

I/O and Powerfeed Modules, System Connectivity Components



Contents

Description	Page
I/O and Powerfeed Modules, System Connectivity Components	
Powerfeed Modules	V7-T9-14
I/O Modules	V7-T9-14
System Connectivity Components	V7-T9-15

I/O and Powerfeed Modules, System Connectivity Components

Product Description

I/O and powerfeed modules mount easily to DIN rail inside the control cabinet and connect directly to the SmartWire-DT system with snap-in connections to the 8-conductor flat SmartWire-DT cable.

I/O modules provide a means of easy connection of digital and analog devices to the SmartWire-DT network. Powerfeed modules allow the insertion of 24 Vdc and/or 15 Vdc power where necessary based on the power demands of components connected to the SmartWire-DT network.

Connectivity components are designed to make connection of devices to the 8-conductor flat SmartWire-DT cable simple and trouble-free.

Features

- I/O modules available in digital input and output, analog input and output, and RTD input versions in various combinations to simplify panel configuration
- Relay output version available for high-current loads
- Temperature input versions have wide operating ranges to support a variety of application requirements
- Powerfeed modules can be used to create zoned control arrangements to support integration of Emergency Stop devices into a network

Product Selection

Powerfeed Modules

Powerfeed Module



Powerfeed Modules

Powerfeed modules feed auxiliary 24 Vdc power and/or 15 Vdc network power into the SmartWire-DT flat cable. The auxiliary 24 Vdc power is needed for the power supply of contactors and the 15 Vdc network power is used for supplying power to additional SmartWire-DT nodes. Powerfeed modules are also used to create zone control or groups of devices controlled by a single Emergency Stop.

Description	Pkg. Qty.	Catalog Number
Powerfeed module 1 (for 24 Vdc auxiliary power)	1	EU5C-SWD-PF1-1
Powerfeed module 2 (for 24 Vdc auxiliary power and 15 Vdc network power)	1	EU5C-SWD-PF2-1

I/O Modules

9

Digital I/O Module



Digital I/O Modules

Digital input/output (I/O) modules are connected as nodes on the SmartWire-DT network and allow standard or generic devices to be connected to the SmartWire-DT system. They can be connected anywhere along the flat cable network and can therefore be positioned in the control panel to help reduce the I/O wiring.

Description	Pkg. Qty.	Catalog Number
Digital module with 8 digital inputs 24 Vdc	1	EU5E-SWD-8DX
Digital module with 8 digital outputs 24 Vdc / 0.5 A	1	EU5E-SWD-X8D
Digital module with 4 digital inputs 24 Vdc and 4 transistor outputs 24 Vdc/0.5 A	1	EU5E-SWD-4D4D
Digital module with 4 digital inputs 24 Vdc and 2 relay outputs 250 Vac/3 A	1	EU5E-SWD-4D2R
For Sensor Inputs		
Digital module with 4 digital inputs 24 Vdc three-wire connections	1	EU5E-SWD-4DX

Analog I/O Module



Analog I/O Modules

Analog input/output (I/O) modules are connected as nodes on the SmartWire-DT network and allow standard or generic devices to be connected to the SmartWire-DT system. They can be connected anywhere along the flat cable network and can therefore be positioned in the control panel to help reduce the I/O wiring.

Description	Pkg. Qty.	Catalog Number
Analog module with 4 analog inputs 0–10 V or 0–20 mA	1	EU5E-SWD-4AX
Analog module with 2 analog inputs 0–10 V or 0–20 mA and 2 analog outputs 0–10 V or 0–20 mA	1	EU5E-SWD-2A2A

Temperature Input Module



Temperature Input Modules

Temperature input modules are connected as nodes on the SmartWire-DT network and allow standard or generic devices to be connected to the SmartWire-DT system. They can be connected anywhere along the flat cable network and can therefore be positioned in the control panel to help reduce the I/O wiring.

Description	Pkg. Qty.	Catalog Number
RTD module with 4 temperature inputs Pt100, Pt 1000 or Ni1000; +32 to +292 °F (0 to +200 °C)	1	EU5E-SWD-4PT
RTD module with 4 temperature inputs Pt100, Pt 1000 or Ni1000; –148 to +752 °F (–100 to +400 °C)	1	EU5E-SWD-4PT-2

Analog I/O Modules

Description	Unit	EU5E-SWD-4AX	EU5E-SWD-2A2A	EU5E-SWD-4PT	EU5E-SWD-4PT-2
General					
Standards		IEC/EN 61131-2/EN 50178	IEC/EN 61131-2/EN 50178	IEC/EN 61131-2/EN 50178	IEC/EN 61131-2/EN 50178
Dimensions (W x H x D)	in (mm)	1.38 x 3.54 x 3.97 (35 x 90 x 101)	1.38 x 3.54 x 3.97 (35 x 90 x 101)	1.38 x 3.54 x 3.97 (35 x 90 x 101)	1.38 x 3.54 x 3.97 (35 x 90 x 101)
Weight	lbs (kg)	0.22 (0.10)	0.22 (0.10)	0.22 (0.10)	0.22 (0.10)
Mounting		Top-hat rail IEC/EN 60715, 35 mm	Top-hat rail IEC/EN 60715, 35 mm	Top-hat rail IEC/EN 60715, 35 mm	Top-hat rail IEC/EN 60715, 35 mm
Mounting position		Vertical	Vertical	Vertical	Vertical
Ambient Conditions, Mechanical					
Protection type (IEC/EN 60529)		IP20	IP20	IP20	IP20
Vibrations (IEC/EN 61131-2:2008)					
Constant amplitude 3.5 mm	Hz	5–8.4	5–8.4	5–8.4	5–8.4
Constant acceleration 1 g	Hz	8.4–150	8.4–150	8.4–150	8.4–150
Mechanical shock resistance (IEC/EN 60068-2-27) semi-sinusoidal 15 g/11 ms	Impacts	9	9	9	9
Drop to IEC/EN 60068-2-31 (drop height)	in (mm)	1.97 (50)	1.97 (50)	1.97 (50)	1.97 (50)
Free fall, packaged (IEC/EN 60068-2-32)	ft (m)	1.0 (0.3)	1.0 (0.3)	1.0 (0.3)	1.0 (0.3)
Electromagnetic Compatibility (EMC)					
Overvoltage category		II	II	II	II
Pollution degree		2	2	2	2
Electrostatic discharge (IEC/EN 61131-2:2008)					
Air discharge (Level 3)	kV	8	8	8	8
Contact discharge (Level 2)	kV	4	4	4	4
Electromagnetic fields (IEC/EN 61131-2:2008)					
80–1000 MHz	V/m	10	10	10	10
1.4–2 GHz	V/m	3	3	3	3
2–2.7 GHz	V/m	1	1	1	1
Radio interference suppression (SmartWire-DT)		EN 55011 Class A	EN 55011 Class A	EN 55011 Class A	EN 55011 Class A
Burst (IEC/EN 61131-2:2008, Level 3)					
Supply cables	kV	2	2	2	2
Signal lines	kV	2	2	2	2
SmartWire-DT cables	kV	2	2	2	2
Surge (IEC/EN 61131-2:2008, Level 1)		Supply cables 1.0 kV	Supply cables 1.0 kV	Supply cables 1.0 kV	Supply cables 1.0 kV
Radiated RFI (IEC/EN 61131-2:2008, Level 3)	V	10	10	10	10
Climatic Environmental Conditions					
Operating ambient temperature (IEC 60068-2)	°F (°C)	13° to 131° (–25° to 55°)	13° to 131° (–25° to 55°)	13° to 131° (–25° to 55°)	13° to 131° (–25° to 55°)
Condensation		Prevent with suitable measures	Prevent with suitable measures	Prevent with suitable measures	Prevent with suitable measures
Storage	°F (°C)	–40° to 158° (–40° to 70°)	–40° to 158° (–40° to 70°)	–40° to 158° (–40° to 70°)	–40° to 158° (–40° to 70°)
Relative humidity, noncondensing (IEC/EN 60068-2-30)	%	5–95	5–95	5–95	5–95
SmartWire-DT Network					
Station type		SmartWire-DT slave	SmartWire-DT slave	SmartWire-DT slave	SmartWire-DT slave
Baud rate setting		Automatic	Automatic	Automatic	Automatic
SmartWire-DT status LED	LED	Green	Green	Green	Green
Connection		Plug: 8-pole/Connection plug: External device plug SWD4-8SF2-5			
Current consumption (15 V SWD supply)		See Page V7-T9-61	See Page V7-T9-61	See Page V7-T9-61	See Page V7-T9-61
Connection Supply and I/O					
Connection type		Push in terminals	Push in terminals	Push in terminals	Push in terminals
Solid	mm ²	0.25–1.5 (AWG 24–16)	0.25–1.5 (AWG 24–16)	0.25–1.5 (AWG 24–16)	0.25–1.5 (AWG 24–16)
Flexible with ferrule [Ⓢ]	mm ²	0.25–1.5 (AWG 24–16)	0.25–1.5 (AWG 24–16)	0.25–1.5 (AWG 24–16)	0.25–1.5 (AWG 24–16)
24 Vdc Supply for Output Supply					
Rated operational voltage (U _o)	V	24 Vdc –15%/+20%	24 Vdc –15%/+20%	24 Vdc –15%/+20%	24 Vdc –15%/+20%
Residual ripple on the input voltage	%	≤5	≤5	≤5	≤5
Current consumption	mA	10	50	—	—
Protection against polarity reversal		Yes	Yes	Yes	Yes

Note

[Ⓢ] Minimum length 8 mm.

Analog I/O Modules, continued

Description	Unit	EU5E-SWD-4AX	EU5E-SWD-2A2A	EU5E-SWD-4PT	EU5E-SWD-4PT-2
Analog Inputs					
Quantity		Four (two-wire connection, screened, length <10m)	Two (two-wire connection, screened, length <10m)	—	—
Parameterization					
Part no.		Voltage, current	Voltage, current	—	—
Averaging		Adjustable	Adjustable	—	—
Voltage					
Input voltage	V	0–10	0–10	—	—
Input impedance	k ohms	13.3	13.3	—	—
Maximum current					
Input current	mA	0–20	0–20	—	—
Input impedance	ohms	< 250	< 250	—	—
Resolution	Bit	12	12	—	—
Conversion time	ms	20	20	—	—
Total error	%	±1	±1	—	—
Repetition accuracy	%	±0.5	±0.5	—	—
Dielectric strength	V	±30	±30	—	—
Analog Outputs					
Number		—	Two (two-wire connection, screened)	—	—
Parameterization					
Part no.		—	Voltage, current	—	—
Averaging		—	—	—	—
Voltage					
Output voltage	V	—	0–10	—	—
Maximum output current	mA	—	10	—	—
Maximum current					
Output current	mA	—	0–20	—	—
Load resistance	ohms	—	<500	—	—
Overload and short-circuit proof		—	Yes	—	—
Resolution	Bit	—	12	—	—
Conversion time	ms	—	20	—	—
Total error	%	—	±1	—	—
Repetition accuracy	%	—	±0.5	—	—
Temperature Inputs					
Number		—	—	Four (two-, three-wire connection, screened, length <10m)	Four (two-, three-wire connection, screened, length <10m)
Parameterization					
Averaging		—	—	Adjustable	Adjustable
Temperature sensor		—	—	PT100, PT1000, Ni1000	PT100, PT1000, Ni1000
Temperature range	°F (°C)	—	—	PT100, PT1000: –58° to 392° (–50° to 200°) Ni1000: –58° to 302° (–50° to 150°)	PT100, PT1000: –58° to 392° (–50° to 200°) Ni1000: –58° to 302° (–50° to 150°)
Resolution	°F (°C)	—	—	32° (0.1°)	32° (0.1°)
Conversion time	ms	—	—	250	250
Display		—	—	°C, °F, raw value	°C, °F, raw value
Total error	%	—	—	±1	±1
Repetition accuracy	%	—	—	±0.5	±0.5
Potential Isolation					
Inputs for SmartWire-DT		Yes	Yes	Yes	Yes
Outputs to SmartWire-DT		—	Yes	—	—
Input to input		No	No	No	No
Output to input		—	No	—	—
Output to output		—	No	—	—