port 17 Temperature
Single Cylinder B8	1154	Engine Exhaust Gas Port 18 Temperature
Single Cylinder B9	1155	Engine Exhaust Gas Port 19 Temperature
Single Cylinder B10	1156	Engine Exhaust Gas Port 20 Temperature
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Load Signal	-	Proprietary parameter.
Speed Demand Switches [1,2,3,4,5,6]	-	Proprietary parameter.
Speed Demand Analog [1,2,3,4,5,6]	898	Engine Requested Speed/Speed Limit
Engine alternate droop accelerator 1 select [1,2,3,4,5,6]	-	Proprietary parameter.
Rating Switch 1	-	Proprietary parameter. 0 – indicates maximum power fueling 1 – indicates alternate power fueling 1 2 - 253 - indicates alternate power fueling 2 thru 253 254 – Error condition 255 – Not available

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite[NT], 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact[NT], 5 - InteliNano[NT], 6 - InteliDrive Nano

Abbreviation explanation

Abbreviation	Meaning
AL	Alarm - Warning or alarm due to a binary signal
LO	Low - Warning or alarm threshold due to a shortfall
HI	High - Warning or alarm limits are exceeded
TD	Transmitter Deviation - Warning or alarm due to a large deviation between the analog values of two redundant sensors
SD	Sensor Defective - Warning or alarm because of a defective sensor
SF	Switch Fault - Warning or alarm condition due to an improper combination two complementary switch
SS	Security Shutdown - Alarm, which led to engine emergency stop
MG	Message - Message from external system
SE	System Error - Warning, a system error
DL	Default Lost - Warning due to a node failure in the default field bus
RL	Redundancy Lost - Warning due to a node failure in the redundant fieldbus
PB	Push Button - Indicator due to the activation of certain control keys

Note: *If you have some problems with frame EBC1 (PGN=61441d, F001h) e.g. binary output engine stop, please contact your MTU service to upgrade firmware in your ECU / SAM module.*

Note: *ECU is automatically configured to isochronous (Droop2 = 0% corresponds to Engine alternate droop accelerator 1 select = 1). If you want to use droop (Droop1 = 4%) then set Source to 0.*

Controller's analog output for speed control configuration

Requested speed settings for InteliGen^{NT} or InteliSys^{NT}		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring between ADEC and SAM module

Function	ADEC X1 connector	SAM X6 connector
CAN H	19	3
CAN COM	20	1
CAN L	35	2

Recommended wiring of power supply

Function	ADEC X3 connector	SAM X13 connector
Battery + (positive)	3,6,9,12,13	1,2
Battery - (negative)	1,4,7,10	3,4

Recommended wiring (SAM with CCB2 card)

Function	SAM module	9pin diagnostic connector	Controller
CAN H	X23 – 2	N/A	CAN1 (extension modules/J1939) – CAN H
CAN COM	X23 – 3	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	X23 – 1	N/A	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	X13 – 1,2	N/A	N/A
Battery - (negative)	X13 – 3,4	N/A	N/A
Key Switch	N/A	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	N/A	SG OUT
Analog Speed Control	N/A	N/A	SG COM

Recommended wiring (SAM without CCB2 card – marine version)

Function	SAM module	Controller
CAN H	X8 – 3	CAN1 (extension modules/J1939) – CAN H
CAN COM	X8 – 1	CAN1 (extension modules/J1939) – CAN COM
CAN L	X8 – 2	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	X13 – 1,2	N/A
Battery - (negative)	X13 – 3,4	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see ECU7 (ADEC) & SAM module on page 1**.

3.20.4 ECU8 (ADEC) & Smart connect

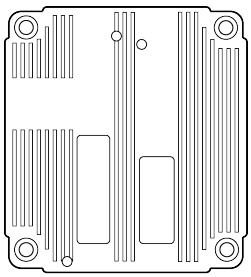


Image 3.53 ECU8

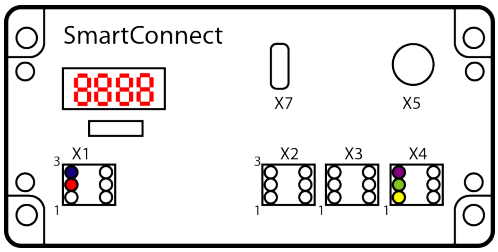


Image 3.54 Smart connect

Controllers that support the ECU8 & Smart connect

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Coolant Pre-heated State	3553	Engine Coolant Pre-heated State
Wait To Start Lamp	1081	Engine Wait to Start Lamp
EPS Engine Shutdown	1110	Engine Protection System has Shutdown Engine
Safety&ProtectionOverStat	520202	Manufacturer Assignable SPN
MTU Engine Running State	520255	Manufacturer Assignable SPN
Engine Cylinder Cutoff	520252	Manufacturer Assignable SPN
Load Generator Status	520253	Manufacturer Assignable SPN
External Stop State	520833	Manufacturer Assignable SPN
Oper. Speed Up Switch Fdb	520205	Manufacturer Assignable SPN
Oper Speed Down Switch Fdb	520206	Manufacturer Assignable SPN
Speed Demand Fail Mode	520830	Manufacturer Assignable SPN
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		

ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
Trip Group 1	-	Proprietary parameter.
Engine Start Command [1,2,3,4,5,6]	520192	Manufacturer Assignable SPN
Engine Stop Command [1,2,3,4,5,6]	520193	Manufacturer Assignable SPN
EngSafety&ProtOverrideCmd [1,2,3,4]	520194	Manufacturer Assignable SPN
Engine Overspeed Test Cmd	520197	Manufacturer Assignable SPN
DisableEngCylCutoffCmd2	520834	Manufacturer Assignable SPN
IntermittentOilPrimingCmd	520835	Manufacturer Assignable SPN
EngSpdGovernorParamSwitch	520841	Manufacturer Assignable SPN
Operating Speed Up Switch	520207	Manufacturer Assignable SPN
Oper. Speed Down Switch	520208	Manufacturer Assignable SPN
MTU Req Speed Limit Switch	520842	Manufacturer Assignable SPN

ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine speed	190	Engine Speed
Percent Load	92	Engine Percent Load At Current Speed
Intake Manifold Abs Press	3563	Engine Intake Manifold #1 Absolute Pressure
ECU Temperature	1136	Engine ECU Temperature

Desired Operating Speed	515	Engine's Desired Operating Speed
Coolant Temp	110	Engine Coolant Temperature
T-Lube Oil	175	Engine Oil Temperature 1
Engine Oil Pressure	100	Engine Oil Pressure
Engine Coolant Pressure	109	Engine Coolant Pressure 1
Fuel Rate	183	Engine Fuel Rate
P-Charge Air	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Keyswitch Battery Voltage	158	Keyswitch Battery Potential
Actual Droop	520831	Manufacturer Assignable SPN
MTU Requested Abs. Torque	520843	Manufacturer Assignable SPN
Demanded Operating Speed	520707	Manufacturer Assignable SPN
Current Speed Demand src	520263	Manufacturer Assignable SPN
Speed Demand CAN fdb	520828	Manufacturer Assignable SPN
Speed Demand Analog In fdb	520829	Manufacturer Assignable SPN
Fuel Delivery Pressure	94	Engine Fuel Delivery Pressure
Exhaust Gas Port 1 Temp	1137	Engine Exhaust Gas Port 1 Temperature
Exhaust Gas Port 2 Temp	1138	Engine Exhaust Gas Port 2 Temperature
Exhaust Gas Port 3 Temp	1139	Engine Exhaust Gas Port 3 Temperature
Exhaust Gas Port 4 Temp	1140	Engine Exhaust Gas Port 4 Temperature
Exhaust Gas Port 5 Temp	1141	Engine Exhaust Gas Port 5 Temperature
Exhaust Gas Port 6 Temp	1142	Engine Exhaust Gas Port 6 Temperature
Exhaust Gas Port 7 Temp	1143	Engine Exhaust Gas Port 7 Temperature
Exhaust Gas Port 8 Temp	1144	Engine Exhaust Gas Port 8 Temperature
Exhaust Gas Port 9 Temp	1145	Engine Exhaust Gas Port 9 Temperature
Exhaust Gas Port 10 Temp	1146	Engine Exhaust Gas Port 10 Temperature
Exhaust Gas Port 11 Temp	1147	Engine Exhaust Gas Port 11 Temperature
Exhaust Gas Port 12 Temp	1148	Engine Exhaust Gas Port 12 Temperature
Exhaust Gas Port 13 Temp	1149	Engine Exhaust Gas Port 13 Temperature
Exhaust Gas Port 14 Temp	1150	Engine Exhaust Gas Port 14 Temperature
Exhaust Gas Port 15 Temp	1151	Engine Exhaust Gas Port 15 Temperature
Exhaust Gas Port 16 Temp	1152	Engine Exhaust Gas Port 16 Temperature
Exhaust Gas Port 17 Temp	1153	Engine Exhaust Gas Port 17 Temperature
Exhaust Gas Port 18 Temp	1154	Engine Exhaust Gas Port 18 Temperature
Exhaust Gas Port 19 Temp	1155	Engine Exhaust Gas Port 19 Temperature
Exhaust Gas Port 20 Temp	1156	Engine Exhaust Gas Port 20 Temperature
Sea Water Pump Outlet Pressure	2435	Sea Water Pump Outlet Pressure
P-Lube Oil Redundant	520292	Manufacturer Assignable SPN
T-Coolant Redundant	520302	Manufacturer Assignable SPN

ECU analog inputs (controller's outputs)

Configuration Name	SPN	J1939 Name
Requested speed [1,2,3,4,5,6]	898	Engine Requested Speed/Speed Limit
Speed Demand Switches	520269	Manufacturer Assignable SPN CAN Demand Switches contains at: Bit 0 - 3 the source for Local normal switch position Bit 4 - 7 the source for Local Emergency switch position Bit 8 - 11 the source for Remote normal switch position Bit 12 - 15 the source for Remote Emergency switch position

		With the following assignment per bit group: 0 = Analog CAN 1 = Up/Down ECU 2 = Up/Down CAN 3 = Analog ECU 4 = Analog ECU relative 5 = Frequency 6 = Notch Position (not used)
Frequency Selection [1,2,3,4,5,6]	4080	Generator Frequency Selection This feature gives the operator ability to switch the rated speed. The system will only react to a state transition while the Engine speed is 0. The recommended source values is an contstant following the requested function. 0 = 50Hz 1 = 60Hz 2 - 5 = Reserved 6 = Error 7 = Do not care

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite[NT], 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact[NT], 5 - InteliNano[NT], 6 - InteliDrive Nano

Controller's analog output for speed control configuration

Requested speed settings for InteliGen[NT] or InteliSys[NT]		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Smart module DIP switches adjustment

DIP	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Function	Speed Demand			Droop (0%/4%)	Frequency (50Hz/60Hz)	Protocol (J1939/CanOpen)	N/A	N/A
State	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF

Note: *Please, notice that the DIP switch configuration is checking up after SMART connects powering up. Any change of DIP switches requires power off and on again of SMART connect.*

Speed demand DIP swichs codes

Code DEC	Code BIN	Designation	Description
0	000	ECU default	ECU default settings of the 4 internal speed demand switches – default speed up/down
1	001	ECU direct up / down	The speed demand (up / down) controlled over binary inputs directly at the ECU. Settings can be done via DiaSys at the ECU
2	010	ECU analogue relative	The analogue speed demand controlled over analogue input directly at the ECU. Settings can be done via DiaSys at the ECU 0VDC = -100RPM

			5VDC = +100RPM
3	011	ECU analogue relative	The analogue speed demand controlled over analogue input directly at the ECU. Settings can be done via DiaSys at the ECU 0VDC = -100RPM 10VDC = +100RPM
4	100	ECU analogue relative	The analogue speed demand controlled over analogue input directly at the ECU. Settings can by done via DiaSys at the ECU 4mADC = -100RPM 20mADC = +100RPM
5	101	CAN analogue	The speed demand value (unit, RPM) will be transferred via CAN bus from SAM/SMART to the ECU. The speed demand information must be received from an external CAN bus (CANopen,SEA J1939)
6	110	CAN up / down	The speed demand (up / down) will be transferred via CAN bus from SAM/SMART to the ECU. The speed demand information must be received from an external CAN bus (CANopen,SEA J1939)
7	111	External speed demand source	The speed demand is flexible. The speed demand source can be transmitted from an external controller

Recommended wiring between ADEC and SMART module

Function	ADEC X1 connector	SMART X3 connector	SMART X4 connector
CAN1 H	1	1	
CAN1 COM	5	3	
CAN1 L	2	2	
CAN2 H	3		1
CAN2 COM	8		3
CAN2 L	4		2

Recommended wiring between ADEC and SMART module

Function	SMART connector	Controller
CAN H	X4 – 1	CAN1 (extension modules/J1939) – CAN H
CAN COM	X4 – 3	CAN1 (extension modules/J1939) – CAN COM
CAN L	X4 – 2	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	X1 – 2	N/A
Battery - (negative)	X1 – 3	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

Ignition (switched by K1)

Function	Connector
Ignition +24VDC	X1 – 32
Ignition IN	X1 – 31

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see ECU8 & Smart connect on page 354**.

3.20.5 ECU9 (ADEC)

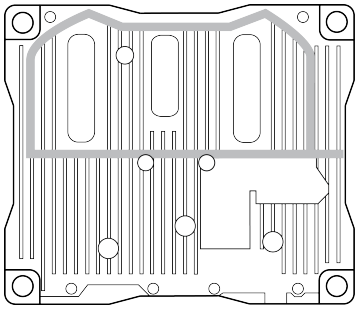


Image 3.55 ECU9

Controllers that support the ECM

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Coolant Pre-heated State	3553	Engine Coolant Pre-heated State
Wait To Start Lamp	1081	Engine Wait to Start Lamp
EPS Engine Shutdown	1110	Engine Protection System has Shutdown Engine
Approaching Shutdown	1109	Engine Protection System Approaching Shutdown
Safety&ProtectionOverStat	520202	Manufacturer Assignable SPN
MTU Engine Running State	520255	Manufacturer Assignable SPN
Engine Cylinder Cutoff	520252	Manufacturer Assignable SPN
Load Generator Status	520253	Manufacturer Assignable SPN
External Stop State	520833	Manufacturer Assignable SPN
Oper. Speed Up Switch Fdb	520205	Manufacturer Assignable SPN
Oper Speed Down Switch Fdb	520206	Manufacturer Assignable SPN
Speed Demand Fail Mode	520830	Manufacturer Assignable SPN
Water in fuel	97	Water In Fuel Indicator 1
Aftertreatment 1 Regeneration Status	3483	Aftertreatment 1 Regeneration Status
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		
Flash Malfunction Indicator Lamp	3038	Flash Malfunction Indicator Lamp
Fast Flash Malfunction Indicator Lamp		

ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
Engine Shutdown Override Switch	1237	Engine Shutdown Override Switch
Trip Group 1	-	Proprietary parameter.
Engine Start Command [1,2,3,4,5,6]	520192	Manufacturer Assignable SPN
Engine Stop Command [1,2,3,4,5,6]	520193	Manufacturer Assignable SPN
EngSafety&ProtOverrideCmd [1,2,3,4]	520194	Manufacturer Assignable SPN
Engine Overspeed Test Cmd	520197	Manufacturer Assignable SPN
DisableEngCylCutoffCmd2	520834	Manufacturer Assignable SPN
IntermittentOilPrimingCmd	520835	Manufacturer Assignable SPN
EngSpdGovernorParamSwitch	520841	Manufacturer Assignable SPN
Operating Speed Up Switch	520207	Manufacturer Assignable SPN
Oper. Speed Down Switch	520208	Manufacturer Assignable SPN
MTU Req Speed Limit Switch	520842	Manufacturer Assignable SPN
DPF Regeneration Inhibit Switch [1,2,3,4]	3695	Aftertreatment Regeneration Inhibit Switch
DPF Regeneration Force Switch [1,2,3,4]	3696	Aftertreatment Regeneration Force Switch

ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine speed	190	Engine Speed
Engine torque	513	Actual Engine - Percent Torque
Engine Starter Mode	1675	Engine Starter Mode
Percent Load	92	Engine Percent Load At Current Speed
Intake Manifold Abs Press	3563	Engine Intake Manifold #1 Absolute Pressure
ECU Temperature	1136	Engine ECU Temperature
Desired Operating Speed	515	Engine's Desired Operating Speed
Coolant Temp	110	Engine Coolant Temperature
T-Lube Oil	-	Proprietary parameter.
Intercooler Temp	52	Engine Intercooler Temperature
Fuel Temperature	174	Engine Fuel Temperature 1
Engine Oil Pressure	100	Engine Oil Pressure
Engine Coolant Pressure	109	Engine Coolant Pressure 1
Engine Oil Level	98	Engine Oil Level
Coolant Level	111	Engine Coolant Level 1
Fuel Rate	183	Engine Fuel Rate
P-Charge Air	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Air Inlet Pressure	106	Engine Intake Air Pressure
Air filter differential pressure	107	Engine Air Filter 1 Differential Pressure
Keyswitch Battery Voltage	158	Keyswitch Battery Potential
Actual Droop	520831	Manufacturer Assignable SPN
MTU Requested Abs. Torque	520843	Manufacturer Assignable SPN
Demanded Operating Speed	520707	Manufacturer Assignable SPN
Current Speed Demand src	520263	Manufacturer Assignable SPN
Speed Demand CAN fdb	520828	Manufacturer Assignable SPN
Speed Demand Analog In fdb	520829	Manufacturer Assignable SPN

Fuel Delivery Pressure	94	Engine Fuel Delivery Pressure
Exhaust Gas Port 1 Temp	1137	Engine Exhaust Gas Port 1 Temperature
Exhaust Gas Port 2 Temp	1138	Engine Exhaust Gas Port 2 Temperature
Exhaust Gas Port 3 Temp	1139	Engine Exhaust Gas Port 3 Temperature
Exhaust Gas Port 4 Temp	1140	Engine Exhaust Gas Port 4 Temperature
Exhaust Gas Port 5 Temp	1141	Engine Exhaust Gas Port 5 Temperature
Exhaust Gas Port 6 Temp	1142	Engine Exhaust Gas Port 6 Temperature
Exhaust Gas Port 7 Temp	1143	Engine Exhaust Gas Port 7 Temperature
Exhaust Gas Port 8 Temp	1144	Trailer, Tag Or Push Channel Tire Pressure
Exhaust Gas Port 9 Temp	1145	Engine Exhaust Gas Port 9 Temperature
Exhaust Gas Port 10 Temp	1146	Engine Exhaust Gas Port 10 Temperature
Exhaust Gas Port 11 Temp	1147	Engine Exhaust Gas Port 11 Temperature
Exhaust Gas Port 12 Temp	1148	Engine Exhaust Gas Port 12 Temperature
Exhaust Gas Port 13 Temp	1149	Engine Exhaust Gas Port 13 Temperature
Exhaust Gas Port 14 Temp	1150	Engine Exhaust Gas Port 14 Temperature
Exhaust Gas Port 15 Temp	1151	Engine Exhaust Gas Port 15 Temperature
Exhaust Gas Port 16 Temp	1152	Engine Exhaust Gas Port 16 Temperature
Sea Water Pump Outlet Pressure	2435	Sea Water Pump Outlet Pressure
Fuel Filter Diff.Press	95	Engine Fuel Filter Differential Pressure
Oil Filter Diff.Press	99	Engine Oil Filter Differential Pressure
Turbocharger 1 Speed	103	Engine Turbocharger 1 Speed
Barometric Pressure	108	Barometric Pressure
Turbocharger 2 Speed	1169	Engine Turbocharger 2 Speed
Turbocharger 3 Speed	1170	Engine Turbocharger 3 Speed
DEF Tank 1 Level	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank Level
Diesel Exhaust Fluid Tank 1 Temperature	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature
T-Charge Air	2629	Engine Turbocharger 1 Compressor Outlet Temperature
Engine Charge Air Cooler Outlet Pressure	2631	Engine Charge Air Cooler Outlet Pressure
Engine Intercooler Coolant Level	3668	Engine Charge Air Cooler Coolant Level
Intake NOx	3216	Aftertreatment 1 Selective Catalytic Reduction Intake NOx
Outlet NOx	3226	Aftertreatment 1 Outlet NOx
SCR Act. dosing reagent quality	4331	Aftertreatment 1 Diesel Exhaust Fluid Actual Dosing Quantity
DEF Tank 1 Low Level Indicator	5245	Aftertreatment Selective Catalytic Reduction Operator Inducement Active

ECU analog inputs (controller's outputs)

Configuration Name	SPN	J1939 Name
Requested speed [1,2,3,4,5,6]	898	Engine Requested Speed/Speed Limit
Frequency Selection [1,2,3,4,5,6]	4080	Generator Frequency Selection
Speed Demand Switches	520269	Manufacturer Assignable SPN

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliNano^{NT}, 6 - InteliDrive Nano

Controller's analog output for speed control configuration

Requested speed settings for InteliGen^{NT} or InteliSys^{NT}		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring

Function	ECU X1 connector	Controller
CAN H	3	CAN1 (extension modules/J1939) – CAN H
CAN COM	6	CAN1 (extension modules/J1939) – CAN COM
CAN L	4	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	58, 59, 62	N/A
Battery - (negative)	57, 60, 61	N/A
Key Switch	31	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see ECU9 on page 1**.

3.20.6 DDEC 10

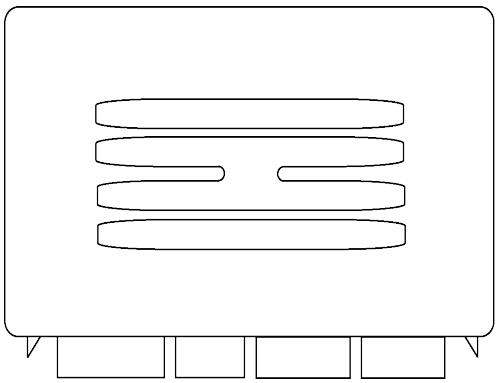


Image 3.56 DDEC 10

Controllers that support the DDEC 10

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
DPF Active Regeneration Inhibited Due to System Fault Active	3712	Diesel Particulate Filter Active Regeneration Inhibited Due to System Fault Active
DPF Active Regeneration Inhibited Due to Vehicle Speed Above Allowed Speed	3709	Diesel Particulate Filter Active Regeneration Inhibited Due to Vehicle Speed Above Allowed Speed
Wait to Start Lamp	1081	Engine Wait to Start Lamp
Water In Fuel Indicator	97	Water In Fuel Indicator 1
DPF Active Regeneration Status	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
Protect Lamp	987	Protect Lamp
Red Stop Lamp	623	Red Stop Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		
DPF Active Regeneration Inhibited Status	3702	Diesel Particulate Filter Active Regeneration Inhibited Status
DPF Active Regeneration Inhibited Due to Inhibit Switch	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPF Active Regeneration Inhibited Due to Clutch Disengaged	3704	Diesel Particulate Filter Active Regeneration Inhibited Due to Clutch Disengaged
DPF Active Regeneration Inhibited Due to PTO Active	3706	Diesel Particulate Filter Active Regeneration Inhibited Due to PTO Active
DPF Active Regeneration Inhibited Due to Accelerator Pedal Off Idle	3707	Diesel Particulate Filter Active Regeneration Inhibited Due to Accelerator Pedal Off Idle
DPF Active Regeneration Inhibited Due to Parking Brake Not Set	3710	Diesel Particulate Filter Active Regeneration Inhibited Due to Parking Brake Not Set
DPF Active Regeneration Inhibited Due to Low Exhaust Gas Temperature	3711	Diesel Particulate Filter Active Regeneration Inhibited Due to Low Exhaust Temperature

ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
DPF Regeneration Inhibit Switch [1,3,4]	3695	Aftertreatment Regeneration Inhibit Switch
DPF Regeneration Force Switch [1,3,4]	3696	Aftertreatment Regeneration Force Switch
Start request [1,3,4,6]	-	Proprietary parameter.
Stop request [1,3,4,6]	-	Proprietary parameter.
Start Loct	-	Proprietary parameter.

ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Desired Operating Speed	515	Engine's Desired Operating Speed
Percent Torque	513	Actual Engine - Percent Torque
SCR Catalyst Intake Gas	4360	Aftertreatment 1 SCR Intake Temperature

Temperature		
SCR Catalyst Outlet Gas Temperature	4363	Aftertreatment 1 SCR Outlet Temperature
Intake NOx	3216	Aftertreatment 1 Selective Catalytic Reduction Intake NOx
Fuel Temperature	174	Engine Fuel Temperature 1
DPF Intake Pressure 1	3609	Aftertreatment 1 Diesel Particulate Filter Intake Pressure
Coolant Level	111	Engine Coolant Level 1
DPF Outlet Pressure 1	3610	Aftertreatment 1 Diesel Particulate Filter Outlet Pressure
Injector Metering Rail Pressure	157	Engine Injector Metering Rail 1 Pressure
Keyswitch Battery Potential	158	Keyswitch Battery Potential
Diesel Exhaust Fluid Tank 1 Heater	3363	Aftertreatment 1 Diesel Exhaust Fluid Tank Heater
Battery Potential	168	Battery Potential / Power Input 1
DPF Differential Pressure	3251	Aftertreatment 1 Diesel Particulate Filter Differential Pressure
Exhaust Gas Temperature 1	3241	Aftertreatment 1 Exhaust Temperature 1
DPF Intake Gas Temperature	3242	Aftertreatment 1 Diesel Particulate Filter Intake Temperature
Exhaust Gas Temperature	173	Engine Exhaust Temperature
DPF Outlet Gas Temperature	3246	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature
Oil Temperature	175	Engine Oil Temperature 1
Accelerator Pedal Position	91	Accelerator Pedal Position 1
Throttle Valve Position	51	Engine Throttle Valve 1 Position 1
Intercooler Temperature	52	Engine Intercooler Temperature
Fuel Rate	183	Engine Fuel Rate
Diesel Exhaust Fluid Concentration	3516	Aftertreatment 1 Diesel Exhaust Fluid Concentration
Engine Speed	190	Engine Speed
ECU Temperature	1136	Engine ECU Temperature
Remote Accelerator Pedal Position	974	Remote Accelerator Pedal Position
Outlet NOx	3226	Aftertreatment 1 Outlet NOx
Diesel Exhaust Fluid Tank 1 Temperature	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature
Percent Load	92	Engine Percent Load At Current Speed
Fuel Delivery Pressure	94	Engine Fuel Delivery Pressure
DEF Tank 1 Level	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank Level
Oil Level	98	Engine Oil Level
Diesel Exhaust Fluid Temperature 2	3515	Aftertreatment 1 Diesel Exhaust Fluid Temperature 2
Oil Pressure	100	Engine Oil Pressure
Crankcase Pressure	101	Engine Crankcase Pressure 1
Intake Manifold Pressure	102	Engine Intake Manifold #1 Pressure
Turbocharger 1 Speed	103	Engine Turbocharger 1 Speed
Intake Manifold Temperature	105	Engine Intake Manifold 1 Temperature
Air Intake Pressure	106	Engine Intake Air Pressure
Coolant Pressure	109	Engine Coolant Pressure 1
Coolant Temperature	110	Engine Coolant Temperature
DPF Lamp Command	3697	Diesel Particulate Filter Lamp Command
Exhaust System High Temperature Lamp Command	3698	Exhaust System High Temperature Lamp Command
SCR Operator Inducement Severity	5246	Aftertreatment SCR Operator Inducement Severity
DEF Tank 1 Low Level Indicator	5245	Aftertreatment Selective Catalytic Reduction Operator Inducement Active

ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed [1,3,4,6]	898	Engine Requested Speed/Speed Limit

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliNano^{NT}, 6 - InteliDrive Nano

Controller's analog output for speed control configuration

Requested speed settings for InteliGen^{NT} or InteliSys^{NT}		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring

Function	Unit connectors ST2(B) or ST3(C)	Controller
CAN H	ST2-18	CAN1 (extension modules/J1939) – CAN H
CAN COM	ST2-17	CAN1 (extension modules/J1939) – CAN COM
CAN L	ST2-16	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	ST2-01	N/A
Battery - (negative)	ST2-02	N/A
Key Switch	ST2-03	Any binary output configured as ECU PwrRelay
Analog Speed Control	ST2-04	SG OUT
Analog Speed Control	ST3-02	SG COM

Note: *To enable the function of Remote throttle sensor on pin ST3-02, the parameter 13/63 has to be set to 1.*

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see DDEC 10 on page 1**.

3.20.7 EIM (Engine Interface Module)

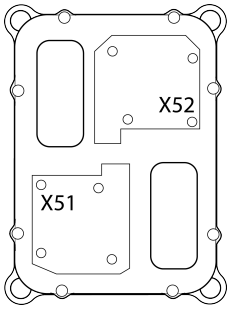


Image 3.57 EIM

Controllers that support the EIM

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Percent Load	92	Engine Percent Load At Current Speed
Engine speed	190	Engine Speed
Engine Exhaust Gas Temp Avg 1	4151	Engine Exhaust Temperature Average
Intake Manifold Abs Press	3563	Engine Intake Manifold #1 Absolute Pressure
Exhaust Gas Temp - Right Manifold	2433	Engine Exhaust Manifold Bank 2 Temperature 1
Exhaust Gas Temp - Left Manifold	2434	Engine Exhaust Manifold Bank 1 Temperature 1
Coolant Temp	110	Engine Coolant Temperature
Fuel Temp	174	Engine Fuel Temperature 1
EngineOil Temp	175	Engine Oil Temperature 1
Fuel Delivery Pressure	94	Engine Fuel Delivery Pressure
Engine Oil Pressure	100	Engine Oil Pressure
Coolant Pressure	109	Engine Coolant Pressure 1
Fuel Rate	183	Engine Fuel Rate
Air Inlet Temperature	172	Engine Intake Air Temperature
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
MTU Engine Speed Redundant	520382	Manufacturer Assignable SPN
MTU Engine Oil Pressure Redundant	520292	Manufacturer Assignable SPN
MTU Engine Coolant Temp Redundant	520302	Manufacturer Assignable SPN
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliNano^{NT}, 6 - InteliDrive Nano

Recommended wiring

Function	X51 connector	Controller
CAN H	56	CAN1 (extension modules/J1939) – CAN H
CAN COM	54	CAN1 (extension modules/J1939) – CAN COM
CAN L	55	CAN1 (extension modules/J1939) – CAN L

Battery + (positive)	N/A	N/A
Battery - (negative)	N/A	N/A
Key Switch	16	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see ECU9 on page 1**.

3.20.8 MIP 4000

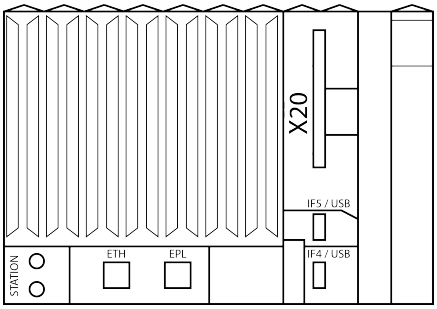


Image 3.58 MIP 4000

Note: *In order to connection to the MTU MIP 4000 gen-set controller it is necessary to use an I-CB module and UC-7112-LX Plus module.*
Configuration of the controller and I-CB has to be done separately using GenConfig or DriveConfig and ICBEdit software. For further information see I-CB manual.
UC-7112-LX Plus configuration file - MTU_MIP4000_ver.: 1.0.0 . For further information see UC-7112-LX Plus manual.

Controllers that support the MIP 4000

Refer to **Comparison table (page 23)**

Available parameters

> **IMPORTANT: The response time of the UC-7112-LX Plus (modbus server) is about 200ms. It has to be taken into account when configure the number and refresh time of read/written parameters. Incorrect configuration of I-CB module may cause instability of read /written parameters.**

ECU binary outputs (controller's inputs); Modbus Discrete Inputs	
Configuration Name	**Regiter**
Demand open backup switch	10001
Demand auxiliary drives	10002
Demand fresh oil pump	10003
Demand engine preheating	10004
Control via interface	11001
Machine available	11002
Engine stopped	11003
Gastype A active	11004
Start demand active	11005
Start active	11006
Stop active	11007
Leakage test gas line A active	11008
Leakage test gas line A ok	11009
Auxiliary drives active	11010
Waste/Prelube oil pump active	11011
Gasvalve 1 for gas type A open	11012

Mains ok	11013
Synchronisation GCB	11014
Synchronisation MCB	11015
GCB is off	11016
GCB is on	11017
MCB is off	11018
MCB is on	11019
Mains parallel operation active	11020
Island operation active	11021
Cooling water preheating blocked	11022
Generator heater on	11023
Hardware signal "Request GCU check" from Engine	11024
Hardware signal "Request gas solenoid valve 1" from Engine	11025
Hardware signal "Request gas solenoid valve 2" from Engine	11026
Signal "Request synchronisation" from Engine	11027
Lube oil refill active	11028
Cooling water preheating active	11029
Gasvalve 2 for gas type A open	11030
Stop command from Operator	11031
Protocol - testing plant active	11032
Release island operation from control technology	11033
Short interruption	11034
Request pre lubrication active	11035
GCB release missing from control technology	11036
Release synchronisation GCB	11037
Biogas active	11038
Fault reset	11039
Warm up phase in insel parallel operation active	11040
GCB black start interlock in island parallel operation	11041
Backup protection active	11042
Generator de-excitation active	11043
Release generator protection	11044
Level Lube Oil Min	11045
Level Lube Oil MinMax	11046
Level Lube Oil Max	11047
Stop Activated	11048
Engine Running	11049
Generator active	11050
Waste oil solenoid valve is on	11051
Go / NoGo	11052
Wait for 0 RPM	11053
Starter On	11054
Mixture throttle position maximum	11055
Limitation active	11056
Back synchronization MCB from MCS/external control technology or other module active	11057
Mains disconnection via MCB from external	11058

ECU binary inputs (controller's outputs - commands); Modbus Coils	
Configuration Name	**Regiter**
Engine start	1
Reset	2
Release GCB	3
Speed higher	4
Speed lower	5
Release island operation	6
Blackstart GCB	7
Cooling water deficiency	8
Release MCB	9
Blackstart MCB	10
Deactivate cooling water preheating	11
Activate Waste/Prelube oil pump	12
Activate lube oil solenoid valves	13
Activate waste oil solenoid valve	14
Reserve - Bit 15	15
Voltage Higher	16
Voltage Lower	17

ECU analog outputs (controller's inputs); Modbus Input Registers	
Configuration Name	**Regiter**
Power setpoint from external	30201
Actual value power 1	30202
Actual value power 2	30203
Power supply voltage 24VDC	30204
Engine speed	30205
T-Coolant engine inlet	30206
T-Coolant engine outlet	30207
T-Lube oil	30208
T-Intake air	30209
P-Coolant engine inlet	30210
P-Coolant engine outlet	30211
P-Lube oil	30212
P-Crankcase	30213
P-Lube oil before filter	30214
P-Lube oil filter diff	30215
P-Coolant diff.	30216
T-Mixture A	30217
T-Intake air B	30218
P-Mixture before throttle	30219
Board temperature MIP panel	30220
Generator winding temperature U1	30221
Generator winding temperature V1	30222
Generator winding temperature W1	30223
P-Mixture A	30224
P-Mixture B	30225
P-Intake Air A	30226

P-Intake Air B	30227
Mixture throttle position A	30228
Mixture throttle position B	30229
Mixture throttle position bypass	30230
Bearing temperature drive end	30231
Bearing temperature non-drive end	30232
T-Exhaust gas after turbine A	30233
T-Exhaust gas after turbine B	30234
Operating hours 1	30235
Operating hours 2	30236
Actual value reactive power	30237
Actual value apperent power	30238
Start counter	30239
Generator frequency	30240
Generator voltage L12	30241
Generator voltage L23	30242
Generator voltage L31	30243
Generator current L1	30244
Generator current L2	30245
Generator current L3	30246
Generator power factor	30247
Generator active energy 1	30248
Generator active energy 2	30249
Mains voltage L12	30250
Mains voltage L23	30251
Mains voltage L31	30252
Mains frequency	30253
Bus bar voltage L12	30254
Bus bar voltage L23	30255
Bus bar voltage L31	30256
Bus bar frequency	30257
T-Exhaust A1	30258
T-Exhaust A2	30259
T-Exhaust A3	30260
T-Exhaust A4	30261
T-Exhaust A5	30262
T-Exhaust A6	30263
T-Exhaust A7	30264
T-Exhaust A8	30265
T-Exhaust A9	30266
T-Exhaust A10	30267
T-Exhaust B1	30268
T-Exhaust B2	30269
T-Exhaust B3	30270
T-Exhaust B4	30271
T-Exhaust B5	30272
T-Exhaust B6	30273

T-Exhaust B7	30274
T-Exhaust B8	30275
T-Exhaust B9	30276
T-Exhaust B10	30277
Desired ignition timing	30278
Knock integrator A1	30279
Knock integrator B1	30280
Knock integrator A2	30281
Knock integrator B2	30282
Knock integrator A3	30283
Knock integrator B3	30284
Knock integrator A4	30285
Knock integrator B4	30286
Knock integrator A5	30287
Knock integrator B5	30288
Knock integrator A6	30289
Knock integrator B6	30290
Knock integrator A7	30291
Knock integrator B7	30292
Knock integrator A8	30293
Knock integrator B8	30294
Knock integrator A9	30295
Knock integrator B9	30296
Knock integrator A10	30297
Knock integrator B10	30298
Gas temperature	30299
Gas pressure inlet (abs) - Tecjet	30300
Actual position - Tecjet	30301
A - Aftertreatment 1 outlet - NOx	30302
B - Aftertreatment 1 outlet - NOx	30303
Relative position - Phytron A	30304
Relative position - Phytron B	30305

ECU analog inputs (controller's outputs); Modbus Holding Regiters	
Configuration Name	**Regiter**
SP_Effective power	40001
SP_Generator power factor	40002
SP_CH4 content	40003
SP_Offset CH4 content	40004
Hearbeat	41001
CommError	41002

Modbus Settings

Configuration Name	**Regiter**
Communication Port	P1
Modbus Address	1

Baud Rate	19200kbps
Data Bits	8
Parity	None
Stop Bits	One
Interface	RS232

It is allowed to read up to 85 sequential registers at one request.

Recommended wiring

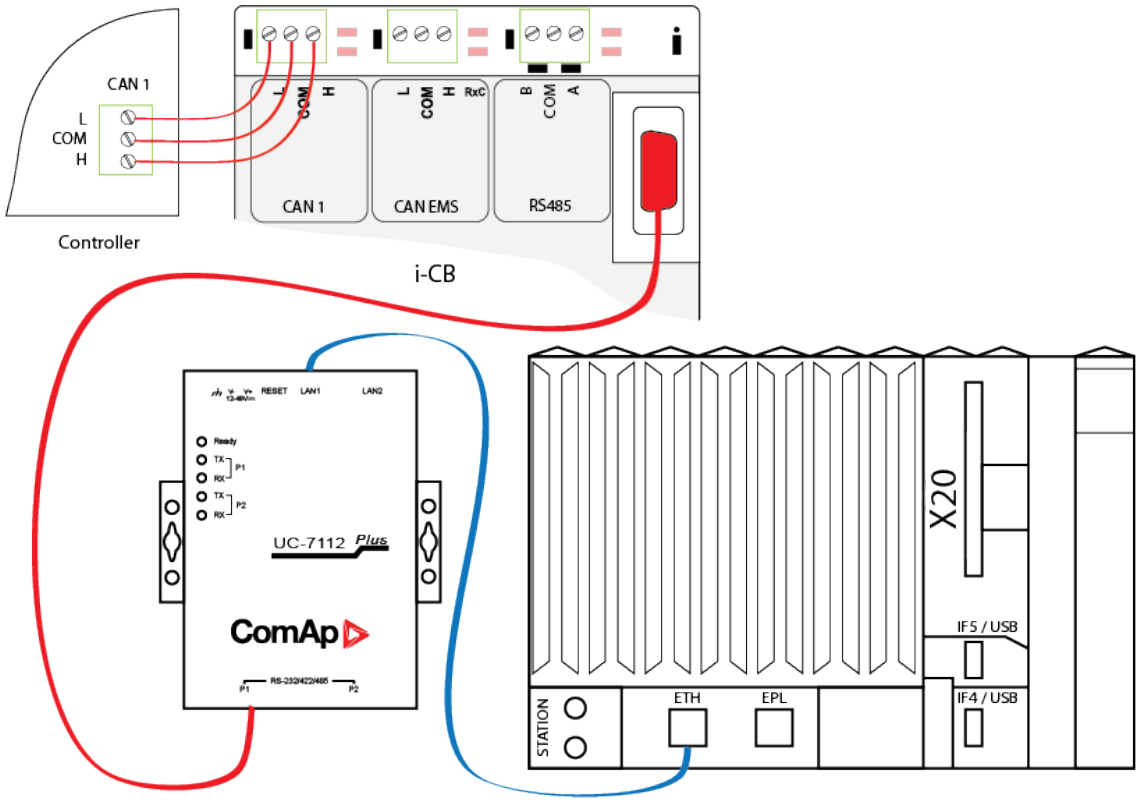


Image 3.59 Recommended wiring of MTU MIP 4000

IMPORTANT: Check that CAN bus terminating resistors or appropriate jumpers are connected.

IMPORTANT: Direct connection of the Ethernet between MTU MIP 4000 and UC-7112-LX Plus is strongly recommended.

Note: *IP addresses of the MTU MIP 4000 (192.168.23.101) and the UC-7112-LX Plus (192.168.23.201) are fixed without possibility to change.*
The network mask (255.255.254.0) if fixed for both devices without possbility to chage it.
The communication UDP port is the same (21101) for both devices.

3.20.9 MTU ADEC 1939 P-engines Fault Codes

Fault Code (SPN)	Text
524287*	HiddenCode

*Hidden fault code by default

3.20.10 MTU SMART Connect Fault Codes

Fault Code (SPN)	Text
52	T-Intcooler
94	P-FuelDelivery
100	P-Oil
105	T-IntManifold
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
157	P-Fuel1Inj1
158	KeySwitch
174	T-Fuel
175	T-Oil
188	Spd-Idle
190	EngineSpeed
247	EngineRunHours
898	Spd-Requested
1136	T-ECU
1237	SdOverride
1349	P-Fuel1Inj2
2629	T-Turbo1Outlet
3563	P-IntakeManAbs
520837	Spd-Starter
520838	Spd-RunUp
520857	Spd-DemandFail
520875	Spd-DemandFail
520900	CylA1Wiring
520901	CylA2Wiring
520902	CylA3Wiring
520903	CylA4Wiring
520904	CylA5Wiring
520905	CylA6Wiring
520910	CylB1Wiring
520911	CylB2Wiring
520912	CylB3Wiring
520913	CylB4Wiring
520914	CylB5Wiring
520915	CylB6Wiring
520923	T-Coolant
520924	Pwr-SupplyHi
520930	CylA1Interrup
520931	CylA2Interrup
520932	CylA3Interrup
520933	CylA4Interrup
520934	CylA5Interrup
520935	CylA6Interrup
520940	CylB1Interrup

520941	CylB2Interrup
520942	CylB3Interrup
520943	CylB4Interrup
520944	CylB5Interrup
520945	CylB6Interrup
520982	U-PDU
520983	Throttle1
520984	Throttle2
520985	PressControl
520986	PressControl
520990	InitError
520992	SmartConnect
520993	SmartConnect
521004	T-Preheat
521016	CamshaftSensor
521017	Crankshaft
521018	Camshaft
521020	InjAmplifierLo
521021	InjAmplifierHi
521022	InjAmplifier
521023	MV Cabling
521026	Pwr-Limit
521027	Stop SD
521040	ProtectionEIL
521041	ErrorEIL
521128	SmartConnect

3.21 Perkins engines support

ECU Type	Engine type
A4E1 A4E2	1100 series
1300	1300 series
ECM or CAT ADEM3, ADEM4	2300 series 2500 series 2800 series

3.21.1 ECM (1100 series)

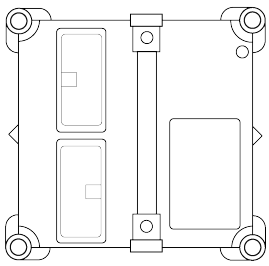


Image 3.60 ECM A4E2

Controllers that support the ECM

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Wait To Start Lamp	1081	Engine Wait to Start Lamp
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		

ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
Stop Request [1,2,3,4,5,6]	-	Proprietary parameter. The command for normal stopping of the engine. The recommended source value for this command is stop pulse.
Alarm Reset [4]	-	Proprietary parameter.

Engine Start [4]	-	Proprietary parameter.
Override	-	Proprietary parameter.
Engine alternate droop accelerator 1 select [4]	-	Proprietary parameter.

ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine speed	190	Engine Speed
Percent Load	92	Engine Percent Load At Current Speed
Coolant Temp	110	Engine Coolant Temperature
Fuel Temp	174	Engine Fuel Temperature 1
EngineOil Temp	175	Engine Oil Temperature 1
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Desired Operating Speed	515	Engine's Desired Operating Speed
Barometric Pressure	108	Barometric Pressure
Fuel Rate	183	Engine Fuel Rate
Throttle position	51	Engine Throttle Valve 1 Position 1
Electrical Potential (Voltage)	168	Battery Potential / Power Input 1
Battery Potential (Voltage)	158	Keyswitch Battery Potential
Engine Oil Pressure	100	Engine Oil Pressure

ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed [1,2,3,4,5,6]	898	Engine Requested Speed/Speed Limit

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliNano^{NT}, 6 - InteliDrive Nano

Controller’s analog output for speed control configuration

Requested speed settings for InteliGen^{NT} or InteliSys^{NT}		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring for A4E1

Function	ECU connector	Controller
CAN H	52	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	61	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	56,57	N/A
Battery - (negative)	68,69	N/A

Key Switch	70	Any binary output configured as ECU PwrRelay
Analog Speed Control	25	SG OUT
Analog Speed Control	44	SG COM

Recommended wiring for A4E2

Function	ECU connector	Controller
CAN H	20	CAN1 (extension modules/J1939) – CAN H
CAN COM	22	CAN1 (extension modules/J1939) – CAN COM
CAN L	21	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	7,8,15,16	N/A
Battery - (negative)	1,2,3,9,10	N/A
Key Switch	40	Any binary output configured as ECU PwrRelay
Analog Speed Control	3	SG OUT
Analog Speed Control	17	SG COM

Note: *To enable speed control over CAN bus set Desired Speed Input Arrangement to "CAN Input" and Digital Speed Control Installed to "Not Installed" in Perkins EST program.*

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see ECM (1100 series) on page 1**.

3.21.2 ECM 1300 (1300 series)

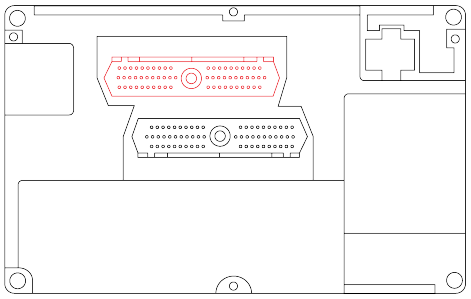


Image 3.61 ECM 1300

Controllers that support the ECM 1300

Refer to **Comparison table (page 23)**

Available parameters for ECM

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Wait To Start Lamp	1081	Engine Wait to Start Lamp
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp

Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		

ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
Stop Request [1,2,3,4,5,6]	-	Proprietary parameter. The command for normal stopping of the engine. The recommended source value for this command is stop pulse.
Alarm Reset [4]	-	Proprietary parameter.
Engine Start [4]	-	Proprietary parameter.
Override	-	Proprietary parameter.
Engine alternate droop accelerator 1 select [4]	-	Proprietary parameter.

ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine speed	190	Engine Speed
Percent Load	92	Engine Percent Load At Current Speed
Coolant Temp	110	Engine Coolant Temperature
Fuel Temp	174	Engine Fuel Temperature 1
EngineOil Temp	175	Engine Oil Temperature 1
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Desired Operating Speed	515	Engine's Desired Operating Speed
Barometric Pressure	108	Barometric Pressure
Fuel Rate	183	Engine Fuel Rate
Throttle position	51	Engine Throttle Valve 1 Position 1
Electrical Potential (Voltage)	168	Battery Potential / Power Input 1
Battery Potential (Voltage)	158	Keyswitch Battery Potential
Engine Oil Pressure	100	Engine Oil Pressure

ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed [1,2,3,4,5,6]	898	Engine Requested Speed/Speed Limit

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliNano^{NT}, 6 - InteliDrive Nano

Available parameters for ECM 1300

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Wait To Start Lamp	1081	Engine Wait to Start Lamp
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp

ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
Stop Request	-	Proprietary parameter. The command for normal stopping of the engine. The recommended source value for this command is stop pulse.

ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine speed	190	Engine Speed
Percent Load	92	Engine Percent Load At Current Speed
Coolant Temp	110	Engine Coolant Temperature
Fuel Temp	174	Engine Fuel Temperature 1
EngineOil Temp	175	Engine Oil Temperature 1
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Desired Operating Speed	515	Engine's Desired Operating Speed
Barometric Pressure	108	Barometric Pressure
Fuel Rate	183	Engine Fuel Rate
Throttle position	51	Engine Throttle Valve 1 Position 1
Electrical Potential (Voltage)	168	Battery Potential / Power Input 1
Battery Potential (Voltage)	158	Keyswitch Battery Potential
Engine Oil Pressure	100	Engine Oil Pressure

ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**

Recommended wiring for ECM 1300

Function	ECU connector	Controller
CAN H	19	CAN1 (extension modules/J1939) – CAN H
CAN COM	18	CAN1 (extension modules/J1939) – CAN COM
CAN L	20	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	25,21,22,41	N/A
Battery - (negative)	23,42,1,2	N/A
Key Switch	24	Any binary output configured as ECU PwrRelay
Analog Speed Control	30	SG OUT
Analog Speed Control	11	SG COM

Recommended wiring for CAT unit

Function	ECU J1 21pin connector	Controller
CAN H	20	CAN1 (extension modules/J1939) – CAN H
CAN COM	22	CAN1 (extension modules/J1939) – CAN COM
CAN L	21	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	7,8,15,16	N/A
Battery - (negative)	1,2,3,9,10	N/A
Key Switch	40	Any binary output configured as ECU PwrRelay
Analog Speed Control	3	SG OUT
Analog Speed Control	17	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see ECM (1100 series) on page 1**.

Available list of texts of fault codes **see ECM 1300 (1300 series) on page 1**.

Note: *To enable speed control over CAN bus if possible - set parameter 89001 - Vehicle Speed Signal Mode to "2" in Perkins 1306/1606 Engine Diagnostic Software*

IMPORTANT: No value for speed control being sent to the ECU when Perkins 1300 is configured!

3.21.3 ADEM (2300, 2500, 2800 series)

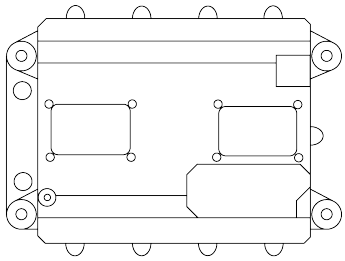


Image 3.62 ADEM3

Controllers that support the ADEM

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Wait To Start Lamp	1081	Engine Wait to Start Lamp
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		

ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
Stop Request [1,2,3,4,5,6]	-	Proprietary parameter. The command for normal stopping of the engine. The recommended source value for this command is stop pulse.
Alarm Reset [4]	-	Proprietary parameter.
Engine Start [4]	-	Proprietary parameter.
Override	-	Proprietary parameter.
Engine alternate droop accelerator 1 select [4]	-	Proprietary parameter.

ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine speed	190	Engine Speed
Percent Load	92	Engine Percent Load At Current Speed
Coolant Temp	110	Engine Coolant Temperature
Fuel Temp	174	Engine Fuel Temperature 1
EngineOil Temp	175	Engine Oil Temperature 1
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Desired Operating Speed	515	Engine's Desired Operating Speed
Barometric Pressure	108	Barometric Pressure
Fuel Rate	183	Engine Fuel Rate
Throttle position	51	Engine Throttle Valve 1 Position 1
Electrical Potential (Voltage)	168	Battery Potential / Power Input 1
Battery Potential (Voltage)	158	Keyswitch Battery Potential
Engine Oil Pressure	100	Engine Oil Pressure
Turbocharger Compressor Bypass Actuator 1 Position	3675	Engine Turbocharger Compressor Bypass Actuator 1 Position
Fuel Valve 1 Position	1442	Engine Fuel Valve 1 Position
Fuel Valve 2 Position	1443	Engine Fuel Valve 2 Position
Requested Fuel Valve 1 Position	1765	Engine Fuel Valve 1 Commanded Position
Requested Fuel Valve 2 Position	1766	Engine Fuel Valve 2 Commanded Position
Fuel Valve 1 Intake Absolute Pressure	1390	Engine Fuel Valve 1 Intake Absolute Pressure
Fuel Valve Differential Pressure	1391	Engine Fuel Valve 1 Differential Pressure
Air to Fuel Differential Pressure	1392	Engine Air to Fuel Differential Pressure
Desired Rated Exhaust Oxygen	1117	Engine Desired Rated Exhaust Oxygen
Desired Exhaust Oxygen	1118	Engine Desired Exhaust Oxygen
Actual Exhaust Oxygen	1119	Engine Actual Exhaust Oxygen
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed [1,2,3,4,5,6]	898	Engine Requested Speed/Speed Limit

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliNano^{NT}, 6 - InteliDrive Nano

Controller’s analog output for speed control configuration

Requested speed settings for InteliGen^{NT} or InteliSys^{NT}		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring for ADEM4 (2200, 2500 series)

Function	ECU J1 connector	Controller
CAN H	50	CAN1 (extension modules/J1939) – CAN H
CAN COM	42	CAN1 (extension modules/J1939) – CAN COM
CAN L	34	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	48,52,53,70	N/A
Battery - (negative)	61,63,65	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

Recommended wiring for ADEM3 (2300, 2800 series)

Function	ECU J1 connector	Controller
CAN H	50	CAN1 (extension modules/J1939) – CAN H
CAN COM	42	CAN1 (extension modules/J1939) – CAN COM
CAN L	34	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	48,52,53,70	N/A
Battery - (negative)	61,63,65	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	17	SG OUT
Analog Speed Control	3	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see ADEM (2300, 2500, 2800 series) on page 1**.

Note: *To enable speed control over CAN bus set Desired Speed Input Arrangement to "CAN Input" and Digital Speed Control Installed to "Not Installed" in Perkins EST program. Or make a loop on J1 connector pins 49 and 18.*

3.22 Scania engines support

ECU Type	Engine type
S6 Singlespeed S6 Allspeed	DC9 DI12 DC12 DC16 D9M DI12M DI16M
S8 Singlespeed S8 Allspeed	DC9 DC13 DC16

3.22.1 Engine type explanation

Engine Code	Meaning
Dxxx	Diesel fuel
xCxx	Intercooler: C - Air/Air I - Water/Air
xx12	Displacement
xxxxM	Marine

3.22.2 S6 Singlespeed

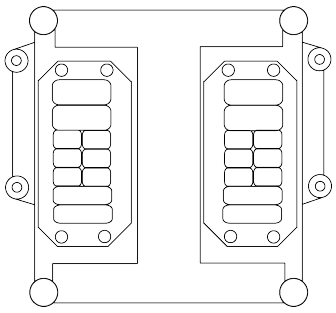


Image 3.63 S6

Controllers that support the S6

Refer to **Comparison table (page 23)**

Available parameters for singlespeed

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
APP Low Idle Switch	558	Accelerator Pedal 1 Low Idle Switch
APP Kickdown Switch	559	Accelerator Pedal Kickdown Switch

Low Engine Oil Pressure	-	Proprietary parameter.
High Engine Coolant Temp	-	Proprietary parameter.
PowerLost Due to HighTemp	-	Proprietary parameter.
Engine stop limit exceed	-	Proprietary parameter.
Generator Charge	-	Proprietary parameter.
Test Engine Lamp	-	Proprietary parameter.
Wait To Start Lamp	1081	Engine Wait to Start Lamp
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		

ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
Droop enable [1,2,3,4]	-	Proprietary parameter. Enable or disable droop function. The droop value is changeable with calibration parameter or with TSC-proprietary. The recommended source value for this command is Logical 0.
Torque enable	-	Proprietary parameter. The calculated output torque of the engine. The data is transmitted in indicated torque as a percent of reference engine torque. The engine percent torque value will not be less than zero and it includes the torque developed in the cylinders required to overcome friction. The recommended source value for this command is Logical 0.
Engine Start [1,2,3,4,5,6]	-	Proprietary parameter. The command used for engine running. The recommended source value for this command is Starter.
Emergency Engine Stop	-	Proprietary parameter. Normally used for engine emergency stop. When used it will set an error- / information code. The recommended source value for this command is Logical 0.
Engine Stop [1,2,3,4,5,6]	-	Proprietary parameter. Normally used for engine emergency stop. Engine Stop (without error code).
Nominal Speed 1 [1,2,3,4]	-	Choose nominal engine speed with these switches. NSSW1 / NSSW2 / Nominal speed 0 / 0 / Use changeable calibration parameter 1 / 0 / 1500 RPM 0 / 1 / 1800 RPM 1 / 1 / Low idle command
Nominal Speed 2 [1,2,3,4]	-	

Torque Limit 1	-	Choosing between 4 different torque limit curves (if available) TLSW1 / TLSW2 / Torque limit 0 / 0 / Highest torque limit curve. (Curve 0) 1 / 0 / Low torque limit curve. (Curve 1) 0 / 1 / User defined curve. (Curve 2) 1 / 1 / User defined curve. (Curve 3)
Torque Limit 2	-	
Exhaust brake floor switch	-	Proprietary parameter.
Exhaust brake - Brake Assist Switch	-	Proprietary parameter.
Idle Command	-	Proprietary parameter.
White smoke limit request	-	Proprietary parameter. For more information about this signal contact local Scania representative.
Parking Brake Switch	70	Parking Brake Switch
Cruise Control Enable Switch	596	Cruise Control Enable Switch
Brake Switch	597	Brake Switch
Clutch Switch	598	Clutch Switch
Cruise Control Coast Switch	600	Cruise Control Coast (Decelerate) Switch
Cruise Control Resume Switch	601	Cruise Control Resume Switch
Cruise Control Accelerate Switch	602	Cruise Control Accelerate Switch
Engine Test mode switch	966	Engine Diagnostic Test Mode Switch
Engine Shutdown Override Switch [1,2,3,4]	1237	Engine Shutdown Override Switch

ECU analog outputs (controller's inputs)

Configuration Name	SPN	J1939 Name
Accelerator Pedal Position	91	Accelerator Pedal Position 1
Percent Load	92	Engine Percent Load At Current Speed
Demand Torque	512	Driver's Demand Engine - Percent Torque
Actual Torque	513	Actual Engine - Percent Torque
Engine speed	190	Engine Speed
Nominal Friction Torque	514	Nominal Friction - Percent Torque
Coolant Temp	110	Engine Coolant Temperature
Engine Oil Temp	175	Engine Oil Temperature 1
Engine Oil Pressure	100	Engine Oil Pressure
Coolant Level	111	Engine Coolant Level 1
Fuel Rate	183	Engine Fuel Rate
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
CAN version of DLN2	-	Proprietary parameter.
Economy Speed Low	-	Proprietary parameter.
Economy Speed High	-	Proprietary parameter.

ECU analog inputs (controller's outputs)

Configuration Name	SPN	J1939 Name
Nominal speed offset [1,2,3,4,5,6]	-	Proprietary parameter.

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliNano^{NT}, 6 - InteliDrive Nano

Available parameters for singlespeed from ver.1794335

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
APP Low Idle Switch	558	Accelerator Pedal 1 Low Idle Switch
APP Kickdown Switch	559	Accelerator Pedal Kickdown Switch
Low Engine Oil Pressure	-	Proprietary parameter.
High Engine Coolant Temp	-	Proprietary parameter.
PowerLost Due to HighTemp	-	Proprietary parameter.
Engine stop limit exceed	-	Proprietary parameter.
Generator Charge	-	Proprietary parameter.
Test Engine Lamp	-	Proprietary parameter.
Diagnostic Status	-	Proprietary parameter.
New DTC	-	Proprietary parameter.
Wait To Start Lamp	1081	Engine Wait to Start Lamp
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		

ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
Droop enable [1,2,3,4]	-	Proprietary parameter. Enable or disable droop function. The droop value is changeable with calibration parameter or with TSC-proprietary. The recommended source value for this command is Logical 0.
Torque enable	-	Proprietary parameter. The calculated output torque of the engine. The data is transmitted in indicated torque as a percent of reference engine torque. The engine percent torque value will not be less than zero and it includes the torque developed in the cylinders required to overcome friction. The recommended source value for this command is Logical 0.
Engine Start [1,2,3,4,5,6]	-	Proprietary parameter. The command used for engine running. The recommended source value for this command is Starter.
Emergency Engine Stop	-	Proprietary parameter. Normally used for engine emergency stop. When used it will set an error- / information code. The recommended source value for this command is Logical 0.
Engine Stop [1,2,3,4,5,6]	-	Proprietary parameter. Normally used for engine emergency stop. Engine Stop (without error code).
Nominal Speed 1 [1,2,3,4]	-	Choose nominal engine speed with these switches. NSSW1 / NSSW2 / Nominal speed 0 / 0 / Use changeable calibration parameter 1 / 0 / 1500 RPM

Nominal Speed 2 [1,2,3,4]	-	0 1	1 1	1800 RPM Low idle command
Torque Limit 1	-	Choosing between 4 different torque limit curves (if available) TLSW1 0 1 0 1	TLSW2 0 0 1 1	Torque limit Highest torque limit curve. (Curve 0) Low torque limit curve. (Curve 1) User defined curve. (Curve 2) User defined curve. (Curve 3)
Torque Limit 2	-			
Exhaust brake floor switch	-	Proprietary parameter.		
Exhaust brake - Brake Assist Switch	-	Proprietary parameter.		
Idle Command	-	Proprietary parameter.		
White smoke limit request	-	Proprietary parameter. For more information about this signal contact local Scania representative.		
TSC1 Droop Enable	-	Proprietary parameter.		
Droop Inc	-	Proprietary parameter.		
Droop Dec	-	Proprietary parameter.		
Parking Brake Switch	70	Parking Brake Switch		
Cruise Control Enable Switch	596	Cruise Control Enable Switch		
Brake Switch	597	Brake Switch		
Clutch Switch	598	Clutch Switch		
Cruise Control Coast Switch	600	Cruise Control Coast (Decelerate) Switch		
Cruise Control Resume Switch	601	Cruise Control Resume Switch		
Cruise Control Accelerate Switch	602	Cruise Control Accelerate Switch		
Engine Test mode switch	966	Engine Diagnostic Test Mode Switch		
Engine Shutdown Override Switch [1,2,3,4]	1237	Engine Shutdown Override Switch		

ECU analog outputs (controller's inputs)

Configuration Name	**SPN**	**J1939 Name**
Accelerator Pedal Position	91	Accelerator Pedal Position 1
Percent Load	92	Engine Percent Load At Current Speed
Demand Torque	512	Driver's Demand Engine - Percent Torque
Actual Torque	513	Actual Engine - Percent Torque
Engine speed	190	Engine Speed
Nominal Friction Torque	514	Nominal Friction - Percent Torque
Coolant Temp	110	Engine Coolant Temperature
Engine Oil Temp	175	Engine Oil Temperature 1
Engine Oil Pressure	100	Engine Oil Pressure
Coolant Level	111	Engine Coolant Level 1
Fuel Rate	183	Engine Fuel Rate
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Battery Potential (Voltage)	158	Keyswitch Battery Potential
CAN version of DLN2	-	Proprietary parameter.
Single Speed Droop Value	-	Proprietary parameter.

ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Nominal speed offset 1,2,3,4,5,6	-	Proprietary parameter.
Requested Speed	-	Proprietary parameter.
Requested Droop	-	Proprietary parameter.

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliNano^{NT}, 6 - InteliDrive Nano

Controller's analog output for speed control configuration

Nominal speed offset settings for InteliGen^{NT} or InteliSys^{NT}		
Source	Speed Request	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A
Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Recommended wiring

Function	ECU B1 connector	8pin diagnostic connector	Controller
CAN H	9	6	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	10	7	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	1,6	1,3,4	N/A
Battery - (negative)	2,7	2,5	N/A
Key Switch	3	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	N/A	SG OUT
Analog Speed Control	N/A	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see S6 Singlespeed on page 1**.

3.22.3 S6 Allspeed

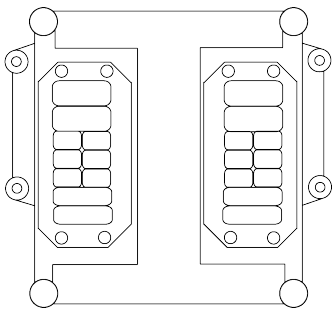


Image 3.64 S6

Controllers that support the S6

Refer to **Comparison table (page 23)**

Available parameters for allspeed

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
APP Low Idle Switch	558	Accelerator Pedal 1 Low Idle Switch
APP Kickdown Switch	559	Accelerator Pedal Kickdown Switch
Low Engine Oil Pressure	-	Proprietary parameter.
High Engine Coolant Temp	-	Proprietary parameter.
PowerLost Due to HighTemp	-	Proprietary parameter.
Engine stop limit exceed	-	Proprietary parameter.
Generator Charge	-	Proprietary parameter.
Test Engine Lamp	-	Proprietary parameter.
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
AP Low Idle Switch [3]	-	Proprietary parameter.
AP kickdown switch	-	Proprietary parameter.
Engine Start [3,6]	-	Proprietary parameter.
Emergency Engine Stop	-	Proprietary parameter.
Engine Stop [3,6]	-	Proprietary parameter.
Engine Control Allowed	-	Proprietary parameter.
Retarder Speed Control Off	-	Proprietary parameter.
Retarder Speed Control Set	-	Proprietary parameter.
CC-Off	-	Proprietary parameter.
Increased Speed Sw1 [3]		Choose between 4 different PTO (power take off) modes. ISSW1 / ISSW2 / PTO-mode 0 / 0 / Normal hand throttle 1 / 0 / Limited hand throttle 0 / 1 / Temporary changed low idle 1 / 1 / Locked engine speed
Increased Speed Sw2 [3]		
Torque Limit 1	-	Choosing between 4 different torque limit curves (if available) TLSW1 / TLSW2 / Torque limit 0 / 0 / Highest torque limit curve. (Curve 0) 1 / 0 / Low torque limit curve. (Curve 1) 0 / 1 / User defined curve. (Curve 2) 1 / 1 / User defined curve. (Curve 3)
Torque Limit 2	-	

Exhaust brake floor switch	-	Proprietary parameter.
Exhaust brake - Brake Assist Switch	-	Proprietary parameter.
Idle Command	-	Proprietary parameter.
White smoke limit request	-	Proprietary parameter.
Parking Brake Switch	70	Parking Brake Switch
Cruise Control Enable Switch	595	Cruise Control Active
Brake Switch	597	Brake Switch
Clutch Switch	598	Clutch Switch
Cruise Control Coast Switch	600	Cruise Control Coast (Decelerate) Switch
Cruise Control Resume Switch	601	Cruise Control Resume Switch
Cruise Control Accelerate Switch	602	Cruise Control Accelerate Switch
Engine Test mode switch	966	Engine Diagnostic Test Mode Switch
Engine Shutdown Override Switch 3	1237	Engine Shutdown Override Switch
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Accelerator Pedal Position	91	Accelerator Pedal Position 1
Percent Load	92	Engine Percent Load At Current Speed
Demand Torque	512	Driver's Demand Engine - Percent Torque
Actual Torque	513	Actual Engine - Percent Torque
Engine speed	190	Engine Speed
Nominal Friction Torque	514	Nominal Friction - Percent Torque
Coolant Temp	110	Engine Coolant Temperature
Engine Oil Temp	175	Engine Oil Temperature 1
Engine Oil Pressure	100	Engine Oil Pressure
Coolant Level	111	Engine Coolant Level 1
Fuel Rate	183	Engine Fuel Rate
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
CAN version of DLN2	-	Proprietary parameter.
Economy Speed Low	-	Proprietary parameter.
Economy Speed High	-	Proprietary parameter.
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed	898	Engine Requested Speed/Speed Limit
Accelerator Pedal Position [3,6]	-	Proprietary parameter. Nominal speed offset (if Torque enable is “Engine speed control”). Increase or decrease the reference speed (with or without droop) in relation to nominal speed. The offset range is changeable with calibration parameters. (normally ± 120 rpm, 0% = -120 rpm and 100% = +120 rpm).

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliNano^{NT}, 6 - InteliDrive Nano

Available parameters for allspeed from ver.1794335

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
APP Low Idle Switch	558	Accelerator Pedal 1 Low Idle Switch
APP Kickdown Switch	559	Accelerator Pedal Kickdown Switch
Low Engine Oil Pressure	-	Proprietary parameter.
High Engine Coolant Temp	-	Proprietary parameter.
PowerLost Due to HighTemp	-	Proprietary parameter.
Engine stop limit exceed	-	Proprietary parameter.
Generator Charge	-	Proprietary parameter.
Test Engine Lamp	-	Proprietary parameter.
Diagnostic Status	-	Proprietary parameter.
New DTC	-	Proprietary parameter.
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		

ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
AP Low Idle Switch	-	Proprietary parameter.
AP kickdown switch	-	Proprietary parameter.
Engine Start [3,6]	-	Proprietary parameter.
Emergency Engine Stop	-	Proprietary parameter.
Engine Stop [3,6]	-	Proprietary parameter.
Engine Control Allowed	-	Proprietary parameter.
Retarder Speed Control Off	-	Proprietary parameter.
Retarder Speed Control Set	-	Proprietary parameter.
CC-Off	-	Proprietary parameter.
Increased Speed Sw1 [3]	-	Choose between 4 different PTO (power take off) modes. ISSW1 / ISSW2 / PTO-mode 0 / 0 / Normal hand throttle 1 / 0 / Limited hand throttle 0 / 1 / Temporary changed low idle 1 / 1 / Locked engine speed
Increased Speed Sw2 [3]	-	
Torque Limit 1	-	Choosing between 4 different torque limit curves (if available) TLSW1 / TLSW2 / Torque limit 0 / 0 / Highest torque limit curve. (Curve 0) 1 / 0 / Low torque limit curve. (Curve 1) 0 / 1 / User defined curve. (Curve 2) 1 / 1 / User defined curve. (Curve 3)
Torque Limit 2	-	

Exhaust brake floor switch	-	Proprietary parameter.
Exhaust brake - Brake Assist Switch	-	Proprietary parameter.
Idle Command	-	Proprietary parameter.
White smoke limit request	-	Proprietary parameter.
Parking Brake Switch	70	Parking Brake Switch
Cruise Control Enable Switch	595	Cruise Control Active
Brake Switch	597	Brake Switch
Clutch Switch	598	Clutch Switch
Cruise Control Coast Switch	600	Cruise Control Coast (Decelerate) Switch
Cruise Control Resume Switch	601	Cruise Control Resume Switch
Cruise Control Accelerate Switch	602	Cruise Control Accelerate Switch
Engine Test mode switch	966	Engine Diagnostic Test Mode Switch
Engine Shutdown Override Switch [3]	1237	Engine Shutdown Override Switch
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Accelerator Pedal Position	91	Accelerator Pedal Position 1
Percent Load	92	Engine Percent Load At Current Speed
Demand Torque	512	Driver's Demand Engine - Percent Torque
Actual Torque	513	Actual Engine - Percent Torque
Engine speed	190	Engine Speed
Nominal Friction Torque	514	Nominal Friction - Percent Torque
Coolant Temp	110	Engine Coolant Temperature
Engine Oil Temp	175	Engine Oil Temperature 1
Engine Oil Pressure	100	Engine Oil Pressure
Coolant Level	111	Engine Coolant Level 1
Fuel Rate	183	Engine Fuel Rate
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Battery Potential (Voltage)	158	Keyswitch Battery Potential
CAN version of DLN2	-	Proprietary parameter.
Single Speed Droop Value	-	Proprietary parameter.
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Accelerator Pedal Position [3,6]	-	Proprietary parameter. Nominal speed offset (if Torque enable is “Engine speed control”). Increase or decrease the reference speed (with or without droop) in relation to nominal speed. The offset range is changeable with calibration parameters. (normally ± 120 rpm, 0% = -120 rpm and 100% = +120 rpm)
Requested Speed	898	Engine Requested Speed/Speed Limit

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliNano^{NT}, 6 - InteliDrive Nano

Controller's analog output for speed control configuration

Accelerator Pedal Position settings for InteliGen^{NT} or InteliSys^{NT}		
Source	Speed Request	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A
Accelerator Pedal Position settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Recommended wiring

Function	ECU B1 connector	8pin diagnostic connector	Controller
CAN H	9	6	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	10	7	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	1,6	1,3,4	N/A
Battery - (negative)	2,7	2,5	N/A
Key Switch	3	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	N/A	SG OUT
Analog Speed Control	N/A	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see S6 Allspeed on page 1**.

3.22.4 S8 Singlespeed

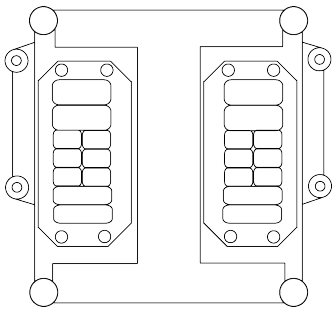


Image 3.65 S8

Controllers that support the S8

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
APP Low Idle Switch	558	Accelerator Pedal 1 Low Idle Switch
APP Kickdown Switch	559	Accelerator Pedal Kickdown Switch
Acceleration Rate Limit	2979	Vehicle Acceleration Rate Limit Status
Low Engine Oil Level	-	Proprietary parameter.
High Engine Oil Level	-	Proprietary parameter.
Low Engine Oil Pressure	-	Proprietary parameter.
High Engine Coolant Temp	-	Proprietary parameter.
PowerLost Due to HighTemp	-	Proprietary parameter.
Engine stop limit exceed	-	Proprietary parameter.
Low Urea Level	-	Proprietary parameter.
Generator Charge	-	Proprietary parameter.
Test Engine Lamp	-	Proprietary parameter.
Diagnostic Status	-	Proprietary parameter.
New DTC	-	Proprietary parameter.
Incorrect Driver Init Engine Sd	-	Proprietary parameter.
GasLeakage	-	Proprietary parameter.
Engine Air Filter Clogged	-	Proprietary parameter.
Afterrun Status	-	Proprietary parameter.
Wait To Start Lamp	1081	Engine Wait to Start Lamp
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		

ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
Droop enable [1,2,3,4]	-	Proprietary parameter.
Torque enable	-	Proprietary parameter.
Engine Start [1,2,3,4,5,6]	-	Proprietary parameter.
Emergency Engine Stop	-	Proprietary parameter.
Engine Stop [1,2,3,4,5,6]	-	Proprietary parameter.
Nominal speed switch 1 [1,2,3,4]	-	Choose nominal engine speed with these switches. NSSW1 / NSSW2 / Nominal speed 0 / 0 / Use changeable calibration parameter 1 / 0 / 1500 RPM 0 / 1 / 1800 RPM 1 / 1 / Low idle command
Nominal speed switch 2 [1,2,3,4]	-	

Torque Limit 1	-	Choosing between 4 different torque limit curves (if available)		
		TLSW1	TLSW2	Torque limit
		0	0	Highest torque limit curve. (Curve 0)
Torque Limit 2	-	1	0	Low torque limit curve. (Curve 1)
		0	1	User defined curve. (Curve 2)
		1	1	User defined curve. (Curve 3)
Exhaust brake floor switch	-	Proprietary parameter.		
Exhaust brake - Brake Assist Switch	-	Proprietary parameter.		
Idle Command	-	Proprietary parameter.		
White smoke limit request	-	Proprietary parameter.		
Retarder Selection	-	Proprietary parameter.		
Shutdown Override Switch	1237	Engine Shutdown Override Switch		
DPF Manual Inhibit	-	Proprietary parameter.		

ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Accelerator Pedal Position	91	Accelerator Pedal Position 1
Percent Load	92	Engine Percent Load At Current Speed
Demand Torque	512	Driver's Demand Engine - Percent Torque
Actual Torque	513	Actual Engine - Percent Torque
Engine speed	190	Engine Speed
Nominal Friction Torque	514	Nominal Friction - Percent Torque
Coolant Temp	110	Engine Coolant Temperature
Engine Oil Temp	175	Engine Oil Temperature 1
Engine Oil Level	98	Engine Oil Level
Engine Oil Pressure	100	Engine Oil Pressure
Coolant Level	111	Engine Coolant Level 1
Fuel Rate	183	Engine Fuel Rate
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Battery Potential	158	Keyswitch Battery Potential
Single Speed Droop Value	-	Proprietary parameter.
Urea Level	-	Proprietary parameter.
Malfunction Indicator	-	Proprietary parameter.
Oil Level Measuring Status	-	Proprietary parameter.
Starter Motor Normal Temp	-	Proprietary parameter.
Urea level inducement state	-	Proprietary parameter.

ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed	898	Engine Requested Speed/Speed Limit

APP - Nominal Speed Offset 1,2,3,4,5,6	-	Proprietary parameter. Nominal speed offset (if Torque enable is “Engine speed control”). Increase or decrease the reference speed (with or without droop) in relation to nominal speed. The offset range is changeable with calibration parameters. (normally ± 120 rpm, 0% = -120 rpm and 100% = +120 rpm)
DPF Manual Activation	-	Proprietary parameter. 0 – No request 1 – Invalidated manual regeneration request 2 - Manual regeneration request 3 – 13 – Reserved 14 – Error 15 – Don’t care

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliNano^{NT}, 6 - InteliDrive Nano

Controller’s analog output for speed control configuration

APP - Nominal Speed Offset settings for InteliGen^{NT} or InteliSys^{NT}		
Source	Speed Request	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A
APP - Nominal Speed Offset settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Recommended wiring

Function	ECU connector	8pin diagnostic connector	Controller
CAN H	N/A	6	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	N/A	7	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	N/A	1,3,4	N/A
Battery - (negative)	N/A	2,5	N/A
Key Switch	N/A	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	N/A	SG OUT
Analog Speed Control	N/A	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see S8 Singlespeed on page 1**.

3.22.5 S8 Allspeed

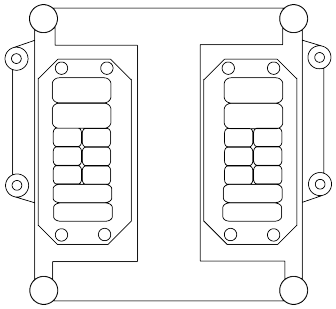


Image 3.66 S8

Controllers that support the S8

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
APP Low Idle Switch	558	Accelerator Pedal 1 Low Idle Switch
APP Kickdown Switch	559	Accelerator Pedal Kickdown Switch
Acceleration Rate Limit	2979	Vehicle Acceleration Rate Limit Status
Low Engine Oil Level	-	Proprietary parameter.
High Engine Oil Level	-	Proprietary parameter.
Low Engine Oil Pressure	-	Proprietary parameter.
High Engine Coolant Temp	-	Proprietary parameter.
PowerLost Due to HighTemp	-	Proprietary parameter.
Engine stop limit exceed	-	Proprietary parameter.
Low Urea Level	-	Proprietary parameter.
Generator Charge	-	Proprietary parameter.
Test Engine Lamp	-	Proprietary parameter.
Diagnostic Status	-	Proprietary parameter.
New DTC	-	Proprietary parameter.
Incorrect Driver Init Engine Sd	-	Proprietary parameter.
GasLeakage	-	Proprietary parameter.
Engine Air Filter Clogged	-	Proprietary parameter.
Afterrun Status	-	Proprietary parameter.
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)

Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
AP Low Idle Switch Released [3]	-	Proprietary parameter.
Engine Start [3,6]	-	Proprietary parameter.
Emergency Engine Stop	-	Proprietary parameter.
Engine Stop [3,6]	-	Proprietary parameter.
Lamp Test	-	Proprietary parameter.
Idle Command	-	Proprietary parameter.
White smoke limit request	-	Proprietary parameter.
Shutdown Override Switch	1237	Engine Shutdown Override Switch
DPF Manual Inhibit	-	Proprietary parameter.
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Accelerator Pedal Position	91	Accelerator Pedal Position 1
Percent Load	92	Engine Percent Load At Current Speed
Demand Torque	512	Driver's Demand Engine - Percent Torque
Actual Torque	513	Actual Engine - Percent Torque
Engine speed	190	Engine Speed
Nominal Friction Torque	514	Nominal Friction - Percent Torque
Coolant Temp	110	Engine Coolant Temperature
Engine Oil Temp	175	Engine Oil Temperature 1
Engine Oil Level	98	Engine Oil Level
Engine Oil Pressure	100	Engine Oil Pressure
Coolant Level	111	Engine Coolant Level 1
Fuel Rate	183	Engine Fuel Rate
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Battery Potential	158	Keyswitch Battery Potential
Single Speed Droop Value	-	Proprietary parameter.
Urea Level	-	Proprietary parameter.
Malfunction Indicator	-	Proprietary parameter.
Oil Level Measuring Status	-	Proprietary parameter.
Starter Motor Normal Temp	-	Proprietary parameter.
Urea level inducement state	-	Proprietary parameter.
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed	898	Engine Requested Speed/Speed Limit

Accelerator Pedal Position [3,6]	-	Proprietary parameter. Nominal speed offset (if Torque enable is “Engine speed control”). Increase or decrease the reference speed (with or without droop) in relation to nominal speed. The offset range is changeable with calibration parameters. (normally ± 120 rpm, 0% = -120 rpm and 100% = +120 rpm)
DPF Manual Activation	-	Proprietary parameter. 0 – No request 1 – Invalidated manual regeneration request 2 - Manual regeneration request 3 – 13 – Reserved 14 – Error 15 – Don’t care

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliNano^{NT}, 6 - InteliDrive Nano

Controller’s analog output for speed control configuration

APP - Nominal Speed Offset settings for InteliGen^{NT} or InteliSys^{NT}		
Source	Speed Request	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

APP - Nominal Speed Offset settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Recommended wiring

Function	ECU connector	8pin diagnostic connector	Controller
CAN H	N/A	6	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	N/A	7	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	N/A	1,3,4	N/A
Battery - (negative)	N/A	2,5	N/A
Key Switch	N/A	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	N/A	SG OUT
Analog Speed Control	N/A	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see S8 AllSpeed on page 1**.

3.23 SISU engines support

ECU Type	Engine type
EEM2	xxDxx
EEM3	xxCxx

3.23.1 Engine type explanation

Engine Code	Meaning
74xxx	Cylinder volume in 0.1 liters
xxCxx	C - Common rail D - Bosch VP 44/30 solenoid controlled injection pumps
xxxTx	Turbocharged
xxxxA	Air-to-air intercooler

3.23.2 EEM2 or EEM3

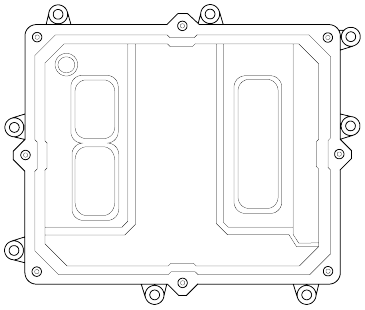


Image 3.67 EEM3

Controllers that support the EEM2 or EEM3

Refer to **Comparison table (page 23)**

Available parameters for "Gen-set"

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
StopLamp[1,2,3,4,5,6,7]	623	Red Stop Lamp
WarningLamp[1,2,3,4,5,6,7]	624	Amber Warning Lamp
ProtectLamp	987	Protect Lamp
WaitStartLamp[1,2,3,4,7]	1081	Engine Wait to Start Lamp
MalfunctLamp	1213	Malfunction Indicator Lamp
FlashMalfunct	3038	Flash Malfunction Indicator Lamp
FFlashMalfunct	3038	Fast Flash Malfunction Indicator Lamp
FlashRed[1,2,3,4,7]	3039	Flash Red Stop Lamp (RSL)
FFlashRed[1,2,3,4,7]	3039	Fast Flash Red Stop Lamp (RSL)

FlashWarning[1,2,3,4,7]	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning[1,2,3,4,7]	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect	3041	Flash Protect Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
Start Request[1,2,3,4,5,6,7]		Start Request
Stop Request[1,2,3,4,5,6,7]		Stop Request
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Load[1,2,3,4,5,6,7]	92	Engine Percent Load At Current Speed
P-FuelDelivery	94	Engine Fuel Delivery Pressure
P-Oil[1,2,3,4,5,6,7]	100	Engine Oil Pressure
P-Intake[1,2,3,4,7]	102	Engine Intake Manifold #1 Pressure
T-IntManifold[1,2,3,4,7]	105	Engine Intake Manifold 1 Temperature
T-Coolant[1,2,3,4,5,6,7]	110	Engine Coolant Temperature
P-Fuel1Inj1*	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
P-Fuel1Inj1	157	Engine Fuel 1 Injector Metering Rail 1 Pressure (backward FW's compatible)
KeySwitch	158	Key Switch Battery Potential
T-Fuel	174	Engine Fuel 1 Temperature 1
T-Oil	175	Engine Oil Temperature 1
FuelRate[1,2,3,4,7]	183	Engine Fuel Rate
EngineSpeed[1,2,3,4,5,6,7]	190	Engine Speed
TorqueActual	513	Actual Engine - Percent Torque
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Spd-Requested[1,2,3,4,5,6,7]	898	Engine Requested Speed/Speed Limit
DroopAccelrtr1	2881	Engine Droop Accelerator 1 Select

*The parameter requires extended controller's support. Please refer controller's manual for further information.

Supported parameter by the controllers configured by NanoEdit, DriveEdit, LiteEdit PC or InteliConfigsoftware:

1 - InteliLite[NT], 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact[NT], 5 - InteliNano[NT], 6 - InteliDrive Nano , 7 - InteliGen200, InteliGen500

Available parameters for "Propulsion"

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
StopLamp[1,2,3,4,5,6,7]	623	Red Stop Lamp
WarningLamp[1,2,3,4,5,6,7]	624	Amber Warning Lamp
ProtectLamp	987	Protect Lamp
MalfunctLamp	1213	Malfunction Indicator Lamp
FlashMalfunct	3038	Flash Malfunction Indicator Lamp
FFlashMalfunct	3038	Fast Flash Malfunction Indicator Lamp
FlashRed[1,2,3,4,7]	3039	Flash Red Stop Lamp (RSL)
FFlashRed[1,2,3,4,7]	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning[1,2,3,4,7]	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning[1,2,3,4,7]	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect	3041	Flash Protect Lamp

ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
Start Request[1,2,3,4,5,6,7]		Start Request
Stop Request[1,2,3,4,5,6,7]		Stop Request

ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Load[1,2,3,4,5,6,7]	92	Engine Percent Load At Current Speed
P-FuelDelivery	94	Engine Fuel Delivery Pressure
P-Oil[1,2,3,4,5,6,7]	100	Engine Oil Pressure
P-Intake[1,2,3,4,7]	102	Engine Intake Manifold #1 Pressure
T-IntManifold[1,2,3,4,7]	105	Engine Intake Manifold 1 Temperature
T-Coolant[1,2,3,4,5,6,7]	110	Engine Coolant Temperature
P-Fuel1Inj1*	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
KeySwitch	158	Key Switch Battery Potential
T-Fuel	174	Engine Fuel 1 Temperature 1
FuelRate[1,2,3,4,7]	183	Engine Fuel Rate
EngineSpeed[1,2,3,4,5,6,7]	190	Engine Speed
TorqueActual	513	Actual Engine - Percent Torque

ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Spd-Requested[1,2,3,4,5,6,7]	898	Engine Requested Speed/Speed Limit
DroopAccelrtr1	2881	Engine Droop Accelerator 1 Select

*The parameter requires extended controller's support. Please refer controller's manual for further information.

Supported parameter by the controllers configured by NanoEdit, DriveEdit, LiteEdit PC or InteliConfigsoftware:
1 - InteliLite[NT], 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact[NT], 5 - InteliNano[NT], 6 - InteliDrive Nano , 7 - InteliGen200, InteliGen500

Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for InteliGen[NT], InteliSys[NT] or InteliSys Gas		
Source	SpeedReq RPM[1]	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

[1] If a custom source is used (PLC output, analog input, etc.) the value has to have exactly one decimal point (0.0 - 3000.0).

Recommended wiring for EEM2

Function	ECU 31pin connector	Controller
CAN H	30	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	31	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	1,3,8,13	N/A
Battery - (negative)	2,4,7,9	N/A
Key Switch	5	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

Recommended wiring for EEM3

Function	ECU A2 89pin connector	Controller
CAN H	53	CAN1 (extension modules/J1939) – CAN H
CAN COM	51	CAN1 (extension modules/J1939) – CAN COM
CAN L	52	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	1,7,12,13	N/A
Battery - (negative)	3,9,14,15	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes see **SISU EEM3 Propulsion Fault Codes (page 210)**

3.23.3 SISU EEM3 Propulsion Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
153	P-Crankcase

157	P-Fuel1Inj1
168	Battery
172	T-AirIntake
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN
515	Spd-Desired
620	5VSupply
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
898	Spd-Requested
970	AuxShutdown
971	DerateSw
1109	EPS SDApproach
1110	EPS Shutdown
1136	T-ECU
1485	ECMMainRelay
9006	VehicleCANoff
9008	IDmoduleCANoff
9010	P-Ambient
9021	5VSupply 1
9022	5VSupply 2
9023	5VSupply 3
9024	WaterInFuelSpp
9025	SelfTestWtchdg
9026	V-SelfTestHi
9027	V-SelfTestLo
9030	MainRelay1Shrt
9031	MainRelay2Shrt
9032	MainRelay3Shrt
9033	MainRelay
9034	MainRelayDfct

9035	NormalRecovery
9036	FullRestart
9070	Spd-CrankSens
9071	Spd-CrankSens
9072	Spd-CrankSens
9080	Spd-CamSensor
9081	Spd-CamSensor
9082	Spd-CamSensor
9083	Spd-CamSensor
9090	Spd-EngineErr
9107	InvalidECUAddr
9131	SolenoidValve1
9132	SolenoidValve2
9133	SolenoidValve3
9134	SolenoidValve4
9135	SolenoidValve5
9136	SolenoidValve6
9140	Throttle2Sens
9141	Throttle3Sens
9150	P-Rail
9151	P-ReliefVlv
9152	P-FuelFiltr
9153	P-FuelFiltr
9174	MPROP
9230	EngSpecMismtch
9231	EngSNMismatch
9233	IDM-NotPresent
9234	IDM-NotComptbl
9235	IDModule
9236	IDM-MemDefect
9237	IDM-Watchdog
9238	IDM-Brownout
9239	EngSpecMissing
9240	EngSNMissing
9241	IDM-NotPresent
9242	GeneratedByPTE
9243	MaxECUByPTE
9305	BadDIConfig
9306	PTO InputError
9310	ExternalFlt1
9311	ExternalFlt2
9312	TorqCtrlInput

3.24 Steyr engines support

ECU Type	Engine type
M1	Marine engines

3.24.1 M1

Controllers that support the M1

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine Warning Light	-	Proprietary parameter.
Preheating Control Light	-	Proprietary parameter.
Engine Oil Pressure Light	-	Proprietary parameter.
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine speed	190	Engine Speed
Accelerator Position	91	Accelerator Pedal Position 1
Percent Load	92	Engine Percent Load At Current Speed
Engine Oil Pressure	100	Engine Oil Pressure
Coolant Temp	110	Engine Coolant Temperature
Fuel Rate	183	Engine Fuel Rate
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Exhaust Gas Temp	173	Engine Exhaust Temperature
Keyswitch Battery Potential	158	Keyswitch Battery Potential
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**

Recommended wiring

No documentation available so far!

3.25 VM engines support

ECU Type	Engine type
EDC	Industrial and marine

3.25.1 EDC

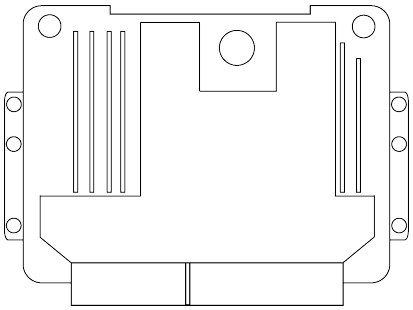


Image 3.68 EDC

Controllers that support the EDC

Refer to **Comparison table (page 23)**

Available parameters for "industrial"

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Wait To Start Lamp	1081	Engine Wait to Start Lamp
Water in Fuel	97	Water In Fuel Indicator 1
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		
PTO Enable Switch	980	Engine PTO Governor Enable Switch
PTO Cost/Decelerate Switch	983	Engine PTO Governor Coast/Decelerate Switch
PTO Resume Switch	982	Engine PTO Governor Resume Switch
PTO Accelerate Switch	981	Engine PTO Governor Accelerate Switch
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
Stop Request [1,2,3,4,5,6]	-	Proprietary parameter.
Parking Brake Switch	70	Parking Brake Switch

Cruise Control Enable Switch	596	Cruise Control Enable Switch
Brake Switch	597	Brake Switch
Clutch Switch	598	Clutch Switch
Cruise Control Coast Switch	600	Cruise Control Coast (Decelerate) Switch
Cruise Control Resume Switch	601	Cruise Control Resume Switch
Cruise Control Accelerate Switch	602	Cruise Control Accelerate Switch
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine speed	190	Engine Speed
Actual Torque	513	Actual Engine - Percent Torque
Demand Torque	512	Driver's Demand Engine - Percent Torque
Coolant Temp	110	Engine Coolant Temperature
Fuel Temp	174	Engine Fuel Temperature 1
EngineOil Temp	175	Engine Oil Temperature 1
Barometric Pressure	108	Barometric Pressure
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
PartTrapSootLoad	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
PartTrapAshLoad	3720	Aftertreatment 1 Diesel Particulate Filter Ash Load Percent
Estimated Percent Fan Speed	975	Engine Fan 1 Estimated Percent Speed
Accelerator Pedal Position	91	Accelerator Pedal Position 1
Percent Load	92	Engine Percent Load At Current Speed
Fuel Rate	183	Engine Fuel Rate
Battery Potential (Voltage)	158	Keyswitch Battery Potential
Fuel Delivery Pressure	94	Engine Fuel Delivery Pressure
Engine Oil Pressure	100	Engine Oil Pressure
Exhaust Gas Temperature	173	Engine Exhaust Temperature
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed [1,2,3,4,5,6]	898	Engine Requested Speed/Speed Limit
PTO State	976	PTO Governor State

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliNano^{NT}, 6 - InteliDrive Nano

Available parameters for "marine"

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Wait To Start Lamp	1081	Engine Wait to Start Lamp
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp

Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		
PTO Enable Switch	980	Engine PTO Governor Enable Switch
PTO Cost/Decelerate Switch	983	Engine PTO Governor Coast/Decelerate Switch
PTO Resume Switch	982	Engine PTO Governor Resume Switch
PTO Accelerate Switch	981	Engine PTO Governor Accelerate Switch
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
Stop Request	-	Proprietary parameter.
Parking Brake Switch	70	Parking Brake Switch
Cruise Control Enable Switch	596	Cruise Control Enable Switch
Brake Switch	597	Brake Switch
Clutch Switch	598	Clutch Switch
Cruise Control Coast Switch	600	Cruise Control Coast (Decelerate) Switch
Cruise Control Resume Switch	601	Cruise Control Resume Switch
Cruise Control Accelerate Switch	602	Cruise Control Accelerate Switch
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine speed	190	Engine Speed
Actual Torque	513	Actual Engine - Percent Torque
Demand Torque	512	Driver's Demand Engine - Percent Torque
Coolant Temp	110	Engine Coolant Temperature
Fuel Temp	174	Engine Fuel Temperature 1
EngineOil Temp	175	Engine Oil Temperature 1
Barometric Pressure	108	Barometric Pressure
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Estimated Percent Fan Speed	975	Engine Fan 1 Estimated Percent Speed
Accelerator Pedal Position	91	Accelerator Pedal Position 1
Percent Load	92	Engine Percent Load At Current Speed
Fuel Rate	183	Engine Fuel Rate
Battery Potential (Voltage)	158	Keyswitch Battery Potential
Fuel Delivery Pressure	94	Engine Fuel Delivery Pressure
Engine Oil Pressure	100	Engine Oil Pressure
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed	898	Engine Requested Speed/Speed Limit
PTO State	976	PTO Governor State

Controller's analog output for speed control configuration

Requested speed settings for InteliGen^{NT} or InteliSys^{NT}		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring

Function	ECU connector	Controller
CAN H	62	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	83	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	1,5	N/A
Battery - (negative)	2,4,6	N/A
Key Switch	28	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see EDC on page 1**.

3.25.2 M1

Image 3.69 M1

Controllers that support the M1

	Selection in PC software
InteliSys^{NT} or InteliGen^{NT}	Steyr M1
InteliDrive DCU or InteliDrive Mobile	
InteliDrive Lite	not supported
InteliLite^{NT} or InteliCompact^{NT}	not supported
InteliNano^{NT}	not supported
InteliDrive Nano	not supported

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine Warning Light	-	Proprietary parameter.
Preheating Control Light	-	Proprietary parameter.
Engine Oil Pressure Light	-	Proprietary parameter.
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine speed	190	Engine Speed
Accelerator Position	91	Accelerator Pedal Position 1
Percent Load	92	Engine Percent Load At Current Speed
Engine Oil Pressure	100	Engine Oil Pressure
Coolant Temp	110	Engine Coolant Temperature
Fuel Rate	183	Engine Fuel Rate
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Exhaust Gas Temp	173	Engine Exhaust Temperature
Keyswitch Battery Potential	158	Keyswitch Battery Potential
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**

Recommended wiring

No documentation available so far!

3.26 Volvo engines support

ECU Type	Engine type
EDC3 Singlespeed (EMS1) EDC3 Allspeed (EMS1)	D12
EMS2	D9, D16, D724
EDC4 (EMR2)	D5, D7

3.26.1 Engine type explanation

Engine Code	Meaning
Txxxxxxxx	Turbocharged
xAxxxxxxx	Air to air intercooled
xxDxxxxxx	Diesel fuel
xxx16xxxx	Displacement indication
xxxxx3xxx	Generation
xxxxxx0xx	Version
xxxxxxxGx	Generator drive
xxxxxxxxE	Emission controlled

Note: *Standalone connection (hardwired speed potentiometer). On D12 industrial gen-set engines it's possible to connect standalone connection. If there is a ComAp panel connected via CAN bus during power up the engine will detect this and will be controlled via CAN bus. But if the ComAp panel is dead during power up the engine and if there is connected a potentiometer on standalone connector the engine will detect this and will run in stand alone mode.*

3.26.2 Volvo Singlespeed EDC3 / EMS1 / EMS2

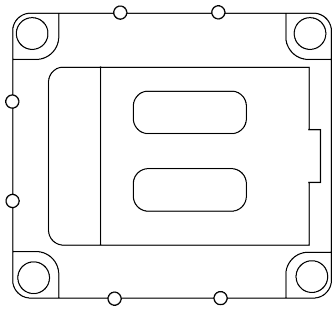


Image 3.70 EMS2

Controllers that support the EMS2

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Preheat Indication	-	Proprietary parameter. The status of the preheat relay.
Running Indication	-	Proprietary parameter. The running status of the engine.
Overspeed Alarm	-	Proprietary parameter. Status of the (virtual) overspeed alarm switch.
Oil Pressure Alarm	-	Proprietary parameter. The status of the (virtual) oil pressure alarm switch.
Oil Temperature Alarm	-	Proprietary parameter. The status of the (virtual) oil temperature alarm switch.
Coolant Temperature	-	Proprietary parameter. The status of the (virtual) coolant temperature alarm switch.
Coolant Level Alarm	-	Proprietary parameter. The status of the coolant level alarm switch.
Charge Alarm	-	Proprietary parameter. The status of the (virtual) charge alarm switch.
Buzzer	-	Proprietary parameter. Controls the buzzer.
EngineOil Filter Diff.Press	-	Proprietary parameter. The status of the engine oil filters differential pressure alarm.
Fuel Pressure Alarm	-	Proprietary parameter. The status of the Fuel pressure alarm.
Override Indication	-	Proprietary parameter. The status of the engine protection override.
General Lamptest	-	Proprietary parameter. Controls the general lamptest.
Buzzer/Lamptest	-	Proprietary parameter. Controls the buzzertest / lamptest.
EMS DiagnoseYellowLamp	-	Proprietary parameter. The status of the yellow diagnose lamp of the EMS (Mirror of PID 44, J1587).
EMS DiagnoseRedLamp	-	Proprietary parameter. The status of the red diagnose lamp of the EMS (Mirror of PID 44, J1587)
Primary Bat.Status	-	Proprietary parameter. Status of the primary battery circuit.
Secondary Bat.Status	-	Proprietary parameter. Status of the secondary battery circuit.
15 Fuse Status	-	Proprietary parameter. The of the 15 supply fuse.
30 Fuse Status	-	Proprietary parameter. The of the 30 supply fuse.
EMS Fuse Status	-	Proprietary parameter. The of the EMS supply fuse.
Extra Fuse Status	-	Proprietary parameter. The of the extra supply fuse.
Water in Fuel	97	Water In Fuel Indicator 1
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp

Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		
Wait To Start Lamp	1081	Engine Wait to Start Lamp
Shutdown Engine	1110	Engine Protection System has Shutdown Engine
Approaching Shutdown	1109	Engine Protection System Approaching Shutdown

ECU binary inputs (controller's outputs - commands)

Configuration Name	SPN	J1939 Name
Start Request [1,2,3,4,5,6]	-	Proprietary parameter. The command used for engine running. The recommended source value for this command is Starter.
Stop Request [1,2,3,4,5,6]	-	Proprietary parameter. The command for normal stopping of the engine. The recommended source value for this command is Stop pulse.
Idle Speed Select [1,2,3,4]	-	Proprietary parameter. The idle/rated switch allows commanding the engine between idle speed and rated speed. The recommended source value for this command is Idle/Nominal.
Frequency Select [1,2,3,4,5,6]	-	Proprietary parameter.
Preheat Request [1,2,3,4]	-	Proprietary parameter. Status of the Preheat request. The recommended source value for this command is Logical 0.
Fuel disable request	-	Proprietary parameter.

ECU analog outputs (controller's inputs)

Configuration Name	SPN	J1939 Name
Engine speed	190	Engine Speed
Actual Torque	513	Actual Engine - Percent Torque
Demand Torque	512	Driver's Demand Engine - Percent Torque
Accelerator Pedal Position	91	Accelerator Pedal Position 1
Percent Load	92	Engine Percent Load At Current Speed
Fuel Delivery Pressure	94	Engine Fuel Delivery Pressure
Engine Oil Level	98	Engine Oil Level
Engine Oil Pressure	100	Engine Oil Pressure
Crankcase Pressure	101	Engine Crankcase Pressure 1
Coolant Pressure	109	Engine Coolant Pressure 1
Coolant Level	111	Engine Coolant Level 1
Coolant Temp	110	Engine Coolant Temperature
Fuel Temp	174	Engine Fuel Temperature 1
Oil Temp	175	Engine Oil Temperature 1
Fuel Rate	183	Engine Fuel Rate
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Air Intake Pressure	106	Engine Intake Air Pressure
Exhaust Gas Temp	173	Engine Exhaust Temperature

Battery Potential	158	Keyswitch Battery Potential
Idle engine speed	-	Proprietary parameter.
Maximum engine speed	-	Proprietary parameter.
DEF Tank 1 Level	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank Level
DEF Tank 1 Low Level Indicator	5245	Aftertreatment Selective Catalytic Reduction Operator Inducement Active
Operator Inducement Severity	5246	Aftertreatment SCR Operator Inducement Severity
EngOil Filter Diff.Press	99	Engine Oil Filter Differential Pressure
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed	898	Engine Requested Speed/Speed Limit
Accelerator Pedal Position 1,2,3,4,5,6	-	Proprietary parameter.

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliNano^{NT}, 6 - InteliDrive Nano

Controller's analog output for speed control configuration

Requested speed settings for InteliGen^{NT} or InteliSys^{NT}		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A
Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring

Function	ECU connector	8pin diagnostic connector	Controller
CAN H	N/A	1	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	N/A	2	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	N/A	4	N/A
Battery - (negative)	N/A	3	N/A
Key Switch	N/A	5	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	N/A	SG OUT
Analog Speed Control	N/A	N/A	SG COM
Stop request	N/A	6	Any binary output configured as **inverted** ECUCommError

Note: *If the engine doesn't crank, check the state of engine mounted auxiliary stop device.*

> **IMPORTANT: It is important that there is no continuous active stop signal on pin 6. The active stop signal depends on the configuration and represents either +24VDC or GND is present on the pin 6.**
> **If there is a constant active stop signal a number of problems will occur:**
> **It is impossible to change parameters.**
> **It is impossible to reprogram the control unit.**
> **The ECU could be damaged when power is removed.**

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see EDC3 (EMS1) or (EMS2) singlespeed only on page 1**.

Frequency change procedure

Customers, who are using ComAp control unit, must transmit certain messages to the D9 / D16 in the same way as Volvo Penta's CIU in order to change from 1500 to 1800 RPM (or opposite).

Procedure if not energized:

1. Power up the ECU.
2. Change the Frequency select setpoint of transmitted value.
3. Send a stop request – press the Stop button.

The whole procedure (step 1 to 3) must not exceed 10 seconds.

Procedure with power on:

1. Send a stop request – press the Stop button.
2. Change the Frequency select setpoint of transmitted value.
3. Send a stop request – press the Stop button.

The whole procedure (step 1 to 3) must not exceed 10 seconds.

3.26.3 Volvo Allspeed EDC3 / EMS1 / EMS2

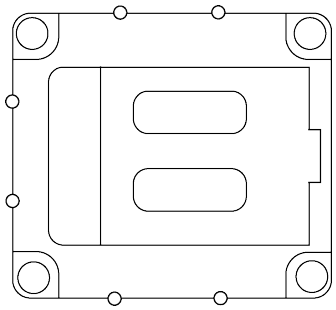


Image 3.71 EMS2

Controllers that support the EMS2

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Water in Fuel	97	Water In Fuel Indicator 1
Shutdown Engine	1110	Engine Protection System has Shutdown Engine
Approaching Shutdown	1109	Engine Protection System Approaching Shutdown
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		
Running Indication	-	Proprietary parameter. The running status of the engine.
Oil Pressure Alarm	-	Proprietary parameter.
Oil Temperature Alarm	-	Proprietary parameter. The status of the (virtual) oil temperature alarm switch.
Oil Level Alarm	-	Proprietary parameter. The status of the oil level alarm switch.
Charge Alarm	-	Proprietary parameter. The status of the (virtual) charge alarm switch.
Coolant Temperature	-	Proprietary parameter.
Coolant Level Alarm	-	Proprietary parameter. The status of the coolant level alarm switch.
Fuel Pressure Alarm	-	Proprietary parameter. The status of the Fuel pressure alarm.
Water in Fuel Alarm	-	Proprietary parameter. The status of the water in fuel alarm switch.
Sea Water Pressure	-	Proprietary parameter. Status of the (virtual) sea water pressure alarm switch.
Fresh Water Pressure	-	Proprietary parameter. Status of the (virtual) fresh water pressure alarm switch.
Piston Cooling Pressure	-	Proprietary parameter. Status of the piston cooling pressure alarm switch.
Boost Temperature	-	Proprietary parameter. Status of the (virtual) boost temperature alarm switch.
Exhaust Temperature	-	Proprietary parameter.
Overspeed Alarm	-	Proprietary parameter. Status of the (virtual) overspeed alarm switch.
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
Stop Request [3,6]	-	Proprietary parameter. The command for normal stopping of the engine. The recommended source value for this command is Stop pulse.

Current Gear	523	Transmission Current Gear
Crank Request [3,6]	-	Proprietary parameter. The command used for engine running. The recommended source value for this command is Starter.
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine speed	190	Engine Speed
Actual Torque	513	Actual Engine - Percent Torque
Demand Torque	512	Driver's Demand Engine - Percent Torque
Accelerator Pedal Position	91	Accelerator Pedal Position 1
Percent Load	92	Engine Percent Load At Current Speed
Fuel Delivery Pressure	94	Engine Fuel Delivery Pressure
Engine Oil Level	98	Engine Oil Level
Engine Oil Pressure	100	Engine Oil Pressure
Crankcase Pressure	101	Engine Crankcase Pressure 1
Coolant Pressure	109	Engine Coolant Pressure 1
Coolant Level	111	Engine Coolant Level 1
Coolant Temp	110	Engine Coolant Temperature
Fuel Temp	174	Engine Fuel Temperature 1
Oil Temp	175	Engine Oil Temperature 1
Fuel Rate	183	Engine Fuel Rate
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Air Intake Pressure	106	Engine Intake Air Pressure
Exhaust Gas Temp	173	Engine Exhaust Temperature
Battery Potential	158	Keyswitch Battery Potential
Idle engine speed	-	Proprietary parameter.
Maximum engine speed	-	Proprietary parameter.
DEF Tank 1 Level	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank Level
DEF Tank 1 Low Level Indicator	5245	Aftertreatment Selective Catalytic Reduction Operator Inducement Active
Operator Inducement Severity	5246	Aftertreatment SCR Operator Inducement Severity
EngOil Filter Diff.Press	99	Engine Oil Filter Differential Pressure
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Throttle Position [3,6]	-	Proprietary parameter.
Requested speed	898	Engine Requested Speed/Speed Limit

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliNano^{NT}, 6 - InteliDrive Nano

Controller’s analog output for speed control configuration

Accelerator Pedal Position settings for InteliGen^{NT} or InteliSys^{NT}		
Source	Speed request	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Accelerator Pedal Position settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring

Function	ECU connector	8pin diagnostic connector	Controller
CAN H	N/A	1	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	N/A	2	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	N/A	4	N/A
Battery - (negative)	N/A	3	N/A
Key Switch	N/A	5	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	N/A	SG OUT
Analog Speed Control	N/A	N/A	SG COM
Stop request	N/A	6	Any binary output configured as **inverted** ECUCommError

Note: *If the engine doesn't crank, check the state of engine mounted auxiliary stop device.*

> **IMPORTANT: It is important that there is no continuous active stop signal on pin 6. The active stop signal depends on the configuration and represents either +24VDC or GND is present on the pin 6.**
> **If there is a constant active stop signal a number of problems will occur:**
> **It is impossible to change parameters.**
> **It is impossible to reprogram the control unit.**
> **The ECU could be damaged when power is removed.**

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see EDC3 (EMS1) or (EMS2) allspeed only on page 1**.

3.26.4 EDC4 (EMR2)

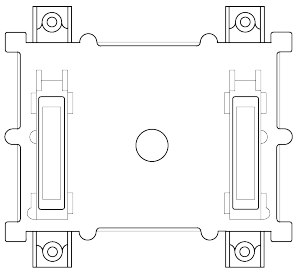


Image 3.72 EMR2

For more information **see EMR2 on page 76**.

3.26.5 EDC7 (with KWP2000)

Controllers that support the EDC7

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
AP low idle switch	558	Accelerator Pedal 1 Low Idle Switch
AP kick down switch	559	Accelerator Pedal Kickdown Switch
Parking Brake Switch	70	Parking Brake Switch
Cruise Control Active	595	Cruise Control Active
Cruise Control Enable Switch	596	Cruise Control Enable Switch
Brake Switch	597	Brake Switch
Clutch Switch	598	Clutch Switch
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		
Running Indication	-	Proprietary parameter.
Diagnostic state	-	Proprietary parameter.
Oil Pressure Alarm	-	Proprietary parameter.
Oil Temperature Alarm	-	Proprietary parameter.
Oil Level Alarm	-	Proprietary parameter.
Charge Alarm	-	Proprietary parameter.
Coolant Temperature	-	Proprietary parameter.

Coolant Level Alarm	-	Proprietary parameter.
Water in Fuel Alarm	-	Proprietary parameter.
Shift In Process	574	Transmission Shift In Process
Converter Lockup	573	Transmission Torque Converter Lockup Engaged
Momentary engine overspeed enable	161	Transmission Input Shaft Speed
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
Crank Request	-	Proprietary parameter.
Stop Request	-	Proprietary parameter.
Current Gear	523	Transmission Current Gear
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine Torque Mode	899	Engine Torque Mode
Engine speed	190	Engine Speed
Actual Torque	513	Actual Engine - Percent Torque
Demand Torque	512	Driver's Demand Engine - Percent Torque
Accelerator Pedal Position	91	Accelerator Pedal Position 1
Percent Load	92	Engine Percent Load At Current Speed
Nominal Friction Torque	514	Nominal Friction - Percent Torque
Cruise control set speed	86	Cruise Control Set Speed
Coolant Temp	110	Engine Coolant Temperature
Fuel Temp	174	Engine Fuel Temperature 1
Barometric Pressure	108	Barometric Pressure
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Engine Oil Level	98	Engine Oil Level
Engine Oil Pressure	100	Engine Oil Pressure
Crankcase Pressure	101	Engine Crankcase Pressure 1
Fuel Rate	183	Engine Fuel Rate
Battery Potential	158	Keyswitch Battery Potential
Common Rail Pressure	-	Proprietary parameter.
Out Shaft Speed	191	Transmission Output Shaft Speed
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Throttle Position	-	Proprietary parameter.
Requested speed	898	Engine Requested Speed/Speed Limit
Torque Limit	518	Engine Requested Torque/Torque Limit

Controller's analog output for speed control configuration

Requested speed settings for InteliGen^{NT} or InteliSys^{NT}		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see EDC7 (with KWP2000) on page 229**.

3.26.6 EDC7 (with KWP2000)

Fault Code (SPN)	Text
20	EngCool Press
51	ThrottlePos
94	FuelDelPress
97	WaterInFuelInd
98	EngineOilLevel
100	EngOil Press
101	CrankcasePress
102	Boost Press
105	Intake Temp
106	AirInletPress
107	AirFiltDifPres
108	BarometricPres
109	Coolant Press
110	EngCool Temp
111	Coolant Level
153	CrankcasePress
158	BattPotential
164	RailPressure
172	AirInlet Temp
173	Exhaust Temp
175	EngOil Temp
190	EngineSpeed
231	J1939 Datalink
608	J1587 Datalink
620	5V SupplyFail
626	PrehActuator
628	EMSProgFailure

629	Controller#1
630	CalibrMemFail
636	Pickup Cam
637	Pickup Crank
639	J1939 CAN Bus
647	CoolingFan
651	InjectorCyl#1
652	InjectorCyl#2
653	InjectorCyl#3
654	InjectorCyl#4
655	InjectorCyl#5
656	InjectorCyl#6
677	EngStartRelay
679	InjPressRegul
729	PreheatSensor
975	Fan Speed
1080	5V Sensor 2
1184	Exhaust Temp
1188	WastegateOut
1239	RailPresSystem
1485	ECU MainRelay
1675	EngStartRelay
2791	EGR Status
520192	PistonCoolSw
520193	SeaWaterPress
520194	Starter input
520195	Stop input
Fault Code in HEX	**Text**
0x0105	AirPressSensor
0x0110	AirTempSensor
0x0115	CoolTempSensor
0x0120	AccPedalSensor
0x0180	FuelTempSensor
0x0195	OilTempSensor
0x0219	EngOverspeed
0x0520	OilPressSensor
0x0560	BatteryVoltage
0x0073	Coolant Temp
0x00B4	Fuel Temp

0x00EF	AirInletTemp
0x00EB	AirInletPress
0x0069	BarometrPress
0x00C3	EngOilTemp
0x0208	EngOilPress
0x0230	BatteryVoltage
0x00BE	FuelRailPress
0x0709	WaterInFuel
0x014F	PickupFlyWheel
0x0154	PICKUP CAM
0x00C9	INJECTOR 1
0x00CA	INJECTOR 2
0x00CB	INJECTOR 3
0x00CC	INJECTOR 4
0x00CD	INJECTOR 5
0x00CE	INJECTOR 6
0x0694	SuperChargCtrl
Fault Code in HEX (KWP2000)	**Text**
0x00014	EngCool Press
0x0001A	Fan Speed
0x0005E	Fuel Press
0x00061	Water in fuel
0x00062	Oil Level
0x00063	Oil Diff Press
0x00064	EngOil Press
0x00066	Boost Press
0x00069	Intake Temp
0x0006A	AirInletPress
0x0006C	Barom Press
0x0006E	EngCool Temp
0x0006F	Coolant Level
0x00099	CrankcasePress
0x0009E	BattPotential
0x000AD	Exhaust Temp
0x000AE	Fuel Temp
0x000AF	EngineOil Temp
0x200E7	SAE J1939 fail
0x200E8	5V DC Fail
0x200F0	Prg MemoryFail

0x200F5	EMS HW Failure
0x200FA	SAE J1587 fail
0x200FD	CalibrMem fail
0x200FE	Controller#1
0x30001	Injector 1
0x30002	Injector 2
0x30003	Injector 3
0x30004	Injector 4
0x30005	Injector 5
0x30006	Injector 6
0x30015	Pickup Cam
0x30016	Pickup Crank
0x30020	WastegateOut
0x30021	CoolingFan
0x40003	Starter Output
0x40006	ExtSTOP Active
0x40008	Piston CoolPr
0x40062	J1587 Sync
0x40084	J1587 Throttl
0x4010B	SeaWater Press
0x600C9	J1939 Datalink
0x600D8	J1939 Bus
0x73C01	Primary Batt
0x73C02	Secondary Batt
0x73C03	15 supply
0x73C04	30 supply
0x73C05	EMS supply
0x73C06	Extra supply

3.27 Waukesha engines support

ECU Type	Engine type
ESM	VHP & APG engine family

3.27.1 ESM

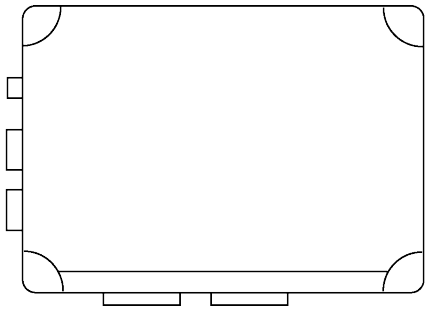


Image 3.73 ESM

Controllers that support the ESM

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Main Fuel Valve	-	Proprietary parameter. Status of the main fuel valve.
Pre-chamber Fuel Valve	-	Proprietary parameter. Status of the pre-chamber fuel valve (if applicable).
Engine Running	-	Proprietary parameter. Whether the engine is running or not running.
Starter Motor	-	Proprietary parameter. Whether the starter motor is engaged or not.
Pre/Post Lube	-	Proprietary parameter. Whether the pre/post lube pump is running.
Yellow Warning Lamp	-	Proprietary parameter. This lamp is used to relay trouble code information that is reporting a problem with the engine system but the engine need not be immediately stopped.
Red Shutdown Lamp	-	Proprietary parameter. This lamp is used to relay trouble code information that is of a severe enough condition that it warrants stopping the engine.
Engine Knocking	-	Proprietary parameter. Whether the engine is in uncontrollable knock.
Start Engine Signal	-	Proprietary parameter. Whether the start engine signal is active.
Normal Shutdown	-	Proprietary parameter. Whether the normal shutdown signal is active.
Emergency Shutdown	-	Proprietary parameter.

		Whether the emergency shutdown signal is active.
Remote rpm Select	-	Proprietary parameter. Whether the remote rpm analog input is active or inactive.
Run High Idle	-	Proprietary parameter. Whether the run high idle digital input is active.
Alter Dynamics/Synchr Mode	-	Proprietary parameter. Whether the alternate governor dynamics is active.
Lockout Button/Ignit Module	-	Proprietary parameter. Whether either the lockout button has been depressed or the IPM-D has failed, or is not powered.
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine Speed	-	Proprietary parameter. Actual engine speed which is calculated over a minimum crankshaft angle of 720 degrees divided by the number of cylinders.
Oil Pressure	-	Proprietary parameter. Gage pressure of oil in engine lubrication system as provided by oil pump.
Intake Manifold Press	-	Proprietary parameter. Gage pressure of air measured downstream on the compressor discharge side of the turbocharger. If there is one boost pressure to report and this range and resolution is adequate, this parameter should be used.
Throttle Position	-	Proprietary parameter. The ratio of actual position of the analog engine speed/torque request input device to the maximum position of the input device. This parameter is intended for the primary accelerator control in an application.
Coolant Temp	-	Proprietary parameter. Temperature of liquid found in engine cooling system.
Battery Voltage	-	Proprietary parameter. Electrical potential measured at the input of the electronic control unit supplied through a switching device.
Intake Manifold Temp	-	Proprietary parameter. Temperature of pre-combustion air found in intake manifold of engine air supply system.
Engine Oil Temp	-	Proprietary parameter. Temperature of the engine lubricant.
First exhaust temperature	-	Proprietary parameter. For more information about this commands, please contact local Waukesha representative.
Second exhaust temperature	-	Proprietary parameter. For more information about this commands, please contact local Waukesha representative.
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**

Controller's analog output for speed control configuration

There is no speed control over datalink available for this particular ECU.

Recommended wiring

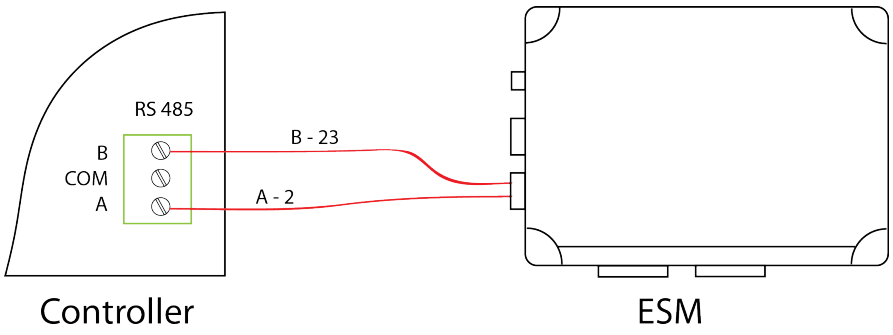


Image 3.74 Recommended wiring of ESM

Function	ECU 47pin connector	Controller
RS485 A	2	RS485 – RS485 A
RS485 COM	N/A	RS485 – RS485 COM
RS485 B	23	RS485 – RS485 B
Battery + (positive)	N/A	N/A
Battery - (negative)	N/A	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	28	SG OUT Analog Speed Control range -2.5VDC – +2.5VDC
Analog Speed Control	29	SG COM
Analog Speed Control Shield	N/A	N/A

Note: *Check that RS485 bus terminating resistors or appropriate jumpers are connected.*

Available list of texts of fault codes **see ESM on page 409**.

Recommended controller setting

Controller	Setpoint	Value	Interface
InteliGen^{NT}	RS232(1) mode RS232(2) mode	ECU LINK	
	RS485(X)conv.	ENABLED DISABLED	RS 485(1), RS 485(2) RS 232(1)[1], RS 232(2)[2]
InteliSys^{NT}	RS232(2) mode	ECU LINK	
	RS485(X)conv.	ENABLED DISABLED	RS 485(2) RS 232(1)[3], RS 232(2)[4]

Waukesha wiring recommendations

Two modbus wires are available at the end of the Customer Interface Harness (loose wires). The two wires are grey and labeled RS 485A- and RS 485B+.

[1]external RS232-485 converter is required
[2]external RS232-485 converter is required
[3]external RS232-485 converter is required
[4]external RS232-485 converter is required

RS-485 networking needs termination resistors if long wire runs are used. Termination resistors of 120are placed across the RS-485 A- and B+ wires at each device and at the MODBUS master (InteliGen^{NT}, InteliSys^{NT}controllers has jumper connecting this resistor closed as default). For short distances of 10 m or less and with slower baud rates (ComAp uses 9600 bps), termination resistors are not needed.

Typically, short distances of 32 ft. (10 m) would not require termination resistors; however, if you experience communication errors, first check the programmed baud rate. ComAp uses 9600 bps which is Waukesha default setting. If communication errors persist, termination resistors may be necessary even for short distances.

Diagnostic lamps

It is possible to configure Yellow Warning Lamp and Red Shutdown Lamp as binary inputs. Displaying of fault codes in the alarm list is conditioned by configuration of these inputs. Once they are not configured the alarms are blocked and not displayed.

3.28 Weichai engines support

ECU Type	Engine type
WISE15A	Series WP12 and Baudouin diesel engines
WISE 13	Series WP13
WISE 10	Baudouin 12M33 engine
WISE 15C	Series WP13, WP12, WP10, WP7, WP6
WISE 18	12M26, 12M33

3.28.1 WISE13

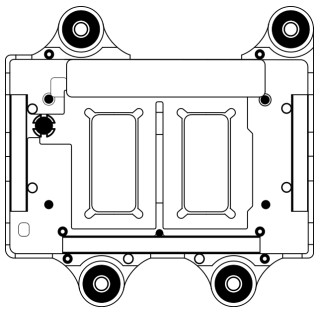


Image 3.75 WISE 13

Controllers that support the WISE13

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
WaterInFuel	97	Water In Fuel Indicator 1
CCEnable	596	Cruise Control Enable Switch
StopLamp[1,2,3,4,5,6,7]	623	Red Stop Lamp
WarningLamp[1,2,3,4,5,6,7]	624	Amber Warning Lamp
ProtectLamp	987	Protect Lamp
WaitStartLamp[1,2,3,4,7]	1081	Engine Wait to Start Lamp
EPS Shutdown	1110	Engine Protection System has Shutdown Engine
MalfunctLamp	1213	Malfunction Indicator Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
ThrottleVlv1	51	Engine Throttle Valve 1 Position 1
T-Intcooler	52	Engine Intercooler Temperature
APP	91	Accelerator Pedal Position 1

Load[1,2,3,4,5,6,7]	92	Engine Percent Load At Current Speed
P-FuelDelivery	94	Engine Fuel Delivery Pressure
OilLevel	98	Engine Oil Level
P-Oil[1,2,3,4,5,6,7]	100	Engine Oil Pressure
P-Crankcase	101	Engine Crankcase Pressure 1
P-Intake[1,2,3,4,7]	102	Engine Intake Manifold #1 Pressure
T-IntManifold[1,2,3,4,7]	105	Engine Intake Manifold 1 Temperature
P-Barometric	108	Barometric Pressure
P-Coolant1	109	Engine Coolant Pressure 1
T-Coolant[1,2,3,4,5,6,7]	110	Engine Coolant Temperature
CoolantLvl	111	Engine Coolant Level 1
P-CoolFltrDiff	112	Engine Coolant Filter Differential Pressure
KeySwitch	158	Key Switch Battery Potential
Battery	168	Battery Potential / Power Input 1
T-AmbientAir	171	Ambient Air Temperature
T-AirIntake	172	Engine Intake 1 Air Temperature
T-Exhaust	173	Engine Exhaust Temperature
T-Fuel	174	Engine Fuel 1 Temperature 1
T-Oil	175	Engine Oil Temperature 1
T-TurboOil	176	Engine Turbocharger Oil Temperature
FuelRate[1,2,3,4,7]	183	Engine Fuel Rate
EngineSpeed[1,2,3,4,5,6,7]	190	Engine Speed
TorqueDemand	512	Driver's Demand Engine - Percent Torque
TorqueActual	513	Actual Engine - Percent Torque
Torque	514	Nominal Friction - Percent Torque
Spd-Desired*	515	Engine's Desired Operating Speed
SourceAddress	1483	Source Address of Controlling Device for Engine Control
StarterMode	1675	Engine Starter Mode
DEFTnkLevel[1,2,3,4,5,6,7]	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank Volume
TorqueDemand	2432	Engine Demand - Percent Torque
T-DEFTnk	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
SCR IntakeNOx	3216	Aftertreatment 1 SCR Intake NOx 1
AT1IntOxygen	3217	Aftertreatment 1 Intake Percent Oxygen 1
AT1OutNOx	3226	Aftertreatment 1 Outlet NOx 1
AT1OutOxygen1	3227	Aftertreatment 1 Outlet Percent Oxygen 1
	ECU analog inputs (controller's outputs)	
Configuration Name	**SPN**	**J1939 Name**
Spd-Requested[1,2,3,4,5,6,7]	898	Engine Requested Speed/Speed Limit

*The parameter requires extended controller's support. Please refer controller's manual for further information.

Supported parameter by the controllers configured by NanoEdit, DriveEdit, LiteEdit PC or InteliConfigsoftware:

1 - InteliLite[NT], 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact[NT], 5 - InteliNano[NT], 6 - InteliDrive Nano , 7 - InteliGen200, InteliGen500

Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for InteliGen^{NT}, InteliSys^{NT} or InteliSys Gas		
Source	SpeedReq RPM[1]	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring

Function	ECU "X2" connector	Controller
CAN H	K54	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	K76	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	K01, K03, K05	N/A
Battery - (negative)	K02, K04, K06	N/A
Key Switch	K88	Any binary output configured as ECU PwrRelay
Analog Speed Control	K61, K83	SG OUT
Analog Speed Control	K62, K84	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes see **Weichai Fault Codes (page 410)**

[1] If a custom source is used (PLC output, analog input, etc.) the value has to have exactly one decimal point (0.0 - 3000.0).

3.29 Yanmar engines support

ECU Type	Engine type
TNV	All TNV Common Rail Series

3.29.1 TNV

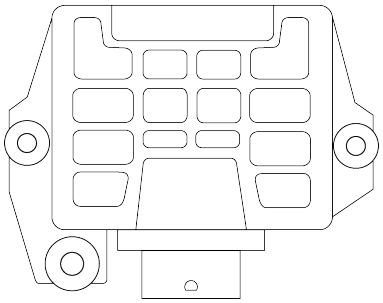


Image 3.76 TNV

Controllers that support the TNV

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
AP low idle switch	558	Accelerator Pedal 1 Low Idle Switch
Preheat	-	Proprietary parameter.
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		
Wait To Start Lamp	1081	Engine Wait to Start Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
Shutdown Requests	-	Proprietary parameter.
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
Engine speed	190	Engine Speed
Starter mode	1675	Engine Starter Mode

AP Position	91	Accelerator Pedal Position 1
Percent Load	92	Engine Percent Load At Current Speed
ECU Temperature	1136	Engine ECU Temperature
Desired Operating Speed	515	Engine's Desired Operating Speed
Coolant Temp	110	Engine Coolant Temperature
Oil Temp	175	Engine Oil Temperature 1
Barometric Pressure	108	Barometric Pressure
Air Inlet Temperature	172	Engine Intake Air Temperature
Electrical Potential	168	Battery Potential / Power Input 1
Battery Potential (Voltage)	158	Keyswitch Battery Potential
Engine Oil Pressure	100	Engine Oil Pressure
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed [3,6]	898	Engine Requested Speed/Speed Limit
Accelerator Pedal Position	-	Proprietary parameter.

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliNano^{NT}, 6 - InteliDrive Nano

Controller's analog output for speed control configuration

Requested speed settings for InteliGen^{NT} or InteliSys^{NT}		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A
Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring

Function	ECU connector	Controller
CAN H	40	CAN1 (extension modules/J1939) – CAN H
CAN COM	30	CAN1 (extension modules/J1939) – CAN COM
CAN L	39	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	34	N/A
Battery - (negative)	33,45	N/A
Key Switch	7	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see TNV on page 1**.

3.29.2 Yanmar TNV Fault Codes

Fault Code (SPN)	Text
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
153	P-Crankcase
158	KeySwitch
168	Battery
172	T-AirIntake
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN
515	Spd-Desired
620	5VSupply
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
898	Spd-Requested
970	AuxShutdown
971	DerateSw
1109	EPS SDApproach
1110	EPS Shutdown
1485	ECMMainRelay

3.30 Yuchai engines support

ECU Type	Engine type
LH (ECU3)	Series YC12VC, YC6C, YC 6TD
BCR	Series YC6K, YC6MK, YC6L, YC6G, YC6A, YC6B
YC	Series YC6C, YC6CL, YC6CD, YC6TD, YC6T, YC6A, YC6B, YC6J

3.30.1 BCR

Controllers that support the BCR

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
WaterInFuel	97	Water In Fuel Indicator 1
AP LowIdleSw	558	Accelerator Pedal 1 Low Idle Switch
StopLamp[1,2,3,4,5,6,7]	623	Red Stop Lamp
WarningLamp[1,2,3,4,5,6,7]	624	Amber Warning Lamp
ProtectLamp	987	Protect Lamp
WaitStartLamp[1,2,3,4,7]	1081	Engine Wait to Start Lamp
MalfunctLamp	1213	Malfunction Indicator Lamp
FFlashMalfunct	3038	Fast Flash Malfunction Indicator Lamp
FlashMalfunct	3038	Flash Malfunction Indicator Lamp
FFlashRed[1,2,3,4,7]	3039	Fast Flash Red Stop Lamp (RSL)
FlashRed[1,2,3,4,7]	3039	Flash Red Stop Lamp (RSL)
FFlashWarning[1,2,3,4,7]	3040	Fast Flash Amber Warning Lamp (AWL)
FlashWarning[1,2,3,4,7]	3040	Flash Amber Warning Lamp (AWL)
FlashProtect	3041	Flash Protect Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
MultiModalSw		Multimodal Switch Status
DPFIntake	81	Aftertreatment 1 Diesel Particulate Filter Intake Pressure (use SPN 3609)
APP	91	Accelerator Pedal Position 1
Load[1,2,3,4,5,6,7]	92	Engine Percent Load At Current Speed
P-FuelDelivery	94	Engine Fuel Delivery Pressure
OilLevel	98	Engine Oil Level
P-Oil[1,2,3,4,5,6,7]	100	Engine Oil Pressure
P-Intake[1,2,3,4,7]	102	Engine Intake Manifold #1 Pressure
T-IntManifold[1,2,3,4,7]	105	Engine Intake Manifold 1 Temperature

P-Barometric	108	Barometric Pressure
T-Coolant[1,2,3,4,5,6,7]	110	Engine Coolant Temperature
CoolantLvl	111	Engine Coolant Level 1
KeySwitch	158	Key Switch Battery Potential
T-AmbientAir	171	Ambient Air Temperature
T-AirIntake	172	Engine Intake 1 Air Temperature
T-Exhaust	173	Engine Exhaust Temperature
T-Fuel	174	Engine Fuel 1 Temperature 1
T-Oil	175	Engine Oil Temperature 1
FuelRate[1,2,3,4,7]	183	Engine Fuel Rate
EngineSpeed[1,2,3,4,5,6,7]	190	Engine Speed
TorqueDemand	512	Driver's Demand Engine - Percent Torque
TorqueActual	513	Actual Engine - Percent Torque
Torque	514	Nominal Friction - Percent Torque
TorqMode	899	Engine Torque Mode
APPRemote	974	Remote Accelerator Pedal Position
StarterMode	1675	Engine Starter Mode
TorqueDemand	2432	Engine Demand - Percent Torque
TrqMax	3357	Actual Maximum Available Engine - Percent Torque
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Spd-Requested[1,2,3,4,5,6,7]	898	Engine Requested Speed/Speed Limit

Supported parameter by the controllers configured by NanoEdit, DriveEdit, LiteEdit PC or InteliConfigsoftware:
1 - InteliLite[NT], 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact[NT], 5 - InteliNano[NT], 6 - InteliDrive Nano , 7 - InteliGen200, InteliGen500

Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for InteliGen[NT], InteliSys[NT] or InteliSys Gas		
Source	SpeedReq RPM[1]	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring

Function	ECU connector	Controller
CAN H		
CAN COM		
CAN L		

[1] If a custom source is used (PLC output, analog input, etc.) the value has to have exactly one decimal point (0.0 - 3000.0).

Battery + (positive)		
Battery - (negative)		
Key Switch		
Analog Speed Control		
Analog Speed Control		

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes see **Yuchai BCR Fault Codes (page 413)**

3.30.2 LH (ECU3)

Controllers that support the LH

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
WaterInFuel	97	Water In Fuel Indicator 1
AP LowIdleSw	558	Accelerator Pedal 1 Low Idle Switch
AP KickDownSw	559	Accelerator Pedal Kickdown Switch
StopLamp[1,2,3,4,5,6,7]	623	Red Stop Lamp
WarningLamp[1,2,3,4,5,6,7]	624	Amber Warning Lamp
ProtectLamp	987	Protect Lamp
WaitStartLamp[1,2,3,4,7]	1081	Engine Wait to Start Lamp
MalfunctLamp	1213	Malfunction Indicator Lamp
FFlashMalfunct	3038	Fast Flash Malfunction Indicator Lamp
FlashMalfunct	3038	Flash Malfunction Indicator Lamp
FFlashRed[1,2,3,4,7]	3039	Fast Flash Red Stop Lamp (RSL)
FlashRed[1,2,3,4,7]	3039	Flash Red Stop Lamp (RSL)
FFlashWarning[1,2,3,4,7]	3040	Fast Flash Amber Warning Lamp (AWL)
FlashWarning[1,2,3,4,7]	3040	Flash Amber Warning Lamp (AWL)
StopLamp	5079	Engine Red Stop Lamp Command
MalfunctLamp	5080	OBD Malfunction Indicator Lamp Command
BrakeLamp	5081	Engine Brake Active Lamp Command
P-LowOilLamp	5082	Engine Oil Pressure Low Lamp Command
T-CoolHiLamp	5083	Engine Coolant Temperature High Lamp Command
CoolLvlLamp	5084	Engine Coolant Level Low Lamp Command
AirFltLamp	5086	Engine Air Filter Restriction Lamp Command
ColdStrRelayF	5550	Engine Cold Start Fuel Igniter Relay Feedback
SDOverride	517009	Shutdown Override Status
Spd-Nominal	517010	Nominal Speed Status
Override	517540	Override active
Overload	517541	Overload mode active
Clamp15	518000	State of clamp 15
Starter	518001	Engine starter state
Running	518002	Engine Running

FuelMassDeact	518003	Engine fuel mass deactivation
StarterLock	518004	Engine starter lock
IdleSpeed	518005	Engine idle speed flag
Start	518006	Engine start request
Combustion	518009	Engine combustion state
RXReady	518010	ECU RX Ready Bit
CCLimiter	518044	CC Limiter Activation
ReadyStart	523000	Engine ready to start
ReadyGridSync	523001	Engine ready to grid sync
ExtLoadAdj	523002	Enable external load adjustment
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
RegenInhibit[1,2,3,4,7]	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce[1,2,3,4,7]	3696	Aftertreatment Regeneration Force Switch
Override	519202	Overriding Request (FRM disable)
Overload	519203	Overload Mode Request (Boost)
Stop[1,2,3,4,5,6,7]	519204	Engine Stop Request
Start[1,2,3,4,5,6,7]	519205	Engine Start Request
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
T-Intcooler	52	Engine Intercooler Temperature
APP	91	Accelerator Pedal Position 1
Load[1,2,3,4,5,6,7]	92	Engine Percent Load At Current Speed
P-FuelDelivery	94	Engine Fuel Delivery Pressure
OilLevel	98	Engine Oil Level
P-Oil[1,2,3,4,5,6,7]	100	Engine Oil Pressure
P-Crankcase	101	Engine Crankcase Pressure 1
P-Intake[1,2,3,4,7]	102	Engine Intake Manifold #1 Pressure
T-IntManifold[1,2,3,4,7]	105	Engine Intake Manifold 1 Temperature
P-IntakeAir	106	Engine Intake Air Pressure
P-Barometric	108	Barometric Pressure
P-Coolant1	109	Engine Coolant Pressure 1
T-Coolant[1,2,3,4,5,6,7]	110	Engine Coolant Temperature
CoolantLvl	111	Engine Coolant Level 1
P-Fuel1Inj1*	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
P-Fuel1Inj1	157	Engine Fuel 1 Injector Metering Rail 1 Pressure (backward FW's compatible)
KeySwitch	158	Key Switch Battery Potential
T-AmbientAir	171	Ambient Air Temperature
T-AirIntake	172	Engine Intake 1 Air Temperature
T-Fuel	174	Engine Fuel 1 Temperature 1
T-Oil	175	Engine Oil Temperature 1
FuelRate[1,2,3,4,7]	183	Engine Fuel Rate
EngineSpeed[1,2,3,4,5,6,7]	190	Engine Speed
TorqueDemand	512	Driver's Demand Engine - Percent Torque
TorqueActual	513	Actual Engine - Percent Torque
Torque	514	Nominal Friction - Percent Torque
Spd-Desired*	515	Engine's Desired Operating Speed

Spd-DesAsym	519	Engine's Desired Operating Speed Asymmetry Adjustment
RetarderTorque	520	Actual Retarder - Percent Torque
TorqMode	899	Engine Torque Mode
APPRemote	974	Remote Accelerator Pedal Position
T-ECU	1136	Engine ECU Temperature
T-ExhPort 1	1137	Engine Exhaust Gas Port 1 Temperature
T-ExhPort 2	1138	Engine Exhaust Gas Port 2 Temperature
T-ExhPort 3	1139	Engine Exhaust Gas Port 3 Temperature
T-ExhPort 4	1140	Engine Exhaust Gas Port 4 Temperature
T-ExhPort 5	1141	Engine Exhaust Gas Port 5 Temperature
T-ExhPort 6	1142	Engine Exhaust Gas Port 6 Temperature
T-ExhPort 7	1143	Engine Exhaust Gas Port 7 Temperature
T-ExhPort 8	1144	Engine Exhaust Gas Port 8 Temperature
T-ExhPort 9	1145	Engine Exhaust Gas Port 9 Temperature
T-ExhPort10	1146	Engine Exhaust Gas Port 10 Temperature
T-ExhPort11	1147	Engine Exhaust Gas Port 11 Temperature
T-ExhPort12	1148	Engine Exhaust Gas Port 12 Temperature
T-ExhPort13	1149	Engine Exhaust Gas Port 13 Temperature
T-ExhPort14	1150	Engine Exhaust Gas Port 14 Temperature
T-ExhPort15	1151	Engine Exhaust Gas Port 15 Temperature
T-ExhPort16	1152	Engine Exhaust Gas Port 16 Temperature
T-ExhPort17	1153	Engine Exhaust Gas Port 17 Temperature
T-ExhPort18	1154	Engine Exhaust Gas Port 18 Temperature
T-ExhPort19	1155	Engine Exhaust Gas Port 19 Temperature
T-ExhPort20	1156	Engine Exhaust Gas Port 20 Temperature
T-Turbo1CInt	1172	Engine Turbocharger 1 Compressor Intake Temperature
P-Turbo1Intake	1176	Engine Turbocharger 1 Compressor Intake Pressure
T-Turbo1Int	1180	Engine Turbocharger 1 Turbine Intake Temperature
T-Turbo2Int	1181	Engine Turbocharger 2 Turbine Intake Temperature
T-Turbo3Int	1182	Engine Turbocharger 3 Turbine Intake Temperature
T-Turbo4Int	1183	Engine Turbocharger 4 Turbine Intake Temperature
T-AuxCoolant	1212	Engine Auxiliary Coolant Temperature
P-Fuel1Inj2*	1349	Engine Fuel 1 Injector Metering Rail 2 Pressure
SourceAddress	1483	Source Address of Controlling Device for Engine Control
T-Intake	1636	Engine Intake Manifold 1 Temperature (High Resolution)
T-Coolant	1637	Engine Coolant Temperature (High Resolution)
StarterMode	1675	Engine Starter Mode
DEFTnkLevel[1,2,3,4,5,6,7]	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank Volume
TorqueDemand	2432	Engine Demand - Percent Torque
T-AirCoolerOut	2630	Engine Charge Air Cooler 1 Outlet Temperature
Torque	2978	Estimated Engine Parasitic Losses - Percent Torque
T-DEFTnk	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
AT1ExhFlowRate	3236	Aftertreatment 1 Exhaust Gas Mass Flow Rate
TrqMax	3357	Actual Maximum Available Engine - Percent Torque
DEFTnkHeater	3363	Aftertreatment 1 Diesel Exhaust Fluid Tank Heater
Operating	3543	Engine Operating State
P-IntakeMan2	3562	Engine Intake Manifold #2 Pressure

ChrgAirCoolLvl	3668	Engine Charge Air Cooler Coolant Level
AftcoolCoolLvl	3676	Engine Aftercooler Coolant Level
DPFLamp[1,2,3,4,5,6,7]	3697	Diesel Particulate Filter Lamp Command
HEST Lamp[1,2,3,4,5,6,7]	3698	Exhaust System High Temperature Lamp Command
DPFStatus[1,2,3,4,5,6,7]	3701	Aftertreatment Diesel Particulate Filter Status
P-DEFDoser1	4334	Aftertreatment 1 Diesel Exhaust Fluid Doser 1 Absolute Pressure
T-SCR1Intake	4360	Aftertreatment 1 SCR Intake Temperature
DEFLowLevel[2,3,5,6,7]	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
SCR Severity[7]	5246	Aftertreatment SCR Operator Inducement Severity
T-TurboOil2	516015	Engine Turbocharger Oil Temperature 2
AvlbTorque	517005	Available Static Torque At Actual Speed
AirPreHeater	517006	Air Pre-Heater Remaining Delay
AirPostHeater	517007	Air Post-Heater Remaining Delay
SDEmergency	518008	Engine emergency stop
DPFRegRem	518011	Diesel Particulate Filter - Remaining Regeneration Time
ProtectLamp	518041	Engine Protect Lamp Command
CCMode	518043	CC Mode
PowerIdle	523003	Engine power-idle
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Spd-Requested[1,2,3,4,5,6,7]	898	Engine Requested Speed/Speed Limit
ControlMode	3542	Requested Engine Control Mode
GCB	3545	Generator Circuit Breaker Status
MCB	3546	Utility Circuit Breaker Status
ATS	3547	Automatic Transfer Switch Status

*The parameter requires extended controller's support. Please refer controller's manual for further information.

Supported parameter by the controllers configured by NanoEdit, DriveEdit, LiteEdit PC or InteliConfigsoftware:
1 - InteliLite[NT], 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact[NT], 5 - InteliNano[NT], 6 - InteliDrive Nano , 7 - InteliGen200, InteliGen500

Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for InteliGen[NT], InteliSys[NT] or InteliSys Gas		
Source	SpeedReq RPM[1]	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

[1] If a custom source is used (PLC output, analog input, etc.) the value has to have exactly one decimal point (0.0 - 3000.0).

Recommended wiring

Function	ECU "X2" connector	Controller
CAN H	21	CAN1 (extension modules/J1939) – CAN H
CAN COM	19	CAN1 (extension modules/J1939) – CAN COM
CAN L	20	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	1,2,3	N/A
Battery - (negative)	4,5	N/A
Key Switch	16	Any binary output configured as ECU PwrRelay
Analog Speed Control	34, 46	SG OUT
Analog Speed Control	11, 23	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes see **Yuchai ECU3 Fault Codes (page 413)**

3.30.3 YCECU

Controllers that support the TNV

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
WaterInFuel	97	Water In Fuel Indicator 1
AP LowIdleSw	558	Accelerator Pedal 1 Low Idle Switch
StopLamp[1,2,3,4,5,6,7]	623	Red Stop Lamp
WarningLamp[1,2,3,4,5,6,7]	624	Amber Warning Lamp
ProtectLamp	987	Protect Lamp
WaitStartLamp[1,2,3,4,7]	1081	Engine Wait to Start Lamp
MalfunctLamp	1213	Malfunction Indicator Lamp
FlashMalfunct	3038	Flash Malfunction Indicator Lamp
FFlashMalfunct	3038	Fast Flash Malfunction Indicator Lamp
FlashRed[1,2,3,4,7]	3039	Flash Red Stop Lamp (RSL)
FFlashRed[1,2,3,4,7]	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning[1,2,3,4,7]	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning[1,2,3,4,7]	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect	3041	Flash Protect Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
ECU analog outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
DPFIntake	81	Aftertreatment 1 Diesel Particulate Filter Intake Pressure (use SPN 3609)
APP	91	Accelerator Pedal Position 1
Load[1,2,3,4,5,6,7]	92	Engine Percent Load At Current Speed
P-Oil[1,2,3,4,5,6,7]	100	Engine Oil Pressure
P-Intake[1,2,3,4,7]	102	Engine Intake Manifold #1 Pressure

T-IntManifold[1,2,3,4,7]	105	Engine Intake Manifold 1 Temperature
P-Barometric	108	Barometric Pressure
T-Coolant[1,2,3,4,5,6,7]	110	Engine Coolant Temperature
CoolantLvl	111	Engine Coolant Level 1
KeySwitch	158	Key Switch Battery Potential
T-AirIntake	172	Engine Intake 1 Air Temperature
T-Fuel	174	Engine Fuel 1 Temperature 1
T-Oil	175	Engine Oil Temperature 1
FuelRate[1,2,3,4,7]	183	Engine Fuel Rate
EngineSpeed[1,2,3,4,5,6,7]	190	Engine Speed
TorqueDemand	512	Driver's Demand Engine - Percent Torque
TorqueActual	513	Actual Engine - Percent Torque
Torque	514	Nominal Friction - Percent Torque
APPRemote	974	Remote Accelerator Pedal Position
TorqueDemand	2432	Engine Demand - Percent Torque
ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Spd-Requested[1,2,3,4,5,6,7]	898	Engine Requested Speed/Speed Limit

Supported parameter by the controllers configured by NanoEdit, DriveEdit, LiteEdit PC or InteliConfigsoftware:
1 - InteliLite[NT], 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact[NT], 5 - InteliNano[NT], 6 - InteliDrive Nano , 7 - InteliGen200, InteliGen500

Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for InteliGen[NT], InteliSys[NT] or InteliSys Gas		
Source	SpeedReq RPM[1]	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A
Requested speed (Spd-Requested) settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring

Function	ECU connector	Controller
CAN H		
CAN COM		
CAN L		
Battery + (positive)		
Battery - (negative)		

[1] If a custom source is used (PLC output, analog input, etc.) the value has to have exactly one decimal point (0.0 - 3000.0).

Key Switch		
Analog Speed Control		
Analog Speed Control		

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes see **Yuchai YCECU Fault Codes (page 413)**

3.31 Standard J1939 engines support

ECU Type	Engine type
Standard J1939 engine	supports only J1939-71 parameters
Standard J1939 monitor	supports only J1939-71 parameters without control functionality

3.31.1 Standard J1939 engine

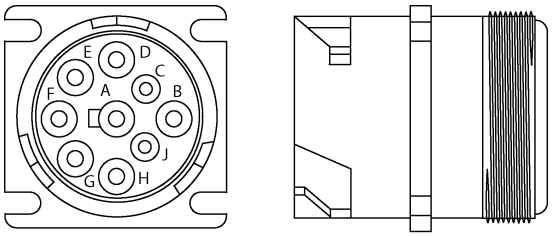


Image 3.77 Standard J1939 engine

Controllers that support the Standard J1939 engine

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
DPF Regen. Status	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPF ActRegInhibitDueToInhSw	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPF Pas.Regen.Status	3699	Aftertreatment Diesel Particulate Filter Passive Regeneration Status
DPF Act. Reg. Inhibit Status	3702	Diesel Particulate Filter Active Regeneration Inhibited Status
DPF Inhibit DueTo Clutch	3704	Diesel Particulate Filter Active Regeneration Inhibited Due to Clutch Disengaged
DPF Inhibit DueTo Breake	3705	Diesel Particulate Filter Active Regeneration Inhibited Due to Service Brake Active
DPF Inhibit DueTo Speed	3709	Diesel Particulate Filter Active Regeneration Inhibited Due to Vehicle Speed Above Allowed Speed
DPF Inhibit DueTo Neutral	3708	Diesel Particulate Filter Active Regeneration Inhibited Due to Out of Neutral
DPF Inhibit DueTo Idle	3707	Diesel Particulate Filter Active Regeneration Inhibited Due to Accelerator Pedal Off Idle
DPF Inhibit DueTo PTO	3706	Diesel Particulate Filter Active Regeneration Inhibited Due to PTO Active
DPF Inhibit DueTo Park.Brake	3710	Diesel Particulate Filter Active Regeneration Inhibited Due to Parking Brake Not Set
DPF Inhibit DueTo Exh.Temp	3711	Diesel Particulate Filter Active Regeneration Inhibited Due to Low Exhaust Temperature
DPF Inhibit DueTo SysFault	3712	Diesel Particulate Filter Active Regeneration Inhibited Due to System Fault Active
DPF Inhibit DueTo SysTimeout	3713	Diesel Particulate Filter Active Regeneration Inhibited Due to System Timeout
DPF Inhibit DueTo SysLockout	3714	Diesel Particulate Filter Active Regeneration Inhibited Due to Temporary System Lockout
DPF Inhibit DueTo Peranent Lockout	3715	Diesel Particulate Filter Active Regeneration Inhibited Due to Permanent System Lockout
DPF ActRegInhibNotWarmUp	3716	Diesel Particulate Filter Active Regeneration Inhibited Due to Engine Not Warmed Up

DPF Inhibit DueTo LowSpeed	3717	Diesel Particulate Filter Active Regeneration Inhibited Due to Vehicle Speed Below Allowed Speed
DPF Auto Reg.Configuration	3718	Diesel Particulate Filter Automatic Active Regeneration Initiation Configuration
HydrocarbonDoserEna	5504	Requested Fuel Mass Rate
DPF Inhibit DueTo Exh.Press	5629	Diesel Particulate Filter Active Regeneration Inhibited Due to Low Exhaust Pressure
DPF ConditionNotRegen	3750	Aftertreatment 1 Diesel Particulate Filter Conditions Not Met for Active Regeneration
Coolant Pre-heated State	3553	Engine Coolant Pre-heated State
AL Fuel Leakage	1239	Engine Fuel Leakage 1
Water in Fuel	97	Water In Fuel Indicator 1
SCR System Cleaning Inhibited Due to Inhibit Switch	6918	SCR System Cleaning Inhibited Due to Inhibit Switch
PTO Enable Switch	980	Engine PTO Governor Enable Switch
PTO Cost/Decelerate Switch	983	Engine PTO Governor Coast/Decelerate Switch
PTO Resume Switch	982	Engine PTO Governor Resume Switch
PTO Accelerate Switch	981	Engine PTO Governor Accelerate Switch
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		
Wait To Start Lamp	1081	Engine Wait to Start Lamp
Shutdown Engine	1110	Engine Protection System has Shutdown Engine

ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**
DPF Reg. Inhibit Switch [1,2,3,4]	3695	**Aftertreatment Regeneration Inhibit Switch**
DPF Reg. Force Switch [1,2,3,4]	3696	**Aftertreatment Regeneration Force Switch**
Engine Auxiliary Shutdown Switch [5,6]	970	**Engine Auxiliary Shutdown Switch**

	ECU analog outputs (controller's inputs)	
Configuration Name	**SPN**	**J1939 Name**
Engine Torque Mode	899	Engine Torque Mode
Engine speed	190	Engine Speed
Actual Torque	513	Actual Engine - Percent Torque
Demand Torque	512	Driver's Demand Engine - Percent Torque
Controlling Device Address	1483	Source Address of Controlling Device for Engine Control
Engine Starter Mode	1675	Engine Starter Mode
Inlet Air Mass Flow Rate	132	Engine Intake Air Mass Flow Rate
Intake NOx	3216	Aftertreatment 1 Selective Catalytic Reduction Intake NOx
Outlet NOx	3226	Aftertreatment 1 Outlet NOx
Fuel Filter Intake Abs Pressure	5417	Engine Fuel Filter (Suction Side) Intake Absolute Pressure
Fuel Temperature 2	3468	Engine Fuel Temperature 2
Soot Load Percent	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
Ash Load Percent	3720	Aftertreatment 1 Diesel Particulate Filter Ash Load Percent
DPF Lamp Command	3697	Diesel Particulate Filter Lamp Command

DPF Status	3701	Aftertreatment Diesel Particulate Filter Status
HEST Lamp Command	3698	Exhaust System High Temperature Lamp Command
DPF Act.Reg.ForcedStatus	4175	Diesel Particulate Filter Active Regeneration Forced Status
Diesel Exhaust Fluid Concentration	3516	Aftertreatment 1 Diesel Exhaust Fluid Concentration
Diesel Exhaust Fluid Temperature 2	3515	Aftertreatment 1 Diesel Exhaust Fluid Temperature 2
Exhaust Gas Temperature 1	3241	Aftertreatment 1 Exhaust Temperature 1
DPF Intake Gas Temperature	3242	Aftertreatment 1 Diesel Particulate Filter Intake Temperature
DPF Differential Pressure	3251	Aftertreatment 1 Diesel Particulate Filter Differential Pressure
DPF Outlet Gas Temperature	3246	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature
DPF Intake Pressure 1	3609	Aftertreatment 1 Diesel Particulate Filter Intake Pressure
DPF Outlet Pressure 1	3610	Aftertreatment 1 Diesel Particulate Filter Outlet Pressure
Exhaust Gas Temp - Right Manifold	2433	Engine Exhaust Manifold Bank 2 Temperature 1
Exhaust Gas Temp - Left Manifold	2434	Engine Exhaust Manifold Bank 1 Temperature 1
DEF Tank 1 Level	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank Level
Diesel Exhaust Fluid Tank 1 Temperature	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature
DEF Tank 1 Low Level Indicator	5245	Aftertreatment Selective Catalytic Reduction Operator Inducement Active
SCR Operator Inducement Severity	5246	Aftertreatment SCR Operator Inducement Severity
Diesel Exhaust Fluid Tank 1 Heater	3363	Aftertreatment 1 Diesel Exhaust Fluid Tank Heater
T-Coolant water (EMU) AUX	441	Auxiliary Temperature 1
Auxiliary Temperature 2	442	Auxiliary Temperature 2
Auxiliary Pressure #1	1387	Auxiliary Pressure #1
Pre-filter Oil Pressure	1208	Engine Pre-filter Oil Pressure
Auxiliary Coolant Pressure	1203	Engine Auxiliary Coolant Pressure
Turbocharger 1 Intake Temp	1180	Engine Turbocharger 1 Turbine Intake Temperature
Turbocharger 2 Intake Temp	1181	Engine Turbocharger 2 Turbine Intake Temperature
Turbo 1 Inlet Pressure	1176	Engine Turbocharger 1 Compressor Intake Pressure
Turbo 2 Inlet Pressure	1177	Engine Turbocharger 2 Compressor Intake Pressure
Exhaust Gas Port 1 Temp	1137	Engine Exhaust Gas Port 1 Temperature
Exhaust Gas Port 2 Temp	1138	Engine Exhaust Gas Port 2 Temperature
Exhaust Gas Port 3 Temp	1139	Engine Exhaust Gas Port 3 Temperature
Exhaust Gas Port 4 Temp	1140	Engine Exhaust Gas Port 4 Temperature
Exhaust Gas Port 5 Temp	1141	Engine Exhaust Gas Port 5 Temperature
Exhaust Gas Port 6 Temp	1142	Engine Exhaust Gas Port 6 Temperature
Exhaust Gas Port 7 Temp	1143	Engine Exhaust Gas Port 7 Temperature
Exhaust Gas Port 8 Temp	1144	Engine Exhaust Gas Port 8 Temperature
Exhaust Gas Port 9 Temp	1145	Engine Exhaust Gas Port 9 Temperature
Exhaust Gas Port 10 Temp	1146	Engine Exhaust Gas Port 10 Temperature
Exhaust Gas Port 11 Temp	1147	Engine Exhaust Gas Port 11 Temperature
Exhaust Gas Port 12 Temp	1148	Engine Exhaust Gas Port 12 Temperature
Exhaust Gas Port 13 Temp	1149	Engine Exhaust Gas Port 13 Temperature
Exhaust Gas Port 14 Temp	1150	Engine Exhaust Gas Port 14 Temperature
Exhaust Gas Port 15 Temp	1151	Engine Exhaust Gas Port 15 Temperature
Exhaust Gas Port 16 Temp	1152	Engine Exhaust Gas Port 16 Temperature
Exhaust Gas Port 17 Temp	1153	Engine Exhaust Gas Port 17 Temperature
Exhaust Gas Port 18 Temp	1154	Engine Exhaust Gas Port 18 Temperature
Exhaust Gas Port 19 Temp	1155	Engine Exhaust Gas Port 19 Temperature

Exhaust Gas Port 20 Temp	1156	Engine Exhaust Gas Port 20 Temperature
ECU Temperature	1136	Engine ECU Temperature
Intake Manifold 2 Temperature	1131	Engine Intake Manifold 2 Temperature
Intake Manifold 3 Temperature	1132	Engine Intake Manifold 3 Temperature
Intake Manifold 4 Temperature	1133	Engine Intake Manifold 4 Temperature
Intake Manifold 5 Temperature	1802	Engine Intake Manifold 5 Temperature
Right Air Filter Restriction	2809	Engine Air Filter 2 Differential Pressure
Intake Manifold Abs Press	3563	Engine Intake Manifold #1 Absolute Pressure
T-Charge Air	2629	Engine Turbocharger 1 Compressor Outlet Temperature
SCR Catalyst Intake Gas Temperature	4360	Aftertreatment 1 SCR Intake Temperature
SCR Catalyst Outlet Gas Temperature	4363	Aftertreatment 1 SCR Outlet Temperature
Intake Manifold 6 Temperature	1803	Engine Intake Manifold 6 Temperature
Turbocharger 1 Boost Pressure	1127	Engine Turbocharger 1 Boost Pressure
Turbocharger 2 Boost Pressure	1128	Engine Turbocharger 2 Boost Pressure
Turbocharger 3 Boost Pressure	1129	Engine Turbocharger 3 Boost Pressure
Turbocharger 4 Boost Pressure	1130	Engine Turbocharger 4 Boost Pressure
Alternator Bearing 1 Temperature	1122	Engine Alternator Bearing 1 Temperature
Alternator Bearing 2 Temperature	1123	Engine Alternator Bearing 2 Temperature
Alternator Winding 1 Temperature	1124	Engine Alternator Winding 1 Temperature
Alternator Winding 2 Temperature	1125	Engine Alternator Winding 2 Temperature
Alternator Winding 3 Temperature	1126	Engine Alternator Winding 3 Temperature
Turbocharger Wastegate Valve Position	1693	Engine Turbocharger Wastegate Valve Position
Trip Avg Fuel Rate	1029	Trip Average Fuel Rate
Rated Power	166	Engine Rated Power
Rated Speed	189	Engine Rated Speed
Estimated Percent Fan Speed	975	Engine Fan 1 Estimated Percent Speed
Injector Metering Rail Pressure	157	Engine Injector Metering Rail 1 Pressure
Inj. Timing Rail 1 Pressure	156	Engine Injector Timing Rail 1 Pressure
Turbocharger 1 Speed	103	Engine Turbocharger 1 Speed
Nominal Friction - % Torque	514	Nominal Friction - Percent Torque
Desired Operating Speed	515	Engine's Desired Operating Speed
Operating Speed Asymetry	519	Engine's Desired Operating Speed Asymmetry Adjustment
Coolant Temp	110	Engine Coolant Temperature
Fuel Temp	174	Engine Fuel Temperature 1
EngineOil Temp	175	Engine Oil Temperature 1
Turbo Oil Temp	176	Engine Turbocharger Oil Temperature
IntercoolTemp	52	Engine Intercooler Temperature
Intercooler Thermostat Opening	1134	Engine Charge Air Cooler Thermostat Opening
Trap Inlet Pressure	81	Aftertreatment 1 Diesel Particulate Filter Intake Pressure
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Air Intake Pressure	106	Engine Intake Air Pressure
Air Filter Differential Pressure	107	Engine Air Filter 1 Differential Pressure
Exhaust Gas Temp	173	Engine Exhaust Temperature
Coolant Filter Diff. Pressure	112	Engine Coolant Filter Differential Pressure

AccPedal 1 Low Idle Switch	558	Accelerator Pedal 1 Low Idle Switch
Accelerator Pedal Position	91	Accelerator Pedal Position 1
Percent Load	92	Engine Percent Load At Current Speed
Remote Accelerator Pedal Position	974	Remote Accelerator Pedal Position
Accelerator Pedal Position2	29	Accelerator Pedal Position 2
Fuel Rate	183	Engine Fuel Rate
Throttle Position	51	Engine Throttle Valve 1 Position 1
Barometric Pressure	108	Barometric Pressure
Cab Interior Temperature	170	Cab Interior Temperature
Ambient Air Temperature	171	Ambient Air Temperature
Air Inlet Temperature	172	Engine Intake Air Temperature
Fuel Filter Diff.Press	95	Engine Fuel Filter Differential Pressure
EngOil Filter Diff.Press	99	Engine Oil Filter Differential Pressure
Gas Supply Pressure	159	Engine Gaseous Fuel Supply Pressure 1
SCR System Cleaning Lamp Command	6915	SCR System Cleaning Lamp Command
Electrical Potential (Voltage)	168	Battery Potential / Power Input 1
Battery Potential (Voltage)	158	Keyswitch Battery Potential
Transmission Oil Pressure	127	Transmission Oil Pressure
Fuel Delivery Pressure	94	Engine Fuel Delivery Pressure
Extended Crankcase Blow-by Pressure	22	Engine Extended Crankcase Blow-by Pressure
Engine Oil Level	98	Engine Oil Level
Engine Oil Pressure	100	Engine Oil Pressure
Crankcase Pressure	101	Engine Crankcase Pressure 1
Coolant Pressure	109	Engine Coolant Pressure 1
Coolant Level	111	Engine Coolant Level 1

ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**
Requested speed [1,2,3,4,5,6]	898	Engine Requested Speed/Speed Limit
PTO State	976	PTO Governor State

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - InteliLite^{NT}, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact^{NT}, 5 - InteliNano^{NT}, 6 - InteliDrive Nano

Controller's analog output for speed control configuration

Requested speed settings for InteliGen^{NT} or InteliSys^{NT}		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Recommended wiring

	9pin diagnostic connector	Controller
CAN H	G	CAN1 (extension modules/J1939) – CAN H
CAN COM	C	CAN1 (extension modules/J1939) – CAN COM
CAN L	F	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	N/A	N/A
Battery - (negative)	N/A	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see Standard J1939 engine on page 1**.

3.31.2 Standard J1939 monitor

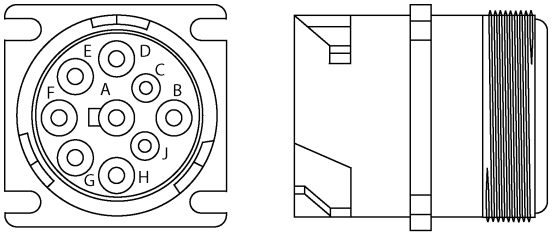


Image 3.78 Standard J1939 engine

Controllers that support the Standard J1939 monitor

Refer to **Comparison table (page 23)**

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	**SPN**	**J1939 Name**
DPF Regen. Status	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPF ActRegInhibitDueToInhSw	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPF Pas.Regen.Status	3699	Aftertreatment Diesel Particulate Filter Passive Regeneration Status
DPF Act. Reg. Inhibit Status	3702	Diesel Particulate Filter Active Regeneration Inhibited Status
DPF Inhibit DueTo Clutch	3704	Diesel Particulate Filter Active Regeneration Inhibited Due to Clutch Disengaged
DPF Inhibit DueTo Breake	3705	Diesel Particulate Filter Active Regeneration Inhibited Due to Service Brake Active
DPF Inhibit DueTo Speed	3709	Diesel Particulate Filter Active Regeneration Inhibited Due to Vehicle Speed Above Allowed Speed
DPF Inhibit DueTo Neutral	3708	Diesel Particulate Filter Active Regeneration Inhibited Due to Out of Neutral
DPF Inhibit DueTo Idle	3707	Diesel Particulate Filter Active Regeneration Inhibited Due to Accelerator Pedal Off Idle
DPF Inhibit DueTo PTO	3706	Diesel Particulate Filter Active Regeneration Inhibited Due to PTO Active
DPF Inhibit DueTo Park.Brake	3710	Diesel Particulate Filter Active Regeneration Inhibited Due to Parking Brake Not Set
DPF Inhibit DueTo Exh.Temp	3711	Diesel Particulate Filter Active Regeneration Inhibited Due to Low Exhaust Temperature
DPF Inhibit DueTo SysFault	3712	Diesel Particulate Filter Active Regeneration Inhibited Due to System Fault Active

DPF Inhibit DueTo SysTimeout	3713	Diesel Particulate Filter Active Regeneration Inhibited Due to System Timeout
DPF Inhibit DueTo SysLockout	3714	Diesel Particulate Filter Active Regeneration Inhibited Due to Temporary System Lockout
DPF Inhibit DueTo Peranent Lockout	3715	Diesel Particulate Filter Active Regeneration Inhibited Due to Permanent System Lockout
DPF ActRegInhibNotWarmUp	3716	Diesel Particulate Filter Active Regeneration Inhibited Due to Engine Not Warmed Up
DPF Inhibit DueTo LowSpeed	3717	Diesel Particulate Filter Active Regeneration Inhibited Due to Vehicle Speed Below Allowed Speed
DPF Auto Reg.Configuration	3718	Diesel Particulate Filter Automatic Active Regeneration Initiation Configuration
HydrocarbonDoserEna	5504	Hydrocarbon Doser Purging Enable
DPF Inhibit DueTo Exh.Press	5629	Diesel Particulate Filter Active Regeneration Inhibited Due to Low Exhaust Pressure
DPF ConditionNotRegen	3750	Aftertreatment 1 Diesel Particulate Filter Conditions Not Met for Active Regeneration
Coolant Pre-heated State	3553	Engine Coolant Pre-heated State
AL Fuel Leakage	1239	Engine Fuel Leakage 1
Water in Fuel	97	Water In Fuel Indicator 1
SCR System Cleaning Inhibited Due to Inhibit Switch	6918	SCR System Cleaning Inhibited Due to Inhibit Switch
PTO Enable Switch	980	Engine PTO Governor Enable Switch
PTO Cost/Decelerate Switch	983	Engine PTO Governor Coast/Decelerate Switch
PTO Resume Switch	982	Engine PTO Governor Resume Switch
PTO Accelerate Switch	981	Engine PTO Governor Accelerate Switch
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		
Wait To Start Lamp	1081	Engine Wait to Start Lamp
Shutdown Engine	1110	Engine Protection System has Shutdown Engine
DPF Reg. Inhibit Switch(RX)	3695	Aftertreatment Regeneration Inhibit Switch
DPF Reg. Force Switch(RX)	3696	Aftertreatment Regeneration Force Switch
Engine Auxiliary Shutdown Sw(RX)	970	Engine Auxiliary Shutdown Switch

ECU binary inputs (controller's outputs - commands)		
Configuration Name	**SPN**	**J1939 Name**

	ECU analog outputs (controller's inputs)	
Configuration Name	**SPN**	**J1939 Name**
Engine Torque Mode	899	Engine Torque Mode
Engine speed	190	Engine Speed
Actual Torque	513	Actual Engine - Percent Torque
Demand Torque	512	Driver's Demand Engine - Percent Torque
Coolant Pressure	109	Engine Coolant Pressure 1
Coolant Level	111	Engine Coolant Level 1
Override control mode(RX)	695	Engine Override Control Mode
Req Speed Ctrl Conditions(RX)	696	Engine Requested Speed Control Conditions

Override Control Mode Prior(RX)	897	Override Control Mode Priority
Requested speed(RX)	898	Engine Requested Speed/Speed Limit
Intake NOx	3216	Aftertreatment 1 Selective Catalytic Reduction Intake NOx
Outlet NOx	3226	Aftertreatment 1 Outlet NOx
Fuel Filter Intake Abs Pressure	5417	Engine Fuel Filter (Suction Side) Intake Absolute Pressure
Fuel Temperature 2	3468	Engine Fuel Temperature 2
Soot Load Percent	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
Ash Load Percent	3720	Aftertreatment 1 Diesel Particulate Filter Ash Load Percent
DPF Lamp Command	3697	Diesel Particulate Filter Lamp Command
DPF Status	3701	Aftertreatment Diesel Particulate Filter Status
HEST Lamp Command	3698	Exhaust System High Temperature Lamp Command
DPF Act.Reg.ForcedStatus	4175	Diesel Particulate Filter Active Regeneration Forced Status
Diesel Exhaust Fluid Concentration	3516	Aftertreatment 1 Diesel Exhaust Fluid Concentration
Diesel Exhaust Fluid Temperature 2	3515	Aftertreatment 1 Diesel Exhaust Fluid Temperature 2
Exhaust Gas Temperature 1	3241	Aftertreatment 1 Exhaust Temperature 1
DPF Intake Gas Temperature	3242	Aftertreatment 1 Diesel Particulate Filter Intake Temperature
DPF Differential Pressure	3251	Aftertreatment 1 Diesel Particulate Filter Differential Pressure
DPF Outlet Gas Temperature	3246	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature
DPF Intake Pressure 1	3609	Aftertreatment 1 Diesel Particulate Filter Intake Pressure
DPF Outlet Pressure 1	3610	Aftertreatment 1 Diesel Particulate Filter Outlet Pressure
Right Air Filter Restriction	2809	Engine Air Filter 2 Differential Pressure
Intake Manifold Abs Press	3563	Engine Intake Manifold #1 Absolute Pressure
T-Charge Air	2629	Engine Turbocharger 1 Compressor Outlet Temperature
SCR Catalyst Intake Gas Temperature	4360	Aftertreatment 1 SCR Intake Temperature
SCR Catalyst Outlet Gas Temperature	4363	Aftertreatment 1 SCR Outlet Temperature
Exhaust Gas Temp - Right Manifold	2433	Engine Exhaust Manifold Bank 2 Temperature 1
Exhaust Gas Temp - Left Manifold	2434	Engine Exhaust Manifold Bank 1 Temperature 1
DEF Tank 1 Level	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank Level
Diesel Exhaust Fluid Tank 1 Temperature	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature
DEF Tank 1 Low Level Indicator	5245	Aftertreatment Selective Catalytic Reduction Operator Inducement Active
SCR Operator Inducement Severity	5246	Aftertreatment SCR Operator Inducement Severity
Diesel Exhaust Fluid Tank 1 Heater	3363	Aftertreatment 1 Diesel Exhaust Fluid Tank Heater
T-Coolant water (EMU) AUX	441	Auxiliary Temperature 1
Auxiliary Temperature 2	442	Auxiliary Temperature 2
Auxiliary Pressure #1	1387	Auxiliary Pressure #1
Pre-filter Oil Pressure	1208	Engine Pre-filter Oil Pressure
Auxiliary Coolant Pressure	1203	Engine Auxiliary Coolant Pressure
Turbocharger 1 Intake Temp	1180	Engine Turbocharger 1 Turbine Intake Temperature
Turbocharger 2 Intake Temp	1181	Engine Turbocharger 2 Turbine Intake Temperature
Turbo 1 Inlet Pressure	1176	Engine Turbocharger 1 Compressor Intake Pressure
Turbo 2 Inlet Pressure	1177	Engine Turbocharger 2 Compressor Intake Pressure
Exhaust Gas Port 1 Temp	1137	Engine Exhaust Gas Port 1 Temperature
Exhaust Gas Port 2 Temp	1138	Engine Exhaust Gas Port 2 Temperature
Engine Starter Mode	1675	Engine Starter Mode
Inlet Air Mass Flow Rate	132	Engine Intake Air Mass Flow Rate

Exhaust Gas Port 3 Temp	1139	Engine Exhaust Gas Port 3 Temperature
Exhaust Gas Port 4 Temp	1140	Engine Exhaust Gas Port 4 Temperature
Exhaust Gas Port 5 Temp	1141	Engine Exhaust Gas Port 5 Temperature
Exhaust Gas Port 6 Temp	1142	Engine Exhaust Gas Port 6 Temperature
Exhaust Gas Port 7 Temp	1143	Engine Exhaust Gas Port 7 Temperature
Exhaust Gas Port 8 Temp	1144	Engine Exhaust Gas Port 8 Temperature
Exhaust Gas Port 9 Temp	1145	Engine Exhaust Gas Port 9 Temperature
Exhaust Gas Port 10 Temp	1146	Engine Exhaust Gas Port 10 Temperature
Exhaust Gas Port 11 Temp	1147	Engine Exhaust Gas Port 11 Temperature
Exhaust Gas Port 12 Temp	1148	Engine Exhaust Gas Port 12 Temperature
Exhaust Gas Port 13 Temp	1149	Engine Exhaust Gas Port 13 Temperature
Exhaust Gas Port 14 Temp	1150	Engine Exhaust Gas Port 14 Temperature
Exhaust Gas Port 15 Temp	1151	Engine Exhaust Gas Port 15 Temperature
Exhaust Gas Port 16 Temp	1152	Engine Exhaust Gas Port 16 Temperature
Exhaust Gas Port 17 Temp	1153	Engine Exhaust Gas Port 17 Temperature
Exhaust Gas Port 18 Temp	1154	Engine Exhaust Gas Port 18 Temperature
Exhaust Gas Port 19 Temp	1155	Engine Exhaust Gas Port 19 Temperature
Exhaust Gas Port 20 Temp	1156	Engine Exhaust Gas Port 20 Temperature
ECU Temperature	1136	Engine ECU Temperature
Intake Manifold 2 Temperature	1131	Engine Intake Manifold 2 Temperature
Intake Manifold 3 Temperature	1132	Engine Intake Manifold 3 Temperature
Intake Manifold 4 Temperature	1133	Engine Intake Manifold 4 Temperature
Intake Manifold 5 Temperature	1802	Engine Intake Manifold 5 Temperature
Intake Manifold 6 Temperature	1803	Engine Intake Manifold 6 Temperature
Turbocharger 1 Boost Pressure	1127	Engine Turbocharger 1 Boost Pressure
Turbocharger 2 Boost Pressure	1128	Engine Turbocharger 2 Boost Pressure
Turbocharger 3 Boost Pressure	1129	Engine Turbocharger 3 Boost Pressure
Turbocharger 4 Boost Pressure	1130	Engine Turbocharger 4 Boost Pressure
Alternator Bearing 1 Temperature	1122	Engine Alternator Bearing 1 Temperature
Alternator Bearing 2 Temperature	1123	Engine Alternator Bearing 2 Temperature
Alternator Winding 1 Temperature	1124	Engine Alternator Winding 1 Temperature
Alternator Winding 2 Temperature	1125	Engine Alternator Winding 2 Temperature
Alternator Winding 3 Temperature	1126	Engine Alternator Winding 3 Temperature
Turbocharger Wastegate Valve Position	1693	Engine Turbocharger Wastegate Valve Position
Trip Avg Fuel Rate	1029	Trip Average Fuel Rate
Rated Power	166	Engine Rated Power
Rated Speed	189	Engine Rated Speed
Estimated Percent Fan Speed	975	Engine Fan 1 Estimated Percent Speed
Injector Metering Rail Pressure	157	Engine Injector Metering Rail 1 Pressure
Controlling Device Address	1483	Source Address of Controlling Device for Engine Control
Inj. Timing Rail 1 Pressure	156	Engine Injector Timing Rail 1 Pressure
Turbocharger 1 Speed	103	Engine Turbocharger 1 Speed
Nominal Friction - % Torque	514	Nominal Friction - Percent Torque
Desired Operating Speed	515	Engine's Desired Operating Speed
Operating Speed Asymetry	519	Engine's Desired Operating Speed Asymmetry Adjustment
Coolant Temp	110	Engine Coolant Temperature

Fuel Temp	174	Engine Fuel Temperature 1
EngineOil Temp	175	Engine Oil Temperature 1
Turbo Oil Temp	176	Engine Turbocharger Oil Temperature
IntercoolTemp	52	Engine Intercooler Temperature
Intercooler Thermostat Opening	1134	Engine Charge Air Cooler Thermostat Opening
Trap Inlet Pressure	81	Aftertreatment 1 Diesel Particulate Filter Intake Pressure
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Air Intake Pressure	106	Engine Intake Air Pressure
Air Filter Differential Pressure	107	Engine Air Filter 1 Differential Pressure
Exhaust Gas Temp	173	Engine Exhaust Temperature
Coolant Filter Diff. Pressure	112	Engine Coolant Filter Differential Pressure
AccPedal 1 Low Idle Switch	558	Accelerator Pedal 1 Low Idle Switch
Accelerator Pedal Position	91	Accelerator Pedal Position 1
Percent Load	92	Engine Percent Load At Current Speed
Remote Accelerator Pedal Position	974	Remote Accelerator Pedal Position
Accelerator Pedal Position2	29	Accelerator Pedal Position 2
Fuel Rate	183	Engine Fuel Rate
Throttle Position	51	Engine Throttle Valve 1 Position 1
Barometric Pressure	108	Barometric Pressure
Cab Interior Temperature	170	Cab Interior Temperature
Ambient Air Temperature	171	Ambient Air Temperature
Air Inlet Temperature	172	Engine Intake Air Temperature
Fuel Filter Diff.Press	95	Engine Fuel Filter Differential Pressure
EngOil Filter Diff.Press	99	Engine Oil Filter Differential Pressure
Gas Supply Pressure	159	Engine Gaseous Fuel Supply Pressure 1
SCR System Cleaning Lamp Command	6915	SCR System Cleaning Lamp Command
Electrical Potential (Voltage)	168	Battery Potential / Power Input 1
Battery Potential (Voltage)	158	Keyswitch Battery Potential
Transmission Oil Pressure	127	Transmission Oil Pressure
Fuel Delivery Pressure	94	Engine Fuel Delivery Pressure
Extended Crankcase Blow-by Pressure	22	Engine Extended Crankcase Blow-by Pressure
Engine Oil Level	98	Engine Oil Level
Engine Oil Pressure	100	Engine Oil Pressure
Crankcase Pressure	101	Engine Crankcase Pressure 1
Torque Limit (RX)	518	Engine Requested Torque/Torque Limit
Frequency Selection(RX)	4080	Generator Frequency Selection
PTO State(RX)	976	PTO Governor State

ECU analog inputs (controller's outputs)		
Configuration Name	**SPN**	**J1939 Name**

Recommended wiring

	9pin diagnostic connector	Controller
CAN H	G	CAN1 (extension modules/J1939) – CAN H
CAN COM	C	CAN1 (extension modules/J1939) – CAN COM

CAN L	F	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	N/A	N/A
Battery - (negative)	N/A	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 18**.
Available list of texts of fault codes **see Standard J1939 monitor on page 1**.

back to List of ECU

4 List of texts of ECU fault codes

back to Table of contents

4.1 AGCOPower EEM4 Fault Codes

Fault Code (SPN)	Text
3	FuelInjectors
51	ThrottleVlv1
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
153	P-Crankcase

157	P-Fuel1Inj1
168	Battery
172	T-AirIntake
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN
515	Spd-Desired
620	5VSupply
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
723	Spd-Speed2
898	Spd-Requested
970	AuxShutdown
971	DerateSw
1043	12VSupply
1076	FuelInjPump
1077	FuelInjPump
1109	EPS SDApproach
1110	EPS Shutdown
1136	T-ECU
1485	ECMMainRelay
3509	SensorSupply01
3510	SensorSupply02
3511	SensorSupply03
3512	SensorSupply04
4201	Spd-Engine1
9006	VehicleCANoff
9008	IDmoduleCANoff
9010	P-Ambient
9021	5VDCSupply1
9022	5VDCSupply2
9023	5VDCSupply3

9024	WaterInFuel
9025	SelfTestWtchdg
9026	SelfTestVolt
9027	SelfTestVolt
9030	MainRelay1
9031	MainRelay2
9032	MainRelay3
9033	MainRelay
9034	MainRelay
9035	NormalRecovery
9036	FullRestart
9070	CrankSpeed
9071	CrankSpeed
9072	CrankSpeed
9080	CamSpeed
9081	CamSpeed
9082	CamSpeed
9083	CamSpeed
9090	EngineSpeed
9107	InvalidECUAddr
9131	SolenoidValve1
9132	SolenoidValve2
9133	SolenoidValve3
9134	SolenoidValve4
9135	SolenoidValve5
9136	SolenoidValve6
9140	Throttle2Sens
9141	Throttle3Sens
9150	P-Rail
9151	PressReliefVlv
9152	P-FuelFlt
9153	P-FuelFlt
9174	MPROP
9230	EngSpecMismtch
9231	EngSNMismatch
9233	IDM-NotPresent
9234	IDM-NotComptbl
9235	IDModule
9236	IDM-MemDefect
9237	IDM-Watchdog
9238	IDM-Brownout
9239	EngSpecMissing
9240	EngSNMissing
9241	IDM-NotPresent
9242	GeneratedByPTE
9243	MaxECUByPTE
9305	BadDIConfig

9306	PTOInputError
9310	ExternalFlt1
9311	ExternalFlt2
9312	TorqCtrlInput
520200	Powerstages
520201	EngineCAN
520202	MainRelay1
520203	MainRelay2
520208	RailPRV
520209	FuelInjectors
520210	FuelInjectors
520212	Internal0105
520213	Internal0106
520214	Internal0107
520215	Internal 0108
520216	Internal0109
520217	Internal0110
520218	Internal0111
520219	Internal0112
520220	Internal0113
520221	Internal0114
520222	Internal0115
520223	Internal0116
520224	Internal0117
520225	Internal0118
520226	Internal0119
520227	Internal0120
520228	Internal0121
520229	Internal0122
520230	EngineSpec
520232	DigitalInputs
520233	Internal0128
520234	Internal0129
520235	Internal0130
520236	Internal0131
520240	InjectorBank0
520241	InjectorBank1
520243	RailPRV
520244	RailPRV
520245	RailPRV
520246	RailPRV
520247	Internal0123
520297	Internal0132
520298	Internal0133

4.2 Caterpillar ADEM Fault Codes

Fault Code (SPN)	Text
27	EGR1
29	APP2
30	P-BwbCrankcase
38	FuelLevel2
51	ThrottleVlv1
81	DPFIntake
82	P-AirStart
91	APP
94	P-FuelDelivery
95	P-FuelFltDiff
96	FuelLevel1
97	WaterInFuel
98	OilLevel
99	P-OilFltDiff
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
137	P-AuxGage
153	P-Crankcase
158	KeySwitch
167	SysCharging
168	Battery
171	T-AmbientAir
172	T-AirIntake
173	T-Exhaust
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
231	TripFuel
234	Software
237	VIN
515	Spd-Desired
611	SysDiagCode1
620	5VSupply
626	StartEnbl1
628	ProgramMemory

629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
659	InjectorCyl 9
660	InjectorCyl10
661	InjectorCyl11
662	InjectorCyl12
663	InjectorCyl13
664	InjectorCyl14
665	InjectorCyl15
666	InjectorCyl16
667	InjectorCyl17
668	InjectorCyl18
669	InjectorCyl19
670	InjectorCyl20
677	StarterMotor
701	AuxiliaryIO 01
702	AuxiliaryIO 02
703	AuxiliaryIO 03
704	AuxiliaryIO 04
705	AuxiliaryIO 05
706	AuxiliaryIO 06
898	Spd-Requested
924	AuxiliaryOut 1
925	AuxiliaryOut 2
970	AuxShutdown
971	DerateSw
1109	EPS SDApproach
1110	EPS Shutdown
1122	T-AltBearing1
1137	T-ExhPort 1
1138	T-ExhPort 2
1139	T-ExhPort 3
1140	T-ExhPort 4
1141	T-ExhPort 5
1142	T-ExhPort 6
1143	T-ExhPort 7

1144	T-ExhPort 8
1145	T-ExhPort 9
1146	T-ExhPort10
1147	T-ExhPort11
1148	T-ExhPort12
1149	T-ExhPort13
1150	T-ExhPort14
1151	T-ExhPort15
1152	T-ExhPort16
1153	T-ExhPort17
1154	T-ExhPort18
1155	T-ExhPort19
1156	T-ExhPort20
1180	T-Turbo1Int
1181	T-Turbo2Int
1182	T-Turbo3Int
1183	T-Turbo4Int
1185	T-Turbo2Out
1203	P-AuxCoolant
1239	FuelLeakage1
1268	IgnitionCoil01
1269	IgnitionCoil02
1270	IgnitionCoil03
1271	IgnitionCoil04
1272	IgnitionCoil05
1273	IgnitionCoil06
1274	IgnitionCoil07
1275	IgnitionCoil08
1276	IgnitionCoil09
1277	IgnitionCoil10
1278	IgnitionCoil11
1279	IgnitionCoil12
1280	IgnitionCoil13
1281	IgnitionCoil14
1282	IgnitionCoil15
1283	IgnitionCoil16
1284	IgnitionCoil17
1285	IgnitionCoil18
1286	IgnitionCoil19
1287	IgnitionCoil20
1352	Cyl 1KnockLvl
1353	Cyl 2KnockLvl
1354	Cyl 3KnockLvl
1355	Cyl 4KnockLvl
1356	Cyl 5KnockLvl
1357	Cyl 6KnockLvl
1358	Cyl 7KnockLvl

1359	Cyl 8KnockLvl
1360	Cyl 9KnockLvl
1361	Cyl10KnockLvl
1362	Cyl11KnockLvl
1363	Cyl12KnockLvl
1364	Cyl13KnockLvl
1365	Cyl14KnockLvl
1366	Cyl15KnockLvl
1367	Cyl16KnockLvl
1368	Cyl17KnockLvl
1369	Cyl18KnockLvl
1370	Cyl19KnockLvl
1371	Cyl20KnockLvl
1393	Cyl 1IgnOutput
1394	Cyl 2IgnOutput
1395	Cyl 3IgnOutput
1396	Cyl 4IgnOutput
1397	Cyl 5IgnOutput
1398	Cyl 6IgnOutput
1399	Cyl 7IgnOutput
1400	Cyl 8IgnOutput
1401	Cyl 9IgnOutput
1402	Cyl10IgnOutput
1403	Cyl11IgnOutput
1404	Cyl12IgnOutput
1405	Cyl13IgnOutput
1406	Cyl14IgnOutput
1407	Cyl15IgnOutput
1408	Cyl16IgnOutput
1409	Cyl17IgnOutput
1410	Cyl18IgnOutput
1411	Cyl19IgnOutput
1412	Cyl20IgnOutput
1485	ECMMainRelay
2452	GenRealPwr
2456	GenReactive
3216	SCR IntakeNOx
3381	GenExitCurrent
3581	ModbusDataLink
4193	T-CoolPumpOut
5578	P-FuelDelivery

4.3 Caterpillar ADEM with EMCP Fault Codes

Fault Code (SPN)	Text
27	EGR1
29	APP2

30	P-BwbCrankcase
38	FuelLevel2
51	ThrottleVlv1
81	DPFIntake
82	P-AirStart
91	APP
94	P-FuelDelivery
95	P-FuelFltDiff
96	FuelLevel1
97	WaterInFuel
98	OilLevel
99	P-OilFltDiff
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
137	P-AuxGage
153	P-Crankcase
158	KeySwitch
167	SysCharging
168	Battery
171	T-AmbientAir
172	T-AirIntake
173	T-Exhaust
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
231	TripFuel
234	Software
237	VIN
515	Spd-Desired
611	SysDiagCode1
620	5VSupply
625	SCADA DataLink
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor

639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
659	InjectorCyl 9
660	InjectorCyl10
661	InjectorCyl11
662	InjectorCyl12
663	InjectorCyl13
664	InjectorCyl14
665	InjectorCyl15
666	InjectorCyl16
667	InjectorCyl17
668	InjectorCyl18
669	InjectorCyl19
670	InjectorCyl20
677	StarterMotor
701	AuxiliaryIO 01
702	AuxiliaryIO 02
703	AuxiliaryIO 03
704	AuxiliaryIO 04
705	AuxiliaryIO 05
706	AuxiliaryIO 06
898	Spd-Requested
924	AuxiliaryOut 1
925	AuxiliaryOut 2
970	AuxShutdown
971	DerateSw
1109	EPS SDApproach
1110	EPS Shutdown
1122	T-AltBearing1
1137	T-ExhPort 1
1138	T-ExhPort 2
1139	T-ExhPort 3
1140	T-ExhPort 4
1141	T-ExhPort 5
1142	T-ExhPort 6
1143	T-ExhPort 7
1144	T-ExhPort 8
1145	T-ExhPort 9
1146	T-ExhPort10
1147	T-ExhPort11

1148	T-ExhPort12
1149	T-ExhPort13
1150	T-ExhPort14
1151	T-ExhPort15
1152	T-ExhPort16
1153	T-ExhPort17
1154	T-ExhPort18
1155	T-ExhPort19
1156	T-ExhPort20
1180	T-Turbo1Int
1181	T-Turbo2Int
1182	T-Turbo3Int
1183	T-Turbo4Int
1185	T-Turbo2Out
1203	P-AuxCoolant
1239	FuelLeakage1
1268	IgnitionCoil01
1269	IgnitionCoil02
1270	IgnitionCoil03
1271	IgnitionCoil04
1272	IgnitionCoil05
1273	IgnitionCoil06
1274	IgnitionCoil07
1275	IgnitionCoil08
1276	IgnitionCoil09
1277	IgnitionCoil10
1278	IgnitionCoil11
1279	IgnitionCoil12
1280	IgnitionCoil13
1281	IgnitionCoil14
1282	IgnitionCoil15
1283	IgnitionCoil16
1284	IgnitionCoil17
1285	IgnitionCoil18
1286	IgnitionCoil19
1287	IgnitionCoil20
1352	Cyl 1KnockLvl
1353	Cyl 2KnockLvl
1354	Cyl 3KnockLvl
1355	Cyl 4KnockLvl
1356	Cyl 5KnockLvl
1357	Cyl 6KnockLvl
1358	Cyl 7KnockLvl
1359	Cyl 8KnockLvl
1360	Cyl 9KnockLvl
1361	Cyl10KnockLvl
1362	Cyl11KnockLvl

1363	Cyl12KnockLvl
1364	Cyl13KnockLvl
1365	Cyl14KnockLvl
1366	Cyl15KnockLvl
1367	Cyl16KnockLvl
1368	Cyl17KnockLvl
1369	Cyl18KnockLvl
1370	Cyl19KnockLvl
1371	Cyl20KnockLvl
1393	Cyl 1IgnOutput
1394	Cyl 2IgnOutput
1395	Cyl 3IgnOutput
1396	Cyl 4IgnOutput
1397	Cyl 5IgnOutput
1398	Cyl 6IgnOutput
1399	Cyl 7IgnOutput
1400	Cyl 8IgnOutput
1401	Cyl 9IgnOutput
1402	Cyl10IgnOutput
1403	Cyl11IgnOutput
1404	Cyl12IgnOutput
1405	Cyl13IgnOutput
1406	Cyl14IgnOutput
1407	Cyl15IgnOutput
1408	Cyl16IgnOutput
1409	Cyl17IgnOutput
1410	Cyl18IgnOutput
1411	Cyl19IgnOutput
1412	Cyl20IgnOutput
1485	ECMMainRelay
1656	AutoStart
1664	AutoStartFail
2433	T-Exh2Manf1
2434	T-Exh1Manif1
2452	GenRealPwr
2456	GenReactive
2648	Maintenance
3216	SCR IntakeNOx
3381	GenExitCurrent
3581	ModbusDataLink
4000	ExhBrakeSwitch
4002	RemoteStart
4003	RemoteStop
4006*	Cooldown
4007*	EMCPNotInAuto
4193	T-CoolPumpOut
5578	P-FuelDelivery

*Hidden fault code by default

4.4 Cummins CM500 Fault Codes

Fault Code (SPN)	Text
29	APP2
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
102	P-Intake
105	T-IntManifold
108	P-Barometric
109	P-Coolant
110	T-Coolant
111	CoolantLvl
135	P-FuelDelivery
156	P-Fuel1Inj1
157	P-Fuel1Inj1
168	Battery
174	T-Fuel
175	T-Oil
190	EngineSpeed
191	Spd-OutShaft
558	AP LowIdleSw
620	5VSupply
626	StartEnbl1
627	PowerSupply
629	Controller1
630	CalibratMemory
632	FuelShtoff1
633	FuelActCmd
635	TimingActuator
639	J1939CANBus
974	APPRemote
1076	FuelInjPump
1077	FuelInjPump
1078	FuelInjPump
1083	AuxiliaryIO 1
1084	AuxiliaryIO 2
1129	P-Turbo3Boost
1131	T-IntManifold2
1132	T-IntManifold3
1172	T-Turbo1CInt
1173	T-Turbo2CInt
1244	FuelActCmd2
1347	FuelPmpAsmbl1
1349	P-Fuel1Inj2
1380	RemoteOilRsv
1384	SDDatalink

4.5 Cummins CM558 Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
100	P-Oil
105	T-IntManifold
109	P-Coolant1
110	T-Coolant
168	Battery
190	EngineSpeed
444	V-BatteryInp2
623	StopLamp
624	WarningLamp
629	Controller1
630	CalibratMemory
632	FuelShtoff1
633	FuelActCmd
639	J1939CANBus
724	O2Sensor
1136	T-ECU
1204	ElectricalLoad
1442	FuelVlvPos1
2634	PowerRelay
3464	ThrottleCmd
3509	SensorSupply01
3510	SensorSupply02
3563	P-IntakeManAbs
3938	GenGovernBias
520352	SDIgnitRelay
520353	CarburInletGas

4.6 Cummins CM570 Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric

109	P-Coolant1
110	T-Coolant
111	CoolantLvl
153	P-Crankcase
158	KeySwitch
168	Battery
172	T-AirIntake
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN
515	Spd-Desired
620	5VSupply
626	StartEnbl1
627	PowerSupply
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
898	Spd-Requested
970	AuxShutdown
971	DerateSw
1109	EPS SDApproach
1110	EPS Shutdown
1485	ECMMainRelay

4.7 Cummins CM800 Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase

102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
153	P-Crankcase
158	KeySwitch
168	Battery
172	T-AirIntake
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN
515	Spd-Desired
620	5VSupply
626	StartEnbl1
627	PowerSupply
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
898	Spd-Requested
970	AuxShutdown
971	DerateSw
1109	EPS SDApproach
1110	EPS Shutdown
1485	ECMMainRelay

4.8 Cummins CM850 Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
91	APP

94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
153	P-Crankcase
157	P-Fuel1Inj1
158	KeySwitch
166	Pwr-Rated
168	Battery
172	T-AirIntake
173	T-Exhaust
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN
515	Spd-Desired
611	SysDiagCode1
612	SysDiagCode2
620	5VSupply
626	StartEnbl1
627	PowerSupply
628	ProgramMemory
629	Controller1
630	CalibratMemory
633	FuelActCmd
636	PositionSensor
637	TimingSensor
639*	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
697	PWMDriver1

723	Spd-Speed2
898	Spd-Requested
970	AuxShutdown
971	DerateSw
1075	LiftPump
1109	EPS SDApproach
1110	EPS Shutdown
1347	FuelPmpAsmbl1
1485	ECMMainRelay
2802	DataMemoryUsg
3509	SensorSupply01
3510	SensorSupply02
3511	SensorSupply03
3512	SensorSupply04
3597	PwrOutSupply1
3938	GenGovernBias
4182	GenOutFreq
4183	GenDroop

*Hidden fault code by default

4.9 Cummins CM2150 Fault Codes

Fault Code (SPN)	Text
27	EGR1
81	DPFIntake
84	Spd-WheelBased
91	APP
93	AuxiliaryTrq
94	P-FuelDelivery
95	P-FuelFltDiff
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
103	Spd-Turbo
105	T-IntManifold
108	P-Barometric
110	T-Coolant
111	CoolantLvl
157	P-Fuel1Inj1
167	SysCharging
168	Battery
171	T-AmbientAir
175	T-Oil
190	EngineSpeed

251	RealTimeClock
411	P-EGR1Diff
412	T-EGR1
441	T-Auxiliary1
558	AP LowIdleSw
612	MagneticSpeed
625	PropDatalink
626	StartEnbl1
627	PowerSupply
629	Controller1
630	CalibratMemory
632	FuelShtoff1
633	FuelActCmd
635	TimingActuator
639	J1939CANBus
640	ProtectionInp
641	TurboGeometry
647	FanClutch1Out
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
697	PWMDriver1
703	AuxiliaryIO 03
723	Spd-Speed2
729	IntAirHeater1
974	APPRemote
1072	CompBrakeOut1
1073	CompBrakeOut2
1074	ExhBrakeOut
1075	LiftPump
1112	CompBrakeOut3
1136	T-ECU
1172	T-Turbo1CInt
1188	TurboWstAct1
1195	A-Tpassword
1209	P-ExhaustPres1
1244	FuelActCmd2
1245	TimeAct2
1267	SDIdleAcc
1347	FuelPmpAsmbl1
1349	P-Fuel1Inj2
1378	OilChange
1388	P-Auxiliary2
1590	AdaptiveCC

1761	DEFTnkLevel
2623	AP1Channel2
2629	T-Turbo1Outlet
2789	T-Turbo1Int
2791	EGR1Vlv1
2797	FuelInjectorG1
2884	AuxGovernor
3031	T-DEFTnk
3050	CatalystBank1
3058	EGRSysMonitor
3064	DPFSysMonitor
3226	AT1OutNOx
3228	AT1OutGS1Pwr
3241	T-AT1Exh1
3245	T-AT1Exh3
3249	T-AT1Exh2
3251	P-DPFDiff
3361	DEFDosing1
3362	DEFDosing1
3363	DEFTnkHeater
3480	P-AT1Fuel
3481	AT1FuelRate
3482	AT1FuelEnb
3489	AT1AirAct
3509	SensorSupply01
3510	SensorSupply02
3511	SensorSupply03
3512	SensorSupply04
3513	SensorSupply05
3555	AmbAirDensity
3556	AT1-FuelInj
3597	PwrOutSupply1
3598	PwrOutSupply2
3703	DPFInhSwitch
4097	AT1FuelDrain
4340	DEFHeater1
4342	DEFHeater2
4360	T-SCR1Intake
4363	T-SCR1Outlet
4794	AT1SCRMissing

4.10 Cummins CM2250 Fault Codes

Fault Code (SPN)	Text
27	EGR1
81	DPFIntake
97	WaterInFuel

100	P-Oil
101	P-Crankcase
102	P-Intake
103	Spd-Turbo
105	T-IntManifold
110	T-Coolant
111	CoolantLvl
157	P-Fuel1Inj1
168	Battery
171	T-AmbientAir
190	EngineSpeed
411	P-EGR1Diff
412	T-EGR1
611	SysDiagCode1
627	PowerSupply
629	Controller1
633	FuelActCmd
639	J1939CANBus
641	TurboGeometry
647	FanClutch1Out
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
659	InjectorCyl 9
660	InjectorCyl10
661	InjectorCyl11
662	InjectorCyl12
663	InjectorCyl13
664	InjectorCyl14
665	InjectorCyl15
666	InjectorCyl16
723	Spd-Speed2
729	IntAirHeater1
1075	LiftPump
1136	T-ECU
1209	P-ExhaustPres1
1231	CANBusOFF
1347	FuelPmpAsmbl1
1378	OilChange
2789	T-Turbo1Int
2791	EGR1Vlv1
2797	FuelInjectorG1

3509	SensorSupply01
3510	SensorSupply02
3511	SensorSupply03
3512	SensorSupply04
3513	SensorSupply05
3514	SensorSupply06
3555	AmbAirDensity
3597	PwrOutSupply1
4795	DPFMissing
4796	DOCMissing

4.11 Cummins CM2350 Fault Codes

Fault Code (SPN)	Text
27	EGR1
81	DPFIntake
91	APP
94	P-FuelDelivery
95	P-FuelFltDiff
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
103	Spd-Turbo
104	P-TurboLubeOil
105	T-IntManifold
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
157	P-Fuel1Inj1
168	Battery
171	T-AmbientAir
174	T-Fuel
175	T-Oil
188	Spd-Idle
190	EngineSpeed
191	Spd-OutShaft
251	Time
411	P-EGR1Diff
412	T-EGR1
441	T-Auxiliary1
442	T-Auxiliary2
558	AP LowIdleSw
612	SysDiagCode2

626	StartEnbl1
629	Controller1
630	CalibratMemory
633	FuelActCmd
639	J1939CANBus
640	ProtectionInp
641	TurboGeometry
644	Spd-ExtInput
647	FanClutch1Out
649	P-ExhBankReg
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
659	InjectorCyl 9
660	InjectorCyl10
661	InjectorCyl11
662	InjectorCyl12
663	InjectorCyl13
664	InjectorCyl14
665	InjectorCyl15
666	InjectorCyl16
697	PWMDriver1
701	AuxiliaryIO 01
723	Spd-Speed2
729	IntAirHeater1
974	APPRemote
1075	LiftPump
1081	WaitStartLamp
1109	EPS SDApproach
1127	P-Turbo1Boost
1136	T-ECU
1172	T-Turbo1CInt
1176	P-Turbo1Intake
1209	P-ExhaustPres1
1213	MalfunctLamp
1231	J1939Net2
1235	J1939Net3
1239	FuelLeakage1
1267	SDIdleAcc
1322	Misfire
1323	MisfireCyl 1
1324	MisfireCyl 2

1325	MisfireCyl 3
1326	MisfireCyl 4
1327	MisfireCyl 5
1328	MisfireCyl 6
1347	FuelPmpAsmbl1
1349	P-Fuel1Inj2
1378	OilChange
1387	P-Auxiliary1
1388	P-Auxiliary2
1563	IncompContr
1569	TorqueDerate
1623	Spd-TachoShaft
1632	TorqueLimit
1639	Spd-Fan
1668	J1939Net4
1675	StarterMode
1761	DEFTnkLevel
1800	T-BatterySLI1
2006	SA 6
2623	AP1Channel2
2629	T-Turbo1Outlet
2630	T-AirCoolerOut
2633	VGTNozzle
2634	PowerRelay
2789	T-Turbo1Int
2791	EGR1Vlv1
2797	FuelInjectorG1
2884	AuxGovernor
2978	Torque
3031	T-DEFTnk
3060	CoolSysMonitor
3216	SCR IntakeNOx
3217	AT1IntOxygen
3218	AT1IntGSPower
3226	AT1OutNOx
3227	AT1OutOxygen1
3228	AT1OutGS1Pwr
3242	T-DPFIntake
3246	T-DPFOutlet
3249	T-AT1Exh2
3251	P-DPFDiff
3255	SCR2IntakeNOx
3265	AT2OutNOx
3353	Alternator1
3361	DEFDosing1
3362	DEFDosing1
3363	DEFTnkHeater

3364	DEFQuality
3480	P-AT1Fuel
3481	AT1FuelRate
3482	AT1FuelEnb
3490	AT1PurgeAir
3509	SensorSupply01
3510	SensorSupply02
3511	SensorSupply03
3512	SensorSupply04
3513	SensorSupply05
3514	SensorSupply06
3515	T-DEFTnk2
3521	DEFProperty
3555	AmbAirDensity
3556	AT1HydroCarb1
3597	PwrOutSupply1
3610	P-DPFOutlet
3667	AirShutoff
3695	RegenInhibit
3703	DPFInhSwitch
3713	DPFInhTimeout
3750	DPFNoMetRegen
3826	DEFAvgConsmpt
3936	DPFSystem
4094	NOxInsfDEF
4096	NOxEmptyDEF
4097	AT1FuelDrain
4182	GenOutFreq
4183	GenDroop
4184	GenGain
4331	DEFDosingQ
4334	P-DEFDoser1
4337	T-DEFDoser1
4339	SCRFeedback
4340	DEFHeater1
4342	DEFHeater2
4344	DEFHeater3
4360	T-SCR1Intake
4363	T-SCR1Outlet
4364	SCRCnvEfficncy
4376	DEFDosing1
4490	Humidity
4765	T-AT1CatalInt
4766	T-AT1CatalOut
4792	AT1SCR
4793	AT1WarmUpDOC
4794	AT1SCRMissing

4795	DPFMissing
4796	DOCMissing
4809	T-AT1DOCInt
4810	T-AT1DOCOut
5018	AT1DOC
5019	P-EGR1Out
5024	AT1IntNOxHeat
5031	AT1OutNOxHeat
5125	SensorSupply07
5246	SCR Severity
5298	AT1DOC
5319	DPFIncomplReg
5357	InjFuelError
5380	FuelValve1
5394	DEFDoserVlv1
5395	IdleFuelQntt
5396	CrankcaseVnt
5397	DPFRegenFreq
5484	FanCltch2Out
5491	DEFHeater
5571	CRReliefVlv
5585	P-Fuel1InjRal1
5625	ExhBank1PReg
5626	ExhBank1PReg
5741	AT1OutSoot
5742	DPFTempSensor
5743	SCRTempSensor
5745	DEFDosing1
5746	DEFDosing1
5747	AT1OutSootHtr
5793	DesFueling
5797	WarmUpDOC
5798	DEFDosing1
5838	EGRVlvMalfunct
5839	DEFConsumption
5840	DEFDosing
5841	DEFQ
5842	SCRMalfunction
6301	WaterInFuel2
6653	P-FuelInjRail1
6655	ECUPwrLamp
6713	VGT SW
6881	SCROverride
6882	DOCTempModule
6918	SCR InhSwitch
6928	SCR InhTimeout
520199	CruiseControl

520320	CrankcsDepVlv
520435	GlowPlugMod
520595	CrankcaseVent
520668	AT1 OutNOx
520716	DEFVlv1Heat
520784	FanBlade
520791	BoostCurve
520808	ESD
520809	TimeAirShutoff

4.12 Cummins CM2880 Fault Codes

Fault Code (SPN)	Text
22	P-ExtCrankcase
29	APP2
51	ThrottleVlv1
52	T-Intcooler
81	DPFIntake
91	APP
92	Load
94	P-FuelDelivery
95	P-FuelFltDiff
97	WaterInFuel
98	OilLevel
99	P-OilFltDiff
100	P-Oil
101	P-Crankcase
102	P-Intake
103	Spd-Turbo
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
112	P-CoolFltrDiff
127	P-Oil
132	IntAirMassFlow
153	P-Crankcase
156	P-Fuel1Inj1
157	P-Fuel1Inj1
158	KeySwitch
159	P-GasFuelSppl
166	Pwr-Rated
168	Battery
170	T-CabInterior

171	T-AmbientAir
172	T-AirIntake
173	T-Exhaust
174	T-Fuel
175	T-Oil
176	T-TurboOil
183	FuelRate
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN
247	EngineRunHours
250	TotalFuelUsed
441	T-Auxiliary1
442	T-Auxiliary2
512	TorqueDemand
513	TorqueActual
514	Torque
515	Spd-Desired
518	ReqTorque
519	Spd-DesAsym
558	AP LowIdleSw
620	5VSupply
623	StopLamp
624	WarningLamp
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
659	InjectorCyl 9
660	InjectorCyl10
661	InjectorCyl11
662	InjectorCyl12
663	InjectorCyl13
664	InjectorCyl14
665	InjectorCyl15
666	InjectorCyl16

667	InjectorCyl17
668	InjectorCyl18
669	InjectorCyl19
670	InjectorCyl20
671	InjectorCyl21
672	InjectorCyl22
673	InjectorCyl23
674	InjectorCyl24
677	StarterMotor
695	OverrideMode
898	Spd-Requested
970	AuxShutdown
971	DerateSw
974	APPRemote
975	Fan1EstSpd
976	PTO
980	PTOEnable
981	PTOAccelerate
982	PTOResume
983	PTODecelerate
987	ProtectLamp
1029	TripAFuelRate
1081	WaitStartLamp
1109	EPS SDApproach
1110	EPS Shutdown
1122	T-AltBearing1
1123	T-AltBearing2
1124	T-AltWinding1
1125	T-AltWinding2
1126	T-AltWinding3
1127	P-Turbo1Boost
1128	P-Turbo2Boost
1129	P-Turbo3Boost
1130	P-Turbo4Boost
1131	T-IntManifold2
1132	T-IntManifold3
1133	T-IntManifold4
1134	ChAirThermost
1136	T-ECU
1137	T-ExhPort 1
1138	T-ExhPort 2
1139	T-ExhPort 3
1140	T-ExhPort 4
1141	T-ExhPort 5
1142	T-ExhPort 6
1143	T-ExhPort 7
1144	T-ExhPort 8

1145	T-ExhPort 9
1146	T-ExhPort10
1147	T-ExhPort11
1148	T-ExhPort12
1149	T-ExhPort13
1150	T-ExhPort14
1151	T-ExhPort15
1152	T-ExhPort16
1153	T-ExhPort17
1154	T-ExhPort18
1155	T-ExhPort19
1156	T-ExhPort20
1176	P-Turbo1Intake
1177	P-Turbo2Intake
1180	T-Turbo1Int
1181	T-Turbo2Int
1203	P-AuxCoolant
1208	P-OilFiltInt
1239	FuelLeakage1
1387	P-Auxiliary1
1483	SourceAddress
1485	ECMMainRelay
1675	StarterMode
1693	TurboWastgate
1761	DEFTnkLevel
1802	T-IntManifold5
1803	T-IntManifold6
2433	T-Exh2Manf1
2434	T-Exh1Manif1
2435	P-SeaWtrPmpOut
2629	T-Turbo1Outler
2809	P-AirFilt2Diff
3031	T-DEFTnk
3041	FlashProtect
3216	SCR IntakeNOx
3226	AT1OutNOx
3241	T-AT1Exh1
3242	T-DPFIntake
3246	T-DPFOutlet
3251	P-DPFDiff
3363	DEFTnkHeater
3468	T-1Fuel2
3515	T-DEFTnk2
3516	DEFConcentrat
3553	CoolPreHeated
3563	P-IntakeManAbs
3609	P-DPFIntake

3610	P-DPFOutlet
3695	RegenInhibit
3696	RegenForce
3697	DPFLamp
3698	HEST Lamp
3699	DPFPasive
3700	DPFRegenAct
3701	DPFStatus
3702	DPFInhibited
3703	DPFInhSwitch
3704	DPFInhClutch
3705	DPFInhBreake
3706	DPFInhPTO
3707	DPFInhIdle
3708	DPFInhNeutral
3709	DPFInhSpeed
3710	DPFInhBreake
3711	DPFInhExhTmp
3712	DPFInhSysFlt
3713	DPFInhTimeout
3714	DPFInhSysLock
3715	DPFInhLockout
3716	DPFInhWarmed
3717	DPFInhLowSpd
3718	DPFInhConfig
3719	DPFSootLoad
3720	DPFAshLoad
3750	DPFNoMetRegen
3826	DEFAvgConsmpt
4080	FreqSelect
4175	DPFRegenForce
4360	T-SCR1Intake
4363	T-SCR1Outlet
5245	DEFLowLevel
5246	SCR Severity
5417	P-FuelFltInt
5504	HydrocarbPurg
5629	DPFInhExhPres
6915	SCR Lamp
6918	SCR InhSwitch

4.13 Cummins PGI Fault Codes

Fault Code (SPN)	Text
27	EGR1
81	DPFIntake
84	Spd-WheelBased

91	APP
93	NetBrakeTrq
94	P-FuelDelivery
95	P-FuelFltDiff
97	WaterInFuel
99	P-OilFltDiff
100	P-Oil
101	P-Crankcase
102	P-Intake
103	Spd-Turbo
105	T-IntManifold
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
157	P-Fuel1Inj1
166	Pwr-Rated
168	Battery
171	T-AmbientAir
173	T-Exhaust
174	T-Fuel
175	T-Oil
183	FuelRate
190	EngineSpeed
191	Spd-OutShaft
251	Time
411	P-EGR1Diff
412	T-EGR1
441	T-Auxiliary1
558	AP LowIdleSw
597	Brake
611	SysDiagCode1
612	SysDiagCode2
623	StopLamp
627	PowerSupply
629	Controller1
630	CalibratMemory
633	FuelActCmd
639	J1939CANBus
640	ProtectionInp
641	TurboGeometry
644	Spd-ExtInput
647	FanClutch1Out
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4

655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
659	InjectorCyl 9
660	InjectorCyl10
661	InjectorCyl11
662	InjectorCyl12
663	InjectorCyl13
664	InjectorCyl14
665	InjectorCyl15
666	InjectorCyl16
697	PWMDriver1
701	AuxiliaryIO 01
702	AuxiliaryIO 02
703	AuxiliaryIO 03
723	Spd-Speed2
729	IntAirHeater1
974	APPRemote
1073	CompBrakeOut2
1075	LiftPump
1112	CompBrakeOut3
1128	P-Turbo2Boost
1131	T-IntManifold2
1132	T-IntManifold3
1133	T-IntManifold4
1136	T-ECU
1137	T-ExhPort 1
1138	T-ExhPort 2
1139	T-ExhPort 3
1140	T-ExhPort 4
1141	T-ExhPort 5
1142	T-ExhPort 6
1143	T-ExhPort 7
1144	T-ExhPort 8
1145	T-ExhPort 9
1146	T-ExhPort10
1147	T-ExhPort11
1148	T-ExhPort12
1149	T-ExhPort13
1150	T-ExhPort14
1151	T-ExhPort15
1152	T-ExhPort16
1172	T-Turbo1CInt
1208	P-OilFiltInt
1209	P-ExhaustPres1
1231	CANBusOff

1235	CANBusOff
1242	Pwr-Brake
1265	OilBurnVlv
1322	Misfire
1323	MisfireCyl 1
1324	MisfireCyl 2
1325	MisfireCyl 3
1326	MisfireCyl 4
1327	MisfireCyl 5
1328	MisfireCyl 6
1329	MisfireCyl 7
1330	MisfireCyl 8
1331	MisfireCyl 9
1332	MisfireCyl 10
1333	MisfireCyl 11
1334	MisfireCyl 12
1335	MisfireCyl 13
1336	MisfireCyl 14
1337	MisfireCyl 15
1338	MisfireCyl 16
1347	FuelPmpAsmbl1
1377	SynchroSwitch
1378	OilChange
1380	RemoteOilRsv
1387	P-Auxiliary1
1388	P-Auxiliary2
1484	OthersECU TC
1563	IncompContr
1632	TorqueLimit
1634	CVN Error
1800	T-BatterySLI1
2433	T-Exh2Manf1
2434	T-Exh1Manif1
2623	AP1Channel2
2630	T-AirCoolerOut
2789	T-Turbo1Int
2791	EGR1Vlv1
2797	FuelInjectorG1
3050	CatalystBank1
3058	EGRSysMonitor
3241	T-AT1Exh1
3242	T-DPFIntake
3245	T-AT1Exh3
3246	T-DPFOutlet
3249	T-AT1Exh2
3251	P-DPFDiff
3481	AT1FuelRate

3509	SensorSupply01
3510	SensorSupply02
3511	SensorSupply03
3512	SensorSupply04
3513	SensorSupply05
3514	SensorSupply06
3549	P-OilFltOut
3555	AmbAirDensity
3556	AT1HydroCarb1
3597	PwrOutSupply1
3610	P-DPFOutlet
3703	DPFInhSwitch
3936	DPFSystem
3938	GenGovernBias
4182	GenOutFreq
4183	GenDroop
4184	GenGain
4185	SDOverspeed
4186	SD P-LowOil
4187	SD T-HiEngine
4188	P-PreLowOil
4223	T-PreHighWrn
4795	DPFMissing
4796	DOCMissing
5298	AT1DOC
520199	CruiseControl
520320	Crankcase
520441	P-EGROutSensor
520442	T-EGRMixSensor
520448	CrankcaseVent
524286	TemporaryUse

4.14 GCS

Fault Code (SPN)	Text
111	ECM-IntFailure
115	MagPickupSenSd
121	MgPickupSenWrn
122	IntkManPressLH
123	IntkManPressLL
128	IntkManPressRH
129	IntkManPressRL
135	OilPrsSenShrtH
141	OilPrsSenShrtL
143	EngOilPressLow
144	CoolTSenShortH
145	CoolTSenShortL

146	EngCoolTmpHigh
151	EngCoolTCritH
152	EngCoolTempLow
153	IntakeManTmpLB
154	IntakManTmpSen
155	CritIntakeManT
159	IntkManTmpSenH
161	IntkManTmpSenL
166	RackPositSensH
167	RackPositSensL
168	RackActPositLB
169	RackActPositLB
171	FuelRackActPos
174	RackActuatrPos
179	RackPositSensH
181	RackPositSensL
182	RackActPositRB
183	RackActPositRB
197	CoolantLvlLow
212	OilTempSensorH
213	OilTempSensorL
214	OilTmpCritHigh
219	EngOilLevelLow
221	BarPressSensH
222	BarPressSensL
223	OilBurnValvSol
228	CoolPresCritLo
231	CoolPressSensH
232	CoolPressSensL
234	EngSpeedHigh
235	CoolLvlCritLow
253	OilLvlCritLow
254	FuelShutoffVal
261	FuelTempHigh
263	FuelTmpSenShrH
265	FuelTmpSenShrL
266	FuelTmpCritHig
343	ECM-IntHWFail
415	OilPresCritLow
421	OilTempHigh
422	CoolLvlSensor
471	OilLevelLow
488	IntakeManTmpH
581	FuelSuppPumpPH
582	FuelSuppPumpPL
1211	FuelShutoffVlv
1212	FuelShutoffVlv

1411	GenOutFreqPot
1412	DroopAdjPotent
1413	ContrConfigErr
1416	FailToShutdown
1417	ECMPowrdwnFail
1418	GainAdjPotent
1424	DiagLampError
1425	CommSdLampErr
1426	CommWrnLampErr
1427	OSLampError
1428	LOPLampError
1429	HETLampError
1431	PreLOPLampErr
1432	PreHETLampErr
1433	LocEmergStop
1434	RemEmergStop
1435	EngineCold
1438	FailToCrank
1443	BattVoltLow
1473	ECMWatchdogFls
1479	FailToStrtLamp
2297	FuelSuppPumpLa
2974	RackPosSensor1
2975	RackPosSensor2
112	EngTimingActtr
113	EngTimActCirc
116	FuelPresSensSH
117	FuelPresSensSL
118	FuelPumpSensSH
119	FuelPumpSensSL
224	CentinelActShr
236	EngPositionSen
252	EngOilLevelSen
259	FuelShutoffVlv
316	FuelSuppPumpSH
318	FuelSuppPumpSt
326	EngOilLevelLow
359	FailedToStart
423	FuelActtrStuck
441	Batt1VoltLow
442	Batt1VoltHigh
451	InjectrPSensSH
452	InjectrPSensSL
455	FuelCtrlValvSH
467	TimRailActCirc
468	FuelRailActCrc
498	EngOilLvlSenSH

499	EngOilLvlSenSL
514	FuelCtrlValve
554	FuelPresSenErr
555	EnginBlowbyWrn
556	EngineBlowbySD
611	EngHotShutdown
649	ChangeLubrOil
688	EngOilLvl1High
689	EngSpeedSenErr
719	BlowbyPrSensSH
729	BlowbyPrSensSL
1419	FuelRailError
1421	TimingRailDrv1
1422	TimingRailDrv2
1423	FuelPumpDiagEr
1436	HPI-PTFuelSyst
2111	EngCoolTmp2SSH
2112	EngCoolTmp2SSL
2113	EngCoolTmp2Wrn
2114	EngCoolTemp2SD

4.15 Daimler Chrysler ADM2 Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
153	P-Crankcase
158	KeySwitch
168	Battery
172	T-AirIntake
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed

231	TripFuel
237	VIN
515	Spd-Desired
620	5VSupply
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
898	Spd-Requested
970	AuxShutdown
971	DerateSw
1109	EPS SDApproach
1110	EPS Shutdown
1485	ECMMainRelay

4.16 Daimler Chrysler ADM3 Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
153	P-Crankcase
158	KeySwitch
168	Battery
172	T-AirIntake

174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN
515	Spd-Desired
620	5VSupply
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
898	Spd-Requested
970	AuxShutdown
971	DerateSw
1109	EPS SDApproach
1110	EPS Shutdown
1485	ECMMainRelay

4.17 DDEC IV/V Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl

153	P-Crankcase
158	KeySwitch
168	Battery
172	T-AirIntake
173	T-Exhaust
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN
515	Spd-Desired
620	5VSupply
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
898	Spd-Requested
970	AuxShutdown
971	DerateSw
1109	EPS SDApproach
1110	EPS Shutdown
1485	ECMMainRelay

4.18 Deutz EMR2 Fault Codes

Fault Code (SPN)	Text
84	Spd-WheelBased
91	APP
98	OilLevel
100	P-Oil
102	P-Intake
105	T-IntManifold
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl

171	T-AmbientAir
174	T-Fuel
190	EngineSpeed
536*	IgnoreFC

*Hidden fault code by default

4.19 Deutz EMR3 Fault Codes

Fault Code (SPN)	Text
29	APP2
84	Spd-WheelBased
91	APP
94	P-FuelDelivery
97	WaterInFuel
100	P-Oil
102	P-Intake
105	T-IntManifold
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
157	P-Fuel1Inj1
158	KeySwitch
168	Battery
174	T-Fuel
175	T-Oil
190	EngineSpeed
520	RetarderTorque
624	WarningLamp
630	CalibratMemory
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
676	GlowPlugRelay
677	StarterMotor
701	AuxiliaryIO 01
702	AuxiliaryIO 02
703	AuxiliaryIO 03
704	AuxiliaryIO 04

705	AuxiliaryIO 05
729	IntAirHeater1
730	IntAirHeater2
898	Spd-Requested
923	PowerOutput
975	Fan1EstSpd
1072	CompBrakeOut1
1074	ExhBrakeOut
1079	Supply1
1080	Supply2
1081	WaitStartLamp
1109	EPS SDApproach
1231	CANBusOff
1235	CANBusOff
1237	SdOverride
1322	Misfire
1323	MisfireCyl 1
1324	MisfireCyl 2
1325	MisfireCyl 3
1326	MisfireCyl 4
1327	MisfireCyl 5
1328	MisfireCyl 6
1346	MisfireCyl 24
1638	T-Hydraulic
2634	PowerRelay
2791	EGR1Vlv1
523212	FrmMngTOEngPrt
523216	FrmMngTOPrHt
523218	FrmMngTORxCCVS
523222	FrmMngTOTCO1
523238	FrmMngTOSwtOut
523239	FrmMngDecV1
523240	FrmMngFunModCt
523350	InjVlvBnk1A
523351	InjVlvBnk1B
523352	InjVlvBnk2A
523353	InjVlvBnk2B
523354	InjVlvChipA
523355	InjVlvChipB
523370	CompresionTest
523420	Watchdog
523450	MultiStateSw
523451	MultiStateSw
523452	MultiStateSw
523470	RailPressValve
523490	ShutoffCond
523500	FrmMngTxTO

523550	TPUDefect
523561	BIPCyl1
523562	BIPCyl2
523563	BIPCyl3
523564	BIPCyl4
523565	BIPCyl5
523566	BIPCyl6
523567	BIPCyl7
523568	BIPCyl8
523600	SerialComm
523601	V-Reference
523602	Spd-Fan
523604	FrmMngTOEngTmp
523605	FrmMngTOTSC1AE
523606	FrmMngTOTSC1AR
523607	FrmMngTOTSC1DE
523608	FrmMngTOTSC1DR
523609	FrmMngTOTSC1PE
523610	FrmMngTOTSC1VE
523611	FrmMngTOTSC1VR
523612	ECUIntMonitor
523613	P-Rail
523615	MeterUnitValve
523617	HWEMonCom

4.20 Deutz EMR4 Fault Codes

Fault Code (SPN)	Text
29	APP2
84	Spd-WheelBased
91	APP
94	P-FuelDelivery
97	WaterInFuel
100	P-Oil
102	P-Intake
105	T-IntManifold
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
157	P-Fuel1Inj1
158	KeySwitch
168	Battery
174	T-Fuel
175	T-Oil
190	EngineSpeed

520	RetarderTorque
563	ABS
624	WarningLamp
630	CalibratMemory
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
676	GlowPlugRelay
677	StarterMotor
701	AuxiliaryIO 01
702	AuxiliaryIO 02
703	AuxiliaryIO 03
704	AuxiliaryIO 04
705	AuxiliaryIO 05
729	IntAirHeater1
730	IntAirHeater2
898	Spd-Requested
923	PWMOutput
975	Fan1EstSpd
1072	CompBrakeOut1
1074	ExhBrakeOut
1079	Supply1
1080	Supply2
1081	WaitStartLamp
1109	EPS SDApproach
1231	CANbusOff
1235	CANbusOff
1237	SdOverride
1322	Misfire
1323	MisfireCyl 1
1324	MisfireCyl 2
1325	MisfireCyl 3
1326	MisfireCyl 4
1327	MisfireCyl 5
1328	MisfireCyl 6
1346	MisfireCyl 24
1443	FuelVlvPos2
1444	Cyl 1Cmbustion
1445	Cyl 2Cmbustion
1446	Cyl 3Cmbustion
1447	Cyl 4Cmbustion
1448	Cyl 5Cmbustion

1449	Cyl 6Cmbustion
1450	Cyl 7Cmbustion
1451	Cyl 8Cmbustion
1638	T-Hydraulic
2634	PowerRelay
2791	EGR1Vlv1
523212	FrmMngTOEngPrt
523216	FrmMngTOPrHt
523218	FrmMngTORxCCVS
523222	FrmMngTOTCO1
523238	FrmMngTOSwtOut
523239	FrmMngDecV1
523240	FrmMngFunModCt
523350	InjVlvBnk1A
523351	InjVlvBnk1B
523352	InjVlvBnk2A
523353	InjVlvBnk2B
523354	InjVlvChipA
523355	InjVlvChipB
523370	CompresionTest
523420	Watchdog
523450	MultiStateSw
523451	MultiStateSw
523452	MultiStateSw
523470	RailPressValve
523490	ShutoffCond
523500	FrmMngTxTO
523550	TPUDefect
523561	BIPCyl1
523562	BIPCyl2
523563	BIPCyl3
523564	BIPCyl4
523565	BIPCyl5
523566	BIPCyl6
523567	BIPCyl7
523568	BIPCyl8
523600	SerialComm
523601	V-Reference
523602	Spd-Fan
523604	FrmMngTOEngTmp
523605	FrmMngTOTSC1AE
523606	FrmMngTOTSC1AR
523607	FrmMngTOTSC1DE
523608	FrmMngTOTSC1DR
523609	FrmMngTOTSC1PE
523610	FrmMngTOTSC1VE
523611	FrmMngTOTSC1VR

523612	ECUIntMonitor
523613	P-Rail
523615	MeterUnitValve
523617	HWEMonCom

4.21 Ford e-control Fault Codes

Fault Code (SPN)	Text
29	APP2
51	ThrottleVlv1
84	Spd-WheelBased
91	APP
94	P-FuelDelivery
100	P-Oil
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
108	P-Barometric
109	P-Coolant1
110	T-Coolant
168	Battery
173	T-Exhaust
174	T-Fuel
190	EngineSpeed
441	T-Auxiliary1
442	T-Auxiliary2
443	P-AuxGage2
444	V-BatteryInp2
515	Spd-Desired
558	AP LowIdleSw
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
639	J1939CANBus
645	Tachometer
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
659	InjectorCyl 9
660	InjectorCyl10
695	OverrideMode

697	PWMDriver1
698	PWMDriver2
699	PWMDriver3
700	PWMDriver4
701	AuxiliaryIO 01
702	AuxiliaryIO 02
703	AuxiliaryIO 03
704	AuxiliaryIO 04
705	AuxiliaryIO 05
706	AuxiliaryIO 06
710	AuxiliaryIO 10
711	AuxiliaryIO 11
712	AuxiliaryIO 12
713	AuxiliaryIO 13
723	Spd-Speed2
724	O2Sensor
731	Knock1
920	AudibleAlarm
925	AuxiliaryOut 2
926	AuxiliaryOut 3
1079	Supply1
1080	Supply2
1127	P-Turbo1Boost
1192	TurboWstAct
1213	MalfunctLamp
1239	FuelLeakage1
1268	IgnitionCoil01
1269	IgnitionCoil02
1270	IgnitionCoil03
1271	IgnitionCoil04
1272	IgnitionCoil05
1273	IgnitionCoil06
1274	IgnitionCoil07
1275	IgnitionCoil08
1276	IgnitionCoil09
1277	IgnitionCoil10
1321	StarterLockout
1323	MisfireCyl 1
1324	MisfireCyl 2
1325	MisfireCyl 3
1326	MisfireCyl 4
1327	MisfireCyl 5
1328	MisfireCyl 6
1329	MisfireCyl 7
1330	MisfireCyl 8
1347	FuelPmpAsmbl1
1348	FuelPmpAsmbl1

1384	SDDatalink
1386	T-Auxiliary2
1485	ECMMainRelay
1692	P-IntManDesAbs
2000	SA 0
2646	AuxiliaryOut 4
2647	AuxiliaryOut 5
3050	CatalystBank1
3051	Catalyst2
3056	OxygenBank1
3217	AT1IntOxygen
3218	AT1IntGSPower
3221	AT1IntWROxygen
3222	AT1IntGSHeater
3225	AT1IntOxygen
3227	AT1OutOxygen1
3256	AT2IntOxygen
3266	AT2OutOxygen1
3468	T-1Fuel2
3673	ThrottleVlv2
4236	Closes-LoopGB1
4237	Adap-LearnGB1
4238	Closes-LoopGB2
4239	Adap-LearnGB1
520197	Knock2Sensor
520199	FPP1/2Invalid
520200	AdpLrnGasBank1
520201	AdpLrnGasBank2
520202	AdaptLearnLPG
520203	AdaptLearnNG
520204	C-LGasolBank1
520205	C-LGasolBank2
520206	ClosedLoopLPG
520207	Closed-loopNG
520208	EGO2Open/Lazy
520209	EGO3Open/Lazy
520210	EGO4Open/Lazy
520211	CatalInactGas1
520212	CatalInactGas2
520213	CatalInactLPG
520214	CatalInactOnNG
520215	AUXAnaPullDn1V
520216	AUXAnaPullUp1V
520217	AUXAnaPullUp2V
520218	AUXAnaPullUp3V
520219	AUXAnaPullUp1
520220	AUXAnaPullUp2

520221	AUXAnaPullUp3
520222	AUX digital1
520223	AUX digital2
520224	AUX digital3
520230	PWM5
520240	T-GasFuelVFl
520241	Knock2
520250	FPP1
520251	V-TPS2
520252	IACwiring
520260	MegaJector
520270	Gov1/2/3Fail
520401	FuelImpurityH
520800	InCam/DistFl
520801	ExhtCamPosErr
520803	MegaJectorFl
522525	CatalystInact
522540	PWM3-Gauge3
522593	MegaJectorComm
522594	V-MegaJector
522595	MegaJectorAct
522596	MegaJectorCirc
522597	MegaJectorComm
522598	PWM4 Short
522599	Injector1Short
522600	Injector4Short
522601	Injector2Short
522602	Injector3Short
522603	T-GasFuelVFl
522604	PowerRelay
522606	EGO2Open/Lazy
522655	CLGasBank1/LPG
522660	AdpLrnGas1/LPG
522697	MicroprocFail
522710	V-TPS1
522711	V-TPS2
522712	V-FPP1
522737	EGO1Open/Lazy
522752	CAMInputSignal
524260	SensorSupplyV2
524261	SensorSupplyV1

4.22 GM e-control Fault Codes

Fault Code (SPN)	Text
29	APP2
51	ThrottleVlv1

84	Spd-WheelBased
91	APP
94	P-FuelDelivery
100	P-Oil
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
108	P-Barometric
109	P-Coolant1
110	T-Coolant
168	Battery
173	T-Exhaust
174	T-Fuel
190	EngineSpeed
441	T-Auxiliary1
442	T-Auxiliary2
443	P-AuxGage2
444	V-BatteryInp2
515	Spd-Desired
558	AP LowIdleSw
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
639	J1939CANBus
645	Tachometer
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
659	InjectorCyl 9
660	InjectorCyl10
695	OverrideMode
697	PWMDriver1
698	PWMDriver2
699	PWMDriver3
700	PWMDriver4
701	AuxiliaryIO 01
702	AuxiliaryIO 02
703	AuxiliaryIO 03
704	AuxiliaryIO 04
705	AuxiliaryIO 05
706	AuxiliaryIO 06

710	AuxiliaryIO 10
711	AuxiliaryIO 11
712	AuxiliaryIO 12
713	AuxiliaryIO 13
723	Spd-Speed2
724	O2Sensor
731	Knock1
920	AudibleAlarm
925	AuxiliaryOut 2
926	AuxiliaryOut 3
1079	Supply1
1080	Supply2
1127	P-Turbo1Boost
1192	TurboWstAct
1213	MalfunctLamp
1239	FuelLeakage1
1268	IgnitionCoil01
1269	IgnitionCoil02
1270	IgnitionCoil03
1271	IgnitionCoil04
1272	IgnitionCoil05
1273	IgnitionCoil06
1274	IgnitionCoil07
1275	IgnitionCoil08
1276	IgnitionCoil09
1277	IgnitionCoil10
1321	StarterLockout
1323	MisfireCyl 1
1324	MisfireCyl 2
1325	MisfireCyl 3
1326	MisfireCyl 4
1327	MisfireCyl 5
1328	MisfireCyl 6
1329	MisfireCyl 7
1330	MisfireCyl 8
1347	FuelPmpAsmbl1
1348	FuelPmpAsmbl1
1384	SDDatalink
1386	T-Auxiliary2
1485	ECMMainRelay
1692	P-IntManDesAbs
2000	SA 0
2646	AuxiliaryOut 4
2647	AuxiliaryOut 5
3050	CatalystBank1
3051	Catalyst2
3056	OxygenBank1

3217	AT1IntOxygen
3218	AT1IntGSPower
3221	AT1IntWROxygen
3222	AT1IntGSHeater
3225	AT1IntOxygen
3227	AT1OutOxygen1
3256	AT2IntOxygen
3266	AT2OutOxygen1
3468	T-1Fuel2
3673	ThrottleVlv2
4236	Closes-LoopGB1
4237	Adap-LearnGB1
4238	Closes-LoopGB2
4239	Adap-LearnGB1
520197	Knock2Sensor
520199	FPP1/2Invalid
520200	AdpLrnGasBank1
520201	AdpLrnGasBank2
520202	AdaptLearnLPG
520203	AdaptLearnNG
520204	C-LGasolBank1
520205	C-LGasolBank2
520206	ClosedLoopLPG
520207	Closed-loopNG
520208	EGO2Open/Lazy
520209	EGO3Open/Lazy
520210	EGO4Open/Lazy
520211	CatalInactGas1
520212	CatalInactGas2
520213	CatalInactLPG
520214	CatalInactOnNG
520215	AUXAnaPullDn1V
520216	AUXAnaPullUp1V
520217	AUXAnaPullUp2V
520218	AUXAnaPullUp3V
520219	AUXAnaPullUp1
520220	AUXAnaPullUp2
520221	AUXAnaPullUp3
520222	AUX digital1
520223	AUX digital2
520224	AUX digital3
520230	PWM5
520240	T-GasFuelVFl
520241	Knock2
520250	FPP1
520251	V-TPS2
520252	IACwiring

520260	MegaJector
520270	Gov1/2/3Fail
520401	FuelImpurityH
520800	InCam/DistFl
520801	ExhtCamPosErr
520803	MegaJectorFl
522525	CatalystInact
522540	PWM3-Gauge3
522593	MegaJectorComm
522594	V-MegaJector
522595	MegaJectorAct
522596	MegaJectorCirc
522597	MegaJectorComm
522598	PWM4 Short
522599	Injector1Short
522600	Injector4Short
522601	Injector2Short
522602	Injector3Short
522603	T-GasFuelVFl
522604	PowerRelay
522606	EGO2Open/Lazy
522655	CLGasBank1/LPG
522660	AdpLrnGas1/LPG
522697	MicroprocFail
522710	V-TPS1
522711	V-TPS2
522712	V-FPP1
522737	EGO1Open/Lazy
522752	CAMInputSignal
524260	SensorSupplyV2
524261	SensorSupplyV1

4.23 GM e-control LCI Fault Codes

Fault Code (SPN)	Text
29	APP2
51	ThrottleVlv1
84	Spd-WheelBased
91	APP
94	P-FuelDelivery
100	P-Oil
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
108	P-Barometric
109	P-Coolant1
110	T-Coolant

168	Battery
173	T-Exhaust
174	T-Fuel
190	EngineSpeed
441	T-Auxiliary1
442	T-Auxiliary2
443	P-AuxGage2
444	V-BatteryInp2
515	Spd-Desired
558	AP LowIdleSw
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
639	J1939CANBus
645	Tachometer
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
659	InjectorCyl 9
660	InjectorCyl10
695	OverrideMode
697	PWMDriver1
698	PWMDriver2
699	PWMDriver3
700	PWMDriver4
701	AuxiliaryIO 01
702	AuxiliaryIO 02
703	AuxiliaryIO 03
704	AuxiliaryIO 04
705	AuxiliaryIO 05
706	AuxiliaryIO 06
710	AuxiliaryIO 10
711	AuxiliaryIO 11
712	AuxiliaryIO 12
713	AuxiliaryIO 13
723	Spd-Speed2
724	O2Sensor
731	Knock1
920	AudibleAlarm
925	AuxiliaryOut 2
926	AuxiliaryOut 3

1079	Supply1
1080	Supply2
1127	P-Turbo1Boost
1192	TurboWstAct
1213	MalfunctLamp
1239	FuelLeakage1
1268	IgnitionCoil01
1269	IgnitionCoil02
1270	IgnitionCoil03
1271	IgnitionCoil04
1272	IgnitionCoil05
1273	IgnitionCoil06
1274	IgnitionCoil07
1275	IgnitionCoil08
1276	IgnitionCoil09
1277	IgnitionCoil10
1321	StarterLockout
1323	MisfireCyl 1
1324	MisfireCyl 2
1325	MisfireCyl 3
1326	MisfireCyl 4
1327	MisfireCyl 5
1328	MisfireCyl 6
1329	MisfireCyl 7
1330	MisfireCyl 8
1347	FuelPmpAsmbl1
1348	FuelPmpAsmbl1
1384	SDDatalink
1386	T-Auxiliary2
1485	ECMMainRelay
1692	P-IntManDesAbs
2000	SA 0
2646	AuxiliaryOut 4
2647	AuxiliaryOut 5
3050	CatalystBank1
3051	Catalyst2
3056	OxygenBank1
3217	AT1IntOxygen
3218	AT1IntGSPower
3221	AT1IntWROxygen
3222	AT1IntGSHeater
3225	AT1IntOxygen
3227	AT1OutOxygen1
3256	AT2IntOxygen
3266	AT2OutOxygen1
3468	T-1Fuel2
3673	ThrottleVlv2

4236	Closes-LoopGB1
4237	Adap-LearnGB1
4238	Closes-LoopGB2
4239	Adap-LearnGB1
520197	Knock2Sensor
520199	FPP1/2Invalid
520200	AdpLrnGasBank1
520201	AdpLrnGasBank2
520202	AdaptLearnLPG
520203	AdaptLearnNG
520204	C-LGasolBank1
520205	C-LGasolBank2
520206	ClosedLoopLPG
520207	Closed-loopNG
520208	EGO2Open/Lazy
520209	EGO3Open/Lazy
520210	EGO4Open/Lazy
520211	CatalInactGas1
520212	CatalInactGas2
520213	CatalInactLPG
520214	CatalInactOnNG
520215	AUXAnaPullDn1V
520216	AUXAnaPullUp1V
520217	AUXAnaPullUp2V
520218	AUXAnaPullUp3V
520219	AUXAnaPullUp1
520220	AUXAnaPullUp2
520221	AUXAnaPullUp3
520222	AUX digital1
520223	AUX digital2
520224	AUX digital3
520230	PWM5
520240	T-GasFuelVFl
520241	Knock2
520250	FPP1
520251	V-TPS2
520252	IACwiring
520260	MegaJector
520270	Gov1/2/3Fail
520401	FuelImpurityH
520800	InCam/DistFl
520801	ExhtCamPosErr
520803	MegaJectorFl
522525	CatalystInact
522540	PWM3-Gauge3
522593	MegaJectorComm
522594	V-MegaJector

522595	MegaJectorAct
522596	MegaJectorCirc
522597	MegaJectorComm
522598	PWM4 Short
522599	Injector1Short
522600	Injector4Short
522601	Injector2Short
522602	Injector3Short
522603	T-GasFuelVFI
522604	PowerRelay
522606	EGO2Open/Lazy
522655	CLGasBank1/LPG
522660	AdpLrnGas1/LPG
522697	MicroprocFail
522710	V-TPS1
522711	V-TPS2
522712	V-FPP1
522737	EGO1Open/Lazy
522752	CAMInputSignal
524260	SensorSupplyV2
524261	SensorSupplyV1

4.24 GM MEFI Fault Codes

Fault Code (SPN)	Text
38	FuelLevel2
51	ThrottleVlv1
84	Spd-WheelBased
94	P-FuelDelivery
96	FuelLevel1
98	OilLevel
100	P-Oil
105	T-IntManifold
106	P-IntakeAir
108	P-Barometric
109	P-Coolant1
110	T-Coolant
113	GovernorDroop
174	T-Fuel
175	T-Oil
620	5VSupply
627	PowerSupply
630	CalibratMemory
636	PositionSensor
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3

654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
723	Spd-Speed2
3563	P-IntakeManAbs
65537	OxygenSensor1
65538	EGRNotTracking
65539	EST
65540	ESTOrBypass
65541	Coil A Fault
65542	Coil B Fault
65543	Coil C Fault
65544	Coil D Fault
65545	Coil E Fault
65546	Coil F Fault
65547	Coil G Fault
65548	Coil H Fault
65549	Knock1Inactive
65550	Knock2Inactive
65551	ROM
65552	OxygenSensor1
65553	OxygenSensor2
65554	FuelPumpRelay
65555	Inj A Short
65556	Inj B Short
65557	Recirculate
65558	DepspwrRef
65559	CANHWFault
65560	CANGovCmd
65561	OxyVoltageA1
65562	OxyVoltageA2
65563	OxyVoltageB1
65564	OxyVoltageB2
65565	OxyFuelTrimA
65566	OxyFuelTrimB
65567	OxyResponseA1
65568	OxyResponseB1
65570	CamPhaserW
65571	CamPhaserX
65572	CamPhaserY
65573	CamPhaserZ
65580	CPU
65581	MHC
65582	NvRAM
65590	Misfire

65591	MisfireCyl1
65592	MisfireCyl2
65593	MisfireCyl3
65594	MisfireCyl4
65595	MisfireCyl5
65596	MisfireCyl6
65597	MisfireCyl7
65598	MisfireCyl8
65599	MisfireRandom
65600	TacModuleFault
65601	EtcTps2
65602	EtcTps1
65604	EtcPps2
65605	EtcPps1
65610	EtcTps12Corr
65613	EtcPps12Corr
65615	EtcActuation
65616	EtcProcess
65618	EtcReturn
65620	V5Buff A
65621	V5Buff B
65671	Cat A Temp
65672	Cat B Temp
65673	Cat A Temp
65674	Cat B Temp
65675	Cat A Eff
65676	Cat B Eff
65677	Cat A Exotherm
65678	Cat B Exotherm
65690	VarGov
65701	GenerWarning1
65702	GenerWarning2
65703	StopEngine
65710	EmergencyStop
65723	CamSensorW
65724	CamSensorX
65725	CamSensorY
65726	CamSensorZ
66001	StarterRelayLS
66002	StarterRelayHS
66003	MilDriver
66004	SvsLamp
66005	GovStatusLamp
66006	DTCLamp3
66007	BuzzerDriver
66008	DTCLamp1
66009	DTCLamp2

66010	SlowModeLamp
66011	SpeedBasedOut
66012	TransUpShift
66013	Powertrain
66014	Powertrain
66015	CanisterPurge
66016	EGR
66017	FuelPump1Relay
66018	Tachometer
66019	OxyHeaterA1
66020	OxyHeaterB1
66021	OxyHeaterA2
66022	OxyHeaterB2
66025	FuelPump2Relay
66026	ShiftInterrupt
66030	InterCooler
66035	BoostControl
66040	OEMOutput1
66041	OEMOutput2
66042	OEMOutput3
66043	OEMOutput4

4.25 GM MEFI-6 Fault Codes

Fault Code (SPN)	Text
27	EGR1
38	FuelLevel2
51	ThrottleVlv1
84	Spd-WheelBased
87	CruiseCSetHigh
91	APP
94	P-FuelDelivery
96	FuelLevel1
98	OilLevel
100	P-Oil
103	Spd-Turbo
105	T-IntManifold
106	P-IntakeAir
108	P-Barometric
109	P-Coolant1
110	T-Coolant
113	GovernorDroop
132	IntAirMassFlow
135	P-FuelDelivery
158	KeySwitch
159	P-GasFuelSppl
167	SysCharging

168	Battery
174	T-Fuel
175	T-Oil
188	Spd-Idle
190	EngineSpeed
237	VIN
245	TtlVehicleDist
527	CruseControl
596	CCEnable
597	Brake
599	CCSet
600	CCCoast
601	CCResume
602	CCAccelerate
620	5VSupply
623	StopLamp
627	PowerSupply
628	ProgramMemory
630	CalibratMemory
632	FuelShtoff1
636	PositionSensor
637	TimingSensor
639	J1939CANBus
650	DriveUnitPwr
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
680	VlvVarSwirl
723	Spd-Speed2
731	Knock1
836	Tachometer
837	Speedometer
876	ComprClutch
911	ServComponent
931	FuelSupplyPump
987	ProtectLamp
1071	CoolFanDrive
1127	P-Turbo1Boost
1188	TurboWstAct1
1195	A-Tpassword
1196	A-Tcomponent
1213	MalfunctLamp

1239	FuelLeakage1
1268	IgnitionCoil01
1269	IgnitionCoil02
1270	IgnitionCoil03
1271	IgnitionCoil04
1272	IgnitionCoil05
1273	IgnitionCoil06
1274	IgnitionCoil07
1275	IgnitionCoil08
1321	StarterLockout
1322	Misfire
1323	MisfireCyl 1
1324	MisfireCyl 2
1325	MisfireCyl 3
1326	MisfireCyl 4
1327	MisfireCyl 5
1328	MisfireCyl 6
1329	MisfireCyl 7
1330	MisfireCyl 8
1352	Cyl 1KnockLvl
1353	Cyl 2KnockLvl
1354	Cyl 3KnockLvl
1355	Cyl 4KnockLvl
1356	Cyl 5KnockLvl
1357	Cyl 6KnockLvl
1358	Cyl 7KnockLvl
1359	Cyl 8KnockLvl
1360	Cyl 9KnockLvl
1361	Cyl10KnockLvl
1362	Cyl11KnockLvl
1363	Cyl12KnockLvl
1393	Cyl 1IgnOutput
1394	Cyl 2IgnOutput
1395	Cyl 3IgnOutput
1396	Cyl 4IgnOutput
1397	Cyl 5IgnOutput
1398	Cyl 6IgnOutput
1399	Cyl 7IgnOutput
1400	Cyl 8IgnOutput
1442	FuelVlvPos1
1634	CVNError
1635	CMM
1765	FuelVlvPosCmd1
2000	SA 0
2430	CoolantLevel
2434	T-Exh1Manif1
2628	P-GasTnk1Low

2645	WakeUpControl
2659	EGR1MassFR
2807	FuelShtoff2
2923	SteeringAxle
3050	CatalystBank1
3051	Catalyst2
3053	EvaporativeMon
3061	ColdStartMon
3217	AT1IntOxygen
3223	AT1IntGSHeater
3227	AT1OutOxygen1
3232	AT1OutGS1Heat
3256	AT2IntOxygen
3261	AT2IntGSHeater
3266	AT2OutOxygen1
3271	AT2OutGS1Heat
3464	ThrottleCmd
3472	AT1AirPrAct
3476	AT2AirPrAct
3509	SensorSupply01
3510	SensorSupply02
3511	SensorSupply03
3563	P-IntakeManAbs
3673	ThrottleVlv2
4002	Remotestart
4256	Spd-CrankLow
65537	OxySens
65538	EGR
65539	EST
65540	EST
65541	CoilA Fault
65542	CoilB Fault
65543	CoilC Fault
65544	CoilD Fault
65545	CoilE Fault
65546	CoilF Fault
65547	CoilG Fault
65548	CoilH Fault
65549	Knock1Inactive
65550	Knock2Inactive
65551	ROMChecksum
65552	OxySens1
65553	OxySens2
65554	FuelPumpRelay
65555	ChargeOil
65557	EGRFault
65559	CanHWFail

65560	CanGovCmdLost
65561	V-Oxy
65562	V-PostOxy
65565	OxyFuelTrim
65567	OxyResponse
65580	CPU
65581	MHC
65582	NvRAM
65585	FuelSelectInp
65601	EtcTps2
65602	EtcTps1
65604	EtcPps2
65605	EtcPps1
65613	EtcPps12
65615	EtcActuation
65616	EtcProcess
65618	EtcReturn
65675	CatalystA
65676	CatalystB
65701	CoolantLevel
65723	CamSensorW
65724	CamSensorX
65725	CamSensorY
65728	CamSensorZ
66002	StarterRelay
66003	MilDriver
66011	GasLockOff
66013	PowertrainDrv
66014	Powertrain
66015	FuelCtrlValve
66019	OxyHeater
66021	PostOxyHeater
75701	CoolantLevel
522545	MILLamp
522608	O2Heater
522609	RearO2
522610	Throttle
522611	ThrottleArea1
522612	ThrottleArea2
522613	ThrottleArea3
522614	ThrottleFailed
522615	ThrottleClosed
522616	Throttle
522617	ThrottleNotDwn
522630	O2LeanBank1
522631	O2RichBank1
522632	O2LeanBank2

522633	O2RichBank2
522635	LFBK1LeanFuel
522636	LFBK1RichFuel
522637	LFBK2LeanFuel
522638	LFBK2RichFuel
522690	SPIBusError
522691	ChecksumError
522692	RedundantFlt
522694	ChecksumError
522712	PedalSensor1
522713	PedalSensor2
522729	InjectorGain
522730	InjectorOffset
522731	P-Injector
522735	O2Bank1
522736	O2Bank1
522739	O2HeaterBank1
522740	O2HeaterBank2
522743	RachLeanResp1
522744	RachLeanResp2
522745	MarkSpaceRatio
522746	MarkSpaceRatio
522747	PeriodFltBank1
522748	PeriodFltBank2
522749	RachLeanResp1
522750	RachLeanResp2
522752	FailToStart
522755	FuelPump
523821	OilLamp
524260	5VPowerSupply
524261	5VPowerSupply
524266	ThrottleMotor
524286	ThrottleMotor
524287	TorqReduction

4.26 GM SECM Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
100	P-Oil
102	P-Intake
105	T-IntManifold
109	P-Coolant1
110	T-Coolant
158	KeySwitch
190	EngineSpeed
632	FuelShtoff1

651	InjectorCyl 1
724	O2Sensor
911	ServComponent
912	ServComponent
913	ServComponent
1079	Supply1
1116	GaseousFuelCF
1118	ExhOxygenDes
1119	ExhOxygen
1213	MalfunctLamp
1268	IgnitionCoil01
1269	IgnitionCoil02
1270	IgnitionCoil03
1271	IgnitionCoil04
1272	IgnitionCoil05
1273	IgnitionCoil06
1274	IgnitionCoil07
1275	IgnitionCoil08
1379	ServiceCI
1442	FuelVlvPos1
1443	FuelVlvPos2
3057	OxygenBank1
3464	ThrottleCmd

4.27 Guascor LECM E6 Fault Codes

Fault Code (SPN)	Text
516096	AFRLean
516097	AFRRich
516100	MAP1SensVoltLo
516101	MAP1SensVoltHi
516102	MAP2SensVoltLo
516103	MAP2SensVoltHi
516104	MAPDiffOOR
516105	MAPHi
516110	MAT1SensInpLo
516112	MAT1SensInpHi
516113	MAT2SensVoltLo
516114	MAT2SensVoltHi
516115	LossofMATSens
516116	MATHi
516121	UEGO1Failure
516122	UEGONrnstVltLo
516123	UEGO1SensFlt
516124	UEGOAINSensLo
516125	UEGOAINSensHi
516126	UEGONrnstVltHi

516127	NOxSens1Alrm
516128	NOxSens2Alrm
516129	NOxSensHtrOpn
516130	NOxSensHtrShrt
516131	NOxSensOpen
516132	NOxSensShort
516133	NoxO2SensOpn
516134	NoxO2SensShrt
516135	NOxContrlFail
516161	CH4SensInpLo
516162	CH4SensInpHi
516167	TPS1InpVoltLo
516168	TPS1InpVoltHi
516169	TPS2InpVoltLo
516170	TPS2InpVoltHi
516171	BoostPSVoltLo
516172	BoostPSVoltHi
516173	Thrott1PWMFlt
516174	Thrott2PWMFlt
516175	BypassPWMFlt
516176	EIDDriverFlt
516177	LamCCorrMax
516178	LamCCorrMin
516179	GQCLCCorrMax
516180	GQCLCCorrMin
516181	NOxCCorrMin
516182	NOxCCorrMax
516183	CAN1PortFlt
516184	CAN2PortFlt
516185	CAN3PortFlt
516186	CAN4PortFlt
516187	CAN1TxError
516188	CAN2TxError
516189	CAN3TxError
516190	CAN4TxError
516191	CAN1RxError
516192	CAN2RxError
516193	CAN3RxError
516194	CAN4RxError
516206	MisfireDetect
516209	PTPSensVoltLo
516210	PTPSensVoltHi
516211	MixThrtt1NotOK
516212	MixThrtt2NotOK
516213	BypassNotOK
516216	ThrottleLimit
516217	NOxSens1Wtchdg

516218	NOxSens2Wtchdg
516221	Tecjet1FGTHi
516222	Tecjet1FGPHi
516223	Tecjet1CoilHi
516225	Tecjet1FGTLo
516226	Tecjet1FGPLo
516229	Tcjet1FGTLoLim
516230	Tecjet1dPLoLim
516231	Tcjet1FGPLoLim
516233	Tcjet1FGTHiLim
516234	Tecjet1dPHiLim
516235	Tcjet1FGPHiLim
516236	Tecjet1FloNR
516239	Tecjet2FGTHi
516240	Tecjet2FGPHi
516243	Tecjet2FGTLo
516244	Tecjet2FGPLo
516245	Tecjet2CoilLo
516246	Tcjet2BattVLo
516247	Tcjet2FGTLoLim
516248	Tecjet2dPLoLim
516249	Tcjet2FGPLoLim
516250	Tcjet2BattVHi
516251	Tcjet2FGTHiLim
516252	Tecjet2dPHiLim
516253	Tcjet2FGPHiLim
516254	Tecjet2FloNR
516255	Tecjet1VlvePos
516256	Tecjet1dPHi
516257	Tcjet1VlvPosHi
516258	Tecjet1dPLo
516259	Tcjet1VlvPosLo
516260	Tecjet1SD
516261	Tcjet1IntFlt
516262	Tcjet1ZeroPrs
516263	Tecjet2dPHi
516264	Tcjet2VlvPosHi
516265	Tecjet2dPLo
516266	Tcjet2VlvPosLo
516307	ProAct1Alarm
516308	ProAct2Alarm
516309	FseriesAlarm
516310	EasYgenWtchdog
516311	BioGasNA
516312	FuelBlndRatLo
516313	FuelBlndRatHi
516314	FuelBlndProcLo

516315	FuelBlndProcHi
516316	PwrFBRatioLim
516317	LdReducFBRatio
516318	ThrottleMax
516319	LoadSetpntNR
516320	TJ2PosLimiter
516321	FBProcLimiter
516322	EasYgenStpCmnd
516323	TCModulWtchdg
516380	EIDOpnPrmCyl1
516381	EIDOpnPrmCyl2
516382	EIDOpnPrmCyl3
516383	EIDOpnPrmCyl4
516384	EIDOpnPrmCyl5
516385	EIDOpnPrmCyl6
516386	EIDOpnPrmCyl7
516387	EIDOpnPrmCyl8
516388	EIDOpnPrmCyl9
516389	EIDOpnPrmCyl10
516390	EIDOpnPrmCyl11
516391	EIDOpnPrmCyl12
516392	EIDOpnPrmCyl13
516393	EIDOpnPrmCyl14
516394	EIDOpnPrmCyl15
516395	EIDOpnPrmCyl16
516396	EIDOpnPrmCyl17
516397	EIDOpnPrmCyl18
516398	EIDOpnPrmCyl19
516399	EIDOpnPrmCyl20
516400	EIDShrtCyl1
516401	EIDShrtCyl2
516402	EIDShrtCyl3
516403	EIDShrtCyl4
516404	EIDShrtCyl5
516405	EIDShrtCyl6
516406	EIDShrtCyl7
516407	EIDShrtCyl8
516408	EIDShrtCyl9
516409	EIDShrtCyl10
516410	EIDShrtCyl11
516411	EIDShrtCyl12
516412	EIDShrtCyl13
516413	EIDShrtCyl14
516414	EIDShrtCyl15
516415	EIDShrtCyl16
516416	EIDShrtCyl17
516417	EIDShrtCyl18

516418	EIDShrtCyl19
516419	EIDShrtCyl20
516500	PlugLifeCyl1
516501	PlugLifeCyl2
516502	PlugLifeCyl3
516503	PlugLifeCyl4
516504	PlugLifeCyl5
516505	PlugLifeCyl6
516506	PlugLifeCyl7
516507	PlugLifeCyl8
516508	PlugLifeCyl9
516509	PlugLifeCyl10
516510	PlugLifeCyl11
516511	PlugLifeCyl12
516512	PlugLifeCyl13
516513	PlugLifeCyl14
516514	PlugLifeCyl15
516515	PlugLifeCyl16
516516	PlugLifeCyl17
516517	PlugLifeCyl18
516518	PlugLifeCyl19
516519	PlugLifeCyl20
516520	EIDCrnkSensor
516521	EIDSyncSensor
516522	EIDCamSensor
516523	EIDTimingErr
516524	EIDOverspeed
516525	EIDMappingFlt
516526	EIDBoostVoltLo
516527	EIDBoostVoltHi
516547	EIDCrankSignl
516548	EIDToothCount
516549	EIDSyncConfig
516550	EIDSyncSynch
516551	EIDSyncLoss
516552	EIDSyncSignal
516553	EIDSyncTthCnt
516554	EIDCamConfig
516555	EIDCamSynch
516556	EIDCamLoss
516557	EIDCamSignal
516558	EIDCamToothCnt
516559	EIDCAN1Severe
516560	EIDCAN1Intrmtn
516561	EIDCAN2Severe
516562	EIDCAN2Intrmtn
516563	EIDCAN3Severe

516564	EIDCAN3Intrmtn
516687	UEGO1VMShort
516688	UEGO1VMVubLoV
516689	UEGO1VMShrtBat
516690	UEGO1VMOpnWire
516691	UEGO1UNShort
516692	UEGO1UNVubLoV
516693	UEGO1UNShrtB+
516694	UEGO1UNOpnWire
516695	UEGO1IA/IPShrt
516696	UEGO1IA/VubLoV
516697	UEGO1IA/ShrtB+
516698	UEGO1IAOpnWire
516699	UEGO1HTROpnWir
516700	UEGO1HTRShrt
516701	UEGO1HTROvrTmp
516702	UEGO1RunFail
516703	UEGO1FailHeat
516704	UEGO1CtlTmpWnd
516705	UEGO1AirCalLim
516706	UEGO1AirCalFlt
516707	LECMBootUp
516708	MAPDiffOOR
516709	LossMAPSensr
516710	BackfreInltMan
516711	MAP HH
516712	EngOverspeed
516713	ExternalESD
516714	InternalESD
516715	LossLoadSens
516716	LoadHiHi
516717	LossMATSens
516718	MATHiHi
516719	LubeOilTmpHiHi
516720	FuelVlv1Msmtch
516721	FuelVlv2Msmtch
516722	AirTempHiHi
516732	Throttl1PWMFlt
516733	Throttl2PWMFlt
516734	BypassPWMFlt
516735	EIDDriverFlt
516736	CAN1PortFlt
516737	CAN2PortFlt
516738	CAN3PortFlt
516739	CAN4PortFlt
516749	MisfireDetect
516750	MixThrot1NotOK

516751	MixThrot2NotOK
516752	BypassNotOK
516753	UncntrldOvrpwr
516754	Tecjet1Wtchdg
516755	Tecjet2Wtchdg
516756	KnockWatchdog
516757	IgnitionWtchdg
516758	Proact1Wtchdg
516759	Proact2Wtchdg
516760	FSries1Wtchdg
516761	TJ1CANFloDmnd
516762	TJ2CANFloDmnd
516763	TJ1ValvePos
516764	Tecjet1SD
516765	TJ1IntrnlFlt
516766	TJ1ZeroPrsDet
516767	TJ1KeySWOFF
516768	TJ2VlvPosErr
516769	Tecjet2SD
516770	TJ2IntrnlFlt
516771	TJ2ZeroPrsDet
516772	TJ2KeySWOFF
516773	IOLockAssrtd
516783	Proact1RunEna
516784	Proact1GnrlSD
516785	Proact2RunEna
516786	Proact2GnrlSD
516787	F-SriesBoostSD
516788	EasYgenWtchdg
516789	TCModlWtchdg
516858	StartFail
516859	EngineStall
516860	IgnitionOffRun
516861	IgnOffCool
516862	EIDIgnitionSD
516863	EIDHiTempSD
516864	EIDDrvrEnabSD
516865	EIDDrvrEnaSDSU
516866	KnockSensFail

4.28 Hatz Fault Codes

Fault Code (SPN)	Text

4.29 Isuzu ECM Fault Codes

Fault Code (SPN)	Text
91	APP
100	P-Oil
102	P-Intake
105	T-IntManifold
108	P-Barometric
109	P-Coolant1
110	T-Coolant
157	P-Fuel1Inj1
158	KeySwitch
172	T-AirIntake
174	T-Fuel
190	EngineSpeed
628	ProgramMemory
633	FuelActCmd
636	PositionSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
675	GlowPlugLamp
676	GlowPlugRelay
677	StarterMotor
697	PWMDriver1
723	Spd-Speed2
987	ProtectLamp
1077	FuelInjPump
1079	Supply1
1080	Supply2
1131	T-IntManifold2
1239	FuelLeakage1
1240	FuelLeakage2
1347	FuelPmpAsmbl1
1381	P-FuelPmpInt
1485	ECMMainRelay
10001	EGRPosition
10002	EGRValveCntr
10003	InjectNozzCom1
10004	InjectNozzCom2
10005	ChargeCircuit1
10006	ChargeCircuit2

10007	CPU
10008	A/Dconversion
10009	5VSupplyFail3
10010	5VSupplyFail4
10011	5VSupplyFail5
10013	EEPROM
10032	QRCode
10033	RAM
10044	SCR
10045	ADIC
10046	Sw-IC1Int
10048	Sw-IC1Comm
10050	Injector
10051	InjComm
10052	InjCheckSum
524287*	HiddenCode

*Hidden fault code by default

4.30 EDC

Fault Code (SPN)	Text
51	ThrottlePos
91	AccelPedalPos
94	FuelDelPress
97	WaterInFuelInd
98	EngineOilLevel
100	EngOil Press
101	CrankcasePress
102	Boost Press
105	Intake Temp
106	AirInletPress
107	AirFiltDifPres
108	BarometricPres
109	Coolant Press
110	EngCool Temp
111	Coolant Level
153	CrankcasePress
158	BattPotential
168	BatteryVoltage
172	AirInlet Temp
173	Exhaust Temp
174	Fuel Temp
175	EngOil Temp
189	RatedEngSpeed
190	EngineSpeed
231	J1939 Datalink
237	VIN
515	EngDesOpSpeed
620	5V SupplyFail
626	PrehActuator
628	EMSProgFailure
629	EEPROMChecksum
630	CalibrMemFail
636	Crank Sensor
637	TimingSensor
639	J1939 CAN Bus
651	InjectorCyl#1
652	InjectorCyl#2
653	InjectorCyl#3
654	InjectorCyl#4
655	InjectorCyl#5
656	InjectorCyl#6
677	EngStartRelay
898	RequestedSpeed

970	AuxEngSdSwitch
971	EngDerateSwtch
1109	EngSdApproach
1110	Engine Sd
1485	ECU MainRelay
65579	Hidden
65585	CoolantTmpSens
65588	BoostPressSens
65589	FuelTempSens
65592	OilPressSens
65594	OilTempSens
0x10051	Cyl 1 error
0x10052	Cyl 2 error
0x10053	Cyl 3 error
0x10054	Cyl 4 error
0x10055	Cyl 5 error
0x10056	Cyl 6 error
0x10059	PWM Powerstage
0x1005A	AD-Channel
0x1005B	High pressure
0x10061	Cyl 1 ShortCir
0x10062	Cyl 2 ShortCir
0x10063	Cyl 3 ShortCir
0x10064	Cyl 4 ShortCir
0x10065	Cyl 5 ShortCir
0x10066	Cyl 6 ShortCir
0x10067	Cyl 1 OpenLoad
0x10068	Cyl 2 OpenLoad
0x10069	Cyl 3 OpenLoad
0x1006A	Cyl 4 OpenLoad
0x1006B	Cyl 5 OpenLoad
0x1006C	Cyl 6 OpenLoad
0x1006D	Rail monitor
0x10071	Bank 1 error
0x10072	Bank 1 error
0x10073	Bank 2 error
0x10074	Bank 2 error
0x1007B	Misfire
0x1007C	Chip error
0x1007E	InjectionLimit
0x10084	SRA2EDC
0x10085	Load-IdleRange
0x30085	Drift Limit
0x10086	Supply Voltage
0x20086	AirMassSignal
0x30086	AirMassSignal
0x40086	Reference
0x10087	PosGovernor

0x10088	NegGovernor
0x20088	GovernorCheck
0x10089	EGR PowerStage
0x20089	EGR PowerStage
0x30089	EGR PowerStage
0x1008A	EGR Bypass
0x1008B	ThrottActuator
0x2008B	ValveActuator
0x3008B	TVA
0x1008D	PosGovernor
0x1008E	NegGovernor
0x1008F	RgnNrm time
0x10091	BoostPressure
0x10092	BPA
0x20092	BPA
0x30092	BPA
0x10093	TurbineSpeed
0x10094	EPCtl
0x10095	PCR deviation
0x20095	PCR Check
0x10096	Cyl 1 Timing
0x20096	Cyl 2 Timing
0x30096	Cyl 3 Timing
0x40096	Cyl 4 Timing
0x10097	Cyl 1 Calibr
0x20097	Cyl 2 Calibr
0x30097	Cyl 3 Calibr
0x40097	Cyl 4 Calibr
0x10098	Cylinder 5
0x20098	Cylinder 6
0x30098	Cylinder 5
0x40098	Cylinder 6
0x10099	P2 pressure
0x1009A	TurbineSpeed
0x1009B	Hi TurbineSpd
0x1009C	P3 pressure
0x1009D	InnerCtrlTemp
0x1009E	OuterCtrlTemp
0x1009F	EGSys-NOxEstIv
0x100A1	Lambda Nox
0x200A1	Lambda Nox
0x100A2	Nox Sensor
0x100A3	Nox Sensor
0x100A4	Nox Sensor
0x100A5	DM1DCU timeout
0x100A6	SCR1 timeout
0x200A6	SCR2 timeout
0x100A8	LowUreaLevel

0x200A8	LowUreaLevel
0x300A8	Urea Sensor
0x400A8	Wrong urea
0x100A9	GasTemp
0x200AB	GasPipePress
0x100AB	VDC1
0x100AC	EGR
0x200AC	EngGsFlowRt
0x100AD	ExhaustGasTemp
0x100AE	AirHumidity
0x100AF	SPN1 message
0x200AF	SPN2 message
0x300AF	SPN3 message
0x400AF	SPN4 message

4.31 JCB DCM Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
84	Spd-WheelBased
86	CruiseCSetSpd
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
153	P-Crankcase
156	P-Fuel1Inj1
157	P-Fuel1Inj1
158	KeySwitch
168	Battery
172	T-AirIntake
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN

515	Spd-Desired
620	5VSupply
623	StopLamp
624	WarningLamp
626	StartEnbl1
627	PowerSupply
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
731	Knock1
898	Spd-Requested
970	AuxShutdown
971	DerateSw
974	APPRemote
1075	LiftPump
1076	FuelInjPump
1079	Supply1
1080	Supply2
1083	AuxiliaryIO 1
1109	EPS SDApproach
1110	EPS Shutdown
1213	MalfunctLamp
1485	ECMMainRelay
1804	StartEnbl2
2648	Maintenance

4.32 Jenbacher DIA.NE Fault Codes

Fault Code (SPN)	Text

4.33 JohnDeere Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
91	APP
94	P-FuelDelivery

97	WaterInFuel
100	P-Oil
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
157	P-Fuel1Inj1
158	KeySwitch
168	Battery
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
237	VIN
412	T-EGR1
515	Spd-Desired
611	SysDiagCode1
620	5VSupply
627	PowerSupply
629	Controller1
632	FuelShtoff1
636	PositionSensor
637	TimingSensor
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
898	Spd-Requested
970	AuxShutdown
971	DerateSw
1076	FuelInjPump
1077	FuelInjPump
1078	FuelInjPump
1079	Supply1
1080	Supply2
1109	EPS SDApproach
1110	EPS Shutdown
1172	T-Turbo1CInt
1347	FuelPmpAsmbl1
1348	FuelPmpAsmbl1

1485	ECMMainRelay
1569	TorqueDerate
2000	SA 0
2630	T-AirCoolerOut

4.34 Kohler Fault Codes

Fault Code (SPN)	Text
28	APP3
29	APP2
51	ThrottleVlv1
84	Spd-WheelBased
91	APP
94	P-FuelDelivery
96	FuelLevel1
97	WaterInFuel
102	P-Intake
105	T-IntManifold
107	P-AirFilt1Diff
108	P-Barometric
110	T-Coolant
156	P-Fuel1Inj1
157	P-Fuel1Inj1
158	KeySwitch
167	SysCharging
171	T-AmbientAir
174	T-Fuel
190	EngineSpeed
249	TtlRevolutions
430	V-StarterSolen
626	StartEnbl1
637	TimingSensor
1083	AuxiliaryIO 1
1084	AuxiliaryIO 2
1127	P-Turbo1Boost
1349	P-Fuel1Inj2
1382	P-FuelFltDiff
1393	Cyl 1IgnOutput
1394	Cyl 2IgnOutput
1395	Cyl 3IgnOutput
1396	Cyl 4IgnOutput
1639	Spd-Fan
2791	EGR1Vlv1
2802	DataMemoryUsg
3241	T-AT1Exh1
3242	T-DPFIntake
3246	T-DPFOutlet

3250	T-DPFIntermed
3251	P-DPFDiff
3349	TranTSC1Rate
3509	SensorSupply01
3510	SensorSupply02
3720	DPFAshLoad
3936	DPFSystem
4082	FuelPump
4781	DPFSoot
5283	T-DPFTrpAct
5829	EGR1Vlv1Err
521272	Intercharge
523350	COM1InjDrive
523352	COM2injDrive

4.35 Kubota Fault Codes

Fault Code (SPN)	Text
29	APP2
91	APP
100	P-Oil
102	P-Intake
108	P-Barometric
110	T-Coolant
157	P-Fuel1Inj1
168	Battery
172	T-AirIntake
174	T-Fuel
190	EngineSpeed
628	ProgramMemory
633	FuelActCmd
636	PositionSensor
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
676	GlowPlugRelay
677	StarterMotor
679	P-InjRegulator
723	Spd-Speed2
1077	FuelInjPump
1239	FuelLeakage1
1347	FuelPmpAsmbl1
1485	ECMMainRelay
3246	T-DPFOutlet
3251	P-DPFDiff
3252	AT1Exh2FMI

3509	SensorSupply01
3510	SensorSupply02
3511	SensorSupply03
3512	SensorSupply04
3701	DPFStatus
4765	T-AT1CatalInt
523523	Comm1Injector
523524	Comm2Injector
523525	V-InjectorChrg
523527	FlashROM
523535	V-InjectorChrg
523536	EGRFeedback
523537	T-EGRMotor
523539	PumpSeizing
523540	PumpSeizing
523541	EGRLiftSensor
523543	APP CANbus
523544	GlowRelay
523547	CAN2busOff
523548	CAN2busError
523572	EGRActuator
523574	EGRActuator
523575	EGRMotor
523576	EGRMotor
523577	EGRMotor
523578	EGRCommError
523580	IntThtrtFdb
523582	IntThtrtLift
523589	T-LowCoolant
523590	ParkRegenTimeO
523591	CAN CCVSError
523592	CAN CM1Error
523593	CAN DDC1Error
523594	CAN ETC2Error
523595	CAN ETC5Error
523596	CAN TSC1Error
523598	CAN EBC1Error
523599	T-ExhSensor
523600	InitPumpCalib
523601	T-ExhGas
523602	GenFrequency
523604	CAN1busOff
523700	EEPROM
523701	EEPROM
523702	EEPROM

4.36 Liebherr Fault Codes

Fault Code (SPN)	Text
27	EGR1
29	APP2
81	DPFIntake
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
157	P-Fuel1Inj1
158	KeySwitch
171	T-AmbientAir
173	T-Exhaust
174	T-Fuel
175	T-Oil
190	EngineSpeed
1136	T-ECU
1172	T-Turbo1CInt
1174	T-Turbo3CInt
1176	P-Turbo1Intake
1178	P-Turbo3Intake
1349	P-Fuel1Inj2
1638	T-Hydraulic
1761	DEFTnkLevel
1800	T-BatterySLI1
2629	T-Turbo1Outlet
2630	T-AirCoolerOut
2799	T-Turbo2Outler
2801	T-Turbo4Outler

4.37 MAN MFR Fault Codes

Fault Code (SPN)	Text
22	P-ExtCrankcase
29	APP2
51	ThrottleVlv1
52	T-Intcooler

81	DPFIntake
91	APP
92	Load
94	P-FuelDelivery
95	P-FuelFltDiff
97	WaterInFuel
98	OilLevel
99	P-OilFltDiff
100	P-Oil
101	P-Crankcase
102	P-Intake
103	Spd-Turbo
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
112	P-CoolFltrDiff
127	P-Oil
132	IntAirMassFlow
153	P-Crankcase
156	P-Fuel1Inj1
157	P-Fuel1Inj1
158	KeySwitch
159	P-GasFuelSppl
166	Pwr-Rated
168	Battery
170	T-CabInterior
171	T-AmbientAir
172	T-AirIntake
173	T-Exhaust
174	T-Fuel
175	T-Oil
176	T-TurboOil
183	FuelRate
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN
247	EngineRunHours
250	TotalFuelUsed
441	T-Auxiliary1
442	T-Auxiliary2
512	TorqueDemand
513	TorqueActual

514	Torque
515	Spd-Desired
518	ReqTorque
519	Spd-DesAsym
558	AP LowIdleSw
620	5VSupply
623	StopLamp
624	WarningLamp
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
659	InjectorCyl 9
660	InjectorCyl10
661	InjectorCyl11
662	InjectorCyl12
663	InjectorCyl13
664	InjectorCyl14
665	InjectorCyl15
666	InjectorCyl16
667	InjectorCyl17
668	InjectorCyl18
669	InjectorCyl19
670	InjectorCyl20
671	InjectorCyl21
672	InjectorCyl22
673	InjectorCyl23
674	InjectorCyl24
677	StarterMotor
695	OverrideMode
898	Spd-Requested
970	AuxShutdown
971	DerateSw
974	APPRemote
975	Fan1EstSpd
976	PTO
980	PTOEnable

981	PTOAccelerate
982	PTOResume
983	PTODecelerate
987	ProtectLamp
1029	TripAFuelRate
1081	WaitStartLamp
1109	EPS SDApproach
1110	EPS Shutdown
1122	T-AltBearing1
1123	T-AltBearing2
1124	T-AltWinding1
1125	T-AltWinding2
1126	T-AltWinding3
1127	P-Turbo1Boost
1128	P-Turbo2Boost
1129	P-Turbo3Boost
1130	P-Turbo4Boost
1131	T-IntManifold2
1132	T-IntManifold3
1133	T-IntManifold4
1134	ChAirThermost
1136	T-ECU
1137	T-ExhPort 1
1138	T-ExhPort 2
1139	T-ExhPort 3
1140	T-ExhPort 4
1141	T-ExhPort 5
1142	T-ExhPort 6
1143	T-ExhPort 7
1144	T-ExhPort 8
1145	T-ExhPort 9
1146	T-ExhPort10
1147	T-ExhPort11
1148	T-ExhPort12
1149	T-ExhPort13
1150	T-ExhPort14
1151	T-ExhPort15
1152	T-ExhPort16
1153	T-ExhPort17
1154	T-ExhPort18
1155	T-ExhPort19
1156	T-ExhPort20
1176	P-Turbo1Intake
1177	P-Turbo2Intake
1180	T-Turbo1Int
1181	T-Turbo2Int
1203	P-AuxCoolant

1208	P-OilFiltInt
1239	FuelLeakage1
1387	P-Auxiliary1
1483	SourceAddress
1485	ECMMainRelay
1675	StarterMode
1693	TurboWastgate
1761	DEFTnkLevel
1802	T-IntManifold5
1803	T-IntManifold6
2433	T-Exh2Manf1
2434	T-Exh1Manif1
2435	P-SeaWtrPmpOut
2629	T-Turbo1Outlet
2809	P-AirFilt2Diff
3031	T-DEFTnk
3041	FlashProtect
3216	SCR IntakeNOx
3226	AT1OutNOx
3241	T-AT1Exh1
3242	T-DPFIntake
3246	T-DPFOutlet
3251	P-DPFDiff
3363	DEFTnkHeater
3468	T-1Fuel2
3515	T-DEFTnk2
3516	DEFConcentrat
3553	CoolPreHeated
3563	P-IntakeManAbs
3609	P-DPFIntake
3610	P-DPFOutlet
3695	RegenInhibit
3696	RegenForce
3697	DPFLamp
3698	HEST Lamp
3699	DPFPassive
3700	DPFRegenAct
3701	DPFStatus
3702	DPFInhibited
3703	DPFInhSwitch
3704	DPFInhClutch
3705	DPFInhBrake
3706	DPFInhPTO
3707	DPFInhIdle
3708	DPFInhNeutral
3709	DPFInhSpeed
3710	DPFInhBrake

3711	DPFInhExhTmp
3712	DPFInhSysFlt
3713	DPFInhTimeout
3714	DPFInhSysLock
3715	DPFInhLockout
3716	DPFInhWarmed
3717	DPFInhLowSpd
3718	DPFInhConfig
3719	DPFSootLoad
3720	DPFAshLoad
3750	DPFNoMetRegen
3826	DEFAvgConsmpt
4080	FreqSelect
4175	DPFRegenForce
4360	T-SCR1Intake
4363	T-SCR1Outlet
5245	DEFLowLevel
5246	SCR Severity
5417	P-FuelFltInt
5504	HydrocarbPurg
5629	DPFInhExhPres
6915	SCR Lamp
6918	SCR InhSwitch

4.38 MAN EDC17 Fault Codes

Fault Code (SPN)	Text
81	DPFIntake
94	P-FuelDelivery
98	OilLevel
100	P-Oil
102	P-Intake
105	T-IntManifold
110	T-Coolant
168	Battery
171	T-AmbientAir
173	T-Exhaust
609	Controller2
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
1079	Supply1
1080	Supply2
1131	T-IntManifold2
1761	DEFTnkLevel

4.39 ECU8 & Smart connect

Fault Code (SPN)	Text
52	IntercoolerTmp
94	FuelDelPress
100	EngOil Press
109	Coolant Press
110	EngCool Temp
111	Coolant Level
158	BattPotential
174	Fuel Temp
175	EngOil Temp
188	SpeedAtIdleLow
190	EngineSpeedLow
898	RequestedSpeed
1136	ECU Temp
2629	Turbo1 OutTemp
520837	Starter Speed
520838	EngRunUpSpeed
502875	SpdDemFail
521128	SmartConnLost

4.40 MTU ADEC1939 Fault Codes

Fault Code (SPN)	Text
3	HI T-Fuel
4	SS T-Fuel
5	HI T-ChargeAir
6	SS T-ChargeAir
9	HI T-CoolInter
10	SS T-CoolInter
15	LO P-Lube Oil
16	SS P-Lube Oil
19	HI T-ExhaustA
20	SS T-ExhaustA
21	HI T-ExhaustB
22	SS T-ExhaustB
23	LO CoolLevel
24	SS CoolLevel
25	HI P-Diff Oil
26	SS P-Diff Oil
30	SS Overspeed
31	HI ETC1Overspd
32	SS ETC1Overspd
33	HI P-DiffFuel
34	SS P-DiffFuel

36	HI ETC2Overspd
37	SS ETC2Overspd
44	LO CoolLvlInt
51	HI T-Lube Oil
52	SS T-Lube Oil
57	LO P-coolant
58	SS P-Coolant
59	SS T-CoolantL3
60	SS T-CoolantL4
65	LO P-Fuel
66	SS P-Fuel
67	HI T-Coolant
68	SS T-Coolant
81	AL RailLeakage
82	HI P-Fuel
83	LO P-Fuel
89	SS Speed Low
90	SS IdleNtReach
91	SS ReleaseSpd
92	SS StarterSpd
93	SS T-Preheat
94	LO T-Preheat
95	AL Prelubric
102	AL FuelConsCnt
104	AL EngHoursCnt
109	P-Coolant1
118	LO ECUPwrSupp
119	LOLO ECUPower
120	HI ECUPwrSupp
121	HIHI ECUPower
122	HI T-ECU
141	AL PwrTooHigh
142	AL MCR1HourExc
176	AL LifeDataNA
177	AL LifeDataInc
180	AL CAN1NodeLst
181	AL CAN2NodeLst
182	AL CANWrongPar
183	AL CANNoPUData
184	AL CANPUDataEr
186	AL CAN1BusOff
187	AL CAN1ErrPass
188	AL CAN2BusOff
189	AL CAN2ErrPass
201	SD T-Coolant
202	SD T-Fuel
203	SD T-ChargeAir

205	SD T-CoolInter
206	SD T-ExhaustA
207	SD T-ExhaustB
208	SD P-ChargeAir
211	SD P-Lube Oil
212	SD P-Coolant
213	SD P-Cool LT
215	SD P-HD
216	SD T-Lube Oil
219	SD T-IntakeAir
220	SD LvlCoolWatr
221	SD P-Diff Oil
222	SD LeakFuelLvl
223	SD LvlCoolIntr
227	SD OilPressure
228	SD P-Fuel
229	AL StopCamshaf
230	SD CranksftSpd
231	SD CamshaftSpd
232	SD ChrgrSpeed1
239	SD P-Diff Fuel
240	SD P-Fuel
245	SD ECUPwrSupp
266	SD SpeedDemand
269	SD LoadAnalog
270	SD FreqInput
301	AL TimingCIA1
302	AL TimingCIA2
303	AL TimingCIA3
304	AL TimingCIA4
305	AL TimingCIA5
306	AL TimingCIA6
307	AL TimingCIA7
308	AL TimingCIA8
309	AL TimingCIA9
310	AL TimingCIA10
311	AL TimingCIB1
312	AL TimingCIB2
313	AL TimingCIB3
314	AL TimingCIB4
315	AL TimingCIB5
316	AL TimingCIB6
317	AL TimingCIB7
318	AL TimingCIB8
319	AL TimingCIB9
320	AL TimingCIB10
321	AL WiringCIA1

322	AL WiringCIA2
323	AL WiringCIA3
324	AL WiringCIA4
325	AL WiringCIA5
326	AL WiringCIA6
327	AL WiringCIA7
328	AL WiringCIA8
329	AL WiringCIA9
330	AL WiringCIA10
331	AL WiringCIB1
332	AL WiringCIB2
333	AL WiringCIB3
334	AL WiringCIB4
335	AL WiringCIB5
336	AL WiringCIB6
337	AL WiringCIB7
338	AL WiringCIB8
339	AL WiringCIB9
340	AL WiringCIB10
341	AL OpenLdCIA1
342	AL OpenLdCIA2
343	AL OpenLdCIA3
344	AL OpenLdCIA4
345	AL OpenLdCIA5
346	AL OpenLdCIA6
347	AL OpenLdCIA7
348	AL OpenLdCIA8
349	AL OpenLdCIA9
350	AL OpenLdCIA10
351	AL OpenLdCIB1
352	AL OpenLdCIB2
353	AL OpenLdCIB3
354	AL OpenLdCIB4
355	AL OpenLdCIB5
356	AL OpenLdCIB6
357	AL OpenLdCIB7
358	AL OpenLdCIB8
359	AL OpenLdCIB9
360	AL OpenLdCIB10
361	AL PwrStageLow
362	AL PwrStagHigh
363	AL StopPwrStag
365	AL StopMVWirin
371	AL Wiring TO1
381	AL WiringTOP1
382	AL WiringTOP2
383	AL WiringTOP3

384	AL WiringTOP4
390	AL MCRExceeded
400	AL DigitInp 1
401	AL DigitInp 2
402	AL DigitInp 3
403	AL DigitInp 4
404	AL DigitInp 5
405	AL DigitInp 6
406	AL DigitInp 7
407	AL DigitInp 8
408	AL Emerg Stop
410	LO U-PDU
411	LOLO U-PDU
412	HI U-PDU
413	HIHI U-PDU
414	HI WtrFuelPref
415	LO P-Cool LT
416	SS P-Cool LT
417	SD WtrFuelpref
438	LO P-Fuel 2
439	HI P-Fuel 2
441	AL Syst2Leaks
444	SD U-PDU
445	SD P-Amb Air
446	SD P-HD2
448	HI P-ChargeAir
449	SS P-ChargeAir
450	SD TorqueInp
454	SS PowerReduct
463	SD AUX 2
464	SD P-AUX 1
468	SD T-AUX 1
469	SD AUX 1
470	SD T-ECU
471	SD CoilCurr
472	AL Stop SD
474	AL Wiring FO
475	AL CR Trigger
476	AL CrashRecErr
478*	AL YellowAlarm
479*	AL Red Alarm
480	AL ExtEngProt
510	AL Override
515	AL Starter
543	AL >1 FDHSlave
544	AL ConfigChang
549	AL PwrInterupt

555	AL Call MTU
576	AL ESCMOverrid
586	LO P-Oil
594	AL L1 UDVFault
595	AL L2 UDVFault
598	AL L1 UDVFault
599	AL L2 UDVFault
610	AL HPFuel1Wir
611	AL HPFuel2Wir
612	AL PresValve1
613	AL PresValve2
1203	P-AuxCoolant

*Hidden fault code by default

4.41 MTU DDEC10 Fault Codes

Fault Code (SPN)	Text
70	ParkingBrake
84	Spd-WheelBased
91	APP
98	OilLevel
100	P-Oil
107	P-AirFilt1Diff
110	T-Coolant
111	CoolantLvl
120	T-HydroRetOil
158	KeySwitch
168	Battery
171	T-AmbientAir
191	Spd-OutShaft
247	EngineRunHours
523	TranGear
527	CruseControl
558	AP LowIdleSw
571	BrakeSwitch
596	CCEnable
597	Brake
598	Clutch
599	CCSet
600	CCCoast
602	CCAccelerate
609	Controller2
628	ProgramMemory
629	Controller1
639	J1939CANBus
667	InjectorCyl17

701	AuxiliaryIO 01
702	AuxiliaryIO 02
703	AuxiliaryIO 03
704	AuxiliaryIO 04
705	AuxiliaryIO 05
706	AuxiliaryIO 06
707	AuxiliaryIO 07
708	AuxiliaryIO 08
709	AuxiliaryIO 09
710	AuxiliaryIO 10
711	AuxiliaryIO 11
712	AuxiliaryIO 12
714	AuxiliaryIO 14
715	AuxiliaryIO 15
716	AuxiliaryIO 16
924	AuxiliaryOut 1
925	AuxiliaryOut 2
926	AuxiliaryOut 3
972	AccelInterlock
973	RetarderSelect
974	APPRemote
979	RemPROPreprg
986	ReqFan1Spd
1121	EBS BrakeSw
1237	SdOverride
1482	TranSA
1484	OthersECU TC
1623	Spd-TachoShaft
1624	Spd-Tachograph
1681	BattSwHold
1716	RetSelection
2003	SA 3
2011	SA 11
2017	SA 17
2023	SA 23
2025	SA 25
2033	SA 33
2042	SA 42
2049	SA 49
2596	MaxSpdLimit
2623	AP1Channel2
2646	AuxiliaryOut 4
2882	AltRatingSel
3353	Alternator1
3510	SensorSupply02
3511	SensorSupply03
3606	SDRequest

3645	TransferCase
3695	RegenInhibit
3696	RegenForce
3840	AuxiliaryIO 17
3841	AuxiliaryIO 18
3842	AuxiliaryIO 19
3843	AuxiliaryIO 20
3844	AuxiliaryIO 21
3845	AuxiliaryIO 22
3846	AuxiliaryIO 23
3847	AuxiliaryIO 24
3848	AuxiliaryIO 25
3849	AuxiliaryIO 26
3850	AuxiliaryIO 27
3851	AuxiliaryIO 28
3852	AuxiliaryIO 29
3853	AuxiliaryIO 30
3854	AuxiliaryIO 31
3855	AuxiliaryIO 32
3856	AuxiliaryIO 33
3857	AuxiliaryIO 34
3858	AuxiliaryIO 35
3859	AuxiliaryIO 36
3860	AuxiliaryIO 37
3861	AuxiliaryIO 38
3862	AuxiliaryIO 39
3863	AuxiliaryIO 40
3864	AuxiliaryIO 41
3865	AuxiliaryIO 42
3866	AuxiliaryIO 43
3867	AuxiliaryIO 44
3868	AuxiliaryIO 45
3869	AuxiliaryIO 46
3870	AuxiliaryIO 47
3871	AuxiliaryIO 48
3872	AuxiliaryIO 49
3873	AuxiliaryIO 50
4206	CountrChecksum
524280	RemoteAPP
524281	J1939Link
524283	GenWiring
524284	CPC4
524285	Parameter01/07
524286	MCM,ACM,CPC
524287	PredictiveCC

4.42 MTU ECU9 Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
52	T-Intcooler
94	P-FuelDelivery
95	P-FuelFltDiff
97	WaterInFuel
98	OilLevel
99	P-OilFltDiff
100	P-Oil
101	P-Crankcase
102	P-Intake
103	Spd-Turbo
104	P-TurboLubeOil
105	T-IntManifold
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
112	P-CoolFltrDiff
157	P-Fuel1Inj1
158	KeySwitch
171	T-AmbientAir
172	T-AirIntake
173	T-Exhaust
174	T-Fuel
175	T-Oil
176	T-TurboOil
188	Spd-Idle
190	EngineSpeed
247	EngineRunHours
250	TotalFuelUsed
441	T-Auxiliary1
623	StopLamp
624	WarningLamp
898	Spd-Requested
966	DiagTestMode
1083	AuxiliaryIO 1
1131	T-IntManifold2
1136	T-ECU
1168	P-TurboOil
1169	Spd-Turbo2
1170	Spd-Turbo3
1171	Spd-Turbo4
1172	T-Turbo1CInt

1176	P-Turbo1Intake
1177	P-Turbo2Intake
1203	P-AuxCoolant
1208	P-OilFiltInt
1237	SdOverride
1239	FuelLeakage1
1349	P-Fuel1Inj2
1380	RemoteOilRsv
1385	T-Auxiliary1
1387	P-Auxiliary1
1638	T-Hydraulic
1761	DEFTnkLevel
2433	T-Exh2Manf1
2434	T-Exh1Manif1
2602	HydroOil
2629	T-Turbo1Outlet
2631	P-ChrgAirCOut
3031	T-DEFTnk
3226	AT1OutNOx
3242	T-DPFIntake
3246	T-DPFOutlet
3251	P-DPFDiff
3468	T-1Fuel2
3517	DEFTnkLevel
3543	Operating
3562	P-IntakeMan2
3563	P-IntakeManAbs
3668	ChrgAirCoolLvl
3673	ThrottleVlv2
3703	DPFInhSwitch
4193	T-CoolPumpOut
4337	T-DEFDoser1
4348	DEFDosingQ
4360	T-SCR1Intake
4363	T-SCR1Outlet
4375	DEFPumpDrive
4390	T-DEF2Doser1
4401	DEF2DosingQ
4413	T-SCR2Intake
4415	T-SCR2Outlet
4441	DEF2PumpDrive
4490	Humidity
4765	T-AT1CatalInt
4990	BatteryCharger
5422	P-FuelFltInt
5571	CRReliefVlv
520406	P-OilNivPump

520837	Starter Speed
520838	EngRunUpSpeed
520872	AL Wiring
520873	Selected Mode
520874	No Valid Mode
520875	Speed Demand
520876	Stop Button
520877	Start Button
520878	Up Button
520879	Down Button
520880	Ext. SpdDemand
520881	Spd Demand Inc
520882	Bin SpdLimit
520883	Droop 2 Switch
520884	FreqSwitch
520885	Test Overspeed
520886	OverrideButton
520887	Alarm Reset
520888	CylinderCutOut
520889	RequestBinTest
520890	ExtProtection
520891	Prelubrication
520892	ExtInc IdleBin
520893	RequestDBR
520900	Wiring CylA1
520901	Wiring CylA2
520902	Wiring CylA3
520903	Wiring CylA4
520904	Wiring CylA5
520905	Wiring CylA6
520906	Wiring CylA7
520907	Wiring CylA8
520908	Wiring CylA9
520909	Wiring CylA10
520910	Wiring CylB1
520911	Wiring CylB2
520912	Wiring CylB3
520913	Wiring CylB4
520914	Wiring CylB5
520915	Wiring CylB6
520916	Wiring CylB7
520917	Wiring CylB8
520918	Wiring CylB9
520919	Wiring CylB10
520923	SS T-Coolant
520924	Power too high
520930	Open LdCylA1

520931	Open LdCylA2
520932	Open LdCylA3
520933	Open LdCylA4
520934	Open LdCylA5
520935	Open LdCylA6
520936	Open LdCylA7
520937	Open LdCylA8
520938	Open LdCylA9
520939	Open LdCylA10
520940	Open LdCylB1
520941	Open LdCylB2
520942	Open LdCylB3
520943	Open LdCylB4
520944	Open LdCylB5
520945	Open LdCylB6
520946	Open LdCylB7
520947	Open LdCylB8
520948	Open LdCylB9
520949	Open LdCylB10
521026	PwrReduction
521027	ALStopSD

4.43 MTU EIM Fault Codes

Fault Code (SPN)	Text
92	Load
95	P-FuelFltDiff
95	P-FuelFltDiff
95	P-FuelFltDiff
99	P-OilFltDiff
99	P-OilFltDiff
99	P-OilFltDiff
100	P-Oil
100	P-Oil
100	P-Oil
100	P-Oil
101	P-Crankcase
101	P-Crankcase
101	P-Crankcase
101	P-Crankcase
102	P-Intake
103	Spd-Turbo
103	Spd-Turbo
103	Spd-Turbo
103	Spd-Turbo
105	T-IntManifold
105	T-IntManifold

109	P-Coolant1
109	P-Coolant1
109	P-Coolant1
110	T-Coolant
110	T-Coolant
110	T-Coolant
110	T-Coolant
111	CoolantLvl
111	CoolantLvl
157	P-Fuel1Inj1
166	Pwr-Rated
168	Battery
174	T-Fuel
174	T-Fuel
174	T-Fuel
175	T-Oil
175	T-Oil
175	T-Oil
175	T-Oil
190	EngineSpeed
898	Spd-Requested
1110	EPS Shutdown
1136	T-ECU
1137	T-ExhPort 1
1138	T-ExhPort 2
1139	T-ExhPort 3
1140	T-ExhPort 4
1141	T-ExhPort 5
1142	T-ExhPort 6
1143	T-ExhPort 7
1144	T-ExhPort 8
1145	T-ExhPort 9
1146	T-ExhPort10
1147	T-ExhPort11
1148	T-ExhPort12
1149	T-ExhPort13
1150	T-ExhPort14
1151	T-ExhPort15
1152	T-ExhPort16
1153	T-ExhPort17
1154	T-ExhPort18
1155	T-ExhPort19
1156	T-ExhPort20
1157	T-Bearing 1
1158	T-Bearing 2
1159	T-Bearing 3
1160	T-Bearing 4

1161	T-Bearing 5
1162	T-Bearing 6
1163	T-Bearing 7
1164	T-Bearing 8
1165	T-Bearing 9
1166	T-Bearing10
1167	T-Bearing11
1169	Spd-Turbo2
1169	Spd-Turbo2
1169	Spd-Turbo2
1169	Spd-Turbo2
1239	FuelLeakage1
2433	T-Exh2Manf1
2433	T-Exh2Manf1
2433	T-Exh2Manf1
2434	T-Exh1Manif1
2434	T-Exh1Manif1
2434	T-Exh1Manif1
2435	P-SeaWtrPmpOut
2629	T-Turbo1Outler
3563	P-IntakeManAbs
520195	ExtInterlock
520202	SafetyProtOvr
520211	BatteryCharger
520219	IntPowerSupply
520231	ESDFail
520240	StarterFail
520254	T-ChargeAir
520254	T-ChargeAir
520256	EngController
520257	Spd-Camshaft
520258	Spd-Crankshaft
520261	BarringGear
520264	PrimingPump
520292	P-Lube Oil EMU
520302	T-Coolant
520302	T-Coolant
520382	Overspeed EMU
520395	T-Spl Oil B1
520396	T-Spl Oil B2
520397	T-Spl Oil B3
520398	T-Spl Oil B4
520399	T-Spl Oil B5
520400	T-Spl Oil B6
520401	T-Spl Oil B7
520402	T-Spl Oil B8
520403	T-Spl Oil B9

520404	T-Spl Oil B10
520405	WB TOP2 EMU
520817	V-Starter
520818	NotReady
520819	StarterNtReady
520824	V-MainSypply
520824	V-MainSypply
520825	V-RedSypply
520825	V-RedSypply
520826	ESD
522194	AmberAlarm
522195	RedAlarm
522197	EIM

4.44 MTU MIP4000 Fault Codes

Fault Code (SPN)	Text
1	EmergencyStop
2	MessageStop
3	MessageAlarm
5	ManualESD
6	EngineESD
11	StatusX20
24	MIPPanelCB
27	CoolingWtr
28	MixCoolingWtr
31	P-Gas
32	P-Gas
34	GasLeakage
39	T-MIPBoard
40	T-MIPBoard
41	T-MIPBoard
46	Lvl-FrameOil
47	CoolingWtr
48	CoolingWtr
49	LubeOilRefill
50	AuxDrivesVolt
53	T-WindingU1
54	T-WindingU1
55	T-WindingU1
56	T-WindingV1
57	T-WindingV1
58	T-WindingV1
59	T-WindingW1
60	T-WindingW1
61	T-WindingW1
65	Engine stop

66	RedAlarmEng
67	YellowAlarmEng
68	Spd-GenLow
69	V-Mains HiHi
70	V-Mains LoLo
71	T-Bearing DE
72	T-Bearing DE
73	T-Bearing DE
78	LoadCtrlSet
81	GasVlv2Fail
82	GasVlv1Fail
84	GCBSyncFail
86	GCBFail
87	GCBOpenFail
88	GCBOpenFail
89	GCBCloseFail
90	MCBFail
92	MCBCloseFail
94	F-Gen Hi
95	F-Gen Lo
96	V-Gen Hi
97	V-Gen Lo
98	Gen OverLoad
99	Gen RewPwr
100	I-Gen Hi
101	I-Gen Hi
103	Gen Load ~
104	Gen PF Fail
105	Gen PF Fail
106	I-Gen Diff
107	I-Gen Diff
108	I-Gen Diff
109	GenL1Fail
110	GenL2Fail
111	GenL3Fail
112	MainsProtFail
113	F-Mains Hi
114	F-Mains Lo
115	V-Mains Hi
116	V-Mains Lo
117	Mains df dt
118	MainsAsymmetry
119	MainsPhaseJump
130	CoolHeatFail
131	WasteOilPump
133	F-Generator
134	CommExtFail

135	GenDiodeFault
137	PLCBattery
138	PLCForcing
139	SafeChainRFai
140	EngineCommFail
146	GeneratorVolt
161	GCBOpened
163	MIP AC Fail
179	T-Bearing NDE
180	T-Bearing NDE
181	T-Bearing NDE
182	TestActive
183	GCB Tripped
190	PowModuleFail
191	Module1Fail
192	Module2Fail
193	Module3Fail
194	Module4Fail
195	Module5Fail
196	Module6Fail
197	Module7Fail
198	Module8Fail
199	Module9Fail
200	Module10Fail
201	CommIslandFail
204	2thPwrModule
230	V-Gen
231	I-Gen
232	I-GenN Hi
233	GenCapacitPwr
248	2thPwrModule
249	2thPwrModule
250	2thPwrModule
251	Module11Fail
252	Module12Fail
253	Module13Fail
254	Module14Fail
255	Module15Fail
256	Module16Fail
257	Module17Fail
258	Module18Fail
259	Module19Fail
260	Module20Fail
261	Module21Fail
262	Module22Fail
263	Module23Fail
264	Module24Fail

265	Module25Fail
266	Module26Fail
267	Module27Fail
268	Module28Fail
269	Module29Fail
270	Module30Fail
271	PLCCfgWrong
274	V-Mains HiAvg
275	V-Mains HiHi
276	V-Mains LoLo
327	MainsProtExt
328	DiffProtTrip
330	GenAVR: Error
344	T-GearOil
345	T-GearOil
346	P-GearOil
347	T-GearOil
348	T-GearOil
354	GenOverFreq2
356	GenUnderFreq2
358	GenOverVolt2
359	GenUnderVolt2
366	GenOverCurr3
367	GenOverCurr4
371	F-Mains Hi
373	F-Mains Lo
379	V-Mains Lo
380	V-Mains Lo
381	V-Mains Lo
382	V-Mains Lo
384	Mains LVFRT1
385	Mains LVFRT2
391	MainSWAuxOpen
392	2thPwrModule
393	LoadCtrlSystem
394	Low Load
397	LoadRampExceed
398	LubeOilRefill
400	ChckAlarmParam
401	P-Oil Lo
402	P-Oil SS
403	T-ExhaustA Hi
404	T-ExhaustA SS
405	T-ExhaustB Hi
406	T-ExhaustB SS
407	P-Diff-Oil Hi
408	P-Diff-Oil SS

409	Spd-Over SS
410	Spd-ETC1 Hi
411	Spd-ETC1 SS
412	Spd-ETC2 Hi
413	Spd-ETC2 SS
414	T-Oil Hi
415	T-Oil SS
416	T-IntAir Hi
417	T-IntAir HiHi
418	P-Coolant Lo
419	P-Coolant SS
420	P-CrankCase Hi
421	P-CrankCase SS
422	T-Coolant Hi
423	T-Coolant SS
424	Spd-EngLow SS
425	Spd-NotIdle SS
426	Spd-NotRlse SS
427	Spd-NotStrt SS
428	T-Preheat SS
429	T-Preheat Lo
430	Prelubrication
431	HrsCntrDefect
432	V-SpplyECU Lo
433	V-SpplyECULoLo
434	V-SpplyECU Hi
435	V-SpplyECUHiHi
436	T-ECU Hi
437	LifeData
438	LifeData
439	CAN1NodeLost
440	CAN2NodeLost
441	CANWrongParam
442	CAN PU-Data
443	CAN PU-Data
444	CAN1BusOff
445	CAN1Error
446	CAN2BusOff
447	CAN2Error
448	EMUParam
449	T-Coolant SD
450	Lvl-Oil SD
451	T-ExhaustA SD
452	T-ExhaustB SD
453	P-Oil SD
454	P-Coolant SD
455	P-CrankCase SD

456	T-Oil SD
457	T-IntAir SD
458	P-DiffOil SD
459	P-OilB.Fltr SD
460	StopCamshaft
461	Spd-CamshaftSD
462	Spd-Charger1SD
463	Spd-Charger2SD
464	V- ECUPower SD
465	Spd-Demand SD
466	WiringTOP1
467	WiringTOP2
468	WiringTOP3
469	WiringTOP4
470	T-IntAirB SD
471	T-CoolB.Eng SD
472	P-CoolDiff Lo
473	P-Coolant Hi
474	P-CoolB.Eng Lo
475	P-CoolB.Eng SS
476	T-CoolB.Eng Hi
477	T-CoolB.Eng SS
478	P-ChrgMixD Hi
479	P-ChrgMixDHiHi
480	T-ChrgMix Hi
481	T-ChrgMixHiHi
482	T-ChrgMix Lo
483	Pwr-RedAct SS
484	T-IntAir Lo
485	T-IntAir LoLo
486	P-CoolB.Eng SD
487	T-ECU SD
488	Stop SD
489	WiringPWM CM2
490	CombAlarmYel
491	CombAlarmRed
492	P-ChrgMixA SD
493	P-ChrgMixB SD
494	P-ChrgMixD SD
495	T-ChrgMix SD
496	P-ChrgMixAHiHi
497	P-ChrgMixBHiHi
498	P-CoolantDi SD
499	StarterNotEng
500	P-ChrgMixB. SD
501	P-IntAirFltASD
502	P-IntAirFltBSD

503	WiringPWM CM1
504	WiringPWM1
505	WiringPWM2
506	MultiFDHSlaves
507	Configuration
508	GasCntrlCheck
509	IgnitionFault
510	GasVlvFault
511	Spd-Collapse
512	MixThrttlAFlt
513	MixThrttlBFlt
514	P-IntAirA.FltA
515	P-IntAirA.FltA
516	P-IntAirA.FltB
517	P-IntAirA.FltB
518	SAM MissData
519	CANRetardTime
520	CANRetardTime
521	CANRetardTime
522	CB Closed
523	HutChangespd
524	ActVlvHu Lo
525	ActVlvHu LoLo
526	ActVlvHu Hi
527	AtcVlvHu HiHi
528	NoxValue Lo
529	NoxValue LoLo
530	NoxValue Hi
531	NoxValue HiHi
532	KnockIntensity
533	ReqAngThrttlA
534	ReqAngThrttlB
535	PreheatingErr
536	GETCommLost
537	IC92xCommLost
538	FSeriesCommLst
539	TecJetCommLost
540	ProActACommLst
541	ProActBCommLst
542	NOxACommLost
543	NOxBCommLost
544	PhytronAComm
545	PhytronBComm
546	OilRefillError
547	GETYellow
548	IC92xYellow
549	FSeriesYellow

550	TecJetYellow
551	ProActAYellow
552	ProActBYellow
553	NOxAYellow
554	NOxB Yellow
555	PhyAYellow
556	PhyBYellow
557	GETRed
558	IC92xRed
559	FSeriesRed
560	TecJetRed
561	ProActARed
562	ProActBRed
563	NOxARed
564	NOxBRed
565	PhyARed
566	PhyBRed
567	LubeOilMin
568	LubeOilMax
569	OilRefill Lo
570	OilRefill Hi
571	Lvl-OilRefilHi
572	T-Gas SD
573	T-Gas L1
574	T-Gas L2
575	P-AmbAir SD
576	CrashInit.Err
577	VerkabelungPWM
578	VerkabelungPWM
579	P-AmbAir SD
580	T0-AmAir SD
581	AirHumidity SD
582	EleEngPwrAI2
583	ActFuelVlvL1
584	Rel.HumidityL1
585	TurningActiv
586	MIC5Yellow
587	MIC5Red
588	MIC5CommLost
589	ESIActivated
590	MIC5SigDiff
591	CAN3BusOff
592	CAN3Error
593	CAN4BusOff
594	CAN4Error
595	DevelopPRSet
596	AirHumidity SD

597	ParamDownload
598	DeltaNOx(AB)Hi
599	DeltaNox(AB)Hi
600	T-ExhA1 Hi
601	T-ExhA2 Hi
602	T-ExhA3 Hi
603	T-ExhA4 Hi
604	T-ExhA5 Hi
605	T-ExhA6 Hi
606	T-ExhA7 Hi
607	T-ExhA8 Hi
608	T-ExhA9 Hi
609	T-ExhA10 Hi
610	T-ExhA1 HiHi
611	T-ExhA2 HiHi
612	T-ExhA3 HiHi
613	T-ExhA4 HiHi
614	T-ExhA5 HiHi
615	T-ExhA6 HiHi
616	T-ExhA7 HiHi
617	T-ExhA8 HiHi
618	T-ExhA9 HiHi
619	T-ExhA10 HiHi
620	T-ExhA1 HiHi
621	T-ExhA2 HiHi
622	T-ExhA3 HiHi
623	T-ExhA4 HiHi
624	T-ExhA5 HiHi
625	T-ExhA6 HiHi
626	T-ExhA7 HiHi
627	T-ExhA8 HiHi
628	T-ExhA9 HiHi
629	T-ExhA10 HiHi
630	T-ExhB1 Hi
631	T-ExhB2 Hi
632	T-ExhB3 Hi
633	T-ExhB4 Hi
634	T-ExhB5 Hi
635	T-ExhB6 Hi
636	T-ExhB7 Hi
637	T-ExhB8 Hi
638	T-ExhB9 Hi
639	T-ExhB10 Hi
640	T-ExhB1 HiHi
641	T-ExhB2 HiHi
642	T-ExhB3 HiHi
643	T-ExhB4 HiHi

644	T-ExhB5 HiHi
645	T-ExhB6 HiHi
646	T-ExhB7 HiHi
647	T-ExhB8 HiHi
648	T-ExhB9 HiHi
649	T-ExhB10 HiHi
650	T-ExhB1 HiHi
651	T-ExhB2 HiHi
652	T-ExhB3 HiHi
653	T-ExhB4 HiHi
654	T-ExhB5 HiHi
655	T-ExhB6 HiHi
656	T-ExhB7 HiHi
657	T-ExhB8 HiHi
658	T-ExhB9 HiHi
659	T-ExhB10 HiHi
660	T-ExhA1 Lo
661	T-ExhA2 Lo
662	T-ExhA3 Lo
663	T-ExhA4 Lo
664	T-ExhA5 Lo
665	T-ExhA6 Lo
666	T-ExhA7 Lo
667	T-ExhA8 Lo
668	T-ExhA9 Lo
669	T-ExhA10 Lo
670	T-ExhA1 LoLo
671	T-ExhA2 LoLo
672	T-ExhA3 LoLo
673	T-ExhA4 LoLo
674	T-ExhA5 LoLo
675	T-ExhA6 LoLo
676	T-ExhA7 LoLo
677	T-ExhA8 LoLo
678	T-ExhA9 LoLo
679	T-ExhA10 LoLo
680	T-ExhB1 Lo
681	T-ExhB2 Lo
682	T-ExhB3 Lo
683	T-ExhB4 Lo
684	T-ExhB5 Lo
685	T-ExhB6 Lo
686	T-ExhB7 Lo
687	T-ExhB8 Lo
688	T-ExhB9 Lo
689	T-ExhB10 Lo
690	T-ExhB1 LoLo

691	T-ExhB2 LoLo
692	T-ExhB3 LoLo
693	T-ExhB4 LoLo
694	T-ExhB5 LoLo
695	T-ExhB6 LoLo
696	T-ExhB7 LoLo
697	T-ExhB8 LoLo
698	T-ExhB9 LoLo
699	T-ExhB10 LoLo
700	T-ExhMean Hi
701	T-ExhMean HiHi
702	T-Exhaust SD
703	CommLostECU
704	GasVlv1Fdbck
705	GasVlvStatus
706	GasVlvFdbck
707	LocalESD SS
750	P-ZeroDetect
751	ZeroFlowDetect
752	FlowNotReached
753	ValvePosError
754	T-HighElectric
755	T-EleFailHigh
756	FGTFailHigh
757	DeltaPFailHigh
758	FGPFailHigh
759	I-CoilFail Hi
760	PosFail Hi
761	T-ElectFail Lo
762	FGTFail Lo
763	P-DeltaFail Lo
764	FGPFail Lo
765	I-CoilFail Lo
766	PosFail Lo
767	AnaInErr Lo
768	AnaInErr Hi
769	PWMDuty
770	PWMDuty
771	V-BattError Lo
772	FGTLimit Lo
773	P-DeltaLmt Lo
774	FGPLimit Lo
775	V-BattError Hi
776	FGTLimit Hi
777	P-DeltaLmt Hi
778	FGPLimit Hi
779	Watchdog

780	CANFlowDmd
781	TecJet SD
782	TecJet IntFlt
783	Keyswitch
784	ParameterErr
785	ParameterErr
786	EEPReadFlt
787	EEPWriteFlt
788	ReadingParam
789	ADC Error
790	5V Error
791	Neg9V Error
792	12V Error
793	ADCTestError
794	CANTimeChng
795	ExceptionError
796	FactoryCalErr
800	PrimOpenCyl1
801	PrimOpenCyl2
802	PrimOpenCyl3
803	PrimOpenCyl4
804	PrimOpenCyl5
805	PrimOpenCyl6
806	PrimOpenCyl7
807	PrimOpenCyl8
808	PrimOpenCyl9
809	PrimOpenCyl10
810	PrimOpenCyl11
811	PrimOpenCyl12
812	PrimOpenCyl13
813	PrimOpenCyl14
814	PrimOpenCyl15
815	PrimOpenCyl16
816	PrimOpenCyl17
817	PrimOpenCyl18
818	PrimOpenCyl19
819	PrimOpenCyl20
820	PrimShortCyl1
821	PrimShortCyl2
822	PrimShortCyl3
823	PrimShortCyl4
824	PrimShortCyl5
825	PrimShortCyl6
826	PrimShortCyl7
827	PrimShortCyl8
828	PrimShortCyl9
829	PrimShortCyl10

830	PrimShortCyl11
831	PrimShortCyl12
832	PrimShortCyl13
833	PrimShortCyl14
834	PrimShortCyl15
835	PrimShortCyl16
836	PrimShortCyl17
837	PrimShortCyl18
838	PrimShortCyl19
839	PrimShortCyl20
850	RingGearSignal
851	ResetSignal
852	CamshaftSignal
853	NrOfGearTeeth
854	UnknownCode
855	Overspeed SD
856	E2PROM
857	GlobalTiming
858	GlobalTiming
859	IndividualTime
860	Selftest SD
861	PrimRtExceeded
862	PrimChannel1
863	PrimChannel2
864	PrimChannel3
865	PrimChannel4
866	PrimChannel5
867	PrimChannel6
868	PrimChannel7
869	PrimChannel8
870	PrimChannel9
871	PrimChannel10
872	PrimChannel11
873	PrimChannel12
874	PrimChannel13
875	PrimChannel14
876	PrimChannel15
877	PrimChannel16
878	PrimChannel17
879	PrimChannel18
880	PrimChannel19
881	PrimChannel20
882	PrimChannel21
883	PrimChannel22
884	PrimChannel23
885	PrimChannel24
886	RingGearSignal

887	ResetSignal
888	CamshaftSignal
889	SCRFaultOdd
890	SCRFaultEven
891	EnergyLvl
892	EnergyLvl
900	SecOpenCyl1
901	SecOpenCyl2
902	SecOpenCyl3
903	SecOpenCyl4
904	SecOpenCyl5
905	SecOpenCyl6
906	SecOpenCyl7
907	SecOpenCyl8
908	SecOpenCyl9
909	SecOpenCyl10
910	SecOpenCyl11
911	SecOpenCyl12
912	SecOpenCyl13
913	SecOpenCyl14
914	SecOpenCyl15
915	SecOpenCyl16
916	SecOpenCyl17
917	SecOpenCyl18
918	SecOpenCyl19
919	SecOpenCyl20
920	SecShortCyl1
921	SecShortCyl2
922	SecShortCyl3
923	SecShortCyl4
924	SecShortCyl5
925	SecShortCyl6
926	SecShortCyl7
927	SecShortCyl8
928	SecShortCyl9
929	SecShortCyl10
930	SecShortCyl11
931	SecShortCyl12
932	SecShortCyl13
933	SecShortCyl14
934	SecShortCyl15
935	SecShortCyl16
936	SecShortCyl17
937	SecShortCyl18
938	SecShortCyl19
939	SecShortCyl20
950	KnockSensorA1

951	KnockSensorB1
952	KnockSensorA2
953	KnockSensorB2
954	KnockSensorA3
955	KnockSensorB3
956	KnockSensorA4
957	KnockSensorB4
958	KnockSensorA5
959	KnockSensorB5
960	KnockSensorA6
961	KnockSensorB6
962	KnockSensorA7
963	KnockSensorB7
964	KnockSensorA8
965	KnockSensorB8
966	KnockSensorA9
967	KnockSensorB9
968	KnockSensorA10
969	KnockSensorB10
971	ErrorStatus
972	CombinedError
973	InternalError
974	ErrorCamshaft
1000	InternalFault
1001	StopCommanded
1002	V-InputFault
1003	PositionError
1004	T-SensorFault
1005	T-DeratingAct
1006	T-Above120°C
1007	LossOfPosDmd
1008	DmdTrackFault
1009	AnaPosiDmdFlt
1010	PWMPosDmdFlt
1011	CANPosDmdFlt
1012	CANFault
1013	CANStopComd
1014	InternalFault
1015	StopCommanded
1016	V-InputFault
1017	PositionError
1018	T-SensorFault
1019	T-DeratingAct
1020	T-Above120°C
1021	LossOfPosDmd
1022	DmdTrackFault
1023	AnaPosiDmdFlt

1024	PWMPosDmdFlt
1025	CANPosDmdFlt
1026	CANFault
1027	CANStopComd
1050	PWMInput Hi
1051	PWMInput Lo
1052	AnaInput Hi
1053	AnaInput Lo
1054	V-InpSupply Hi
1055	V-InpSupply Lo
1056	T-ElectronicHi
1057	T-ElectronicLo
1058	PositionError
1059	RunEnNotActive
1060	SpringFailed
1061	InternalFault
1062	CANFault
1063	Shutdown
1064	Alarm
1065	DeratingActive
1100	PositionAErr
1101	V-AlarmA Lo
1102	T-Error A
1103	T-Alarm A
1104	Circuit A
1105	Watchdog A
1106	PositionBErr
1107	V-AlarmB Lo
1108	T-Error B
1109	T-Alarm B
1110	Circuit B
1111	Watchdog B
1112	HIDeltaO5Nox
1113	P-CrankCase Lo
1114	P-CrankCs LoLo
1115	Pwr-Diff HiHi
1116	Pwr-Diff LoLo
1117	EILProtection
1118	EILAlarm
1119	EILDiffEngNr
1150	Pwr-GasSensA
1151	T-GasSensA
1152	NoxReadingA
1153	WideRangeO2 A
1154	Pwr-GasSensB
1155	T-GasSensB
1156	NoxReadingB

1157	WideRangeO2 B
1164	Synchro
1165	OperationalErr
1166	NoSigDetected
1167	PolarityFailed
1168	WrongPolarity
1169	NoIndexMark
1170	WrNrTriggerE
1171	SignalMissing
1172	SignalFaulty
1173	IndexMark
1174	IndexToEarly
1175	IndexToLate
1176	OperationalErr
1177	SystemErr
1178	T-Limit
1179	Pwr-OutputLim
1180	InvCoilData
1181	InvConfig
1182	InvTrggrConfig
1183	ConfigChecksum
1184	I-AnaCurrent
1185	V-AnaSignal
1186	V-AuxInputs
1187	V-TrggrSupply
1188	GlobalTiming
1189	GeneralFault
1190	Overspeed
1191	Spd-DetSelftst
1192	Shutdown
1193	OutOfBoardFlt
1194	HV PowerSupply
1195	T-Sensor
1196	I-Sensor
1197	T-Limit
1198	Pwr-OutLimit
1199	Synchro
1200	OperationalErr
1201	NoSigDetected
1202	PolarityFailed
1203	WrongPolarity
1204	NoIndexMark
1205	WrNrTrggrE
1206	SignalMissing
1207	SignalFaulty
1208	IndexMark
1209	IndexToEarly

1210	IndexToLate
1211	Synchro
1212	OperationalErr
1213	NoSigDetected
1214	PolarityFailed
1215	WrongPolarity
1216	NoIndexMark
1217	WrNrTrggrE
1218	SignalMissing
1219	SignalFaulty
1220	IndexMark
1221	IndexToEarly
1222	IndexToLate

4.45 Perkins ECM Fault Codes

Fault Code (SPN)	Text
1	InjectorCyl#1
2	InjectorCyl#2
3	InjectorCyl#3
4	InjectorCyl#4
5	InjectorCyl#5
6	InjectorCyl#6
41	SensPower8V
51	ThrottleVlv1
91	APP
92	Load
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
153	P-Crankcase
157	P-Fuel1Inj1
158	KeySwitch
168	Battery
172	T-AirIntake
174	T-Fuel
175	T-Oil

183	FuelRate
189	Spd-Rated
190	EngineSpeed
228	Spd-SensCalib
231	TripFuel
234	Software
237	VIN
247	EngineRunHours
248	DataLinkComm
253	CheckSysParams
254	ECMFault
261	TimingCalib
262	SensPower5V
268	CheckPrgParams
273	P-TurboOutlet
274	P-Atmosphere
281	ActionAlrtLamp
282	Overspeed
285	T-Coolant
286	P-LubeOil
323	SDLamp
324	WrnLamp
342	Spd-Sensor2
443	P-AuxGage2
515	Spd-Desired
620	5VSupply
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
678	8VDCSupply
695	OverrideMode
723	Spd-Speed2
799	ServiceTool
898	Spd-Requested
970	AuxShutdown
971	DerateSw

1108	EPS TimerOvrd
1109	EPS SDApproach
1110	EPS Shutdown
1111	EPS Config
1266	OilReplVlv
1485	ECMMainRelay
1664	AutoStartFail

4.46 Perkins 1300 Fault Codes

Fault Code (SPN)	Text
1	InjectorCyl#1
2	InjectorCyl#2
3	InjectorCyl#3
4	InjectorCyl#4
5	InjectorCyl#5
6	InjectorCyl#6
41	SensPower8V
51	ThrottleVlv1
91	APP
92	Load
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
153	P-Crankcase
157	P-Fuel1Inj1
158	KeySwitch
168	Battery
172	T-AirIntake
174	T-Fuel
175	T-Oil
183	FuelRate
189	Spd-Rated
190	EngineSpeed
228	Spd-SensCalib
231	TripFuel
234	Software

237	VIN
247	EngineRunHours
248	DataLinkComm
253	CheckSysParams
254	ECMFault
261	TimingCalib
262	SensPower5V
268	CheckPrgParams
273	P-TurboOutlet
274	P-Atmosphere
281	ActionAlrtLamp
282	Overspeed
285	T-Coolant
286	P-LubeOil
323	SDLamp
324	WrnLamp
342	Spd-Sensor2
443	P-AuxGage2
515	Spd-Desired
620	5VSupply
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
678	8VDCSupply
695	OverrideMode
723	Spd-Speed2
799	ServiceTool
898	Spd-Requested
970	AuxShutdown
971	DerateSw
1108	EPS TimerOvrd
1109	EPS SDApproach
1110	EPS Shutdown
1111	EPS Config
1266	OilReplVlv
1485	ECMMainRelay
1664	AutoStartFail

4.47 Scania S6 Singlespeed Fault Codes

Fault Code (SPN)	Text
524287*	HiddenCode
0x1000	Overspeed
0x1100	Spd-Sensor1
0x1200	Spd-Sensor2
0x2000	T-WaterSensor
0x2100	T-ChargeAir
0x2200	P-ChargeAir
0x2300	T-OilSensor
0x2400	P-OilSensor
0x2600	SensorSupply1
0x2700	SensorSupply2
0x2800	ExtrAnalogIn
0x3200	BatteryVoltage
0x3300	CAN msg not ok
0x3403	CAN version
0x4300	HWWatchdog
0x6200	FanActuator
0x6400	WasteGateAct
0x6600	Starter
0x6605	StarterMotor
0x6702	AlternatorChrg
0x6A00	ExhBrakeAct
0xB000	P-Oil
0xB100	Lvl-Coolant
0xB200	OverheatCool
0xB300	EmergencyStop
0xB501	Lvl-Coolant
0xC000	PDEInjctorCyl1
0xC100	PDEInjctorCyl2
0xC200	PDEInjctorCyl3
0xC300	PDEInjctorCyl4
0xC400	PDEInjctorCyl5
0xC500	PDEInjctorCyl6
0xC600	PDEInjctorCyl7
0xC700	PDEInjctorCyl8
0xE200	OverheatProt
0xE600	CoordEmergStop

*Hidden fault code by default

4.48 Scania S6 Allspeed Fault Codes

Fault Code (SPN)	Text
524287*	HiddenCode
0x1000	Overspeed
0x1100	Spd-Sensor1
0x1200	Spd-Sensor2
0x2000	T-WaterSensor
0x2100	T-ChargeAir
0x2200	P-ChargeAir
0x2300	T-OilSensor
0x2400	P-OilSensor
0x2600	SensorSupply1
0x2700	SensorSupply2
0x2800	ExtrAnalogIn
0x3200	BatteryVoltage
0x3300	CAN msg not ok
0x3403	CAN version
0x4300	HWWatchdog
0x6200	FanActuator
0x6400	WasteGateAct
0x6600	Starter
0x6605	StarterMotor
0x6702	AlternatorChrg
0x6A00	ExhBrakeAct
0xB000	P-Oil
0xB100	Lvl-Coolant
0xB200	OverheatCool
0xB300	EmergencyStop
0xB501	Lvl-Coolant
0xC000	PDEInjctorCyl1
0xC100	PDEInjctorCyl2
0xC200	PDEInjctorCyl3
0xC300	PDEInjctorCyl4
0xC400	PDEInjctorCyl5
0xC500	PDEInjctorCyl6
0xC600	PDEInjctorCyl7
0xC700	PDEInjctorCyl8
0xE200	OverheatProt
0xE600	CoordEmergStop

*Hidden fault code by default

4.49 Scania S8 Singlespeed Fault Codes

Fault Code (SPN)	Text
0xFFFF*	HiddenCode
27	EGR1
51	ThrottleVlv1
70	ParkingBrake
100	P-Oil
102	P-Intake
105	T-IntManifold
110	T-Coolant
111	CoolantLvl
132	IntAirMassFlow
168	Battery
175	T-Oil
190	EngineSpeed
521	BrakePedal
558	AP LowIdleSw
559	AP KickDownSw
636	PositionSensor
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
677	StarterMotor
696	ReqSpeedCC
898	Spd-Requested
986	ReqFan1Spd
1111	EPS Config
1188	TurboWstAct1
1624	Spd-Tachograph
1632	TorqueLimit
2797	FuelInjectorG1
3353	Alternator1
3354	Alternator2
3509	SensorSupply01
3510	SensorSupply02
3585	EmergencySD
4000	ExhBrakeSwitch

*Hidden fault code by default

4.50 Scania S8 Allspeed Fault Codes

Fault Code (SPN)	Text
0xFFFF*	HiddenCode
46	P-Pneumatic
51	ThrottleVlv1
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
102	P-Intake
103	Spd-Turbo
105	T-IntManifold
107	P-AirFilt1Diff
108	P-Barometric
110	T-Coolant
111	CoolantLvl
131	P-TransOil
132	IntAirMassFlow
156	P-Fuel1Inj1
167	SysCharging
168	Battery
171	T-AmbientAir
172	T-AirIntake
174	T-Fuel
175	T-Oil
188	Spd-Idle
190	EngineSpeed
234	Software
532	Spd-HighIdle
558	AP LowIdleSw
559	AP KickDownSw
590	TimerState
597	Brake
598	Clutch
636	PositionSensor
641	TurboGeometry
645	Tachometer
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8

677	StarterMotor
723	Spd-Speed2
788	TranClutchAct
968	IdleIncrement
972	AccelInterlock
974	APPRemote
986	ReqFan1Spd
1086	P-ParkingAir
1108	EPS TimerOvrd
1110	EPS Shutdown
1135	T-Oil2
1239	FuelLeakage1
1322	Misfire
1323	MisfireCyl 1
1324	MisfireCyl 2
1325	MisfireCyl 3
1326	MisfireCyl 4
1327	MisfireCyl 5
1328	MisfireCyl 6
1329	MisfireCyl 7
1330	MisfireCyl 8
1442	FuelVlvPos1
1443	FuelVlvPos2
1483	SourceAddress
1484	OthersECU TC
1485	ECMMainRelay
1569	TorqueDerate
1632	TorqueLimit
1639	Spd-Fan
1675	StarterMode
1761	DEFTnkLevel
2609	P-A/CCompresor
1791	TrqLimitMax
2797	FuelInjectorG1
2798	FuelInjectorG2
2858	DataConfig1
2859	DataConfig2
2860	DataConfig3
2861	DataConfig4
2862	DataConfig5
3031	T-DEFTnk
3216	SCR IntakeNOx
3226	AT1OutNOx
3241	T-AT1Exh1
3242	T-DPFIntake
3245	T-AT1Exh3
3246	T-DPFOutlet

3249	T-AT1Exh2
3251	P-DPFDiff
3275	T-AT2Exh1
3279	T-AT2Exh3
3283	T-AT2Exh2
3340	P-ChrgAirC1Int
3360	DEFContr1
3361	DEFDosing1
3362	DEFDosing1
3363	DEFTnkHeater
3354	Alternator2
3468	T-1Fuel2
3471	AT1FuelPrAct
3472	AT1AirPrAct
3480	P-AT1Fuel
3485	P-AT1SupplyAir
3515	T-DEFTnk2
3516	DEFConcentrat
3563	P-IntakeManAbs
3606	SDRequest
3607	ESDRequest
3673	ThrottleVlv2
3822	EGR1Vlv2
3936	DPFSystem
4090	NOx
4094	NOxInsfDEF
4095	NOxIntrDEF
4096	NOxEmptyDEF
4201	Spd-Engine1
4202	Spd-Engine3
4225	NOxControlSys
4301	AT1FuelInjHeat
4334	P-DEFDoser1
4337	T-DEFDoser1
4341	DEFHeater1
4343	DEFHeater2
4345	DEFHeater3
4347	DEFHeater4
4374	Spd-DEFPump1
4427	T-DEF2Tnk
4782	DPFSoot
4809	T-AT1DOCInt
4810	T-AT1DOCOut
4814	CoolantPumpCmd
5264	EGR2Vlv1
5265	EGR2Vlv2
5285	DPFTripFuel

5401	TurboBypassAct
5419	ThrottleAct
5421	TurboWstgAct1
5435	DEFPump
5485	DEFPump
5541	P-Turbo1Outlet
5543	ExhBrakeAct
5706	DEFHeater
5743	SCRTempSensor
5745	DEFDosing1
5841	DEFQ
7461	Spd-DEFPump2

*Hidden fault code by default

4.51 SISU EEM3 Genset Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
153	P-Crankcase
157	P-Fuel1Inj1
168	Battery
172	T-AirIntake
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN
515	Spd-Desired
620	5VSupply
626	StartEnbl1
628	ProgramMemory

629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
898	Spd-Requested
970	AuxShutdown
971	DerateSw
1109	EPS SDApproach
1110	EPS Shutdown
1136	T-ECU
1485	ECMMainRelay
9006	VehicleCANoff
9008	IDmoduleCANoff
9010	P-Ambient
9021	5Vdc Supply 1
9022	5Vdc Supply 2
9023	5Vdc Supply 3
9024	WaterInFuel
9025	SelfTestWtchdg
9026	SelfTestVoltHi
9027	SelfTestVoltLo
9030	MainRelay1Shrt
9031	MainRelay2Shrt
9032	MainRelay3Shrt
9033	MainRelay
9034	MainRelayDfct
9035	NormalRecovery
9036	FullRestart
9070	CrankSpeedSens
9071	CrankSpeedSens
9072	CrankSpeedSens
9080	CamSpeedSensor
9081	CamSpeedSensor
9082	CamSpeedSensor
9083	CamSpeedSensor
9090	EngineSpeedErr
9107	InvalidECUAddr
9131	SolenoidValve1
9132	SolenoidValve2

9133	SolenoidValve3
9134	SolenoidValve4
9135	SolenoidValve5
9136	SolenoidValve6
9140	Throttle2Sens
9141	Throttle3Sens
9150	P-Rail
9151	PressReliefVlv
9152	P-FuelFiltr
9153	P-FuelFiltr
9174	MPROP
9230	EngSpecMismtch
9231	EngSNMismatch
9233	IDM-NotPresent
9234	IDM-NotComptbl
9235	IDModule
9236	IDM-MemDefect
9237	IDM-Watchdog
9238	IDM-Brownout
9239	EngSpecMissing
9240	EngSNMissing
9241	IDM-NotPresent
9242	GeneratedByPTE
9243	MaxECUByPTE
9305	BadDIConfig
9306	PTOInputError
9310	ExternalFlt1
9311	ExternalFlt2
9312	TorqCtrlInput

4.52 Standard J1939 engine Fault Codes

Fault Code (SPN)	Text
22	P-ExtCrankcase
29	APP2
51	ThrottleVlv1
52	T-Intcooler
81	DPFIntake
91	APP
92	Load
94	P-FuelDelivery
95	P-FuelFltDiff
97	WaterInFuel
98	OilLevel
99	P-OilFltDiff
100	P-Oil
101	P-Crankcase

102	P-Intake
103	Spd-Turbo
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
112	P-CoolFltrDiff
127	P-Oil
132	IntAirMassFlow
153	P-Crankcase
156	P-Fuel1Inj1
157	P-Fuel1Inj1
158	KeySwitch
159	P-GasFuelSppl
166	Pwr-Rated
168	Battery
170	T-CabInterior
171	T-AmbientAir
172	T-AirIntake
173	T-Exhaust
174	T-Fuel
175	T-Oil
176	T-TurboOil
183	FuelRate
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN
247	EngineRunHours
250	TotalFuelUsed
441	T-Auxiliary1
442	T-Auxiliary2
512	TorqueDemand
513	TorqueActual
514	Torque
515	Spd-Desired
518	ReqTorque
519	Spd-DesAsym
558	AP LowIdleSw
620	5VSupply
623	StopLamp
624	WarningLamp
626	StartEnbl1
628	ProgramMemory

629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
659	InjectorCyl 9
660	InjectorCyl10
661	InjectorCyl11
662	InjectorCyl12
663	InjectorCyl13
664	InjectorCyl14
665	InjectorCyl15
666	InjectorCyl16
667	InjectorCyl17
668	InjectorCyl18
669	InjectorCyl19
670	InjectorCyl20
671	InjectorCyl21
672	InjectorCyl22
673	InjectorCyl23
674	InjectorCyl24
677	StarterMotor
695	OverrideMode
898	Spd-Requested
970	AuxShutdown
971	DerateSw
974	APPRemote
975	Fan1EstSpd
976	PTO
980	PTOEnable
981	PTOAccelerate
982	PTOResume
983	PTODecelerate
987	ProtectLamp
1029	TripAFuelRate
1081	WaitStartLamp
1109	EPS SDApproach
1110	EPS Shutdown
1122	T-AltBearing1
1123	T-AltBearing2

1124	T-AltWinding1
1125	T-AltWinding2
1126	T-AltWinding3
1127	P-Turbo1Boost
1128	P-Turbo2Boost
1129	P-Turbo3Boost
1130	P-Turbo4Boost
1131	T-IntManifold2
1132	T-IntManifold3
1133	T-IntManifold4
1134	ChAirThermost
1136	T-ECU
1137	T-ExhPort 1
1138	T-ExhPort 2
1139	T-ExhPort 3
1140	T-ExhPort 4
1141	T-ExhPort 5
1142	T-ExhPort 6
1143	T-ExhPort 7
1144	T-ExhPort 8
1145	T-ExhPort 9
1146	T-ExhPort10
1147	T-ExhPort11
1148	T-ExhPort12
1149	T-ExhPort13
1150	T-ExhPort14
1151	T-ExhPort15
1152	T-ExhPort16
1153	T-ExhPort17
1154	T-ExhPort18
1155	T-ExhPort19
1156	T-ExhPort20
1176	P-Turbo1Intake
1177	P-Turbo2Intake
1180	T-Turbo1Int
1181	T-Turbo2Int
1203	P-AuxCoolant
1208	P-OilFiltInt
1239	FuelLeakage1
1387	P-Auxiliary1
1483	SourceAddress
1485	ECMMainRelay
1675	StarterMode
1693	TurboWastgate
1761	DEFTnkLevel
1802	T-IntManifold5
1803	T-IntManifold6

2433	T-Exh2Manf1
2434	T-Exh1Manif1
2435	P-SeaWtrPmpOut
2629	T-Turbo1Outlet
2809	P-AirFilt2Diff
3031	T-DEFTnk
3041	FlashProtect
3216	SCR IntakeNOx
3226	AT1OutNOx
3241	T-AT1Exh1
3242	T-DPFIntake
3246	T-DPFOutlet
3251	P-DPFDiff
3363	DEFTnkHeater
3468	T-1Fuel2
3515	T-DEFTnk2
3516	DEFConcentrat
3553	CoolPreHeated
3563	P-IntakeManAbs
3609	P-DPFIntake
3610	P-DPFOutlet
3695	RegenInhibit
3696	RegenForce
3697	DPFLamp
3698	HEST Lamp
3699	DPFPassive
3700	DPFRegenAct
3701	DPFStatus
3702	DPFInhibited
3703	DPFInhSwitch
3704	DPFInhClutch
3705	DPFInhBrake
3706	DPFInhPTO
3707	DPFInhIdle
3708	DPFInhNeutral
3709	DPFInhSpeed
3710	DPFInhBrake
3711	DPFInhExhTmp
3712	DPFInhSysFlt
3713	DPFInhTimeout
3714	DPFInhSysLock
3715	DPFInhLockout
3716	DPFInhWarmed
3717	DPFInhLowSpd
3718	DPFInhConfig
3719	DPFSootLoad
3720	DPFAshLoad

3750	DPFNoMetRegen
3826	DEFAvgConsmpt
4080	FreqSelect
4175	DPFRegenForce
4360	T-SCR1Intake
4363	T-SCR1Outlet
5245	DEFLowLevel
5246	SCR Severity
5417	P-FuelFltInt
5504	HydrocarbPurg
5629	DPFInhExhPres
6915	SCR Lamp
6918	SCR InhSwitch

4.53 Steyr M1 Fault Codes

Fault Code (SPN)	Text

4.54 VM Industrial Fault Codes

Fault Code (SPN)	Text
27	EGR1
51	ThrottleVlv1
84	Spd-WheelBased
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
132	IntAirMassFlow
153	P-Crankcase
157	P-Fuel1Inj1
158	KeySwitch
164	P-Fuel1InjCtr
168	Battery
172	T-AirIntake
174	T-Fuel

175	T-Oil
189	Spd-Rated
190	EngineSpeed
228	Spd-SensCalib
231	TripFuel
237	VIN
515	Spd-Desired
597	Brake
598	Clutch
604	TranNeutral
620	5VSupply
624	WarningLamp
625	FMTCNonMonoMap
626	StartEnbl1
627	PowerSupply
628	ProgramMemory
629	Controller1
630	CalibratMemory
633	FuelActCmd
634	ThrtBypassVlv
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
675	GlowPlugLamp
676	GlowPlugRelay
677	StarterMotor
723	Spd-Speed2
767	TranRevSwitch
835	OilLevel
859	Heater06
898	Spd-Requested
970	AuxShutdown
971	DerateSw
976	PTO
977	FanDrive
979	RemPROPreprg
1079	Supply1
1109	EPS SDApproach
1110	EPS Shutdown

1137	T-ExhPort 1
1138	T-ExhPort 2
1213	MalfunctLamp
1347	FuelPmpAsmbl1
1351	AirCompressor
1484	OthersECU TC
1485	ECMMainRelay
1680	CabHeatingZone

4.55 VM Marine Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
132	IntAirMassFlow
153	P-Crankcase
157	P-Fuel1Inj1
158	KeySwitch
164	P-Fuel1InjCtr
168	Battery
172	T-AirIntake
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
228	Spd-SensCalib
231	TripFuel
237	VIN
515	Spd-Desired
620	5VSupply
624	WarningLamp
626	StartEnbl1
627	PowerSupply
628	ProgramMemory

629	Controller1
630	CalibratMemory
633	FuelActCmd
636	PositionSensor
637	TimingSensor
639	J1939CANBus
641	TurboGeometry
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
677	StarterMotor
679	FuelInjPrsReg
723	Spd-Speed2
835	OilLevel
898	Spd-Requested
970	AuxShutdown
971	DerateSw
976	PTO
1079	Supply1
1109	EPS SDApproach
1110	EPS Shutdown
1347	FuelPmpAsmbl1
1485	ECMMainRelay
1680	CabHeatingZone

4.56 Volvo singlespeed Fault Codes

Fault Code (SPN)	Text

4.57 Volvo allspeed Fault Codes

Fault Code (SPN)	Text
20	P-Coolant1
51	ThrottleVlv1
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold

106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
153	P-Crankcase
158	KeySwitch
164	P-Fuel1InjCtr
172	T-AirIntake
173	T-Exhaust
175	T-Oil
190	EngineSpeed
231	J1939Datalink
608	J1587Datalink
620	5VSupply
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
647	FanClutch1Out
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
679	FuelInjPrsReg
729	IntAirHeater1
975	Fan1EstSpd
1080	Supply2
1184	T-Turbo1Out
1188	TurboWstAct1
1239	FuelLeakage1
1485	ECMMainRelay
1675	StarterMode
2791	EGR1Vlv1
520192	PistonCool
520193	P-SeaWater
520194	StarterInput
520195	StopInput
0x0073	T-Coolant
0x00B4	T-Fuel

0x00EF	T-AirInlet
0x00EB	P-AirInlet
0x0069	P-Barometric
0x00C3	T-Oil
0x0208	P-Oil
0x0230	V-Battery
0x00BE	P-FuelRail
0x0709	WaterInFuel
0x014F	PickupFlyWheel
0x0154	PickupCam
0x00C9	Injector1
0x00CA	Injector2
0x00CB	Injector3
0x00CC	Injector4
0x00CD	Injector5
0x00CE	Injector6
0x0694	SuperChrgCtrl
0x00014	P-Coolant
0x0001A	Spd-Fan
0x0005E	P-Fuel
0x00061	WaterInFuel
0x00062	OilLevel
0x00063	P-OilDiff
0x00064	P-Oil
0x00066	P-Boost
0x00069	T-Intake
0x0006A	P-AirInlet
0x0006C	P-Barometric
0x0006E	T-Coolant
0x0006F	CoolantLevel
0x00099	P-Crankcase
0x0009E	V-Battery
0x000AD	T-Exhaust
0x000AE	T-Fuel
0x000AF	T-Oil
0x200E7	SAEJ1939Fail
0x200E8	5VDCFail
0x200F0	PrgMemoryFail
0x200F5	EMSHWFailure
0x200FA	SAEJ1587Fail
0x200FD	CalibrMemFail
0x200FE	Controller#1
0x30001	Injector1
0x30002	Injector2
0x30003	Injector3
0x30004	Injector4
0x30005	Injector5

0x30006	Injector6
0x30015	PickupCam
0x30016	PickupCrank
0x30020	WastegateOut
0x30021	CoolingFan
0x40003	StarterOutput
0x40006	ExtSTOPActive
0x40008	P-PistonCool
0x40062	J1587Sync
0x40084	J1587Throttle
0x4010B	P-SeaWater
0x600C9	J1939Datalink
0x600D8	J1939Bus
0x73C01	PrimaryBatt
0x73C02	SecondaryBatt
0x73C03	15Supply
0x73C04	30Supply
0x73C05	EMSSupply
0x73C06	ExtraSupply

4.58 ESM

Fault Code	Text
211	OilPressSenFlt
212	IMAP-LB SenFlt
213	OilTempSenFlt
214	IMAP-RB SenFlt
221	IMAT SenFlt
222	MainFuelValve
223	OilPressLow
224	Knock
225	KnockSenFlt
231	Cyl1-IgnitFlt
232	Cyl2-IgnitFlt
233	Cyl3-IgnitFlt
234	Cyl4-IgnitFlt
235	Cyl5-IgnitFlt
241	Cyl6-IgnitFlt
242	Cyl7-IgnitFlt
243	Cyl8-IgnitFlt
244	Cyl9-IgnitFlt
245	Cyl10-IgnitFlt
251	Cyl11-IgnitFlt
252	Cyl12-IgnitFlt
253	Cyl13-IgnitFlt
254	Cyl14-IgnitFlt
255	Cyl15-IgnitFlt
311	Cyl16-IgnitFlt
312	EngOverload
313	IgnitionFault
314	RemoteRPMFlt
315	HighIMAT
322	CalibrateAct
323	StuckThrotLink
332	IgnitCommFlt
333	CoolTempHigh
335	OilTempHigh
353	IgnitPwrHigh
341	StepperLeftFlt
342	SteperRightFlt
343	LBOxygSensFlt
344	ExhTempHighLB
345	RBOxygSensFlt
351	ExhTempHighRB
413	LeanLimitLeft
415	RichLimitLeft

422	CoolTempSenFlt
423	LeanLimitRight
425	RichLimitRight
432	StepperCommFlt
441	ThrottleActFlt
451	RemoteRPMOver
454	BattVoltOut
455	ECUTempHigh
523	AlternatorFlt
541	UserDI Changed
542	StartWithRPM>0
552	EngBeingDriven
555	InternalFault
65748	CrankMagPickup
65750	CamMagPickup
65757	EngOverspeed
65758	CustomerSd
65759	OilPressLow
65760	Knock
65767	OverCrank
65768	EngineStall
65787	CustOverspeed
65848	EngOverload
65849	Lockout/Ignit
65851	HighIMAT
65869	CoolTempHigh
65871	KnockAbsThres
66087	Update Err/Flt
66089	SecurityViolat
66091	InternalFault

4.59 Weichai Fault Codes

Fault Code (SPN)	Text
29	APP2
84	Spd-WheelBased
91	APP
95	P-FuelFltDiff
97	WaterInFuel
98	OilLevel
100	P-Oil
102	P-Intake
105	T-IntManifold
108	P-Barometric
110	T-Coolant
111	CoolantLvl
132	IntAirMassFlow

157	P-Fuel1Inj1
158	KeySwitch
168	Battery
171	T-AmbientAir
172	T-AirIntake
173	T-Exhaust
174	T-Fuel
175	T-Oil
190	EngineSpeed
520	RetarterTorque
596	MFLvCrCtlMode
597	Brake
598	Clutch
624	WarningLamp
630	CalibratMemory
636	PositionSensor
645	Tachometer
651	InjVlvCyl1
652	InjVlvCyl2
653	InjVlvCyl3
654	InjVlvCyl4
655	InjectorCyl 5
656	InjVlvCyl5
676	GlowPlugRelay
677	StarterMotor
729	IntAirHeater1
730	IntAirHeater2
898	Spd-Requested
970	AuxShutdown
985	A/CHiPressFan
1071	CoolFanDrive
1072	CompBrakeOut1
1074	ExhBrakeOut
1079	Supply1
1080	Supply2
1081	WaitStartLamp
1108	EPS TimerOvrd
1192	TurboWstAct
1213	MalfunctLamp
1322	Misfire
1323	MisfireCyl 1
1324	MisfireCyl 2
1325	MisfireCyl 3
1326	MisfireCyl 4
1327	MisfireCyl 5
1328	MisfireCyl 6
1351	AirCompressor
1485	MRlyCD

1624	Spd-Tachograph
1639	Spd-Fan
2634	PowerRelay
2791	EGR1Vlv1
520192	ADCMon
520193	AFSCDPlStDrft
520194	ASLLCD
520195	AirCtlGvnrMax
520196	AirCtlGvnrMin
520197	CABCD
520198	ClgAbsTst
520199	CoVMDCSh
520200	ComprTst
520201	EATSCDBET
520202	EATSCDClgZn
520203	EATSCDInAir
520204	EBSwPrSelPlaus
520206	EGPpCDP3
520207	FlFCDHtg
520208	FWEngGsFlRtHtr
520209	FWEngTmp2Sens
520210	FWTODashDspl
520211	FWTOEBC1
520212	FWTOERC1DR
520213	FWTOETC1
520214	FWTOGsFlowRt
520215	FWTOHRVD
520216	FWTORxAMCON
520218	FWTORxCCVS
520219	FWTOTSC1VE
520220	FWTOTSC1VR
520221	GearbxInc
520222	HWEMonRcyLckd
520223	HpTst
520224	IAHSCD
520225	InjCrvInjLim
520226	InjVlvNumInj
520227	MSSCD
520228	OvRMonSigA
520229	PCRGvnrDvtMax
520230	PCRGvnrDvtMin
520231	PSPCDActr
520232	RunUpTst
520233	ShOffTst
520234	TVACD
520236	FMTCNonMonoMap
520237	FWTOTimeDate
520238	FWTOWSI

520239	VarMngCodDs
520240	brk1crctllmp
520241	brk1crctlrls
520242	brk1swterr
520243	rmtapp1
520244	rmtapp2
523218	FWTORxCCVS
523222	FWTOTCO1
523350	InjVlvBnk1A
523351	InjVlvBnk1B
523352	InjVlvBnk2A
523353	InjVlvBnk2B
523354	InjVlvChipA
523355	InjVlvChipB
523420	Montr
523470	PRVMon
523500	FWTxTO
523550	TPUMon
523600	WdCom
523601	SSpMon3
523604	FWTORxEngTemp2
523605	FWTOTSC1AE
523606	FWTOTSC1AR
523607	FWTOTSC1DE
523608	FWTOTSC1DR
523612	HWEMonUSupply
523613	RailMeUn
523615	MeUnCDNoLoad
523617	HWEMonCom

4.60 Yuchai BCR Fault Codes

Fault Code (SPN)	Text

4.61 Yuchai ECU3 Fault Codes

Fault Code (SPN)	Text

4.62 Yuchai YCECU Fault Codes

Fault Code (SPN)	Text
29	APP2
91	APP
97	WaterInFuel
100	P-Oil

102	P-Intake
105	T-IntManifold
108	P-Barometric
110	T-Coolant
158	KeySwitch
168	Battery
174	T-Fuel
175	T-Oil
558	AP LowIdleSw
599	CCSet
629	Controller1
636	PositionSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
697	PWMDriver1
702	AuxiliaryIO 02
703	AuxiliaryIO 03
706	AuxiliaryIO 06
707	AuxiliaryIO 07
723	Spd-Speed2
729	IntAirHeater1
966	DiagTestMode
969	RemAccelEnable
1079	Supply1
1080	Supply2
1136	T-ECU
1213	MalfunctLamp
1675	StarterMode

5 Notes

back to Table of contents

5.1 Software compatibility

Version 7.0.0 can be imported into GenConfig, DriveConfig, LiteEdit, LiteEdit 2015, DriveEdit, NanoEdit, ECUDiag as a standard firmware package. It must be used with the following versions of ComAp PC software:

- GenConfig ver. 3.8.0 or newer
- DriveConfig ver. 3.8.0 or newer
- LiteEdit ver. 5.6.0 or newer
- LiteEdit 2015 ver. 10.2.0 or newer
- DriveEdit ver. 1.1.1 or newer
- NanoEdit ver. 2.1.0 or newer
- ECUDiag ver. 1.1 or newer

5.2 Document history

Revision number	Related sw. version	Date	Author
7	7.0.0	6.9.2019	Roman Taragel
6	7.0.0		Roman Taragel
5	6.9.0		Roman Taragel
4	6.8.0	10.1.2018	Roman Taragel
3	6.7.0	31.8.2017	Roman Taragel
2	6.6.0	21.6.2017	Jan Horacek
1	6.5.0	15.3.2016	Roman Taragel

5.3 ECU list content

ESC file	ID	Version	Description
Agco Power EEM4	116	1.4.0	AGCOpower (former SISU diesel) 84WIP, 44AWF allspeed engines with EEM4 engine control unit.
Caterpillar ADEM & EMCP	17	2.5.0	Caterpillar gen-sets with ADEM engine control unit and EMCP ver.3 or ver.4 control panel.
Caterpillar J1939	10	2.11.0	Caterpillar ACERT engines (C18, C15, C13, C11, C9, C7.1, C6.6, C4.4) and others with ADEM engine control unit with parameters "IntervoolerTemp", "CurrentGear", "SelectedGear", "OutShaftSpeed", "Transmission Output Shaft Speed" and "Transmission Current Gear".

ESC file	ID	Version	Description
Cummins CM2150	134	1.1.1	Cummins engines ISDe, ISLe, ISX, ISX13 China stage 3 series with CM2150E engine control unit. Under tests!
Cummins CM2250	59	1.11.0	Cummins industrial engines series ISB, ISX with CM2250 engine control unit with parameters "Accelerator Pedal Position 2", "Accelerator Pedal Position 1", "Engine Percent Load At Current Speed".
Cummins CM2350	101	1.4.0	Cummins engines QSF3.8, QSB4.5, QSB6.7, QSL8.9, QSX15, QSK95 and QSG12 with CM2350 control unit. Tier 4 Final monitoring and control is available.
Cummins CM2880	154	1.1.0	Cummins engines ISDe NS3, ISLe NS3, ISBe NS4, ISC3 NS4, ISDe NS4, ILSe NS4, ISZ NS4 series with CM2880 engine control unit. Under tests!
Cummins CM500	57	1.9.0	Cummins industrial engines QSK19, QSK23, QSK45, QSK60, QSK78 engines with CM500 engine control unit.
Cummins CM558	33	2.4.0	Cummins gas engines with CM558 unit.
Cummins CM570	4	2.8.0	Cummins engines QSM, QSX, ISM series with CM570 engine control unit.
Cummins CM800	67	1.10.0	Cummins industrial engines ISB, ISBe series with CM800 engine control unit.
Cummins CM850	26	2.9.0	Cummins engines QSL, QSB, QSK, QST, series with CM850 engine control unit with parameters "CurrentGear", "SelectedGear", "OutShaftSpeed", "Transmission Output Shaft Speed" and "Transmission Current Gear".
Cummins CM850/CM2150/CM2250	43	2.2.0	Cummins PGI 1.1 engines - QSB, QSL series with CM2250 engine control unit; QSK series with CM2150 engine control unit; QSB, QSL, QSM series with CM850 engine control unit.
Cummins MODBUS	5	3.2.1	Cummins engines with GCS engine control unit. Communication interface RS485.
DaimlerChrysler ADM2	24	2.3.0	DaimlerChrysler 500, 900, 450 series engines equipped with PLD-MR engine control unit and ADM2 vehicle control adaptation module.
DaimlerChrysler ADM3	42	1.10.0	DaimlerChrysler 500, 900, 450 series engines equipped with PLD-MR engine control unit and ADM3 vehicle control adaptation module.
DDC DDEC IV/V	9	2.6.0	Detroit Diesel or MTU series 60 engines equipped DDEC IV or DDEC V engine control unit.
Deutz EMR2	8	3.6.0	Deutz engines series 1000 with EMR2 engine control unit (similar to Volvo EDC4).
Deutz EMR3	25	2.5.0	Deutz engines series 2000 with EMR3 engine control unit.

ESC file	ID	Version	Description
Deutz EMR4	70	1.10.0	Deutz engines TDC 3.6, TDC 4.1, TDC 6.1, TDC 7.8, TDC 12 or others with EMR4 control unit with parameters "Diesel Exhaust Fluid Tank Level", "Aftertreatment Regeneration Inhibit Switch", "Aftertreatment Regeneration Force Switch", "DPF Lamp", "High Exhaust System Temperature Lamp Command", "DPF Regeneration Urgency Status", "DPF Active Regeneration Inhibited Lamp", "DPF Active Regeneration Inhibited Due to Inhibit Switch", and Tier4 Final.
Ford e-control	95	1.7.0	FORD natural gas or propane or gasoline engines 2.3L, 5.7L or others with e-control module.
GM e-control	44	1.11.0	GM natural gas or propane engines GM3.0, GM4.3, GM5.0, GM5.7 or others with e-control module.
GM e-control LCI	58	1.9.0	GM natural gas or propane engines GM4.3, GM5.7 or others with e-control LCI engine control unit.
GM MEFI4/MEFI5B	34	2.3.0	GM diesel engines with MEFI4B or MEFI5B engine control unit.
GM MEFI6	71	1.11.0	GM diesel engines with MEFI6 engine control unit with parameters "Spark Advance", "Bank_A Close Loop Fuel Control", "O2 Sensor_A1 Raw Voltage", "O2 Sensor_A1 Rich/Lean Cross Counts", "Bank_A BLM Cell", "Bank_A BLM[Cell] Value", "Bank_A Fuel Mult", "Bank_B Close Loop Fuel Control", "O2 Sensor_B1 Raw Voltage", "O2 Sensor_B1 Rich/Lean Cross Counts", "Bank_B BLM Cell", "Bank_B BLM[Cell] Value", "Bank_B Fuel Mult", "O2 Sensor_A2 Raw Voltage", "O2 Sensor_B2 Raw Voltage", "Throttle Position", "CurrentRpmRatedTorque", "Cam-W Angle", "Reference Cam-W Angle". Tier 4 monitoring and control is available.
GM SECM	35	2.2.0	GM diesel engines with Woodward SECM interface. SECM with address 1 is only supported!
Guascor LECM E6	147	1.3.0	Gas engine with Woodward LECM E6 Engine control unit. Applicable for Guascor engines SFGLD 480, SFGLD 560, HGM 560. Under tests!
Isuzu ECM	36	2.9.0	Isuzu engine 4HK, 4J, 6HK, 6U, 6W series or others with ECM engine control unit. Tier 4 monitoring and control is available.
Iveco NEF & Cursor	14	2.7.0	Iveco NEF N40, N60 series or Cursor 9, 10, 13 series engines with Bosch EDC engine control unit.
Iveco NEF & Cursor Tier3	91	1.8.0	Iveco Tier3 Stage IIIA genset industrial application. NEF N40, N60 series or Cursor 9, 10, 13 series engines with Bosch EDC7UC31 engine control unit.
Iveco Vector	28	2.4.0	Iveco Vector engines with ADEM engine control unit.

ESC file	ID	Version	Description
Jenbacher Diane	22	1.4.0	Jenbacher gas engines with Diane control system. Communication interface RS485!
JCB Delphi DCM	23	2.6.0	JCB Dieselmax or ecoMAX engines with Delphi DCM engine control unit.
John Deere	7	2.11.0	John Deere diesel engines with JDEC engine control unit with parameter "Engine Requested Torque/Torque Limit".
Kubota	122	1.5.0	Kubota diesel engine equipped with a control unit. Under tests!
Liebherr LIDEC1	135	1.2.0	Liebherr Dxxx diesel engines equipped by LIDEC1 engine control unit. Under tests!
MAN data logger	56	1.11.0	For reading data from ID-Mobile Logger. This ECU is not supported by InteliDrive Nano controller!
MAN MFR	29	2.2.0	MAN diesel engines 6R, 8V, 12V or others with MFR interface and EDC engine control unit with parameters "Seconds", "Minutes", "Hours", "Month", "Day", "Year".
MTU ADEC J1939	20	2.5.0	MTU engines series 2000/4000 with ADEC (ECU7) control unit with parameters "EAC/Engine Auxliliary Coolant Pressure" and "EFL/P1 / Coolant Pressure", "AL Combined Alarm Yellow" and "AL Combined Alarm Red". SAM interface module with CCB2 card is required!
MTU ADEC J1939 Pengines	37	2.2.0	MTU P - engines series 2000/4000 with ADEC (ECU7) control unit and EMU module.
MTU DDEC10	117	1.6.0	MTU 4R1000, 6R1000, 6R1100, 6R1300, 6R1500 or Detroit DD13, DD15, DD16 or Fuso 6R10 diesel engines equipped DDEC10 engine control unit with commands "Start Request" and "Stop Request".
MTU ECU 9	125	1.5.0	MTU engines fitted with ECU 9 control unit. Supported diesel engines with FSW ver.2.0, gas with FSW ver.2.3. Under tests!
MTU EIM	120	1.3.0	Central connection box of MTU marine engine series 2000/4000 with parameters "Protect Lamp", "Malfunction Lamp", "Flash Malfunction Indicator Lamp", "Flash Red Stop Lamp", "Flash Amber Warning Lamp". Commonly used with MTU ECU7.
MTU SMART Connect	60	2.6.0	MTU engines series 1600 with ADEC (ECU8) control unit with parameters "Exhaust Gas Port 17 Temp", "Exhaust Gas Port 18 Temp", :Exhaust Gas Port 19 Temp" and "Exhaust Gas Port 20 Temp". SMART connect interface module is required!
Perkins 1300	54	1.11.0	Perkins series 1300 engines. No engine control by the controller is available.
Perkins ECM	12	2.7.0	Perkins series 1100, 1300, 2300, 2500 and 2800 engines.

ESC file	ID	Version	Description
Scania S6 Singlespeed	3	3.8.0	Scania singlespeed series DC9, DI12, DC12, DC16, D9M, DI12M, DI16M engines or others with S6 engine control unit.
Scania S6 Singlespeed from ver.1794335	16	2.7.0	Scania singlespeed series DC9, DI12, DC12, DC16, D9M, DI12M, DI16M engines or others with S6 engine control unit (software version 1794335 or higher)
Scania S6 Allspeed	6	3.10.0	Scania allspeed series DC9, DI12, DC12, DC16, D9M, DI12M, DI16M engines or others with S6 engine control unit.
Scania S6 Allspeed from ver.1794335	11	3.10.0	Scania allspeed series DC9, DI12, DC12, DC16, D9M, DI12M, DI16M engines or others with S6 engine control unit (software version 1794335 or higher)
Scania S8 Allspeed	69	1.11.0	Scania allspeed series DC9, DC13,DC16 engines with S8 engine control unit.
Scania S8 Singlespeed	68	1.10.0	Scania singlespeed series DC9, DC13,DC16 engines with S8 engine control unit.
SISU EEM3 Gen-set	18	2.7.0	SISU gen-set engines with EEM3 engine control unit.
SISU EEM3 Propulsion	19	2.5.0	SISU propulsion engines with EEM3 engine control unit.
Standard J1939 engine	255	3.12.0	This contains only values defined by CAN SAE J1939 specification.
Standard J1939 monitor	118	1.5.0	This configuration contains only received values by the controller.
Steyr M1	66	1.10.0	Steyr marine or industrial engines with M1 engine control unit. No engine control by the controller is available.
VM Industrial	32	2.3.0	VM industrial engines with EDC engine control unit.
VM Marine	31	2.3.0	VM marine engines with EDC engine control unit.
Volvo EDC7 Allspeed KWP2000	114	1.7.0	VolvoPenta propulsion series D4, D6 engines with EDC7 engine control unit.
Volvo Singlespeed	1	3.11.0	VolvoPenta singlespeed series D9, D12, D13, D16 engines with EMSI/EMSII/EMS2.2 engine control unit.
Volvo Allspeed	2	3.11.0	VolvoPenta propulsion series D5, D7, D9, D12, D13, D16 engines with EDC or EMS engine control unit.
Waukesha ESM	15	1.4.0	Waukesha Engenius Engine System Manager with Modbus interface. Communication interface RS485!
Yanmar TNV	89	1.6.0	Yanmar engine 3TNVA with TNV control unit.
Yuchai Bosch	159	1.0.0	Yuchai engines series YC6K, YC6MK, YC6L, YC6G, YC6A, YC6B with YC-BCR engine control unit. Under tests!
Yuchai YCECU	156	1.0.0	Yuchai engines series YC6T, YC6TD, YC6C, YC12VC, YC16VC with YCECU engine control unit. Under tests!

back to Notes

back to Table of contents