SmartWire-DT

41.1.1 SmartWire-DT Panel Wiring Solution

SmartWire-DT Panel Wiring Solution

Contents

System Overview

Product Description

The SmartWire-DT system uses a continuous green flat cable located in the control cabinet to connect motor starters, pushbutton actuators, and indicator lights. It eliminates the need for most of the conventional point-to-point control wiring—and even integrates 24 Vdc control power for contactor coils on the eight conductor flat cable. The start of the SmartWire-DT system is a gateway—it establishes the connection to standard programmable logic controller (PLC) fieldbuses, such as PROFIBUS-DP and CANopen. Because SmartWire-DT directly integrates the input/output (I/O) level in the switching devices, no conventional PLC I/O modules are needed—instead communication enabled modules are attached to standard Eaton motor control components. Thus, the PLC in the control cabinet simply consists of a central processing unit (CPU) module.

Typical faults such as loose connections and miswired terminations are eliminated using the flat cable and the specialized connectors. Furthermore, each SmartWire-DT enabled device has individual diagnostic LEDs built in, which reduce commissioning time and troubleshooting in the field.

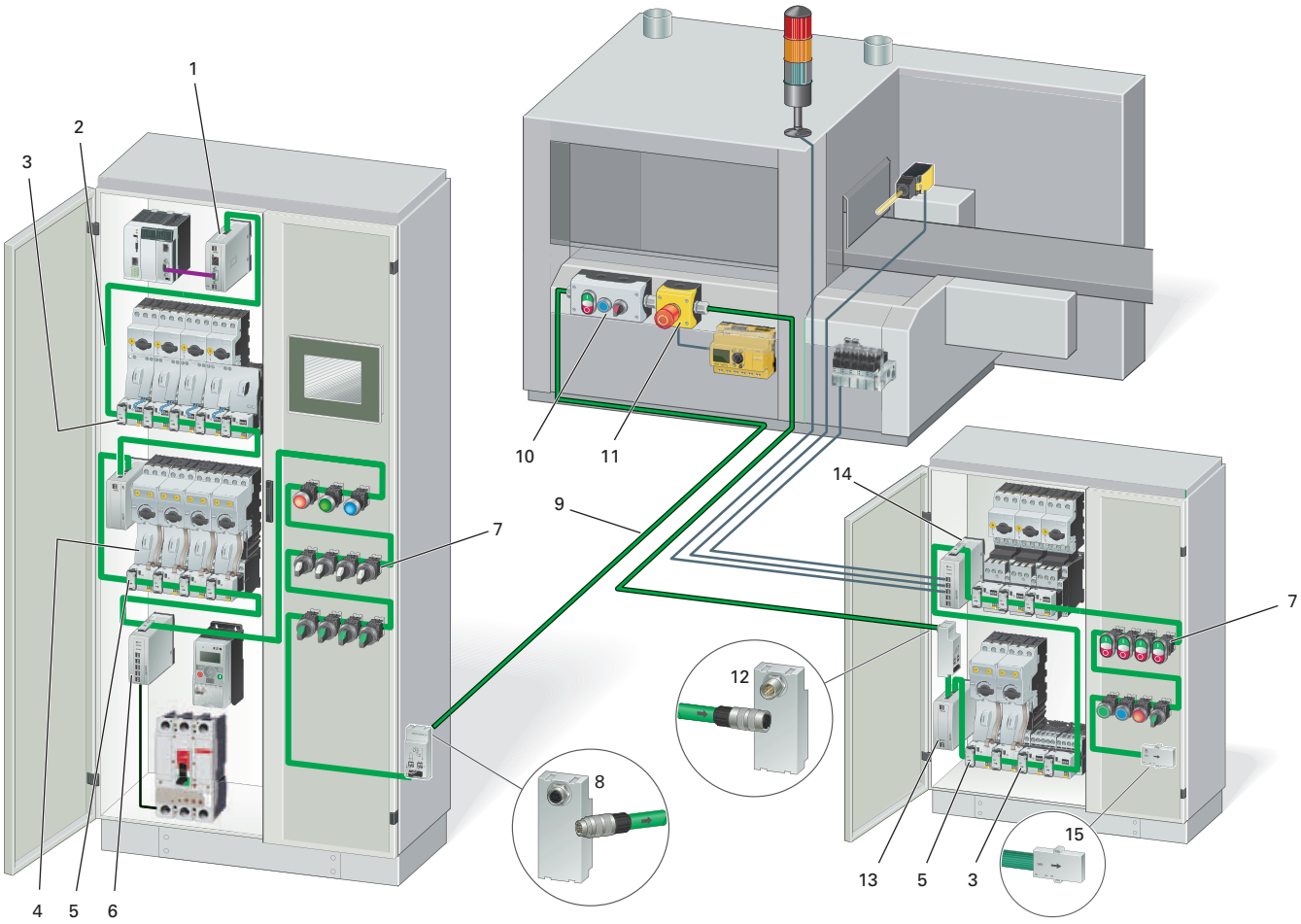
Nodes on the SmartWire-DT network are automatically assigned addresses on the gateway with the push of a button—assigning addresses in the order that the nodes are connected. The system employs time monitoring and a watchdog timeout using the established target configuration as a reference—safely monitoring the integrity of the control scheme. SmartWire-DT has a maximum network length of 2000 ft, can be extended to pushbutton control stations outside of the control cabinet, and can connect up to 99 nodes per gateway. A software program called SWD-Assist enables the layout, planning, and system configuration of a SmartWire-DT network.

Features

- Connects directly to standard XTCE contactors, XTRE control relays, and M22 pilot devices
- Supports PROFIBUS-DP and CANopen fieldbuses
- Supports up to 99 nodes on CANopen and 58 nodes on PROFIBUS-DP
- Automatically assigns addresses to SmartWire-DT nodes
- Integrates and supplies 24 Vdc power to contactor and relay coils over the network
- Includes diagnostic bi-color LEDs on each node connection

System Overview Diagram

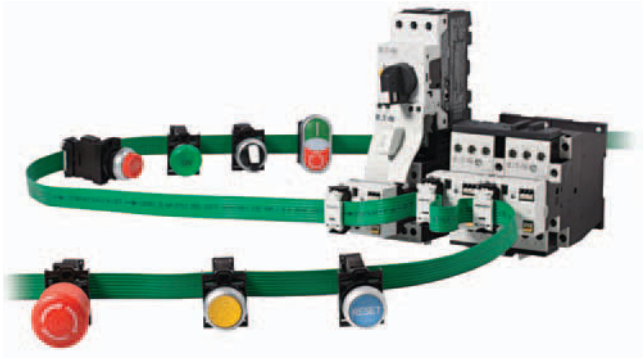
SmartWire-DT Connection System



Item Number	Description
1	Gateway to PLC fieldbus network
2	Flat cable
3	Modules for XT contactors with XTPR manual motor protectors
4	Powerfeed module 1 (optional 24 Vdc power feeder)
5	Modules for XT contactors with XTPE electronic manual motor protectors
6	Digital I/O module
7	Modules for M22 pilot devices
8	Cabinet cable adapter socket

Item Number	Description
9	Round cable
10	Pilot device control station
11	Emergency stop control station
12	Cabinet cable adapter plug
13	Powerfeed module 2 (optional 15 Vdc and 24 Vdc power feeder)
14	Digital I/O module (for connection of sensors and actuators)
15	Terminating resistor

System Components



Contents

System Components

Product Description

The start of the SmartWire-DT system is a gateway module. The gateway connects as a node to a programmable logic controller (PLC) fieldbus. The PLC used must have a fieldbus polling master module or input/output (I/O) scanner card so that the gateway can connect as a node on the fieldbus network. Currently, SmartWire-DT can connect to PROFIBUS-DP and CANopen fieldbuses. To plan and lay out a SmartWire-DT network, a MS Windows compatible software program called SWD-Assist is available as a free download from the Eaton website. The SWD-Assist configuration software will calculate the control power requirements needed and generate a bill of materials of all the required components.

Gateway Modules

Gateway modules connect the SmartWire-DT system to the PLC. They are connected as nodes to the existing PLC fieldbus and are the start of the SmartWire-DT connection system. Gateways are available with PROFIBUS-DP and CANopen protocols.

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.

Digital I/O Modules

Digital 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.

Contactor Modules

Contactor modules fit into standard XT contactors and control relays directly on top, in place of a top mounted auxiliary contact block. The modules fit all XTCE size B and C frame contactors and XTRE control relays.

Pilot Device Modules

Pilot device modules fit into standard M22 pilot devices in both front mount and base mount configurations. Single and double contact modules with and without LEDs are available to meet a wide variety of control circuit requirements.

Flat and Round Cables

The flat cable is an 8 AWG 24 conductor cable that is flexible, durable, and rated for 600V so that it can be placed in the panel wiring duct along with 480V or 600V power conductors. It has two prominent features: (a) arrows indicating the front of the cable and the direction away from the gateway and (b) black edging indicating the polarity of the flat cable, the 15 Vdc wire and the reference mark for installing the device plugs and flat plugs.

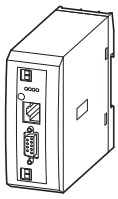
The round cable has 4 AWG 20 and 4 AWG 24 wires and is 300V rated. It is used outside the control panel to connect peripherals such as pushbutton control stations to the SmartWire-DT network. Cable adapters are available to transition a flat cable to a round cable connection and IP67 type connectors are available to provide quick-disconnect cable connections on the round cable.

Other System Accessories

Other accessories for the SmartWire-DT system include connectors, jumpers, bushings, plugs, and sockets, flat to round cable adapters and crimping tools.

Product Selection

Gateway Module



Gateway Modules

Gateway modules connect the SmartWire-DT system to the programmable logic controller (PLC). They are connected as nodes to the existing PLC fieldbus and are the start of the SmartWire-DT connection system.

Description	Pkg. Qty.	Catalog Number
PROFIBUS-DP Gateway Automatic baud rate detection from 9.6 kBit/s to 12 Mbit/s Address range 1–126 9-pole SUB-D socket Connection of up to 58 SmartWire-DT modes	1	**EU5C-SWD-DP**
CANopen Gateway Automatic baud rate detection from 10 kB to 1 MB Address range 1–32 9-pole SUB-D plug Connection of up to 99 SmartWire-DT modes	1	**EU5C-SWD-CAN**

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**

Digital I/O Module

Digital I/O Modules

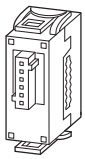
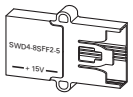
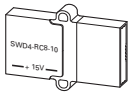
Digital input/output (I/O) modules are connected as nodes on the SmartWire-DT network and allow standard or generic devices to be connected to the SmartWire-DT system. They can be connected anywhere along the flat cable network and can therefore be positioned in the control panel to help reduce the I/O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

Description	Pkg. Qty.	Catalog Number
Digital module with 8 digital inputs 24 Vdc	1	**EU5E-SWD-8DX**
Digital module with 4 digital inputs 24 Vdc and 4 transistor outputs 24 Vdc/0.5A	1	**EU5E-SWD-4D4D**
Digital module with 4 digital inputs 24 Vdc and 2 relay outputs 250 Vac	1	**EU5E-SWD-4D2R**

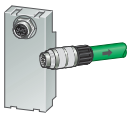
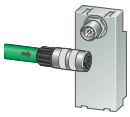
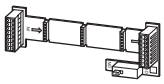
Accessories

System Accessories

Accessories for the SmartWire-DT system includes cables, connectors, jumpers, bushings, plugs, sockets, flat to round cable adapters, and crimping tools.

	Description	Length	Pkg. Qty.	Catalog Number
Flat Cable 	**Flat Cable, 8 AWG 24, 600V**			
	For SmartWire-DT network **inside** the control panel	328.1 ft (100m)	1	**SWD4-100LF8-24**
	Complete with flat plugs SWD4-8MF2 installed at both ends	9.8 ft (3m)	1	**SWD4-3LF8-24-2S**
		16.4 ft (5m)	1	**SWD4-5LF8-24-2S**
		32.8 ft (10m)	1	**SWD4-10LF8-24-2S**
Round Cable 	**Round Cable, 4 AWG 20 and 4 AWG 24, 300V**			
	For SmartWire-DT network **outside** of the control panel	164.0 ft (50m)	1	**SWD4-50LR8-24**
Device Plug 	**Device Plugs**			
	For connection to SmartWire-DT modules or nodes	—	10	**SWD4-8SF2-5**
Flat Plug 	**Flat Plugs**			
	For connection to SmartWire-DT system components: gateways, powerfeed modules, coupling and terminating resistor	—	10	**SWD4-8MF2**
Device Plug Jumper 	**Device Plug Jumpers**			
	For bridging open, spare or inverted device plugs	—	5	**SWD4-SEL8-10**
PCB Jumper 	**Control Station PCB Jumpers**			
	For bridging open mounting locations on the control station printed circuit board	—	5	**M22-SWD-SEL8-10**
Coupling 	**Coupling**			
	For connecting or joining flat cables with flat plugs	—	1	**SWD4-8SFF2-5**
Terminating Resistor 	**Terminating Resistor**			
	For terminating the end of the network on a flat cable	—	1	**SWD4-RC8-10**
Adapter 	**Panel Cable Adapter**			
	For flat cable (plug) to round cable terminals	—	1	**SWD4-8FRF-10**

System Accessories, continued

	Description	Pkg. Qty.	Catalog Number
Adapter Socket 	**Cabinet Cable Adapter Socket**		
	For flat cable (plug) to round cable (plug)	1	**SWD4-SFL8-20**
Adapter Plug 	**Cabinet Cable Adapter Plug**		
	For flat cable (plug) to round cable (socket)	1	**SWD4-SML8-20**
PCB 	**PCBs**		
	For surface mounting M22 enclosures and for base-mount pilot device modules Includes a built-in switchable terminating resistor		
	Element enclosure PCB 1	1	**M22-SWD-I1-LP01**
	Element enclosure PCB 2	1	**M22-SWD-I2-LP01**
	Element enclosure PCB 3	1	**M22-SWD-I3-LP01**
	Element enclosure PCB 4	1	**M22-SWD-I4-LP01**
	Element enclosure PCB 6	1	**M22-SWD-I6-LP01**
	Connectors for Round Cables		
Connector Socket 	Round cable 8-pole socket	1	**SWD4-SF8-67**
Connector Plug 	Round cable 8-pole plug	1	**SWD4-SM8-67**
Connector (Right Angle) 	Right angle round cable 8-pole socket	1	**SWD4-SF8-67W**
	Right angle round cable 8-pole plug	1	**SWD4-SM8-67W**
	Enclosure Bushings		
Bushing Socket 	Enclosure bushing, 8-pole socket, M20	1	**SWD4-SF8-20**
Bushing Plug 	Enclosure bushing, 8-pole plug, M20	1	**SWD4-SM8-20**
Cord Grip 	**Cord Grip**		
	Round cable cord grip, M20	1	**V-M20**
	Crimping Tool		
Device Plug Tool 	Device plug crimping tool	1	**SWD4-CRP-1**
Flat Plug Tool 	Flat plug crimping tool	1	**SWD4-CRP-2**

Contactor Modules

Contents

Contactor Modules

Product Description

Contactor modules fit onto standard XT contactors and control relays directly on top, in place of a top mounted auxiliary contact block. The modules fit all XTCE size B and C frame contactors and XTRE control relays.

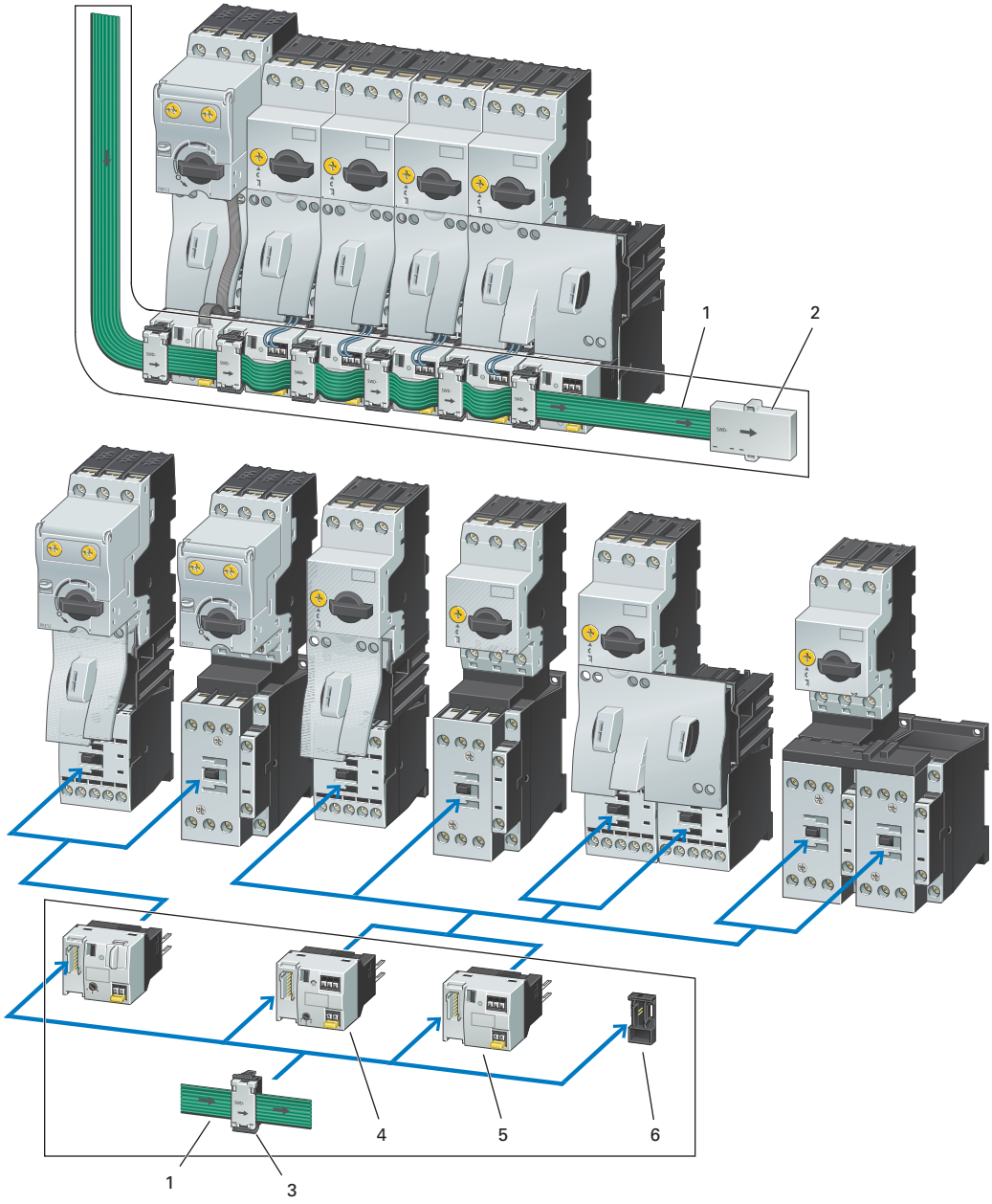
These modules facilitate direct connection to the SmartWire-DT flat cable and eliminate the traditional point-to-point wiring to the PLC input and output modules as well as wiring to the contactor coils.

Features

- Integrated 24 Vdc coil power on network and plug-in modules
- Integrated switch position polling
- Integrated mechanical switch position display
- Integrated feedback circuit to PLC
- Built-in diagnostic bi-color LEDs on each module
- Connection to SmartWire-DT flat cable via quick disconnect device plugs

Product Identification

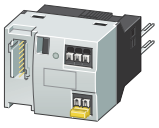
SmartWire-DT Contactor Modules

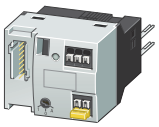


Item Number	Description
1	Flat cable
2	Terminating resistor (SWD4-RC8-10)
3	Device plug (SWD4-85F2-5)
4	Modules for XT contactors with XTPR manual motor protectors, with 1-0-A switch (DIL-SWD-32-002)
5	Modules for XT contactors with XTPR manual motor protectors (DIL-SWD-32-001)
6	Device plug jumper (SWD4-SEL8-10)

Product Selection

Contactor Modules





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Contactor Modules ①②③

SmartWire-DT module for attachment to XTCE007–XTCE032 contactors and XTRE control relays.
One module is required per contactor.

Description	Pkg. Qty.	Catalog Number
Two digital inputs for voltage-free contacts. One electrical interlock for the surface mounting of reversing combinations. Messages: contactor switching position, status of the digital inputs 1 and 2.	5	**DIL-SWD-32-001**
Two digital inputs for voltage-free contacts. One electrical interlock for the surface mounting of reversing combinations. 1-0-A switch for manual or automatic operation. Messages: contactor switching position, status of the digital inputs 1 and 2 and of the 1-0-A switch.	5	**DIL-SWD-32-002**

Design Note

The number of motor starters or XTCE contactors that can be connected is dependent upon the power consumption of the contactor coils. To increase the number of SmartWire-DT modules that can be connected. Powerfeed modules can be used.

24 Vdc		XTCE007	XTCE009	XTCE012	XTCE015	XTCE018	XTCE025	XTCE032
Pick-up power	W	3	3	4.5	4.5	12	12	12
Sealing power	W	3	3	4.5	4.5	0.5	0.5	0.5

Notes

① Take account of the maximum current consumption of the contactor coils per SmartWire-DT line.
② A2 connections must not be linked.
③ Connection terminals for electrical interlocking are not suitable for safety technology.

Pilot Device Modules

Contents

Pilot Device Modules

Product Description

Pilot device modules fit onto standard M22 pilot devices in both front mount and base mount configurations. Single and double contact modules with and without LEDs are available to meet a wide variety of control circuit requirements.

These modules facilitate direct connection to the SmartWire-DT flat cable and eliminate the traditional point-to-point wiring to the PLC input and output modules.

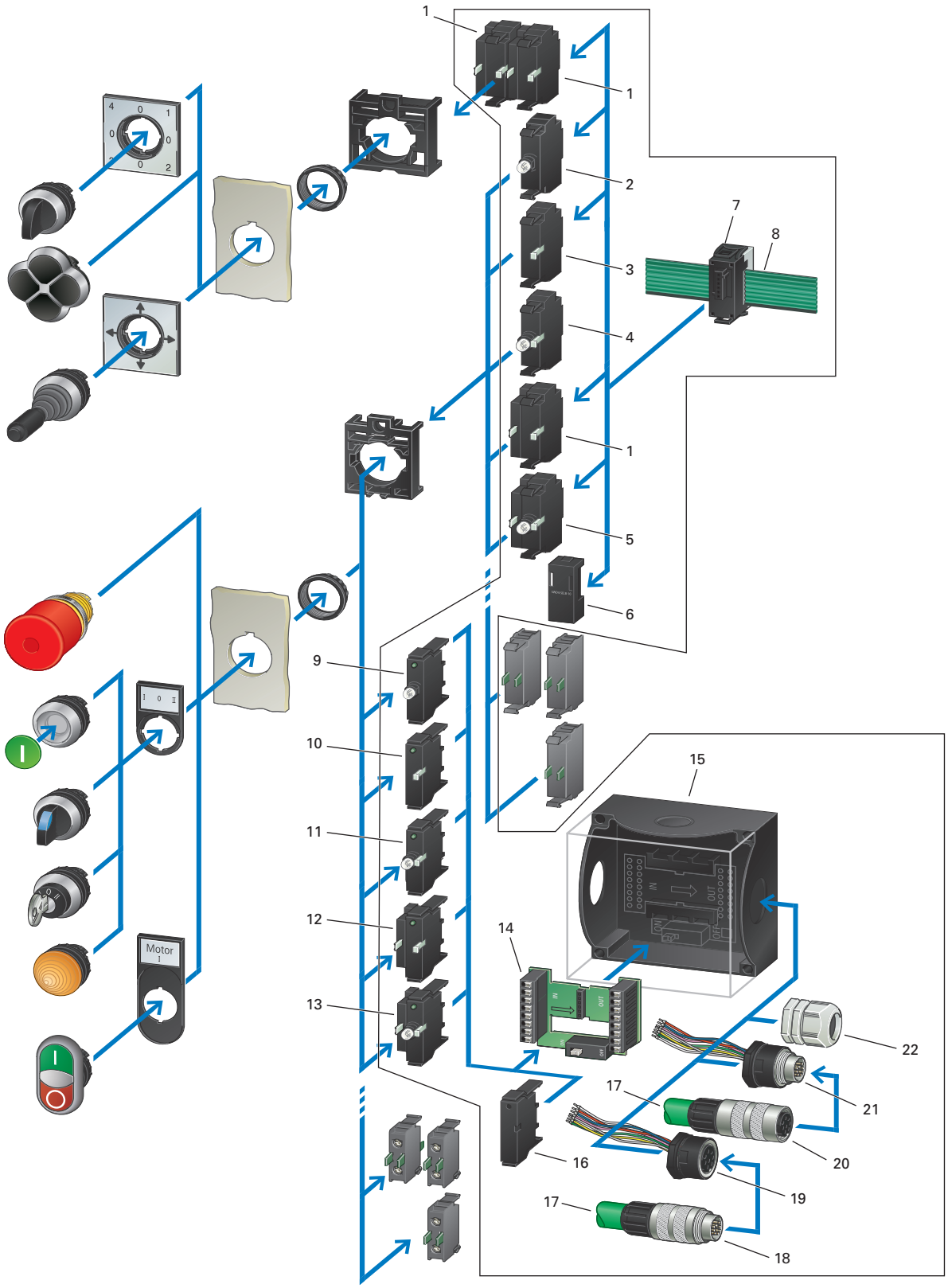
Features

- Front or base mount modules
- Built-in diagnostic bi-color LEDs on each module
- Connection to SmartWire-DT flat cable via quick disconnect device plugs

41.1

Product Identification

Pilot Device Modules Connections



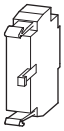
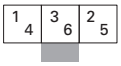
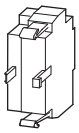
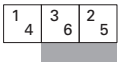
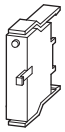
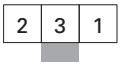
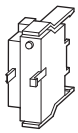
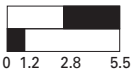
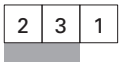
Pilot Device Modules Connections

Item Number	Description
1	M22 contact module, front mount (M22-SWD-KC22)
2	M22 LED module, front mount (M22-SWD-LED_)
3	Module, front mount (M22-SWD-K11)
4	M22 contact module with LED, front mount (M22-SWD-K11LED_)
5	M22 contact module with LED, front mount (M22-SWD-K22LED_)
6	Device plug jumper (SWD4-SEL8-10)
7	Device plug (SWD4-85F2-5)
8	Flat cable
9	M22 LED module, base mount (M22-SWD-LEDC_)
10	M22 contact module, base mount (M22-SWD-KC11)
11	M22 contact module with LED, base mount (M22-SWD-K11LEDC_)
12	M22 contact module, base mount (M22-SWD-KC22)
13	M22 contact module with LED, base mount (M22-SWD-K22LEDC_)
14	1 element enclosure PCB (M22-SWD-I1-1P01)
15	M22 control station enclosure with M20 knockouts
16	Control station PCB jumper (M22-SWD-SEL8-10)
17	Round cable
18	Round cable plug (SWD4-SM8-67)
19	Enclosure bushing socket (SWD4-SF8-20)
20	Round cable socket (SWD4-SF8-67)
21	Enclosure bushing plug (SWD4-SM8-20)
22	M20 cord grip (V-M20)

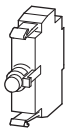
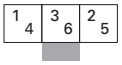
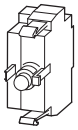
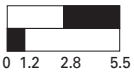
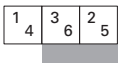
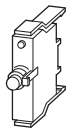
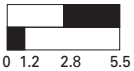
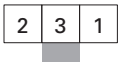
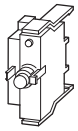
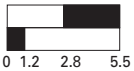
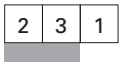
Product Selection

M22 Pilot Device Modules Connections

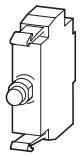
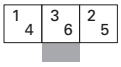
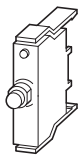
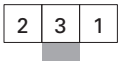
M22 Contact Modules, without LEDs

	Number of Changeover Contacts	Contact Sequence	Contact Travel Diagram Stroke in Connection with Front Element	Configuration	Pkg. Qty.	Catalog Number
Front Mount						
M22-SWD-K11 	1				20	**M22-SWD-K11**
M22-SWD-K22 	2				10	**M22-SWD-K22**
Base Mount						
M22-SWD-KC11 	1				20	**M22-SWD-KC11**
M22-SWD-KC22 	2				10	**M22-SWD-KC22**

M22 Contact Modules, with LEDs

	Number of Changeover Contacts	Contact Sequence	Contact Travel Diagram Stroke in Connection with Front Element	Configuration	Color LED	Pkg. Qty.	Catalog Number
Front Mount							
M22-SWD-K11LED_ 	1				○	20	M22-SWD-K11LED-W
							M22-SWD-K11LED-B
							M22-SWD-K11LED-G
							M22-SWD-K11LED-R
M22-SWD-K22LED_ 	2				○	10	M22-SWD-K22LED-W
							M22-SWD-K22LED-B
							M22-SWD-K22LED-G
							M22-SWD-K22LED-R
Base Mount							
M22-SWD-K11LEDC_ 	1				○	20	M22-SWD-K11LEDC-W
							M22-SWD-K11LEDC-B
							M22-SWD-K11LEDC-G
							M22-SWD-K11LEDC-R
M22-SWD-K22LEDC_ 	2				○	10	M22-SWD-K22LEDC-W
							M22-SWD-K22LEDC-B
							M22-SWD-K22LEDC-G
							M22-SWD-K22LEDC-R

M22 LED Modules

	Configuration	Color LED	Pkg. Qty.	Catalog Number
Front Mount				
M22-SWD-LED_ 		○	20	M22-SWD-LED-W
				M22-SWD-LED-B
				M22-SWD-LED-G
				M22-SWD-LED-R
Base Mount				
M22-SWD-LEDC_ 		○	20	M22-SWD-LEDC-W
				M22-SWD-LEDC-B
				M22-SWD-LEDC-G
				M22-SWD-LEDC-R

Technical Data and Specifications

Gateways and Powerfeed Modules

Description	Unit	EU5C-SWD-DP Gateway	EU5C-SWD-CAN Gateway	EU5C-SWD-PF1-1 Powerfeed	EU5C-SWD-PF2-1 Powerfeed
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 5.0 (35 x 90 x 127)	1.38 x 3.54 x 5.0 (35 x 90 x 127)	1.38 x 3.54 x 4.88 (35 x 90 x 124)	1.38 x 3.54 x 4.88 (35 x 90 x 124)
Weight	lbs (kg)	0.35 (0.16)	0.35 (0.16)	0.24 (0.11)	0.37 (0.17)
Mounting		DIN rail IEC/EN 60715, 35 mm			
Mounting position		Vertical	Vertical	Vertical	Vertical
Ambient Conditions, Mechanical					
Degree of protection (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 1g	Hz	8.4–150	8.4–150	8.4–150	8.4–150
Mechanical shock resistance (IEC/EN 60068-2-27) semi-sinusoidal 15g/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
CAN/DP bus cable	kV	1	1	—	—
SmartWire-DT cables	kV	1	1	1	1
Surge (IEC/EN 61131-2:2008, Level 1)					
Supply cables	kV	0.5	0.5	0.5	0.5
CAN/DP bus cable	kV	1	1	1	1
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			
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, non-condensing (IEC/EN 60068-2-30)	%	5–95	5–95	5–95	5–95
Supply Voltage U_{Aux}					
SM Puffer Bremer	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
Protection against polarity reversal		Yes	Yes	Yes	Yes
Max. current (I_{max})	A	3 ①	3 ①	3	3
Short-circuit rating		No, external fuse FAZ Z3	No, external fuse FAZ Z3	No, external fuse FAZ Z3	No, external fuse FAZ Z3
Power loss	W	Normally 1	Normally 1	Normally 1	Normally 1
Potential isolation		No	No	No	No
Rated operating voltage of 24 Vdc modes	V	Typ. U_{Aux} –0.2	Typ. U_{Aux} –0.2	Typ. U_{Aux} –0.2	Typ. U_{Aux} –0.2

Note

① If contactors with a total current consumption >3A are connected, a powerfeed module EU5C-SWD-PF1/2 has to be used.

Gateways and Powerfeed Modules, continued

Description	Unit	EU5C-SWD-DP Gateway	EU5C-SWD-CAN Gateway	EU5C-SWD-PF1-1 Powerfeed	EU5C-SWD-PF2-1 Powerfeed
Supply Voltage U_{Pow}					
Supply voltage	V	24 Vdc (–15%/+20%)	24 Vdc (–15%/+20%)	24 Vdc (–15%/+20%)	24 Vdc (–15%/+20%)
Input voltage ripple	%	≤5	≤5	≤5	≤5
Siemens MPI, (optional)		Yes	Yes	—	Yes
Rated current (I)	A	0.7	0.7	0.7	0.7
Overload proof		Yes	Yes	Yes	Yes
Inrush current and duration	A	12.5 A/6 ms	12.5 A/6 ms	12.5 A/6 ms	12.5 A/6 ms
Heat dissipation at 24 Vdc	W	3.8	3.8	3.8	3.8
Potential isolation between U_{Pow} and 15V SmartWire-DT supply voltage		No	No	—	Yes
Bridging voltage dips	ms	10	10	—	10
Repetition rate	s	1	1	—	1
Status indication (LED)		Yes	Yes	No	Yes
SmartWire-DT Supply Voltage					
Rated operating voltage (U_e)	V	14.5 g 3%	14.5 g 3%	14.5 g 3%	14.5 g 3%
Max. current (I_{max})	A	0.7 ①	0.7 ①	0.7	0.7
Short-circuit proof		Yes	Yes	No	Yes
Connection Supply Voltages					
Connection type		Push in terminals	Push in terminals	Push in terminals	Push in terminals
Solid	mm^2	0.2–1.5 (AWG 24–16)	0.2–1.5 (AWG 24–16)	0.2–1.5 (AWG 24–16)	0.2–1.5 (AWG 24–16)
Flexible with ferrule	mm^2	0.25–1.5	0.25–1.5	0.25–1.5	0.25–1.5
SmartWire-DT Network					
Station type		SmartWire-DT master	SmartWire-DT master	—	—
Number of SmartWire-DT modes		58	99	—	—
Baud rates		125	125	—	—
Address allocation		Automatic	Automatic	None	None
Status indication (LED)					
SmartWire-DT master		Green	Green	Green	Green
Configurations		Red	Red	Red	Red
Connections		Plug, 8-pole	Plug, 8-pole	2 x plug, 8-pole	2 x plug, 8-pole
Plug connectors		Flat plug SWD4-8MF2	Flat plug SWD4-8MF2	Two flat plugs SWD4-8MF2	Two flat plugs SWD4-8MF2
Fieldbus Interface					
Bus protocol		PROFIBUS-DP	CANopen	—	—
Baud rates		Up to 12 mB	To 1 mB	—	—
Address allocation		Automatic	Automatic	—	—
Station address		2–125	2–32	—	—
Address allocation		DIP switch	DIP switch	—	—
Status display fieldbus interface (LED)		Two-colored red/green	Two-colored red/green	—	—
Terminating resistor		Switchable via plug	DIP switches	—	—
Connection design for field bus		1 x SUB-D socket, 9-pole	1 x SUB-D plug, 9-pole	—	—
Potential isolation		Yes	Yes	—	—

Note

① If contactors with a total current consumption >0.7 A are connected, a Power Feeder module EU5C-SWD-PF2 has to be used.

Input/Output Modules

	Unit	EU5E-SWD-8DX I/O Module	EU5E-SWD-4D4D I/O Module	EU5E-SWD-4D2R I/O Module
General				
Standards		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)
Weight	lbs (kg)	0.22 (0.10)	0.22 (0.10)	0.24 (0.11)
Mounting		DIN rail IEC/EN 60715, 35 mm	DIN rail IEC/EN 60715, 35 mm	DIN rail IEC/EN 60715, 35 mm
Mounting position		Vertical	Vertical	Vertical
Ambient Conditions, Mechanical				
Degree of protection (IEC/EN 60529)		IP20	IP20	IP20
Vibrations (IEC/EN 61131-2:2008)				
Constant amplitude 3.5 mm	Hz	5–8.4	5–8.4	5–8.4
Constant acceleration 1g	Hz	8.4–150	8.4–150	8.4–150
Mechanical shock resistance (IEC/EN 60068-2-27) semi-sinusoidal 15g/11 ms	Impacts	9	9	9
Drop to IEC/EN 60068-2-31 (drop height)	in (mm)	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)
Electromagnetic Compatibility (EMC)				
Overvoltage category		II	II	II
Pollution degree		2	2	2
Electrostatic discharge (IEC/EN 61131-2:2008)				
Air discharge (Level 3)	kV	8	8	8
Contact discharge (Level 2)	kV	4	4	4
Electromagnetic fields (IEC/EN 61131-2:2008)				
80–1000 MHz	V/m	10	10	10
1.4–2 GHz	V/m	3	3	3
2–2.7 GHz	V/m	1	1	1
Radio interference suppression (SmartWire-DT)		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
Signal lines	kV	1	1	1
SmartWire-DT cables	kV	1	1	1
Surge (IEC/EN 61131-2:2008, Level 1)				
Supply cables	kV	0.5	0.5	0.5
Radiated RFI (IEC/EN 61131-2:2008, Level 3)	V	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°)
Condensation		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°)
Relative humidity, non-condensing (IEC/EN 60068-2-30)	%	5–95	5–95	5–95
SmartWire-DT Network				
Station type		SmartWire-DT station (node)	SmartWire-DT station (node)	SmartWire-DT station (node)
Address allocation		Automatic	Automatic	Automatic
SmartWire-DT status (LED)		Green	Green	Green
Connection				
Plug		8-pole	8-pole	8-pole
Connection plug		External device plug SWD4-8SF2-5	External device plug SWD4-8SF2-5	External device plug SWD4-8SF2-5
Current consumption (15V SWD supply)		See **Page V7-T41.1-26**	See **Page V7-T41.1-26**	See **Page V7-T41.1-26**
Connection Supply and I/O				
Connection type		Push in terminals	Push in terminals	Push in terminals
Solid	mm^2	0.2–1.5 (AWG 24–16)	0.2–1.5 (AWG 24–16)	0.2–1.5 (AWG 24–16)
Flexible with ferrule ①	mm^2	0.25–1.5	0.25–1.5	0.25–1.5

Note

① Minimum length 8 mm.

Input/Output Modules, continued

	Unit	EU5E-SWD-8DX I/O Module	EU5E-SWD-4D4D I/O Module	EU5E-SWD-4D2R I/O Module
24 Vdc Supply for Output Supply				
Rated operational voltage (U_e)	V	24 Vdc (–15%/+20%)	24 Vdc (–15%/+20%)	24 Vdc (–15%/+20%)
Residual ripple on the input voltage	%	—	5	—
Protection against polarity reversal		—	Yes	—
Digital Inputs				
Quantity		8	4	4
Input current	mA	Typ. 4 at 24 Vdc	Typ. 4 at 24 Vdc	Typ. 4 at 24 Vdc
Voltage level to IEC/EN 61131-2				
Limit value type 1		Low <5 Vdc; High >15 Vdc	Low <5 Vdc; High >15 Vdc	Low <5 Vdc; High >15 Vdc
Input delay				
High		<0.2 ms	<0.2 ms	<0.2 ms
Low		<0.2 ms	<0.2 ms	<0.2 ms
SmartWire-DT status (LED)		Yellow	Yellow	Yellow
Transistor Outputs				
Number		—	4	—
Output current	A	—	Normally 0.5 at 24 Vdc	—
Short-circuit tripping current	A	—	Max. 1.2 over 3 ms	—
Lamp load (R_{LL})	W	—	3	—
Overload proof		—	Yes, with diagnostics	—
Switching capacity		—	EN 60947-5-1 utilization category DC-13	—
Relay Outputs				
Number		—	—	2
Contact type art		—	—	N/O contact
Operations				
Utilization category AC-1, 250V, 6A		—		$>6 \times 10^4$
Utilization category AC-15, 250V, 3A		—	—	$>5 \times 10^4$
Utilization category DC-13, 24V, 1A		—	—	$>2 \times 10^5$
Safe isolation	Vac	—	—	230
Minimum load current	mA	—	—	100 mA, 12 Vdc
Pick-up/drop-out time	ms	—	—	5/2.5
Bounce duration	ms	—	—	Normally 1.5
Short-circuit protection		—	—	External 4A gL/gG
Status display outputs (LED)		—	Yellow	Yellow
Potential Isolation				
Inputs for SmartWire-DT		Yes	Yes	Yes
Transistor outputs for SmartWire-DT		—	Yes	—
Transistor outputs for inputs		—	No	—
Relays for SmartWire-DT		—	—	Yes
Relays for inputs		—	—	Yes
Relays for relays		—	—	Yes

Accessories

	Unit	SWD4-RC8-10 Resistor	SWD4-8SF2-5 Plug	SWD4-8SFF2-5 Coupling	SWD4-SF8-20 Bushing
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)	1.91 x 1.36 x 0.34 (48.5 x 34.5 x 10)	0.59 x 1.44 x 0.69 (15 x 36.5 x 17.5)	1.91 x 1.36 x 0.34 (48.5 x 34.5 x 10)	0.94 x 1.02 x 6.34 (24 x 26 x 162)
Weight	lbs (g)	0.022 (10)	0.012.1 (5.5)	0.010 (4.5)	0.044 (20)
Mounting position		As required	As required	As required	As required
Ambient Conditions, Mechanical					
Degree of protection (IEC/EN 60529)		IP20	IP20	IP20	IP67
Vibrations (IEC/EN 61131-2:2008)					
Constant amplitude 3.5 mm	Hz	5–8.4	5–8.4	5–8.4	—
Constant acceleration 1g	Hz	8.4–150	8.4–150	8.4–150	—
Mechanical shock resistance (IEC/EN 60068-2-27) semi-sinusoidal 15g/11 ms	Impacts	9	9	9	—
Drop to IEC/EN 60068-2-31 (drop height)	in (mm)	1.97 (50)	—	—	—
Free fall, packaged (IEC/EN 60068-2-32)	ft (m)	1.0 (0.3)	—	—	—
Electromagnetic Compatibility (EMC)					
Overvoltage category		II	—	—	—
Pollution degree		2	—	—	—
Electrostatic discharge (IEC/EN 61131-2:2008)					
Air discharge (Level 3)	kV	8	—	—	—
Contact discharge (Level 2)	kV	4	—	—	—
Electromagnetic fields (IEC/EN 61131-2:2008)					
80–1000 MHz	V/m	10	—	—	—
1.4–2 GHz	V/m	3	—	—	—
2–2.7 GHz	V/m	1	—	—	—
Radio interference suppression (SmartWire-DT)		EN 55011 Class A	—	—	—
Burst (IEC/EN 61131-2:2008, Level 3)					
SmartWire-DT cables	kV	1	—	—	—
Radiated RFI (IEC/EN 61131-2:2008, Level 3)	V	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		
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, non-condensing (IEC/EN 60068-2-30)	%	5 –95	5 –95	5 –95	5 –95
Connection Options					
SWD-In		Plug, 8-pole	Plug connector	Plug, 8-pole	—
Number of insertion cycles		≥200	1	≥200	—
SWD-Out		—	Socket, 8-pole	Plug, 8-pole	Socket, 8-pole
Number of insertion cycles		—	≥200	≥200	≥500
Current consumption (15V SWD supply)		See **Page V7-T41.1-26**	See **Page V7-T41.1-26**	See **Page V7-T41.1-26**	See **Page V7-T41.1-26**

Accessories, continued

	Unit	SWD4-SM8-20 Bushing	SWD4-8FRF-10 Adapter	SWD4-SFL8-20 Adapter	SWD4-SML8-20 Adapter
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)	0.94 x 1.02 x 6.69 (24 x 26 x 170)	1.38 x 3.54 x 1.38 (35 x 90 x 35)	1.38 x 3.27 x 1.57 (35 x 83 x 40)	1.38 x 3.27 x 1.82 (35 x 83 x 46)
Weight	lbs (g)	0.050 (22.5)	0.093 (42)	0.110 (50)	0.110 (50)
Mounting position		As required	As required	As required	As required
Ambient Conditions, Mechanical					
Degree of protection (IEC/EN 60529)		IP67	IP20	IP67	IP67
Vibrations (IEC/EN 61131-2:2008)					
Constant amplitude 3.5 mm	Hz	—	5–8.4	5–8.4	5–8.4
Constant acceleration 1g	Hz	—	8.4–150	8.4–150	8.4–150
Mechanical shock resistance (IEC/EN 60068-2-27) semi-sinusoidal 15g/11 ms	Impacts	—	9	9	9
Drop to IEC/EN 60068-2-31 (drop height)	in (mm)	—	—	—	—
Free fall, packaged (IEC/EN 60068-2-32)	ft (m)	—	—	—	—
Electromagnetic Compatibility (EMC)					
Overvoltage category		—	—	—	—
Pollution degree		—	—	—	—
Electrostatic discharge (IEC/EN 61131-2:2008)					
Air discharge (Level 3)	kV	—	8	8	8
Contact discharge (Level 2)	kV	—	4	4	4
Electromagnetic fields (IEC/EN 61131-2:2008)					
80–1000 MHz	V/m	—	—	10	10
1.4–2 GHz	V/m	—	—	3	3
2–2.7 GHz	V/m	—	—	1	1
Radio interference suppression (SmartWire-DT)		—	—	—	—
Burst (IEC/EN 61131-2:2008, Level 3)		—	—	—	—
SmartWire-DT cables	kV	—	—	—	—
Radiated RFI (IEC/EN 61131-2:2008, Level 3)	V	—	—	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			
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, non-condensing (IEC/EN 60068-2-30)	%	5 –95	5 –95	5 –95	5 –95
Connection Options					
SWD-In		Plug, 8-pole	Plug, 8-pole	Plug, 8-pole	Plug, 8-pole
Number of insertion cycles		≥500	≥200	≥200	≥500
SWD-Out		—	Push in terminals	Socket, 8-pole	Plug, 8-pole
Number of insertion cycles		—	—	≥500	≥200
Current consumption (15V SWD supply)		See **Page V7-T41.1-26**	See **Page V7-T41.1-26**	See **Page V7-T41.1-26**	See **Page V7-T41.1-26**

Contactor Modules

Description	Unit	DIL-SWD-32-001	DIL-SWD-32-002
General			
Standards		IEC/EN 61131-2 EN 50178 IEC/EN 60947	IEC/EN 61131-2 EN 50178 IEC/EN 60947
Dimensions (W x H x D)	in (mm)	1.77 x 1.50 x 3.0 (45 x 38 x 76)	1.77 x 1.50 x 3.0 (45 x 38 x 76)
Weight	lbs (kg)	0.9 (0.04)	0.9 (0.04)
Mounting		on XTCE007–XTCE032	on XTCE007–XTCE032
Mounting position		as XTCE007–XTCE032	as XTCE007–XTCE032
Ambient Conditions, Mechanical			
Degree of protection (IEC/EN 60529)		IP20	IP20
Vibrations (IEC/EN 61131-2:2008)			
Constant amplitude 3.5 mm	Hz	5–8.4	5–8.4
Constant acceleration 1g	Hz	8.4–150	8.4–150
Mechanical shock resistance (IEC/EN 60068-2-27) semi-sinusoidal 15g/11 ms	Impacts	9	9
Drop to IEC/EN 60068-2-31 (drop height)	in (mm)	1.97 (50)	1.97 (50)
Free fall, packaged (IEC/EN 60068-2-32)	ft (m)	1.0 (0.3)	1.0 (0.3)
Electromagnetic Compatibility (EMC)			
Overvoltage category		II	II
Pollution degree		2	2
Electrostatic discharge (IEC/EN 61131-2:2008)			
Air discharge (Level 3)	kV	8	8
Contact discharge (Level 2)	kV	4	4
Electromagnetic fields (IEC/EN 61131-2:2008)			
80–1000 MHz	V/m	10	10
1.4–2 GHz	V/m	3	3
2–2.7 GHz	V/m	1	1
Radio interference suppression (SmartWire-DT)		EN 55011 Class A	EN 55011 Class A
Burst (IEC/EN 61131-2:2008, Level 3)			
CAN/DP bus cable	kV	1	1
SmartWire-DT cables	kV	1	1
Radiated RFI (IEC/EN 61131-2:2008, Level 3)	V	10	10
Climatic Environmental Conditions			
Operating ambient temperature (IEC 60068-2)	°F (°C)	–13° to 140° (–25° to 60°)	–13° to 140° (–25° to 60°)
Condensation		Prevent with suitable measures	Prevent with suitable measures
Storage	°F (°C)	–22° to 158° (–30° to 70°)	–22° to 158° (–30° to 70°)
Relative humidity, non-condensing (IEC/EN 60068-2-30)	%	5–95	5–95

Contactor Modules, continued

Description	Unit	DIL-SWD-32-001	DIL-SWD-32-002
SmartWire-DT Network			
Station type		SmartWire-DT station (mode)	SmartWire-DT station (mode)
Address allocation		Automatic	Automatic
SmartWire-DT status LED		Green/orange	Green/orange
Connections			
Plug		8-pole	8-pole
Plug connectors		External device plug SWD4-8SF2-5	External device plug SWD4-8SF2-5
Current consumption (15V SWD supply)		See **Page V7-T41.1-26**	See **Page V7-T41.1-26**
Mode Parameter			
Manual/automatic mode		No	Yes
Setting		—	Rotary switch
Connection Auxiliary Contact			
Number		2	2
Rated voltage (U_e) ①	Vdc	15	15
Input current at 1 signal, typical	mA	3	3
Potential isolation		No	No
Cable length	ft (m)	≤9.2 (2.8)	≤9.2 (2.8)
Connection type		Push in terminals	Push in terminals
Terminal Capacities			
Solid	mm^2	0.2–1.5 (AWG 24–16)	0.2–1.5 (AWG 24–16)
Flexible with ferrule ②	mm^2	0.25–1.5	0.25–1.5

Notes

① Own supply.
② Minimum length: 0.35 in (8 mm).

Pilot Device Modules

Description	Unit	M22-SWD-K11	M22-SWD-KC11	M22-SWD-LED-_	M22-SWD-LEDC-_	M22-SWD-K11-LED_
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	IEC/EN 61131-2 EN 50178
Dimensions (W x H x D)	in (mm)	0.47 x 1.65 x 1.54 (12 x 42 x 39)	0.47 x 1.77x 1.46 (12 x 45 x 37)	0.39 x 1.65 x 1.77 (10 x 42 x 45)	0.39 x 1.77 x 1.65 (10 x 45 x 42)	0.47 x 1.65 x 1.77 (12 x 42 x 45)
Weight	lbs (g)	0.022 (10)	0.022 (10)	0.022 (10)	0.022 (10)	0.022 (10)
Mounting position		As required	As required	As required	As required	As required
Ambient Conditions, Mechanical						
Degree of protection (IEC/EN 60529)		IP20	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	5–8.4
Constant acceleration 1g	Hz	8.4–150	8.4–150	8.4–150	8.4–150	8.4–150
Mechanical shock resistance (IEC/EN 60068-2-27) semi-sinusoidal 15g/11 ms	Impacts	9	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)	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)	1.0 (0.3)
Electromagnetic Compatibility (EMC)						
Overvoltage category		Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Pollution degree		2	2	2	2	2
Electrostatic discharge (IEC/EN 61131-2:2008)						
Air discharge (Level 3)	kV	8	8	8	8	8
Contact discharge (Level 2)	kV	4	4	4	4	4
Electromagnetic fields (IEC/EN 61131-2:2008)						
80–1000 MHz	V/m	10	10	10	10	10
1.4–2 GHz	V/m	3	3	3	3	3
2–2.7 GHz	V/m	1	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	EN 55011 Class A
Burst (IEC/EN 61131-2:2008, Level 3)						
Supply cables	kV	2	2	2	2	2
SmartWire-DT cables	kV	1	1	1	1	1
Radiated RFI (IEC/EN 61131-2:2008, Level 3)	V	10	10	10	10	10
Climatic Environmental Conditions						
Operating ambient temperature (IEC 60068-2)	°F (°C)	–22° to 131° (–30° to 55°)	–22° to 131° (–30° to 55°)	–22° to 131° (–30° to 55°)	–22° to 131° (–30° to 55°)	–22° to 131° (–30° to 55°)
Condensation		Prevent with suitable measures				
Storage	°F (°C)	–40° to 176° (–40° to 80°)	–40° to 176° (–40° to 80°)	–40° to 176° (–40° to 80°)	–40° to 176° (–40° to 80°)	–40° to 176° (–40° to 80°)
Relative humidity, non-condensing (IEC/EN 60068-2-30)	%	9–95	9–95	9–95	9–95	9–95
SmartWire-DT Network						
Station type		SmartWire-DT station (node)				
Address allocation		Automatic	Automatic	Automatic	Automatic	Automatic
SmartWire-DT status LED		Green	Green	Green	Green	Green
Connections						
Plug		8-pole	8-pole	8-pole	8-pole	8-pole
Plug connectors		SWD4-8SF2-5	M22-SWD-I_LP	SWD4-8SF2-5	M22-SWD-I_LP	SWD4-8SF2-5
Number of insertion cycles		≥ 50	≥ 50	≥ 50	≥ 50	≥ 50
Current consumption (15V SWD supply)		See **Page V7-T41.1-26**	See **Page V7-T41.1-26**	See **Page V7-T41.1-26**	See **Page V7-T41.1-26**	See **Page V7-T41.1-26**
Function Element						
Contacts		1 changeover contact	1 changeover contact	—	—	1 changeover contact
Lifespan mechanical/electrical (operations)		1 x 10^6	1 x 10^6	—	—	1 x 10^6
LED display		No	No	Yes	Yes	Yes
Diagnostics		Yes	Yes	No	No	Yes
Mounting		Front mount	Base mount	Front mount	Base mount	Front mount

Pilot Device Modules, continued

Description	Unit	M22-SWD-K11LEDC-_	M22-SWD-K22	M22-SWD-KC22	M22-SWD-K22-LED_	M22-SWD-K22LEDC-_
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	IEC/EN 61131-2 EN 50178
Dimensions (W x H x D)	in (mm)	0.47 x 1.77 x 1.65 (12 x 45 x 42)	0.67 x 1.65 x 1.54 (17 x 42 x 39)	0.67 x 1.77 x 1.46 (17 x 45 x 37)	0.67 x 1.65 x 1.77 (17 x 42 x 45)	0.67 x 1.77 x 1.65 (17 x 45 x 42)
Weight	lbs (g)	0.022 (10)	0.030 (14)	0.030 (14)	0.030 (14)	0.030 (14)
Mounting position		As required	As required	As required	As required	As required
Ambient Conditions, Mechanical						
Degree of protection (IEC/EN 60529)		IP20	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	5–8.4
Constant acceleration 1g	Hz	8.4–150	8.4–150	8.4–150	8.4–150	8.4–150
Mechanical shock resistance (IEC/EN 60068-2-27) semi-sinusoidal 15g/11 ms	Impacts	9	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)	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)	1.0 (0.3)
Electromagnetic Compatibility (EMC)						
Overvoltage category		Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Pollution degree		2	2	2	2	2
Electrostatic discharge (IEC/EN 61131-2:2008)						
Air discharge (Level 3)	kV	8	8	8	8	8
Contact discharge (Level 2)	kV	4	4	4	4	4
Electromagnetic fields (IEC/EN 61131-2:2008)						
80–1000 MHz	V/m	10	10	10	10	10
1.4–2 GHz	V/m	3	3	3	3	3
2–2.7 GHz	V/m	1	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	EN 55011 Class A
Burst (IEC/EN 61131-2:2008, Level 3)						
Supply cables	kV	2	2	2	2	2
SmartWire-DT cables	kV	1	1	1	1	1
Radiated RFI (IEC/EN 61131-2:2008, Level 3)	V	10	10	10	10	10
Climatic Environmental Conditions						
Operating ambient temperature (IEC 60068-2)	°F (°C)	–22° to 131° (–30° to 55°)	–22° to 131° (–30° to 55°)	–22° to 131° (–30° to 55°)	–22° to 131° (–30° to 55°)	–22° to 131° (–30° to 55°)
Condensation		Prevent with suitable measures				
Storage	°F (°C)	–40° to 176° (–40° to 80°)	–40° to 176° (–40° to 80°)	–40° to 176° (–40° to 80°)	–40° to 176° (–40° to 80°)	–40° to 176° (–40° to 80°)
Relative humidity, non-condensing (IEC/EN 60068-2-30)	%	9–95	5–95	5–95	5–95	5–95
SmartWire-DT Network						
Station type		SmartWire-DT station (node)				
Address allocation		Automatic	Automatic	Automatic	Automatic	Automatic
SmartWire-DT status LED		Green	Green	Green	Green	Green
Connections						
Plug		8-pole	8-pole	8-pole	8-pole	8-pole
Plug connectors		M22-SWD-I_LP	SWD4-8SF2-5	M22-SWD-I_LP	SWD4-8SF2-5	M22-SWD-I_LP
Number of insertion cycles		≥50	≥50	≥50	≥50	≥50
Current consumption (15V SWD supply)		See **Page V7-T41.1-26**	See **Page V7-T41.1-26**	See **Page V7-T41.1-26**	See **Page V7-T41.1-26**	See **Page V7-T41.1-26**
Function Element						
Contacts		1 contact	2 contacts	2 contacts	2 contacts	2 contacts
Lifespan mechanical/electrical (operations)		1×10^6	1×10^6	1×10^6	1×10^6	1×10^6
LED display		Yes	No	No	Yes	Yes
Diagnostics		Yes	Yes	Yes	Yes	Yes
Mounting		Base mount	Front mount	Base mount	Front mount	Base mount

Current Consumption Ratings

Power Consumption/Current Consumption 24 Vdc Control Voltage U_{AUX}

Description	Unit	DIL-SWD-32-_
Pick-Up Power		
For XTCE007–XTCE009	W	3
For XTCE012–XTCE015	W	4,5
For XTCE018–XTCE032	W	12
Pick-Up Current		
For XTCE007–XTCE009	mA	125
For XTCE012–XTCE015	mA	188
For XTCE018–XTCE032	mA	500
Holding Power		
For XTCE007–XTCE009	W	3
For XTCE012–XTCE015	W	4,5
For XTCE018–XTCE032	W	0,5
Holding Current		
For XTCE007–XTCE009	mA	125
For XTCE012–XTCE015	mA	188
For XTCE018–XTCE032	mA	21

Current Consumption 15 Vdc Supply Voltage

Catalog Number	Current Consumption (mA)
DIL-SWD-32-001	40
DIL-SWD-32-002	40
EU5E-SWD-4D2R	45
EU5E-SWD-4D4D	45
EU5E-SWD-8DX	12
M22-SWD-I1-LP01 ①	17
M22-SWD-I2-LP01 ①	17
M22-SWD-I3-LP01 ①	17
M22-SWD-I4-LP01 ①	17
M22-SWD-I6-LP01 ①	17
M22-SWD-K11	7
M22-SWD-K11LED-B	19
M22-SWD-K11LED-G	19
M22-SWD-K11LED-R	19
M22-SWD-K11LED-W	19
M22-SWD-K11LEDC-B	19
M22-SWD-K11LEDC-G	19
M22-SWD-K11LEDC-R	19
M22-SWD-K11LEDC-W	19

Catalog Number	Current Consumption (mA)
M22-SWD-K22	7
M22-SWD-K22LED-B	19
M22-SWD-K22LED-G	19
M22-SWD-K22LED-R	19
M22-SWD-K22LED-W	19
M22-SWD-K22LEDC-B	19
M22-SWD-K22LEDC-G	19
M22-SWD-K22LEDC-R	19
M22-SWD-K22LEDC-W	19
M22-SWD-KC11	7
M22-SWD-KC22	7
M22-SWD-LED-B	19
M22-SWD-LED-G	19
M22-SWD-LED-R	19
M22-SWD-LED-W	19
M22-SWD-LEDC-B	19
M22-SWD-LEDC-G	19
M22-SWD-LEDC-R	19
M22-SWD-LEDC-W	19
SWD4-RC8-10	17

Note

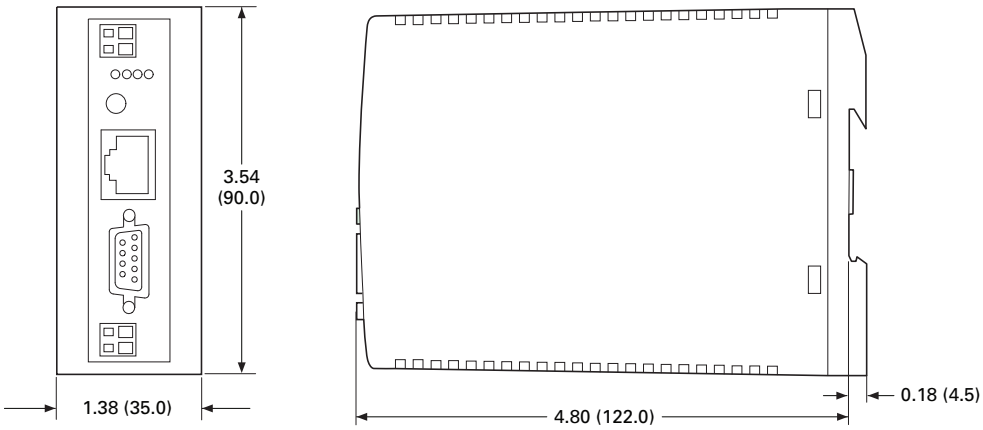
① With terminating resistor switched on.

Dimensions

Approximate Dimensions in Inches (mm)

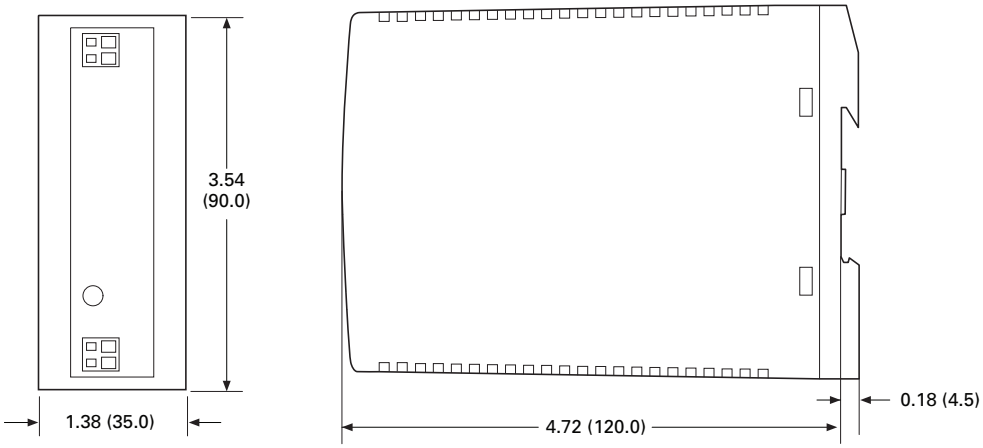
Gateways

EUSC_SWD, DP_



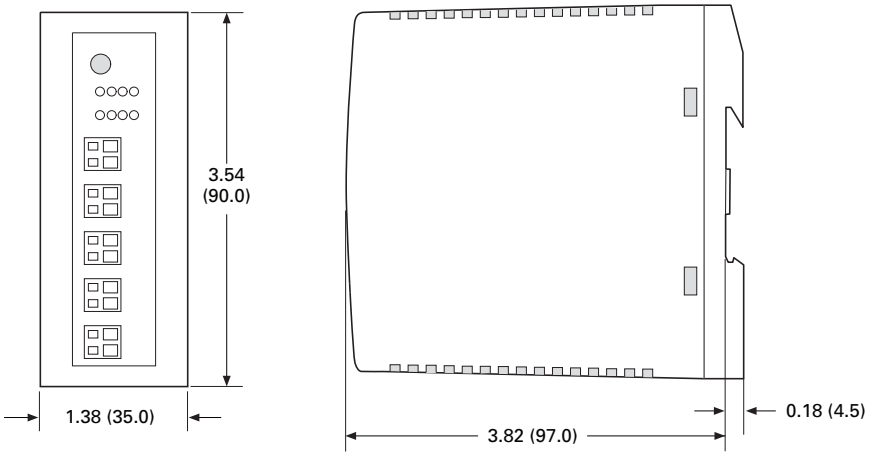
Powerfeed Modules

EUSC-SWD-PF_



I/O Modules

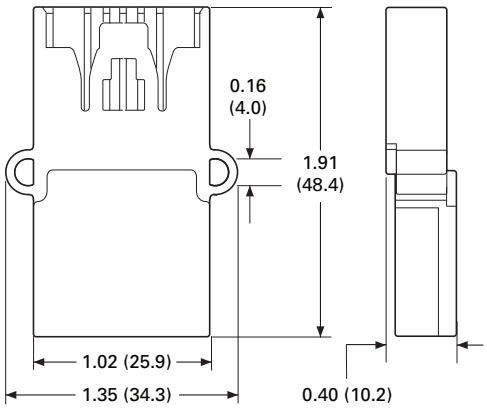
EUSE-SWD_



Approximate Dimensions in Inches (mm)

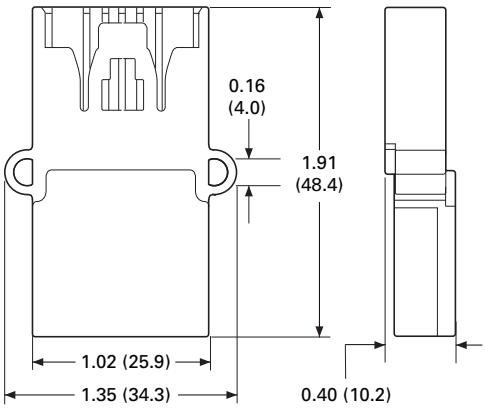
Terminating Resistor

SWD4-RC8-10



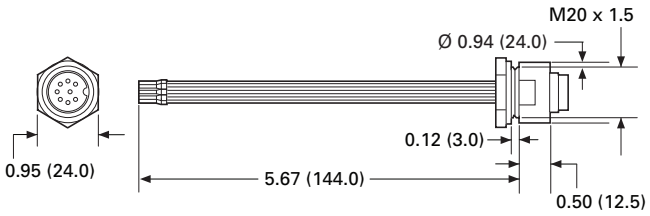
Coupling

SWD4-8SFF2-5



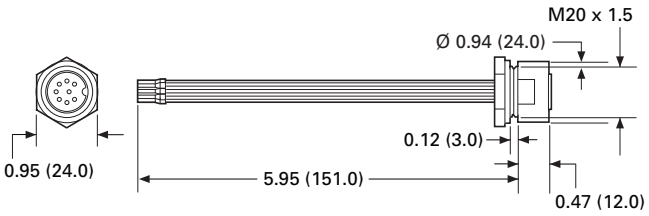
Enclosure Bushing Plug

SWD4-SM8-20



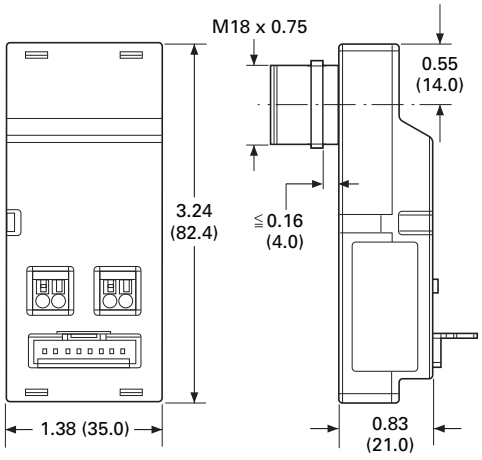
Enclosure Bushing Socket

SWD4-SF8-20



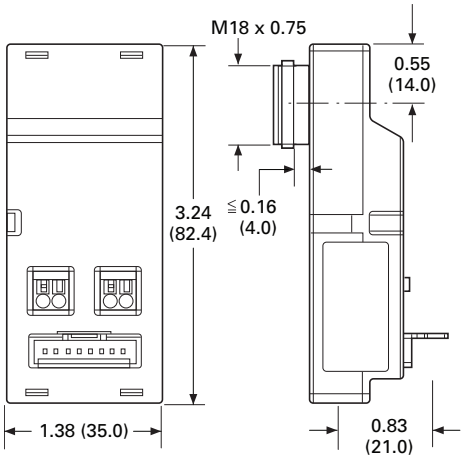
Cabinet Cable Adapter Plug

SWD4-SML8-20



Cabinet Cable Adapter Socket

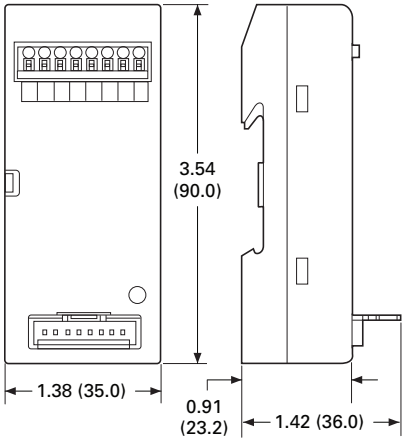
SWD4-SFL8-20



Approximate Dimensions in Inches (mm)

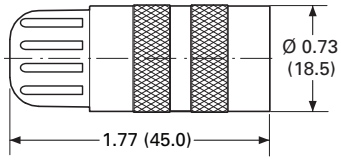
Panel Cable Adapter)

SWD4-8FRF-10



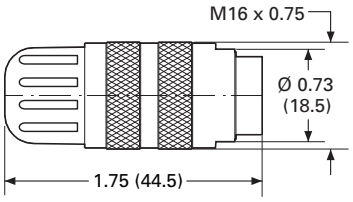
Round Cable Socket

SWD4-SF8-67



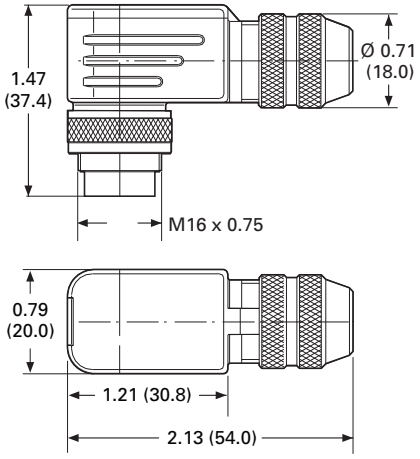
Round Cable Plug

SWD4-SM8-67



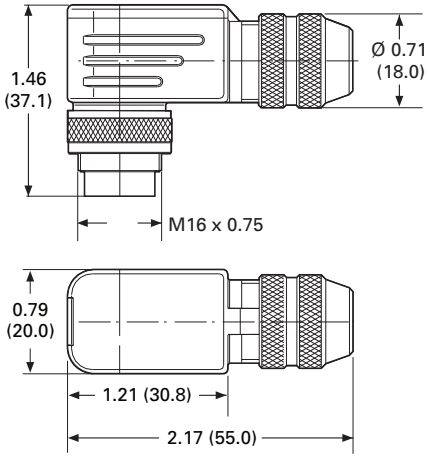
Right Angle Round Cable Socket

SWD4-SF8-67W



Right Angle Round Cable Plug

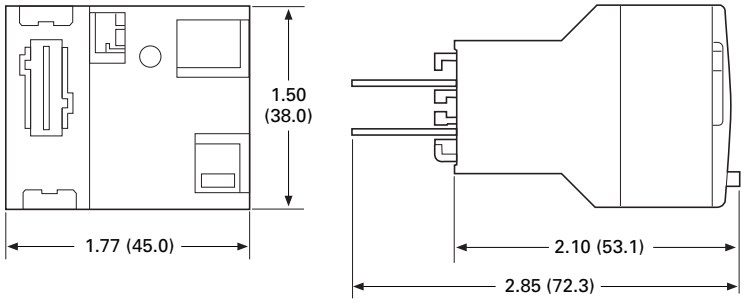
SWD4-SM8-67W



Approximate Dimensions in Inches (mm)

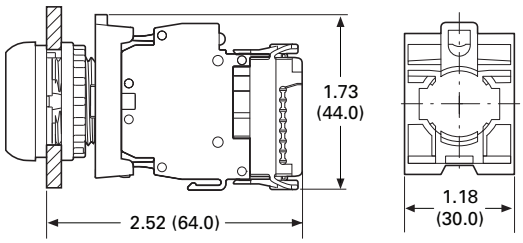
Contactor Modules

DIL-SWD-32-001 and DIL-SWD-32-002



Pilot Device Modules

M22-SWD-K_, M22-SWD-LED_



Device Plug

SWD4-8SF2-5