

Experion Series-C I/O Specification



**EP03-490-520**

**Release 520**

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CC-PAOH01 CC-PAOX01		Analog Output 16pt HART Analog Output 16pt w/o HART	16		√
	CC-TAOX01	AO IOTA		6	
	CC-TAOX11	AO IOTA Red.		12	√
CC-PAOH51		Analog Output 16pt HART	16		√
	CC-TAOX51	AO IOTA		6	
	CC-TAOX61	AO IOTA Red		12	√
CC-PAON01		Analog Output 16pt w/o HART	16		√
	CC-TAON01	AO IOTA		6	
	CC-TAON11	AO IOTA Red		12	√
CC-PDIL01 CC-PDIS01		Digital Input 24V Digital Input Sequence of Events	32		√
	CC-TDIL01	DI 24V IOTA		9	
	CC-TDIL11	DI 24V IOTA Red.		12	√
CC-PDIL51		Digital Input 24V	32		√
	CC-TDIL51	DI 24V IOTA		9	
	CC-TDIL61	DI 24V IOTA Red.		12	√
CC-PDIH01		Digital Input High Voltage	32		√
	CC-TDI110	DI 110V IOTA		9	
	CC-TDI120	DI 110V IOTA Red.		12	√
	CC-TDI220	DI 220VAC IOTA		9	
	CC-TDI230	DI 220VAC IOTA Red.		12	√
CC-PDOB01		DO - 24V Bussed Out	32		√
	CC-TDOB01	DO 24V Buss IOTA		9	
	CC-TDOB11	DO 24V Buss IOTA Red.		12	√
	CC-TDOR01	DO Relay IOTA		6	
	CC-TDOR11	DO Relay IOTA Red.		12	√
	CC-SDOR01	DO Relay Extension Board		12	
CC-PUIO01		Universal Input Output	32		√
	CC-TUIO01	Universal Input Output IOTA		12	
	CC-TUIO11	Universal Input Output IOTA Red.		18	√
CC-PUIO31		Universal Input Output	32		√

## 5.8. Analog Output with HART – CC-PAOH01

### 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 instruments
- Multiple modems for fast collection of control variables
- Safe-state (FAILOPT) behaviors configurable on a per channel basis
- Output read-back and alarm on discrepancy
- Non-incendive output

### FAILOPT

Series C 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 C IO function will be able to detect and annunciate open field wire with a Channel Soft Failure indication.

### Detail Specifications - Analog Output with HART

Parameter	Specification		
Input / Output Model	CC-PAOH01 - High-Level Analog Output with HART		
IOTA Models	CC-TAOX01	Non-Redundant	6"
	CC-TAOX11	Redundant	12"
	CC-GAOX11	Redundant	12"
	CC-GAOX21	Non-Redundant	6"
Output Type	4-20 mA		
Output Channels	16		
Output Ripple	< 100 mV peak-to-peak at power line frequency, across 250 Ω load		
Output Temperature Drift	0.005% of Full Scale/°C		
Output Readback Accuracy	±4% of Full Scale		
Output Current Linearity	± 0.05% of Full Scale nominal		
Resolution	± 0.05% of Full Scale		
Calibrated Accuracy	± 0.35% of Full Scale (25°C) including linearity		
Directly Settable Output Current Range	0 mA, 2.9 mA to 21.1 mA		
Maximum Resistive Load (24 V supply = 22 VDC through 28 VDC)	800 ohms		

<b>Parameter</b>	<b>Specification</b>
Maximum Output Compliant Voltage (24 V supply = 22 VDC through 28 VDC)	16 V
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)

## 6. Function Matrix

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

### AI Function Matrix

Series-C IO			Function							
IOM	NR IOTA	Red IOTA	AI 4-20ma	HART Conf / Status	HART on CTL	HART Fast Ctl	AI 0-5V 1-5V	Int. IS	NR IOTA Size	Differential Inputs
CC-PAIH01 CC-PAIH02	CC-TAIX01	CC-TAIX11	◆	◆	◆	◆	◆		6"	13 - 16
CC-PAIH02	CC-TAID01	CC-TAID11	◆	◆	◆	◆	◆		9"	1 - 16
CC-PAIH01 CC-PAIH02	CC-GAIX21	CC-GAIX11	◆	◆	◆			◆	6"	NA
CC-PAIH51	CC-TAIX51	CC-TAIX61	◆	◆					6"	NA
CC-PAIX01 CC-PAIX02	CC-GAIX21	CC-GAIX11	◆			◆	◆	◆	6"	NA
CC-PAIX01 CC-PAIX02	CC-TAIX01	CC-TAIX11	◆			◆	◆		6"	13 - 16
CC-PAIX02	CC-TAID01	CC-TAID11	◆			◆	◆		9"	1 - 16
CC-PAIN01	CC-TAIN01	CC-TAIN11	◆						6"	None
CC-PUIO31	CC-TUIO31	CC-TUIO41	◆	◆	◆				9"	None

### AO Function Matrix

Series-C IO			Function							
IOM	NR IOTA	Red IOTA	AO 4-20ma	HART Conf / Status	HART on CTL	HART Fast CTL	Output Validation	Open Wire Det.	NR IOTA Size	Int IS
CC-PAOH01	CC-TAOX01	CC-TAOX11	◆	◆	◆		◆	◆	6"	
CC-PAOH01	CC-GAOX21	CC-GAOX11	◆	◆	◆		◆	◆	9"	◆
CC-PAOH51	CC-TAOX51	CC-TAOX61	◆	◆				◆	6"	
CC-PAOX01	CC-TAOX01	CC-TAOX11	◆				◆	◆	6"	
CC-PAOX01	CC-GAOX21	CC-GAOX11	◆				◆	◆	9"	◆
CC-PAON01	CC-TAON01	CC-TAON11	◆				◆	◆	6"	
CC-PUIO31	CC-TUIO31	CC-TUIO41	◆	◆	◆	◆	◆	◆	9"	

**DI Function Matrix**

			Function						
IOM	NR IOTA	Red IOTA	24V	HV	SOE	Fast Scan	Open Wire	Isolation	IS
CC-PDIL01	CC-TDIL01	CC-TDIL11	◆			◆	◆	1500V	
CC-PDIL51	CC-TDIL51	CC-TDIL61	◆			◆		1000V	
CC-PDIS01	CC-TDIL01	CC-TDIL11	◆		◆	◆	◆	1500V	
CC-PDIL01	CC-GDIL21	CC-GDIL11	◆			◆	◆	Inf.	◆
CC-PDIH01	CC-TDI110	CC-TDI120		110V			◆	1500V	
CC-PDIH01	CC-TDI220	CC-TDI230		220V			◆	1500V	
CC-PUIO31	CC-TUIO31	CC-TUIO41	◆		◆	◆	◆	None	

**DO Function Matrix**

				Function					
IOM	NR IOTA	Red IOTA	Support IOTA	Open Wire Det	Short Prot.	Output Type	Out. I	Isolation	IS
CC-PDOB01	CC-TDOB01	CC-TDOB11		◆	◆	Source	0.5A	1500V	
CC-PDOB01	CC-TDOR01	CC-TDOR11	CC-SDOR01	◆		Dry Contact	3A	Inf.	
CC-PDOB01	—	CC-GDOL11	CC-SDXX01	◆	◆	Source	48ma	Inf.	◆
CC-PDOD51	CC-TDOD51	CC-TDOD61		◆	◆	Sink	0.1A	1000V	
CC-PUIO31	CC-TUIO31	CC-TUIO41	◆	◆	◆	Source	0.5A	None	