

4 Outputs Valve Controller, SAE J1939

12 or 24 VDC

4 Universal Outputs (2.5 A)

CAN (SAE J1939)

with Axiomatic Electronic Assistant

P/N: AX020600

Features:

- 4 universal outputs (up to 2.5 A) user-selectable as follows.
 - Proportional Current
 - Hotshot Digital
 - PWM Duty Cycle
 - Proportional Voltage
 - On/Off Digital
- 12 or 24 VDC nominal input power
- 1 CAN port (SAE J1939 with auto-baud-rate detection)
- Command messages are received through CAN network (no physical inputs)
- Protection against input surge/transient, input undervoltage, output overcurrent, and output short circuit
- Rugged enclosure and connector
- User-configurable using Axiomatic Electronic Assistant



Applications:

- The controller is designed to meet the rugged demands of mobile equipment and heavy duty industrial machine control applications, such as PID closed loop valve control and hydraulic valve control.
- Off-highway construction equipment and municipal vehicles

Ordering Part Number:

4 Outputs Valve Controller, SAE J1939 with auto-baud-rate detection P/N: **AX020600**

Accessories:

Axiomatic Electronic Assistant Configuration KIT P/N: **AX070502** or **AX070506K**

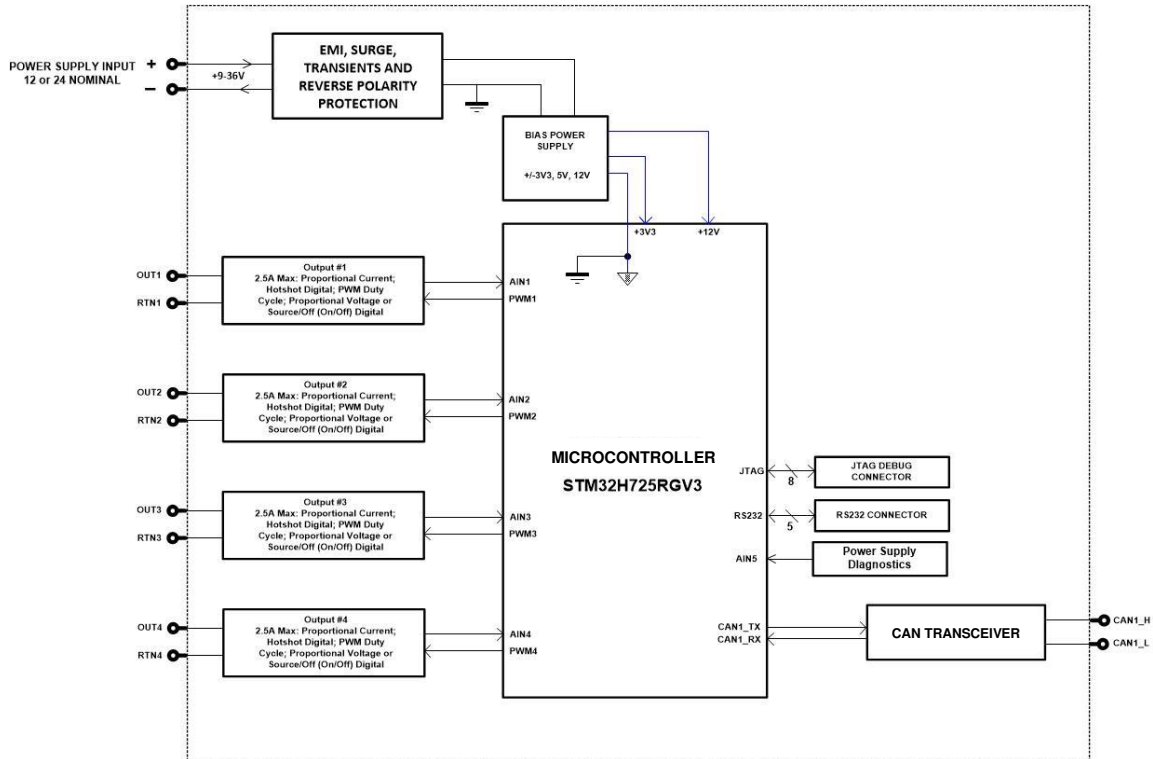
Mating Plug KIT P/N: **PL-DTM06-12SA**

Description:

The controller features 1 CAN port for controlling the outputs over the CAN bus. It accepts a nominal input power supply voltage of 12 or 24 VDC. Using the CAN network, it can provide control of up to four outputs, configured for a wide variety of responses and up to 2.5 A per channel. For example, it can drive proportional valves, on/off valves, or provide a hotshot control profile. PWM signal or proportional voltage outputs are also user-selectable. Standard control logic is provided. The sophisticated microcontroller can accommodate complex application-specific control algorithms for advanced machine control on request.

Rugged enclosure and power supply surge protection suits the harsh environment of mobile equipment.

Functional 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/>.

Input

Power Supply Input	12 or 24 VDC nominal (8 to 36 VDC)
Quiescent Current	55 mA @ 12 V; 35 mA @ 24 V typical
Protection	Power supply surge and transient protection Under-voltage protection (Shutdown at 7.5 V) Over-voltage protection (Shutdown at 37.5 V)

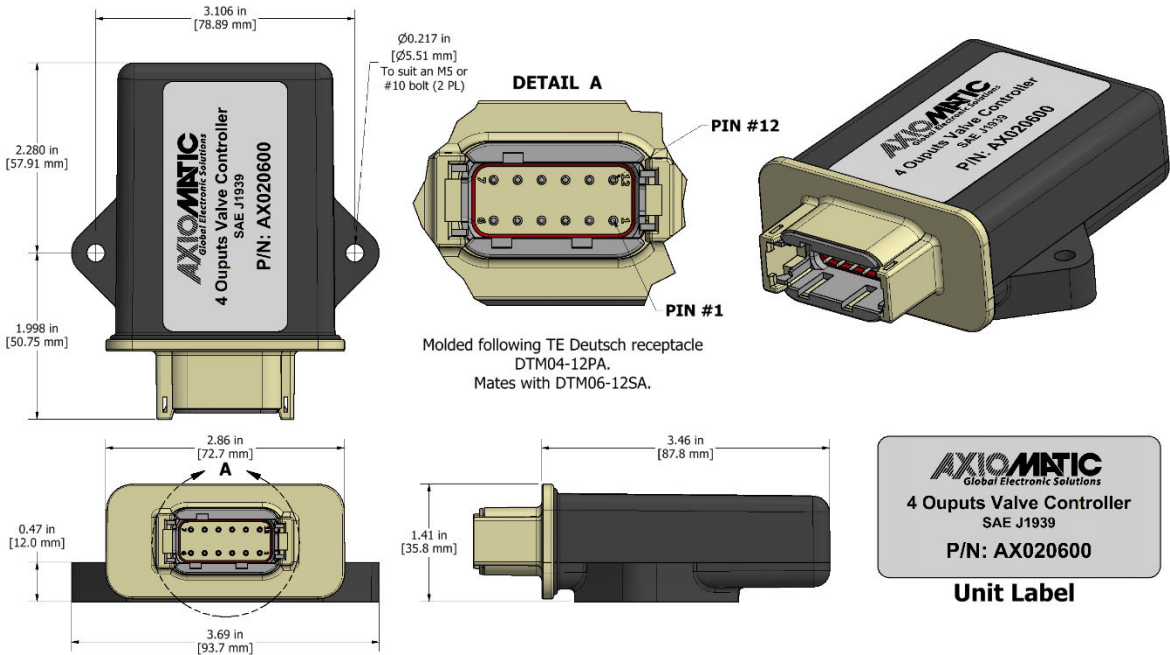
Output

Universal Outputs	4 outputs selectable as follows.	
	Proportional Current Output	1 mA resolution, +/-1% error
	Hotshot Digital Output	Firmware programmable waveform
	PWM Output	0.1% resolution, +/-0.1% error
	Proportional Voltage Output	0.1 V resolution, +/-5% error
	On/Off Digital Output	Sourcing from power supply Sinking from output to ground or off
Load at supply voltage must not draw more than 2.5 A. Half-bridge output, current sensing, grounded load. High side sourcing up to 2.5 A High frequency drive up to 25 kHz		
Protection	Overcurrent protection Short circuit protection in hardware	

General Specifications

Microcontroller	STM32H725RGV3																										
Communications	1 CAN SAE J1939-compliant port 250 kbit/s, 500 kbit/s, 667 kbit/s, 1 Mbit/s auto-baud-rate detection																										
Control Logic	Standard embedded control logic is provided. Refer to the User Manual.																										
User Interface	User configuration and diagnostics are provided with the Axiomatic Electronic Assistant P/N: AX070502 or AX070506K																										
Compliance	RoHS																										
Vibration	MIL-STD-202H, method 204, test condition C 10g peak (Sine) MIL-STD-202H, method 214A, test condition I/B 7.56 Grms (Random)																										
Shock	MIL-STD-202H, method 213B, test condition A 50 g peak																										
Operating Conditions	-40°C to 85°C (-40 to 185°F)																										
Storage Temperature	-50°C to 105°C (-58 to 221°F)																										
Weight	0.272 lb. (0.124 kg)																										
Protection	IP67																										
Enclosure and Dimensions	Molded enclosure, integral connector Nylon 6/6, 30% glass, laser welded 4.28 in x 3.69 in x 1.41 in (108.6 mm x 94 mm x 36 mm) Note: L x W x H includes the integral connector. Refer to Dimensional Drawing. Flammability rating: UL 94 HB																										
Electrical Connections	Integral 12-pin receptacle (equivalent to TE Deutsch P/N: DTM04-12P) <table border="1" data-bbox="509 821 911 1157"> <thead> <tr> <th>Pin #</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>BATT+</td> </tr> <tr> <td>2</td> <td>OUTPUT GND</td> </tr> <tr> <td>3</td> <td>OUTPUT GND</td> </tr> <tr> <td>4</td> <td>OUTPUT GND</td> </tr> <tr> <td>5</td> <td>OUTPUT GND</td> </tr> <tr> <td>6</td> <td>CAN L</td> </tr> <tr> <td>7</td> <td>CAN H</td> </tr> <tr> <td>8</td> <td>OUTPUT 4</td> </tr> <tr> <td>9</td> <td>OUTPUT 3</td> </tr> <tr> <td>10</td> <td>OUTPUT 2</td> </tr> <tr> <td>11</td> <td>OUTPUT 1</td> </tr> <tr> <td>12</td> <td>BATT-</td> </tr> </tbody> </table>	Pin #	Description	1	BATT+	2	OUTPUT GND	3	OUTPUT GND	4	OUTPUT GND	5	OUTPUT GND	6	CAN L	7	CAN H	8	OUTPUT 4	9	OUTPUT 3	10	OUTPUT 2	11	OUTPUT 1	12	BATT-
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Mating Connectors	Mating Plug KIT P/N: PL-DTM06-12SA (includes 1 DTM06-12SA plug, 1 WM-12S wedgelock, 12 0462-201-20141 solid contacts, and 6 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 inches (12 mm) thick. It should be mounted with connectors facing left or right to reduce the 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 inches or 15 cm) and strain relief (12 inches or 30 cm).																										

Dimensional Drawing



Form: TDAX020600-08/29/2024