

ROC800-Series Analog Output Module

The Analog Output (AO) module provides the ROC800-Series Remote Operations Controller (ROC800) with the ability to control various analog field values.

The AO module provides four analog output channels. Each channel provides a 4 to 20 mA current signal for controlling analog current loop devices.

The need for fuses has been eliminated on the input/output (I/O) modules through the extensive use of current-limiting, short-circuit protection, and surge protection techniques. This results in less maintenance for remote locations. The I/O modules are self-resetting after a fault clears.

The AO module provides 2500 Vdc of isolation from other modules and the backplane including power and signal isolation.

The AO module provides isolated loop-power (+T) sources with integrated short-circuit protection. This protection limits the amount of current (+T) during a short-circuit and auto-recovers after the fault clears.

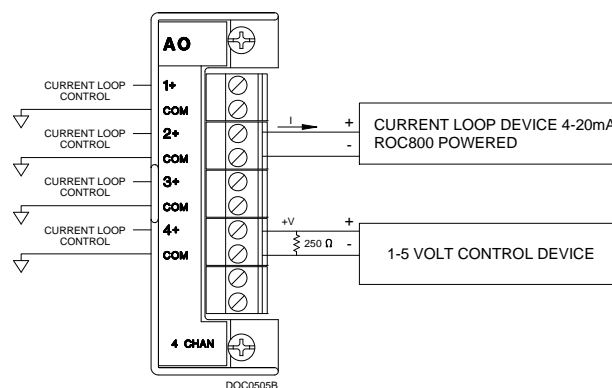
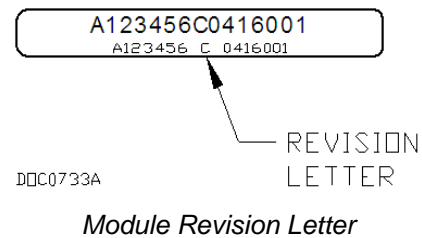
Compatibility and Installation

AO modules can be installed in any module slot on a Series 1 or Series 2 ROC800. Modules can easily be installed or removed from the module slots at any time by removing the two captive screws accessible from the front of the unit.

The AO module has removable terminal blocks for convenient wiring and servicing. The terminal blocks can accommodate a wide range of wire gauges from 12 to 22 AWG.

AO modules (Rev. B or later) are hot-swappable, meaning the module can be removed and another module, of the same kind, can be installed under power. AO modules (Rev. B or later) are hot-pluggable, meaning they may be installed directly into unused module slots under power. The modules are also self-identifying via ROCLINK™ 800 Configuration Software.

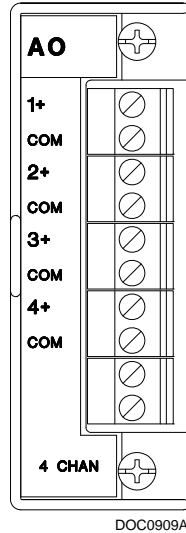
To determine the revision level of your module, power off the ROC and remove the module. Locate the label on the module's board. The label consists of a single letter (the revision level) surrounded by two letter/number sequences, as shown below.



Analog Output Wiring

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Field Wiring Terminals



Terminal	Label	Definition
1	1+	Positive Analog Output
2	COM	Analog Output Return
3	2+	Positive Analog Output
4	COM	Analog Output Return
5	3+	Positive Analog Output
6	COM	Analog Output Return
7	4+	Positive Analog Output
8	COM	Analog Output Return
9	N/A	Not Used
10	N/A	Not Used

Outputs

Quantity	4 channels	
Type	Single-ended, current control. 16-bit resolution	
Maximum Input Overload Voltage	±24 Vdc, continuous	
Output Load at 12 Vdc ¹	300 ohms maximum	
Output Load at 24 Vdc ¹	750 ohms maximum	
Accuracy ² at 25°C (77°F) with full load	Loop Power set for +12 Vdc	0.045%
	Loop Power set for +24 Vdc	0.200%
Accuracy ² Over Operating Temperature Range with full load [-40 to 75°C (-40 to 167°F)]	Loop Power set for +12 Vdc	0.31%
	Loop Power set for +24 Vdc	0.35%
Reset Action	User selectable between outputs going to software-configured value or to last value on power-up (on restart)	
Minimum Scan Period	50 milliseconds on all channels	

1. If all channels are at 100% output and R load is < 100 ohms on each channel, then the unit's operating temperature range must be reduced by 1 degree Celsius/channel when maximum battery voltage is applied to the unit.
2. Accuracy after calibration includes: Linearity, Hysteresis, Repeatability, Stability, Gain, and Offset error.

Power		
Consumption	Main power supply loading at the Battery Terminals (at 12.0 Vdc)	100 mA maximum over operating temperature range
	Loop Power @ 12 Vdc	1.25 multiplied by measured current draw per channel output
	Loop Power @ 24 Vdc	2.5 multiplied by measured current draw per channel output
Loop Power	Sensor Supply Voltage	Jumper selectable between 12 Vdc and 24 Vdc
	Sensor Supply Current	0–20.83 mA per channel
Isolation	Field to Logic	2500 Vdc, 1 minute minimum
	Field to Power	2500 Vdc, 1 minute minimum
	Module to Module	2500 Vdc, 1 minute minimum
Physical		
Dimensions	26 mm W by 75 mm H by 133 mm D (1.03 in. W by 2.96 in. H by 5.24 in. D)	
Weight	54.4 g (1.92 oz)	
Wiring	12–22 American Wire Gauge (AWG) at the removable terminal block	
Environmental		
Same as the ROC800-Series unit in which it is installed		
Approvals		
Same as the ROC800-Series unit in which it is installed		

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