

Technical Information

Series 8 Controller and I/O Specification



S803-150-530

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4.3.2. I/O Module Sizes

IOTA Sizing is nominal (6in = 152mm, 9in = 228mm, 12in = 304mm). I/O modules are associated with their respective IOTAs in the table below. The I/O Module is supported by one or more IOTAs. Below section also provides an overview of various available IO modules, IOTA, IOTA size and redundancy features.

I/O Module (Coated)	IOTA (Coated)	Description	Circuits	Size (in “)	Red.
8C-PAIH54		High-level AI HART, Differential	16		✓
	8C-TAIDA1	AI IOTA		9	
	8C-TAIDB1	AI IOTA Redundant		12	✓
8C-PAIHA1		High-level AI HART, Single-ended	16		✓
8C-PAINA1		High-level AI w/o HART, Single-ended	16		✓
8C-TAIXA1		AI IOTA	6		
8C-TAIXB1		AI IOTA Redundant	12	✓	
8C-PAIMA1		Low-level AI – RTD & TC	16		
	8C-TAIMA1	Low-level AI IOTA		9	
8C-PAOHA1		Analog Output HART	16		✓
8C-PAONA1		Analog Output w/o HART	16		✓
		8C-TAOXA1	AO IOTA	6	
		8C-TAOXB1	AO IOTA Redundant	12	✓
8C-PDILA1		Digital Input 24V	32		✓
8C-PDISA1		Digital Input Sequence of Events	32		✓
8C-PDIPA1		Digital Input 24V Pulse Accumulation	32		✓
		8C-TDILA1	DI 24V IOTA	9	
		8C-TDILB1	DI 24V IOTA Redundant	12	✓
8C-PDODA1		DO 24V Bussed Out	32		✓
	8C-TDODA1	DO 24V Bussed IOTA		9	
	8C-TDODB1	DO 24V Bussed IOTA Redundant		12	✓
	8C-SDOX01	DO Relay Extension ¹		15	✓
Note 1- DO Relay Extension board is used along with DO IO module with IOTA (Redundant or non-redundant). Refer Section 4.4.11 for more details.					

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		

4.5. Series 8 IO Function Matrix

The following tables assist in selecting I/O Modules and IOTAs with similar functional characteristics:

AI Function Matrix

IOM	NR IOTA	Red IOTA	Function	
			AI 4-20 mA	HART
8C-PAIHA1	8C-TAIXA1	8C-TAIXB1	◆	◆
8C-PAINA1	8C-TAIXA1	8C-TAIXB1	◆	
8C-PAIH54	8C-TAIDA1	8C-TAIDB1	◆	◆

TC/RTD Function Matrix

IOM	NR IOTA	Red IOTA	Function	
			TC	RTD
8C-PAIMA1	8C-TAIMA1	NA	◆	◆

AO Function Matrix

IOM	NR IOTA	Red IOTA	Function	
			AIO 4-20 mA	HART
8C-PAOHA1	8C-TAOXA1	8C-TAOXB1	◆	◆
8C-PAONA1	8C-TAOXA1	8C-TAOXB1	◆	

DI Function Matrix

IOM	NR IOTA	Red IOTA	Function		
			DI	SOE	PA
8C-PDILA1	8C-TDILA1	8C-TDILB1	◆		
8C-PDISA1	8C-TDILA1	8C-TDILB1		◆	
8C-PDIPA1	8C-TDILA1	8C-TDILB1			◆

DO Function Matrix

IOM	NR IOTA	Red IOTA	Relay Extension	Source
8C-PDODA1	8C-TDODA1	8C-TDODB1	8C-SDOX01	◆

5. Series-8 Power Systems and Accessories

The Series 8 Mark II Power System provides 24 VDC power to compatible Series-8 components. Series-8 power is provided by Commercial Off the Shelf (COTS) power systems. The power system provides unique capabilities that are tailored for the particular Series-8 need.

5.1. COTS Series-8 Power System

Commercial Off the Shelf (COTS) power system for Series-8 is available when Battery Backup is not required. The COTS Power system provides redundant 24VDC primary power at 20 amps for Series 8 devices. The power system also provides capabilities to support integral field power. This eliminates the need for additional power sources as well as the additional wiring, fusing, marshalling and documentation costs. Various COTS power systems are available. Selection is a user preference.

5.1.1. Notable Features

- Various COTS Power Systems available based on User Preference
- Space efficient design
- Validated for Series 8 hardware
- Optionally redundant power supply
- Seamless switch operation between power supplies
- Visual and point contact alarms on all power system components

5.1.2. Model Numbers

Description	Model or Part Number
Power Supply Module, 24VDC/20A, PULSE, Conformal Coated, AC or DC Input	8U-PWSP02-CN
Power Supply Module, 24VDC/20A, PULS, AC Input only	8U-PWSP04
Power Supply Module, 24VDC/20A, TRIO-PS, Phoenix Contact	8U-PWSP05
Power Supply Module, 24VDC/20A, PULSE, Back Panel Assembly	51202960-100 ¹
Note 1 - 51202960-100 Back Panel Assembly is compatible with all power supply modules mentioned above.	



8U-PWSP05: TRIO
PHX Contact



8U-PWSP04: PULS



8U-PWS02-CN:
PULS