

Technical Information

Series 8 Controller and I/O Specification



S803-150-530

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4.4.10. Digital Output 24VDC

Function

The Digital Output bussed 24VDC (DO24V) module can switch reliable 24V digital output signals to control other process equipment as well as solenoid valves and interposing relays.

Notable Features

- Extensive internal diagnostics to ensure data integrity
- Optional redundancy
- Safe-state (FAILOPT) behaviors
- Direct/Reverse output support
- Latched, pulsed or pulse-width modulated output (per channel)
- Galvanic Isolation

Bussed 24VDC DO

The Digital Output Bussed 24VDC has provisions for both internal and external field power excitation. As a bussed output device, all of the outputs share a common return (ground). All outputs get their power from the same source, which can be either the system power supply or an externally connected 24V power supply. When selection is from an external source, outputs can be galvanically isolated from the Series 8 power system.

Safe-state Behavior (FAILOPT)

Series 8 DO module will support FAILOPT parameter on a per channel basis. The output can be directed by configuration to either HOLD THE LAST VALUE, or SHED to a SAFE VALUE. The safe value can be configured by the user.

Detailed Specification – Digital Output 24VDC (8C-PDODA1)

Parameter	Specification		
Input / Output Module	8C-PDODA1 - Digital Output 24 VDC, Field Isolated, Bussed output, Coated		
IOTA Modules	8C-TDODA1	Non Redundant, Coated	9"
	8C-TDODB1	Redundant, Coated	12"
Relay Extension Board	Supported, details in section 4.4.11		
Output Channels	32		
Output Type	Source		
Voltage Rating	24 VDC		
Module current rating	105mA		
Load Voltage	30 VDC Maximum		
Load Current ¹	100mA per channel (Max) and 3.2A per module (Max)		
Galvanic Isolation ²	1000 VAC RMS or ± 1500 VDC		

Parameter	Specification
On-State Voltage	24 VDC (typ) (load current @ 0.1A max)
Off-State Leak Current	5 µA (max)
Turn-On/Turn-Off Time	10 ms (max)
Gap (0 current) of Output to Field on Switchover	None (0ms) (applies to Redundancy only)
Module Removal and Insertion Under Power	Supported
Note 1 – Short circuit protection for DO channel would be using series FUSEs in the output channel. Total four (4) fuses for 32 channels on DO IOTA Note 2 – System to Field type isolation, option available only with external user supplied power. A wiring option on the IOTA determines if outputs are referenced to the Series 8 system power or an external field power source	

4.4.11. DO Relay Extension Board

Function

The Digital Output Relay provides a dry contact for isolated low voltage / low current or high voltage / high current discrete output applications. Each relay supports a Form-C output contact. The Relay extension board connects the Digital Output 24V (DO24V) IOM with DO IOTA to support the Relay output.

Notable Features

- Galvanic isolation
- Isolated Dry Contact
- Counter EMF Snubbing Circuit
- LED indication for each channel ON condition

Detailed Specification – DO Relay Extension Board (8C-SDOX01)

Parameter	Specification		
Relay Extension Board	8C-SDOX01	Relay Extension, Coated	15"
Output Channels	32 isolated Form C (SPDT) contacts. Three screws per channel (NC, NO, COM) for Normal Open or Normal Close usage.		
Contact Type	Au over AgSnO2		
Maximum Load Voltage	250 VAC (RMS)/125 VDC		
Maximum Steady State Load Current per Output	Current	Voltage	
	5A	125 / 250 VAC (resistive)	
	3 A	30 VDC (resistive)	
	1 A	48 VDC (resistive)	
	0.2 A	125 VDC (resistive)	
	2 A	125 / 250 VAC (inductive = 0.4 power factor)	
	1 A	30 VAC (inductive L/R = 100 ms)	
	0.3 A	48 VAC (inductive L/R = 100 ms)	
	0.1 A	125 VAC (inductive L/R = 100 ms)	
Minimum Load Voltage	5 VDC ¹		
Minimum Load Current	10 mA or 100mA ¹		
Inrush Current (Max)	10A for 4s at a 10% duty cycle		
Voltage Rating	24 VDC		
Module current rating	1010 mA		
Isolation (Channel-to-channel, and channel-to-logic common)	1500 VAC RMS or ±1500 VDC		
Turn On Time	20 ms maximum		
Turn Off Time	20 ms maximum		

Parameter	Specification
Contact Life	Mechanical : Min. 20,000,000 operations Electrical: Min. 100,000 operations @ 3A
Module Removal and Insertion Under Power	Supported
Relay Cable assembly ²	Honeywell Part # 51155506-xxx (0.5 mtr to 50 mtr cable length options)
Note 1 – The minimum 10mA load current and 5 VDC load voltage specified are only valid if the contact has not been previously used in high current / high voltage applications. Once a relay contact is used in a high current / high voltage application, the minimum load current is 100mA	
Note 2 – Is used to connect Relay Extension board with DO IOM with IOTA	