Connector pin assignement ECU8-03 (ECB19-02) C - Model with Tyco - connectors

Number of Input and Output (channels names)

"Plant Side" 13.03.2008

channel name	number	description
DI	8	digital input (±50 isolated)
ESI	1	emergency stop input
FIP	1	frequency input plant side
FO	1	frequency output (PWM) (low switch)
TOP	4	transistor output plant side (high or low switch)
AO	2	analogue output
AI	2	analogue input
CAN_P	2	controller area network plant side
U_Batt	1	24V power supply
IGI	1	ignition input (KL15)
ITS_OFF	1	internal testsystem off
RS485 zweidraht	1	RS485 -> USB Interface
RS232	1	nur für interne Zwecke

"Engine Side" 13.03.2008

channel name	number	Description
LSI	2	level sensor input (with PWM in)
NSI	1	niveau sensor input (with PWM in)
TI	8	temperature input
PI /PHI	9	pressure input
ASI	2	angle speed input (inductiv)
FI	2	frequency input (inductiv)
DFI	2	digital frequency input
TO	1	transistor output engine side (high switch)
PWM_CM	4	pulse width modulated output with current measurement
PWM	2	pulse width modulated output
IO	12	injector output (6 banks)
CAN_E	1	controller area network (engine side)

Connectors at the ECU8:

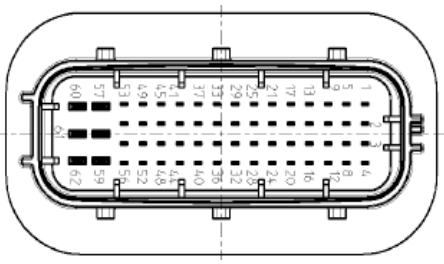
X1	plant side connector (Basic I/O)
X2	engine side connector
ST1	engineering interface 1 (40 pol NEXUS / JTAG Interface)
ST2	engineering interface 2 (26 pol. IOS signals, RS-232 Interface)

connector X1 : plantside
62 pol. Code A (47 + 6 = 53 pins used)

tab header housing	X00E 502 00 336 Code A
cover for tab header housing	X00E 502 00 337
cab for socket housing (IP54)	X00E 502 00 338
socket housing (ECU side)	X00E 502 00 335 Code A

Kabelabgang

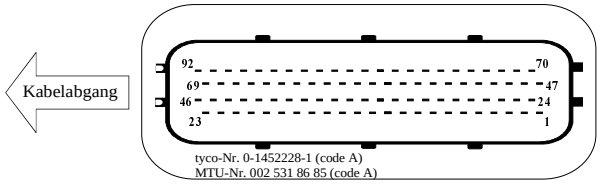
Systemkabel 6 x 2,5mm² + 24 x 2 x 0,5mm² mit paarig verseilten Adern



Channel	Signal	Pin	description	Ader	twisting
CAN1_P	CAN1_P_H	1	50V isolated	35	s
CAN1_P	CAN1_P_L	2		36	s
CAN1_P	CAN1_P_GND	5		37	t
CAN2_P	CAN2_P_H	3	50V isolated	39	u
CAN2_P	CAN2_P_L	4		40	u
CAN2_P	CAN2_P_GND	8		38	t
DI1	DI1_H	10	<4V(< 1,1mA) = low / >8V(>1,5mA) = high	1	a
DI1	DI1_L	9	50V isolated	2	a
DI2	DI2_H	14	<4V(< 1,1mA) = low / >8V(>1,5mA) = high	3	b
DI2	DI2_L	13	50V isolated	4	b
DI3	DI3_H	18	<4V(< 1,1mA) = low / >8V(>1,5mA) = high	5	c
DI3	DI3_L	17	50V isolated	6	c
DI4	DI4_H	22	<4V(< 1,1mA) = low / >8V(>1,5mA) = high	7	d
DI4	DI4_L	21	50V isolated	8	d
DI5	DI5_H	26	<4V(< 1,1mA) = low / >8V(>1,5mA) = high	9	e
DI5	DI5_L	25	50V isolated	10	e
DI6	DI6_H	30	<4V(< 1,1mA) = low / >8V(>1,5mA) = high	11	f
DI6	DI6_L	29		12	f
DI7	DI7_H	34	<4V(< 1,1mA) = low / >8V(>1,5mA) = high	13	g
DI7	DI7_L	33	50V isolated	14	g
DI8	DI8_H	38	<4V(< 1,1mA) = low / >8V(>1,5mA) = high	15	h
DI8	DI8_L	37	50V isolated	16	h
AI1_2	AI1_2_5V	41	5V / 25mA ±50V isolated to other potential	17	j
AI1	AI1_U	46	0...10V (not isolated to AI2)	19	k
AI1	AI1_I	45	0...23,7mA (not isolated to AI2)	20	k
AI2	AI2_U	50	0...10V (not isolated to AI1)	21	l
AI2	AI2_I	49	0...23,7mA (not isolated to AI1)	22	l
AI1_2	AI1_2_GND	42	AI_GND ±50V isolated to other potential	18	j
AO1	AO1_OUT	40	0..10V / 8mA	23	m
AO2	AO2_OUT	44	0..10V / 8mA	24	m
AO1_2_FIP	AO1_2_FIP_GND	35	GND	25	n
FIP	FIP_IN	24	0..5V or frequency input <xV low / >yV high I=?	27	o
TOP1	TOP1_OUT	12	24V / TOP1+..+TOP4 = 3A; max. 1,5A source / sink	29	p
TOP2	TOP2_OUT	11	24V / TOP1+..+TOP4 = 3A; max. 1,5A source / sink	30	p
TOP1_2	TOP1_2_GND	15	LGND (3A)	28	o
TOP3	TOP3_OUT	20	24V / TOP1+..+TOP4 = 3A; max. 1,5A source / sink	31	q
TOP4	TOP4_OUT	19	24V / TOP1+..+TOP4 = 3A; max. 1,5A source / sink	32	q
TOP3_4	TOP3_4_GND	16	LGND (3A)	33	r
FO	FO_OUT	48	24V / 1,5A sink to LGND / < 500Hz	34	r
ITS_RS232	TxD_1	28	MTU Interface (DSUB 9 polig Pin 2 (Buchse))	45	x
ITS_RS232	RxD_1	27	MTU Interface (DSUB 9 polig Pin 3 (Buchse))	46	y
ITS_RS232	FGND	23	MTU Interface (DSUB 9 polig Pin 5 (Buchse))	47	x
IGI	IGI_24V	32	24V/10mA (bridge to IGI_IN to disable IGI Funktion)	41	v
IGI	IGI_IN	31	<4V(2mA) = low / >8V(4mA) = high	42	v
ESI	ESI_IN	36	<4V(2mA) = low / >8V(4mA) = high	26	n
ITS_OFF	ITS_OFF	39	connect this pin to FGND -> ITS disabled!	Brücke	
ITS_OFF	FGND	43		Brücke	
SKey_RS485	RS485_H(A)	6	250kBaud / sec / DSUB9 Pin 2	43	w
SKey_RS485	RS485_L(B)	7	250kBaud / sec / DSUB9 Pin 1 / Pin5 FGND von RS232	44	w
	NC	47	NC	48	y
	NC	51	NC		
	NC	52	NC		
	NC	53	NC		
	NC	54	NC		
	NC	55	NC		
	NC	56	NC		
POWER	+24V	59	24V / 30A	rt	
POWER	+24V	58		rt	
POWER	+24V	62		rt	
POWER	GND	57	GND / 30A	sw	
POWER	GND	61		sw	
POWER	GND	60		sw	

connector X2 : engine
92 pol. Code A (92 pins used)

tab header housing Code A: 0-1452228-1 (002 531 86 85)
cover for tab header housing (002 531 91 85)
socket housing (ECU side) Code A: 0-1394565-1 (002 531 88 85)
cab for socket housing (IP54) (nicht vorhanden)



tyco-Nr. 0-1452228-1 (code A)
MTU-Nr. 002 531 86 85 (code A)

Stand 06.10.2006

Channel	Signal	Pin	description	twisting	twisting
ASI1	ASI1_H	78		a	a
ASI1	ASI1_L	56	<120mV = low / <0mV = high	a	a
ASI2	ASI2_H	77		b	b
ASI2	ASI2_L	55	<120mV = low / <0mV = high	b	b
CAN3_E	CAN3_E_GND	24		c	c
CAN3_E	CAN3_E_H	1	50V isolated	c	c
CAN3_E	CAN3_E_L	2		c	c
FI2	FI2_H	53	<-482mV = low / >596mV = high	d	d
FI2	FI2_L	75		d	d
FI1	FI1_H	54	<-482mV = low / >596mV = high	e	e
FI1	FI1_L	76		e	e
IO11	IO11_H	46	44V/10A	f	f
IO11	IO11_L	23	bank 1	f	f
IO12	IO12_H	45	44V/10A	g	g
IO12	IO12_L	22	bank 1	g	g
IO21	IO21_H	44	44V/10A	h	h
IO21	IO21_L	21	bank 2	h	h
IO22	IO22_H	43	44V/10A	i	i
IO22	IO22_L	20	bank 2	i	i
IO31	IO31_H	42	44V/10A	j	j
IO31	IO31_L	19	bank 3	j	j
IO32	IO32_H	41	44V/10A	k	k
IO32	IO32_L	18	bank 3	k	k
IO41	IO41_H	40	44V/10A	l	l
IO41	IO41_L	17	bank 4	l	l
IO42	IO42_H	39	44V/10A	m	m
IO42	IO42_L	16	bank 4	m	m
IO51	IO51_H	38	44V/10A	n	n
IO51	IO51_L	15	bank 5	n	n
IO52	IO52_H	37	44V/10A	o	o
IO52	IO52_L	14	bank 5	o	o
IO61	IO61_H	36	44V/10A	p	p
IO61	IO61_L	13	bank 6	p	p
IO62	IO62_H	35	44V/10A	q	q
IO62	IO62_L	12	bank 6	q	q
LSI1	LSI1_13V_5V_T8	31	supply 13V/5V for LSI1 max. 12mA/channel Tracker 8	r	r
LSI1	LSI1_IN	10	0...5V / internal 47k5 pull down PI / pull up 3k32 LSI	r	r
LSI2	LSI2_13V_5V_T9	32	supply 13V/5V for LSI2 max. 12mA/channel Tracker 9	s	s
LSI2	LSI2_IN	33	0...5V / internal 47k5 pull down PI / 3k32 pull up LSI (Data IN / Out EI_Modul)	s	s
NSI1	NSI1_24V	11	24V / 0,5A / Rmin 16k for OL detection	t	t
NSI1	NSI1_IN	34	0...5V / Intern 47k5 pull down PI/ pull up LSI	t	t
NSI1	NSI1_LGND	30	GND	t	t
PHI1	PHI1_5V_T1	73	5V / 12mA / tracker T1	u	u
PHI1	PHI1_GND	52	GND	u	u
PHI1	PHI1_IN	74	0...5V / internal 47k5 pull down	u	u
PHI2	PHI2_5V_T2	71	5V / 12mA / tracker T2	v	v
PHI2	PHI2_GND	51	GND	v	v
PHI2	PHI2_IN	72	0...5V / internal 47k5 pull down	v	v
PI1	PI1_5V_T3	49	5V / 12mA / tracker T3	w	w
PI1	PI1_GND	50	GND	w	w
PI1	PI1_IN	70	0...5V / internal 47k5 pull down	w	w
PI2	PI2_5V_T4	25	5V / 12mA / tracker T4	x	x
PI2	PI2_GND	26	GND	x	x
PI2	PI2_IN	3	0...5V / internal 47k5 pull down	x	x
PI3	PI3_5V_T5	4	5V / 12mA / tracker T5	y	y
PI3	PI3_GND	27	GND	y	y
PI3	PI3_IN	5	0...5V / internal 47k5 pull down	y	y
PI4	PI4_5V_T6	6	5V / 12mA / tracker T6	z	z
PI4	PI4_GND	28	GND	z	z
PI4	PI4_IN	7	0...5V / internal 47k5 pull down	z	z
PI5	PI5_5V_T7	8	supply 5V / tracker T7 for PI5..7 (48mA)	A	A
PI5	PI5_GND	29	GND	A	A
PI5	PI5_IN	9	0...5V / internal 47k5 pull down	A	A
PI6	PI6_IN	47	0...5V / internal 47k5 pull down	B	B
PI7	PI7_IN	48	0...5V / internal 47k5 pull down	B	B
PWM_CM1	PWM_CM1_GND	91	LGND (50mOhm)	C	C
PWM_CM1	PWM_CM1_OUT	92	24V / 3A with current messurement (CM)	C	C
PWM_CM2	PWM_CM2_GND	68	LGND (50mOhm)	D	D
PWM_CM2	PWM_CM2_OUT	69	24V / 3A / < 500Hz	D	D
PWM_CM3	PWM_CM3_GND	67	LGND (50mOhm)	E	E
PWM_CM3	PWM_CM3_OUT	90	24V / 3A / < 500Hz	E	E
PWM1	PWM1_GND	65	LGND	F	F
PWM1	PWM1_OUT	88	24V / 3A / < 500Hz	F	F
PWM2	PWM2_GND	66	LGND	G	G
PWM2	PWM2_OUT	89	24V / 3A / < 500Hz	G	G
TI1	TI1_GND	64	GND	H	H
TI1	TI1_IN	87	0...5V / internal 1k91 pull up to TI_BUF	H	H
TI2	TI2_GND	63	GND	I	I
TI2	TI2_IN	86	0...5V / internal 1k91 pull up to TI_BUF	I	I
DFI2	DFI_IN	62	internal 47k5 pull down / pull up 1,82k + Diode -> 5V	J	J
TI3	TI3_IN	85	0...5V / internal 1k91 pull up to TI_BUF	K	K
DFI1	DFI_IN	61	internal 47k5 pull down / pull up 1,82k + Diode -> 5V	J	J
TI4	TI4_IN	84	0...5V / internal 1k91 pull up to TI_BUF	K	K
DFI1_2	DFI1_2_12V	60	supply for DFI1/2 12V / 200mA	J	J
TI5	TI5_IN	83	0...5V / internal 1k91 pull up to TI_BUF	K	K
TI6	TI6_IN	82	0...5V / internal 1k91 pull up to TI_BUF	M	M
TI7	TI7_IN	81	0...5V / internal 1k91 pull up to TI_BUF	M	M
TI8	TI8_IN	59	0...5V / internal 1k91 pull up to TI_BUF	M	M
PWM_CM4	PWM_CM4_GND	58	LGND (50mOhm)	N	N

PWM_CM4	PWM_CM4_OUT	80	24V / 3A / < 500Hz	N	N
TO1	TO1_GND	57	LGND	O	O
TO1	TO1_OUT	79	24V / 1,5A	O	O

connector ST1 : Nexus Jtag interface Buchsenleiste 40 polig -> X00E50200968

Adaptersteckerbelegung auf der ECU8

Signal	Pin Numbers		Signal
3,3V	**39**	**40**	**3,3V**
/RESETOUT	37	38	CLKOUT
/PORESET	35	**36**	**DGND**
MDO_11	33	34	MDO_10
MDO_8	31	32	MDO_7
DGND	**29**	**30**	**DGND**
MDO_0	27	28	MDO_6
TDI	25	26	TCK
DGND	**23**	**24**	**DGND**
/TEST	21	22	TDO
MDO_5	19	20	MDO_9
DGND	**17**	**18**	**DGND**
MDO_2	15	16	MDO_4
MDO_1	13	14	MDO_3
DGND	**11**	**12**	**DGND**
/EVTO	9	10	/EVTI
/MSEO_0	7	8	TMS
DGND	**5**	**6**	**DGND**
/MSEO_1	3	4	JCOMP
/RDY	1	2	MCKO

connector ST2 : engineering interface "Teststecker" Stecker X00E50201207

Kanal	Signal	Pin	Bemerkung
	GND	1	
	GND	2	
	I_Bank1	3	
	Test_WUFI	4	
	Test_PDUA0	5	
	Test_PDUB0	6	
	ASI1_KW	7	
	ASI2_FHI_NW	8	
	Sel_Bank1	9	
	IReg_11	10	
	Sel_Bank2	11	
	IReg_12	12	
	Sel_Bank3	13	
	/OC_Bank1	14	
	Sel_Bank4	15	
	/PDU_SD	16	
	Sel_Bank5	17	
	Test_PDUA30	18	Test_TPUA30 out (100kHz intern. eQADCA trig.)
	Sel_Bank6	19	
	Test_TPUA31	20	Test_TPUA31 out (100kHz intern. eQADCB trig. Teststecker)
RS232_1	RxD1	21	Auf Stecke X1
RS232_2	RxD2	22	
RS232_1	TxD1	23	Auf Stecke X1
RS232_2	TxD2	24	
	Test_MIOS14	25	Test_MIOS14 out (1 kHz intern. eQADC trig. Teststecker)
	Test_MIOS15	26	Test_MIOS15 out (10 kHz intern. eQADC trig. Teststecker)