Preliminary
TECHNICAL DATASHEET #TDAX030781

1x Input, 2x Analog & 2x 5A Proportional Outputs Controller

1x CANopen® Port

1x H-Bridge or 2x 5A Proportional / Digital Outputs
2x Analog Voltage or Current Outputs
1x Isolated Digital Input
EDS File for Configuration
P/N: AX030781

Features

- 1x isolated digital input
- 2x outputs (up to ±5 A) selectable as follows.
  - Proportional voltage
  - Proportional current
  - Digital hotshot
  - PWM
  - Digital on/off
  - 1x H-bridge output
- 2x analog voltage or current outputs
- Operational from 7 to 46 VDC (12 or 24 VDC)
- 1x CAN port (CANopen®)
- Compact
- Integrated 12-pin connector
- Sealed enclosure, IP67
- EDS File for Configuration

Applications

Controls and drives lamps, relays, actuators, valves, and DC motors

Ordering Part Number

1x Input, 2x Analog & 2x 5A Proportional Outputs Controller, CANopen® – P/N: **AX030781**

Accessories:
Mating Plug KIT - P/N: **PL-DTM06-12SA**
EDS File

Description

This AX030781 has one isolated digital input, two analog outputs, and two 5 A proportional / digital outputs. The two proportional outputs can be either used together to form one full H-bridge or can be individually configured as proportional voltage, proportional current, digital hotshot, PWM, or digital on/off types. The two analog outputs are programmable as analog voltage or analog current.

Powerful control algorithms allow the user to program the controller for a wide range of applications without the need for custom firmware. It features one CAN (CANopen®) port.

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Block Diagram

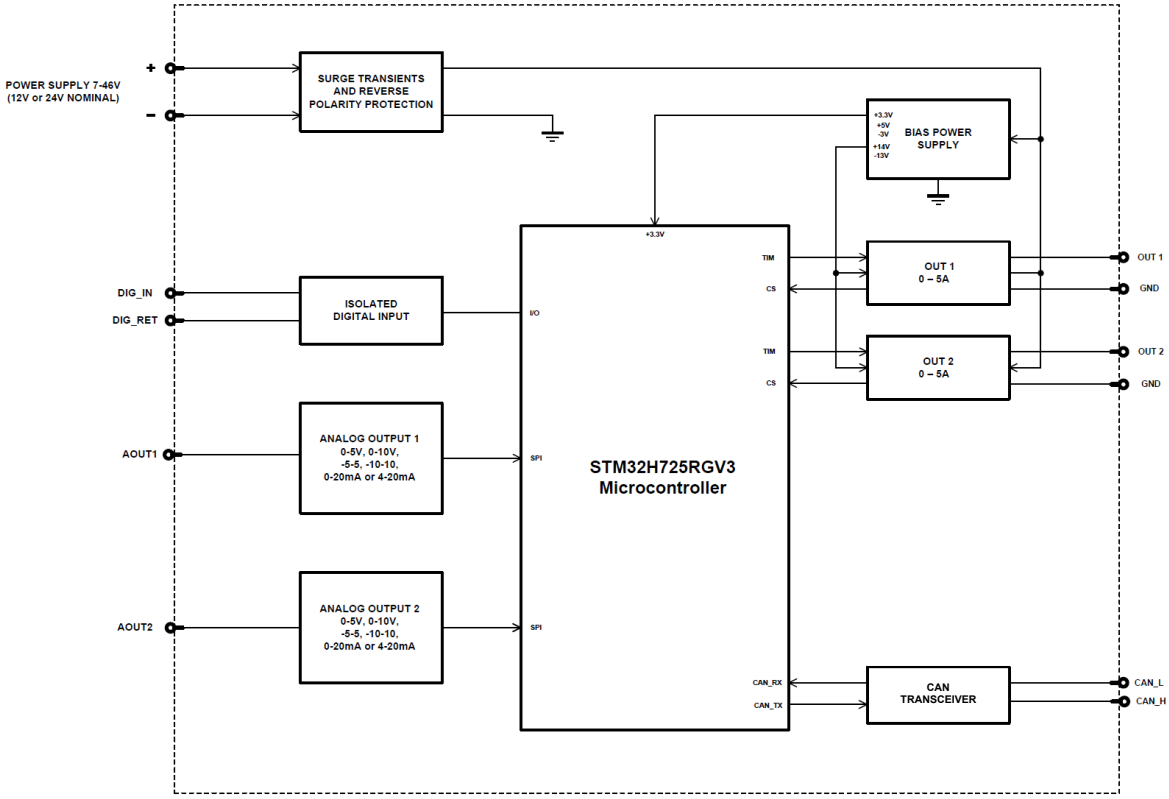

Figure 1 - Block Diagram

Dimensional Drawing

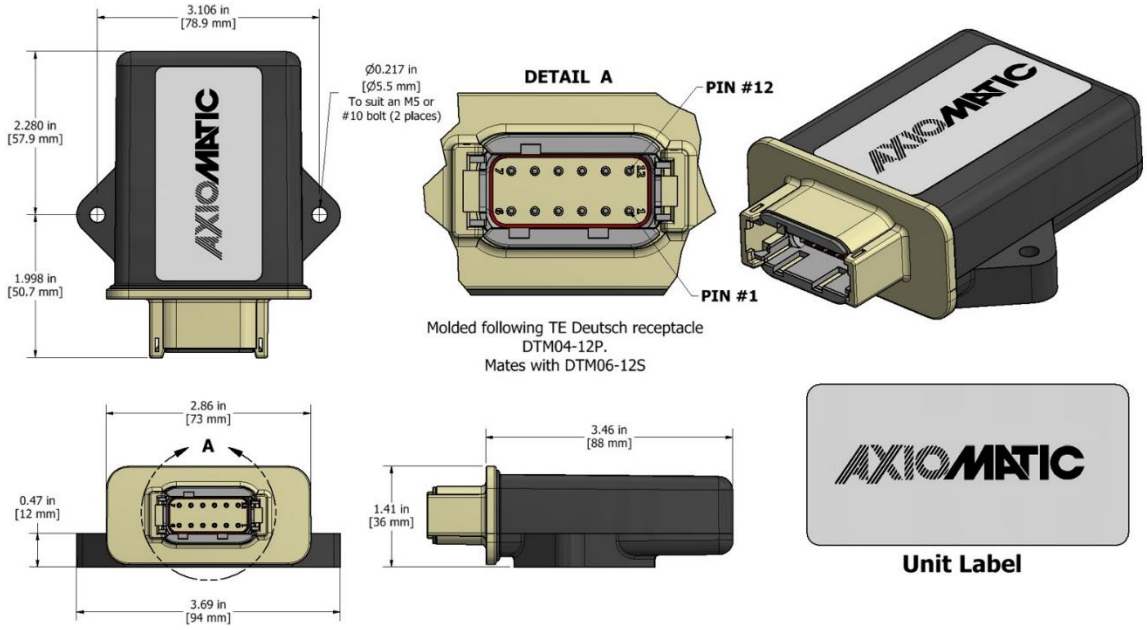

Figure 2 - Dimensional Drawing

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 Input	12 or 24 VDC (nominal) 7 to 46 VDC range
Quiescent Current	TBD mA @ 12 VDC; TBD mA @ 24 VDC (typical)
Protections	Surge and transient protection is provided. Reverse polarity protection up to -80 VDC is provided. Undervoltage protection is provided. Hardware shutdown at 6 V. Overvoltage protection is provided. Hardware shutdown at 37 V.

Input

Digital Input	1 isolated digital input Low: 13.6 V High: 14.3 V Input impedance: 12 KΩ

Outputs

H-Bridge, Proportional, or Digital Outputs	2x outputs programmable as follows. • 2x proportional / digital outputs • 1x full H-bridge ±5 A output (Load connected between “Proportional / Digital Output 1” and “Proportional / Digital Output 2”) The proportional outputs are further configurable as follows.

Proportional Voltage	Range: 0 to Vps Resolution: 100 mV Accuracy: ±1 % error
Proportional Current	Ranges: Up to ±5 A Resolution: 1 mA Accuracy: ±1 % error
Hotshot Digital	Ranges: Up to ±5 A Resolution: 1 mA Accuracy: ±1 % error See profile diagram below.
PWM	Range: 1 Hz to 10 kHz Duty Cycle: 0 to 100 % Resolution: 0.1 % Accuracy: ±1 % error Amplitude: Vps ±0.5 %
Digital On/Off	ON = Vps ±0.5 % OFF = 0 V Load up to 3.5 A is supported.
Disabled Output	-

Current sensing is provided.
Note: Load at supply voltage must not draw more than TBD.

Analog Outputs	2 analog outputs configurable as voltage or current type.

Analog Voltage	Ranges: 0 to 5 V, 0 to 10 V, -5 to 5 V, or -10 to 10 V Resolution: 0.01 V Accuracy: ±0.5 % error Maximum Load: 30 mA
Analog Current	Ranges: 0 to 20 mA or 4 to 20 mA Resolution: 0.01 mA Accuracy: ±0.5 % error Maximum Load Resistance: 400 Ω

12-bit Digital-to-Analog Converter (DAC)

Protection	Protected against shorts to Ground or Battery +.

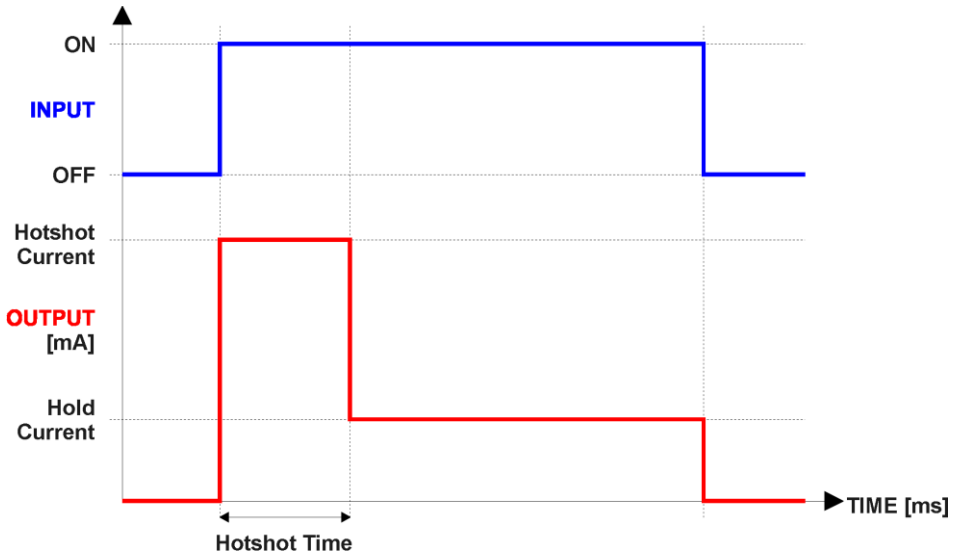

Figure 3 – Hotshot Digital Profile

General Specifications

Microcontroller	STM32H725RGV3
Control Logic	Standard embedded control logic is provided. Refer to the User Manual.
Communications	1 CAN port (CANopen®) Supported baud-rates: 10 kbit/s, 20 kbit/s, 50 kbit/s, 125 kbit/s (default), 250 kbit/s, 500 kbit/s, 800 kbit/s, and 1 Mbit/s
User Interface	EDS file is provided for interfacing with the device using standard CANopen® tools.
Compliance	RoHS
Operating Conditions	-40 to 85 °C (-40 to 185 °F)
Storage Temperature	-40 to 105 °C (-40 to 221 °F)
Weight	TBD lb. (TBD kg)
Protection Rating	IP67
Enclosure	Molded Enclosure, integral connector Nylon 6/6, 30% glass, laser welded Flammability rating: UL 94 HB 4.228 in. x 3.679 in. x 1.407 in. (107.39 mm x 93.45 mm x 35.75 mm) Note: L x W x H includes the integral connector Refer to Dimensional Drawing.
Electrical Connections	Integral 12-pin receptacle (equivalent to TE Deutsch P/N: **DTM04-12PA**)

Pin	Description
1	Digital Input
2	Digital Input Return
3	Proportional / Digital Output 1
4	Proportional / Digital Output 2
5	Ground
6	Analog Output 1
7	Analog Output 2
8	Ground
9	Battery +
10	Battery -
11	CAN High
12	CAN Low

Mating Connectors	Mating Plug KIT P/N: **PL-DTM06-12SA** (includes 1x DTM06-12SA plug, 1x WM-12S wedgelock, 12x 0462-201-20141 solid contacts, and 6x 0413-204-2005 sealing plugs)
Mounting	Mounting holes are sized for #10 or M5 bolts. The bolt length will be determined by the end-user's mounting plate thickness. The mounting flange of the controller is 0.47 in. (12 mm) thick. It should be mounted with connectors facing left or right to reduce likelihood of moisture entry. 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 in. or 15 cm) and strain relief (12 in. or 30 cm).

Form: TDAX030781-01/13/2026