

4 Universal Input CAN Controller, CANopen®

+5V or +8V Reference
Feedback Signal from VREF
EDS File
P/N: AX030451

Features

- 4 universal signal inputs selectable as voltage, current, resistance, frequency, PWM, or digital as follows.
 - 0-5 V, 0-10 V, 4-20 mA or 0-20 mA
 - 30 Ω to 250 k Ω resistive
 - 1 Hz to 10 kHz PWM
 - Digital
- +5V or +8V reference voltage
- Feedback signal from VREF
- 12 or 24 Vdc nominal input (8 to 36 Vdc range)
- 1 CAN port (CANopen®)
- EDS file is provided for configuration
- Surge, transient and under-voltage protection
- -40°C to 85°C operating temperature
- 12-pin integral TE Deutsch equivalent connector
- IP67 rating



Applications

- Mobile control panels
- Power generation, co-generation, stationary power, etc.
- Commercial vehicles, off-highway equipment, etc.

Ordering Part Numbers

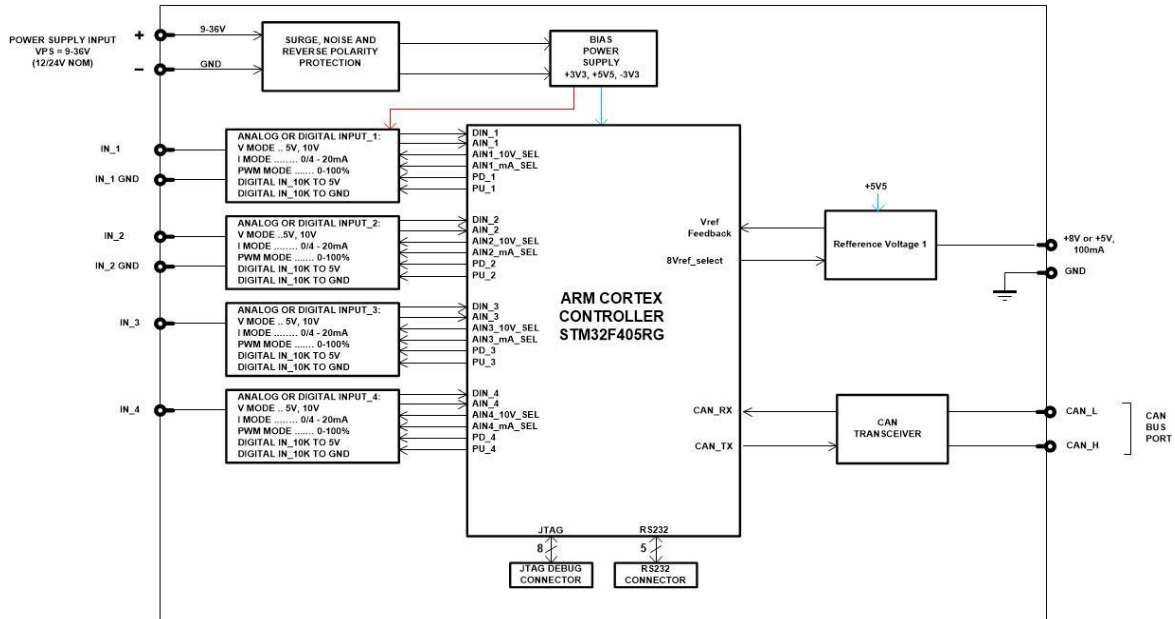
4 Universal Input CAN Controller, 5V/8V Reference with Feedback Signal, CANopen®, P/N:
AX030451

Accessories:

EDS File

Mating Plug Kit: **PL-DTM06-12SA**

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 Limitations & Return Materials Process as described on <https://www.axiomatic.com/service/>.

Power

Power Supply Input	12 or 24 Vdc nominal input (8 to 36 Vdc range)
Quiescent Current	50 mA @12 Vdc, 28 mA @ 24 Vdc typical
Protection	Surge and transient protection provided Reverse polarity protection up to 60 Vdc Undervoltage hardware shutdown at 4.7 Vdc Overvoltage hardware shutdown at 59.2 V

Input

Signal Inputs	<p>4 universal signal inputs selectable as voltage, current, resistance, frequency, PWM, or digital</p> <p>12-bit analog to digital (voltage, current, resistive)</p> <p>Protected against shorts to GND or +Vsupply</p> <p><u>Voltage Types:</u> Range: 0-5 V or 0-10 V Input impedance: 10 kΩ or >1 GΩ pull-down for 0-5 V 204 kΩ for 0-10 V Resolution: 1 mV Accuracy: $\pm 0.2\%$</p> <p><u>Current Types:</u> Ranges: 0-20 mA or 4-20 mA Input impedance: 249 Ω Resolution: 1 μA Accuracy: $\pm 0.2\%$</p> <p><u>Resistive Type:</u> Range: 30 Ω to 250 KΩ Resolution: 1 Ω Accuracy: $\pm 2\%$</p> <p><u>Frequency Type:</u> Range: 1-10,000 Hz Resolution: 0.01% Accuracy: $\pm 0.1\%$</p> <p><u>PWM Signal Frequency:</u> 1-10,000 Hz Duty cycle: 0 to 100%</p> <p><u>Digital Input:</u> Active high or active low 10 kΩ pull-up or pull-down Amplitude: up to +Vsupply</p>
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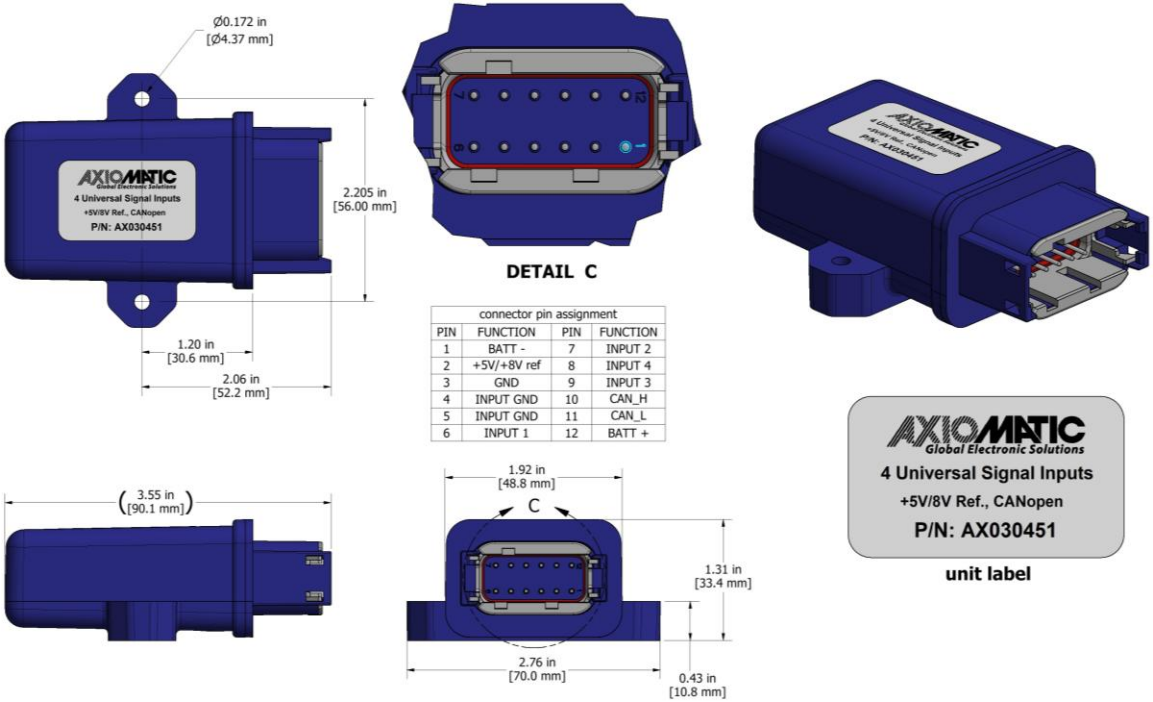
Reference Voltage

Voltage Output	<p>User selectable from the following.</p> <p>5 V or 8 V Accuracy: $\pm 10\%$ 100 mA maximum</p>
Feedback Signal	Measurement accuracy: $\pm 0.2\%$

General Specifications

Microcontroller	STM32F405RG, 32-bit, 1 MB flash memory																										
Communication	1 CAN port (CANopen®) Baud rate: 10, 20, 50, 100, 125, 250, 500, 667, 800, 1000 kbit/s SAE J1939 model - P/N: AX030451																										
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.																										
Control Logic	Standard embedded software is provided. (<i>Application-specific control logic or a set point file is available on request.</i>)																										
User Interface	EDS File (Download from axiomatic.com) Commercially available CANopen tools (not supplied)																										
Compliance	RoHS																										
Operating Temperature	-40 to 85 °C (-40 to 185 °F)																										
Storage Temperature	-45 to 125 °C (-49 to 257 °F)																										
Vibration	MIL-STD-202H, method 204D, test condition C 10g peak (Sine component) MIL-STD-202H, method 214A, test condition I/B 7.56 Grms (Random component)																										
Shock	MIL-STD-202H, method 213B, test condition A 50g peak																										
Weight	0.15 lb. (0.069 kg)																										
Protection	IP67																										
Enclosure	Molded Enclosure, integral connector Nylon 6/6, 30% glass, Ultrasonically welded Flammability Rating: UL 94V-0 3.55 in. x 2.76 in. x 1.31 in. (90.1 mm x 70.0 mm x 33.4 mm) L x W x H including integral connector Refer to the dimensional drawing.																										
Electrical Connections	Integral 12-pin receptacle (equivalent TE Deutsch P/N: DTM04-12PA) <table border="1"> <thead> <tr> <th>Pin</th><th>Function</th></tr> </thead> <tbody> <tr><td>1</td><td>Battery -</td></tr> <tr><td>2</td><td>5V or 8V Reference</td></tr> <tr><td>3</td><td>Ground</td></tr> <tr><td>4</td><td>Input Ground</td></tr> <tr><td>5</td><td>Input Ground</td></tr> <tr><td>6</td><td>Input 1</td></tr> <tr><td>7</td><td>Input 2</td></tr> <tr><td>8</td><td>Input 4</td></tr> <tr><td>9</td><td>Input 3</td></tr> <tr><td>10</td><td>CAN_H</td></tr> <tr><td>11</td><td>CAN_L</td></tr> <tr><td>12</td><td>Battery +</td></tr> </tbody> </table>	Pin	Function	1	Battery -	2	5V or 8V Reference	3	Ground	4	Input Ground	5	Input Ground	6	Input 1	7	Input 2	8	Input 4	9	Input 3	10	CAN_H	11	CAN_L	12	Battery +
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Mating Plug Kit	PL-DTM06-12SA Mating Plug Kit (includes 1x DTM06-12SA, 1x WM-12S, 12x 0462-201-20141, 6x 0413-204-2005 Sealing Plug)																										
Mounting	<p>Mounting holes are sized for #8 or M4 bolts. The bolt length will be determined by the end-user's mounting plate thickness. The mounting flange of the controller is 0.425 in. (10.8 mm) thick. If the module is mounted without an enclosure, it should be mounted vertically with connectors facing left or right to reduce the likelihood of moisture entry.</p> <p>The CAN wiring is considered intrinsically safe. The power wires are not considered intrinsically safe and so in hazardous locations, they need to be located in conduit or conduit trays at all times. The module must be mounted in an enclosure in hazardous locations for this purpose.</p> <p>No wire or cable harness should exceed 30 m in length. The power input wiring should be limited to 10 m. All field wiring should be suitable for the operating temperature range.</p> <p>Install the unit with appropriate space available for servicing and for adequate wire harness access (6 in. or 15 cm) and strain relief (12 in. or 30 cm).</p>																										

Dimensional Drawing



Form: TDAX030451-04/28/2025