

RTC Module

1 Universal Signal Input

2 SAE J1939

P/N: AX141120

Features:

- Real Time Clock Battery backup
- 1 Universal input signal (0-5V; 0-10V; 4-20 mA; Frequency or PWM Signal)
- 2 CAN ports (SAE J1939, auto-baud-rate detection)
- SPN 237 Vehicle Identification Number supported
- Operational 8...90 Vdc (12 Vdc, 24 Vdc or 48Vdc)
- LED indicator
- Integrated 8-pin connector (equivalent to a TE Deutsch P/N)
- Compact, fully sealed enclosure, IP67
- Configurable with the Axiomatic Electronic Assistant



Description:

The RTC Module permits time and date information with a battery backed up Real-Time-Clock (RTC). It has one universal signal input and SAE J1939 CAN bus. The universal input can interface with a command signal (0-5V; 0-10V; 4-20 mA; Frequency or PWM) or it can serve as "clock synchronization" trigger. For example, the RTC date and time could only be set when the input is triggered. The device supports the Vehicle Identification Number message according to the SAE J1939 standards. The battery backup permits 15 years of operation. Power is 12V, 24V or 48Vdc nominal. The controller is ruggedly packaged for harsh operating environments.

Applications:

- Industrial Cranes
- Heavy equipment

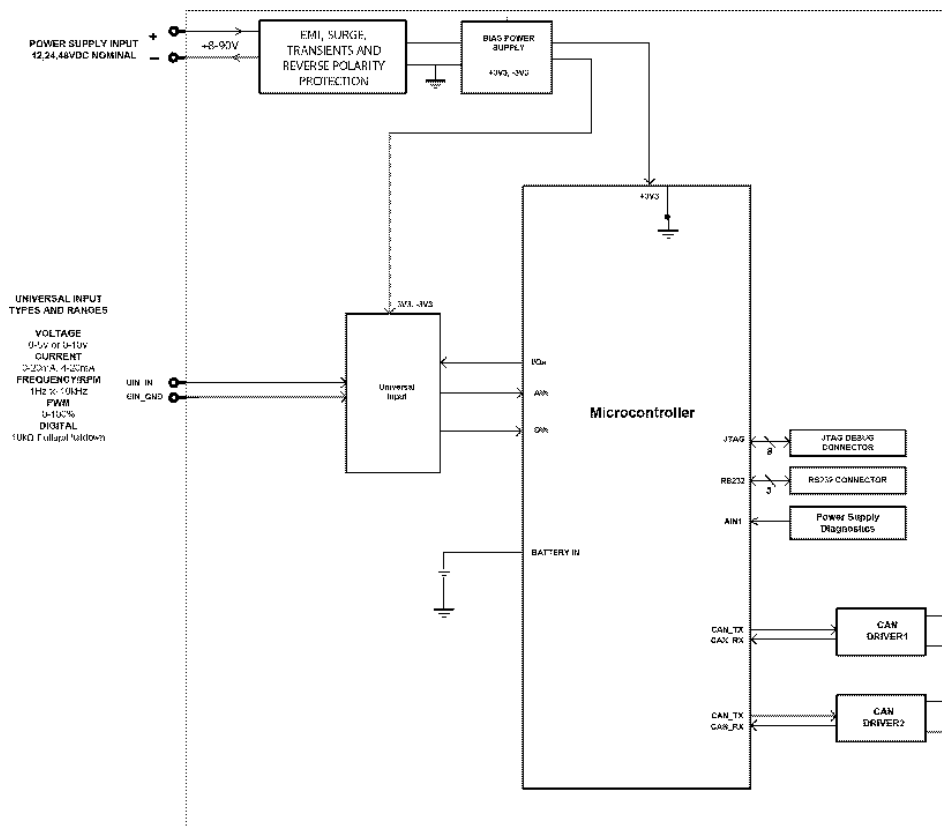
Ordering Part Numbers:

RTC Module, 2 SAE J1939 with Auto-baud-rate-detection - P/N: **AX141120**

Accessories:

The Axiomatic Electronic Assistant Configuration KIT, P/Ns: **AX070502** or **AX070506K**

Mating Plug KIT, P/N: **AX070112**



Proj 20018

Block Diagram

Sep 16, 2020

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Drawn by
T.M.

Figure 1.0 – Block Diagram

Technical Specifications:

Specifications are indicative and subject to change. Actual performance will vary depending on the application and operating conditions. Users should satisfy themselves that the product is suitable for use in the intended application. All our products carry a limited warranty against defects in material and workmanship. Please refer to our Warranty, Application Approvals/Limitations and Return Materials Process as described on <https://www.axiomatic.com/service/>.

Power

Power Supply Input - Nominal	12V, 24V or 48Vdc nominal; 8...90 Vdc The minimum allowable supply voltage for the power pin is 7 Vdc.
Surge Protection	Meets the surge requirements of SAE J1445
Reverse Polarity Protection	Provided
RTC Battery Supply	Battery backup – RTC, 3V 15 years operation minimum

Input

Universal Signal Input	<p>1 Universal Signal Input selectable as: Voltage, Current, PWM or Digital</p> <p>12-bit Analog to Digital (voltage, current) Protected against shorts to GND or +Supply</p> <p>Voltage Type: 0-5 Vdc, 0-10 Vdc</p> <p>Current Type: 0-20 mA or 4-20 mA Current sense resistor 124Ω</p> <p>PWM or Frequency Type: 0.1 Hz to 10,000 Hz 0-100% D.C. 0.01% Resolution</p> <p>Digital Type: Active High up to +Vps or Active Low to Ground 10 kΩ Pullup/Pulldown Amplitude: 0V to +Vps</p>
Input Accuracy	<p>Voltage: +/- 0.5%</p> <p>Current: +/- 0.5%</p> <p>PWM Signal: +/- 1%</p> <p>Frequency Signal: +/- 1%</p>

Control Software

Software Platform	<p>Pre-programmed with standard logic. Refer to the user manual.</p> <p>SPN 237 Vehicle Identification Number is supported.</p> <p><i>Note: During the first start, the device's parameters are set to default. Also, the time and date of the RTC can be adjusted via CAN. So, it is possible to use the RTC module without the Axiomatic Electronic Assistant for default input type configurations. However, in this case, it will not be possible to change other parameters (such as an Input Type).</i></p>
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General Specifications

Memory	STM32F413CGU6, 1024 Kbytes Flash Program Memory
CAN Port	2 CAN (SAE J1939) 250kBit/s, 500kBit/s, 667kBit/s, and 1Mbit/s auto baud rate detection
Quiescent Current Draw	13.3mA @ 12Vdc; 7.7 mA @ 24Vdc
Operating Conditions	-40 to 85°C (-40 to 185°F)
LED Indicator	Provided
Weight	0.15 lb. (0.068 kg)
Protection Rating	IP67
Vibration	MIL-STD-202G, Test 204D and 214A (Sine and Random) 10 g peak (Sine); 7.85 Grms peak (Random)
Shock	MIL-STD-202G, Test 213B, 50 g
Enclosure and Dimensions	<p>Molded Enclosure, integral connector</p> <p>Nylon 6/6, 30% glass</p> <p>Ultrasonically welded</p> <p>3.47 x 2.75 x 1.31 inches (88.2 x 70.0 x 33.3 mm)</p> <p>L x W x H including integral connector</p> <p>Refer to Figure 1.0, dimensional drawing.</p>

Electrical Connections	Integral 8-pin receptacle (equivalent TE Deutsch P/N: DT04-08PA) 18 AWG wire is recommended for use with contacts 0462-201-16141. <table border="1" data-bbox="597 304 1047 573"> <thead> <tr> <th>PIN #</th><th>FUNCTION</th></tr> </thead> <tbody> <tr><td>1</td><td>CAN1_L</td></tr> <tr><td>2</td><td>CAN1_H</td></tr> <tr><td>3</td><td>CAN2_L</td></tr> <tr><td>4</td><td>CAN2_H</td></tr> <tr><td>5</td><td>UI_RET</td></tr> <tr><td>6</td><td>UI</td></tr> <tr><td>7</td><td>BATT+</td></tr> <tr><td>8</td><td>BATT-</td></tr> </tbody> </table>	PIN #	FUNCTION	1	CAN1_L	2	CAN1_H	3	CAN2_L	4	CAN2_H	5	UI_RET	6	UI	7	BATT+	8	BATT-
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7	BATT+																		
8	BATT-																		
Mating Plug Kit	A mating plug kit is available. Ordering P/N: AX070112 is comprised of 1 DT06-08SA, 1 W8S, 8 0462-201-16141, and 3 114017.																		
User Interface, Reflashing	The Axiomatic Electronic Assistant KIT, P/Ns: AX070502 or AX070506K																		

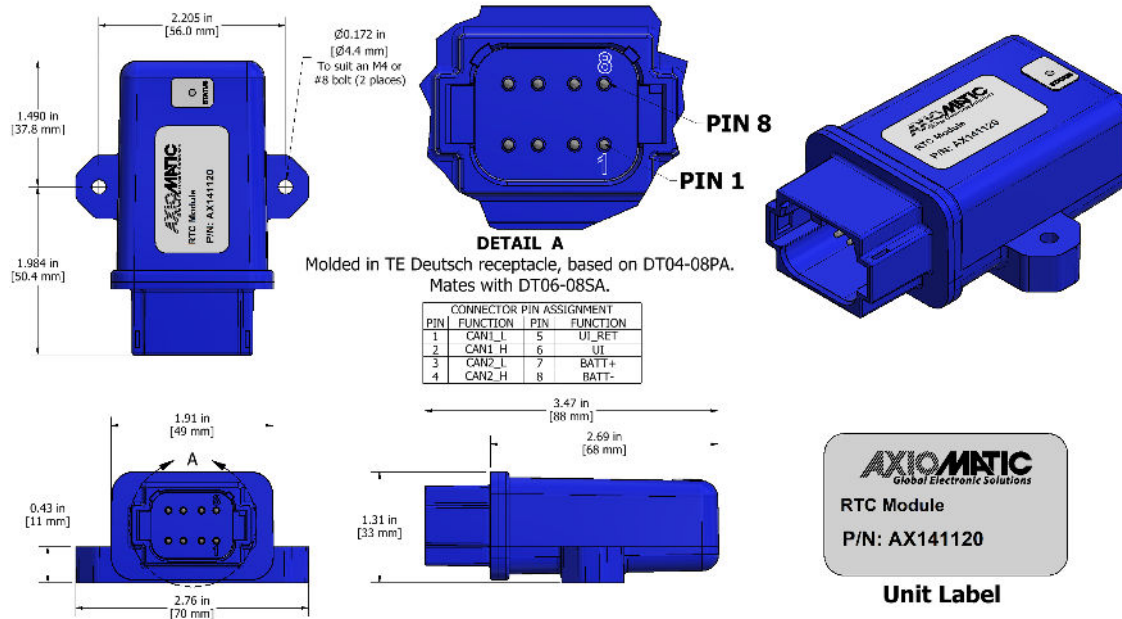


Figure 2.0 – Dimensional Drawing

Form: TDAX141120-06/29/23