4 Universal Signal Inputs Controller

4 Universal Signal Inputs
1 +8V Reference or +5V Reference
1 CAN (CANopen®)
P/N: AX030441

Features:

- Four universal signal inputs configurable as Voltage, Current, Resistive, Frequency, PWM, or Digital
- CANopen® port
- +8V Reference, +5V Reference (user selectable)
- 12V or 24V nominal power
- Compact IP67 Enclosure, 12-pin Integral Connector (TE Deutsch equivalent)
- Operates from -40°C to +85°C
- CE marking

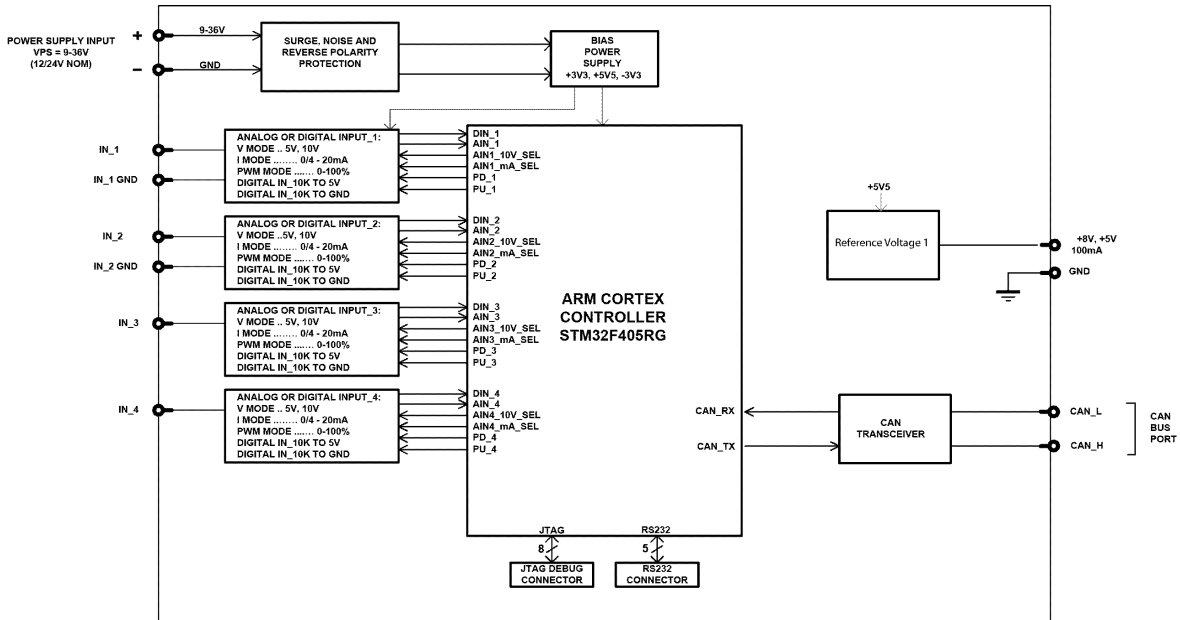## Applications:

- Machine automation

Ordering Part Numbers:

4 Universal Signal Inputs Controller, +8V/+5V Ref., CANopen®: **AX030441**

Accessories:
EDS File (Download from axiomatic.com.)
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 Approvals/Limitations and Return Materials Process as described on https://www.axiomatic.com/service/.

Power Supply

Power Supply Input	12 Vdc or 24 Vdc nominal 8…36 Vdc power supply range
Protection	Reverse polarity protection up to -100V. Undervoltage shutdown at 5Vdc. Overvoltage protection is up to 59 V.
Voltage Reference	User selectable +8V, 100 mA, 2% reference voltage output +5V, 100 mA, 2% reference voltage output

Inputs

Inputs	4 Universal Signal Inputs Refer to Table 1.0.
Input Grounds	Three (3) are provided.
Protection	All inputs are protected against short to GND. All inputs are protected against shorts to Nominal Vps (36Vdc).
Input Accuracy and Resolution	

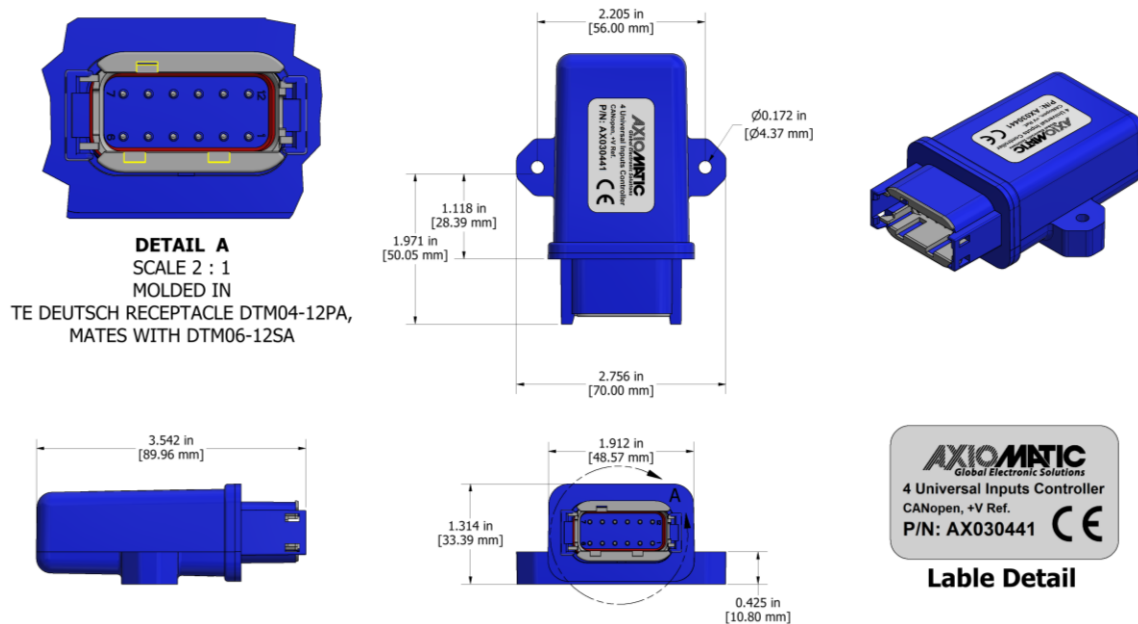| Input Type	Input Range	Accuracy	Resolution
Voltage	0-5V, 0-10V	+/-0.2%	1 mV
Current	0(4)-20mA	+/-0.2%	1 µA
Resistive	30-250kΩ	+/-2%	1 Ω
Frequency	1Hz-10kHz	+/-0.1%	0.01%
PWM	Frequency	+/-0.1%	0.01%

Table 1.0 –User Programmable Universal Inputs	
Analog & Digital Input Functions	Voltage Input, Current Input, Resistive Input or Digital Input 12-bit Analog to Digital
Voltage Input	0-5 V (Impedance > 1 GΩ or 10 kOhm pull-down) 0-10 V (Impedance 204 kΩ))
Current Input	0-20 mA (Impedance 249 Ω) 4-20 mA (Impedance 249 Ω)
Resistive	30 Ohms to 250 kOhms Self-calibrating
Digital Input	Active High or Active Low with 10 kOhm pull-up or pull-down Accepts up to Vps
PWM Input	1 Hz to 25 kHz 0 to 100% D.C. (Impedance 200 kΩ)
Frequency/RPM Input	1 Hz to 25 kHz

Maximum and Minimum Ratings	Characteristic	Min	Max	Units
	Power Supply	9	36	V dc
	Voltage Input	0	36	V dc
	Current Input 0(4)-20 mA	0	12	Vdc
	Current Input 0-200 mA	0	1V	Vdc
	Resistive Input	20	250 000	Ω
	Digital Input	0	36	Vdc
	PWM Duty Cycle	0	100	%
	PWM Frequency	5	25 000	Hz
	PWM Voltage pk - pk	0	36	V dc
	RPM Frequency	1	25 000	Hz

General Specifications

Microprocessor	STM32F405RG
Typical Quiescent Current	55.1 mA @ 12Vdc typical; 27.2 mA @ 24Vdc typical
Control Logic	Standard embedded software is provided. *(Application-specific control logic or a set point file is available on request.)*
Communications	1 CAN port (CANopen®)
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.
User Interface	EDS File Download from axiomatic.com, log-in tab. The password is available from sales@axiomatic.com. Commercially available CANopen tools (not supplied)
Software Reflashing	Axiomatic Electronic Assistant, P/N: **AX070502,** or **AX070506K**
Operating Conditions	-40 to 85 °C (-40 to 185 °F)
Storage Temperature	-55 to 125 °C (-67 to 257°F)
Protection	IP67
Compliance	CE marking
Vibration	MIL-STD-202G, Test 204D and 214A (Sine and Random) 10 g peak (Sine) 7.86 Grms peak (Random)
Shock	MIL-STD-202G, Test 213B 50g
Weight	0.15 lb. (0.068 kg)
Enclosure	Molded Enclosure, integral connector Nylon 6/6, 30% glass Ultrasonically welded 3.54 x 2.75 x 1.31 inches (90.09 x 70.00 x 33.35 mm) L x W x H including integral connector Refer to the dimensional drawing.
Electrical Connections	Integral 12 pin receptacle (equivalent to TE Deutsch P/N: DTM04-12PA)

PIN #	FUNCTION
1	BATT -
2	+8V Reference
3	Input Ground
4	Input Ground
5	Input Ground
6	Universal Signal Input 1
7	Universal Signal Input 2
8	Universal Signal Input 4
9	Universal Signal Input 3
10	CAN _H
11	CAN _L
12	BATT +

Mating Plug Kit	**PL-DTM06-12SA** Mating Plug KIT :1 DTM06-12SA, 1 WM-12S, 12 0462-201-20141, 6 0413-204-2005 Sealing Plug
Mounting	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 inches (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 likelihood of moisture entry.
	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.
	No wire or cable harness should exceed 30 meters in length. The power input wiring should be limited to 10 meters.
	All field wiring should be suitable for the operating temperature range.
	Install the unit with appropriate space available for servicing and for adequate wire harness access (6 inches or 15 cm) and strain relief (12 inches or 30 cm).

Dimensional Drawing

DETAIL A
SCALE 2 : 1
MOLDED IN
TE DEUTSCH RECEPTACLE DTM04-12PA,
MATES WITH DTM06-12SA

2.205 in [56.00 mm]

Ø0.172 in [Ø4.37 mm]

1.118 in [28.39 mm]

1.971 in [50.05 mm]

2.756 in [70.00 mm]

3.542 in [89.96 mm]

1.912 in [48.57 mm]

1.314 in [33.39 mm]

0.425 in [10.80 mm]

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Lable Detail

Note: CANopen® is a registered community trademark of CAN in Automation e.V.