

PACSystems™ RSTi-EP

ANALOG INPUT MODULES

(EP-3124, EP-3164, EP-3264, EP-32A4, EP-3368,
EP-3468, EP-3664, EP-3704, EP-3804, EP-3914 & EP-1813)



Warnings and Caution Notes as Used in this Publication

WARNING

Warning notices are used in this publication to emphasize that hazardous voltages, currents, temperatures, or other conditions that could cause personal injury exist in this equipment or may be associated with its use.

In situations where inattention could cause either personal injury or damage to equipment, a Warning notice is used.

⚠ CAUTION

Caution notices are used where equipment might be damaged if care is not taken.

Note: Notes merely call attention to information that is especially significant to understanding and operating the equipment.

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Introduction

Emerson provides a range of RSTi-EP analog input modules with 4 or 8 inputs and up to 16-bit resolution. The measurement range is defined by parameterization with an accuracy of 0.1% FSR with the exception of EP3124, which 0.25% FSR. The parameters for the measurement range can be individually set for each channel.

The EP-32A4 modules can detect up to 4 analog inputs with resolution of 16-bit per channel and inputs are isolated from each other and from the system supply.

The EP-3704 module can detect up to 4 analog resistance temperature detectors. The resolution is 16 bit per channel. The EP-3804 module can detect up to 4 analog thermocouple sensors or voltages between ± 15 mV and ± 2 V.

The EP-3914 is intended to use for the purpose of position detection (absolute encoder with resistance detection) using resistance between 300 ohm and 50k ohm can be connected to each of the 4 channels. Resolution is 16 bit per channel 0.25% FSR.

The EP-1813 module is a Power measurement module included in the list of Analog Input modules. This module can measure and process all relevant measurands (RMS Voltage, RMS Current, Active power, etc.) of one or three phase current consumers (up to 500 V AC phase-to-phase voltage).

The wiring connectors on each module are color coded for ease of wiring. Refer to the section, Field wiring for additional information. Each module features a type plate, which includes identification information, the key technical specifications, and a block diagram. In addition, a QR code allows for direct online access to the associated documentation. The software for reading the QR code must support inverted QR codes.

Markers are available as accessories for labelling equipment. Each I/O module can be labelled using the markers to ensure clear identification when replacing individual modules or electronic units.

A green Module Status LED indicates there is communication on the system bus. In addition, each channel has its own status LED. The RSTi-EP station is usually installed on a horizontally positioned DIN rail. Installation on vertically positioned DIN rails is also possible.

Modules should be allowed to de-energize for a minimum 10 seconds after power down, prior to starting any maintenance activity.

Refer to the RSTi-EP Slice I/O Module User Manual (GFK-2958) for additional information.

Refer to the RSTi-EP Power Supply Reference Guide, a software utility available on PAC Machine Edition V9.00, for detailed power-feed requirements.

Module Features

- Spring style technology for ease of wiring
- DIN rail mounted
- Double-click installation for positive indication of correct installation
- Up to 8 analog inputs
- Supports indirect firmware update through network adapter using Web server
- Supports hot insertion and extraction

Ordering Information

Module	Description
EP-3124	Analog Input, 4 Channels Voltage/Current 12 Bits 2, 3, or 4 Wire
EP-3164	Analog Input, 4 Channels Voltage/Current 16 Bits 2, 3, or 4 Wire
EP-3264	Analog Input, 4 Channels Voltage/Current 16 Bits with Diagnostics 2, 3, or 4 Wire
EP-32A4	Analog Input, 4 channels Isolated Voltage/Current 16 Bits with Diagnostics 2 Wire
EP-3368	Analog Input, 8 Channels Current 16 Bits 2, 3, or 4 Wire
EP-3468	Analog Input, 8 Channels Current 16 Bits 2, 3, or 4 Wire, Channel Diagnostic
EP-3664	Analog Input, 4 Channels Voltage/Current 16 Bits with Diagnostics 2, 3, or 4 Wire, Differential Input
EP-3704	Analog Input, 4 Channels RTD 16 Bits with Diagnostics 2, 3, or 4 Wire
EP-3804	Analog Input, 4 Channels TC 16 Bits with Diagnostics 2, 3, or 4 Wire
EP-3914	Analog Input (Potentiometer), 4 Channels, 16 bits with Diagnostics, 3 wire or 3 wire connection +FE
EP-1813	Power Measurement Module, 8 Channels

Specifications

Specifications	EP-3124	EP-3164	EP-3264	EP-32A4	EP-3368	EP-3468
System Data						
Data	Process, parameter and diagnostic data depend on the network adapter used.					
Interface	RSTi-EP system bus					
System bus transfer rate	48 Mbps					
Potential isolation	Test voltage: max. 28.8 V within one channel, 500 V DC field/system Pollution severity level: 2 Overvoltage category: II					
Common mode voltage	Against: 0V - ±50V Channel-Channel: ±3V					
Inputs						
Number	4	4	4	4	8	8
Input values	1. Voltage (0 to 5 V, ±5 V, 0 to 10 V, ±10 V, 1 to 5 V, 2 to 10 V) 2. Current (0 to 20 mA, 4 to 20 mA)				Current input (0 to 20 mA, 4 to 20 mA)	
Threshold Values*	Voltage	Underrange	Overrange			
	0 to 5V	x	5.25V			
	-5V to +5V	-5.25V	+5.25V			
	0 to 10V	x	+10.5V			
	-10V to +10V	-10.5V	+10.5V			
	1V to 5V	+0.9V	+5.25V			
	2V to 10V	+1.8V	+10.5V			

Specifications	EP-3124	EP-3164	EP-3264	EP-32A4	EP-3368	EP-3468
	Current	Underrange	Overrange			
	0 to 20mA	x	21.67mA			
	4 to 20mA	3.6mA	21.67mA			
Resolution	12 bits	16 bits				
Frequency suppression	Options: disabled (0) / 50 Hz (1) / 60 Hz (2) / Average over 16 values (3) Default: disabled					
Accuracy	0.25 % max. at 25 °C (77 °F) 50 ppm/K max. Temperature coefficient max. –10 mV/A additional inaccuracy in the voltage mode due to sensor power supply current	0.1 % max. at 25 °C (77 °F) 50 ppm/K max. Temperature coefficient max. –10 mV/A additional inaccuracy in the voltage mode due to sensor power supply current		0.1 % max. at 25 °C (77 °F) 50 ppm/K max. Temperature coefficient	0.1 % max. at 25 °C (77 °F) 50 ppm/K max. Temperature coefficient	
Sensor supply	max. 2 A per plug, total max. 8 A	max. 2 A per plug, total max. 8 A	max. 0,5 A per plug	No	max. 125 mA per channel; channel 0 to 3 and 4 to 7 respectively are fused in combination	
Sensor connection	2-wire, 3-wire, 3-wire + FE	2-wire, 3-wire, 3-wire + FE	2-wire, 3-wire, 3-wire + FE	2-wire	2-wire, 3-wire, 3-wire + FE	
Conversion time	1 ms	1 ms	1 ms	1 ms, all 4 channels per cycle sampled asynchronously	1 ms	
Internal resistance	Voltage mode: 100 kΩ; Current mode: 41.2 Ω			Voltage mode: 200 kΩ; Current mode: 70 Ω	approx. 45 Ω	
Reverse polarity protection	Yes					
Short-circuit-proof	Yes	Yes	Yes	--	Yes	Yes
Response time of the protective circuit	< 0.1 s with short-circuit to +24 V	< 50 ms	< 50 ms	--	< 0.1 s with short-circuit to +24 V	
Reset time	--	--	--	--	Temperature-dependent (< 30 s at 20°C)	

Specifications	EP-3124	EP-3164	EP-3264	EP-32A4	EP-3368	EP-3468
Module diagnostics	Yes					
Individual channel diagnostics	No	No	Yes	Yes	No	Yes
Supply						
Supply voltage	20.4V – 28.8V via system bus	20.4V – 28.8V via system bus	20.4V – 28.8V via system bus	20.4V – 28.8V via system bus (acc. IEC 61131) 18.0 - 31.2 Via system bus (acc. DNV GL)	20.4V – 28.8V via system bus	20.4V – 28.8V via system bus
Current consumption from system current path ISYS	8 mA					
Current consumption from input current path IIN	25 mA + sensor supply current			31 mA+	20 mA + load	
General data						
Operating temperature	-20°C to +60°C (-4 °F to +140 °F)					
Storage temperature	-40°C to +85°C (-40 °F to +185 °F)					
Air humidity (operation/transport)	5% to 95%, noncondensing as per IEC 61131-2					
Width	11.5 mm (0.45 in)					
Depth	76 mm (2.99 in)					
Height	120 mm (4.72 in)					
Weight	87 g (3.07 oz)	89 g (3.14 oz)	89 g (3.14 oz)	89 g (3.14 oz)	90 g (3.17 oz)	90 g (3.17 oz)
*The Threshold ranges are applicable with FW version “01.00.36” onwards						
Specifications	EP-3664					
System Data						
Data	Process, parameter and diagnostic data depend on the network adapter used.					
Interface	RSTi-EP system bus					
System bus transfer rate	48 Mbps					
Potential isolation	Test voltage: max. 28.8 V within one channel, 500 V DC field/system Pollution severity level: 2 Overvoltage category: II					
Common mode voltage	Against: -30 V ...+30 V					
Inputs						

Specifications	EP-3124	EP-3164	EP-3264	EP-32A4	EP-3368	EP-3468
Number	4					
Input values	1. Voltage (0 to 5 V, ±5 V, 0 to 10 V, ±10 V, 1 to 5 V, 2 to 10 V) 2. Current (0 to 20 mA, 4 to 20 mA)					
Threshold Values*	Voltage	Underrange	Overrange			
	0 to 5V	x	5.25V			
	-5V to +5V	-5.25V	+5.25V			
	0 to 10V	x	+10.5V			
	-10V to +10V	-10.5V	+10.5V			
	1V to 5V	+0.9V	+5.25V			
	2V to 10V	+1.8V	+10.5V			
	Current	Underrange	Overrange			
	0 to20mA	x	21.67mA			
	4 to 20mA	3.6mA	21.67mA			
Resolution	16 bits					
Frequency suppression	Options: disabled (0) / 50 Hz (1) / 60 Hz (2) / Average over 16 values (3) Default: disabled					
Accuracy	0.1 % max. at 25 °C (77 °F) 50 ppm/K max. Temperature coefficient					
Sensor supply	max. 0,5 A per plug, no galvanic isolation					
Sensor connection	2-wire, 3-wire, 4-wire					
Conversion time	1 ms					
Internal resistance	Voltage mode: 89 kΩ; Current mode: 16 Ω					
Reverse polarity protection	Yes					

Specifications	EP-3664
Short-circuit-proof	Yes
Module diagnostics	Yes
Individual channel diagnostics	Yes
Supply	
Supply voltage	20.4V – 28.8V via system bus
Current consumption from system current path ISYS	8 mA
Current consumption from input current path IIN	31 mA + Load
General data	
Operating temperature	-20°C to +60°C (-4 °F to +140 °F)
Storage temperature	-40°C to +85°C (-40 °F to +185 °F)
Air humidity (operation/transport)	5% to 95%, noncondensing as per IEC 61131-2
Width	11.5 mm (0.45 in)
Depth	76 mm (2.99 in)
Height	120 mm (4.72 in)
Weight	91 g (3.21 oz)
*The Threshold ranges are applicable with FW version "01.00.36" onwards	

Specifications	EP-3704	EP-3804†	EP-3914
System Data			
Data	Process, parameter and diagnostic data depend on the network adapter used.		
Interface	RSTi-EP system bus		
System bus transfer rate	48 Mbps		
Potential isolation	Test voltage: max. 28.8 V within one channel, 500 V DC field/system Pollution severity level: 2 Overvoltage category: II		----
Inputs			
Number	4		
Input value	--	--	Ratiometric potentiometer analysis with own supply
Sensor types	Pt100, Pt200, Pt500, Pt1000, Ni100, Ni120, Ni 200, Ni500, Ni1000, Cu10, and resistors with 40 Ω, 80 Ω, 150 Ω, 300 Ω, 500 Ω, 1 kΩ, 2 kΩ, 4 kΩ	J, K, T, B, N, E, R, S, L, U, C, mV	----
Resolution	16 bits		
Accuracy	max. 0.2 % FSR / 0.3 % FSR for Ni sensors / 0.6 % FSR for Cu10	Conversion time ≥ 80 ms: 10 μV + 0.1 % of voltage measurement range (without cold-junction measurement error)	< 0.25% FSR at 25 °C
Temperature coefficient	±50 ppm/K max.	50 ppm	50 ppm/K
Sensor connection	2-wire, 3-wire, 4-wire	2-wire	3 wire, 3 wire +FE
Sensor current	Depending on the sensor type 0,75 mA (Pt100, Ni100, Ni120, Cu10, 40 Ω, 80 Ω, 150 Ω, 300 Ω) or 0,25 mA (Pt200, Pt500, Pt1000, Ni200, Ni500, Ni1000, 500 Ω, 1 kΩ, 2 kΩ, 4 kΩ)	0,25 mA for the cold-junction compensation with a Pt1000	----
Cold junction compensation	--	Internal and external (Pt1000), int. accuracy ≤ 3 K	-----
Max. wire resistance / measurement range	2.5 Ω / 40 Ω, 5 Ω / 80 Ω, 10 Ω / 150 Ω and Cu10, 25 Ω in all other measuring ranges	--	300 Ω ... 50 kΩ
Temperature range	-200 to +850°C (-328 to 1562 °F)		
Conversion time	36 to 240 ms, adjustable		Typ. 500 μs
Internal resistance	--	> 1 MΩ	Typ. 500 kΩ against the wiper connection
Common mode input voltage range	Channel to channel: max. ±2 V	--	
	Channel to voltage supply: max. ±50 V		

Supply voltage for potentiometer			+10 V DC ±10%
Current of the supply voltage output			max. 0.05 A per channel, total 0.2 A
Line break detection	-	-	yes
Short circuit proof	-	-	yes
Reverse polarity protection	Yes		
Module diagnostics	Yes		Yes
Individual channel diagnostics	Yes		Yes (Line break detection slider (AI), overload and short circuit detection sensor supply)
Supply			
Supply voltage	20.4V – 28.8V via system bus		
Current consumption from system current path I _{sys}	8 mA		
Current consumption from input current path I _{IN}	20 mA		26 mA
General data			
Operating temperature	-20°C to +60°C (-4 °F to +140 °F)		
Storage temperature	-40°C to +85°C (-40 °F to +185 °F)		
Air humidity (Operation/transprt)	5% to 95%, noncondensing as per IEC 61131-2		
Width	11.5 mm (0.45 in)		
Depth	76 mm (2.99 in)		
Height	120 mm (4.72 in)		
Weight	91 g (3.21 oz)	86 g (3.03 oz)	87 g (3.069 oz)
† Warm up time for the module to get the required accuracy is 30 minutes			

Specifications	EP-1813
System Data	
Data	Process, parameter and diagnostic data depend on the network adapter used.
Interface	RSTi-EP system bus
System bus transfer rate	48 Mbps
Connections	
Number	3 Neutral conductors
	3 Phase conductors (voltage measurement)
	3 Phase conductors (current measurement 5 A)
	3 Phase conductors (current measurement 1 A)
Nominal input voltage ¹⁾	0 ... 300 V _{eff} AC (L–N); one or three phase measurement
Rated voltage	250 V AC (L–N) +20%
Nominal input current	max. 1 A at measuring connection L' 1 A (current measurement in the phase conductor)
	max. 5 A at measuring connection L' 5 A (current measurement in the phase conductor)
Sampling rate	3300 Samples/s
Resolution (per channel)	16 Bit (internally 24 Bit)
Frequency range	45 ... 65 Hz
Limiting frequency of the input filter ²⁾	typ. 4,5 kHz
Harmonics analysis	Visualization for the first 31 harmonics; 1% accuracy guaranteed for the first 10 harmonics (Blackman-Harris Window)
Isolation	3,0 kV eff (1 min)
Rated impulse voltage	4 kV
Overvoltage category	CAT II (IEC 61010-1)
Measuring procedure	True RMS in conjunction with high resolution Delta Sigma converter
Measuring accuracy ³⁾	0,5% for measured values relative to the upper limit of effective range (U/I) 1% for calculated values
Temperature coefficient	U: 150 ppm/K I: 150 ppm/K
Conducted disturbances	EN 61000-4-6/IEC 61000-4-6 < ±10.0%
Input impedance	2,4 MΩ per channel
Measuring shunt	4 mΩ (at 5 A), 44 mΩ (at 1 A)
Supply	
Supply voltage	24 V DC +20% /-15%
Current consumption from system current path I _{sys}	8 mA
Current consumption from input current path I _{in}	12 mA
General data	
Weight (operational status)	87 g
ATEX conform	No
1) Nominal input voltage with corner-grounded systems: 0 ... 200 V _{eff} AC	
2) Typical frequency curve for current and voltage measurement	

3) Current and voltage values within each phase are measured and are available with 0.5% accuracy. All other results are based on the noted measuring values and are available with 1% accuracy.

Current Demand for Analog Input Modules

Product	ISYS	IIN	IOUT	IS	IL
EP-3124	8 mA	25 mA	--	x	--
EP-3164	8 mA	25 mA	--	x	--
EP-3264	8 mA	25 mA	--	x	--
EP-32A4	8 mA	31 mA	--	x	--
EP-3368	8 mA	20 mA	--	--	--
EP-3468	8 mA	20 mA	--	--	--
EP-3664	8 mA	31 mA + Load	--	--	--
EP-3704	8 mA	20 mA	--	--	--
EP-3914	8 mA	26 mA	--	--	--
EP-3804	8 mA	20 mA	--	--	--
EP-1813	8 mA	≤ 40 mA	--	--	
<p>ISYS Current consumption from the system current path</p> <p>IIN Power consumption from input current path</p> <p>IOUT Power consumption from output current path</p> <p>IS Current demand of the connected sensors</p> <p>IL Current demand of the connected actuators</p> <p>x Must be included when calculating the power supply</p>					

LED Status

LED	EP-3124	EP-3164	EP-3264	EP-32A4	EP-3704	EP-3804
Module Status	Green: Communication over the system bus Red: Module System Fault or Diagnostic Fault	Green: Communication over the system bus Red: Module System Fault or Diagnostic Fault	Green: Communication over the system bus Red: Module System Fault or Diagnostic Fault	Green: Communication over the system bus Red: Module System Fault or Diagnostic Fault	Green: Communication over the system bus Red: Module System Fault or Diagnostic Fault	Green: Communication over the system bus Red: Module System Fault or Diagnostic Fault
1.1	Red: channel error	Red: channel error	Red: channel error		Red: channel error	Red: channel error
1.2	--	--	--		--	--
1.3	--	--	Red: +24 V short circuit or line break (with current < 1 mA)		--	--
1.4	--	--	--	Red: channel error	--	--
2.1	Red: channel error	Red: channel error	Red: channel error		Red: channel error	Red: channel error
2.2	--	--	--		--	--
2.3	--	--	Red: +24 V short circuit or line break (with current < 1 mA)		--	--
2.4	--	--	--	Red: channel error	--	--
3.1	Red: channel error	Red: channel error	Red: channel error		Red: channel error	Red: channel error
3.2	--	--	--		--	--
3.3	--	--	Red: +24 V short circuit or line break (with current < 1 mA)		--	--
3.4	--	--	--	Red: channel error	--	--
4.1	Red: channel error	Red: channel error	Red: channel error		Red: channel error	Red: channel error
4.2	--	--	--		--	--
4.3	--	--	Red: +24 V short circuit or line break (with current < 1 mA)		--	--
4.4	--	--	--	Red: channel error	--	--

LED	EP-3368	EP-3468
Module Status	Green: Communication over the system bus Red: Module System Fault or Diagnostic Fault	Green: Communication over the system bus Red: Module System Fault or Diagnostic Fault
1.1	Red: channel error	Red: channel error
2.1	Red: channel error	Red: channel error
3.1	Red: channel error	Red: channel error
4.1	Red: channel error	Red: channel error
5.1	Red: channel error	Red: channel error
6.1	Red: channel error	Red: channel error
7.1	Red: channel error	Red: channel error
8.1	Red: channel error	Red: channel error
LED	EP-3664	
Module Status	Green: Communication over the system bus Red: Module System Fault or Diagnostic Fault (Collective error diagnostics)	
1.1	Red: Line break or range exceeded input 0	
1.2	--	
1.3	Red: Line break or short circuit in sensor supply	
1.4	--	
2.1	Red: Line break or range exceeded input 1	
2.2	--	
2.3	Red: Line break or short circuit in sensor supply	
2.4	--	
3.1	Red: Line break or range exceeded input 2	
3.2	--	
3.3	Red: Line break or short circuit in sensor supply	
3.4	--	
4.1	Red: Line break or range exceeded input 3	
4.2	--	
4.3	Red: Line break or short circuit in sensor supply	
4.4	--	

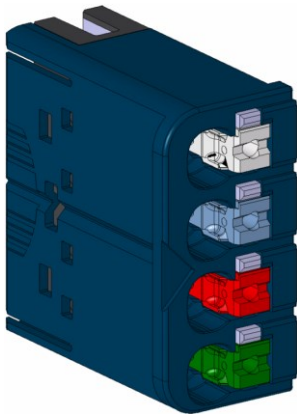
LED	EP-3914
Module Status	Green: Communication over the system bus Red: Error
1.1	Red: Line break input 0

LED	EP-3914
1.2	--
1.3	--
1.4	--
2.1	Red: Line break input 1
2.2	--
2.3	--
2.4	--
3.1	Red: Line break input 2
3.2	--
3.3	--
3.4	--
4.1	Red: Line break input 3
4.2	--
4.3	--
4.4	--

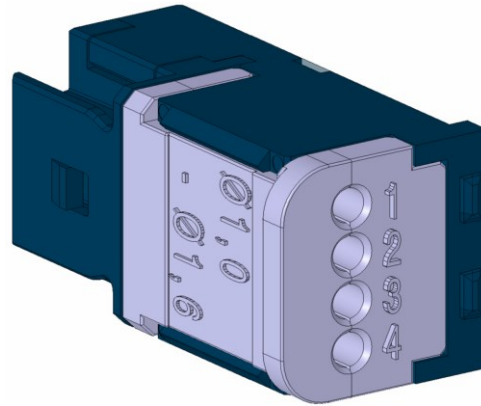
LED	EP-1813
Module Status	Green: Communication over the system bus Red: Module System Fault or Diagnostic Fault (Collective error diagnostics)
1.1	--
1.2	--
1.3	--
1.4	--
2.1	--
2.2	Yellow: Voltage >70 V at L1 Yellow flashing: Running light with 3.2 and 4.2 indicates the phase sequence
2.3	Red: (parameterized) current alarm limit ¹ exceeded
2.4	Red: (parameterized) voltage alarm limit ² exceeded
3.1	
3.2	Yellow: Voltage >70 V at L2 Yellow flashing: Running light with 2.2 and 4.2 indicates the phase sequence
3.3	Red: (parameterized) current alarm limit ¹ exceeded
3.4	Red: (parameterized) voltage alarm limit ² exceeded
4.1	Red: Line break or range exceeded input 3
4.2	Yellow: Voltage >70 V at L3 Yellow flashing: Running light with 2.2 and 3.2 indicates the phase sequence
4.3	Red: (parameterized) current alarm limit ¹ exceeded
4.4	Red: (parameterized) voltage alarm limit ² exceeded
	1) Max. nominal input current 1 A bzw. 5 A 2) Max. nominal input voltage 300 V

Field Wiring

The connection frame can take up to four connectors, and four wires can be connected to each connector. The *Spring style* technology allows for either finely stranded or solid wire with crimped wire-end ferrules or ultrasonically welded wires, each with a maximum cross-section of 1.5 mm² (16 gauge), to be inserted easily through the opening in the clamping terminal without having to use tools. To insert fine stranded wires without wire-end ferrules, the pusher must be pressed in with a screwdriver and released to latch the wire.



Connector with Four Wire Connectors
special tool)



Connector for HD Module (requires

Notes: The four wire connector image is for illustration of color coding only.

Connector Specifications:

- Conductor cross-section 0.14 to 1.5 mm² (26 – 16 gauge)
- Maximum ampacity: 10 A
- 4-pole

The pushers are color-coded for the following connections:

- White Signal
- Blue GND
- Red 24 V DC
- Green Functional earth (FE)

The modules do not have a fused sensor/activator power supply. All cables to the connected sensors/actuators must be fused corresponding to their conductor cross-sections (as per Standard DIN EN 60204-1, section 12).

Refer to the RSTi-EP Slice I/O User Manual (GFK-2958) for additional information.

For technical assistance, refer to the links located at the end of this document.

Connection Diagrams

Figure 1: EP-3164 and EP-3264

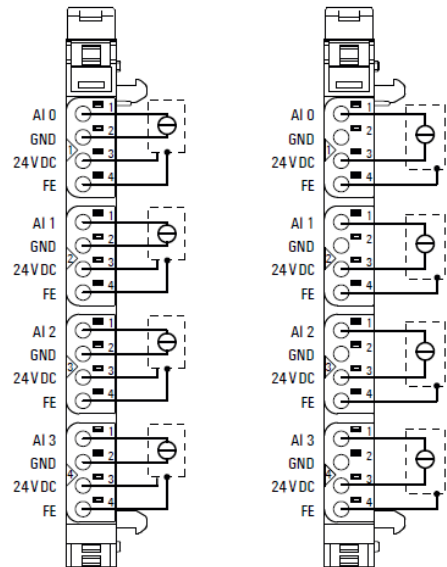


Figure 2: EP-32A4

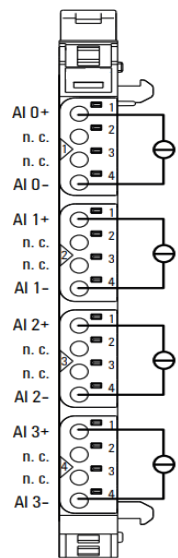


Figure 3: EP-3124

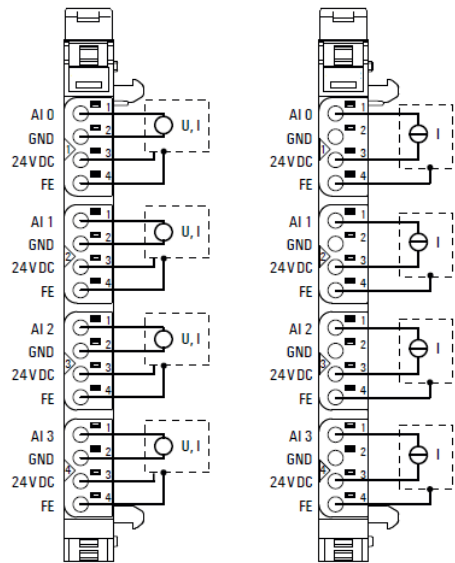


Figure 4: EP-3368 and EP-3468

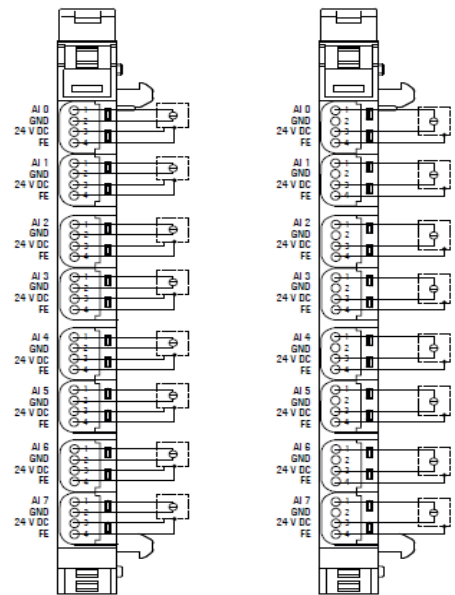


Figure 5: EP-3664

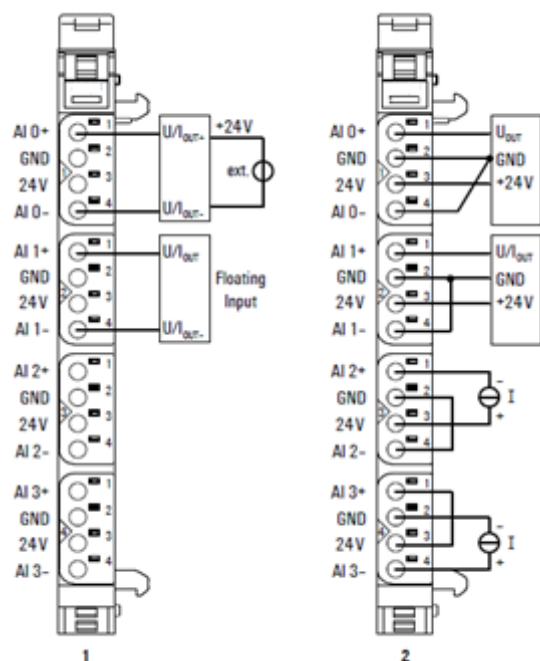
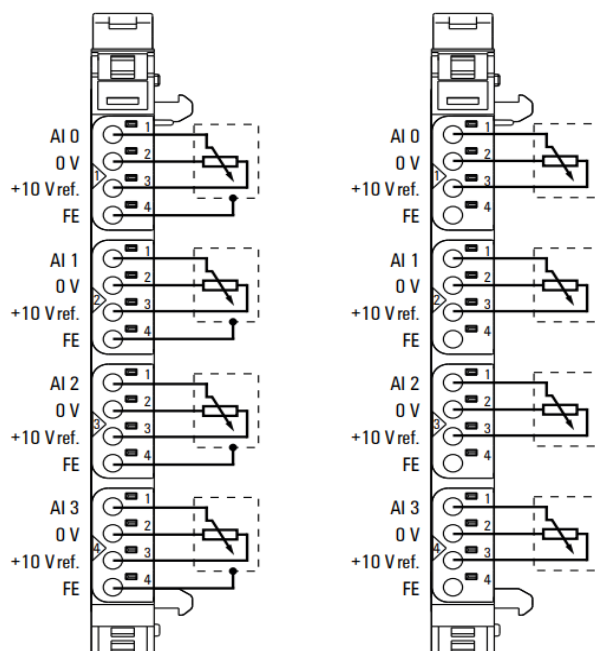


Figure 6: EP-3914



Note: 1= Standard, 2= Alternative option.

Figure 7: EP-3704

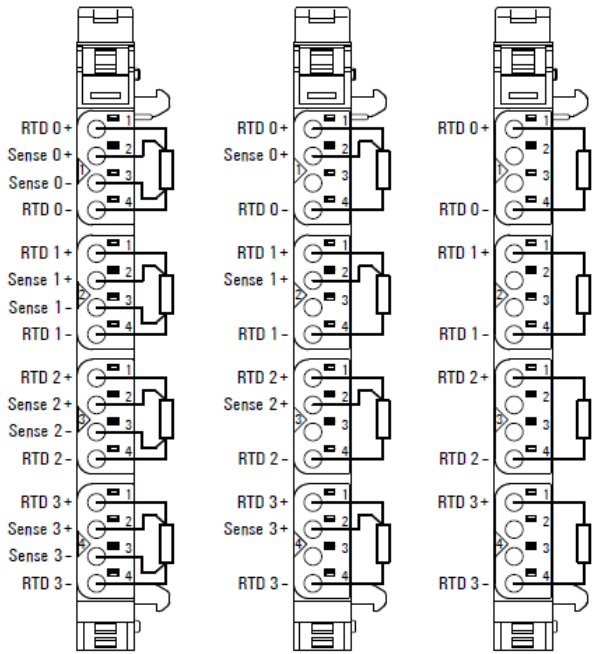
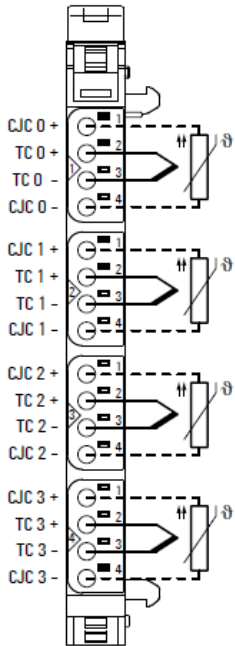
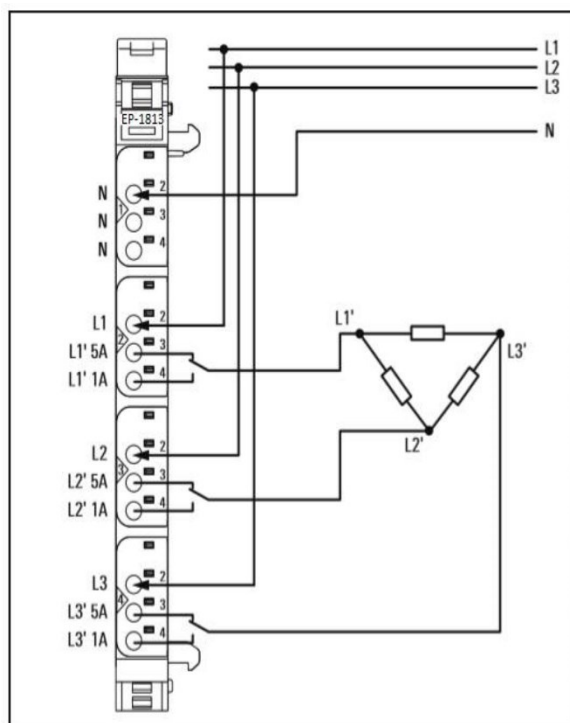


Figure 8: EP-3804

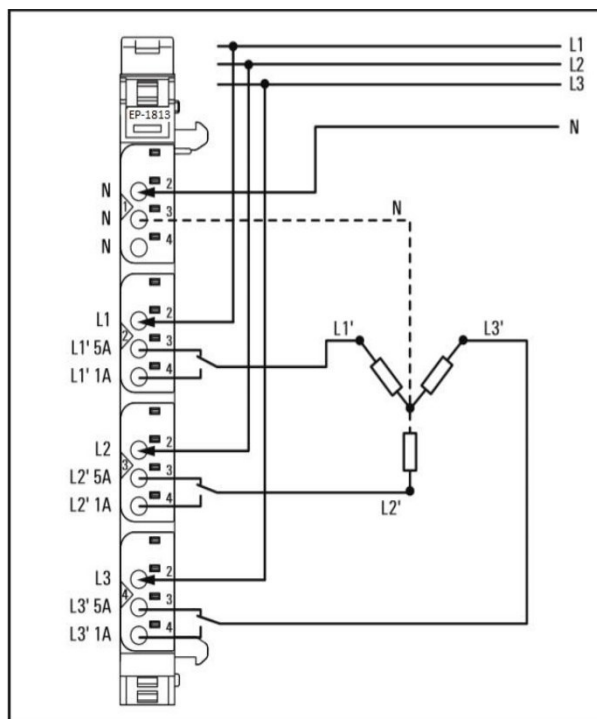


Notes: For EP-3804, the external CJC shown with a dotted line is optional. An internal CJC can also be used.

Figure 9: EP-1813 Delta connection (Example)



EP-1813 Star connection (Example)



Connection Block Diagrams

Figure 10: EP-3164

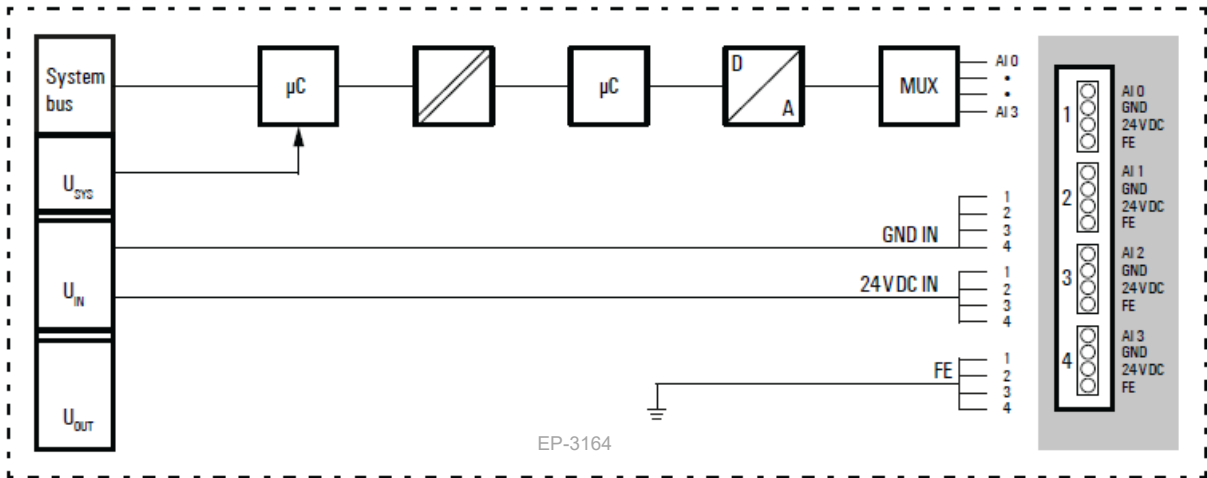


Figure 11: EP-3264

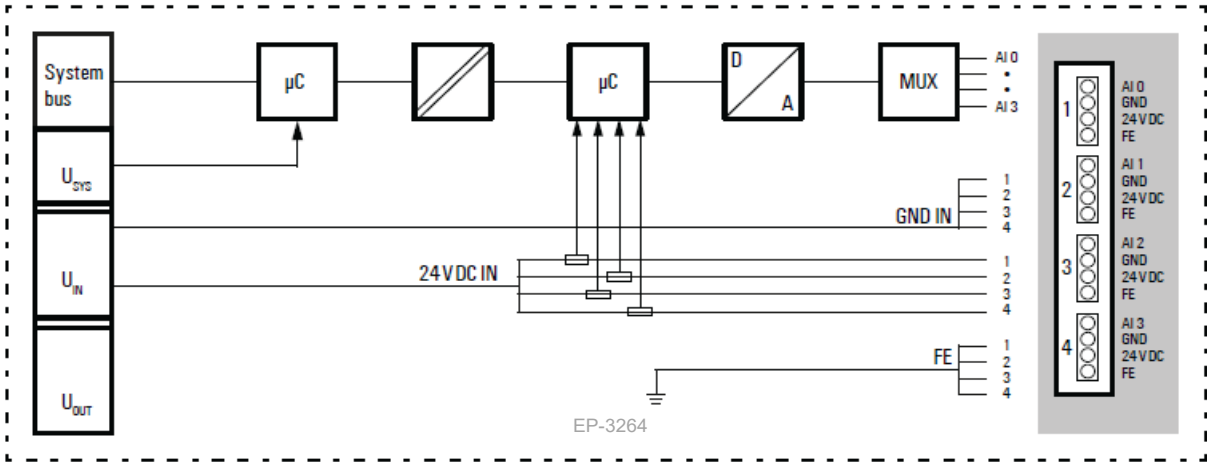


Figure 12: EP-32A4

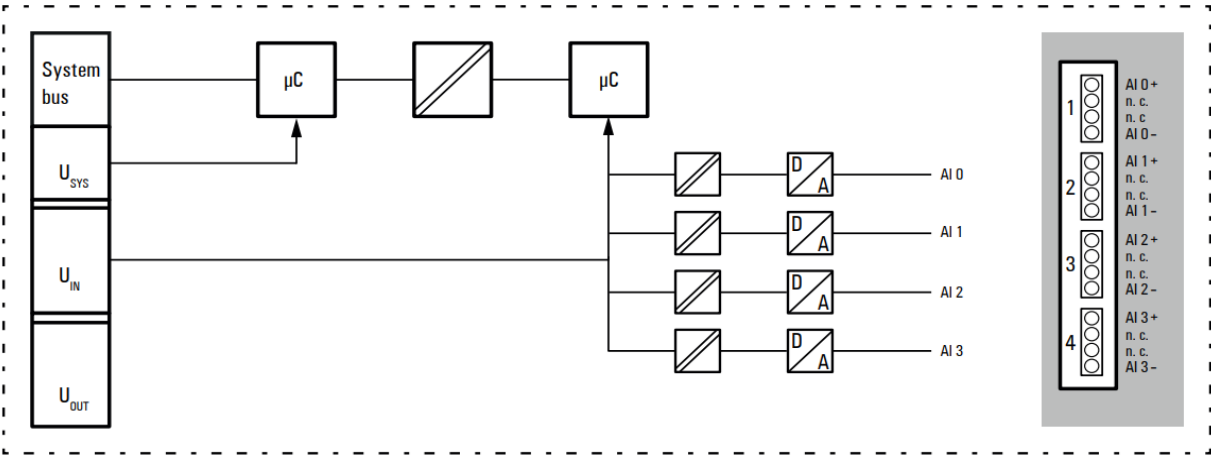


Figure 13: EP-3124

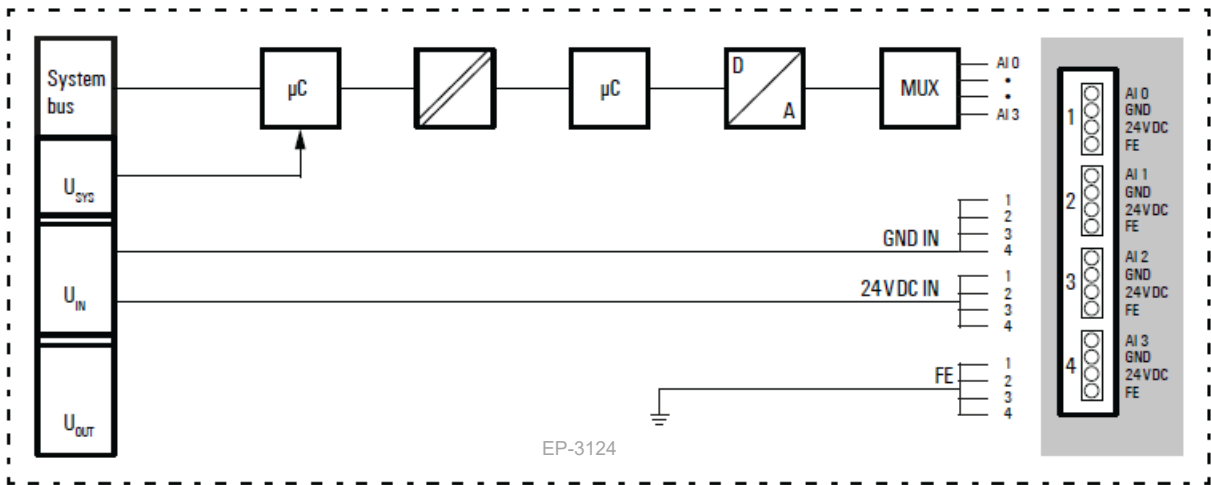


Figure 14: EP-3368

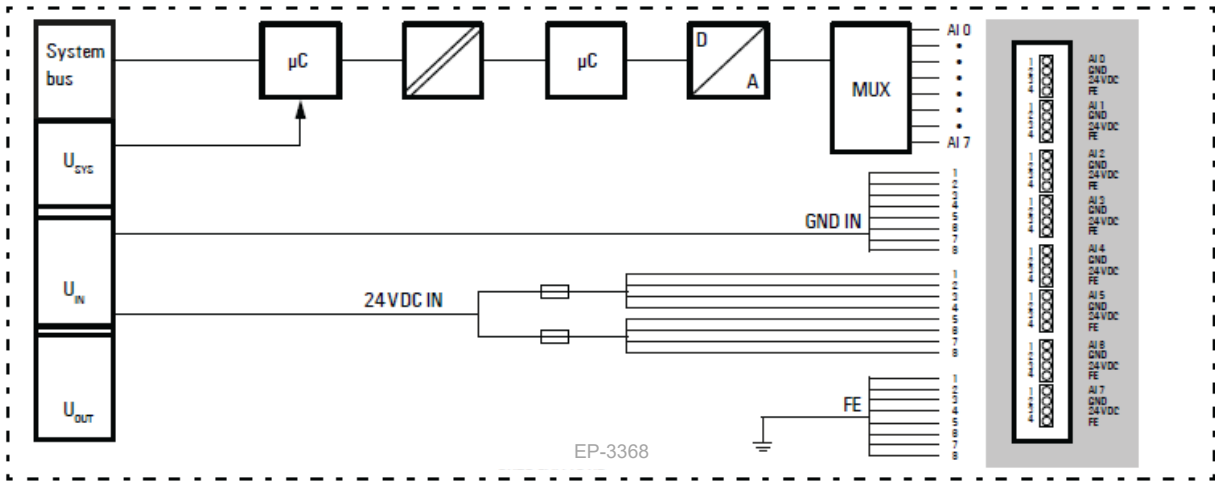


Figure 15: EP-3468

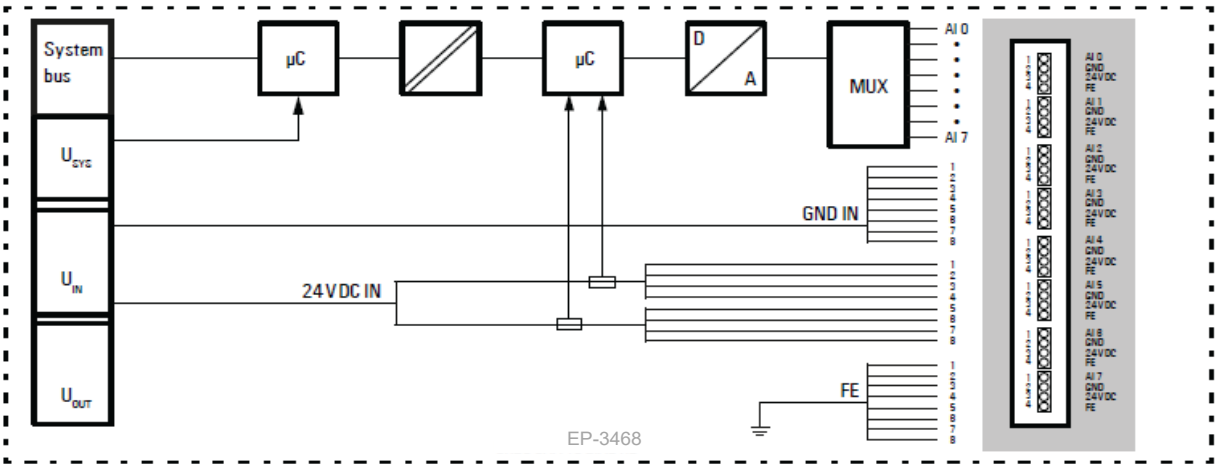


Figure 16: EP-3664

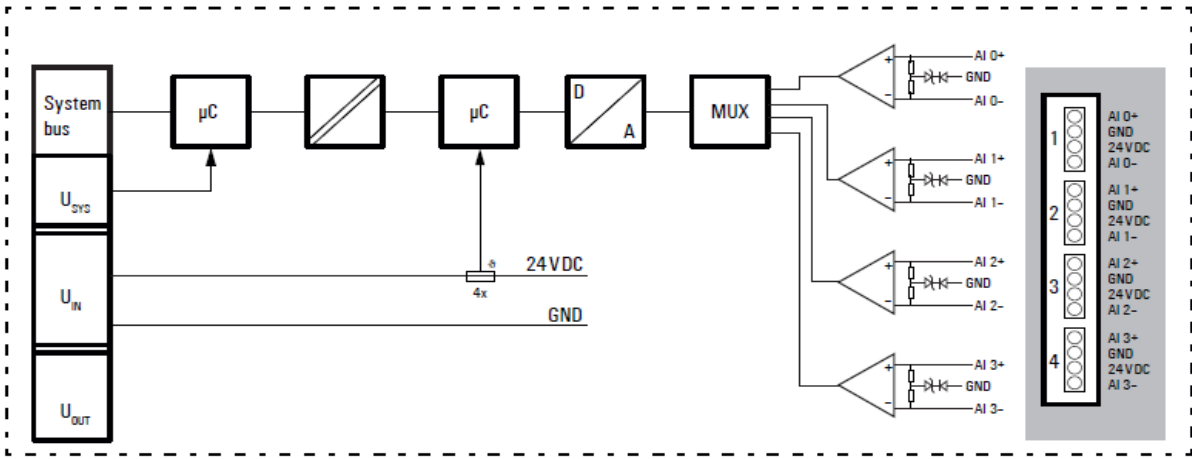


Figure 17: EP-3704

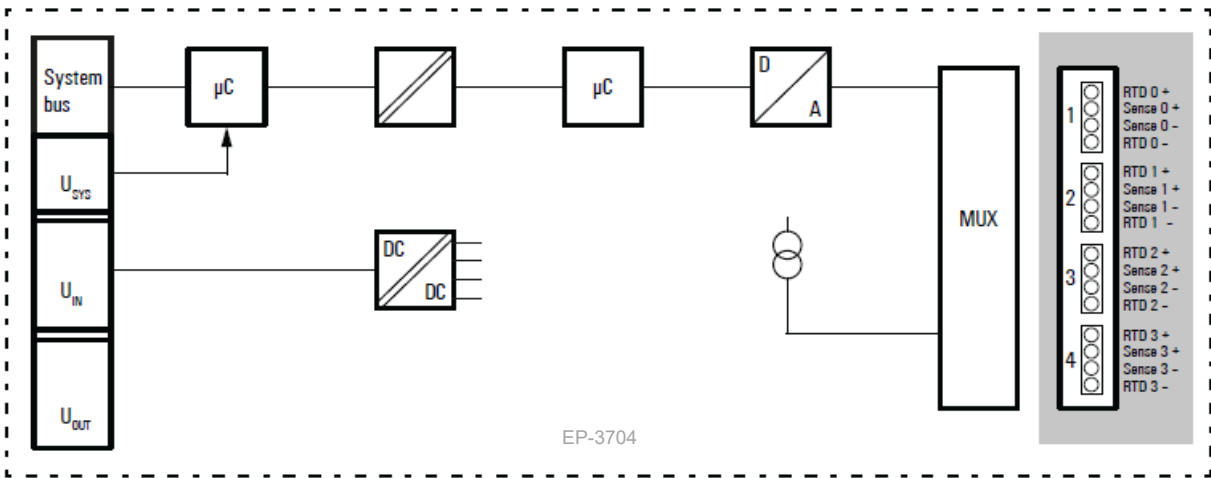


Figure 18: EP-3804

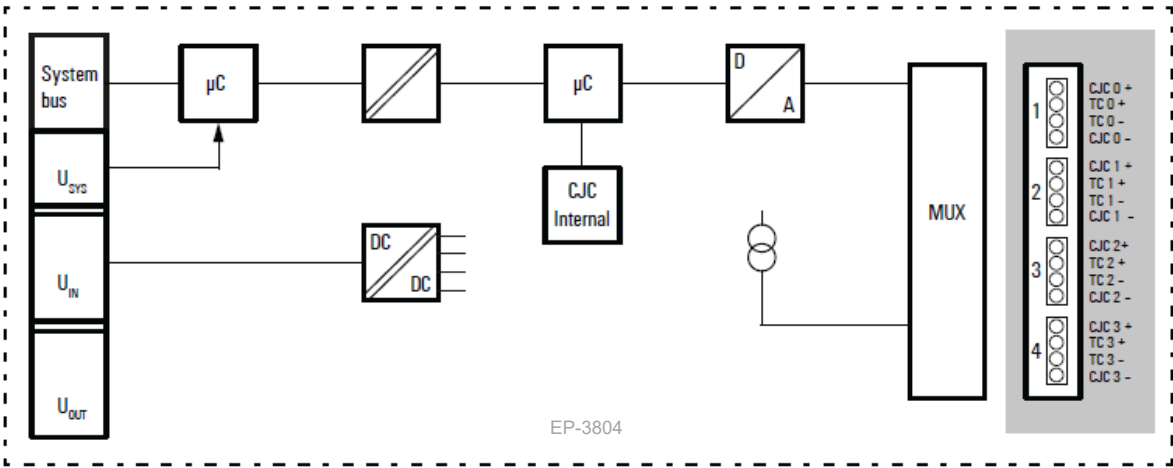


Figure 19: EP-3914

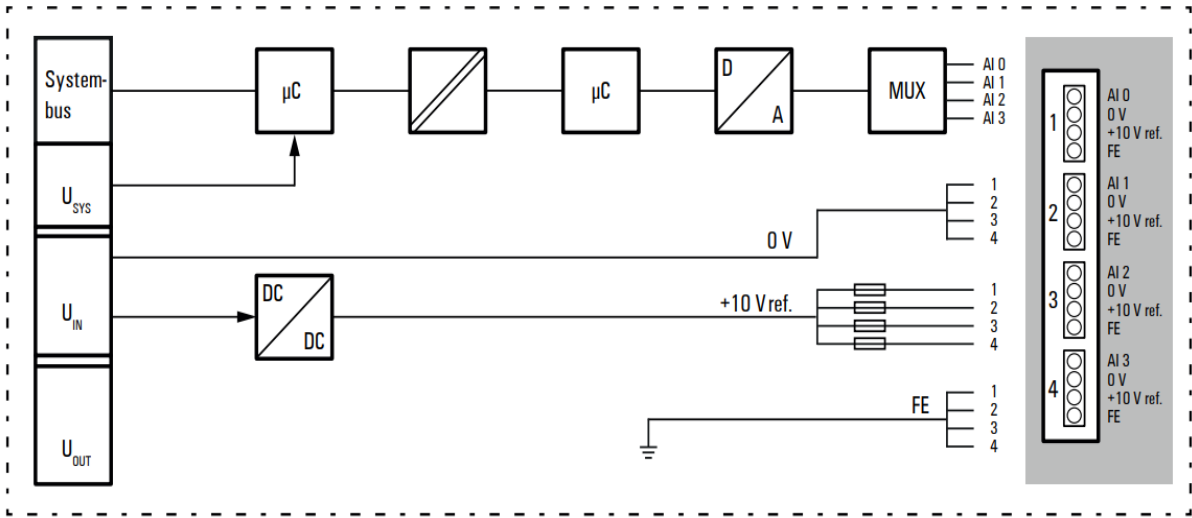
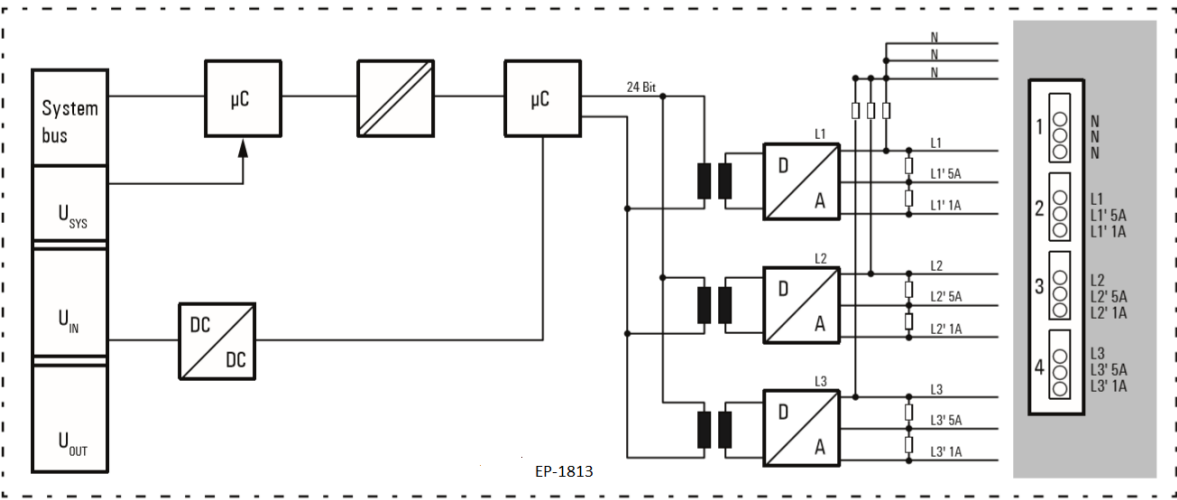


Figure 20: EP-1813



Installation in Hazardous Areas

⚠ WARNING

- EQUIPMENT LABELED WITH REFERENCE TO CLASS I, GROUPS A, B, C & D, DIV. 2 HAZARDOUS AREAS IS SUITABLE FOR USE IN CLASS I, DIVISION 2, GROUPS A, B, C, D OR NON-HAZARDOUS AREAS ONLY .
- EXPLOSION HAZARD - SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2;
- EXPLOSION HAZARD - WHEN IN HAZARDOUS AREAS, TURN OFF POWER BEFORE REPLACING OR WIRING MODULES; AND
- EXPLOSION HAZARD - DO NOT CONNECT OR DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NONHAZARDOUS.

ATEX Marking

II 3 G Ex nA IIC T4 Gc

Ta: -20°C to +60°C (-4° F to +140 °F)

Notes: ATEX Marking is not applicable for EP-1813 Module

Release History

Catalog Number	Firmware Version	Date	Comments
EP-32A4-AA EP-3914-AA	01.01.01 01.00.03	Feb 2025	Added new module
EP-3124-DF EP-3164-DF EP-3264-DF EP-3368-CF	01.00.13	Jan 2024	Updated Product markings to include UKCA, CCC and Morocco.

Catalog Number	Firmware Version	Date	Comments
EP-3468-CF EP-3664-CA EP-3704-EE EP-3804-EE EP-1813-BA			
EP-3704-DE EP-3804-DE	01.00.13	Sep 2022	Firmware update to allow additional suppliers on approved vendor list. No impact to existing functionality.
EP-3164-CF EP-3124-CF EP-3264-CF EP-3368-BF EP-3468-BF	01.02.04	Dec 2021	<ol style="list-style-type: none"> 1. Channel current overflow error fixed, when the AI channel is in current mode (0-20mA) and the 2Hz filter is activated, it happens sporadically that the channel jumps briefly to 32767 (overflow) and triggers a diagnostic fault. 2. Channel voltage overflow error fixed, when the AI channel is in voltage mode(0-10V) and the 2Hz filter is activated, it happens sporadically that the channel jumps briefly to 32767(overflow) and triggers a diagnostic fault.
EP-1813-AA	01.00.47	Dec 2019	Power Measurement Module:- Initial Release
EP-3164-CE EP-3124-CE EP-3264-CE EP-3368-BE EP-3468-BE	01.02.00	Sep 2019	<p>Following Emerson's acquisition of this product, changes have been made to apply appropriate branding and registration of the product with required certification agencies. No changes to material, process, form, fit or functionality.</p> <p>Firmware update for</p> <ul style="list-style-type: none"> • Brand labeling of GE Web Application to EMERSON • Changed the value range for the force mode of the webserver now low-level values for the range of underloading can be set • Fixed that the channel error LED stays off when lower or upper limits are exceeded • Reduced the crosstalk between the input channels • Removed toggling diagnosis between "Overload" and "Upper limit value exceeded", when an input channel is overloaded • Adjusted behaviour of module diagnoses. • Module diagnostics are always active (in case of an error the module status LED will be red). In case of an error the channel error LED will always be red on modules which are supporting single channel diagnostic, independent of the configuration for the diagnostic
EP-3704-DD EP-3804-DD	01.00.11	Sep 2019	<ul style="list-style-type: none"> • Following Emerson's acquisition of this product, changes have been made to apply appropriate branding and registration of the product with required certification agencies. No changes to material, process, form, fit or functionality. • Brand labeling of GE Web Application to EMERSON.
EP-3164-BD EP-3124-BD EP-3264-BD EP-3368-AD	01.00.36	Sep 2018	Firmware update for addition of low pass filter 2Hz

Catalog Number	Firmware Version	Date	Comments
EP-3468-AD			
EP-3704-CD EP-3804-CD	01.00.11	Sep 2018	Improved process alarm behaviour, if there is no more alarm, the flag will be reset
EP-3664-AA	01.03.05	Sep 2018	Initial Release. This is product revision and later is usable in Marine applications. Refer GFK-2958 for certification details.
EP-3124-BC EP-3164-BC EP-3264-BC EP-3704-CC EP-3804-CC	01.00.34	Apr 2018	These product revisions are updated to be usable in Marine application and pass marine certification tests. Refer GFK-2958 for certification details.
EP-3368-AC EP-3264-AC EP-3124-AC EP-3164-AC EP-3468-AC	01.00.34	Mar 2018	Standardization of the Signal Level for the Failure Information of Digital Transmitters
EP-3704-AC EP-3804-AC	01.00.10	Nov 2017	Linearization curve for CU10 sensors >200°C corrected
EP-3124 EP-3164 EP-3264 EP-3704 EP-3804	01.00	Dec 2015	Documentation update only
EP-3124 EP-3164 EP-3264 EP-3704 EP-3804	01.00	Nov 2015	Initial Release

Important Product Information for this Release Updates

None

Functional Compatibility

Refer to the Network Adaptor IPs for this information.

Problems Resolved with this Release

N/A

New Features and Enhancements

Modules	Description
EP-32A4	New Analog Input (4 channel Isolated), 16- bits EP-32A4 added to RSTi-EP Product line.
EP-3914	New Analog Input Potentiometer, 16 -bits, Position detection added to RSTi-EP Product line.

Known Restrictions and Open Issues

N/A

Operational Notes

N/A

Product Documentation

RSTi-EP Slice I/O Module User Manual (GFK-2958)




RSTi-EP Slice I/O Functional Safety Module User Manual (GFK-2956)

Contact Information and Support Guide

Questions? We are here to help.

Before starting a case or making a call, try searching our Knowledge Base on the Customer Center website—it might have the answer you need right away.

If you have a question, try the following steps:

Search our Knowledge Base	Open a Support Ticket	Register for a Customer Account
 pacsystems.co/knowledge	 pacsystems.co/support	 pacsystems.co/signup

Other Helpful Links

Customer Center Home Page	Commercial Website	Contact Information
 pacsystems.co/customercenter	 pacsystems.co/commercial	 pacsystems.co/contactus

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