

Single Valve Controller, Plug-In

P/N: AX023100

Distribute your control functions directly onto the valve.

Features:

- 1 signal input (0-5 VDC, 0.5-4.5 VDC, 4-20 mA, PWM)
- Drives 1 hydraulic valve (Proportional 0-2.5 A)
- +5 V, 50 mA reference voltage to power sensors
- Variable superimposed dither
- 12 or 24 VDC nominal input power
- Rugged IP67 packaging
- Integrated connector to minimize wiring and reduce installation time
- Compact, plug-in style for valve coil with a molded connector
- Flexible user programming for application-specific parameters via Single EWRITE GUI Service Tool for Windows computers



Ordering Part Number:

Single Valve Controller, Plug-In, Model AXLCS: **AX023100**

Accessories:

Service Tool: **Axiomatic Single EWRITE GUI** and GUI user manual are available at <https://www.axiomatic.com/customer-downloads/>. Contact Axiomatic for access.

Configuration Cable for GUI: **AX070120**

Mating Connector KIT (for the 6-pin Connector): **AX070119**
(See General Specifications below for details.)

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 Input

Power Input	12 or 24 VDC nominal (9 to 32 VDC power supply range)
Protection	Reverse polarity protection is provided. Overvoltage protection to 32 VDC is provided.

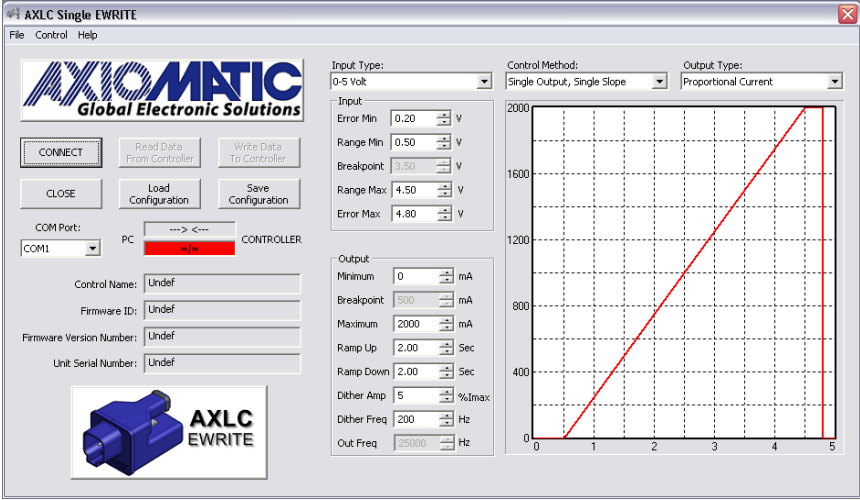
Inputs

Signal Input	1 signal input is provided for interface with a joystick or other command input User configurable operating and error ranges. 0-5 VDC, 4-20 mA, or PWM (Default: 0.5 - 4.5 VDC) Output is off when the input signal goes out of range.
Resolution and Accuracy	0-5 VDC Input: 10 mV resolution and $\pm 1\%$ error 4-20 mA Input: 0.1 mA resolution and $\pm 1\%$ error PWM Input (> 100 Hz, < 10 kHz): 0.1% resolution and $\pm 1\%$ error

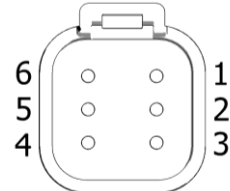
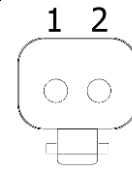
Outputs

Output	User configurable output types <ul style="list-style-type: none">Proportional current (Single high side switch 0-2.5 A) - DefaultProportional Voltage (0-Vps)PWM Duty Cycle (0-100%) Current sensing for closed-loop control (current output type) User configurable output ranges <ul style="list-style-type: none">Default Output range min: 0 mADefault Output range max: 2000 mA
Dither	Variable Frequency Range: 50 to 400 Hz Default: 200 Hz Amplitude Range: 0 to 10% of I _{max} Default: 0 % (Disabled)
Ramps	User configurable ramp up and ramp down Range: 0 to 60 seconds Default: 0 seconds (Disabled)
Resolution and Accuracy	1 mA resolution $\pm 1\%$ error
Protection for Output +	The output plugs directly into the valve and is protected against a short to Ground.
Output Ground	One provided
Reference Voltage	+5 V, 50 mA

General Specifications

Microcontroller	STM32, 32-bit, 128 Kbyte program memory
Response Time	126 ms at 3 Ω load for 2 A current
Control Logic	Single or Dual Slope Control Directly or inversely proportional output response to changes at the input.
User Interface for Configuration	<p>A service tool is available for user configuration called the Axiomatic Single EWRITE GUI. It can be used with a configuration cable P/N: AX070120.</p> 
Temperature Rating	Operating: -40 to 85 °C (-40 to 185 °F) Storage: -50 to 105 °C (-58 to 221 °F)
Protection	IP67 rating for the product assembly
Weight	0.15 lbs. (0.068 kg)
Enclosure	Molded Enclosure, integral connectors Polyester, 30% glass Silicone seal 3.04 in. x 1.44 in. x 1.526 in. (77.1 mm x 36.6 mm x 38.8 mm) L x W x H including integral connectors

Electrical Connections

Electrical Connections	6-pin integral connector (equivalent TE Deutsch P/N: DT06-6P); mates with TE Deutsch P/N: DT06-6S (not supplied).																																							
	<table><tr><th>Pin</th><th>Description</th></tr><tr><td>1</td><td>Power +</td></tr><tr><td>2</td><td>Power -</td></tr><tr><td>3</td><td>+5V Reference Ground</td></tr><tr><td>4</td><td>+5V Reference</td></tr><tr><td>5</td><td>Signal -</td></tr><tr><td>6</td><td>Signal +</td></tr></table>	Pin	Description	1	Power +	2	Power -	3	+5V Reference Ground	4	+5V Reference	5	Signal -	6	Signal +																									
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	2-pin integral connector (equivalent TE Deutsch P/N: DT06-2S); mates with valve coil connector TE Deutsch P/N: DT04-2P (not supplied)																																							
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Mating Connector KIT and Configuration Cable	<p>Mating Connector KIT (for the 6-pin connector) – P/N: AX070119 (includes 1x plug DT06-6S, 1x wedgelock W6S, and 6x contacts 0462-201-16141). Wires should be of the appropriate gauge to meet requirements of applicable electrical codes and suit the specifications of the connector(s).</p> <p>Configuration cable for Axiomatic Single EWRITE GUI: AX070120</p> <table><tr><th colspan="2">DT04-6P Connector Pinout for AX070120 Configuration Cable</th></tr><tr><th>Pin</th><th>Description</th></tr><tr><td>1</td><td>Power +</td></tr><tr><td>2</td><td>Power -</td></tr><tr><td>3</td><td>Not used</td></tr><tr><td>4</td><td>Not used</td></tr><tr><td>5</td><td>Not used</td></tr><tr><td>6</td><td>Not used</td></tr></table> <table><tr><th colspan="2">DB-9 Connector Pinout for AX070120 Configuration Cable</th></tr><tr><th>Pin</th><th>Description</th></tr><tr><td>1</td><td>Not Used</td></tr><tr><td>2</td><td>RxD</td></tr><tr><td>3</td><td>TxD</td></tr><tr><td>4</td><td>Not Used</td></tr><tr><td>5</td><td>Not Used</td></tr><tr><td>6</td><td>Not Used</td></tr><tr><td>7</td><td>RTS</td></tr><tr><td>8</td><td>Not Used</td></tr><tr><td>9</td><td>Not Used</td></tr></table>		DT04-6P Connector Pinout for AX070120 Configuration Cable		Pin	Description	1	Power +	2	Power -	3	Not used	4	Not used	5	Not used	6	Not used	DB-9 Connector Pinout for AX070120 Configuration Cable		Pin	Description	1	Not Used	2	RxD	3	TxD	4	Not Used	5	Not Used	6	Not Used	7	RTS	8	Not Used	9	Not Used
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Dimensional Drawing

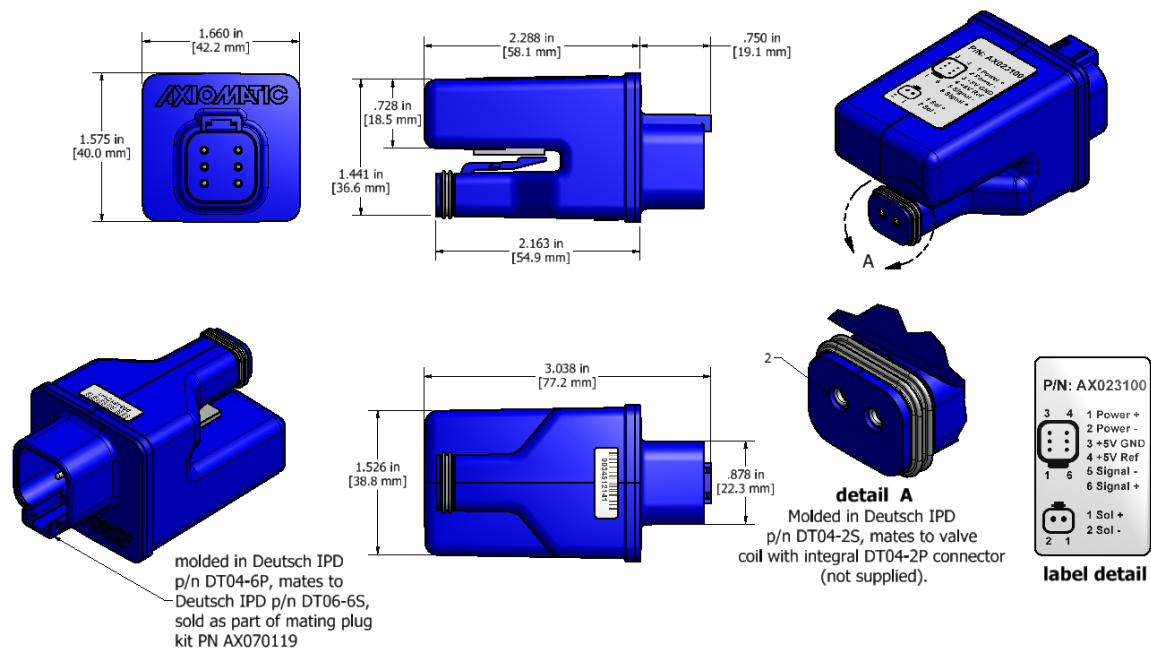


Figure 1.0 – Dimensional Drawing

Form: TDAX023100B-09/18/2025