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.

4.4.5. Analog Output with HART

Function

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.

Detailed Specification- Analog Output with HART (8C-PAOHA1)

Parameter	Specification		
Input / Output Module	8C-PAOHA1 - Analog Output with HART, Coated		
IOTA Modules	8C-TAOXA1	Non-Redundant, Coated	6”
	8C-TAOXB1	Redundant, Coated	12”
Output Type	4-20 mA		
Output Channels	16		
Output Ripple	< 100 mV peak-to-peak at power line freq, across 250 Ω load		
Output Temperature Drift	0.005% of Full Scale/°C		
Output Current Linearity	± 0.05% of Full Scale nominal		
Load Resistance (24 V supply = 22 VDC through 28 VDC)	50-800Ω		
Voltage Rating	24 VDC		
Module current rating	205 mA		
Resolution	± 0.05% of Full Scale		
Calibrated Accuracy	± 0.2% of Full Scale (25oC) including linearity		
Directly Settable Output Current Range	2.9 mA to 21.1 mA		
Maximum Output Compliant Voltage (24 V supply = 22 VDC through 28 VDC)	16 V		

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	♦