


Dimensions & Mass
 SEE DRAWING

Features
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Assembly P/N
PCB P/N
Communication Protocols
 CAN (SAE J1939)

Installation Requirements
 SEE DRAWING

E1783000

E1777000

E1783001

E1777001

Pinout

E1783000 - LCI, Mag PU *Cal SW configurable			E1783001 - LCI, Hall Effect *Cal SW configurable		
Pin	Function	Limits	Pin	Function	Limits
1	DBW+	± 6.0 A H-Bridge	1	DBW+	± 6.0 A H-Bridge
2	DBW-	± 6.0 A H-Bridge	2	DBW-	± 6.0 A H-Bridge
3	INJ1/SPARK3	3.0 A LS to GND	3	INJ1/SPARK3	3.0 A LS to GND
4	INJ2/SPARK4	3.0 A LS to GND	4	INJ2/SPARK4	3.0 A LS to GND
5	LOCKOFF	3.0 A LS to GND	5	LOCKOFF	3.0 A LS to GND
6	*MIL/INJ4/TACH	3.0 A LS to GND	6	*MIL/INJ4/TACH	3.0 A LS to GND
7	SPARK1	499Ω Impedance, 0-5 V	7	SPARK1	499Ω Impedance, 0-5 V
8	SPARK2/INJ3	499Ω Impedance, 0-5 V	8	SPARK2/INJ3	499Ω Impedance, 0-5 V
9	EGO1/OILP	0-1.2 V	9	EGO1/OILP	0-1.2 V
10	Ground	GND, 14 A	10	Ground	GND, 14 A
11	Vbat	6-18V, 14A	11	Vbat	6-18V, 14A
12	TPS1	0-5 V, 100KΩ PD to GND	12	TPS1	0-5 V, 100KΩ PD to GND
13	*AuxDIG1/GOV1	0-28 V, 12.0KΩ MP to +2.7V	13	*AuxDIG1/GOV1	0-28 V, 12.0KΩ MP to +2.7V
14	*AuxDIG2/GOV2/OILP/CAM	0-5 V, 22.1KΩ PU to +5V	14	*AuxDIG2/GOV2/OILP/CAM	0-5 V, 22.1KΩ MP to +5V
15	*AuxDIG3/Vsw	0-28 V, 12.0KΩ MP to +2.7V	15	*AuxDIG3/Vsw	0-28 V, 12.0KΩ MP to +2.7V
16	5V_ext	5.0 V, 50mA	16	5V_ext	5.0 V, 50mA
17	MAP	0-5 V, 100KΩ PD to GND	17	MAP	0-5 V, 100KΩ PD to GND
18	ECT	0-5 V, 2.21KΩ PU to +5V	18	ECT	0-5 V, 2.21KΩ PU to +5V
19	5V_rtn	GND, 50mA	19	5V_rtn	GND, 50mA
20	CAN1+	Pulled to 2.5V, Driven to 5.0V	20	CAN1+	Pulled to 2.5V, Driven to 5.0V
21	CAN1-	Pulled to 2.5V, Driven to 0.0V	21	CAN1-	Pulled to 2.5V, Driven to 0.0V
22	CRK_NEG	5KΩ Impedance, 250 V p-p	22	CRK_NEG	0-5V Hall Effect, no pull up
23	CRK_POS	5KΩ Impedance, 250 V p-p	23	CRK_POS	0-5V Hall Effect, no pull up

Product Validation

Category	Test Limits	Test Procedure
Operating Voltage	6 to 18 VDC	
Nom. Operating Temp	-40°C to 105°C	SAE J1455 - Section 4.1
Max. Operating Temp	125°C for <10% & <5 min per occurrence	SAE J1455 - Section 4.1
Storage Temp	-40°C to 135°C	SAE J1455 - Section 4.1
Handling Drop	1m Drop onto Concrete Surface	SAE J1455 - Section 4.10.3.1
Salt Spray	100 Hr, 90% Salt / 10% Calcium Chloride	ASTM B117-73
Water Intrusion	15 min, 4 inches, 1500 psig, 50°C, Harness Connected	SAE J1455 - Section 4.5.3
Radiated Immunity	Tri-Plate (200 V/m 10 kHz to 512 MHz, 100 V/m 512 MHz to 1 GHz)	Ford ES-XW7T-1A278-AB - RI 110
	Parallel Wire Ignition Noise (30 cm coupling)	Ford ES-XW7T-1A278-AB - RI 120
	Parallel Wire Misc Noise - Chattering Relay (1 m coupling)	Ford ES-XW7T-1A278-AB - RI 130
	Magnetic Field (50 to 10kHz, 163 - 130 db pTesla RMS)	Ford ES-XW7T-1A278-AB - RI 140
Conducted Immunity	Normal Sinewave (20 Hz to 600 Hz, 0.2 V p-p)	Ford ES-XW7T-1A278-AB - CI 210-A1
	Normal Sinewave (600 Hz to 10 kHz, 0.5 V - 2.0 V p-p)	Ford ES-XW7T-1A278-AB - CI 210-A2
	Abnormal Sinewave (100 Hz)	Ford ES-XW7T-1A278-AB - CI 210-B1
	Abnormal Sinewave (600 Hz to 10 kHz)	Ford ES-XW7T-1A278-AB - CI 210-B2
	Inductive Switching Transients (-100 V, 2 ms, Rs = 10 Ω)	Ford ES-XW7T-1A278-AB - CI 220-A
	Inductive Switching Transients (+150 V, 50 μs, Rs = 4 Ω)	Ford ES-XW7T-1A278-AB - CI 220-C
	Inductive Switching Transients (-150 V, 0.1 μs, Rs = 50 Ω)	Ford ES-XW7T-1A278-AB - CI 220-D
	Inductive Switching Transients (+100 V, 0.1 μs, Rs = 50 Ω)	Ford ES-XW7T-1A278-AB - CI 220-E
	Load Dump (Vbat = +64 V, 300 ms & R=0.7Ω Vbat = +30 V, 150 ms)	Ford ES-XW7T-1A278-AB - CI 240
	Ground Shift Transient (± 5 V, 10 μs, 100 Hz)	Ford ES-XW7T-1A278-AB - CI 250-A
	Ground Shift Sinewave (0.2 V, 1 kHz to 5 kHz)	Ford ES-XW7T-1A278-AB - CI 250-B
	Reverse Battery (-14 V for 1 minute)	Ford ES-XW7T-1A278-AB - CI 270-A
	Overvoltage (19 V for 1 hour)	Ford ES-XW7T-1A278-AB - CI 270-B
	Jump Start (24 V)	Ford ES-XW7T-1A278-AB - CI 270-C
	Electrostatic Discharge (C = 150 pF, R = 2 kΩ, ±10 kV)	Ford ES-XW7T-1A278-AB - CI 280-A