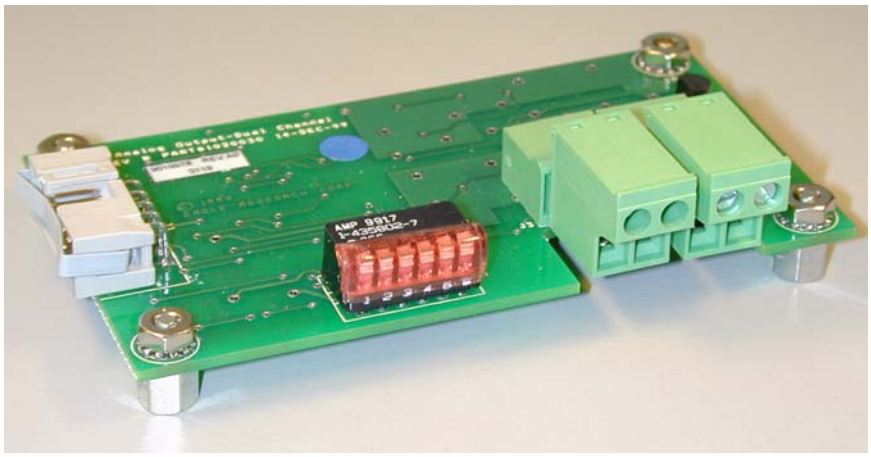
EAGLE RESEARCH CORPORATION

Product Information

PRODUCT DATA

XA-AO – Dual Channel Analog Output Module



Introduction

The XA-AO Analog Output Module provides TWO two-wire, loop-powered, optically isolated, precision 4-20mA outputs. This module interfaces with the XA Series product line to provide 4-20 mA outputs for flow rate, pressure, or numerous other control and monitoring applications. Multiple AO modules can be interfaced with one RTU or EFC to provide more than two 4-20 mA outputs.

Product Description

Power for the digital interface section of the XA-AO is selectable by using the DIP switches, and can be supplied by Vcc of the RTU, or from the main supply voltage. The AO module interfaces to an XA Series RTU via the standard I2C serial interface bus. The XA unit requests the desired mA output from the AO module using this bus. An I2C digital I/O chip is used to send the information to the analog output section of the AO board. Using the module DIP switches, this I/O chip is addressable to and of the 5 addresses that are free in the standard XA configuration. This allows for up to five AO modules to be connected to a standard unit – providing there is sufficient space in the enclosure.

The analog output section of the board derives its power from the current loop, and is optically isolated from the digital control interface section. The analog output section receives commands from the digital I/O chip through opto-isolators. Commands are in the form of a serial data stream. The AO module provides 4-20 mA output signals with a resolution of 1 part in 65536 (16 bit), or 0.00024 mA. The D/A also allows for over ranging of the output to a minimum of 3.5 mA and a maximum of 24 mA. The field interface to the D/A is a simple two-wire connection. Reverse polarity protection is provided.

The XA-AO will function properly in temperatures ranging from –40 F. to +160 F, and in conditions of high humidity (including condensing environments). Software calibration of the 4-20 mA outputs is provided for easy calibration.

4036 Teays Valley Road, P. O. Box 668, Scott Depot, WV 25560 Phone: (304) 757-6565 Fax: (304) 757-3332
Web: http://www.eagleresearchcorp.com

Dual Channel XA-AO
Specifications

Environmental

Operating Temperature	-40 Deg. F to +160 Deg. F
Operating Humidity	0 to 100 %

Electrical Isolation

500 V DC or AC RMS (sine wave) between digital interface and 4-20 mA loop.

Current Loop Outputs

Maximum Output Current	24 mA
Minimum Output Current	3.5 mA
Maximum Supply Voltage	50 Volts
Minimum Supply Voltage	8 Volts
Resolution	16 bits, 0.00024 mA
Full Scale % Error (Software Calibrated at 4 and 20 mA and tested at room temperature)	±0.01% Max.
Temperature Drift	±0.00044 mA/Deg. F Max.
Error due to RFI	<1% of span shift with 2.8W 150MHz applied at 1.7 Ft.

Digital Control Interface

Vcc Powered Input Current (Address = 20 hex. 15mA Max. during communications)	10uA Max. in idle mode:
Vin Powered Input Current	30uA higher than with Vcc power typical
Communications Interface	I2C as described for the Philips PCF8575 digital I/O chip.

Physical (In Enclosure)

Width w/mounting tabs	4.75”
Width w/o mounting tabs	3.78”
Height	2.143”
Depth	0.688”