HEM Data Mini ADAQ 1400™ Details

Dimensions and Pinout

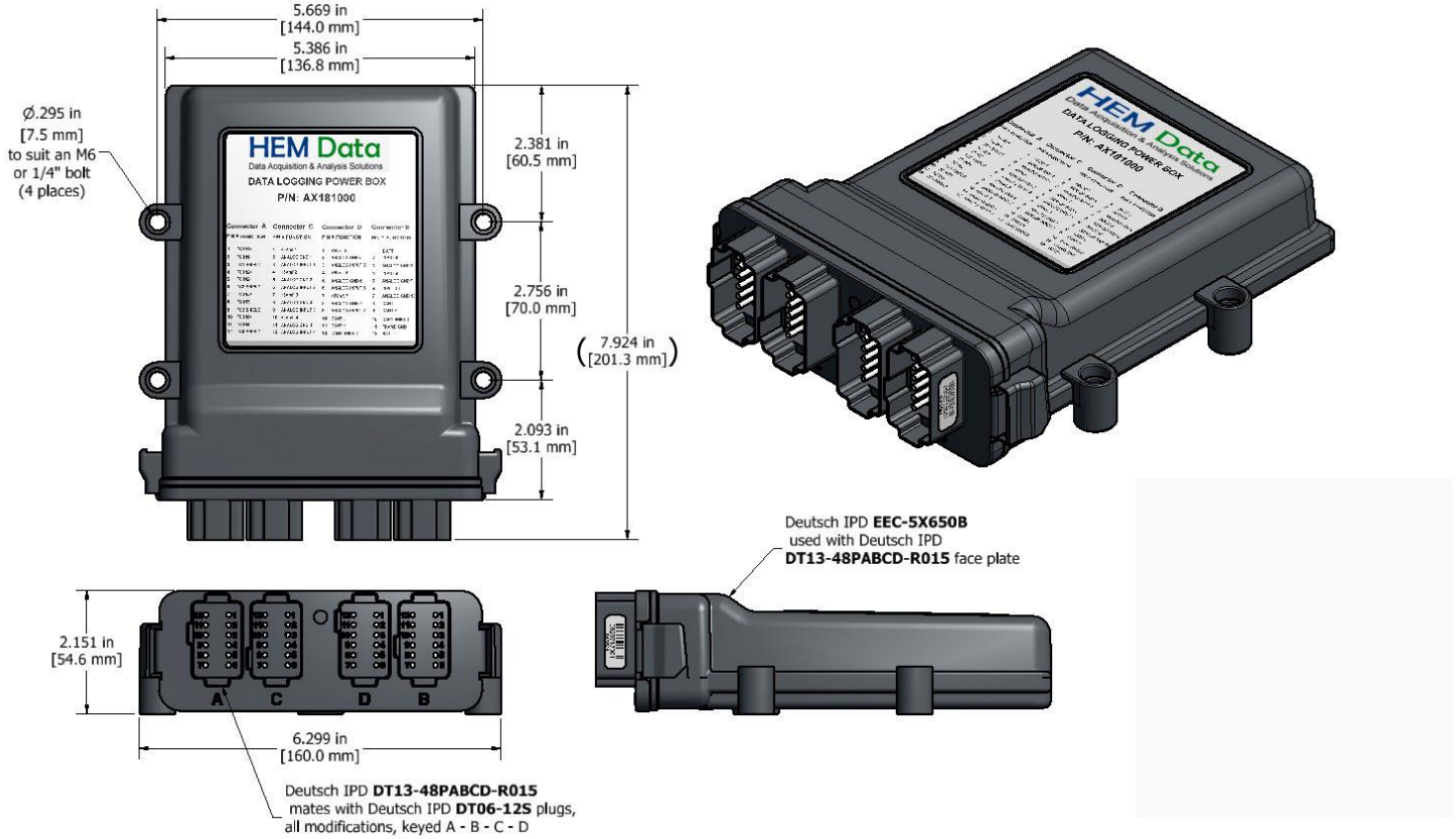

Figure 1 - Dimensional Drawing

Connector A		Connector C		Connector D		Connector B	
Pin#	**Function**	**Pin#**	**Function**	**Pin#**	**Function**	**Pin#**	**Function**
1	TC IN1+	1	+5Vref. 1	1	+5Vref. 5	1	Batt+
2	TC IN1-	2	Analog GND 1	2	Analog GND 5	2	Input 8
3	TC1 Shield	3	Analog Input 1	3	Analog Input 5	3	Analog GND 8
4	TC IN2+	4	+5Vref. 2	4	+5Vref. 6	4	Input 9
5	TC IN2-	5	Analog GND 2	5	Analog GND 6	5	Analog GND 9
6	TC2 Shield	6	Analog Input 2	6	Analog Input 6	6	Input 10
7	TC IN3+	7	+5Vref. 3	7	+5Vref. 7	7	Analog GND 10
8	TC IN3-	8	Analog GND 3	8	Analog GND 7	8	CAN1 L
9	TC3 Shield	9	Analog Input 3	9	Analog Input 8	9	CAN1 H
10	TC IN4+	10	+5Vref. 4	10	CAN2 L	10	CAN1 Shield
11	TC IN4-	11	Analog GND 4	11	CAN2 H	11	Frame GND
12	TC4 Shield	12	Analog Input 4	12	CAN2 Shield	12	Batt-

Table 1 - Connector Pinout

Technical Specifications

Inputs

Power Supply Input	12 Vdc, 24 Vdc or 48 Vdc nominal (9…60 Vdc power supply range)
Protection	Reverse polarity protection Overvoltage protection is up to 120 V.
Inputs	4 Thermocouple Inputs 7 Analog Signal Inputs 3 Analog or Digital Signal Inputs User programmable (Refer to Table 1.0.) Inputs and Power are isolated from CAN.
Analog Grounds	10 provided. All grounds are connected. Single-ended inputs.

User Programmable Options	
Thermocouple Inputs	Reads up to 4 (Type J, K or T) thermocouple inputs • Full channel to channel isolation and isolation from CAN line, other inputs and power supply • Cold junction compensation is provided. • Thermocouple input resolution is 0.1 °C. • Accuracy is +/-1 °C throughout the entire range of the thermocouple input. • 4 shield connections are provided.
Analog Input Functions	Voltage Input or Current Input
Voltage Input	0-5 V (Impedance 200 KOhm) 0-10V (Impedance 150 KOhm)
Current Input	0-20 mA (Impedance 125 Ohm) 4-20 mA (Impedance 125 Ohm)
Digital Input Functions	Discrete Input, PWM Input, Frequency Input
Digital Input Level	12V or 24V Threshold: Low <1.5 V High >3.5V
PWM Input	0 to 100% 100 Hz to 10 kHz Note: Universal Inputs 2 and 3 share a timer in Frequency and PWM mode, thus they should be set on same frequency range.
Frequency/RPM Input	0.5 Hz to 50 Hz; 10 Hz to 1 kHz; or 100 Hz to 10 kHz
Digital Input	Active High with pull-up (input 8 - 5kΩ, input 9 and input 10 – 1kΩ)
Input Accuracy	

Input Type	Input Range	Accuracy
Voltage	0-5V	0.1%
	0-10V	0.1%
Current	0(4)-20mA	0.1%
Frequency	0.5Hz-50Hz	0.2%
	10Hz-1kHz	0.17%
	100Hz-10kHz	0.17%
PWM	Low Frequency	0.08%
	High Frequency	0.41%

Input Resolution	12-bit
Sample Rate	0.1 to 200 samples /sec

Outputs

CAN bus	SAE J1939
Reference Voltages	7 provided +5V (30 mA)

General Specifications

Microprocessor	STM32F205 32-bit, 512 Kbyte flash memory
Typical Quiescent Current	84 mA@12Vdc; 52 mA@24Vdc
Response Time	3 mSec.
Control Logic	Standard embedded software is provided.
Communications	2 Isolated CAN ports (SAE J1939) 300 Vrms
Network Termination	It is necessary to terminate the network with external termination resistors. The resistors are 120 Ohm, 0.25W minimum, metal film or similar type. They should be placed between CAN_H and CAN_L terminals at both ends of the network. HEM Data provides this within the cable provided.
Operating Conditions	-40 to 85 °C (-40 to 185 °F)
Storage Temperature	-55 to 125 °C (-67 to 257°F)
Protection	IP67
Weight	1.30 lbs. (0.59 kg)
Packaging	High Temperature Nylon housing, Deutsch IPD P/N: EEC-5X650B 4.03 x 4.25 x 1.68 inches 102.44 x 107.96 x 42.67 mm L x W x H including integral connector Refer to the dimensional drawing.
Electrical Connections	48 pin Deutsch IPD connector P/N: DT13-48PABCD-R015 Mates with: Deutsch IPD P/N's DT06-12SA Plug, DT 12 Way A Key DT06-12SB Plug, DT 12 Way B Key DT06-12SC Plug, DT 12 Way C Key DT06-12SD Plug, DT 12 Way D Key