

2.2.5. Analog Output

Function

The Analog Output (AO) Module delivers high-level constant current to actuators and recording/indicating devices.

Notable Features

- Extensive self diagnostics
- Optional redundancy
- Safe-state (FAILOPT) behaviors configurable on a per channel basis

FAILOPT

Series 8 AO module supports the FAILOPT parameter on a per channel basis. The user can configure each channel to either HOLD LAST VALUE, or SHED to a SAFE VALUE. The Output will always go to zero, the safe state, if the IOM device electronics fails.

Open-wire Detection

This Series 8 IO function can detect and annunciate open field wire with a Channel Soft Failure indication.

Detail Specifications – Analog Output

Parameter		Specification		
Input / Output Module		8C-PAONA1 - Analog Output, Coated		
		8U-PAONA1 - Analog Output, Uncoated		
IOTA Modules		8C-TAOXA1	Non-Redundant, Coated	6"
		8U-TAOXA1	Non-Redundant, Uncoated	6"
		8C-TAOXB1	Redundant, Coated	12"
		8U-TAOXB1	Redundant, Uncoated	12"
Output Type		4-20 mA		
Output Channels		16		
Output Ripple		100 mV peak-to-peak at power line frequency, across 250 Ω load		
Load Resistance		50-800 Ω		
Voltage Rating		24 VDC		
Module current rating		190 mA		
Temperature	Operating Temperature	0 to 60 °C		
	Storage temperature	-40 to 85 °C		
Resolution		$\pm 0.05\%$ of Full Scale		
Module Removal and Insertion Under Power		Supported		
Calibrated Accuracy		$\pm 0.2\%$ of Full Scale (25°C) including linearity		
Directly Settable Output Current Range		2.9 mA to 21.1 mA		
Maximum Open Circuit Voltage		22 V		
Response Time (DAC input code to output)		settles to within 1% of final value within 80 ms		
Gap (0 mA) of Output to Field on Switchover		10 ms maximum (applies to Redundancy only)		
Agency certifications				
		 Class I, Division 2, Group A, B, C, D; T4 Class I, Zone 2 AEx/ Ex nA II C T4		
		 Class I, Division 2, Group A, B, C, D; T4 Class I, Zone 2, Ex nA II C T4		

2.2.6. Analog Output with HART

The Analog Output (AO) Module delivers high-level constant current to actuators and recording/indicating devices.

Notable Features

- Extensive self diagnostics
- Optional redundancy
- HART-capable, multivariable devices
- Safe-state (FAILOPT) behaviors configurable on a per channel basis

Safe-state Behavior (FAILOPT)

Series 8 AO module supports the FAILOPT parameter on a per channel basis. The user can configure each channel to either HOLD LAST VALUE, or SHED to a SAFE VALUE. The Output will always go to zero, the safe state, if the IOM device electronics fails.

Open-wire Detection

This Series 8 IO function can detect and annunciate open field wire with a Channel Soft Failure indication.

Detail Specifications – Analog Output with HART

Parameter		Specification		
Input / Output Module		8C-PAOHA1 - Analog Output with HART, Coated 8U-PAOHA1 - Analog Output with HART, Uncoated		
IOTA Modules		8C-TAOXA1	Non-Redundant, Coated	6"
		8U-TAOXA1	Non-Redundant, Uncoated	6"
		8C-TAOXB1	Redundant, Coated	12"
		8U-TAOXB1	Redundant, Uncoated	12"
Output Type		4-20 mA		
Output Channels		16		
Output Ripple		< 100 mV peak-to-peak at power line freq, across 250 Ω load		
Load Resistance		50-800 Ω		
Voltage Rating		24 VDC		
Module current rating		205 mA		
Temperature	Operating Temperature	0 to 60 °C		
	Storage temperature	-40 to 85 °C		
Resolution		$\pm 0.05\%$ of Full Scale		
Module Removal and Insertion Under Power		Supported		
Calibrated Accuracy		$\pm 0.2\%$ of Full Scale (25°C) including linearity		
Directly Settable Output Current Range		2.9 mA to 21.1 mA		
Maximum Open Circuit Voltage		22 V		
Response Time(DAC input code to output)		settles to within 1% of final value within 80 ms		
Gap (0 mA) of Output to Field on Switchover		10 ms maximum (applies to Redundancy only)		
Agency certifications				
		 Class I, Division 2, Group A, B, C, D; T4 Class I, Zone 2 AEx/ Ex nA II C T4		
		 Class I, Division 2, Group A, B, C, D; T4 Class I, Zone 2, Ex nA II C T4		