

SmartWire-DT

# SmartWire-DT Catalog

Build machines and operate  
systems more efficiently  
Build it in.



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*Powering Business Worldwide*



# Energizing a world that demands more.

## We deliver:

- **Electrical solutions** that use less energy, improve power reliability and make the places we live and work safer and more comfortable
- **Hydraulic and electrical solutions** that enable machines to deliver more productivity without wasting power
- **Aerospace solutions** that make aircraft lighter, safer and less costly to operate, and help airports operate more efficiently
- **Vehicle drivetrain and powertrain solutions** that deliver more power to cars, trucks and buses, while reducing fuel consumption and emissions

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As a global power management company, we help customers worldwide manage the power needed for buildings, aircraft, trucks, cars, machinery and businesses.

Eaton's innovative technologies help customers manage electrical, hydraulic and mechanical power more reliably, efficiently, safely and sustainably.

We provide integrated solutions that help make energy, in all its forms, more practical and accessible.

With 2014 sales of \$22.6 billion, Eaton has approximately 100,000 employees around the world and sells products in more than 175 countries.

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# Reducing complexity for more compact, cost-optimised machines.



Customer expectations today are focused on increased performance in a more compact design, shorter delivery times, and the right price. To meet these requirements, machines need to be built in shorter time frames, using smaller control cabinets with intelligent, energy-saving devices that allow a smaller machine footprint.

SmartWire-DT is a unique wiring solution that streamlines connection and communications inside and outside control panels.

Machine builders globally are finding that SmartWire-DT can be integrated easily into machines in a smaller control cabinet, reducing the time and effort for wiring their machines by up to 85%.



# Build it in.

## Reducing wiring costs by 85%



## Simplify wiring. Reduce costs.

Today, control wires are used to connect devices like switchgear or pilot devices to PLC I/O-modules. Using SmartWire-DT, these modules and the control wiring becomes obsolete. All devices are connected to this intelligent wiring system, reducing engineering and installation costs for the machine builder, and optimizing machine maintenance and availability for the customer.

### Less complex, more compact machines

Eliminating the PLC I/O and the control wiring means more compact control panels and machines, and makes automation structures simple to design and configure.

### Simplified connectivity

By replacing conventional, time-consuming control circuit wiring with one single cable, SmartWire-DT enables the simple connection of switchgear in control panels, as well as sensors and actuators outside control panels. This results in safe and error-free switchgear installations combined with significantly shorter commissioning times.

### Higher flexibility

With industrial fieldbus gateways, SmartWire-DT can be connected to PLCs from any manufacturer, giving the machine builder the flexibility to meet customer demand more easily.

### More compact machines with Eaton controllers

For small and medium machines, Eaton offers HMI/PLCs, compact PLC and control relays with integrated SmartWire-DT communication interface. This offers machine builders the opportunity to develop simpler, and even more compact automation solutions.



# Extended communication improves system effectiveness.

Plants need multiple drives, control and pilot devices to be designed, installed and controlled, along with distributed sensors and actuators. Automation of the process environment can be quite challenging, especially if continuous process availability is required. SmartWire-DT is an intelligent wiring system that provides more data on installed devices, central to increased availability and preventive maintenance.

## More data, increased availability

More detailed information enables better process control, more detailed diagnostics, reduced downtime and increased availability. SmartWire-DT switchgear devices provide continuous real-time data information on motor load conditions that allows an interaction before an overload situation occurs and the system stops. Monitoring motor current values also helps with preventive maintenance.

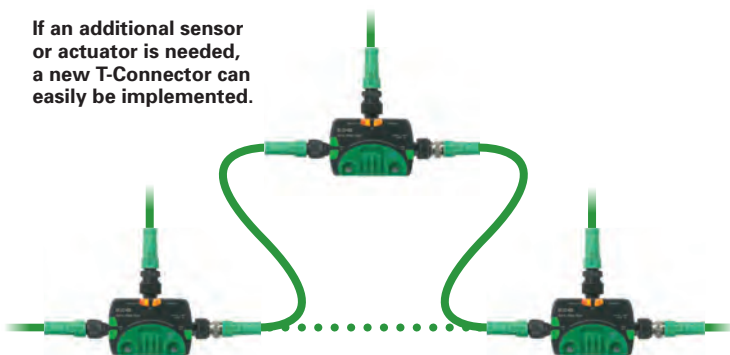
## Compliant to industrial fieldbus standards

With industrial fieldbus gateways, SmartWire-DT can be connected to PLCs from any manufacturer and existing installations can be easily extended.

## Easy expansion

SmartWire-DT makes it easy to add expansions during operation. New devices are simply connected to the communication cable inside or outside the control panel. An overall length of up to 600m simplifies distributed control architectures.

**If an additional sensor or actuator is needed, a new T-Connector can easily be implemented.**



**Build it in.**

**Optimized  
availability  
increases  
profitability**

**Compliant to  
all industrial  
fieldbus  
standards**

**Up to 99  
devices  
installed  
along 600m**

**Intelligent devices at the heart of Industrie 4.0**

Intelligent devices and open communication standards are essential to solutions true to an Industrie 4.0 vision. They have to be able to communicate with every controller within an open architecture while also controlling specific distributed processes independently.

With its SmartWire-DT platform and intelligent devices, Eaton brings the vision of Industrie 4.0 to life. These intelligent devices help engineers to run their businesses on a lean, smart and efficient basis and take another step toward implementing complete Industrie 4.0 solutions.



**Intelligent Motor Control Centre with SmartWire-DT®**

With motor control centers, SmartWire-DT replaces all control wiring in the corresponding withdrawable units. Mounting is simplified, wiring reduced and space saved. The information the MCC delivers with SmartWire-DT helps minimise system downtime.

# One system, countless possibilities.

SmartWire-DT enables distributed intelligence that changes automation. Interface modules installed on standard switchgear replace the digital and analog I/O layer on PLCs. Gateways to any industrial fieldbus make it not just possible, but simple to access the SmartWire-DT network independent of the PLC system. At the same time, SmartWire-DT technology is available as an integrated part of our controllers. The result: easy-to-configure, linear automation structures with few components.

## Powerful technology

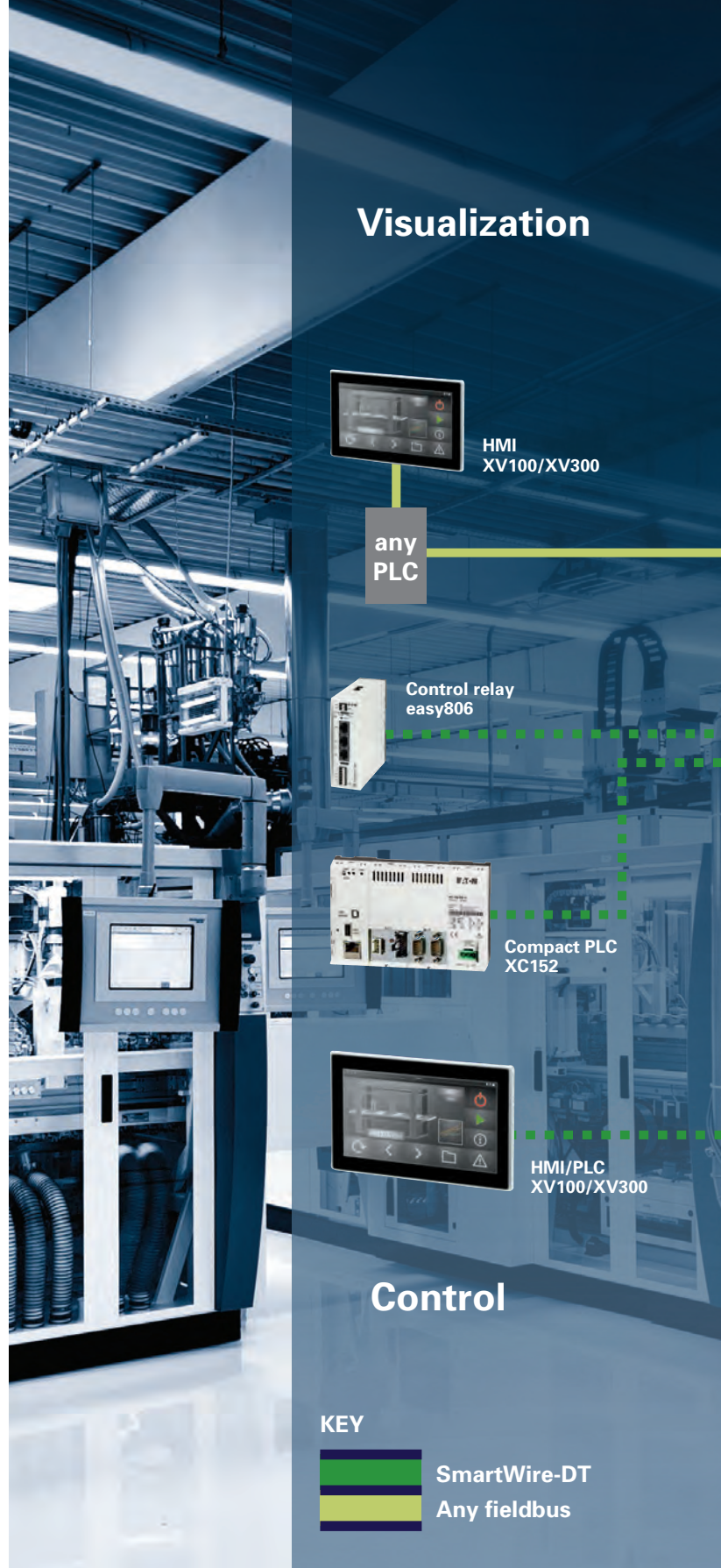
Up to 99 devices can be connected on a single SmartWire-DT line. The maximum permissible total length is 600m, while the maximum data volume for cyclic process data is 1,000 bytes. The SmartWire-DT cable also includes the required power supply for the SmartWire-DT electronics as well as for installed contactors.

## Flexible integration in every automation environment

Fieldbus gateways are used to connect the SmartWire-DT communication system to your individual PLC system. SmartWire-DT can communicate via industrial fieldbus using standardised mechanisms for configuring and parameter setting.

## SmartWire-DT modules

Two different types of SmartWire-DT modules are available. Special function modules replace the electrical interfaces of contactors, pushbuttons, pilot devices and auxiliary switches. Intelligent devices like electronic motor protective devices, softstarters and drives transmit digital and analog information (e.g. current, overload..) directly onto the SmartWire-DT network.



## Inside and outside the cabinet

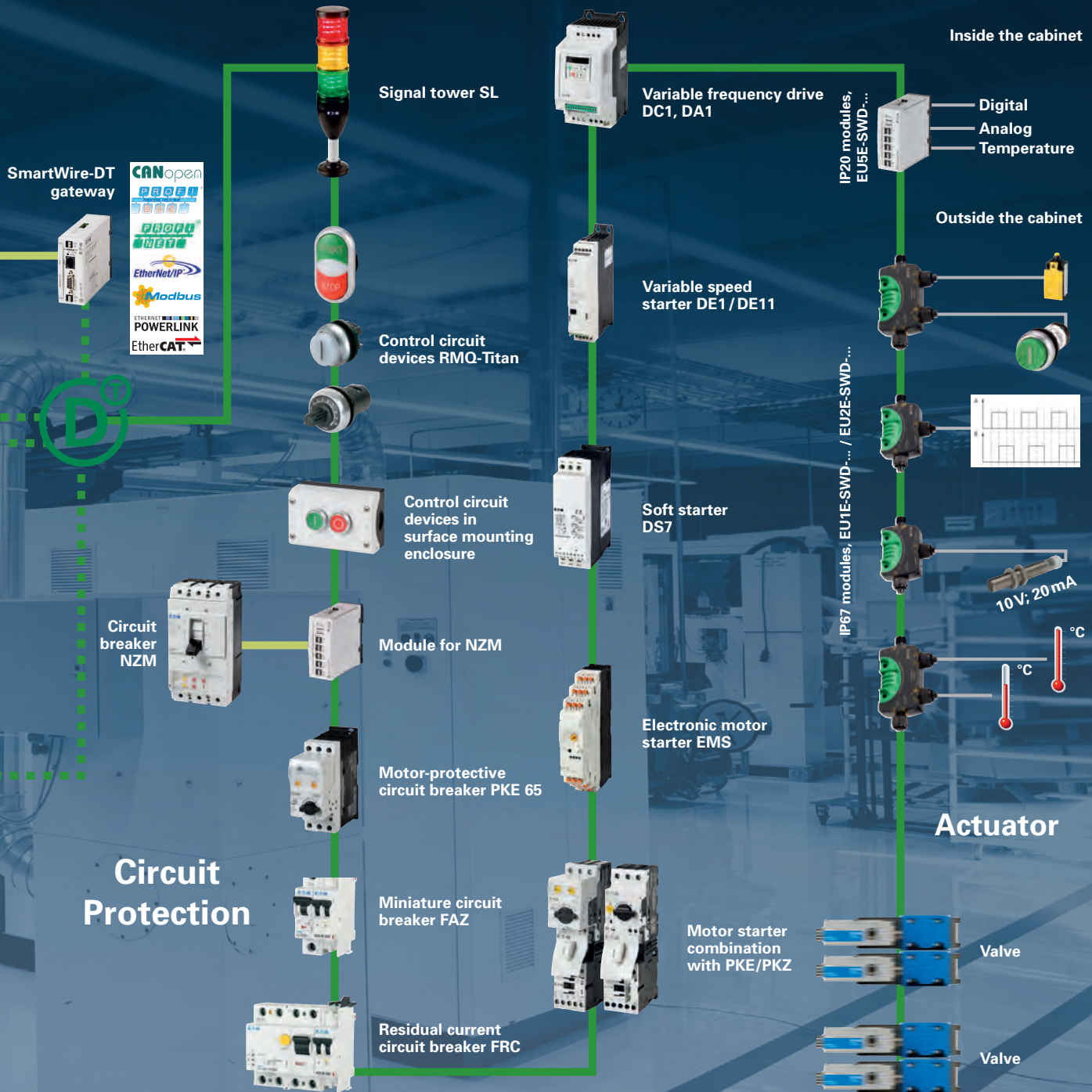
Smartwire-DT can also be used to directly connect sensors and actuators in the field. This is done with T-Connectors, available as digital and analog I/O modules with an IP67 degree of protection.



## Operate

## Start a motor

## Input/Output



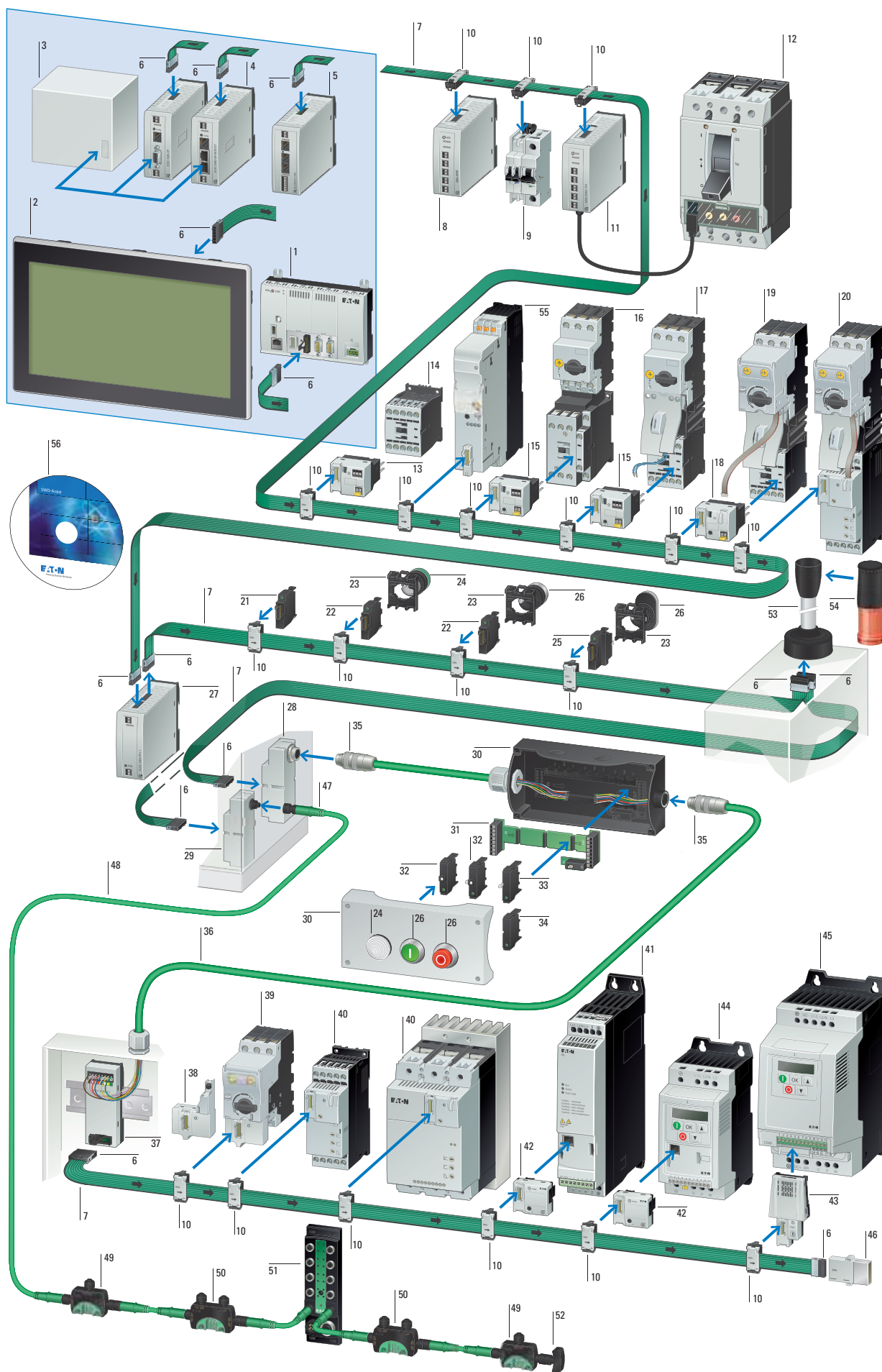
## Circuit Protection



### Electrical and Hydraulic

Special dedicated SmartWire-DT modules can be used to directly control 2/3-position or proportional hydraulic valves.

System overview



1	Compact PLC	17	MSC motor starters	30	Surface mounting enclosure RMQ-Titan	43	SWD function element for DA1 variable frequency drive
2	Touch display	18	SWD PKE module (motor starter)	31	SWD circuit card for function elements, base fixing	44	DC1 variable frequency drive
3	PLC with field bus interface	19	Motor starters with PKE electronic motor protection	32	SWD LED elements for base fixing	45	DA1 variable frequency drives
4	Gateways	20	Soft starter DS7 with electronic motor protection from PKE	33	SWD function elements for base fixing	46	SWD bus termination resistor for SWD ribbon cable, 8 pole
5	Control relays	21	SWD universal module, front mounting	34	SWD universal modules, base fixing	47	M12 plug connector, 5 pole
6	SWD blade terminal, 8 pole	22	SWD LED element, front mounting	35	SWD plug-in connector, 8 pole	48	SWD round cable, 5 pole
7	SWD ribbon cable, 8 pole	23	RMQ-Titan fixing adapter for flush mounting plates	36	SWD round cable, 8 pole	49	SWD I/O module IP67, 2 I/O
8	SmartWire-DT I/O module	24	RMQ-Titan indicator lights	37	SWD adapter for flat/round cable for top-hat rail mounting	50	SWD I/O module IP67, 4 I/O
9	SWD module for circuit-breakers and residual current circuit-breakers	25	SWD function elements for front mounting	38	SWD PKE module (motor-protective circuit-breaker)	51	SWD I/O module IP67, max. 16 I/O
10	SWD external device plug, 8 pole	26	SWD operating elements	39	Motor Protective circuit-breakers PKE	52	SWD bus termination resistor IP67 for SWD round cable, 5 pole
11	SWD interface for NZM	27	SWD power feeder module	40	Soft Starter DS7	53	Base module signal tower SL4/SL7
12	NZM circuit-breakers	28	SWD control panel bushing ribbon cable to 8 pole round cable, M20	41	DE1 Variable speed starter	54	Signal towers SL4/SL7
13	SWD contactor module	29	SWD control panel bushing ribbon cable to 5 pole round cable, M12	42	SWD function element for DC1 variable frequency drive, DE1 variable speed starter	55	Electronic Motor Starter EMS
14	DILM contactor					56	SmartWire-DT planning and ordering tool (SWD-Assist)
15	SWD contactor module with manual 0 automatic switch						
16	Motor-Protective Circuit-Breakers						

 <http://eaton.de/ecat>   <http://www.eaton.eu/swd>   <http://www.eaton.eu/swdproducts>

## Features

### SmartWire-DT coordinators

#### Touch display

with SWD master and PLC function  
3.5", 5.7", 7", 10" or 15" TFT-LCD screen,  
additional field bus interfaces, Ethernet, WEB server

#### Compact controller

with SWD master  
additional fieldbus interfaces, Ethernet, WEB server

#### Control relay

with SWD master

#### Gateways

Connection of SmartWire-DT to fieldbus  
(e.g. CANopen, Profibus, Profinet ...)  
Supply voltage for the SmartWire-DT modules  
Feeder unit for the control voltage for the motor starter  
or contactor  
Support of up to 99 SmartWire-DT modules

### SmartWire-DT modules

I/O modules to connect digital and analog input/output  
signals in IP20, IP67 degree of protection

DS7 Soft starter with integrated SWD interface

Function element to connect to:

- Pilot devices RMQ-Titan
- SL4/7 signal tower
- Contactor DILM
- Motor-protective circuit-breaker PKZ/PKE
- PKE32,65 circuit-breaker
- NZM2,3,4 circuit-breakers
- Miniature circuit breaker (MCB)
- DE1 Variable speed starter
- DC1, DA1 variable frequency drives
- XNH fuse switch-disconnector

### SmartWire-DT accessories

Several connection elements are necessary to ensure  
the SWD line function

- Power feeder module
- SWD cables
- SWD housing and switch cabinet bushings
- Plugs and plug-in connections
- Links
- Couplings, cable adapters
- Bus termination resistors
- Tools
- Programming accessories

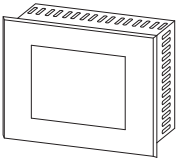

Ordering

	Screen diagonal	Resolution	built-in interfaces								Part no.	Article no.	Std. pack UL, CSA
	Inch	Pixel	1 x Ethernet 10/100 Mbps	1 x RS485	1 x USB host 2.0	1 x USB device	1 x CANopen®/easyNet	1 x PROFIBUS/MPI	1 x SmartWire-DT				

Touch display with integrated controller (HMI-PLC)

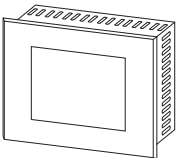


XV100  
Windows CE 5.0 (licence incl.), Approvals: cUL (UL508)  
Slots for SD card: 1  
Resistive touch with TFT display, 64 k colors  
Standard front with standard membrane (fully enclosed)

Insulating enclosure and front plate

	3.5	QVGA 320 x 240	✓	-	-	✓	-	-	✓	<b>XV-102-BE-35TQRC-10</b>	153524	1 off  
	5.7	VGA 640 x 480	✓	✓	✓	✓	✓	-	✓	<b>XV-102-E6-57TVRC-10</b>	153525	
			✓	✓	✓	✓	-	✓	✓	<b>XV-102-E8-57TVRC-10</b>	153526	
	7	WVGA 800 x 480	✓	✓	✓	✓	✓	-	✓	<b>XV-102-E6-70TWRC-10</b>	153527	
✓			✓	✓	✓	-	✓	✓	<b>XV-102-E8-70TWRC-10</b>	153528		

XV150

Metal enclosure and front plate

	5.7	VGA 640 x 480	✓	✓	✓	✓	✓	-	✓	<b>XV-152-E6-57TVRC-10</b>	166700	1 off  
			✓	✓	✓	✓	-	✓	✓	<b>XV-152-E8-57TVRC-10</b>	166701	
	8.4	VGA 640 x 480	✓	✓	✓	✓	✓	-	✓	<b>XV-152-E6-84TVRC-10</b>	166702	
			✓	✓	✓	✓	-	✓	✓	<b>XV-152-E8-84TVRC-10</b>	166703	
			✓	✓	✓	✓	✓	-	✓	<b>XV-152-E6-10TVRC-10</b>	166704	
			✓	✓	✓	✓	-	✓	✓	<b>XV-152-E8-10TVRC-10</b>	166705	

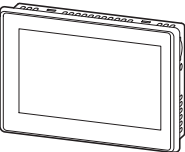


 [www.eaton.eu/xv](http://www.eaton.eu/xv)

	Screen diagonal	Resolution	built-in interfaces								Part no.	Article no.	Std. pack UL, CSA
			1 x Ethernet 10/100 Mbps	2 x Ethernet 10/100 Mbps	1 x RS 232	1 x RS 485	1 x USB host 2.0	1 x USB device	1 x CANopen®/easyNet	1 x PROFIBUS/MPI			

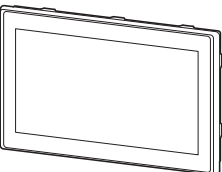


Multi-touch display with integrated controller (HMI-PLC)

Windows Embedded Compact 7 Pro, Approvals: cUL 61010-2-201  
Slots for SD card: 1  
Resolution: WSVGA 1024 x 600 Pixel  
PLC licence inclusive  
Capacitive multi-touch technology (PCT), Number of colors: 16 million  
Model: Plastic enclosure and glass panel in plastic frame

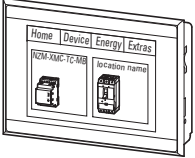
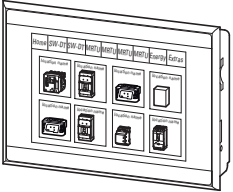
XV300 7"

	✓	-	✓	✓	✓	✓	✓	-	✓	<b>XV-303-70-BE0-A00-1C</b>	179655	1 off  
	-	✓	✓	✓	✓	✓	✓	-	✓	<b>XV-303-70-CE0-A00-1C</b>	179656	
	✓	-	✓	✓	✓	✓	✓	✓	✓	<b>XV-303-70-BE2-A00-1C</b>	179657	
	-	✓	✓	✓	✓	✓	✓	✓	✓	<b>XV-303-70-CE2-A00-1C</b>	179658	

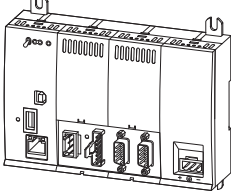


XV300 10.1"

	✓	-	✓	✓	✓	✓	✓	-	✓	<b>XV-303-10-BE0-A00-1C</b>	179667	1 off  
	-	✓	✓	✓	✓	✓	✓	-	✓	<b>XV-303-10-CE0-A00-1C</b>	179668	
	✓	-	✓	✓	✓	✓	✓	✓	✓	<b>XV-303-10-BE2-A00-1C</b>	179669	
	-	✓	✓	✓	✓	✓	✓	✓	✓	<b>XV-303-10-CE2-A00-1C</b>	179670	




 [www.eaton.eu/xv300](http://www.eaton.eu/xv300)

Description	Part no.	Article no.	Std. pack UL, CSA	
<b>pre-programmed solution</b>				
<b>BreakerVisu</b>				
<p>Visualize and log circuit-breaker and/or measuring device data                      Read diagnostic memories                      Create energy logs                      Connect NZM using NZM-XSWD-704                      Connect all NZM...-XMC-MB... measuring modules and NZM-XMC-TC-MB                      Connection of IZMX16/40 using IZMX-MCAM                      Connect IZM26... using IZM-MMINT                      Connect PKE with XTUA or XTUWA using PKE-SWD-SP                      Connect PKE with XTUACP or XTUWACP using PKE-SWD-CP                      Connect RCCBs, MCBs, RCBOs using MCB-HK-SWD                      Ethernet connection for display on web browsers                      FTP connection for data transfers                      Gateway function for forwarding data                      Non-Eaton devices can be connected</p>				
	<p>Max. 8 devices via SmartWire-DT                      3.5 Inch                      Color display, TFT</p>	<p><b>NZM-XMC-MDISP35-SWD</b></p>	<p>172765</p>	<p>1 off</p>
	<p>Max. 32 devices via MODBUS RTU and/or max. 16 devices via SmartWire-DT                      7 Inch                      Color display, TFT</p>	<p><b>NZM-XMC-MDISP70</b></p>	<p>172766</p>	<p>1 off</p>




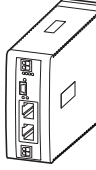
 [www.eaton.eu/breakervisu](http://www.eaton.eu/breakervisu)





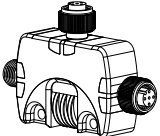


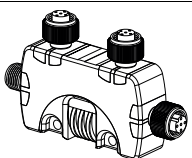
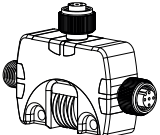


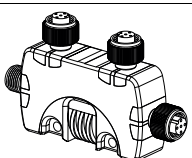
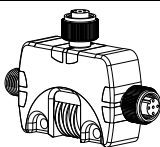


	Built-in interfaces							Part no.	Article no.	Std. pack UL, CSA
	1 x Ethernet 10/100 Mbps									
	1 x RS232									
	1 x RS485									
	1 x USB host 2.0									
	1 x CANopen@easyNet									
	1 x PROFIBUS/MPI									
	1 x SmartWire-DT									
<b>XC compact PLCs</b>										
24 V DC power supply Slot for memory card RUN/STOP switch and LED displays OPC Server Integrated Web server Approvals: CE, cULus Application/marker/retain data 64 MB/4 KB/32 KB Cycle time for 1 k of instructions (Bit, Byte) 0.04 ms										
	✓	✓	-	✓	-	-	✓	<b>XC-152-E3-11</b>	167850	1 off  
	✓	-	✓	✓	✓	-	✓	<b>XC-152-E6-11</b>	167851	
	✓	-	✓	✓	-	✓	✓	<b>XC-152-E8-11</b>	167852	

[www.eaton.eu/xc152](http://www.eaton.eu/xc152)

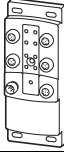


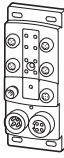
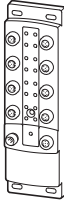
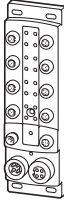
	Inputs		SmartWire-DT	Outputs		Real time clock	Part no.	Article no.	Std. pack UL, CSA	
	Digital	Of which can be used as outputs		Transistor	SmartWire-DT					
<b>easy800 control relay</b>										
Combines the functionality of an easy800 with direct connection to SmartWire-DT communication system Up to 99 SmartWire-DT modules with a total of up to 166 digital inputs/outputs and/or up to 128 analog inputs/outputs can be connected via a SmartWire-DT line Supply voltage 24 V DC										
	-	-	83	-	83	✓	<b>EASY802-DC-SWD</b>	152901	1 off  	
	4	2	83	2	83	✓	<b>EASY806-DC-SWD</b>	152902		

[www.eaton.eu/easy](http://www.eaton.eu/easy)

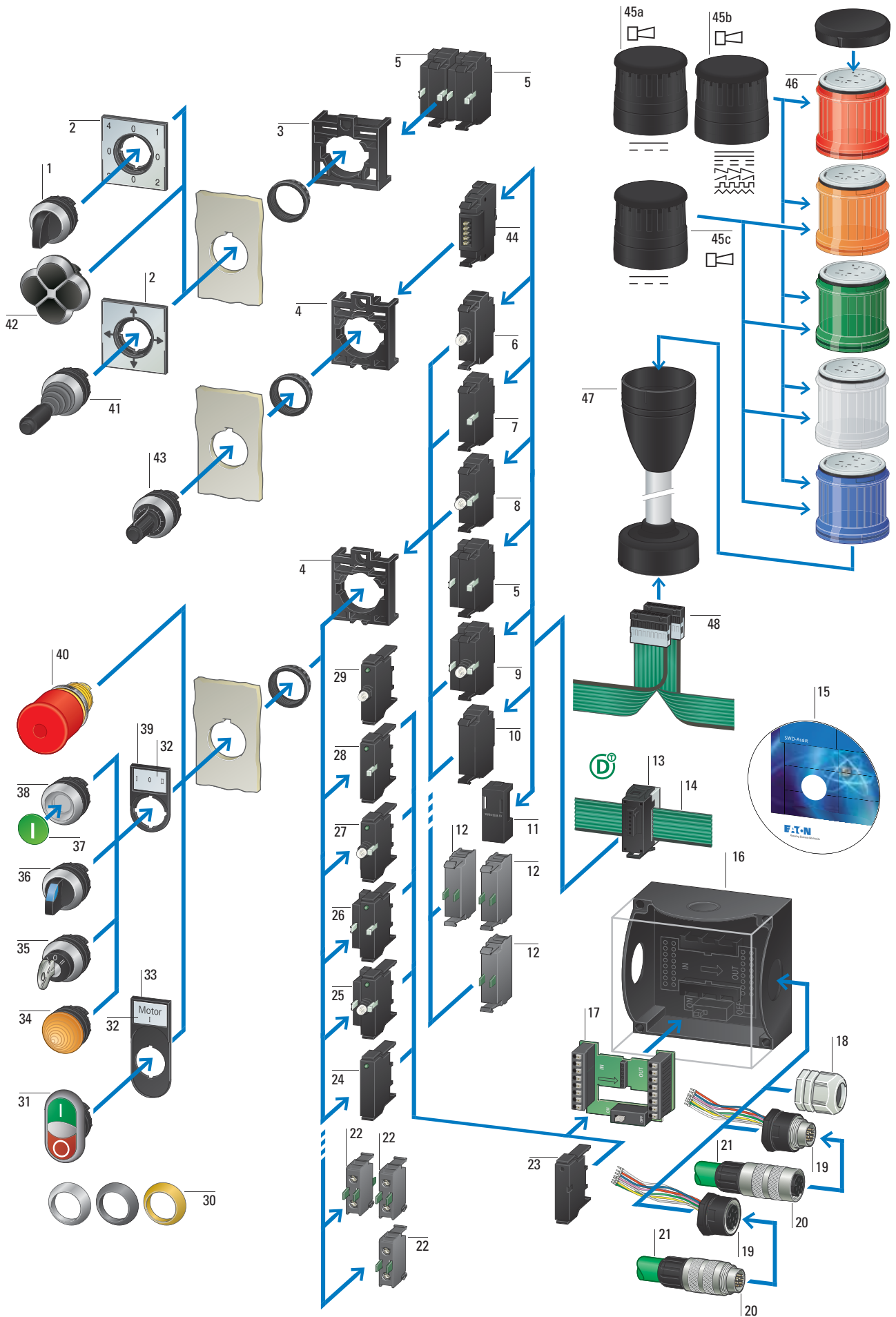
		Baud Rates	Number of SmartWire-DT slaves	Part no.	Article no.	Std. pack UL, CSA
<b>Gateways</b>						
Used to connect the SmartWire-DT communication system to industrial field bus systems Powers SmartWire-DT modules and switchgear						
	For connection to CANopen® field bus Field bus connection via 9 pole SUB-D plug Separate RS232 diagnostics interface (RJ45)	up to 1 MBit/s	Max. 99	<b>EU5C-SWD-CAN</b>	116307	1 off 
	For connection to PROFIBUS-DP field bus Field bus connection via 9 pole SUB-D socket Separate RS232 diagnostics interface (RJ45)	up to 12 MBit/s	Max. 58	<b>EU5C-SWD-DP</b>	116308	
	For connection to the Ethernet-IP/MODBUS-TCP field bus Field bus connection via Ethernet Switch Separate RS232 diagnostics interface (RJ45)	10/100 MBit/s	Max. 99	<b>EU5C-SWD-EIP-MODTCP</b>	153163	
	For connection to field bus PROFINET as PROFINET IO-Device Field bus connection via Ethernet Switch Separate USB diagnostics interface (Mini-USB)	100 MBit/s	Max. 99	<b>EU5C-SWD-PROFINET</b>	170124	
	For connection to a POWERLINK field bus as a slave Field bus connection via Ethernet hub Separate USB diagnostics interface (Mini-USB)	100 MBit/s	Max. 99	<b>EU5C-SWD-POWERLINK</b>	171797	
	For connection to an EtherCAT fieldbus as a slave Field bus connection via Ethernet Switch Separate USB diagnostics interface (Mini-USB)	100 MBit/s	Max. 99	<b>EU5C-SWD-ETHERCAT</b>	177354	
	For connection to an SERCOS III fieldbus as a slave Field bus connection via Ethernet Switch Separate USB diagnostics interface (Mini-USB)	100 MBit/s	Max. 99	<b>EU5C-SWD-SERCOS</b>	184982	

		Inputs	Outputs			Part no.	Article no.	Std. pack UL, CSA	
		Digital	Analog	Relay	Transistor				Analog
<b>Input/output modules (IP20)</b>									
<b>Digital modules IP20</b>									
For connection of digital I/O signals									
For use with: ribbon cable, SWD coordinators									
		8	-	-	-	-	<b>EU5E-SWD-8DX</b>	116381	1 off  
	The outputs are short-circuit proof.	4	-	-	4	-	<b>EU5E-SWD-4D4D</b>	116382	
		4	-	2	-	-	<b>EU5E-SWD-4D2R</b>	116383	
	The outputs are short-circuit proof.	-	-	-	8	-	<b>EU5E-SWD-X8D</b>	144061	
	Inputs with supply for sensor system.	4	-	-	-	-	<b>EU5E-SWD-4DX</b>	144060	
<b>Analog modules IP20</b>									
For connection of analog I/O signals									
For use with ribbon cable, SWD coordinators									
	Inputs configurable: 0 - 10 V, 0 - 20 mA	-	4	-	-	-	<b>EU5E-SWD-4AX</b>	144062	
	Inputs/outputs, configurable: 0 - 10 V, 0 - 20 mA	-	2	-	-	2	<b>EU5E-SWD-2A2A</b>	144063	
	Configurable inputs: PT100, PT1000, Ni1000	-	4	-	-	-	<b>EU5E-SWD-4PT</b>	144064	
	Temperature range °C : PT100, PT1000: -50 - +200 Ni1000: -50 - +150								
	Configurable inputs: PT100, PT1000, Ni1000	-	4	-	-	-	<b>EU5E-SWD-4PT-2</b>	172560	
Temperature range °C : PT100, PT1000: -100 - +400 Ni1000: -50 - +200									
<b>Input/output modules (IP67) T-Connector</b>									
<b>Digital modules IP67</b>									
For connection of digital I/O signals									
	-	1	-	-	-	-	<b>EU1E-SWD-1DX</b>	174710	1 off  
	-	2	-	-	-	-	<b>EU1E-SWD-2DX</b>	174711	
	Freely configurable inputs/outputs, max. 2 The outputs are short-circuit proof.	≤ 2	-	-	≤ 2	-	<b>EU1E-SWD-2DD</b>	174715	
	-	2	-	-	-	-	<b>EU2E-SWD-2DX</b>	174725	
	-	4	-	-	-	-	<b>EU2E-SWD-4DX</b>	174726	
	Freely configurable inputs/outputs, max. 2 The outputs are short-circuit proof.	≤ 2	-	-	≤ 2	-	<b>EU2E-SWD-2DD</b>	174730	
	Freely configurable inputs/outputs, max. 4 The outputs are short-circuit proof.	≤ 4	-	-	≤ 4	-	<b>EU2E-SWD-4DD</b>	174732	
	Freely configurable inputs/outputs, max. 4 The outputs are short-circuit proof. Plug configuration (X1: 1 I/O, X2: 3 I/O)	≤ 4	-	-	≤ 4	-	<b>EU2E-SWD-4DD-1</b>	180406	
<b>Analog modules IP67</b>									
For connection of analog I/O signals									
	Input: 0 - 10 V	-	1	-	-	-	<b>EU1E-SWD-1AX-1</b>	174717	1 off  
	Input: 0 - 20 mA	-	1	-	-	-	<b>EU1E-SWD-1AX-2</b>	174718	
	Output: 0 - 10 V	-	-	-	-	1	<b>EU1E-SWD-1XA-1</b>	174719	
	Output: 0 - 20 mA	-	-	-	-	1	<b>EU1E-SWD-1XA-2</b>	174720	
	Configurable inputs: PT100, PT1000, Ni1000	-	2	-	-	-	<b>EU2E-SWD-2PT</b>	174733	
<b>Counter module IP67</b>									
For connecting a counter									
	Counter/incremental encoder 24 V DC, max. 30 kHz	-	-	-	-	-	<b>EU1E-SWD-1CX</b>	174721	1 off  




Short Description	Output current	Inputs Digital	Outputs Transistor	Part no.	Article no.	Std. pack UL, CSA
<b>Input/output modules (IP67) Block module</b>						
<b>Digital modules IP67</b>						
For connection of digital I/O signals						
	-	4	-	<b>EU6E-SWD-4DX</b>	174735	1 off  
	-	8	-	<b>EU6E-SWD-8DX</b>	174736	
	Freely configurable inputs/outputs, max. 8 The outputs are short-circuit proof.	0.5 A	≤ 8	≤ 8	<b>EU6E-SWD-8DD</b>	
	With supply	0.5 A	2	2	<b>EU6E-SWD-2D2D-1</b>	183264
		0.5 A	4	4	<b>EU6E-SWD-4D4D-1</b>	183266
		0.5 A	-	4	<b>EU6E-SWD-4XD-1</b>	183268
		0.5 A	-	8	<b>EU6E-SWD-8XD-1</b>	183270
		2 A	2	2	<b>EU6E-SWD-2D2D-2</b>	183265
		2 A	4	4	<b>EU6E-SWD-4D4D-2</b>	183267
		2 A	-	4	<b>EU6E-SWD-4XD-2</b>	183269
	-	16	-	<b>EU8E-SWD-16DX</b>	174744	
	Freely configurable inputs/outputs, max. 16 The outputs are short-circuit proof.	0.5 A	≤ 16	≤ 16	<b>EU8E-SWD-16DD</b>	
	With supply	0.5 A	4	4	<b>EU8E-SWD-4D4D-1</b>	183272
		0.5 A	8	8	<b>EU8E-SWD-8D8D-1</b>	183273
		0.5 A	-	8	<b>EU8E-SWD-8XD-1</b>	183274
		0.5 A	-	16	<b>EU8E-SWD-16XD-1</b>	183271

System overview



1	RMQ-Titan, 4-way selector switch actuator	12	RMQ-Titan, M22 contact elements for front mounting	25	SWD function element with 3 positions and LED for base fixing	38	RMQ-Titan, pushbuttons
2	RMQ-Titan, label with label mount for 4-way selector switch actuator and joystick	13	SWD external device plug	26	SWD function element with 3 positions for base fixing	39	RMQ-Titan, label mounts
3	SWD front mounting adapter for 2 × M22-SWD-K22	14	SWD ribbon cable	27	SWD function element with 2 positions and LED for base fixing	40	RMQ-Titan, emergency-stop button (for safety circuits use only M22 standard contacts)
4	RMQ-Silver, front mounting adapter with three mounting locations	15	SWD-Assist, planning and ordering tool	28	SWD function element with 2 positions for base fixing	41	RMQ-Titan, joystick
5	SWD function element with 3 positions and LED for front mounting	16	RMQ-Titan, surface mounting enclosure	29	SWD LED element for base fixing	42	RMQ-Titan, 4-way position switch
6	SWD LED element for front mounting	17	SWD circuit board for surface mounting enclosure cable gland for SWD round cable	30	RMQ-Titan, bezels	43	RMQ-Titan, potentiometer/encoder
7	SWD function element with 2 positions for front mounting	18	Cable gland for SWD round cable	31	RMQ-Titan, double actuator pushbutton	44	Function element for potentiometer/encoder
8	SWD function element with 2 positions and LED for front mounting	19	SWD bulkhead interface/socket with assembled signal cables	32	RMQ-Titan, insert labels	45	Acoustic modules signal tower
9	SWD function element with 3 positions and LED for front mounting	20	SWD socket/plug for round cable	33	RMQ-Titan, Label mount for double actuator pushbuttons	46	Illumination modules signal tower
10	Universal module for front mounting	21	SWD round cable, 8 pole	34	RMQ-Titan, indicator light	47	SWD interface module for signal tower
11	Link for SWD external device plug	22	RMQ-Titan, M22 contact elements for base fixing	35	RMQ-Titan, key-operated button	48	SWD ribbon cable with blade terminal
		23	Link for SWD circuit card	36	RMQ-Titan, selector switch actuators		
		24	Universal module for base fixing	37	RMQ-Titan, button plates/button lenses		

 [www.eaton.eu/rmq](http://www.eaton.eu/rmq)

## Features

### SWD RMQ connection for front mount

- Adaptation with standard adapter M22-A or M22-SWD-A4 for 4-way selector switch/pushbutton and joystick.
- Combination with standard pilot devices of the RMQ-Titan M22 series.
- Types with one or two change-over contacts and with/without integrated LED element.
- LED elements in four colors.
- Function elements for connecting to potentiometer / encoder
- SWD diagnostics LED for signaling the communication status of the function element.
- Connection to SWD ribbon cable line with external device plug.

### SWD RMQ connection for base fixing

- For use with SWD card, RMQ-Titan surface mounting enclosure and RMQ-Titan M22 pilot devices.
- Types with one or two change-over contacts and with/without integrated LED element.
- LED elements in four colors.
- SWD diagnostics LED to signal the communication status of the function element

### SWD card for function elements

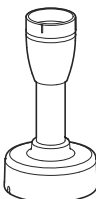

- Connecting SWD function elements for base fixing
- Type with 1, 2, 3, 4 and 6 slots.
- Bridging of free slots with links for base fixing.
- Integrated connectible bus termination resistor
- Connection to 8 pole SWD round cable via terminals or plug-in with enclosure bushing





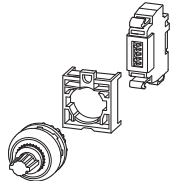




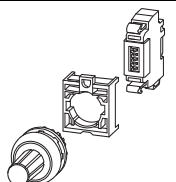
### SWD connection - base module for signal tower SL4/SL7

- Connection to SWD ribbon cable line with blade terminal.
- Actuation of up to 5 signal modules.
- 24 V DC supply of the signal modules via SWD ribbon cable or separately.

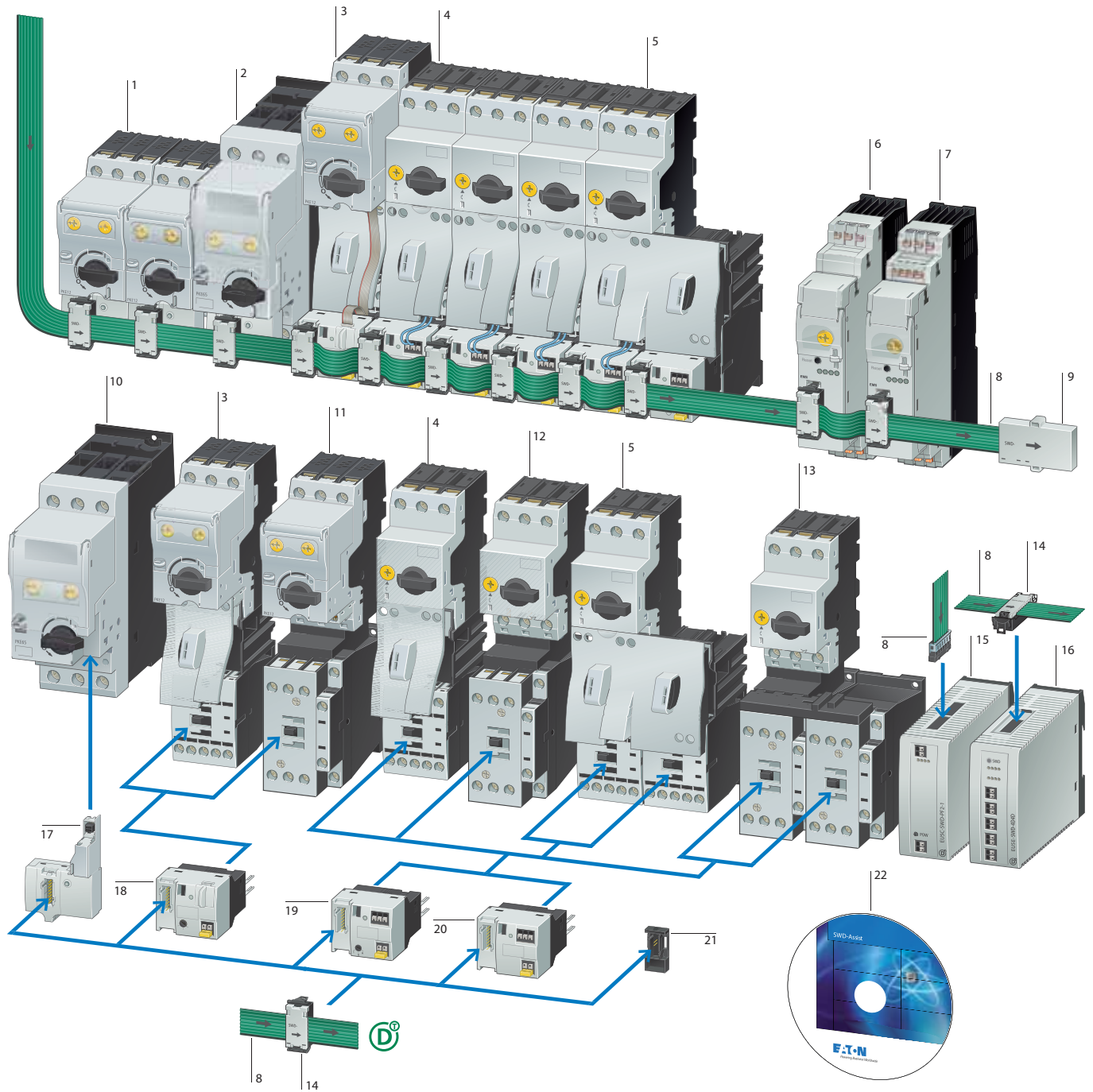
## Ordering

	Contacts	Color	Front fixing Part no.	Article no.	Base fixing Part no.	Article no.	Std. pack UL, CSA
<b>RMQ connections</b>							
For combination with RMQ-Titan operating elements M22-...							
<b>Function elements</b>							
	1 changeover contact	-	<b>M22-SWD-K11</b>	115964	<b>M22-SWD-KC11</b>	115995	20 off 
	2 changeover contact	-	<b>M22-SWD-K22</b>	115965	<b>M22-SWD-KC22</b>	115996	10 off 
	1 changeover contact		<b>M22-SWD-K11LED-W</b>	115972	<b>M22-SWD-K11LEDC-W</b>	116003	20 off 
			<b>M22-SWD-K11LED-B</b>	115973	<b>M22-SWD-K11LEDC-B</b>	116004	
			<b>M22-SWD-K11LED-G</b>	115974	<b>M22-SWD-K11LEDC-G</b>	116005	
			<b>M22-SWD-K11LED-R</b>	115975	<b>M22-SWD-K11LEDC-R</b>	116006	
	2 changeover contact		<b>M22-SWD-K22LED-W</b>	115978	<b>M22-SWD-K22LEDC-W</b>	116009	10 off 
			<b>M22-SWD-K22LED-B</b>	115979	<b>M22-SWD-K22LEDC-B</b>	116010	
			<b>M22-SWD-K22LED-G</b>	115980	<b>M22-SWD-K22LEDC-G</b>	116011	
			<b>M22-SWD-K22LED-R</b>	115981	<b>M22-SWD-K22LEDC-R</b>	116012	
<b>LED elements</b>							
	-		<b>M22-SWD-LED-W</b>	115966	<b>M22-SWD-LEDC-W</b>	115997	20 off 
	-		<b>M22-SWD-LED-B</b>	115967	<b>M22-SWD-LEDC-B</b>	115998	
	-		<b>M22-SWD-LED-G</b>	115968	<b>M22-SWD-LEDC-G</b>	115999	
	-		<b>M22-SWD-LED-R</b>	115969	<b>M22-SWD-LEDC-R</b>	116000	

Description	Tube length	For use with	Part no.	Article no.	Std. pack UL, CSA
<b>Signal towers Basic modules</b>					
For horizontal mounting, including cover, max. 5 modules,					
	100 mm	SL4-L-... SL4-BL-... SL4-FL-... SL4-AP-...	<b>SL4-SWD</b>	171311	1 off 
	100 mm	SL7-L-... SL7-BL-... SL7-FL-... SL7-AP-...	<b>SL7-SWD</b>	171459	

	Description	Part no.	Article no.	Std. pack UL, CSA
<b>Potentiometer</b>				
	Front element SmartWire-DT potentiometer Only in conjunction with M22-SWD-R function element	<b>M22-R-SWD</b>	179292	1 off  
	Function element SmartWire-DT potentiometer Only in conjunction with M22-R-SWD front element	<b>M22-SWD-R</b> <b>M22-R-SWD-R</b>	179293	
	Standard pack for hanging Complete practical solution Can be ordered using a single article no	<b>M22-R-SWD-R</b>	179294	
<b>Encoder</b>				
	Front element SmartWire-DT encoder With actuation function Only in conjunction with M22-SWD-INC function element	<b>M22-INC-SWD</b>	179981	1 off  
	Function element SmartWire-DT encoder Only in conjunction with M22-INC-SWD front element	<b>M22-SWD-INC</b>	179982	
	Standard pack for hanging Complete practical solution Can be ordered using a single article no	<b>M22-INC-SWD-INC</b>	179983	

System overview



- |   |   |   |   |
|---|---|---|---|
| <p>1 Network-capable motor-protective circuit-breaker PKE 12/PKE 32 with trip block PKE-XTUA-... up to 15 kW</p> <p>2 Network-capable PKE65 motor-protective circuit-breaker with PKE-XTUA-... trip block up to 30 kW</p> <p>3 Network-capable motor starter MSC-DEA based on PKE up to 5.5 kW</p> <p>4 MSC-D direct-on-line starter based on PKZM0 up to 5.5 kW</p> <p>5 Reversing starter MSC-R based on PKZM0 up to 5.5 kW</p> | <p>6 Electronic motor starter EMS up to 3 kW</p> <p>7 Electronic motor starter EMS up to 3 kW for controlled stop</p> <p>8 SWD ribbon cable, 8 pole</p> <p>9 SWD bus termination resistor for SWD ribbon cable, 8 pole</p> <p>10 Network-capable PKE circuit-breaker to protect wires and cables</p> <p>11 Network-capable motor starter MSC-DEA based on PKE up to 15 kW</p> | <p>12 Direct-on-line starter MSC-D based on PKZM0 up to 15 kW</p> <p>13 Reversing starter MSC-R based on PKZM0 up to 15 kW</p> <p>14 SWD external device plug, 8 pole</p> <p>15 SWD power feeder modules</p> <p>16 SWD I/O module with relay outputs</p> <p>17 SWD module for PKE circuit-breaker</p> <p>18 SWD module for PKE motor-starter combinations</p> | <p>19 SWD contactor module with manual 0 automatic switch</p> <p>20 SWD contactor module</p> <p>21 link for external device plug</p> <p>22 SmartWire-DT planning and ordering tool (SWD-Assist)</p> |
|---|---|---|---|

## Features

**SWD contactor modules**

- Suitable for contactors DILM7(24VDC)...DILM38(RDC24), DILMC7(24VDC)...DILMC32(RDC24), DILA, DILMP20(24VDC)...DILMP45(RDC24)
- Use of the standard accessories in the xStart series
- Suitable for contactor combinations with PKZ or with Z overloads
- Integrated switch position polling
- Integrated mechanical switch position indication
- Contactor actuation
- SWD diagnostics LED for signaling communication status and signaling the switch command via SWD
- Two independently fed digital inputs for scanning potentially isolated contacts, such as motor protective circuit-breaker auxiliary contacts.
- Connection to the SWD ribbon cable via external device plug

**SWD input/output modules**

- Digital module with four 24 V DC digital inputs and two relay outputs for actuating DILM40...DILM72 contactors.

- Connection to the SWD via external device plug.

**Safety technology for SWD contactor modules and SWD PKE module (motor starter)**

Controlled stop switch off as per IEC/EN 954-1, switching category 3; EN ISO 13849-1 PL d; IEC 62061 SIL 2.

Switching off control voltage centrally at the gateway or power feeder module

Can be combined with safety-oriented switchgear.

**Power feeder module**

- SWD supply voltage incoming unit.
- 24 V DC supply voltage incoming unit for activation of the contactors.
- Assembly of controlled stop groups.

**SWD PKE module (motor starter)**

- Suitable for motor starters MSC-DEA-... (24 V DC) or DILM(C)7 -DILM(C)32 in combination with PKE12/32 and trip block PKE-XTUA-...
- Use of the standard accessories in the xStart series
- Integrated mechanical switch position indication of the contactor state
- Integrated switch position polling
- Integrated mechanical switch position indication
- Transmission of PKE-specific data (PKE contactor state, relative motor current, thermal motor image, trip indications (overload, short-circuit,...), type PKE trip block, set value overload release and time-lag class).
- Communication cable (PKE32-COM) for connection to PKE trip block included as standard.
- Contactor actuation
- Selectable overload relay function (switches off the contactor in the event of an overload)
- SWD diagnostics LED to signal the communication status of the module and to signal the switching command via SWD
- Hand/Auto functionality for automatic or manual switching-on of the connected contactor.
- Connection to the SWD ribbon cable via external device plug

**SWD PKE module (motor-protective circuit-breaker)**

- Can be fitted to PKE12, PKE32, PKE65 motor-protective circuit-breaker with PKE-XTUA-... trip block
- Use of standard accessories for PKE motor-protective circuit-breaker
- Transmission of PKE-specific data (switch position PKE, relative motor current, thermal motor image, trip indications (overload, short-circuit,...), type PKE trip block, set value overload release and time-lag class)
- Remote tripping of PKE motor-protective circuit-breaker
- SWD diagnostics LED for signaling of the communication status
- Connection to the SWD ribbon cable via external device plug

**SWD PKE module (circuit-breaker)**

- Can be fitted to PKE32, PKE65 motor-protective circuit-breaker with PKE-XTUACP-... trip block.
- Use of standard PKE accessories
- Transmission of PKE specific data: PKE contactor state, relative phase current (L1 ...L3), thermal pattern, trip indications (overload, short-circuit, ...) trip block type, value set for overload trip and shortcircuit release
- Remote tripping of PKE motor-protective circuitbreaker
- SWD diagnostics LED for signaling of the communication status
- Connection to SWD flat band conductor via external device plug.

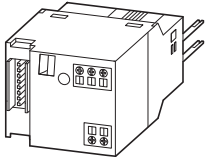


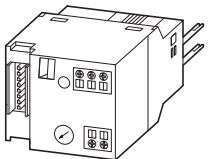


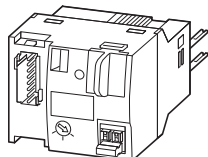


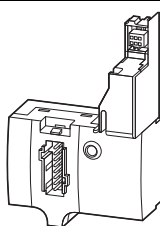


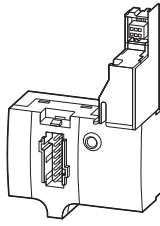
**Electronic motor starter EMS with SWD**

- Motor direct start
- Motor reverse start
- Motor protection
- Useable up to 3 kW rated motor output
- Transmission of EMS specific data: operating direction, relative motor current, absolute motor current, thermal motor pattern, tripped messages (overload, phase failure, ...), device type, value set for overload trip
- Overload pre-warning
- Remote reset after overload trip
- Remote configuration of the set motor current
- SWD diagnostics LED for signaling of the communication status
- Connection to the SWD ribbon cable via external device plug

**Electronic EMS motor starter for controlled stop with SWD**

- Motor direct start
- Motor reverse start
- Motor protection
- Controlled stop via additional terminal up to SIL3/PLe.
- Useable up to 3kW rated motor output
- Transmission of EMS specific data: operating direction, relative motor current, absolute motor current, thermal motor pattern, tripped messages (overload, phase failure, ...), device type, value set for overload trip
- Overload pre-warning
- Remote reset after overload trip
- SWD diagnostics LED for signaling of the communication status
- Connection to the SWD ribbon cable via external device plug


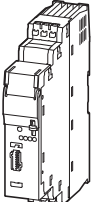
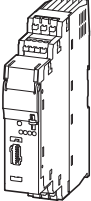
## Ordering

Description	For use with	Part no. Article no.	Std. pack UL, CSA
<b>Contactor modules<sup>1,2)</sup></b>			
For connecting the contactors to SmartWire-DT Per contactor 1 module necessary.			
 <p><b>Messages</b> Switch status Contactor, status of the digital inputs 1 and 2 <b>Commands</b> Contactor actuation</p>	DILM(C)7... - DILM(C)32 DILM38 DILA MSC-D(E)-...(24VDC)	<b>DIL-SWD-32-001</b> 118560	5 off  
 <p>1-0-A switch for manual or automatic operation. <b>Messages</b> Switch status Contactor, status of the digital inputs 1 and 2, 1-0-A switch position <b>Commands</b> Contactor actuation</p>	DILM(C)7... - DILM(C)32 DILM38 DILA MSC-D(E)-...(24VDC)	<b>DIL-SWD-32-002</b> 118561	5 off  
<b>PKE module (motor-starter combinations)<sup>1)</sup></b>			
For connecting PKE motor-starter combination MSC-DEA... with PKE-XTUA... trip blocks with a rated motor output of 15 kW/400 V to SmartWire-DT SmartWire-DT module for connection of motor-starter combination, model "Extended" 24 V DC (MSC-DEA-...) up to 15 kW. 1 module per contactor and PKE.			
 <p>Mounting on DILM contactor with 24 V DC control voltage. One module per contactor and PKE necessary Additional SWD contactor module required for actuation of reversing starter. 1 electrical interlock for the surface mounting of reversing starters. 1-0-A switch for manual or automatic operation. Selectable overload relay function (ZMR) for switching off the contactor on overload. Wiring sets DILM 12-XRL and PKZM0-XRM12 cannot be used. Connecting cable between module and trip block PKE-XTUA-... included as standard. <b>Messages</b> Switch position contactor/PKE/1-0-A switch Motor current in % Thermal motor image in % Trip indications (Overload, Short-circuit,...) Set value of overload releases Set time lag (CLASS) Part no. of trip block <b>Commands</b> Contactor actuation Activation Overload relay function (ZMR)</p>	DILM(C)7... - DILM(C)32 MSC-DEA	<b>PKE-SWD-32</b> 126895	4 off  
<b>PKE module (motor-protective circuit-breaker)</b>			
For connecting the motor-protective circuit-breaker with PKE-XTU(W)A-... trip blocks(motor protection) to SmartWire-DT			
 <p>Fitted on PKE motor-protective circuit-breaker <b>Messages</b> Contactor state PKE Motor current in % Thermal motor image in % Trip indications (Overload, Short-circuit,...) Set value of overload releases Set time lag (CLASS) Part no. of trip block <b>Commands</b> Remote disconnection of motor-protective circuit-breaker</p>	PKE12 PKE32 PKE65	<b>PKE-SWD-SP</b> 150614	1 off  
<b>PKE module (circuit-breaker)</b>			
For connecting the PKE circuit-breaker with PKE-XTU(W)ACP-... trip blocks to SmartWire-DT			
 <p>For attachment to PKE circuit-breakers <b>Messages</b> Contactor state PKE All phase currents in % Thermal load as a % Trip indications (Overload, Short-circuit,...) Set value of overload releases Set short-circuit release value <b>Commands</b> Part no. of trip block Remote circuit-breaker de-energization</p>	PKE32 PKE65	<b>PKE-SWD-CP</b> 172735	1 off

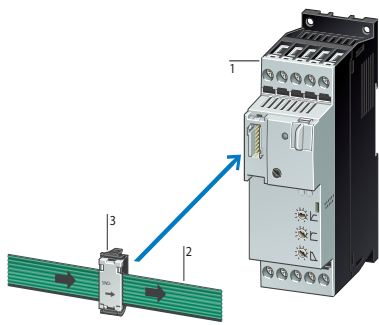
## Notes

- For current consumption of the contactor coils > 3 A (UL: 2 A) use additional power feed module.  
A2 connections must not be bridged.  
Wiring sets DILM 12-XRL and PKZM0-XRM12 cannot be used.
- Connection terminals for electrical interlocking are not suitable for safety technology.



Description	Setting range of overload releases $I_r$ $A_x$ 	Part no.	Article no.	Std. pack UL, CSA		
<b>Electronic motor starter</b>						
For connecting to SmartWire-DT for expanded diagnostics.						
	DOL starters (complete devices)	0,18 - 2,4 1,5 - 7 (AC-53a) 9 (AC-51)	<b>EMS-DO-T-2,4-SWD</b>	170106	1 off	
			<b>EMS-DO-T-9-SWD</b>	170107		
	Reversing starters (complete devices)	0,18 - 2,4 1,5 - 7 (AC-53a) 9 (AC-51)	<b>EMS-RO-T-2,4-SWD</b>	170108		
			<b>EMS-RO-T-9-SWD</b>	170109		
	Controlled stop via additional enable signal terminal up to SIL3/Plc.	DOL starters (complete devices)	0,18 - 2,4 1,5 - 7 (AC-53a) 9 (AC-51)	<b>EMS-DOS-T-2,4-SWD</b>	170110	1 off
				<b>EMS-DOS-T-9-SWD</b>	170111	
				<b>EMS-ROS-T-2,4-SWD</b>	170112	
				<b>EMS-ROS-T-9-SWD</b>	169790	

System overview



- 1 Soft Starter DS7
- 2 SWD ribbon cable, 8 pole
- 3 SWD external device plug, 8 pole

The DS7-...-D soft starters are designed for connection to SmartWire-DT. These two-phase-controlled soft starters control three-phase motors for applications with normal operating frequency in the performance range from 4 to 200 A (1.5 to 110 kW at 400 V mains voltage). Due to Eaton's special control method the true run behavior of a DS7 can be compared with that of three-phase soft starters.

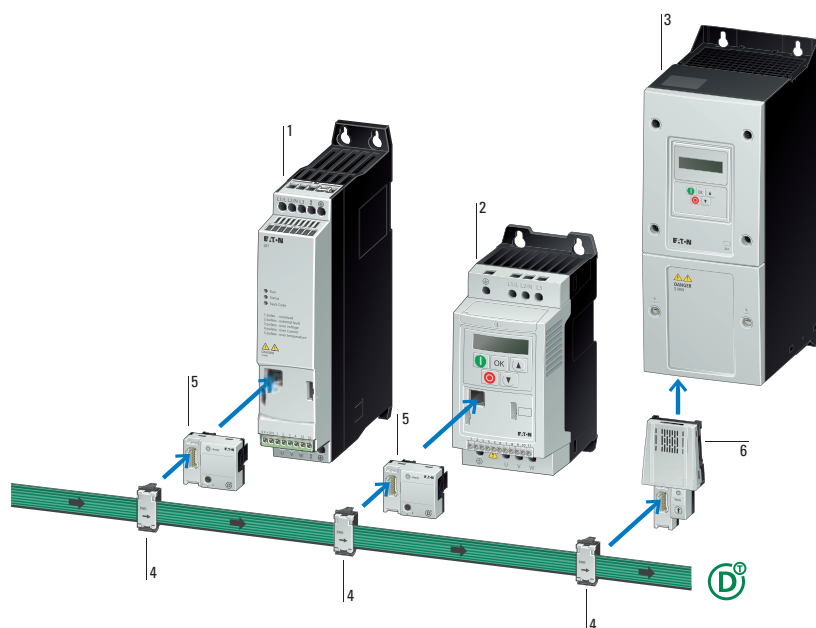
SmartWire-DT provides a direct connection to the DS7, without control signal wiring. Through SmartWire-Darwin the PLC transmits all control signals directly to the soft starter. The device data are available for processing in the master control system without additional configuration. The connection with SmartWire-DT is fast, easy, inexpensive and convenient.

[www.eaton.eu/ds7](http://www.eaton.eu/ds7)

Ordering

	Rated operational current of the soft starter	Assigned motor rating		Part no. Article no.	Std. pack UL, CSA
	$I_e$ A	at 400 V, 50 Hz P kW	at 460 V, 60 Hz P HP		
<b>Soft starters</b>					
Soft starters for three-phase loads, mains supply voltage 230 – 480 V AC (50/60 Hz) Rated control circuit voltage $U_c$ : 24 V DC SmartWire-DT					
	4	1.5	2	<b>DS7-34DSX004N0-D</b> 134943	1 off 
	7	3	5	<b>DS7-34DSX007N0-D</b> 134945	
	9	4	5	<b>DS7-34DSX009N0-D</b> 134946	
	12	5.5	10	<b>DS7-34DSX012N0-D</b> 134947	
	16	7.5	10	<b>DS7-34DSX016N0-D</b> 134948	
	24	11	15	<b>DS7-34DSX024N0-D</b> 134949	
	32	15	25	<b>DS7-34DSX032N0-D</b> 134950	
	41	22	30	<b>DS7-34DSX041N0-D</b> 134952	
	55	30	40	<b>DS7-34DSX055N0-D</b> 134953	
	70	37	50	<b>DS7-34DSX070N0-D</b> 134954	
	81	45	60	<b>DS7-34DSX081N0-D</b> 134955	
	100	55	75	<b>DS7-34DSX100N0-D</b> 134956	
	135	75	100	<b>DS7-34DSX135N0-D</b> 134957	
	160	90	125	<b>DS7-34DSX160N0-D</b> 134958	
	200	110	150	<b>DS7-34DSX200N0-D</b> 134959	

System overview



- 1 Power XL DE1 variable speed starter
- 2 Power XL DC1 variable frequency drive
- 3 Power XL DA1 variable frequency drive
- 4 SWD external device plug, 8 pole
- 5 SWD function element for DC1 variable frequency drive, DE1 Variable speed starter
- 6 SWD function element for DA1 variable frequency drive

PowerXL DE1 variable speed starter

The PowerXL DE1 variable speed starter offers simple handling and highest reliability while at the same time variable motor speed and improved energy efficiency of the machine. This new device class closes the loop between conventional motor starters and variable frequency drives.

- Performance range 0.25 - 7.5 kW
- Connection to SmartWire-DT via SWD module DX-NET-SWD3

PowerXL DC1 variable frequency drive, Compact Machinery Drive

The compact PowerXL DC1 variable frequency drive is particularly well-suited for use with simple pump, fan, and conveyor belt systems. It can be quickly and easily configured and commissioned, resulting in tangible savings.

- Performance range 0.37 - 11 kW
- Connection to SmartWire-DT via SWD module DX-NET-SWD3


PowerXL DA1 variable frequency drive, Advanced Machinery Drive

The PowerXL DA1 variable frequency drive, designed for the machine and system building industry, is characterized by its enormous flexibility in terms of communications protocols, a function block editor (PLC) that makes it possible to configure the drive as necessary for specific applications, and a powerful vector control mode for highly dynamic applications.

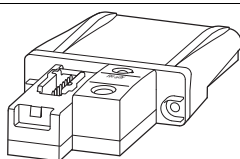


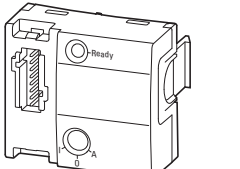


- Performance range 0.75 - 250 kW
- Connection to SmartWire DT via SWD module DX-NET-SWD1

SWD modules DX-NET, for connecting to variable speed starter and variable frequency drive

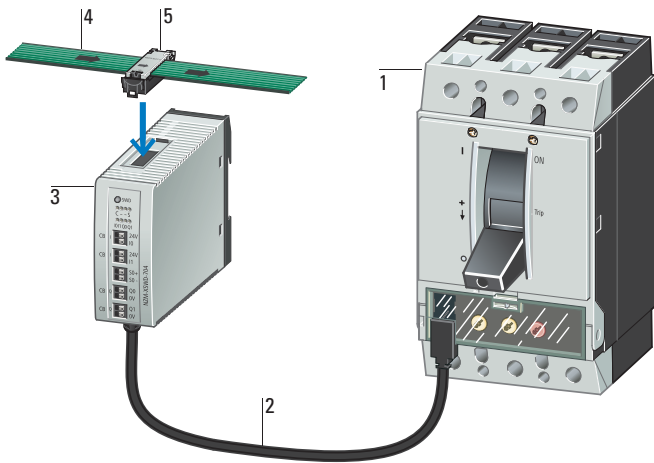
- Reading and writing cyclic and acyclic data
- Complete command volume for controlling the variable frequency drive
- Complete command volume for configuring the variable frequency drive
- Complete access to status, error and diagnostic messages
- Fast and fault-free wiring with plug-in units

 www.eaton.eu/powerxl

Ordering

	Connection technique	For use with	Part no.	Article no.	Std. pack UL, CSA
<b>SWD function elements</b>					
<b>Fieldbus connection (optional)</b>					
	For connecting DA1 variable frequency drives (IP20/IP55) to SmartWire-DT Plug-in module with slot for SWD4-8SF2-5 external device plug	DA1 (IP20, IP55)	<b>DX-NET-SWD1</b>	169129	1 off  
	For connecting DE1 variable speed starter and DC1 variable frequency drives (IP20) to SmartWire-DT Plug-in module (front) with slot for SWD4-8SF2-5 external device plug	DE1, DE11, DC1 (IP20)	<b>DX-NET-SWD3</b>	169131	1 off  

System overview



- 1 NZM circuit-breaker
- 2 Connection cable
- 3 SWD interface for NZM
- 4 SWD ribbon cable, 8 pole
- 5 SWD external device plug, 8 pole

SWD module to connect to NZM2/3/4 circuit-breaker

Status data NZM: ON/OFF/TRIPPED

- Status data of the circuit-breaker
- Load warnings
- Reason for last trip
- Actual current values
- Switch type
- Actual settings of the rotary coding switches

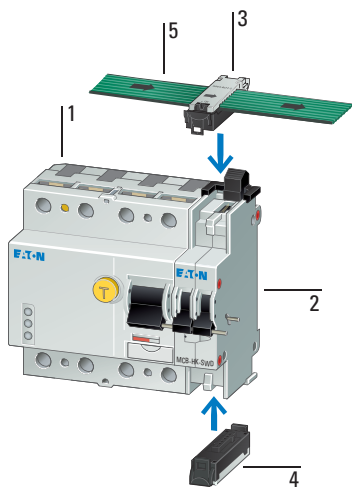
[www.eaton.eu/nzm](http://www.eaton.eu/nzm)

Ordering

Description	Part no. Article no.	Std. pack UL, CSA
<b>SWD function element</b>		
<p>SmartWire-DT interface for NZM The module implements the data connection between the NZM2/3/4 with electronic release and SmartWire-DT.</p> <p>A switch with a remote operator can also be remotely operated with the module. Two digital inputs for the switch status 2 transistor outputs for remote switching Retentive memory for energy data (kWh) Energy data is transmitted through digital input (S0) from an external energy measuring module NZN...-XMC-S0. A connection cable (1.90 m) for the circuit-breaker and two NZM auxiliary contacts (1 x NO, 1 x NC) are included as standard.</p>	<p><b>NZM-XSWD-704</b> 135530</p>	<p>1 off</p>



## System overview



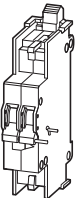
- 1 Residual current circuit-breakers
- 2 Fuse auxiliary contact
- 3 SWD external device plug, 8 pole
- 4 Covering cap
- 5 SWD ribbon cable, 8 pole

### SWD module for circuit-breakers and residual current circuit-breakers

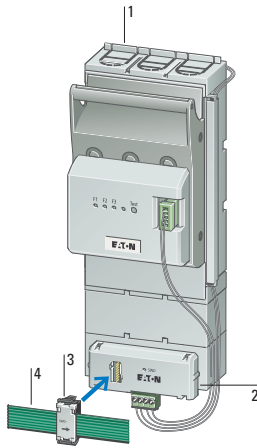
The SmartWire-DT auxiliary contact module makes it possible to easily connect a circuit-breaker, fault current switch or combination protective switch to the SmartWire -DT line using plug-in connection and to in this way easily and quickly integrate the protective switching devices. This makes the I/O level redundant and at the same time the information is implemented in the controllers and the drives. With the SmartWire-DT auxiliary contact, the states ON, OFF and triggered (as a result of a fault) can be transmitted.

 [www.eaton.eu/cp](http://www.eaton.eu/cp)

## Ordering

Short Description	Side mounting	Part no. Article no.	Std. pack UL, CSA
<a href="#">SmartWire-DT function element for miniature circuit-breaker, residual current circuit-breaker, or residual current operated circuit-breaker with overcurrent protection</a>			
SmartWire-DT module for XEffect protective switchgear  Fuse auxiliary contact Accessories for combined residual-current/power circuit-breakers Accessories for residual current circuit-breakers Accessories for miniature circuit-breaker	for fitting on left to: FI for fitting on right to: LS, FI/LS	<b>MCB-HK-SWD</b> 177175	1 off

System overview



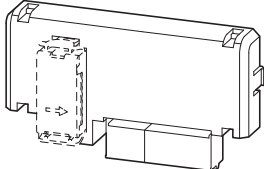
- 1 XNH fuse switch-disconnector
- 2 SWD module for XNH
- 3 SWD external device plug, 8 pole
- 4 SWD ribbon cable, 8 pole

SWD module for XNH fuse switch-disconnector





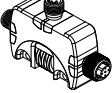

The XNH-SWD... SmartWire-DT module makes it easy to integrate XNH switch-disconnectors into the SmartWire-DT communication system. It transmits both the corresponding switch position indication state and the trip indication. There is a second version to which current transformers can be connected as well, making it possible to transmit the three-phase currents too.

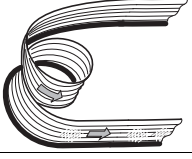


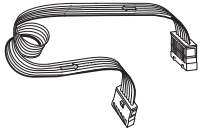









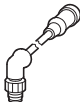




[www.eaton.eu/xnh](http://www.eaton.eu/xnh)

Ordering

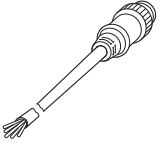


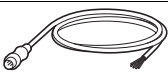


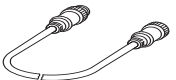


Description	For use with	Part no. Article no.	Std. pack UL, CSA
<b>SmartWire-DT function element for XNH fuse switch-disconnector</b>			
Only in conjunction with FCE fuse monitoring			
 <p>Basic module with 2 digital inputs for XNH Contact plug, 4 pole (included as standard)</p> <p>High-performance module with 2 digital and 3 analog inputs Contact plug, 4 pole + 6 pole (included as standard)</p>	XNH00-FCE-... XNH1-FCE-... XNH2-FCE-... XNH3-FCE-...	<b>XNH-SWD-2DX-1</b> 183089	1 off
	XNH00-FCE-... XNH1-FCE-... XNH2-FCE-... XNH3-FCE-...	<b>XNH-SWD-2DX-3AX-1</b> 183090	1 off
Wiring set, consisting of basic module, prefabricated cables, and additional connection area cover			
Mounting on XNH switch-disconnectors	XNH00-FCE-...	<b>XNH00-SWD-KIT</b> 183083	1 off
	XNH1-FCE-...	<b>XNH1-SWD-KIT</b> 183084	1 off
	XNH2-FCE-...	<b>XNH2-SWD-KIT</b> 183085	1 off
	XNH3-FCE-...	<b>XNH3-SWD-KIT</b> 183086	1 off
Fitting on mounting plate	XNH00-FCE-...	<b>XNH00-SWD-KIT-EXT</b> 183087	1 off
	XNH1-FCE-... XNH2-FCE-... XNH3-FCE-...	<b>XNH123-SWD-KIT-EXT</b> 183088	1 off





## Ordering

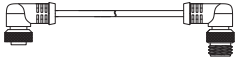

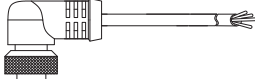

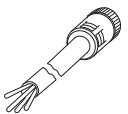

	Description	Part no. Article no.	Std. pack UL, CSA
<b>Power feeder module</b>			
	<p>For feeding control voltage in order to connect additional motor starters and contactors to the SmartWire-DT ribbon cable For the formation of emergency switching off groups for motor starters and contactors</p>	<p><b>EU5C-SWD-PF1-1</b> 116309</p>	<p>1 off  </p>
	<p>For feeding supply voltage in order to connect additional SmartWire-DT modules to the SmartWire-DT ribbon cable For additional control voltage feeder for the motor starter and contactors For the formation of emergency switching off groups for motor starters and contactors</p>	<p><b>EU5C-SWD-PF2-1</b> 116380</p>	<p>1 off  </p>
	<p>For feeding supply voltage in order to connect additional SmartWire-DT modules (IP 67) and connected sensors/actuators</p>	<p><b>EU1S-SWD-PF1-2</b> 174724</p>	<p>1 off  </p>

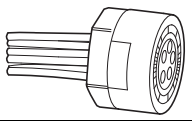


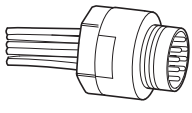


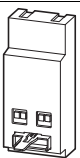





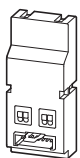


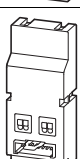





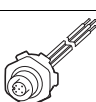





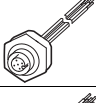


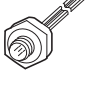


Description	Protection type (IEC/EN 60529, EN50178, VBG 4)	Length m	Part no. Article no.	Std. pack UL, CSA	
<b>SWD Connection cables</b>					
<b>SWD ribbon cable</b> For connecting the SmartWire-DT modules within the control panel					
	8 pole not ready-assembled	IP20	100	<b>SWD4-100LF8-24</b> 116026	1 off  
	8 pole prefabricated with two blade terminals SWD4-8MF2	IP20	10	<b>SWD4-10LF8-24-2S</b> 116029	
		IP20	3	<b>SWD4-3LF8-24-2S</b> 116027	
		IP20	5	<b>SWD4-5LF8-24-2S</b> 116028	
<b>SWD round cable</b> For connecting pilot devices in CI surface mounting enclosures					
	8 pole HK-S0-Li2YY, 8 mm diameter	IP67	50	<b>SWD4-50LR8-24</b> 116030	1 off  
		IP67	250	<b>SWD4-250LR8-24</b> 144878	
<b>SWD round cable M12</b> For connecting peripheral SmartWire-DT cards					
	5 pole not ready-assembled	IP67	250	<b>SWD4-250LR5</b> 187457	1 off  
<b>SWD round cable M12</b> For connecting peripheral SmartWire-DT cards					
	5 pole prefabricated with M12 socket and M12 plug, A-keyed	IP67	0.1	<b>SWD4-M1LR5-2S</b> 174760	1 off  
		IP67	0.3	<b>SWD4-M3LR5-2S</b> 174761	
		IP67	0.6	<b>SWD4-M6LR5-2S</b> 174762	
		IP67	1	<b>SWD4-1LR5-2S</b> 174763	
		IP67	1.5	<b>SWD4-1M5LR5-2S</b> 174764	
		IP67	2	<b>SWD4-2LR5-2S</b> 174765	
		IP67	3	<b>SWD4-3LR5-2S</b> 174766	
		IP67	4	<b>SWD4-4LR5-2S</b> 174767	
		IP67	5	<b>SWD4-5LR5-2S</b> 174768	
		IP67	10	<b>SWD4-10LR5-2S</b> 174769	
		IP67	20	<b>SWD4-20LR5-2S</b> 174770	
<b>SWD round cable M12</b> For directly connecting sensors/actuators to IP67 SWD modules					
	5 pole Prefabricated with right-angle M12 plug and straight M12 socket, A-keyed	IP67	0.1	<b>SWD4-M1LR5-RS</b> 183155	1 off  
	5 pole Prefabricated with straight M12 plug and right-angle M12 socket, A-keyed	IP67	0.1	<b>SWD4-M1LR5-SR</b> 183144	1 off  

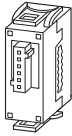



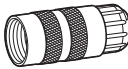

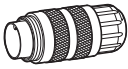








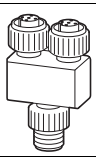
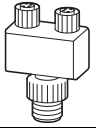
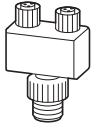








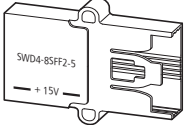

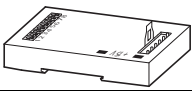

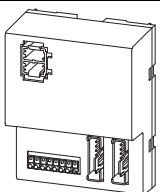
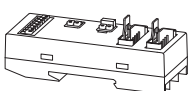
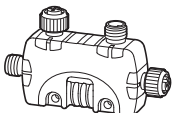

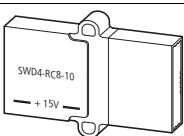

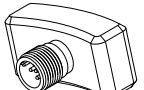

Description	Protection type (IEC/EN 60529, EN50178, VBG 4)	Length m	Part no. Article no.	Std. pack UL, CSA
<b>SWD Connection cables</b>				
<b>I/O round cable M12</b> For directly connecting sensors/actuators to IP67 SWD modules				
 <p>5 pole prefabricated on one side with M12 plug, A-keyed</p>	IP67	0.3	<b>SWD4-M3LR5-S</b> 174771	1 off  
	IP67	0.6	<b>SWD4-M6LR5-S</b> 174772	
	IP67	1	<b>SWD4-1LR5-S</b> 174697	
	IP67	2	<b>SWD4-2LR5-S</b> 174698	
<b>I/O round cable M12</b> For connecting to the signal tower				
 <p>8 pole prefabricated on one side with M12 plug, A-keyed</p>	IP67	0.3	<b>SWD4-M3LR8-S</b> 174699	1 off  
	IP67	0.6	<b>SWD4-M6LR8-S</b> 174700	
	IP67	1	<b>SWD4-1LR8-S</b> 174701	
	IP67	2	<b>SWD4-2LR8-S</b> 174702	
<b>I/O round cable</b> For directly connecting sensors/actuators to IP67 SWD modules				
 <p>5 pole prefabricated with M12 socket and M12 plug, A-keyed</p>	IP67	0.3	<b>SWD4-M3LR5-1-2S</b> 179543	1 off  
	IP67	0.6	<b>SWD4-M6LR5-1-2S</b> 179544	
	IP67	1	<b>SWD4-1LR5-1-2S</b> 179545	
	IP67	2	<b>SWD4-2LR5-1-2S</b> 179546	

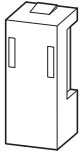


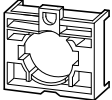


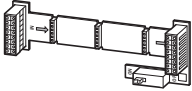


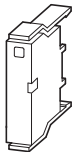


Description	Protection type (IEC/EN 60529, EN50178, VBG 4)	Length m	Part no. Article no.	Std. pack UL, CSA	
<b>SWD Connection cables</b>					
<b>Supply cable</b> For connecting the power supply to EU6E.., EU8E.. IP67 SWD modules					
	4 pole, not prefabricated	IP67	25	<b>SWD4-25LR4P</b> 184486	1 off 
		IP67	50	<b>SWD4-50LR4P</b> 184487	
		IP67	100	<b>SWD4-100LR4P</b> 184485	
	4 pole prefabricated with 7/8" plug and 7/8" socket	IP67	0.3	<b>SWD4-M3LR4P-2S</b> 183208	1 off 
		IP67	0.6	<b>SWD4-M6LR4P-2S</b> 183209	
		IP67	1	<b>SWD4-1LR4P-2S</b> 183210	
		IP67	1.5	<b>SWD4-1M5LR4P-2S</b> 183211	
		IP67	2	<b>SWD4-2LR4P-2S</b> 183212	
		IP67	3	<b>SWD4-3LR4P-2S</b> 183213	
		IP67	4	<b>SWD4-4LR4P-2S</b> 183214	
		IP67	5	<b>SWD4-5LR4P-2S</b> 183215	
		IP67	10	<b>SWD4-10LR4P-2S</b> 183216	
		IP67	20	<b>SWD4-20LR4P-2S</b> 183217	



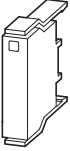

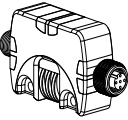

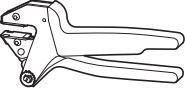
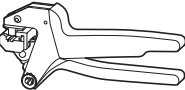





Description	Protection type (IEC/EN 60529, EN50178, VBG 4)	Length m	Part no. Article no.	Std. pack UL, CSA
<b>SWD Connection cables</b>				
<b>Supply cable</b> For connecting the power supply to EU6E.., EU8E.. IP67 SWD modules				
 <p>4 pole prefabricated with 7/8" right-angle plug and 7/8" right-angle socket</p>	IP67	0.3	<b>SWD4-M3LR4P-2R</b> 183218	1 off 
	IP67	0.6	<b>SWD4-M6LR4P-2R</b> 183219	
	IP67	1	<b>SWD4-1LR4P-2R</b> 183220	
	IP67	1.5	<b>SWD4-1M5LR4P-2R</b> 183221	
	IP67	2	<b>SWD4-2LR4P-2R</b> 183222	
	IP67	3	<b>SWD4-3LR4P-2R</b> 183223	
	IP67	4	<b>SWD4-4LR4P-2R</b> 183224	
	IP67	5	<b>SWD4-5LR4P-2R</b> 183225	
	IP67	10	<b>SWD4-10LR4P-2R</b> 183226	
	IP67	20	<b>SWD4-20LR4P-2R</b> 183227	
 <p>4 pole prefabricated on one side with 7/8" right-angle socket</p>	IP67	2	<b>SWD4-2LR4P-R</b> 183198	1 off 
	IP67	4	<b>SWD4-4LR4P-R</b> 183199	
	IP67	6	<b>SWD4-6LR4P-R</b> 183200	
	IP67	10	<b>SWD4-10LR4P-R</b> 183201	
	IP67	20	<b>SWD4-20LR4P-R</b> 183202	
 <p>4 pole prefabricated on one side with 7/8" straight socket</p>	IP67	2	<b>SWD4-2LR4P-S</b> 183203	1 off 
	IP67	4	<b>SWD4-4LR4P-S</b> 183204	
	IP67	5	<b>SWD4-6LR4P-S</b> 183205	
	IP67	10	<b>SWD4-10LR4P-S</b> 183206	
	IP67	20	<b>SWD4-20LR4P-S</b> 183207	

Description	Function	Protection type (IEC/EN 60529, EN50178, VBG 4)	Length m	Part no. Article no.	Std. pack UL, CSA
<b>SWD enclosure and control panel cable gland</b>					
 8 pole M20 socket 8 prefabricated cables for connection to PCB M22-SWD-I...	For flush mounting in M22-I... surface mounting enclosure	IP20	0.15	<b>SWD4-SF8-20</b> 116031	1 off  
 8 pole M20 plug 8 prefabricated cables for connection to PCB M22-SWD-I...		IP20	0.15	<b>SWD4-SM8-20</b> 116032	1 off  
 Connection round cable via socket Connection of ribbon cable with blade terminal SWD4-8MF2 8 pole Double conductor run pluggable Additional control voltage feeder for the motor starter and contactors	For transition from SWD ribbon cable to SWD round cable SWD4-...LR8-24	IP20	-	<b>SWD4-SFL8-20</b> 121380	1 off  
 Connection round cable via plug Connection of ribbon cable with blade terminal SWD4-8MF2 8 pole Double conductor run pluggable Additional control voltage feeder for the motor starter and contactors		IP20	-	<b>SWD4-SML8-20</b> 121381	1 off  
 SmartWire-DT control panel bushing for 8-conductor ribbon cable to 5-conductor round cable, separate 24 VDC 4 A power supply for round cable	For transition from SWD round cable to SWD ribbon cable SWD4-...LR5-2S	IP20	-	<b>SWD4-SFL8-12</b> 174756	1 off  
 SWD control panel bushing from IP67 to IP20, from 5-conductor round cable to 8-conductor ribbon cable, integrated 15 VDC 180 mA power supply unit for SmartWire-DT modules on the ribbon cable	For transition from SWD round cable SWD4-...LR5-2S to SWD ribbon cable	IP20	-	<b>SWD4-SML8-12</b> 174755	1 off  
 Control panel cable gland for 5-conductor SWD4-...LR8-24 M12 SmartWire-DT round cable, M12 plug/socket	For flush mounting in an enclosure	IP20	-	<b>SWD4-SML5-12</b> 174757	1 off  
 5 pole M12 socket, A-coded 5 prefabricated cables		IP20	1	<b>SWD4-PRF5-1-S</b> 174758	1 off  
 5 pole M12 plug, A-coded 5 prefabricated cables		IP20	1	<b>SWD4-PRM5-1-S</b> 174759	1 off  
 5 pole M12 socket, A-coded 5 prefabricated cables		IP20	0.15	<b>SWD4-PRF5-2-S</b> 179541	1 off  
 5 pole M12 plug, A-coded 5 prefabricated cables		IP20	0.15	<b>SWD4-PRM5-2-S</b> 179542	1 off  

Description	Function	Protection type (IEC/EN 60529, EN50178, VBG 4)	Part no. Article no.	Std. pack UL, CSA	
<b>SWD plugs and plug-in connections</b>					
	8-pin SmartWire-DT external device plug that can be connected at any point on the ribbon cable. External device plugs can be used to connect the function elements of any SmartWire-DT module in a control panel.	For connecting the ribbon cable to SmartWire-DT modules in the control panel	IP20	<b>SWD4-8SF2-5</b> 116022	10 off 
	8-pin SmartWire-DT blade terminal that can be installed at both ends of the SmartWire-DT ribbon cable. The following components can be connected: SmartWire-DT coordinators such as easy800-SWD / SmartWire-DT gateway, SmartWire-DT power feeder module, SmartWire-DT coupling, SmartWire-DT bus termination resistor, SmartWire-DT control panel bushings	For connecting the ribbon cable to the gateway, power feeder module, coupling, SWD4-RC8-10 bus termination resistor	IP20	<b>SWD4-8MF2</b> 116023	10 off 
	8 pole socket Straight Soldering connection	Plug connector for 8 pole SWD4-...LR8-24 round cables	IP67	<b>SWD4-SF8-67</b> 116033	1 off 
	8-pinplug connector Straight Soldering connection		IP67	<b>SWD4-SM8-67</b> 116034	
	5 pole socket Straight Screw connection	Plug connector for 5 pole SWD4-...LR5-.. round cables	IP67	<b>SWD4-SF5-67</b> 179547	1 off 
	5 pole plug Straight Screw connection		IP67	<b>SWD4-SM5-67</b> 179548	
	4 pole socket Straight Screw connection	Plug connector for 4 pole SWD4-...LR4P-.. round cables	IP67	<b>SWD4-SF4P-67</b> 183228	
	4 pole plug Straight Screw connection		IP67	<b>SWD4-SM4P-67</b> 183230	
	4 pole socket Angled Screw connection	For splitting an M12 I/O connection's I/O signals	IP67	<b>SWD4-SF4P-67R</b> 183229	1 off 
	4 pole plug Angled Screw connection		IP67	<b>SWD4-SM4P-67R</b> 183231	
	Splitter with IP67 degree of protection, M12 plug into two M12 sockets with I/O signal on pin 4	IP67	<b>SWD4-SP-4124</b> 174703		
	Splitter with IP67 degree of protection, M12 plug into two M12 sockets with I/O signal on pin 2	IP67	<b>SWD4-SP-4122</b> 174704		
	Splitter with IP67 degree of protection, M12 plug into two 4 pole M8 sockets with I/O signal on pin 4	IP67	<b>SWD4-SP-4084</b> 174705		
	Splitter with IP67 degree of protection, M12 plug into two 4 pole M8 sockets with I/O signal on pin 2	IP67	<b>SWD4-SP-4082</b> 174706		
	Splitter with IP67 degree of protection, M12 plug into two 3 pole M8 sockets	IP67	<b>SWD4-SP-3084</b> 174707		
	Cap with monitoring function for M12 bushings on SWD connector (IP67)	IP67	<b>SWD4-ACAP-10</b> 174751	1 off 	
	Cap for M12 sockets on SWD connector (IP67)	IP67	<b>SWD4-PCAP-F</b> 174752		
	Cap for M12 plugs on SWD connector (IP67)	IP67	<b>SWD4-PCAP-M</b> 174753		
	Cap for 7/8" sockets on SWD module EU6E.., EU8E.. (IP67)	IP67	<b>SWD4-PCAPP-F</b> 184489		
	Cap for 7/8" plugs on SWD module EU6E.., EU8E..	IP67	<b>SWD4-PCAPP-M</b> 184490		

Description	Function	Protection type (IEC/EN 60529, EN50178, VBG 4)	Part no. Article no.	Std. pack UL, CSA	
<b>SWD coupling</b>					
 SWD4-8SFF2-5 + 15V	Coupling via two 8-pin blade terminals	To connect SWD ribbon cables over SWD4-8MF2 blade terminals	IP20	<b>SWD4-8SFF2-5</b> 116024	1 off 
<b>SWD cable adapters</b>					
	SmartWire-DT cable adapter for connecting a ribbon cable (plug) to a round cable (terminal)		IP20	<b>SWD4-8FRF-10</b> 121377	1 off 
	SWD power supply module for modules (IP20) on a local SWD segment		IP20	<b>SWD4-FFR-PF1-1</b> 168880	1 off
	SmartWire-DT cable adapter for putting together a local SmartWire-DT segment		IP20	<b>SWD4-FFR-ST1-1</b> 168881	1 off
	SWD branch for putting together a local SWD network with SWD module (IP67)		IP67	<b>EU2A-SWD-PBWN</b> 174734	1 off 
<b>SWD bus termination</b>					
 SWD4-RC8-10 + 15V	SmartWire-DT bus termination; plugged onto SWD4-8MF2 blade terminal at the end of the SmartWire-DT ribbon cable	For the SmartWire-DT bus termination on the SmartWire-DT ribbon cable	IP20	<b>SWD4-RC8-10</b> 116020	1 off 
	SmartWire-DT bus termination with IP67 degree of protection, connected to 5-conductor SWD4...LR5... round cable or directly to SmartWire-DT T-Connectors (IP67 I/O modules)	For IP67, M12 SWD bus termination	IP67	<b>SWD4-RC5-10</b> 174754	1 off 

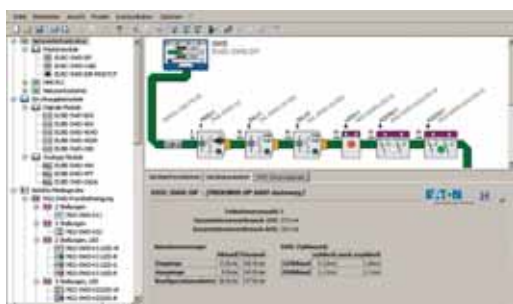
	Function	Protection type (IEC/EN 60529, EN50178, VBG 4)	Part no. Article no.	Std. pack UL, CSA
<b>Link</b>				
	For bridging open mounting locations for SWD4-8SF2-5 external device plugs	IP20	<b>SWD4-SEL8-10</b> 116021	5 off  
<b>RMQ</b>				
	For 2 function elements M22-SWD-K22... For two M22-SWD-NOP universal modules	IP67	<b>M22-SWD-A4</b> 116016	10 off  
	For mounting 1 base function element	IP20	<b>M22-SWD-I1-LP01</b> 115990	1 off  
	For mounting 2 base function elements		<b>M22-SWD-I2-LP01</b> 115991	
	For mounting 3 base function elements		<b>M22-SWD-I3-LP01</b> 115992	
	For mounting 4 base function elements		<b>M22-SWD-I4-LP01</b> 115993	
	For mounting 6 base function elements		<b>M22-SWD-I6-LP01</b> 115994	
	For bridging of open mounting locations on card	IP20	<b>M22-SWD-SEL8-10</b> 116698	5 off  

	Function	Protection type (IEC/EN 60529, EN50178, VBG 4)	Part no. Article no.	Std. pack UL, CSA
<b>Universal module</b>				
	For configured but not yet installed SWD modules connected to the SWD ribbon cable	IP20	<b>M22-SWD-NOP</b> 147637	20 off 
	For configured but not yet installed SWD modules on the M22-SWD-I... card	IP20	<b>M22-SWD-NOPC</b> 147638	20 off 
	For configured but not yet installed SWD modules connected to the SWD ribbon cable SWD4-...LR5-2S	IP67	<b>EU1M-SWD-NOP</b> 174716	1 off 
<b>Tools für plugs</b>				
	Crimping tool to install external device plug SWD4-8SF2-5 on SmartWire-DT ribbon cable		<b>SWD4-CRP-1</b> 116025	1 off
	Crimping tool to install external blade terminal SWD4-8MF2 at both ends of the SmartWire-DT ribbon cable		<b>SWD4-CRP-2</b> 116699	1 off
<b>Programming accessories</b>				
	For transferring the user program to the PLC or for diagnosing SmartWire-DT networks SUB-D, 9 pole serial		<b>EU4A-RJ45-CAB1</b> 106726	1 off 
	For transferring the user program to the PLC or for diagnosing SmartWire-DT networks USB		<b>EU4A-RJ45-USB-CAB1</b> 115735	1 off
	Programming and visualisation software		<b>EASY-SOFT-PRO</b> 266040	1 off 



Current consumption 15-V-SWD supply voltage

Type	Current consumption mA	Notes
DIL-SWD-32-001	40	-
DIL-SWD-32-002	40	-
DS7-34DSX...-D	50	-
DX-NET-SWD1, DX-NET-SWD3	22	-
EMS-DO-T-2,4-SWD, EMS-DO-T-9-SWD	50	-
EMS-DOS-T-2,4-SWD, EMS-DOS-T-9-SWD	50	-
EMS-RO-T-2,4-SWD, EMS-RO-T-9-SWD	50	-
EMS-ROS-T-2,4-SWD, EMS-ROS-T-9-SWD	50	-
EU5E-SWD-4DX	33	-
EU5E-SWD-8DX	16	-
EU5E-SWD-4D4D	33	-
EU5E-SWD-4D2R	45	-
EU5E-SWD-X8D	43	-
EU5E-SWD-4AX	22	-
EU5E-SWD-2A2A	22	-
EU5E-SWD-4PT	22	-
EU5E-SWD-4PT-2	22	-
MCB-HK-SWD	27	-
M22-SWD-K11, M22-SWD-K22	10	-
M22-SWD-KC11, M22-SWD-KC22	10	-
M22-SWD-NOP, M22-SWD-NOPC	10	-
M22-SWD-LEDC-..., M22-SWD-LED-...	22	-
M22-SWD-K11LED-..., M22-SWD-K22LED-...	22	-
M22-SWD-K11LEDC-..., M22-SWD-K22LEDC-...	22	-
M22-SWD-I...-LP01	17	with bus termination resistor switched on
M22-SWD-INC	20	-
M22-SWD-R	20	-
NZM-XSWD-704	25	-
PKE-SWD-32	58	-
PKE-SWD-SP, PKE-SWD-CP	35	-
SL7-SWD, SL4-SWD	26	-
SWD4-RC8-10	17	-
XNH-SWD-2DX-3AX-1	40	-
XNH-SWD-2DX, XHN...-SWD-KIT...	19	-



SWD-Assist can be downloaded for free from our website:  
[www.eaton.eu/swdassist](http://www.eaton.eu/swdassist)  
Planning and ordering tool

Achieving results quicker using SWD-Assist:  
.. Planning .. Engineering .. Commissioning

The SWD-Assist software supports you to plan, configure and put a SWD network into operation. Not only does it offer planning and configuration functions, but the network can be easily initialized using the SWD coordinator diagnostics interface.

SWD-Assist contains the following functions:

Offline:

- Easy design of SWD networks
- Validity check while automatically adding missing components
- Creation of project-specific field bus description files (e.g. Profibus, Profinet)
- Print-out of the SWD network

Online:

- Importing installed network configurations
- Verifying correct installation (target-actual configuration comparison)
- Display process data of digital and analog inputs and outputs
- Wiring test (setting outputs in the stop position of the controller)
- Display of fault messages for easy fault diagnostics

## Technical data

			<b>XV-102-BE-35TORC-10</b> 153524	<b>NZM-XMC-MDISP35-SWD</b> 172765
<b>Display</b>				
Display - Type			Color display, TFT	Color display, TFT
Screen diagonal		Inch	3.5	3.5
Resolution		Pixel	QVGA, 320 x 240	QVGA, 320 x 240
Visible screen area		mm	70 x 53	70 x 53
Number of colours			64 k Colours	64 k Colours
Contrast ratio (Normally)			Normally 300:1	Normally 300:1
Brightness		cd/m <sup>2</sup>	Normally 250	Normally 250
Back-lighting			LED, dimmable via software	LED, dimmable via software
Service life of back-lighting		h	Normally 40000	Normally 40000
<b>Operation</b>				
Front type			Standard front with standard membrane (fully enclosed)	
Technology			Resistive-Touch, 4 wire	Resistive-Touch, 4 wire
Touch sensor			Glass with film	Glass with film
<b>System</b>				
Processor			RISC CPU, 32 Bit, 400 MHz	RISC CPU, 32 Bit, 400 MHz
Internal memory			DRAM (OS, Program and data memory): 64 MByte NAND-Flash (can be used for data backup): approx. 128 MByte available NVRAM (retained data): approx. 32 KByte available	
External memory			SD Memory Card Slot: SDA Specification 1.00	
Cooling			Fanless CPU and system cooling, natural convection-based passive cooling	
Back-up of real-time clock				
Battery (service life)			Zero maintenance	Zero maintenance
Backup (time at zero voltage)			Normally 10 years	Normally 10 years
Operating system			Windows CE 5.0 (licence incl.)	Windows CE 5.0 (licence incl.)
<b>Engineering</b>				
Visualisation software			GALILEO, EPAM, XSOFT-CODESYS-2, XSOFT-CODESYS-3	-
PLC-Programming software			XSOFT-CODESYS-2 XSOFT-CODESYS-3	-
Target and web visualization			Yes	no
<b>Interfaces, communication</b>				
built-in interfaces			1 x Ethernet 10/100 Mbps 1 x USB device 1 x SmartWire-DT	1 x Ethernet 100base-TX/10base-T 1 x USB device 1 x SmartWire-DT
PLC-licence			PLC licence inclusive	PLC licence inclusive
SmartWire-DT master			Yes	Yes
Ethernet			100Base-TX/10Base-T	100Base-TX/10Base-T
easyNet			no	no
MPI			no	no
<b>Power supply</b>				
Nominal voltage			24 V DC SELV (safety extra low voltage)	
permissible voltage			Effective: 19.2-30.0 V DC (rated operating voltage -20%/+25%) Absolute with ripple: 18.0-31.2 V DC Battery powered: 18.0-31.2 V DC (rated operating voltage -25%/+30%) 35 V DC for a duration of < 100 ms	
Voltage dips		ms	≤ 10 ms from rated voltage (24 V DC), ≤ 5 ms from undervoltage (19.2 V DC)	
Power consumption		P <sub>max.</sub>	W	5
Note on power consumption			Basic device USB Slave to USB Host: 2.5 Total: 9.5	Basic device USB Slave to USB Host: 2.5 Total: 9.5
Heat dissipation			W	5
Note on heat dissipation			Heat dissipation with power consumption for 24 V, all ports and interfaces connected	
Siemens MPI, (optional)			yes	yes
Type of fuse			Yes (fuse not accessible)	
Potential isolation			no potential isolation	no potential isolation

<b>XV-102-E6-57TVRC-10</b> 153525	<b>XV-102-E8-57TVRC-10</b> 153526	<b>XV-102-E6-70TWRC-10</b> 153527	<b>XV-102-E8-70TWRC-10</b> 153528	<b>NZM-XMC-MDISP70</b> 172766
Color display, TFT	Color display, TFT	Color display, TFT	Color display, TFT	Color display, TFT
5.7	5.7	7	7	7
VGA, 640 x 480	VGA, 640 x 480	WVGA, 800 x 480	WVGA, 800 x 480	WVGA, 800 x 480
115 x 86	115 x 86	152 x 91	152 x 91	152 x 91
64 k Colours	64 k Colours	64 k Colours	64 k Colours	64 k Colours
Normally 300:1	Normally 300:1	Normally 300:1	Normally 300:1	Normally 300:1
Normally 250	Normally 250	Normally 250	Normally 250	Normally 250
LED, dimmable via software	LED, dimmable via software	LED, dimmable via software	LED, dimmable via software	LED, dimmable via software
Normally 40000	Normally 40000	Normally 40000	Normally 40000	Normally 40000
Standard front with standard membrane (fully enclosed)				
Resistive-Touch, 4 wire	Resistive-Touch, 4 wire	Resistive-Touch, 4 wire	Resistive-Touch, 4 wire	Resistive-Touch, 4 wire
Glass with film	Glass with film	Glass with film	Glass with film	Glass with film
RISC CPU, 32 Bit, 400 MHz	RISC CPU, 32 Bit, 400 MHz	RISC CPU, 32 Bit, 400 MHz	RISC CPU, 32 Bit, 400 MHz	RISC CPU, 32 Bit, 400 MHz
DRAM (OS, Program and data memory): 64 MByte NAND-Flash (can be used for data backup): approx. 128 MByte available NVRAM (retained data): approx. 32 KByte available				
SD Memory Card Slot: SDA Specification 1.00				
Fanless CPU and system cooling, natural convection-based passive cooling				
Zero maintenance	Zero maintenance	Zero maintenance	Zero maintenance	Zero maintenance
Normally 10 years	Normally 10 years	Normally 10 years	Normally 10 years	Normally 10 years
Windows CE 5.0 (licence incl.)				
GALILEO, EPAM, XSOFT-CODESYS-2, XSOFT-CODESYS-3				
XSOFT-CODESYS-2 XSOFT-CODESYS-3	XSOFT-CODESYS-2 XSOFT-CODESYS-3	XSOFT-CODESYS-2 XSOFT-CODESYS-3	XSOFT-CODESYS-2 XSOFT-CODESYS-3	-
Yes	Yes	Yes	Yes	no
1 x Ethernet 10/100 Mbps 1 x RS485 1 x USB host 2.0 1 x USB device 1 x CANopen®/easyNet 1 x SmartWire-DT	1 x Ethernet 10/100 Mbps 1 x RS485 1 x USB host 2.0 1 x USB device 1 x PROFIBUS/MPI 1 x SmartWire-DT	1 x Ethernet 10/100 Mbps 1 x RS485 1 x USB host 2.0 1 x USB device 1 x CANopen®/easyNet 1 x SmartWire-DT	1 x Ethernet 10/100 Mbps 1 x RS485 1 x USB host 2.0 1 x USB device 1 x PROFIBUS/MPI 1 x SmartWire-DT	1 x Ethernet 100base-TX/ 10base-T 1 x RS485 1 x USB host 1 x USB device 1 x SmartWire-DT
PLC licence inclusive	PLC licence inclusive	PLC licence inclusive	PLC licence inclusive	PLC licence inclusive
Yes	Yes	Yes	Yes	Yes
100Base-TX/10Base-T	100Base-TX/10Base-T	100Base-TX/10Base-T	100Base-TX/10Base-T	100Base-TX/10Base-T
Yes	no	Yes	no	no
no	Yes	no	Yes	no
24 V DC SELV (safety extra low voltage)				
Effective: 19.2-30.0 V DC (rated operating voltage -20%/+25%) Absolute with ripple: 18,0-31,2 V DC Battery powered: 18,0-31,2 V DC (rated operating voltage -25%/+30%) 35 V DC for a duration of < 100 ms				
≤ 10 ms from rated voltage (24 V DC), ≤ 5 ms from undervoltage (19.2 V DC)				
10	10	10	10	7
Basic device USB Slave to USB Host: 2.5 Total: 9.5				
9.5	9.5	9.5	9.5	7
Heat dissipation with power consumption for 24 V 7 W for basic device + 2.5 W for USB module				Heat dissipation with power consumption for 24 V, all ports and interfaces connected
yes	yes	yes	yes	yes
Yes (fuse not accessible)				
no potential isolation	no potential isolation	no potential isolation	no potential isolation	no potential isolation

				<b>XV-102-BE-35TQRC-10</b> 153524	<b>NZM-XMC-MDISP35-SWD</b> 172765
<b>General</b>					
Housing material				Plastic, gray	Insulated material black
Front type				Standard front with standard membrane (fully enclosed)	
Dimensions (W x H x D)		mm		136 x 100 x 30	136 x 100 x 30
flush mounted				Clearance: W x H x D ≥ 30 mm (1.18") Inclination from vertical: ±45° (if using natural convection)	
Weight		kg		0.3	0.3
Degree of protection (IEC/EN 60529, EN50178, VBG 4)				IP65 (at front), IP20 (at rear)	
<b>Approvals</b>					
Approvals				cUL (UL508)	cUL (UL508)
Explosion protection (according to ATEX 94/9/EC)				II 3D Ex II T70°C IP5x: Zone 22, Category 3D	
shipping classification				DNV GL	
<b>Environmental conditions</b>					
<b>Temperature</b>					
Operation	θ	°C		0 - +50	0 - +50
Storage / Transport	θ	°C		-20 - +60	-20 - +60
Relative humidity				10 - 95%, non-condensing	10 - 95%, non-condensing
<b>Supply voltage U<sub>Aux</sub></b>					
Rated operational voltage	U <sub>Aux</sub>	V		24 V DC (-20/+25%)	24 V DC (-20/+25%)
Residual ripple on the input voltage		%		≤ 5	≤ 5
Protection against polarity reversal				Yes	Yes
Max. current	I <sub>max</sub>	A		3	3
Note				If contactors with a total power consumption > 3 A are connected, a power feeder module EU5C-SWD-PF1/2 has to be used.	
Short-circuit rating				no, external fuse FAZ Z3	no, external fuse FAZ Z3
Potential isolation				No	No
Rated operating voltage of 24-V-DC slaves		V		typ. U <sub>Aux</sub> - 0.2	-
<b>Supply voltage U<sub>Pow</sub></b>					
Supply voltage	U <sub>Pow</sub>	V		24 DC -20 % + 25 %	24 DC -20 % + 25 %
Input voltage ripple		%		≤ 5	≤ 5
Siemens MPI, (optional)				yes	yes
Rated current	I	A		0.7	0.7
Overload proof				yes	yes
Inrush current and duration		A		12.5 A/6 ms	12.5 A/6 ms
Heat dissipation at 24 V DC		W		1.0	1.0
Potential isolation between U <sub>Pow</sub> and 15 V SmartWire-DT supply voltage				No	No
Bridging voltage dips		ms		10	10
Repetition rate		s		1	1
Status indication		LED		yes	yes
<b>SmartWire-DT supply voltage</b>					
Rated operating voltage	U <sub>e</sub>	V		14,5 ± 3 %	14,5 ± 3 %
max. current	I <sub>max</sub>	A		0.7	0.7
Note				If SmartWire-DT modules with a total power consumption > 0.7 A are connected, a power feeder module EU5C-SWD-PF2 has to be used.	
Short-circuit rating				Yes	Yes
<b>Connection supply voltages</b>					
Connection type				Push in terminals	Push in terminals
Solid		mm <sup>2</sup>		0.2 - 1.5	0.2 - 1.5
Flexible with ferrule		mm <sup>2</sup>		0.25 - 1.5	0.25 - 1.5
UL/CSA solid or stranded		AWG		24 - 16	24 - 16
<b>SmartWire-DT network</b>					
Station type				SmartWire-DT master	SmartWire-DT master
Number of SmartWire-DT slaves				99	8
Baud Rates		kBd		125, 250	125, 250
Address allocation				automatic	automatic
Status indication		LED		SmartWire-DT master LED: red/green Configurations LED: red/green	
Connections				Plug, 8-pole	2 x plug, 8-pole
Plug connectors				Blade terminal SWD4-8MF2	Blade terminal SWD4-8MF2

<b>XV-102-E6-57TVRC-10</b> 153525	<b>XV-102-E8-57TVRC-10</b> 153526	<b>XV-102-E6-70TWRC-10</b> 153527	<b>XV-102-E8-70TWRC-10</b> 153528	<b>NZM-XMC-MDISP70</b> 172766
Plastic, gray	Plastic, gray	Plastic, gray	Plastic, gray	Insulated material black
Standard front with standard membrane (fully enclosed)				
170 x 130 x 39	170 x 130 x 39	210 x 135 x 38	210 x 135 x 38	210 x 135 x 38
Clearance: W x H x D ≥ 30 mm (1.18") Inclination from vertical: ±45° (if using natural convection)				
0.6	0.6	0.6	0.6	0.6
IP65 (at front), IP20 (at rear)				
cUL (UL508)	cUL (UL508)	cUL (UL508)	cUL (UL508)	cUL (UL508)
II 3D Ex II T70°C IP5x: Zone 22, Category 3D				
DNV GL				
0 - +50	0 - +50	0 - +50	0 - +50	0 - +50
-20 - +60	-20 - +60	-20 - +60	-20 - +60	-20 - +60
10 - 95%, non-condensing	10 - 95%, non-condensing	10 - 95%, non-condensing	10 - 95%, non-condensing	10 - 95%, non-condensing
24 V DC (-20/+25%)	24 V DC (-20/+25%)	24 V DC (-20/+25%)	24 V DC (-20/+25%)	24 V DC (-20/+25%)
≤ 5	≤ 5	≤ 5	≤ 5	≤ 5
Yes	Yes	Yes	Yes	Yes
3	3	3	3	3
If contactors with a total power consumption > 3 A are connected, a power feeder module EU5C-SWD-PF1/2 has to be used.				-
no, external fuse FAZ Z3				
No	No	No	No	No
typ. U <sub>Aux</sub> - 0.2	typ. U <sub>Aux</sub> - 0.2	typ. U <sub>Aux</sub> - 0.2	typ. U <sub>Aux</sub> - 0.2	-
24 DC -20 % + 25 %	24 DC -20 % + 25 %	24 DC -20 % + 25 %	24 DC -20 % + 25 %	24 DC -20 % + 25 %
≤ 5	≤ 5	≤ 5	≤ 5	≤ 5
yes	yes	yes	yes	yes
0.7	0.7	0.7	0.7	0.7
yes	yes	yes	yes	yes
12.5 A/6 ms	12.5 A/6 ms	12.5 A/6 ms	12.5 A/6 ms	12.5 A/6 ms
1.0	1.0	1.0	1.0	1.0
No	No	No	No	No
10	10	10	10	10
1	1	1	1	1
yes	yes	yes	yes	yes
14,5 ± 3 %	14,5 ± 3 %	14,5 ± 3 %	14,5 ± 3 %	14,5 ± 3 %
0.7	0.7	0.7	0.7	0.7
If SmartWire-DT modules with a total power consumption > 0.7 A are connected, a power feeder module EU5C-SWD-PF2 has to be used.				
Yes	Yes	Yes	Yes	Yes
Push in terminals	Push in terminals	Push in terminals	Push in terminals	Push in terminals
0.2 - 1.5	0.2 - 1.5	0.2 - 1.5	0.2 - 1.5	0.2 - 1.5
0.25 - 1.5	0.25 - 1.5	0.25 - 1.5	0.25 - 1.5	0.25 - 1.5
24 - 16	24 - 16	24 - 16	24 - 16	24 - 16
SmartWire-DT master	SmartWire-DT master	SmartWire-DT master	SmartWire-DT master	SmartWire-DT master
99	99	99	99	16
125, 250	125, 250	125, 250	125, 250	125
automatic	automatic	automatic	automatic	automatic
SmartWire-DT master LED: red/green Configurations LED: red/green				
Plug, 8-pole	Plug, 8-pole	Plug, 8-pole	Plug, 8-pole	2 x plug, 8-pole
Blade terminal SWD4-8MF2	Blade terminal SWD4-8MF2	Blade terminal SWD4-8MF2	Blade terminal SWD4-8MF2	Blade terminal SWD4-8MF2

			<b>XV-152-E6-57TVRC-10</b> 166700	<b>XV-152-E8-57TVRC-10</b> 166701
<b>Display</b>				
Display - Type			Color display, TFT	Color display, TFT
Screen diagonal		Inch	5.7	5.7
Resolution		Pixel	VGA, 640 x 480	VGA, 640 x 480
Visible screen area		mm	115 x 86	115 x 86
Number of colours			64 k Colours	64 k Colours
Contrast ratio (Normally)			Normally 300:1	Normally 300:1
Brightness		cd/m <sup>2</sup>	Normally 250	Normally 250
Back-lighting			LED, dimmable via software	LED, dimmable via software
Service life of back-lighting		h	Normally 40000	Normally 40000
<b>Operation</b>				
Front type			Standard front with standard membrane (fully enclosed)	Standard front with standard membrane (fully enclosed)
Technology			Resistive-Touch 4 wire	Resistive-Touch 4 wire
Touch sensor			Glass with film	Glass with film
<b>System</b>				
Processor			RISC CPU, 32 Bit, 400 MHz	RISC CPU, 32 Bit, 400 MHz
Internal memory			DRAM (OS, Program and data memory): 64 MByte NAND-Flash (can be used for data backup): approx. 64 MByte available NVRAM (Retain data): 125 kByte NOR-Flash: 2 MByte	
External memory			SD Memory Card Slot: SDA Specification 1.00	
Cooling			Fanless CPU and system cooling, natural convection-based passive cooling	
Back-up of real-time clock				
Battery (service life)			CR 2032 (190 mA/h), zero maintenance (soldered)	
Backup (time at zero voltage)			Normally 10 years	Normally 10 years
Operating system			Windows CE 5.0 (licence incl.)	Windows CE 5.0 (licence incl.)
<b>Engineering</b>				
Visualisation software			GALILEO EPAM XSOFT-CODESYS-2 XSOFT-CODESYS-3	GALILEO EPAM XSOFT-CODESYS-2 XSOFT-CODESYS-3
PLC-Programming software			XSOFT-CODESYS-2 XSOFT-CODESYS-3	XSOFT-CODESYS-2 XSOFT-CODESYS-3
Target and web visualization			Yes	Yes
<b>Interfaces, communication</b>				
built-in interfaces			1 x Ethernet 10/100 Mbps 1 x RS485 1 x USB host 2.0 1 x USB device 1 x CANopen@/easyNet 1 x SmartWire-DT	1 x Ethernet 10/100 Mbps 1 x RS485 1 x USB host 2.0 1 x USB device 1 x PROFIBUS/MPI 1 x SmartWire-DT
PLC-licence			PLC licence inclusive	PLC licence inclusive
SmartWire-DT master			Yes	Yes
Ethernet			100Base-TX/10Base-T	100Base-TX/10Base-T
easyNet			Yes	no
MPI			no	Yes
<b>Power supply</b>				
Nominal voltage			24 V DC SELV (safety extra low voltage)	24 V DC SELV (safety extra low voltage)
permissible voltage			Effective: 19.2-30.0 V DC (rated operating voltage -20%/+25%) Absolute with ripple: 18,0-31,2 V DC Battery powered: 18,0-31,2 V DC (rated operating voltage -25%/+30%) 35 V DC for a duration of < 100 ms	
Voltage dips		ms	≤ 10 ms from rated voltage (24 V DC) ≤ 5 ms from undervoltage (19.2 V DC)	≤ 10 ms from rated voltage (24 V DC) ≤ 5 ms from undervoltage (19.2 V DC)
Power consumption		P <sub>max.</sub>	W	7
Note on power consumption			Basic device USB Slave to USB Host: 2.5 Total: 9.5	Basic device USB Slave to USB Host: 2.5 Total: 9.5
Heat dissipation		W	9.5	9.5
Note on heat dissipation			Heat dissipation with power consumption for 24 V, 7 W for basic device + 2.5 W for USB module	
Siemens MPI, (optional)			yes	yes
Type of fuse			Yes (fuse not accessible)	Yes (fuse not accessible)
Potential isolation			no potential isolation	no potential isolation

<b>XV-152-E6-84TVRC-10</b> 166702	<b>XV-152-E8-84TVRC-10</b> 166703	<b>XV-152-E6-10TVRC-10</b> 166704	<b>XV-152-E8-10TVRC-10</b> 166705
Color display, TFT	Color display, TFT	Color display, TFT	Color display, TFT
8.4	8.4	10.4	10.4
VGA, 640 x 480	VGA, 640 x 480	VGA, 640 x 480	VGA, 640 x 480
170 x 128	170 x 128	211 x 158	211 x 158
64 k Colours	64 k Colours	64 k Colours	64 k Colours
Normally 300:1	Normally 300:1	Normally 300:1	Normally 300:1
Normally 250	Normally 250	Normally 250	Normally 250
LED, dimmable via software	LED, dimmable via software	LED, dimmable via software	LED, dimmable via software
Normally 40000	Normally 40000	Normally 40000	Normally 40000
Standard front with standard membrane (fully enclosed)	Standard front with standard membrane (fully enclosed)	Standard front with standard membrane (fully enclosed)	Standard front with standard membrane (fully enclosed)
Resistive-Touch 4 wire	Resistive-Touch 4 wire	Resistive-Touch 4 wire	Resistive-Touch 4 wire
Glass with film	Glass with film	Glass with film	Glass with film
RISC CPU, 32 Bit, 400 MHz	RISC CPU, 32 Bit, 400 MHz	RISC CPU, 32 Bit, 400 MHz	RISC CPU, 32 Bit, 400 MHz
DRAM (OS, Program and data memory): 64 MByte NAND-Flash (can be used for data backup): approx. 64 MByte available NVRAM (Retain data): 125 kByte NOR-Flash: 2 MByte			
SD Memory Card Slot: SDA Specification 1.00			
Fanless CPU and system cooling, natural convection-based passive cooling			
CR 2032 (190 mA/h), zero maintenance (soldered)			
Normally 10 years	Normally 10 years	Normally 10 years	Normally 10 years
Windows CE 5.0 (licence incl.)	Windows CE 5.0 (licence incl.)	Windows CE 5.0 (licence incl.)	Windows CE 5.0 (licence incl.)
GALILEO EPAM XSOFTE-CODESYS-2 XSOFTE-CODESYS-3	GALILEO EPAM XSOFTE-CODESYS-2 XSOFTE-CODESYS-3	GALILEO EPAM XSOFTE-CODESYS-2 XSOFTE-CODESYS-3	GALILEO EPAM XSOFTE-CODESYS-2 XSOFTE-CODESYS-3
XSOFTE-CODESYS-2 XSOFTE-CODESYS-3	XSOFTE-CODESYS-2 XSOFTE-CODESYS-3	XSOFTE-CODESYS-2 XSOFTE-CODESYS-3	XSOFTE-CODESYS-2 XSOFTE-CODESYS-3
Yes	Yes	Yes	Yes
1 x Ethernet 10/100 Mbps 1 x RS485 1 x USB host 2.0 1 x USB device 1 x CANopen®/easyNet 1 x SmartWire-DT	1 x Ethernet 10/100 Mbps 1 x RS485 1 x USB host 2.0 1 x USB device 1 x PROFIBUS/MPI 1 x SmartWire-DT	1 x Ethernet 10/100 Mbps 1 x RS485 1 x USB host 2.0 1 x USB device 1 x CANopen®/easyNet 1 x SmartWire-DT	1 x Ethernet 10/100 Mbps 1 x RS485 1 x USB host 2.0 1 x USB device 1 x PROFIBUS/MPI 1 x SmartWire-DT
PLC licence inclusive	PLC licence inclusive	PLC licence inclusive	PLC licence inclusive
Yes	Yes	Yes	Yes
100Base-TX/10Base-T	100Base-TX/10Base-T	100Base-TX/10Base-T	100Base-TX/10Base-T
Yes	no	Yes	no
no	Yes	no	Yes
24 V DC SELV (safety extra low voltage)	24 V DC SELV (safety extra low voltage)	24 V DC SELV (safety extra low voltage)	24 V DC SELV (safety extra low voltage)
Effective: 19.2-30.0 V DC (rated operating voltage -20%/+25%) Absolute with ripple: 18,0-31,2 V DC Battery powered: 18,0-31,2 V DC (rated operating voltage -25%/+30%) 35 V DC for a duration of < 100 ms			
≤ 10 ms from rated voltage (24 V DC) ≤ 5 ms from undervoltage (19.2 V DC)	≤ 10 ms from rated voltage (24 V DC) ≤ 5 ms from undervoltage (19.2 V DC)	≤ 10 ms from rated voltage (24 V DC) ≤ 5 ms from undervoltage (19.2 V DC)	≤ 10 ms from rated voltage (24 V DC) ≤ 5 ms from undervoltage (19.2 V DC)
12	12	12	12
Basic device USB Slave to USB Host: 2.5 Total: 9.5	Basic device USB Slave to USB Host: 2.5 Total: 9.5	Basic device USB Slave to USB Host: 2.5 Total: 9.5	Basic device USB Slave to USB Host: 2.5 Total: 9.5
14.5	14.5	14.5	14.5
Heat dissipation with power consumption for 24 V, 12 W for basic device + 2.5 W for USB module			
yes	yes	yes	yes
Yes (fuse not accessible)	Yes (fuse not accessible)	Yes (fuse not accessible)	Yes (fuse not accessible)
no potential isolation	no potential isolation	no potential isolation	no potential isolation

			<b>XV-152-E6-57TVRC-10</b> 166700	<b>XV-152-E8-57TVRC-10</b> 166701
<b>General</b>				
Housing material			Metal, anodized	Metal, anodized
Front type			Standard front with standard membrane (fully enclosed)	
Dimensions (W x H x D)		mm	212 x 198 x 54	212 x 198 x 54
flush mounted			Clearance: W x H x D ≥ 30 mm (1.18") Inclination from vertical: ±45° (if using natural convection)	
Weight		kg	1.25	1.25
Degree of protection (IEC/EN 60529, EN50178, VBG 4)			IP65 (at front), IP20 (at rear) Enclosure Type 4X (Indoor use only)	IP65 (at front), IP20 (at rear) Enclosure Type 4X (Indoor use only)
Approvals				
Approvals			cUL (UL508)	cUL (UL508)
Explosion protection (according to ATEX 94/9/EC)			II 3D Ex II T70°C IP5x: Zone 22, Category 3D	
<b>Environmental conditions</b>				
Temperature				
Operation	θ	°C	0 - +50	0 - +50
Storage / Transport	θ	°C	-20 - +60	-20 - +60
Relative humidity			IEC/EN 50178 10 - 95%, non-condensing	IEC/EN 50178 10 - 95%, non-condensing
<b>Supply voltage U<sub>Aux</sub></b>				
Rated operational voltage	U <sub>Aux</sub>	V	24 V DC (-20/+25%)	24 V DC (-20/+25%)
Residual ripple on the input voltage		%	≤ 5	≤ 5
Protection against polarity reversal			Yes	Yes
Max. current	I <sub>max</sub>	A	3	3
Note			If contactors with a total power consumption > 3 A are connected, a power feeder module EU5C-SWD-PF1/2 has to be used.	
Short-circuit rating			no, external fuse FAZ Z3	no, external fuse FAZ Z3
Potential isolation			No	No
Rated operating voltage of 24-V-DC slaves		V	typ. U <sub>Aux</sub> - 0.2	typ. U <sub>Aux</sub> - 0.2
<b>Supply voltage U<sub>Pow</sub></b>				
Supply voltage	U <sub>Pow</sub>	V	24 DC -20 % + 25 %	24 DC -20 % + 25 %
Input voltage ripple		%	≤ 5	≤ 5
Siemens MPI, (optional)			yes	yes
Rated current	I	A	0.7	0.7
Overload proof			yes	yes
Inrush current and duration		A	12.5 A/6 ms	12.5 A/6 ms
Heat dissipation at 24 V DC		W	1.0	1.0
Potential isolation between U <sub>Pow</sub> and 15 V SmartWire-DT supply voltage			No	No
Bridging voltage dips		ms	10	10
Repetition rate		s	1	1
Status indication		LED	yes	yes
<b>SmartWire-DT supply voltage</b>				
Rated operating voltage	U <sub>e</sub>	V	14,5 ± 3 %	14,5 ± 3 %
max. current	I <sub>max</sub>	A	0.7	0.7
Note			If SmartWire-DT modules with a total power consumption > 0.7 A are connected, a power feeder module EU5C-SWD-PF2 has to be used.	
Short-circuit rating			Yes	Yes
<b>Connection supply voltages</b>				
Connection type				
Solid		mm <sup>2</sup>	0.2 - 1.5	0.2 - 1.5
Flexible with ferrule		mm <sup>2</sup>	0.25 - 1.5 (AWG 24 - 16)	0.25 - 1.5 (AWG 24 - 16)
UL/CSA solid or stranded		AWG	24 - 16	24 - 16
<b>SmartWire-DT network</b>				
Station type				
Number of SmartWire-DT slaves			99	99
Baud Rates		kBd	125, 250	125, 250
Address allocation			automatic	automatic
Status indication		LED	SmartWire-DT master LED: red/green Configurations LED: red/green	
Connections			Plug, 8-pole	Plug, 8-pole
Plug connectors			Blade terminal SWD4-8MF2	Blade terminal SWD4-8MF2



<b>XV-152-E6-84TVRC-10</b> 166702	<b>XV-152-E8-84TVRC-10</b> 166703	<b>XV-152-E6-10TVRC-10</b> 166704	<b>XV-152-E8-10TVRC-10</b> 166705
Metal, anodized	Metal, anodized	Metal, anodized	Metal, anodized
Standard front with standard membrane (fully enclosed)			
275 x 208 x 54	275 x 208 x 54	345 x 260 x 54	345 x 260 x 54
Clearance: W x H x D ≥ 30 mm (1.18") Inclination from vertical: ±45° (if using natural convection)			
2.1	2.1	3	3
IP65 (at front), IP20 (at rear) Enclosure Type 4X (Indoor use only)	IP65 (at front), IP20 (at rear) Enclosure Type 4X (Indoor use only)	IP65 (at front), IP20 (at rear) Enclosure Type 4X (Indoor use only)	IP65 (at front), IP20 (at rear) Enclosure Type 4X (Indoor use only)
cUL (UL508)	cUL (UL508)	cUL (UL508)	cUL (UL508)
II 3D Ex II T70°C IP5x: Zone 22, Category 3D			
0 - +50	0 - +50	0 - +50	0 - +50
-20 - +60	-20 - +60	-20 - +60	-20 - +60
IEC/EN 50178 10 - 95%, non-condensing	IEC/EN 50178 10 - 95%, non-condensing	IEC/EN 50178 10 - 95%, non-condensing	IEC/EN 50178 10 - 95%, non-condensing
24 V DC (-20/+25%)	24 V DC (-20/+25%)	24 V DC (-20/+25%)	24 V DC (-20/+25%)
≤ 5	≤ 5	≤ 5	≤ 5
Yes	Yes	Yes	Yes
3	3	3	3
If contactors with a total power consumption > 3 A are connected, a power feeder module EU5C-SWD-PF1/2 has to be used.			
no, external fuse FAZ Z3	no, external fuse FAZ Z3	no, external fuse FAZ Z3	no, external fuse FAZ Z3
No	No	No	No
typ. U <sub>Aux</sub> - 0.2	typ. U <sub>Aux</sub> - 0.2	typ. U <sub>Aux</sub> - 0.2	typ. U <sub>Aux</sub> - 0.2
24 DC -20 % + 25 %	24 DC -20 % + 25 %	24 DC -20 % + 25 %	24 DC -20 % + 25 %
≤ 5	≤ 5	≤ 5	≤ 5
yes	yes	yes	yes
0.7	0.7	0.7	0.7
yes	yes	yes	yes
12.5 A/6 ms	12.5 A/6 ms	12.5 A/6 ms	12.5 A/6 ms
1.0	1.0	1.0	1.0
No	No	No	No
10	10	10	10
1	1	1	1
yes	yes	yes	yes
14,5 ± 3 %	14,5 ± 3 %	14,5 ± 3 %	14,5 ± 3 %
0.7	0.7	0.7	0.7
If SmartWire-DT modules with a total power consumption > 0.7 A are connected, a power feeder module EU5C-SWD-PF2 has to be used.			
Yes	Yes	Yes	Yes
Push in terminals	Push in terminals	Push in terminals	Push in terminals
0.2 - 1.5	0.2 - 1.5	0.2 - 1.5	0.2 - 1.5
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 - 16	24 - 16	24 - 16	24 - 16
SmartWire-DT master	SmartWire-DT master	SmartWire-DT master	SmartWire-DT master
99	99	99	99
125, 250	125, 250	125, 250	125, 250
automatic	automatic	automatic	automatic
SmartWire-DT master LED: red/green Configurations LED: red/green			
Plug, 8-pole	Plug, 8-pole	Plug, 8-pole	Plug, 8-pole
Blade terminal SWD4-8MF2	Blade terminal SWD4-8MF2	Blade terminal SWD4-8MF2	Blade terminal SWD4-8MF2

			XV-303-70-BE0-A00-1C 179655	XV-303-70-CE0-A00-1C 179656	XV-303-70-BE2-A00-1C 179657
<b>Display</b>					
Display - Type			Color display, TFT, anti-glare	Color display, TFT, anti-glare	Color display, TFT, anti-glare
Screen diagonal		Inch	7, widescreen		
Resolution		Pixel	WSVGA, 1024 x 600		
Visible screen area		mm	153.6 x 90.0	153.6 x 90.0	153.6 x 90.0
Format			16:9	16:9	16:9
Number of colours			16 mil.	16 mil.	16 mil.
Contrast ratio (Normally)			Normally 850:1	Normally 850:1	Normally 850:1
Brightness		cd/m <sup>2</sup>	Normally 400	Normally 400	Normally 400
Back-lighting			LED, dimmable via software	LED, dimmable via software	LED, dimmable via software
Service life of back-lighting		h	Normally 50000	Normally 50000	Normally 50000
<b>Operation</b>					
Front type			Anti-glare tempered glass in plastic bezel		
Technology			Projected Capacitive Touch (PCT)		
Touch sensor			Multi-touch touch panel		
<b>System</b>					
Processor			ARM Cortex-A9 800 MHz	ARM Cortex-A9 800 MHz	ARM Cortex-A9 800 MHz
Internal memory			DRAM: 512 MB RAM Flash: 1GB SLC NVRAM: 128kB Retain		
External memory			SD card, Type: SDSC, SDHC		
Cooling			Fanless CPU and system cooling, natural convection-based passive cooling		
Back-up of real-time clock					
Battery (service life)			Zero maintenance	Zero maintenance	Zero maintenance
Backup (time at zero voltage)			Normally 10 years	Normally 10 years	Normally 10 years
Operating system			Windows Embedded Compact 7 Pro		
<b>Engineering</b>					
Visualisation software			GALILEO, XSOFT-CODESYS		
PLC-Programming software			XSOFT-CODESYS-2, XSOFT-CODESYS-3		
Target and web visualization			Yes	Yes	Yes
<b>Interfaces, communication</b>					
built-in interfaces			1 x Ethernet 10/100 Mbps 1 x RS232 1 x RS485 1 x USB host 2.0 1 x USB device 1 x CANopen®/easyNet 1 x SmartWire-DT	2 x Ethernet 10/100 Mbps 1 x RS232 1 x RS485 1 x USB host 2.0 1 x USB device 1 x CANopen®/easyNet 1 x SmartWire-DT	1 x Ethernet 10/100 Mbps 1 x RS232 1 x RS485 1 x USB host 2.0 1 x USB device 1 x CANopen®/easyNet 1 x PROFIBUS/MPI 1 x SmartWire-DT
PLC-licence			PLC licence inclusive	PLC licence inclusive	PLC licence inclusive
Slots			for SD card: 1	for SD card: 1	for SD card: 1
SmartWire-DT master			Yes	Yes	Yes
Ethernet			10/100 Mbps	10/100 Mbps	10/100 Mbps
easyNet			-	-	-
MPI			no	no	Yes
<b>Power supply</b>					
Nominal voltage			24 V DC SELV (safety extra low voltage)		
permissible voltage			Effective: 19.2-30.0 V DC (rated operating voltage -20%/+25%) Absolute with ripple: 18,0-31,2 V DC Battery powered: 18,0-31,2 V DC (rated operating voltage -25%/+30%) 35 V DC for a duration of < 100 ms		
Voltage dips		ms	≤ 10 ms from rated voltage (24 V DC) ≤ 5 ms from undervoltage (19.2 V DC)		
Power consumption		P <sub>max.</sub>	W	14.4	14.4
Note on power consumption				-	-
Heat dissipation			W	14.4	14.4
Note on heat dissipation			Current consumption at 24 V DC 11.9 W for basic device + 2.5 W for USB module		
Siemens MPI, (optional)			yes	yes	yes
Type of fuse			Yes (fuse not accessible)		
Potential isolation			no	no	no

## Coordinators, Multi-touch display (HMI-PLC) XV300

XV-303-70-CE2-A00-1C 179658	XV-303-10-BE0-A00-1C 179667	XV-303-10-CE0-A00-1C 179668	XV-303-10-BE2-A00-1C 179669	XV-303-10-CE2-A00-1C 179670
Color display, TFT, anti-glare	Color display, TFT, anti-glare	Color display, TFT, anti-glare	Color display, TFT, anti-glare	Color display, TFT, anti-glare
7, widescreen	10.1, widescreen			
WSVGA, 1024 x 600				
153.6 x 90.0	222.72 x 125.28	222.72 x 125.28	222.72 x 125.28	222.72 x 125.28
16:9	16:9	16:9	16:9	16:9
16 mil.	16 mil.	16 mil.	16 mil.	16 mil.
Normally 850:1	Normally 500:1	Normally 500:1	Normally 500:1	Normally 500:1
Normally 400	Normally 400	Normally 400	Normally 400	Normally 400
LED, dimmable via software	LED, dimmable via software	LED, dimmable via software	LED, dimmable via software	LED, dimmable via software
Normally 50000	Normally 50000	Normally 50000	Normally 50000	Normally 50000
Anti-glare tempered glass in plastic bezel				
Projected Capacitive Touch (PCT)				
Multi-touch touch panel				
ARM Cortex-A9 800 MHz	ARM Cortex-A9 800 MHz	ARM Cortex-A9 800 MHz	ARM Cortex-A9 800 MHz	ARM Cortex-A9 800 MHz
DRAM: 512 MB RAM Flash: 1GB SLC NVRAM: 128kB Retain				
SD card, Type: SDSC, SDHC				
Fanless CPU and system cooling, natural convection-based passive cooling				
Zero maintenance	Zero maintenance	Zero maintenance	Zero maintenance	Zero maintenance
Normally 10 years	Normally 10 years	Normally 10 years	Normally 10 years	Normally 10 years
Windows Embedded Compact 7 Pro				
GALILEO, XSOFT-CODESYS				
XSOFT-CODESYS-2, XSOFT-CODESYS-3				
Yes	Yes	Yes	Yes	Yes
2 x Ethernet 10/100 Mbps 1 x RS232 1 x RS485 1 x USB host 2.0 1 x USB device 1 x CANopen®/easyNet 1 x PROFIBUS/MPI 1 x SmartWire-DT	1 x Ethernet 10/100 Mbps 1 x RS232 1 x RS485 1 x USB host 2.0 1 x USB device 1 x CANopen®/easyNet 1 x SmartWire-DT	2 x Ethernet 10/100 Mbps 1 x RS232 1 x RS485 1 x USB host 2.0 1 x USB device 1 x CANopen®/easyNet 1 x SmartWire-DT	1 x Ethernet 10/100 Mbps 1 x RS232 1 x RS485 1 x USB host 2.0 1 x USB device 1 x CANopen®/easyNet 1 x PROFIBUS/MPI 1 x SmartWire-DT	2 x Ethernet 10/100 Mbps 1 x RS232 1 x RS485 1 x USB host 2.0 1 x USB device 1 x CANopen®/easyNet 1 x PROFIBUS/MPI 1 x SmartWire-DT
PLC licence inclusive	PLC licence inclusive	PLC licence inclusive	PLC licence inclusive	PLC licence inclusive
for SD card: 1	for SD card: 1	for SD card: 1	for SD card: 1	for SD card: 1
Yes	Yes	Yes	Yes	Yes
10/100 Mbps	10/100 Mbps	10/100 Mbps	10/100 Mbps	10/100 Mbps
-	-	-	-	-
Yes	no	no	Yes	Yes
24 V DC SELV (safety extra low voltage)				
Effective: 19.2-30.0 V DC (rated operating voltage -20%/+25%) Absolute with ripple: 18,0-31,2 V DC Battery powered: 18,0-31,2 V DC (rated operating voltage -25%/+30%) 35 V DC for a duration of < 100 ms				
≤ 10 ms from rated voltage (24 V DC) ≤ 5 ms from undervoltage (19.2 V DC)				
14.4	18	18	18	18
-	-	-	-	-
14.4	18	18	18	18
Current consumption at 24 V DC 11.9 W for basic device + 2.5 W for USB module	Heat dissipation with power consumption for 24 V 12 W for basic device + 2.5 W for USB module			
yes	yes	yes	yes	yes
Yes (fuse not accessible)				
no	no	no	no	no

			XV-303-70-BE0-A00-1C 179655	XV-303-70-CE0-A00-1C 179656	XV-303-70-BE2-A00-1C 179657
<b>General</b>					
Housing material			Insulated material black	Insulated material black	Insulated material black
Front type			Anti-glare tempered glass in plastic bezel		
Dimensions (W x H x D)		mm	196 x 135 x 51	196 x 135 x 51	196 x 135 x 51
flush mounted			Clearance: W x H x D ≥ 30 mm (1.18") Inclination from vertical: ±45° (if using natural convection)		
Weight		kg	0.74	0.74	0.74
Degree of protection (IEC/EN 60529, EN50178, VBG 4)			IP65 (in the front as per EN 60529-1), IP20 (on rear as per EN 60529-1), NEMA 4X (in preparation)		
<b>Approvals</b>					
Approvals			cUL 61010-2-201		
Explosion protection (according to ATEX 94/9/EC)			-	-	-
shipping classification			DNV GL		
<b>Environmental conditions</b>					
<b>Climatic environmental conditions</b>					
Climatic proofing			Cold to EN 60068-2-1, Dry heat to IEC 60068-2-2, Damp heat as per EN 60068-2-3		
Air pressure (operation)		hPa	795 - 1080	795 - 1080	795 - 1080
<b>Temperature</b>					
Operation	θ	°C	0 - +50	0 - +50	0 - +50
Storage / Transport	θ	°C	-20 - +60	-20 - +60	-20 - +60
Relative humidity			10 - 95%, non-condensing		
<b>Supply voltage U<sub>Aux</sub></b>					
Rated operational voltage	U <sub>Aux</sub>	V	24 V DC (-15/+20%)	24 V DC (-15/+20%)	24 V DC (-15/+20%)
Residual ripple on the input voltage		%	≤ 5	≤ 5	≤ 5
Protection against polarity reversal			Yes	Yes	Yes
Max. current	I <sub>max</sub>	A	3	3	3
Note			If contactors with a total power consumption > 3 A are connected, a power feeder module EU5C-SWD-PF1/2 has to be used.		
Short-circuit rating			no, external fuse FAZ Z3		
Potential isolation			No	No	No
Rated operating voltage of 24-V-DC slaves		V	typ. U <sub>Aux</sub> - 0.2	typ. U <sub>Aux</sub> - 0.2	typ. U <sub>Aux</sub> - 0.2
<b>Supply voltage U<sub>Pow</sub></b>					
Supply voltage	U <sub>Pow</sub>	V	24 DC -15 % + 20 %	24 DC -15 % + 20 %	24 DC -15 % + 20 %
Input voltage ripple		%	≤ 5	≤ 5	≤ 5
Siemens MPI, (optional)			yes	yes	yes
Rated current	I	A	0.7	0.7	0.7
Overload proof			yes	yes	yes
Inrush current and duration		A	12.5 A/6 ms	12.5 A/6 ms	12.5 A/6 ms
Heat dissipation at 24 V DC		W	1.0	1.0	1.0
Potential isolation between U <sub>Pow</sub> and 15 V SmartWire-DT supply voltage			No	No	No
Bridging voltage dips		ms	10	10	10
Repetition rate		s	1	1	1
Status indication		LED	yes	yes	yes
<b>SmartWire-DT supply voltage</b>					
Rated operating voltage	U <sub>e</sub>	V	14.5 ± 3 %	14.5 ± 3 %	14.5 ± 3 %
max. current	I <sub>max</sub>	A	0.7	0.7	0.7
Note			If SmartWire-DT modules with a total power consumption > 0.7 A are connected, a power feeder module EU5C-SWD-PF2 has to be used.		
Short-circuit rating			Yes	Yes	Yes
<b>Connection supply voltages</b>					
Connection type			Push in terminals	Push in terminals	Push in terminals
Solid		mm <sup>2</sup>	0.2 - 1.5	0.2 - 1.5	0.2 - 1.5
Flexible with ferrule		mm <sup>2</sup>	0.25 - 1.5	0.25 - 1.5	0.25 - 1.5
UL/CSA solid or stranded		AWG	24 - 16	24 - 16	24 - 16
<b>SmartWire-DT network</b>					
Station type			SmartWire-DT master	SmartWire-DT master	SmartWire-DT master
Number of SmartWire-DT slaves			99	99	99
Baud Rates		kBd	125, 250	125, 250	125, 250
Address allocation			automatic	automatic	automatic
Status indication		LED	SmartWire-DT master LED: red/green Configurations LED: red/green		
Connections			Plug, 8-pole	Plug, 8-pole	Plug, 8-pole
Plug connectors			Blade terminal SWD4-8MF2	Blade terminal SWD4-8MF2	Blade terminal SWD4-8MF2

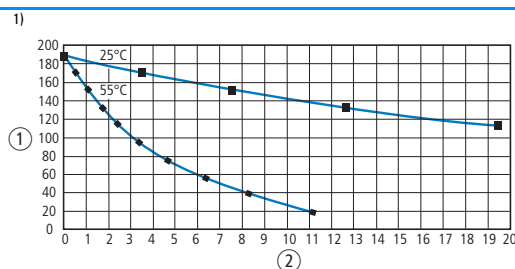
## Coordinators, Multi-touch display (HMI-PLC) XV300

<b>XV-303-70-CE2-A00-1C</b> 179658	<b>XV-303-10-BE0-A00-1C</b> 179667	<b>XV-303-10-CE0-A00-1C</b> 179668	<b>XV-303-10-BE2-A00-1C</b> 179669	<b>XV-303-10-CE2-A00-1C</b> 179670
Insulated material black	Insulated material black	Insulated material black	Insulated material black	Insulated material black
Anti-glare tempered glass in plastic bezel				
196 x 135 x 51	269 x 174 x 58	269 x 174 x 58	269 x 174 x 58	269 x 174 x 58
Clearance: W x H x D ≥ 30 mm (1.18") Inclination from vertical: ±45° (if using natural convection)				
0.74	1.13	1.13	1.13	1.13
IP65 (in the front as per EN 60529-1), IP20 (on rear as per EN 60529-1), NEMA 4X (in preparation)				
cUL 61010-2-201				
-	-	-	-	-
DNV GL				
Cold to EN 60068-2-1, Dry heat to IEC 60068-2-2, Damp heat as per EN 60068-2-3				
795 - 1080	795 - 1080	795 - 1080	795 - 1080	795 - 1080
0 - +50	0 - +50	0 - +50	0 - +50	0 - +50
-20 - +60	-20 - +60	-20 - +60	-20 - +60	-20 - +60
10 - 95%, non-condensing	10 - 95%, non-condensing	10 - 95%, non-condensing	10 - 95%, non-condensing	10 - 95%, non-condensing
24 V DC (-15/+20%)	24 V DC (-15/+20%)	24 V DC (-15/+20%)	24 V DC (-15/+20%)	24 V DC (-15/+20%)
≤ 5	≤ 5	≤ 5	≤ 5	≤ 5
Yes	Yes	Yes	Yes	Yes
3	3	3	3	3
If contactors with a total power consumption > 3 A are connected, a power feeder module EU5C-SWD-PF1/2 has to be used.				
no, external fuse FAZ Z3				
No	No	No	No	No
typ. U <sub>Aux</sub> - 0.2	typ. U <sub>Aux</sub> - 0.2	typ. U <sub>Aux</sub> - 0.2	typ. U <sub>Aux</sub> - 0.2	typ. U <sub>Aux</sub> - 0.2
24 DC -15 % + 20 %	24 DC -15 % + 20 %	24 DC -15 % + 20 %	24 DC -15 % + 20 %	24 DC -15 % + 20 %
≤ 5	≤ 5	≤ 5	≤ 5	≤ 5
yes	yes	yes	yes	yes
0.7	0.7	0.7	0.7	0.7
yes	yes	yes	yes	yes
12.5 A/6 ms	12.5 A/6 ms	12.5 A/6 ms	12.5 A/6 ms	12.5 A/6 ms
1.0	1.0	1.0	1.0	1.0
No	No	No	No	No
10	10	10	10	10
1	1	1	1	1
yes	yes	yes	yes	yes
14.5 ± 3 %	14.5 ± 3 %	14.5 ± 3 %	14.5 ± 3 %	14.5 ± 3 %
0.7	0.7	0.7	0.7	0.7
If SmartWire-DT modules with a total power consumption > 0.7 A are connected, a power feeder module EU5C-SWD-PF2 has to be used.				
Yes	Yes	Yes	Yes	Yes
Push in terminals	Push in terminals	Push in terminals	Push in terminals	Push in terminals
0.2 - 1.5	0.2 - 1.5	0.2 - 1.5	0.2 - 1.5	0.2 - 1.5
0.25 - 1.5	0.25 - 1.5	0.25 - 1.5	0.25 - 1.5	0.25 - 1.5
24 - 16	24 - 16	24 - 16	24 - 16	24 - 16
SmartWire-DT master	SmartWire-DT master	SmartWire-DT master	SmartWire-DT master	SmartWire-DT master
99	99	99	99	99
125, 250	125, 250	125, 250	125, 250	125, 250
automatic	automatic	automatic	automatic	automatic
SmartWire-DT master LED: red/green Configurations LED: red/green				
Plug, 8-pole	Plug, 8-pole	Plug, 8-pole	Plug, 8-pole	Plug, 8-pole
Blade terminal SWD4-8MF2	Blade terminal SWD4-8MF2	Blade terminal SWD4-8MF2	Blade terminal SWD4-8MF2	Blade terminal SWD4-8MF2

			<b>XC-152-E3-11</b> 167850	<b>XC-152-E6-11</b> 167851	<b>XC-152-E8-11</b> 167852
<b>General</b>					
Standards			EN 61131, UL 508	EN 61131, UL 508	EN 61131, UL 508
Approvals			CE, cULus	CE, cULus	CE, cULus
Ambient temperature		°C	0 - +55	0 - +55	0 - +55
Storage / Transport	θ	°C	-20 - +60	-20 - +60	-20 - +60
Degree of Protection			IP20	IP20	IP20
Battery (service life)			normally 10 years	normally 10 years	normally 10 years
Weight		kg	0.47	0.49	0.49
<b>Power supply</b>					
Supply voltage		V DC	24	24	24
Permissible range	U <sub>e</sub>		20.4 - 28.8 V DC	20.4 - 28.8 V DC	20.4 - 28.8 V DC
Maximum power loss	P <sub>v</sub>	W	8.5	8.5	8.5
Note on heat dissipation			Heat dissipation with power consumption for 24 V 6 W for basic device + 2.5 W for USB module		
<b>CPU</b>					
Processor			RISC CPU, 32 Bit, 400 MHz	RISC CPU, 32 Bit, 400 MHz	RISC CPU, 32 Bit, 400 MHz
<b>Memory</b>					
Program code/program data			64MB	64MB	64MB
Cycle time for 1 k of instructions (Bit, Byte)		ms	Normally 0.04	Normally 0.04	Normally 0.04
<b>Interfaces</b>					
Basic interfaces					
Ethernet					
Profile			FTP SMTP HTTP TCP UDP IP	FTP SMTP HTTP TCP UDP IP	FTP SMTP HTTP TCP UDP IP
Data transfer rate		MBit/s	100Base-TX 10Base-T	100Base-TX 10Base-T	100Base-TX 10Base-T
Potential isolation			500 V <sub>r.m.s.</sub>	500 V <sub>r.m.s.</sub>	500 V <sub>r.m.s.</sub>
Programming interface			yes	yes	yes
Connections			RJ45	RJ45	RJ45
USB					
USB Host			USB 2.0	USB 2.0	USB 2.0
Potential isolation			None	None	None
USB device			USB 2.0	USB 2.0	USB 2.0
Potential isolation			None	None	None
additional interfaces					
PROFIBUS					
Profile			-	-	DP V1 MPI (Master)
Data transfer rate		kbit/s	-	-	max. 1500
Potential isolation			-	-	None
Module		Count	-	-	126
Connections			-	-	9-pin D-sub (socket)
CAN					
Profile			-	CANopen easyNet (Master/Device)	-
Data transfer rate		kbit/s	-	max. 1000	-
Potential isolation			-	None	-
Module		Count	-	127	-
Connections			-	9-pin D-sub (plug)	-
SmartWire-DT					
Profile			SmartWire-DT	SmartWire-DT	SmartWire-DT
Data transfer rate		kbit/s	max. 250	max. 250	max. 250
Potential isolation			None	None	None
Module		Count	99	99	99
Connections			Blade terminal SWD4-8MF2	Blade terminal SWD4-8MF2	Blade terminal SWD4-8MF2

	<b>XC-152-E3-11</b> 167850	<b>XC-152-E6-11</b> 167851	<b>XC-152-E8-11</b> 167852
<b>Interfaces</b>			
additional interfaces			
RS485			
Data transfer rate	kbit/s -	max. 57.6	max. 57.6
Potential isolation	-	None	None
Connections	-	9-pin D-sub (plug)	9-pin D-sub (plug)
RS232			
Data transfer rate	kbit/s max. 57.6	-	-
Potential isolation	None	-	-
Connections	9-pin D-sub (plug)	-	-
RTC (real-time clock)	yes	yes	yes

			EASY802-DC-SWD 152901	EASY806-DC-SWD 152902
<b>General</b>				
Standards			EN 55011, EN 55022, IEC/EN 61000-4, IEC 60068-2-6, IEC 60068-2-27	
Dimensions (W x H x D)		mm	35 x 110 x 125.5 (2 PE)	35 x 110 x 125.5 (2 PE)
Weight		kg	0.16	0.16
Mounting			Top-hat rail IEC/EN 60715, 35 mm or screw fixing using fixing brackets ZB4-101-GF1 (accessories)	
<b>Terminal capacities</b>				
Solid		mm <sup>2</sup>	0.2/1.5 (AWG 24 - 16)	0.2/1.5 (AWG 24 - 16)
Flexible with ferrule		mm <sup>2</sup>	0.2/1.5 (AWG 24 - 16)	0.2/1.5 (AWG 24 - 16)
Standard screwdriver		mm	-	-
Max. tightening torque		Nm	-	-
<b>Climatic environmental conditions</b>				
Operating ambient temperature		°C	In accordance with IEC 60068-2-1, -25 - +55	In accordance with IEC 60068-2-1, -25 - +55
Condensation			Take appropriate measures to prevent condensation	Take appropriate measures to prevent condensation
Storage	Ø	°C	In accordance with IEC 60068-2-1, -2, -14 -40 - +70	In accordance with IEC 60068-2-1, -2, -14 -40 - +70
relative humidity		%	in accordance with IEC 60068-2-30, IEC 60068-2-78 5 - 95	in accordance with IEC 60068-2-30, IEC 60068-2-78 5 - 95
Air pressure (operation)		hPa	795 - 1080	795 - 1080
<b>Ambient conditions, mechanical</b>				
Protection type (IEC/EN 60529, EN50178, VBG 4)			IP20	IP20
Vibrations	3,5 mm / 1 g	Hz	In accordance with IEC 60068-2-6 constant amplitude 0.15 mm: 10 - 57 constant acceleration 2 g: 57 - 150	In accordance with IEC 60068-2-6 constant amplitude 0.15 mm: 10 - 57 constant acceleration 2 g: 57 - 150
Mechanical shock resistance (IEC/EN 60068-2-27) semi-sinusoidal 15 g/11 ms		Impacts	18	18
Drop to IEC/EN 60068-2-31	Drop height	mm	50	50
Free fall, packaged (IEC/EN 60068-2-32)		m	0.3	0.3
Mounting position			Vertical or horizontal	Vertical or horizontal
<b>Electromagnetic compatibility (EMC)</b>				
Overvoltage category/pollution degree			III/2	III/2
Electrostatic discharge (ESD)				
applied standard			according to IEC EN 61000-4-2	according to IEC EN 61000-4-2
Air discharge		kV	8	8
Contact discharge		kV	6	6
Electromagnetic fields (RFI) to IEC EN 61000-4-3		V/m	0.8 - 1.0 GHz: 10 1.4 - 2 GHz: 3 2.0 - 2.7 GHz: 1	0.8 - 1.0 GHz: 10 1.4 - 2 GHz: 3 2.0 - 2.7 GHz: 1
Radio interference suppression			EN 55011 Class B	EN 55011 Class B
Burst		kV	according to IEC/EN 61000-4-4 Supply cables: 2 Signal cables: 2 SWD lines: 2	according to IEC/EN 61000-4-4 Supply cables: 2 Signal cables: 2 easyNet: 2 SWD lines: 2
power pulses (Surge)			according to IEC/EN 61000-4-5 1 kV (supply cables, symmetrical)	according to IEC/EN 61000-4-5 1 kV (supply cables, symmetrical)
Immunity to line-conducted interference to (IEC/EN 61000-4-6)		V	10	10
<b>Insulation resistance</b>				
Clearance in air and creepage distances			EN 50178, UL 508, CSA C22.2, No. 142	EN 50178, UL 508, CSA C22.2, No. 142
Insulation resistance			EN 50178	EN 50178
<b>Back-up of real-time clock</b>				
Accuracy of real-time clock to inputs		s/day	typ. ± 2 (± 0.2 h/Year) depending on ambient air temperature fluctuations of up to ± 5 s/day (± 0.5 h/year) are possible	typ. ± 2 (± 0.2 h/Year)

**Note**

① Backup time (hours) with fully charged double layer capacitor

② Service life (years)



			<b>EASY802-DC-SWD</b> 152901	<b>EASY806-DC-SWD</b> 152902
<b>Repetition accuracy of timing relays</b>				
Accuracy of timing relays (of values)		%	± 0.02	± 0.02
<b>Resolution</b>				
Range "S"		ms	5	5
Range "M:S"		s	1	1
Range "H:M"		min	1	1
<b>Retentive memory</b>				
Write cycles of the retentive memory			10 <sup>14</sup> (read/write cycles)	10 <sup>14</sup> (read/write cycles)
<b>Power supply</b>				
Rated operational voltage	U <sub>e</sub>	V	24 DC (-15/+20%)	24 DC (-15/+20%)
Permissible range	U <sub>e</sub>		20.4 - 28.8 V DC	20.4 - 28.8 V DC
Residual ripple		%	≤ 5	≤ 5
Siemens MPI, (optional)			yes	yes
Frequency		Hz	-	-
Input current			normally 500 mA at U <sub>e</sub>	normally 900 mA at U <sub>e</sub>
Inrush current and length		A	12.5 for 6 ms	12.5 for 6 ms
Voltage dips		ms	≤ In accordance with IEC 61131-2 ≤ ≤ 10	≤ In accordance with IEC 61131-2 ≤ ≤ 10
Fuse		A	≥ 3 A (T) (e.g FAZ C3)	≥ 3 A (T) (e.g FAZ C3)
Potential isolation			-	-
Power loss	P	W	Normally 1	Normally 1
Heat dissipation at 24 V DC		W	-	-
Note on heat dissipation			Current consumption at 24 V DC	Current consumption at 24 V DC
<b>Digital inputs 24 V DC</b>				
Number			-	4
Inputs can be used as analog inputs			-	-
Status Display			-	LED
Potential isolation			-	from power supply: no between digital inputs: no from the outputs: no to COM interface: yes to easyNet: yes to AUX: yes to SmartWire-DT: no
Rated operational voltage	U <sub>e</sub>	V DC	-	24
Input voltage		V DC	-	Signal 0: ≤ 5 (I1 - I4) Signal 1: ≥ 15 (I1 - I4)
Input current at signal 1		mA	-	I1 - I4: 3.9
Deceleration time		ms	-	20 (0 -> 1/1 -> 0, Debounce ON) normally 0.025 (0 -> 1/1 -> 0, Debounce OFF)
Cable length		m	-	100 (unshielded)
<b>Frequency counter</b>				
Number			-	4 (I1, I2, I3, I4)
Counter frequency		kHz	-	≤ 5
Pulse shape			-	Square
Pulse pause ratio			-	1:1
Cable length		m	-	≤ 20 (screened)
<b>Incremental counter</b>				
Number of counter inputs			-	2 (I1 + I2, I3 + I4)
Value range			-	-
Counter frequency		kHz	-	≤ 5
Pulse shape			-	Square
Counter inputs			-	-
Reference input			-	-
Input for reference switch			-	-
Counter inputs I1 and I2, I3 and I4			-	-
Signal offset			-	90°
Pulse pause ratio			-	1:1

			EASY802-DC-SWD 152901	EASY806-DC-SWD 152902
<b>Rapid counter inputs</b>				
Number			-	4 (I1, I2, I3, I4)
Value range			-	-
Cable length		m	-	≤ 20 (screened)
Counter frequency		kHz	-	< 5
Pulse shape			-	Square
Pulse pause ratio			-	1:1
<b>Transistor outputs</b>				
Number			-	2
Rated operational voltage	$U_e$	V DC	-	-
Permissible range	$U_e$		-	-
Residual ripple		%	-	-
Supply current		mA	-	-
Siemens MPI, (optional)			-	-
Potential isolation			-	from power supply: no From the inputs: yes: no to COM interface: yes to easyNet: yes to AUX: yes
Rated operational current at signal „1“ DC per channel	$I_e$	A	-	max. 0.1
Lamp load without $R_v$ per channel		W	-	1.2
Residual current on 0 signal per channel		mA	-	< 0.1
Max. output voltage		V	-	2.5 (signal 0 at external load < 10 M $\Omega$ ) $U = U_e - 2 V$ (signal 1 at $I_e = 0.1 A$ )
Short-circuit protection			-	Yes, electronic (Q1 - Q2)
Short-circuit tripping current for $R_a \leq 10 m\Omega$		A	-	0.15 - 0.35 per output depending on number of active channels and their load
Total short-circuit current		A	-	-
Peak short-circuit current		A	-	10 A/80 ms (on short-circuit) 10 A/20 ms (on attempted restart of device after 10s)
Thermal cutout			-	no
Max. operating frequency with constant resistive load		Operations/h	-	-
<b>Parallel connection of outputs</b>				
With resistive load, inductive load with external suppressor circuit, combination within a group			-	-
Number of outputs	max.		-	-
Max. total current		A	-	-
<b>Output status indication</b>				
Inductive load to EN 60947-5-1				
Without external suppressor circuit				
$T_{0.95} = 1 ms, R = 48 \Omega, L = 16 mH$				
Utilization factor		g	-	-
Duty factor		% DF	-	-
Max. switching frequency $f = 0.5 Hz$ (max. DF = 50 %)		Operations	-	-
DC-13, $T_{0.95} = 72 ms, R = 48 \Omega, L = 1.15 H$				
Utilization factor		g	-	-
Duty factor		% DF	-	-
Max. switching frequency $f = 0.5 Hz$ (max. DF = 50 %)		Operations	-	-
$T_{0.95} = 15 ms, R = 48 \Omega, L = 0.24 H$				
Utilization factor		g	-	-
Duty factor		% DF	-	-
Max. switching frequency $f = 0.5 Hz$ (max. DF = 50 %)		Operations	-	-
With external suppressor circuit				
Utilization factor		g	-	-
Duty factor		% DF	-	-
Max. switching frequency, max. duty factor		Operations	-	-

			<b>EASY802-DC-SWD</b> 152901	<b>EASY806-DC-SWD</b> 152902
<b>Supply voltage <math>U_{Aux}</math></b>				
Rated operational voltage	$U_{Aux}$	V	24 V DC (-15/+20%)	24 V DC (-15/+20%)
Permissible range			20.4 - 28.8 V DC	20.4 - 28.8 V DC
Output voltage SWD-OUT			$U_e - 0.3$ V	$U_e - 0.3$ V
Siemens MPI, (optional)			yes	yes
Residual ripple on the input voltage		%	$\leq 5$	$\leq 5$
Max. current	$I_{max}$	A	3 (IEC) 2 (UL)	3 (IEC) 2 (UL)
Short-circuit rating			no	no
Heat dissipation		W	Normally 1 W at 24 V DC	Normally 1 W at 24 V DC
Potential isolation			from power supply POW: yes to COM interface: yes to SmartWire-DT: yes	from power supply POW: yes From the inputs: yes from the outputs: yes to COM interface: yes to easyNet: yes to SmartWire-DT: yes
Power loss	P	W	1	1
<b>SmartWire-DT supply voltage</b>				
Rated operating voltage	$U_e$	V	$14.5 \pm 3$ %	$14.5 \pm 3$ %
max. current	$I_{max}$	A	0.4	0.7
Short-circuit rating			Yes	Yes
Potential isolation			from power supply POW: no to COM interface: yes to AUX: yes	from power supply POW: no From the inputs: yes: no from the outputs: no to COM interface: yes to easyNet: yes to AUX: yes
<b>SmartWire-DT network</b>				
Station type			Master	Master
Number of SmartWire-DT slaves			Max. 99	Max. 99
Baud Rates		kBd	125/250	125/250
Address allocation			Automatically (via Configuration button)	Automatically (via Configuration button)
Status indication		LED	SWD-LED: orange/green/red Config. LED: green/red	SWD-LED: orange/green/red Config. LED: green/red
Connections			Plug, 8-pole	Plug, 8-pole
Plug connectors			Blade terminal SWD4-8MF2	Blade terminal SWD4-8MF2
Bus termination			Integrated in the device SmartWire-DT line end with SWD4-RC8-10	Integrated in the device SmartWire-DT line end with SWD4-RC8-10
<b>Network easyNet</b>				
Module		Count	-	Max. 8
Data transfer rate/distance			-	1000 KBit/s, 6 m 500 KBit/s, 25 m 250 Kbit/s, 40 m 125 Kbit/s, 300 m 50 KBit/s, 300 m 20 KBit/s, 700 m 10 KBit/s, 1000 m Lengths from 40 m can be obtained only with cables with reinforced cross-section and terminal adapter.
Potential isolation			-	from power supply POW: yes From the inputs: yes from the outputs: yes to COM interface: yes to SmartWire-DT: yes to AUX: yes
Bus termination (first and last station)			-	yes
Terminal types			-	RJ45, 8-polig
Terminal capacity			-	up to 1000 m, < 16 mΩ/m: 1.5 (AWG: 16) up to 600 m, < 26 mΩ/m: 0.75 - 0.8 (AWG: 18) up to 600 m, < 26 mΩ/m: 0.5 - 0.6 (AWG: 20, 19) up to 400 m, < 40 mΩ/m: 0.34 - 0.5 (AWG: 22, 21, 20) up to 250 m, < 60 mΩ/m: 0.25 - 0.34 (AWG: 23, 22) up to 175 m, < 70 mΩ/m: 0.13 (AWG: 26) up to 40 m, < 140 mΩ/m: 1.5 (AWG: 16)

			EU5C-SWD-CAN 116307	EU5C-SWD-DP 116308	EU5C-SWD-EIP-MODTCP 153163	EU5C-SWD-PROFINET 170124	EU5C-SWD-POWERLINK 171797	EU5C-SWD-ETHERCAT 177354	EU5C-SWD-SERCOS 184982	
<b>General</b>										
Standards			IEC/EN 61131-2 EN 50178			IEC/EN 61131-2				
Dimensions (W x H x D)		mm	35 x 90 x 127	35 x 90 x 127	35 x 90 x 124	35 x 90 x 124	35 x 90 x 124	35 x 90 x 124	35 x 90 x 124	
Weight		kg	0.16	0.16	0.17	0.16	0.16	0.16	0.16	
Mounting			Top-hat rail IEC/EN 60715, 35 mm or screw fixing using fixing brackets ZB4-101-GF1 (accessories)							
Mounting position			As required	As required	As required	As required	As required	As required	As required	
<b>Ambient conditions, mechanical</b>										
Protection type (IEC/EN 60529, EN50178, VBG 4)			IP20	IP20	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 - 9	5 - 9	5 - 9	5 - 9	
Constant acceleration 1 g		Hz	8.4 - 150	8.4 - 150	8.4 - 150	9 - 150	9 - 150	9 - 150	9 - 150	
Mechanical shock resistance (IEC/EN 60068-2-27) semi-sinusoidal 15 g/11 ms			Impacts	9	9	9	9	9	9	
Drop to IEC/EN 60068-2-31		Drop height mm	50	50	50	50	50	50	50	
Free fall, packaged (IEC/EN 60068-2-32)			m	0.3	0.3	0.3	1	1	1	
<b>Electromagnetic compatibility (EMC)</b>										
Overvoltage category			II	II	II	II	II	II	II	
Pollution degree			2	2	2	2	2	2	2	
Electrostatic discharge (IEC/EN 61131-2:2008)										
Air discharge (Level 3)		kV	8	8	8	8	8	8	8	
Contact discharge (Level 2)		kV	4	4	4	4	4	4	4	
Electromagnetic fields (IEC/EN 61131-2:2008)										
80 - 1000 MHz		V/m	10	10	10	10	10	10	10	
1.4 - 2 GHz		V/m	3	3	3	3	3	3	3	
2 - 2.7 GHz		V/m	1	1	1	1	1	1	1	
Radio interference suppression			EN 55011 Class A							
Burst (IEC/EN 61131-2:2008, Level 3)										
Supply cable		kV	2	2	2	2	2	2	2	
Fieldbus cable										
Signal lines		kV	1	1	1	1	1	1	1	
SmartWire-DT cable										
SmartWire-DT cables		kV	1	1	1	1	1	1	1	
Surge (IEC/EN 61131-2:2008, Level 1)										
Supply cable			0.5 kV	0.5 kV	0.5 kV	0.5 kV	0.5 kV	0.5 kV	0.5 kV	
Radiated RFI (IEC/EN 61131-2:2008, Level 3)			V	10	10	10	10	10	10	
<b>Operating conditions</b>										
Climatic environmental conditions										
Climatic proofing			In accordance with IEC 60068-2							
Ambient temperature										
Operation		θ °C	-25 - +55	-25 - +55	-25 - +55	-25 - +55	-25 - +55	-25 - +55	-25 - +55	
Storage		θ °C	-40 - +70	-40 - +70	-40 - +70	-40 - +70	-40 - +70	-40 - +70	-40 - +70	
Atmospheric conditions										
Relative humidity, non-condensing (IEC/EN 60068-2-30)		%	5 - 95	5 - 95	5 - 95	5 - 95	5 - 95	5 - 95	5 - 95	
Air pressure (operation)		hPa	795 - 1080	795 - 1080	795 - 1080	795 - 1080	795 - 1080	795 - 1080	795 - 1080	
<b>Supply voltage U<sub>Aux</sub></b>										
Rated operational voltage		U <sub>Aux</sub> V	24 V DC (-15/+20%)							
Residual ripple on the input voltage		%	≤ 5	≤ 5	≤ 5	≤ 5	≤ 5	≤ 5	≤ 5	
Protection against polarity reversal			Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Max. current		I <sub>max</sub> A	3	3	3	3	3	3	3	
Short-circuit rating			no, external fuse FAZ Z3							
Power loss		P W	Normally 1	Normally 1	Normally 1	Normally 1	Normally 1	Normally 1	Normally 1	
Potential isolation			No	No	No	No	No	No	No	
Rated operating voltage of 24-V-DC slaves		V	typ. U <sub>Aux</sub> - 0.2	typ. U <sub>Aux</sub> - 0.2	typ. U <sub>Aux</sub> - 0.2	typ. U <sub>Aux</sub> - 0.2	typ. U <sub>Aux</sub> - 0.2	typ. U <sub>Aux</sub> - 0.2	typ. U <sub>Aux</sub> - 0.2	

			EU5C-SWD-CAN 116307	EU5C-SWD-DP 116308	EU5C-SWD-EIP-MODTCP 153163	EU5C-SWD-PROFINET 170124	EU5C-SWD-POWERLINK 171797	EU5C-SWD-ETHERCAT 177354	EU5C-SWD-SERCOS 184982
<b>Supply voltage U<sub>Pow</sub></b>									
Supply voltage	U <sub>Pow</sub>	V	24 V DC (-15/+20%)						
Input voltage ripple		%	≤ 5	≤ 5	≤ 5	≤ 5	≤ 5	≤ 5	≤ 5
Siemens MPI, (optional)			yes	yes	yes	yes	yes	yes	yes
Rated current	I	A	0.6	0.7	0.7	0.7	0.7	0.7	0.7
Overload proof			yes	yes	yes	yes	yes	yes	yes
Inrush current and duration		A	12.5 A/6 ms	12.5 A/6 ms	12.5 A/6 ms	44 A/2 ms	44 A/2 ms	44 A/2 ms	44 A/2 ms
Heat dissipation at 24 V DC		W	3.8	3.8	3.8	4.4	4.4	4.4	4.4
Potential isolation between U <sub>Pow</sub> and 15 V SmartWire-DT supply voltage			No	No	No	No	No	No	No
Bridging voltage dips		ms	10	10	10	10	10	10	10
Repetition rate		s	1	1	1	1	1	1	1
Status indication		LED	yes	yes	yes	yes	yes	yes	yes
<b>SmartWire-DT supply voltage</b>									
Rated operating voltage	U <sub>e</sub>	V	14,5 ± 3 %	14,5 ± 3 %	14,5 ± 3 %	14,5 ± 3 %	14,5 ± 3 %	14,5 ± 3 %	14,5 ± 3 %
max. current	I <sub>max</sub>	A	0.7	0.7	0.7	0.7	0.7	0.7	0.7
If SWD modules with a total current consumption > 0.7 A are connected, a power feeder module EU5C-SWD-PF2 has to be used.									
Short-circuit rating			Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Connection supply voltages</b>									
Connection type			Push in terminals						
Solid		mm <sup>2</sup>	0.2 - 1.5	0.2 - 1.5	0.2 - 1.5	0.2 - 1.5	0.2 - 1.5	0.2 - 1.5	0.2 - 1.5
Flexible with ferrule		mm <sup>2</sup>	0.25 - 1.5	0.25 - 1.5	0.25 - 1.5	0.25 - 1.5	0.25 - 1.5	0.25 - 1.5	0.25 - 1.5
UL/CSA solid or stranded		AWG	24 - 16	24 - 16	24 - 16	24 - 16	24 - 16	24 - 16	24 - 16
<b>SmartWire-DT network</b>									
Station type			SmartWire-DT master						
Number of SmartWire-DT slaves			99	58	99	99	99	99	99
Baud Rates		kBd	125 250	125 250	125 250	125 250	125 250	125 250	125 250
Status indication		LED	SmartWire-DT master LED: red/green Configurations LED: red/green						
Connections			Plug, 8-pole						
Plug connectors			Blade terminal SWD4-8MF2						
<b>Fieldbus interface</b>									
Module type			CANopen® slave	PROFIBUS DP slave	Ethernet IP/ MODBUS-TCP Slave	PROFINET IO Device	Powerlink slave	EtherCAT slave	SERCOS slave
Protocol			CANopen®	PROFIBUS-DP	Ethernet IP/ MODBUS-TCP	PROFINET	Powerlink V2	EtherCAT	SERCOS III
Input data, max.		Byte	128	240	Ethernet-IP: 546 MODBUS-TCP: 800	800	800	800	280
Output data, max.		Byte	128	240	Ethernet-IP: 496 MODBUS-TCP: 642	642	642	642	272
Baud Rate									
Baud Rates			up to 1 MBit/s	up to 12 MBit/s	10/100 MBit/s	100 MBit/s	100 MBit/s	100 MBit/s	100 MBit/s
Baud rate setting									
Address allocation			automatic	automatic	automatic	-	-	-	-
Station address			2 ... 32	2 ... 125	IP	IP	IP	IP	IP
Address allocation									
Setting			viaDIP switch	viaDIP switch	viaDip switch/ DHCP/BOOTP	via PROFINET	via Powerlink	via EtherCAT	viaSERCOS III
Status display interface									
Status display fieldbus interface	Multi colour	LED	CAN	DP	MS, Link status	APL, SF, BF, LINK, RX/TX	APL, BS, BE, L/A	APL, RUN, ERR, L/A	APL, L/A
Terminating resistor									
Type or resistance			Switchable via DIP switches	Switchable via field bus connectors	-	-	-	-	-
Connection design for field bus			1 x SUB-D plug, 9-pole	1 x D-SUB socket, 9-pin	2 x RJ45 (2-channel switch)	2 x RJ45 (2-channel switch)	Two RJ45 (two-channel hub)	2 x RJ45 (2-channel switch)	2 x RJ45 (2-channel switch)
Potential isolation			Yes	Yes	Yes	Yes	Yes	Yes	Yes

			EU5E-SWD-8DX 116381	EU5E-SWD-4DX 144060	EU5E-SWD-4D2R 116383	EU5E-SWD-4D4D 116382	EU5E-SWD-X8D 144061
<b>General</b>							
Standards			IEC/EN 61131-2 IEC/EN 61131-2				
Dimensions (W x H x D)		mm	35 x 90 x 101				
Weight		kg	0.1	0.1	0.1	0.1	0.1
Mounting			Top-hat rail IEC/EN 60715, 35 mm				
Mounting position			As required				
<b>Climatic environmental conditions</b>							
Climatic proofing			Dry heat to IEC 60068-2-2 Damp heat as per EN 60068-2-3				
Air pressure (operation)		hPa	795 - 1080	795 - 1080	795 - 1080	795 - 1080	795 - 1080
Operating ambient temperature (IEC 60068-2)		°C	- 25 - +55	- 25 - +55	- 25 - +55	- 25 - +55	- 25 - +55
Storage / Transport	g	°C	- 40+ 70	- 40+ 70	- 40+ 70	- 40+ 70	- 40+ 70
Relative humidity							
Relative humidity, non-condensing (IEC/EN 60068-2-30)		%	5 - 95	5 - 95	5 - 95	5 - 95	5 - 95
<b>Ambient conditions, mechanical</b>							
Protection type (IEC/EN 60529, EN50178, VBG 4)			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 1 g		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 15 g/11 ms		Impacts	9	9	9	9	9
Drop to IEC/EN 60068-2-31	Drop height	mm	50	50	50	50	50
Free fall, packaged (IEC/EN 60068-2-32)		m	0.3	0.3	0.3	0.3	0.3
<b>Electromagnetic compatibility (EMC)</b>							
Overvoltage category			II	II	II	II	II
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				
Burst (IEC/EN 61131-2:2008, Level 3)							
Supply cable		kV	2	2	2	2	2
Signal lines		kV	1	1	1	1	1
SmartWire-DT cables		kV	1	1	1	1	1
Surge (IEC/EN 61131-2:2008, Level 1)							
Surge power cables		kV	-	0.5	-	0.5	0.5
Surge I/O cables		kV	1	1	1	1	1
Radiated RFI (IEC/EN 61131-2:2008, Level 3)		V	10	10	10	10	10

			EU5E-SWD-8DX 116381	EU5E-SWD-4DX 144060	EU5E-SWD-4D2R 116383	EU5E-SWD-4D4D 116382	EU5E-SWD-X8D 144061
<b>SmartWire-DT network</b>							
Station type			SmartWire-DT slave				
Setting the baud rate			automatic				
Baud rate (data transfer speed)		kbps	maximum250				
Status SmartWire-DT		LED	Green				
Connection			Plug, 8-pole Connection plug: external device plug SWD4-8SF2-5				
SWD-IN			-	-	-	-	-
SWD-OUT			-	-	-	-	-
Current consumption (15 V SWD supply)	$I_e$	mA	16	33	45	33	43
Overload and short-circuit proof			-	-	-	-	-
<b>Digital inputs</b>							
Number of digital inputs/outputs			-	-	-	-	-
Quantity			8	-	4	4	-
Input current		mA	Normally 4 at 24 V DC	-	Normally 4 at 24 V DC	Normally 4 at 24 V DC	-
Voltage level to IEC/EN 61131-2			-	-	-	-	-
Limit value type 1			Low < 5V DC; High > 15V DC	-	Low < 5V DC; High > 15V DC	Low < 5V DC; High > 15V DC	-
Input delay			High->Low < 0.2 ms Low->High < 0.2 ms	-	High->Low < 0.2 ms Low->High < 0.2 ms	High->Low < 0.2 ms Low->High < 0.2 ms	-
Status display inputs		LED	yellow	-	yellow	yellow	-
<b>Digital semi-conductor outputs</b>							
Quantity			-	-	-	4	8
Output current		A	-	-	-	0.5	0.5
Short-circuit tripping current		A	-	-	-	max. 1.2 over 3 ms	
Lamp load	$R_{LL}$	W	-	-	-	$\leq 3$	$\leq 3$
Overload proof			-	-	-	yes, with diagnostics	yes, with diagnostics
Switching capacity			-	-	-	EN 60947-5-1 utilization category DC-13	
Status display outputs		LED	-	-	-	yellow	
<b>Relay outputs</b>							
Number			-	-	2	-	-
Contact type art			-	-	N/O contact	-	-
Operations							
Utilization category AC-1, 250 V, 4 A			-	-	$> 5 \times 10^4$	-	-
Utilization category AC-15, 250 V, 3 A			-	-	$> 5 \times 10^4$	-	-
Utilization category DC-13, 24 V, 1 A			-	-	$> 2 \times 10^5$	-	-
Safe isolation according to EN 50178		V AC	-	-	230	-	-
Minimum load current		mA	-	-	100 mA , 12 V DC	-	-
Pick-up/drop-out time		ms	-	-	5/2.5	-	-
Bounce duration		ms	Normally -	Normally -	Normally 1.5	Normally -	Normally -
Short-circuit protection			-	-	external 4 A gL/gG	-	-
Status display for relay outputs		LED	-	-	yellow	-	-
<b>Potential isolation</b>							
Output to input			-	-	-	no	-
Output to output			-	-	Yes	-	-
Inputs for SmartWire-DT			Yes	Yes	Yes	Yes	-
Outputs to SmartWire-DT			-	Yes	Yes	Yes	Yes
Input to input			-	-	-	No	-

			EU5E-SWD-4AX 144062	EU5E-SWD-2A2A 144063	EU5E-SWD-4PT 144064	EU5E-SWD-4PT-2 172560
<b>General</b>						
Standards			IEC/EN 61131-2, IEC/EN 61131-2			
Dimensions (W x H x D)		mm	35 x 90 x 101	35 x 90 x 101	35 x 90 x 101	35 x 90 x 101
Weight		kg	0.1	0.1	0.1	0.1
Mounting			Top-hat rail IEC/EN 60715, 35 mm			
Mounting position			As required	As required	As required	As required
<b>Climatic environmental conditions</b>						
Climatic proofing			Dry heat to IEC 60068-2-2 Damp heat as per EN 60068-2-3			
Air pressure (operation)		hPa	795 - 1080	795 - 1080	795 - 1080	795 - 1080
Operating ambient temperature (IEC 60068-2)		°C	- 25 - +55	- 25 - +55	- 25 - +55	- 25 - +55
Storage / Transport	θ	°C	- 40+ 70	- 40+ 70	- 40+ 70	- 40+ 70
Relative humidity						
Relative humidity, non-condensing (IEC/EN 60068-2-30)		%	5 - 95	5 - 95	5 - 95	5 - 95
<b>Ambient conditions, mechanical</b>						
Protection type (IEC/EN 60529, EN50178, VBG 4)			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
Drop to IEC/EN 60068-2-31	Drop height	mm	50	50	50	50
Free fall, packaged (IEC/EN 60068-2-32)		m	0.3	0.3	0.3	0.3
<b>Electromagnetic compatibility (EMC)</b>						
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 B	EN 55011 Class B	EN 55011 Class B	EN 55011 Class B
Burst (IEC/EN 61131-2:2008, Level 3)						
Supply cable		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)						
Surge power cables		kV	1	1	1	1
Surge I/O cables		kV	1	1	1	1
Radiated RFI (IEC/EN 61131-2:2008, Level 3)		V	10	10	10	10
<b>SmartWire-DT network</b>						
Station type			SmartWire-DT slave			
Setting the baud rate			automatic	automatic	automatic	automatic
Baud rate (data transfer speed)		kbps	maximum 250	maximum 250	maximum 250	maximum 250
Status SmartWire-DT			LED	Green	Green	Green
Connection			Plug, 8-pole Connection plug: external device plug SWD4-8SF2-5			
SWD-IN			-	-	-	-
SWD-OUT			-	-	-	-
Current consumption (15 V SWD supply)	I <sub>e</sub>	mA	22	22	22	22
Overload and short-circuit proof			-	-	-	-



			<b>EU5E-SWD-4AX</b> 144062	<b>EU5E-SWD-2A2A</b> 144063	<b>EU5E-SWD-4PT</b> 144064	<b>EU5E-SWD-4PT-2</b> 172560
<b>Analog inputs</b>						
Quantity			4 (2-wire connection, screened, length < 10 m)	2 (2-wire connection, screened, length < 10 m)	-	-
Parameter setting						
Input type			Voltage, current	Voltage, current	-	-
Averaging			adjustable	adjustable	-	-
Voltage						
Input voltage	V		0 - 10	0 - 10	-	-
Input impedance	kΩ		-	-	-	-
Max. current						
Input current	mA		0 - 20	0 - 20	-	-
Input impedance	Ω		< 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	-	-
<b>Analog outputs</b>						
Quantity			-	2 (2-wire connection, screened)	-	-
Parameter setting						
Type			-	Voltage, current	-	-
Voltage						
Output voltage	V		-	0 - 10	-	-
Max. output current	mA		-	10	-	-
Max. current						
Output current	mA		-	0 - 20	-	-
Load resistance	Ω		-	< 500	-	-
Overload and short-circuit proof			-	yes	-	-
Resolution	Bit		-	12	-	-
Conversion time	ms		-	20	-	-
Total error	%		-	± 1	-	-
Repetition accuracy	%		-	± 0.5	-	-
<b>Temperature inputs</b>						
Quantity			-	-	4 (2, 3-wire connection, screened, length < 10 m)	
Parameter setting						
Averaging			-	-	adjustable	adjustable
Temperature sensor			-	-	PT100, PT1000, Ni1000	PT100, PT1000, Ni1000
Temperature range	°C		-	-	PT100, PT1000: -50 - +200 Ni1000: -50 - +150	PT100, PT1000: -100 - +400 Ni1000: -50 - +200
Resolution	°C		-	-	0.1	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
<b>Potential isolation</b>						
Output to input			-	no	-	-
Output to output			-	No	-	-
Inputs for SmartWire-DT			Yes	Yes	Yes	Yes
Outputs to SmartWire-DT			-	Yes	-	-
Input to input			No	No	No	No

			EU1E-SWD-1DX 174710	EU1E-SWD-2DX 174711	EU1E-SWD-2DD 174715	EU2E-SWD-2DX 174725
<b>General</b>						
Standards			IEC/EN 61131-2	IEC/EN 61131-2	IEC/EN 61131-2	IEC/EN 61131-2
Dimensions (W x H x D)		mm	85.6 x 56.9 x 20.1	85.6 x 56.9 x 20.1	85.6 x 56.9 x 20.1	98.0 x 56.9 x 20.1
Weight		kg	0.07	0.07	0.07	0.09
Mounting			DIN-rail, screw fixing (M4), mounting section (Clip M20)			
Mounting position			As required			
<b>Climatic environmental conditions</b>						
Climatic proofing			Dry heat to IEC 60068-2-2 Damp heat as per EN 60068-2-3			
Air pressure (operation)		hPa	795 - 1080	795 - 1080	795 - 1080	795 - 1080
Operating ambient temperature (IEC 60068-2)		°C	- 25 - +70	- 25 - +70	- 25 - +70	- 25 - +70
Storage / Transport	θ	°C	- 40+ 70	- 40+ 70	- 40+ 70	- 40+ 70
<b>Ambient conditions, mechanical</b>						
Protection type (IEC/EN 60529, EN50178, VBG 4)			IP67	IP67	IP67	IP67
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 30 g/11 ms		Impacts	9	9	9	9
Drop to IEC/EN 60068-2-31	Drop height	mm	50	50	50	50
Free fall, packaged (IEC/EN 60068-2-32)		m	0.3	0.3	0.3	0.3
<b>Electromagnetic compatibility (EMC)</b>						
Overvoltage category			II	II	II	II
Pollution degree			3	3	3	3
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			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 cable		kV	2	2	2	2
Signal lines		kV	1	1	1	1
SmartWire-DT cables		kV	1	1	1	1
Surge (IEC/EN 61131-2:2008, Level 1)						
Surge power cables		kV	0.5	0.5	0.5	0.5
Surge I/O cables		kV	1	1	1	1
Radiated RFI (IEC/EN 61131-2:2008, Level 3)		V	10	10	10	10

## Module, Input/output modules (IP67) T-Connector, digital

<b>EU2E-SWD-4DX</b> 174726	<b>EU2E-SWD-2DD</b> 174730	<b>EU2E-SWD-4DD</b> 174732	<b>EU2E-SWD-4DD-1</b> 180406	<b>EU1E-SWD-1CX</b> 174721	<b>EU1M-SWD-NOP</b> 174716
IEC/EN 61131-2	IEC/EN 61131-2	IEC/EN 61131-2	IEC/EN 61131-2	IEC/EN 61131-2	IEC/EN 61131-2
98.0 x 56.9 x 20.1	98.0 x 56.9 x 20.1	98.0 x 56.9 x 20.1	98.0 x 56.9 x 20.1	85.6 x 56.9 x 20.1	85.6 x 41.1 x 20.1
0.09	0.09	0.09	0.09	0.07	0.07
DIN-rail, screw fixing (M4), mounting section (Clip M20)					
As required	As required	As required	As required	As required	As required
Dry heat to IEC 60068-2-2					
Damp heat as per EN 60068-2-3					
795 - 1080	795 - 1080	795 - 1080	795 - 1080	795 - 1080	795 - 1080
- 25 - +70	- 25 - +70	- 25 - +70	- 25 - +70	- 25 - +70	- 25 - +70
- 40+ 70	- 40+ 70	- 40+ 70	- 40+ 70	- 40+ 70	- 40+ 70
IP67	IP67	IP67	IP67	IP67	IP67
5 - 8.4	5 - 8.4	5 - 8.4	5 - 8.4	5 - 8.4	5 - 8.4
8.4 - 150	8.4 - 150	8.4 - 150	8.4 - 150	8.4 - 150	8.4 - 150
9	9	9	9	9	9
50	50	50	50	50	50
0.3	0.3	0.3	0.3	0.3	0.3
II	II	II	II	II	II
3	3	3	3	3	3
8	8	8	8	8	8
4	4	4	4	4	4
10	10	10	10	10	10
3	3	3	3	3	3
1	1	1	1	1	1
EN 55011 Class A	EN 55011 Class A	EN 55011 Class A	EN 55011 Class A	EN 55011 Class A	EN 55011 Class A
2	2	2	2	2	2
1	1	1	1	1	1
1	1	1	1	1	1
0.5	0.5	0.5	0.5	0.5	0.5
1	1	1	1	1	1
10	10	10	10	10	10

			EU1E-SWD-1DX 174710	EU1E-SWD-2DX 174711	EU1E-SWD-2DD 174715	EU2E-SWD-2DX 174725
<b>SmartWire-DT network</b>						
Station type			SmartWire-DT slave			
Setting the baud rate			automatic	automatic	automatic	automatic
Baud rate (data transfer speed)		kbps	maximum 2000	maximum 2000	maximum 2000	maximum 2000
Status SmartWire-DT		LED	Green	Green	Green	Green
Connection			-	-	-	-
SWD-IN			M12 plug (A-coded), 5 pole			
SWD-OUT			M12 socket (A-coded), 5 pole			
Current consumption (24V, without sensor and without I/O supply)	I <sub>e</sub>	mA	44	55	55	52
Sensor supply						
Max. current consumption per M12 I/O plug		mA	70	70	70	70
Overload and short-circuit proof			yes, with diagnostics	yes, with diagnostics	yes, with diagnostics	yes, with diagnostics
<b>Digital inputs</b>						
Number of digital inputs/outputs			-	2	2, configurable as input or output	2
Quantity			-	-	≤ 3	2
Input current		mA	-	-	Normally 4 at 24 V DC	Normally 4 at 24 V DC
Voltage level to IEC/EN 61131-2			-	-	-	-
Limit value type 1			-	-	Low < 5V DC; High > 15V DC	Low < 5V DC; High > 15V DC
Input delay			-	-	High->Low < 0.2 ms Low->High < 0.2 ms	High->Low < 0.2 ms Low->High < 0.2 ms
Status display inputs		LED	-	-	yellow	yellow
<b>Digital semi-conductor outputs</b>						
Quantity			-	-	2	-
Output current		A	-	-	0.5	-
Short-circuit tripping current		A	-	-	max. 1.2 over 3 ms	-
Lamp load	R <sub>LL</sub>	W	≤ -	≤ -	≤ 3	≤ -
Overload proof			-	-	yes, with diagnostics	-
Switching capacity			-	-	EN 60947-5-1 utilization category DC-13	-
Status display outputs		LED	-	-	yellow	-
<b>Zähler-Eingänge</b>						
Quantity			-	-	-	-
Input rated voltage		V DC	-	-	-	-
Counter input frequency		kHz	-	-	-	-
Counter value		Bit	-	-	-	-
Funktion Inkrementalgeber						
Encoder inputs			-	-	-	-
Encoding			-	-	-	-
Frequency measurement		Hz	-	-	-	-
Funktion Einfachzähler						
Counter inputs			-	-	-	-
Encoding			-	-	-	-
Frequency measurement		Hz	-	-	-	-
Counter status indicator		LED	-	-	-	-
<b>Potential isolation</b>						
Output to output			-	-	No	-
Output to input			-	-	no	no
Inputs for SmartWire-DT			-	-	No	No
Outputs to SmartWire-DT			-	-	No	No
Input to input			-	-	No	-

## Module, Input/output modules (IP67) T-Connector, digital

EU2E-SWD-4DX 174726	EU2E-SWD-2DD 174730	EU2E-SWD-4DD 174732	EU2E-SWD-4DD-1 180406	EU1E-SWD-1CX 174721	EU1M-SWD-NOP 174716
SmartWire-DT slave					
automatic	automatic	automatic	automatic	automatic	automatic
maximum 2000	maximum 2000	maximum 2000	maximum 2000	maximum 2000	maximum 2000
Green	Green	Green	Green	Green	Green
-	-	-	-	-	-
M12 plug (A-coded), 5 pole					
M12 socket (A-coded), 5 pole					
72	55	75	75	57	36
70	70	70	70	70	-
yes, with diagnostics	yes, with diagnostics	yes, with diagnostics	yes, with diagnostics	yes, with diagnostics	-
4	2, configurable as input or output	4, configurable as input or output	4, configurable as input or output	-	-
4	2	4	4	-	-
Normally 4 at 24 V DC	Normally 4 at 24 V DC	Normally 4 at 24 V DC	Normally 4 at 24 V DC	-	-
-	-	-	-	-	-
Low < 5V DC; High > 15V DC	Low < 5V DC; High > 15V DC	Low < 5V DC; High > 15V DC	Low < 5V DC; High > 15V DC	-	-
High->Low < 0.2 ms Low->High < 0.2 ms	High->Low < 0.2 ms Low->High < 0.2 ms	High->Low < 0.2 ms Low->High < 0.2 ms	High->Low < 0.2 ms Low->High < 0.2 ms	-	-
yellow	yellow	yellow	yellow	-	-
-	2	4	4	-	-
-	0.5	0.5	0.5	-	-
-	max. 1.2 over 3 ms	max. 1.2 over 3 ms	max. 1.2 over 3 ms	-	-
≤ -	≤ 3	≤ 3	≤ 3	≤ -	≤ -
-	yes, with diagnostics	yes, with diagnostics	yes, with diagnostics	-	-
-	EN 60947-5-1 utilization category DC-13	EN 60947-5-1 utilization category DC-13	EN 60947-5-1 utilization category DC-13	-	-
-	yellow	yellow	yellow	-	-
-	-	-	-	1	-
-	-	-	-	24	-
-	-	-	-	Max.30	-
-	-	-	-	32	-
-	-	-	-	A,B,reference	-
-	-	-	-	X1, X2, X4	-
-	-	-	-	0-65535	-
-	-	-	-	Counter pulse, direction, reference mark	-
-	-	-	-	1.2-way	-
-	-	-	-	0-65535	-
-	-	-	-	yellow	-
-	No	No	No	-	-
-	no	no	no	-	-
No	No	No	No	No	-
-	No	No	No	-	-
No	No	No	No	-	-

			EU1E-SWD-1AX-1 174717	EU1E-SWD-1AX-2 174718	EU1E-SWD-1XA-1 174719	EU1E-SWD-1XA-2 174720	EU2E-SWD-2PT 174733
<b>General</b>							
Standards			IEC/EN 61131-2	IEC/EN 61131-2	IEC/EN 61131-2	IEC/EN 61131-2	IEC/EN 61131-2
Dimensions (W x H x D)		mm	85.6 x 56.9 x 20.1	85.6 x 56.9 x 20.1	85.6 x 56.9 x 20.1	85.6 x 56.9 x 20.1	98.0 x 56.9 x 20.1
Weight		kg	0.07	0.07	0.07	0.07	0.09
Mounting			DIN-rail, screw fixing (M4), mounting section (Clip M20)				
Mounting position			As required	As required	As required	As required	As required
<b>Climatic environmental conditions</b>							
Climatic proofing			Dry heat to IEC 60068-2-2 Damp heat as per EN 60068-2-3				
Air pressure (operation)		hPa	795 - 1080	795 - 1080	795 - 1080	795 - 1080	795 - 1080
Operating ambient temperature (IEC 60068-2)		°C	- 25 - +70	- 25 - +70	- 25 - +70	- 25 - +70	- 25 - +70
Storage / Transport	θ	°C	- 40+ 70	- 40+ 70	- 40+ 70	- 40+ 70	- 40+ 70
<b>Ambient conditions, mechanical</b>							
Protection type (IEC/EN 60529, EN50178, VBG 4)			IP67	IP67	IP67	IP67	IP67
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 1 g		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 30 g/11 ms		Impacts	9	9	9	9	9
Drop to IEC/EN 60068-2-31	Drop height	mm	50	50	50	50	50
Free fall, packaged (IEC/EN 60068-2-32)		m	0.3	0.3	0.3	0.3	0.3
<b>Electromagnetic compatibility (EMC)</b>							
Overvoltage category			II	II	II	II	II
Pollution degree			3	3	3	3	3
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			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 cable		kV	2	2	2	2	2
Signal lines		kV	1	1	1	1	1
SmartWire-DT cables		kV	1	1	1	1	1
Surge (IEC/EN 61131-2:2008, Level 1)							
Surge power cables		kV	0.5	0.5	0.5	0.5	0.5
Surge I/O cables		kV	1	1	1	1	1
Radiated RFI (IEC/EN 61131-2:2008, Level 3)		V	10	10	10	10	10
<b>SmartWire-DT network</b>							
Station type			SmartWire-DT slave				
Setting the baud rate			automatic	automatic	automatic	automatic	automatic
Baud rate (data transfer speed)		kbps	maximum 2000	maximum 2000	maximum 2000	maximum 2000	maximum 2000
Status SmartWire-DT		LED	Green	Green	Green	Green	Green
Connection							
SWD-IN			M12 plug (A-coded), 5 pole				
SWD-OUT			M12 socket (A-coded), 5 pole				
Current consumption (24V, without sensor and without I/O supply)	I <sub>e</sub>	mA	46	46	52	67	37

## Module, Input/output modules (IP67) T-Connector, analog

			EU1E-SWD-1AX-1 174717	EU1E-SWD-1AX-2 174718	EU1E-SWD-1XA-1 174719	EU1E-SWD-1XA-2 174720	EU2E-SWD-2PT 174733
<b>SmartWire-DT network</b>							
Sensor supply							
Max. current consumption per M12 I/O plug		mA	70	70	70	70	-
Overload and short-circuit proof			yes, with diagnostics	yes, with diagnostics	yes, with diagnostics	yes, with diagnostics	-
<b>Analog inputs</b>							
Quantity			1 (2-wire connection, screened, length < 10 m)		-	-	-
Parameter setting							
Input type			Voltage	Current	-	-	-
Averaging			adjustable	adjustable	-	-	-
Voltage							
Input voltage		V	0 - 10	-	-	-	-
Input impedance		kΩ	13.3	-	-	-	-
Max. current							
Input current		mA	-	0 - 20	-	-	-
Input impedance		Ω	-	< 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	-	-	-
<b>Analog outputs</b>							
Quantity			-	-	1 (2-wire connection, screened)		-
Parameter setting							
Type			-	-	Voltage	Current	-
Voltage							
Output voltage		V	-	-	0 - 10	-	-
Max. output current		mA	-	-	10	-	-
Max. current							
Output current		mA	-	-	-	0 - 20	-
Load resistance		Ω	-	-	-	< 500	-
Overload and short-circuit proof			-	-	yes	yes	-
Resolution		Bit	-	-	12	12	-
Conversion time		ms	-	-	20	20	-
Total error		%	-	-	± 1	± 1	-
Repetition accuracy		%	-	-	± 0.5	± 0.5	-
<b>Temperature inputs</b>							
Quantity			-	-	-	-	2 (two-, three-wire connection, screened, length < 10 m)
Parameter setting							
Averaging			-	-	-	-	adjustable
Temperature sensor			-	-	-	-	PT100, PT1000, Ni1000
Temperature range		°C	-	-	-	-	PT100, PT1000: -100 - +400 Ni1000: -50 - +200
Resolution		°C	-	-	-	-	0.1
Conversion time		ms	-	-	-	-	250
Display			-	-	-	-	°C, °F, raw value
Total error		%	-	-	-	-	± 1
Repetition accuracy		%	-	-	-	-	± 0.5
<b>Potential isolation</b>							
Output to output			-	-	-	-	-
Output to input			-	-	-	-	-
Inputs for SmartWire-DT			No	No	-	-	No
Outputs to SmartWire-DT			-	-	No	No	-
Input to input			No	No	-	-	No

			EU6E-SWD-4DX 174735	EU6E-SWD-8DX 174736	EU6E-SWD-8DD 174742	EU6E-SWD-2D2D-1 183264
<b>General</b>						
Standards			IEC/EN 61131-2	IEC/EN 61131-2	IEC/EN 61131-2	IEC/EN 61131-2
Dimensions (W x H x D)		mm	60 x 157 x 34	60 x 157 x 34	60 x 157 x 34	60 x 157 x 34
Weight		kg	0.25	0.25	0.25	0.25
Mounting			Screw fixing (M4)			
Mounting position			As required	As required	As required	As required
<b>Climatic environmental conditions</b>						
Climatic proofing			Dry heat to IEC 60068-2-2 Damp heat as per EN 60068-2-3			
Air pressure (operation)		hPa	795 - 1080	795 - 1080	795 - 1080	795 - 1080
Operating ambient temperature (IEC 60068-2)		°C	- 25 - +55	- 25 - +55	- 25 - +55	- 25 - +55
Storage / Transport	ø	°C	- 40+ 70	- 40+ 70	- 40+ 70	- 40+ 70
<b>Ambient conditions, mechanical</b>						
Protection type (IEC/EN 60529, EN50178, VBG 4)			IP67	IP67	IP67	IP67
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 30 g/11 ms						
Drop to IEC/EN 60068-2-31	Drop height	mm	50	50	50	50
Free fall, packaged (IEC/EN 60068-2-32)		m	0.3	0.3	0.3	0.3
<b>Electromagnetic compatibility (EMC)</b>						
Overvoltage category			II	II	II	II
Pollution degree			3	3	3	3
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						
Burst (IEC/EN 61131-2:2008, Level 3)			EN 55011 Class A			
Supply cable		kV	2	2	2	2
Signal lines		kV	1	1	1	1
SmartWire-DT cables		kV	1	1	1	1
Surge (IEC/EN 61131-2:2008, Level 1)						
Surge power cables		kV	0.5	0.5	0.5	0.5
Surge I/O cables		kV	1	1	1	1
Radiated RFI (IEC/EN 61131-2:2008, Level 3)		V	10	10	10	10
<b>SmartWire-DT network</b>						
Station type			SmartWire-DT slave			
Setting the baud rate			automatic	automatic	automatic	automatic
Baud rate (data transfer speed)		kbps	maximum2000	maximum2000	maximum2000	maximum2000
Status SmartWire-DT		LED	Green	Green	Green	Green
Connection						
SWD-IN			M12 plug (A-coded), 5 pole			
SWD-OUT			M12 socket (A-coded), 5 pole			
Current consumption (24V, without sensor and without I/O supply)	I <sub>e</sub>	mA	66	98	114	50
Sensor supply						
Max. current consumption per M12 I/O plug		mA	70	70	70	70
Overload and short-circuit proof			yes, with diagnostics	yes, with diagnostics	yes, with diagnostics	yes, with diagnostics



## Module, Input/output modules (IP67) Block module, digital

EU6E-SWD-4D4D-1 183266	EU6E-SWD-4XD-1 183268	EU6E-SWD-8XD-1 183270	EU6E-SWD-2D2D-2 183265	EU6E-SWD-4D4D-2 183267	EU6E-SWD-4XD-2 183269
IEC/EN 61131-2	IEC/EN 61131-2	IEC/EN 61131-2	IEC/EN 61131-2	IEC/EN 61131-2	IEC/EN 61131-2
60 x 157 x 34	60 x 157 x 34	60 x 157 x 34	60 x 157 x 34	60 x 157 x 34	60 x 157 x 34
0.25	0.25	0.25	0.25	0.25	0.25
Screw fixing (M4)					
As required	As required	As required	As required	As required	As required
Dry heat to IEC 60068-2-2 Damp heat as per EN 60068-2-3					
795 - 1080	795 - 1080	795 - 1080	795 - 1080	795 - 1080	795 - 1080
- 25 - +55	- 25 - +55	- 25 - +55	- 25 - +50	- 25 - +50	- 25 - +50
- 40+ 70	- 40+ 70	- 40+ 70	- 40+ 70	- 40+ 70	- 40+ 70
IP67	IP67	IP67	IP67	IP67	IP67
5 - 8.4	5 - 8.4	5 - 8.4	5 - 8.4	5 - 8.4	5 - 8.4
8.4 - 150	8.4 - 150	8.4 - 150	8.4 - 150	8.4 - 150	8.4 - 150
9	9	9	9	9	9
50	50	50	50	50	50
0.3	0.3	0.3	0.3	0.3	0.3
II	II	II	II	II	II
3	3	3	3	3	3
8	8	8	8	8	8
4	4	4	4	4	4
10	10	10	10	10	10
3	3	3	3	3	3
1	1	1	1	1	1
EN 55011 Class A	EN 55011 Class A	EN 55011 Class A	EN 55011 Class A	EN 55011 Class A	EN 55011 Class A
2	2	2	2	2	2
1	1	1	1	1	1
1	1	1	1	1	1
0.5	0.5	0.5	0.5	0.5	0.5
1	1	1	1	1	1
10	10	10	10	10	10
SmartWire-DT slave					
automatic	automatic	automatic	automatic	automatic	automatic
maximum2000	maximum2000	maximum2000	maximum2000	maximum2000	maximum2000
Green	Green	Green	Green	Green	Green
-	-	-	-	-	-
M12 plug (A-coded), 5 pole					
M12 socket (A-coded), 5 pole					
66	54	74	50	66	54
70	70	70	70	70	70
yes, with diagnostics	yes, with diagnostics	yes, with diagnostics	yes, with diagnostics	yes, with diagnostics	yes, with diagnostics

			EU6E-SWD-4DX 174735	EU6E-SWD-8DX 174736	EU6E-SWD-8DD 174742	EU6E-SWD-2D2D-1 183264
<b>Digital inputs</b>						
Number of digital inputs/outputs			-	-	8, configurable as input or output	4
Quantity			4	8	4	2
Input current		mA	Normally 4 at 24 V DC	Normally 4 at 24 V DC	Normally 4 at 24 V DC	Normally 4 at 24 V DC
Voltage level to IEC/EN 61131-2			-	-	-	-
Limit value type 1			Low < 5V DC; High > 15V DC			
Input delay			High->Low < 0.2 ms Low->High < 0.2 ms			
Status display inputs		LED	yellow	yellow	yellow	yellow
<b>Digital semi-conductor outputs</b>						
Quantity			-	-	4	2
Output current		A	-	-	0.5	0.5
Short-circuit tripping current		A	-	-	max. 1.2 over 3 ms	max. 1.2 over 3 ms
Lamp load	$R_{LL}$	W	$\leq$ -	$\leq$ -	$\leq$ 3	$\leq$ 3
Overload proof			-	-	yes, with diagnostics	
Switching capacity			-	-	EN 60947-5-1 utilization category DC-13	
Status display outputs		LED	-	-	yellow	-
<b>Potential isolation</b>						
Output to output			-	-	No	-
Output to input			-	-	no	-
Inputs for SmartWire-DT			No	No	No	-
Outputs to SmartWire-DT			-	-	No	-
Input to input			No	No	No	-

Module, Input/output modules (IP67) Block module, digital

EU6E-SWD-4D4D-1 183266	EU6E-SWD-4XD-1 183268	EU6E-SWD-8XD-1 183270	EU6E-SWD-2D2D-2 183265	EU6E-SWD-4D4D-2 183267	EU6E-SWD-4XD-2 183269
8	4	8	2	8	4
4	-	-	2	4	-
Normally 4 at 24 V DC	-	-	Normally 4 at 24 V DC	Normally 4 at 24 V DC	-
-	-	-	-	-	-
Low < 5V DC; High > 15V DC	-	-	Low < 5V DC; High > 15V DC	Low < 5V DC; High > 15V DC	-
High Low typ. < 0.2 ms Low High typ. < 0.2 ms	-	-	High Low typ. < 0.2 ms Low High typ. < 0.2 ms	High Low typ. < 0.2 ms Low High typ. < 0.2 ms	-
yellow	-	-	yellow	yellow	-
4	4	8	2	4	8
0.5	0.5	0.5	2	2	2
max. 1.2 over 3 ms	max. 1.2 over 3 ms	max. 1.2 over 3 ms	max. 1.2 over 3 ms	max. 1.2 over 3 ms	max. 1.2 over 3 ms
≤ 3	≤ 3	≤ 3	≤ 3	≤ 3	≤ 3
yes, with diagnostics	yes, with diagnostics	yes, with diagnostics	yes, with diagnostics	yes, with diagnostics	yes, with diagnostics
EN 60947-5-1 utilization category DC-13					
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-

			EU8E-SWD-16DX 174744	EU8E-SWD-16DD 174750	EU8E-SWD-4D4D-1 183272	EU8E-SWD-8D8D-1 183273	EU8E-SWD-8XD-1 183274	EU8E-SWD-16XD-1 183271
<b>General</b>								
Standards			IEC/EN 61131-2	IEC/EN 61131-2	IEC/EN 61131-2	IEC/EN 61131-2	IEC/EN 61131-2	IEC/EN 61131-2
Dimensions (W x H x D)		mm	60 x 210,3 x 34	60 x 210,3 x 34	60 x 210,3 x 34	60 x 210,3 x 34	60 x 210,3 x 34	60 x 210,3 x 34
Weight		kg	0.3	0.3	0.3	0.3	0.3	0.3
Mounting			Screw fixing (M4)					
Mounting position			As required	As required	As required	As required	As required	As required
<b>Climatic environmental conditions</b>								
Climatic proofing			Dry heat to IEC 60068-2-2 Damp heat as per EN 60068-2-3					
Air pressure (operation)		hPa	795 - 1080	795 - 1080	795 - 1080	795 - 1080	795 - 1080	795 - 1080
Operating ambient temperature (IEC 60068-2)		°C	- 25 - +55	- 25 - +55	- 25 - +55	- 25 - +55	- 25 - +55	- 25 - +55
Storage / Transport	9	°C	- 40+ 70	- 40+ 70	- 40+ 70	- 40+ 70	- 40+ 70	- 40+ 70
<b>Ambient conditions, mechanical</b>								
Protection type (IEC/EN 60529, EN50178, VBG 4)			IP67	IP67	IP67	IP67	IP67	IP67
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	5 - 8.4
Constant acceleration 1 g		Hz	8.4 - 150	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 30 g/11 ms		Impacts	9	9	9	9	9	9
Drop to IEC/EN 60068-2-31	Drop height	mm	50	50	50	50	50	50
Free fall, packaged (IEC/EN 60068-2-32)		m	0.3	0.3	0.3	0.3	0.3	0.3
<b>Electromagnetic compatibility (EMC)</b>								
Overvoltage category			II	II	II	II	II	II
Pollution degree			3	3	3	3	3	3
Electrostatic discharge (IEC/EN 61131-2:2008)								
Air discharge (Level 3)		kV	8	8	8	8	8	8
Contact discharge (Level 2)		kV	4	4	4	4	4	4
Electromagnetic fields (IEC/EN 61131-2:2008)								
80 - 1000 MHz		V/m	10	10	10	10	10	10
1.4 - 2 GHz		V/m	3	3	3	3	3	3
2 - 2.7 GHz		V/m	1	1	1	1	1	1
Radio interference suppression EN 55011 Class A								
Burst (IEC/EN 61131-2:2008, Level 3)								
Supply cable		kV	2	2	2	2	2	2
Signal lines		kV	1	1	1	1	1	1
SmartWire-DT cables		kV	1	1	1	1	1	1
Surge (IEC/EN 61131-2:2008, Level 1)								
Surge power cables		kV	0.5	0.5	0.5	0.5	0.5	0.5
Surge I/O cables		kV	1	1	1	1	1	1
Radiated RFI (IEC/EN 61131-2:2008, Level 3)		V	10	10	10	10	10	10

			EU8E-SWD-16DX 174744	EU8E-SWD-16DD 174750	EU8E-SWD-4D4D-1 183272	EU8E-SWD-8D8D-1 183273	EU8E-SWD-8XD-1 183274	EU8E-SWD-16XD-1 183271
<b>SmartWire-DT network</b>								
Station type			SmartWire-DT slave					
Setting the baud rate			automatic	automatic	automatic	automatic	automatic	automatic
Baud rate (data transfer speed)		kbps	maximum2000	maximum2000	maximum2000	maximum2000	maximum2000	maximum2000
Status SmartWire-DT		LED	Green	Green	Green	Green	Green	Green
Connection								
SWD-IN			M12 plug (A-coded), 5 pole					
SWD-OUT			M12 socket (A-coded), 5 pole					
Current consumption (24V, without sensor and without I/O supply)	I <sub>e</sub>	mA	231	231	79	119	79	119
Sensor supply								
Max. current consumption per M12 I/O plug		mA	70	70	70	70	70	70
Overload and short-circuit proof			yes, with diagnostics					
<b>Digital inputs</b>								
Number of digital inputs/outputs			16	16, configurable as input or output	8	16	8	16
Quantity			16	16	4	8	-	-
Input current		mA	Normally 4 at 24 V DC				-	-
Voltage level to IEC/EN 61131-2			-	-	-	-	-	-
Limit value type 1			Low < 5V DC; High > 15V DC				-	-
Input delay			High->Low < 0.2 ms Low->High < 0.2 ms				-	-
Status display inputs		LED	yellow	yellow	yellow	yellow	-	-
<b>Digital semi-conductor outputs</b>								
Quantity			-	≤ 6	4	8	8	16
Output current		A	-	0.5	0.5	0.5	0.5	0.5
Short-circuit tripping current		A	-	max. 1.2 over 3 ms	max. 1.2 over 3 ms	max. 1.2 over 3 ms	max. 1.2 over 3 ms	max. 1.2 over 3 ms
Lamp load	R <sub>LL</sub>	W	-	≤ 3	≤ 3	≤ 3	≤ 3	≤ 3
Overload proof			-	yes, with diagnostics				-
Switching capacity			-	EN 60947-5-1 utilization category DC-13				-
Status display outputs		LED	-	yellow	yellow	yellow	yellow	yellow
<b>Potential isolation</b>								
Output to output			-	-	-	No	No	No
Output to input			-	no	yes	yes	-	-
Inputs for SmartWire-DT			No	No	No	No	-	-
Outputs to SmartWire-DT			-	No	Yes	Yes	Yes	Yes
Input to input			No	No	No	No	-	-

			<b>M22-SWD-K11</b> 174735	<b>M22-SWD-KC11</b> 174735	<b>M22-SWD-LED...</b> 115966-115969	<b>M22-SWD-LEDC...</b> 115997-116000	<b>M22-SWD-K11LED...</b> 115972-115975
<b>General</b>							
Standards			IEC/EN 61131-2 EN 50178				
Dimensions (W x H x D)		mm	12 x 42 x 39	12 x 45 x 37	10 x 42 x 45	10 x 45 x 42	12 x 42 x 45
Weight		g	10	10	10	10	10
Mounting position			As required	As required	As required	As required	As required
<b>Ambient conditions, mechanical</b>							
Protection type (IEC/EN 60529, EN50178, VBG 4)			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 1 g		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 15 g/11 ms		Impacts	9	9	9	9	9
Drop to IEC/EN 60068-2-31	Drop height	mm	50	50	50	50	50
Free fall, packaged (IEC/EN 60068-2-32)		m	0.3	0.3	0.3	0.3	0.3
<b>Electromagnetic compatibility (EMC)</b>							
Overvoltage category			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)							
Radio interference suppression			EN 55011 Class A				
Burst (IEC/EN 61131-2:2008, Level 3)							
Supply cable		kV	2	2	2	2	2
SmartWire-DT cables		kV	1	1	1	1	1
Surge (IEC/EN 61131-2:2008, Level 1)							
Supply cables/CAN/DP bus cable							
Surge power cables		kV	-	-	-	-	-
Surge I/O cables		kV	-	-	-	-	-
Radiated RFI (IEC/EN 61131-2:2008, Level 3)		V	10	10	10	10	10
<b>Climatic environmental conditions</b>							
Operating ambient temperature (IEC 60068-2)		°C	- 30 - +70	- 30 - +55	- 30 - +70	- 30 - +55	- 30 - +70
Storage / Transport		°C	- 40 - + 80	- 40 - + 80	- 40 - + 80	- 40 - + 80	- 40 - + 80
Condensation							
Relative humidity, non-condensing (IEC/EN 60068-2-30)		%	9 - 95	9 - 95	9 - 95	9 - 95	9 - 95
<b>SmartWire-DT network</b>							
Station type			SmartWire-DT slave				
Number of SmartWire-DT slaves			-	-	-	-	-
Baud Rates		kBd	-	-	-	-	-
Address allocation			automatic	automatic	-	-	automatic
Status indication		LED	Green	Green	Green	Green	Green
Connections			Plug, 8-pole				
Plug connectors			SWD4-8SF2-5	M22-SWD-I...LP	SWD4-8SF2-5	M22-SWD-I...LP	SWD4-8SF2-5

M22-SWD-K11LEDC... 116003-116006	M22-SWD-K22 115965	M22-SWD-KC22 115996	M22-SWD-K22LED... 115978-115981	M22-SWD-K22LEDC... 116009-116012	M22-SWD-INC 179982	M22-SWD-R 179293
IEC/EN 61131-2 EN 50178					IEC/EN 61131-2	IEC/EN 61131-2
12 x 45 x 42	17 x 42 x 39	17 x 45 x 37	17 x 42 x 45	17 x 45 x 42	13 x 42 x 37	13 x 42 x 37
10	14	14	14	14		9
As required	As required	As required	As required	As required	As required	As required
IP20	IP20	IP20	IP20	IP20	IP20	IP20
5 - 8.4	5 - 8.4	5 - 8.4	5 - 8.4	5 - 8.4	5 - 8.4	5 - 8.4
8.4 - 150	8.4 - 150	8.4 - 150	8.4 - 150	8.4 - 150	8.4 - 150	8.4 - 150
9	9	9	9	9	9	9
50	50	50	50	50	50	50
0.3	0.3	0.3	0.3	0.3	0.3	0.3
Not applicable						
2	2	2	2	2	2	2
8	8	8	8	8	8	8
4	4	4	4	4	4	4
10	10	10	10	10	10	10
3	3	3	3	3		3
1	1	1	1	1		1
EN 55011 Class A						
2	2	2	2	2		2
1	1	1	1	1	1	1
-	-	-	-	-	-	-
-	-	-	-	-	-	-
10	10	10	10	10		10
- 30 - +55	- 30 - +70	- 30 - +55	- 30 - +70	- 30 - +55		
- 40 - + 80	- 40 - + 80	- 40 - + 80	- 40 - + 80	- 40 - + 80		
Take appropriate measures to prevent condensation						
9 - 95	5 - 95	5 - 95	5 - 95	5 - 95	9 - 95	9 - 95
SmartWire-DT slave						
-	-	-	-	-	-	-
-	-	-	-	-	-	-
automatic	automatic	automatic	automatic	automatic	-	-
Green	Green	Green	Green	Green	Green	Green
Plug, 8-pole	Plug, 8-pole	Plug, 8-pole	Plug, 8-pole	Plug, 8-pole	Plug, 8-pole	Plug, 8-pole
M22-SWD-I...LP	SWD4-8SF2-5	M22-SWD-I...LP	SWD4-8SF2-5	M22-SWD-I...LP	SWD4-8SF2-5	SWD4-8SF2-5

		<b>M22-R-SWD</b> 179292	<b>M22-SWD-R</b> 179293	<b>M22-INC-SWD</b> 179981	<b>M22-SWD-INC</b> 179982
<b>General</b>					
Climatic proofing		Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30	-	Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30	-
Mounting position		As required	As required	As required	As required
Mechanical shock resistance	g	15 Shock duration 11 ms Sinusoidal according to IEC 60068-2-27	-	15 Shock duration 11 ms Sinusoidal according to IEC 60068-2-27	-
Operating ambient temperature min.	°C	-30	-30	-30	-30
Operating ambient temperature max.	°C	+70	+70	+70	+70



	<b>SL4-SWD</b> 171311	<b>SL7-SWD</b> 171459
<b>General</b>		
Standards	IEC/EN 60947-5-1	IEC/EN 60947-5-1
Climatic proofing	Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60069-2-30	
Mounting position	for horizontal mounting	for horizontal mounting
Mechanical shock resistance	g > 15 according to IEC 60068-2-27 Shock duration 11 ms Sinusoidal	> 15 according to IEC 60068-2-27 Shock duration 11 ms Sinusoidal
IEC degree of protection	IP66 IEC/EN 60529	IP66 IEC/EN 60529
Protection type UL	Type 4, 4X, 13	Type 4, 4X, 13
Cap colour		
	black Aluminum color tube	black Aluminum color tube
Ambient temperature	°C -30 - +60	-30 - +60
Number of signal elements	Max. 5 with standard base Max. 10 with base for mounting on both sides	Max. 5 with standard base Max. 10 with base for mounting on both sides

			DIL-SWD-32-001 118560	DIL-SWD-32-002 118561	PKE-SWD-32 126895	PKE-SWD-SP 150614	172735 PKE-SWD-CP	NZM-XSWD-704 135530
<b>General</b>								
Standards			IEC/EN 61131-2 EN 50178 IEC/EN 60947			IEC/EN 61131-2 IEC/EN 61131-2		IEC/EN 61131-2 EN 50178
Dimensions (W x H x D)	mm		45 x 38 x 76	45 x 38 x 76	45 x 38 x 76	45 x 46.8 x 70.3 45 x 46.8 x 70.3		35 x 90 x 101
Weight	kg		0.04	0.04	0.04	0.02 0.04		0.1
Mounting			on DILM7...DILM38	on DILM7...DILM38	on DILM7...DILM32	at PKE12/32/65 at PKE32/65		Top-hat rail IEC/EN 60715, 35 mm
Mounting position			as DILM7 to DILM38	as DILM7 to DILM38	as DILM7 to DILM32	as PKE12/35/65 as PKE32/65		Vertical
<b>Ambient conditions, mechanical</b>								
Protection type (IEC/EN 60529, EN50178, VBG 4)			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 1 g	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 15 g/11 ms	Impacts		9	9	9	9		9
Drop to IEC/EN 60068-2-31	Drop height	mm	50	50	50	50		50
Free fall, packaged (IEC/EN 60068-2-32)		m	0.3	0.3	0.3	0.3		0.3
<b>Electromagnetic compatibility (EMC)</b>								
Overvoltage category			II	II	II	II		II
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			EN 55011 Class A					
Burst (IEC/EN 61131-2:2008, Level 3)								
Signal lines	kV		1	1	1	1		1
SmartWire-DT cables	kV		1	1	1	1		1
Radiated RFI (IEC/EN 61131-2:2008, Level 3)	V		10	10	10	10		10
<b>Climatic environmental conditions</b>								
Operating ambient temperature (IEC 60068-2)	°C		-25 - +60	-25 - +60	-25 - +60	-25 - +60		-25 - +55
Condensation			Take appropriate measures to prevent condensation					
Storage / Transport	θ	°C	-	-	-30 - +70	-30 - +70		-
Relative humidity, non-condensing (IEC/EN 60068-2-30)		%	5 - 95	5 - 95	5 - 95	5 - 95		5 - 95

			<b>DIL-SWD-32-001</b> 118560	<b>DIL-SWD-32-002</b> 118561	<b>PKE-SWD-32</b> 126895	<b>PKE-SWD-SP</b> 150614 172735 <b>PKE-SWD-CP</b>	<b>NZM-XSWD-704</b> 135530
<b>SmartWire-DT network</b>							
Station type			SmartWire-DT slave				
Address allocation			automatic	automatic	automatic	automatic	automatic
Status SmartWire-DT		LED	green/orange	green/orange	green/orange	Green	Green
Connections			Plug, 8-pole	Plug, 8-pole	Plug, 8-pole	Plug, 8-pole	-
Connection			External device plug SWD4-8SF2-5	External device plug SWD4-8SF2-5	External device plug SWD4-8SF2-5	External device plug SWD4-8SF2-5	Plug, 8-pole Connection plug: External device plug SWD4-8SF2-5
<b>Current consumption</b>							
15-V-SWD supply		mA	-	-	58	35	-
24-V-DC-SWD control voltage	$U_{aux}$		-	-	See the contactor's pick-up current and holding current (max. 0.5 A).	-	-
<b>Operating mode</b>							
Manual/automatic mode			-	-	yes	-	-
Setting			-	via Rotary switch	via Rotary switch	-	-
<b>Connection auxiliary contact</b>							
Number			2	2	-	-	-
Rated voltage	$U_e$	V DC	15	15	-	-	-
Input current at 1 signal, typical		mA	3	3	-	-	-
Potential isolation			No	No	-	-	-
Cable length		m	≤ 2.8	≤ 2.8	≤ 2.8	-	≤ 2.8
Connection type			Push in terminals			-	Push in terminals
<b>Terminal capacities</b>							
Solid		mm <sup>2</sup>	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 <sup>2</sup>	0.25 - 1.5	0.25 - 1.5	0.25 - 1.5	-	0.25 - 1.5

			EMS-DO-T-2,4-SWD 170106	EMS-DO-T-9-SWD 170107	EMS-RO-T-2,4-SWD 170108
<b>General</b>					
Standards			IEC/EN 60947-4-2	IEC/EN 60947-4-2	IEC/EN 60947-4-2
Dimensions					
Width	mm		30	30	30
Height	mm		157	157	157
Depth	mm		124	124	124
Weight	kg		0.3	0.3	0.3
Mounting			Top-hat rail IEC/EN 60715, 35 mm		
Protection type (IEC/EN 60529, EN50178, VBG 4)			IP20	IP20	IP20
Mounting position			Vertical	Vertical	Vertical
Lifespan, electrical	Operations		3 x 10 <sup>7</sup>	3 x 10 <sup>7</sup>	3 x 10 <sup>7</sup>
Max. switching frequency	Operations/h		7200 (pulse pause time 50:50)		
Terminal capacity					
Solid	mm <sup>2</sup>		1 x (0.2 - 2.5) 1 x AWG20 - 14	1 x (0.2 - 2.5) 1 x AWG20 - 14	1 x (0.2 - 2.5) 1 x AWG20 - 14
flexible, with ferrule	mm <sup>2</sup>		2 x (0.2 - 2.5) 1 x AWG24 - 14	2 x (0.2 - 2.5) 1 x AWG24 - 14	2 x (0.2 - 2.5) 1 x AWG24 - 14
Notes			Minimum length 10 mm.	Minimum length 10 mm.	Minimum length 10 mm.
flexible, with twin ferrule	mm <sup>2</sup>		2 x (0.2 - 1.5) 2 x AWG24 - 16	2 x (0.2 - 1.5) 2 x AWG24 - 16	2 x (0.2 - 1.5) 2 x AWG24 - 16
Notes			Minimum length 10 mm.	Minimum length 10 mm.	Minimum length 10 mm.
<b>Climatic environmental conditions</b>					
Operating ambient temperature	°C		-5 - +60, in accordance with IEC 60068-2-1		
Storage	g	°C	-40 - +80	-40 - +80	-40 - +80
<b>Main conducting paths</b>					
Rated impulse withstand voltage	U <sub>imp</sub>	V AC	6000	6000	6000
Overvoltage category/pollution degree			III/2	III/2	III/2
Rated operational voltage	U <sub>e</sub>	V	42 - 550	42 - 550	42 - 550
Rated operational current					
AC-51	I <sub>e</sub>	A	0.15 - 2.40	1.20 - 9	0.15 - 2.40
AC-53a	I <sub>e</sub>	A	0.15 - 2.4	1.20 - 7	0.15 - 2.4
Rated operational current at AC-53a	I <sub>e</sub>	A	2.4	7	2.4
Heat dissipation	P <sub>V</sub>	W	0.1 - 2	1 - 12	0.1 - 2
Static heat dissipation, non-current-dependent	P <sub>vs</sub>	W	1	1	1
Basic insulation to IEC/EN60947-1					
Between supply, control, and switching voltages			V AC	500	-
Current measurement					
Setting range of overload releases	I <sub>r</sub>	A <sub>x</sub>	0,18 - 2,4	1,5 - 7 (AC-53a) 9 (AC-51)	0,18 - 2,4
Release class			CLASS	10 (I <sub>r</sub> ≤ 4 A) 10A (I <sub>r</sub> > 4 A)	10
Recovery time	t <sub>W</sub>	min.	2 (manual startup) 20 (automatic restart)		
Balance monitoring					
Magnitude I <sub>max</sub> > I <sub>rated</sub> ((I <sub>max</sub> - I <sub>min</sub> )/I <sub>max</sub> )			%	If ≥ 33, pick-up time of 120 s If ≥ 67, pick-up time of 1.8 s	
Magnitude I <sub>max</sub> < I <sub>rated</sub> ((I <sub>max</sub> - I <sub>min</sub> )/I <sub>rated</sub> )			%	If ≥ 33, pick-up time of 120 s If ≥ 67, pick-up time of 1.8 s	
Stall protection					
Pick-up time I (L1) or I (L3)			A	33	60
Pick-up time			S	0.5	0.5
Short-circuit rating					
Type "1" coordination			Short-circuit protective device		
			50 kA, 500 V AC: Fuse 16 A gG/gL 50 kA, 500 V AC: fuse 30 A CCMR 50 kA, 415 V AC: PKM0-4 15 kA, 415 V AC: PKM0-6,3 2.5 kA, 400 V AC: FAZ-B16/3		

EMS-RO-T-9-SWD 170109	EMS-DOS-T-2,4-SWD 170110	EMS-DOS-T-9-SWD 170111	EMS-ROS-T-2,4-SWD 170112	EMS-ROS-T-9-SWD 169790
IEC/EN 60947-4-2	IEC/EN 60947-4-2	IEC/EN 60947-4-2	IEC/EN 60947-4-2	IEC/EN 60947-4-2
30	30	30	30	30
157	157	157	157	157
124	124	124	124	124
0.3	0.3	0.3	0.3	0.3
Top-hat rail IEC/EN 60715, 35 mm				
IP20	IP20	IP20	IP20	IP20
Vertical	Vertical	Vertical	Vertical	Vertical
3 x 10 <sup>7</sup>	3 x 10 <sup>7</sup>	3 x 10 <sup>7</sup>	3 x 10 <sup>7</sup>	3 x 10 <sup>7</sup>
7200 (pulse pause time 50:50)				
1 x (0,2 - 2,5) 1 x AWG20 - 14	1 x (0,2 - 2,5) 1 x AWG20 - 14	1 x (0,2 - 2,5) 1 x AWG20 - 14	1 x (0,2 - 2,5) 1 x AWG20 - 14	1 x (0,2 - 2,5) 1 x AWG20 - 14
2 x (0,2 - 2,5) 1 x AWG24 - 14	2 x (0,2 - 2,5) 1 x AWG24 - 14	2 x (0,2 - 2,5) 1 x AWG24 - 14	2 x (0,2 - 2,5) 1 x AWG24 - 14	2 x (0,2 - 2,5) 1 x AWG24 - 14
Minimum length 10 mm.	Minimum length 10 mm.	Minimum length 10 mm.	Minimum length 10 mm.	Minimum length 10 mm.
2 x (0,2 - 1,5) 2 x AWG24 - 16	2 x (0,2 - 1,5) 2 x AWG24 - 16	2 x (0,2 - 1,5) 2 x AWG24 - 16	2 x (0,2 - 1,5) 2 x AWG24 - 16	2 x (0,2 - 1,5) 2 x AWG24 - 16
Minimum length 10 mm.	Minimum length 10 mm.	Minimum length 10 mm.	Minimum length 10 mm.	Minimum length 10 mm.
-5 - +60, in accordance with IEC 60068-2-1				
-40 - +80	-40 - +80	-40 - +80	-40 - +80	-40 - +80
6000	6000	6000	6000	6000
III/2	III/2	III/2	III/2	III/2
42 - 550	42 - 550	42 - 550	42 - 550	42 - 550
1.20 - 9	0.15 - 2.40	1.20 - 9	0.15 - 2.40	1.20 - 9
1.20 - 7	0.15 - 2.4	1.20 - 7	0.15 - 2.4	1.20 - 7
7	2.4	7	2.4	7
1 - 12	0.1 - 2	1 - 12	0.1 - 2	1 - 12
1	1	1	1	1
-	500	-	-	-
1,5 - 7 (AC-53a) 9 (AC-51)	0,18 - 2,4	1,5 - 7 (AC-53a) 9 (AC-51)	0,18 - 2,4	1,5 - 7 (AC-53a) 9 (AC-51)
10 (I <sub>r</sub> ≤ 4 A) 10A (I <sub>r</sub> > 4 A)	10	10 (I <sub>r</sub> ≤ 4 A) 10A (I <sub>r</sub> > 4 A)	10	10 (I <sub>r</sub> ≤ 4 A) 10A (I <sub>r</sub> > 4 A)
2 (manual startup) 20 (automatic restart)				
If ≥ 33, pick-up time of 120 s If ≥ 67, pick-up time of 1.8 s				
If ≥ 33, pick-up time of 120 s If ≥ 67, pick-up time of 1.8 s				
60	33	60	33	60
0.5	0.5	0.5	0.5	0.5
50 kA, 500 V AC: Fuse 16 A gG/gL 50 kA, 500 V AC: fuse 30 A CCMR 50 kA, 415 V AC: PKM0-4 15 kA, 415 V AC: PKM0-6,3 2.5 kA, 400 V AC: FAZ-B16/3				

		EMS-DO-T-2,4-SWD 170106	EMS-DO-T-9-SWD 170107	EMS-RO-T-2,4-SWD 170108
<b>Electromagnetic compatibility (EMC)</b>				
Electrostatic discharge (ESD)				
applied standard		IEC EN 61000-4-2, Level 3	IEC EN 61000-4-2, Level 3	IEC EN 61000-4-2, Level 3
Air discharge	kV	8	8	8
Contact discharge	kV	6	6	6
Electromagnetic fields (RFI)				
applied standard		IEC/EN 61000-4-3	IEC/EN 61000-4-3	IEC/EN 61000-4-3
	V/m	800 - 1000 MHz: 10 1.4 - 2 GHz: 10 2.0 - 2.7 GHz: 3		
Radio interference suppression				
		EN 55011, Class A (emitted interference, line-conducted) EN 61000-6-3, Class A (emitted interference, radiated)		
Burst	kV	2 IEC/EN 61000-4-4, level 3	2 IEC/EN 61000-4-4, level 3	2 IEC/EN 61000-4-4, level 3
power pulses (Surge)				
		1 kV (symmetrical) 2 kV (asymmetrical) according to IEC/EN 61000-4-5		
Immunity to line-conducted interference to (IEC/EN 61000-4-6)				
	V	10	10	10

<b>EMS-RO-T-9-SWD</b> 170109	<b>EMS-DOS-T-2,4-SWD</b> 170110	<b>EMS-DOS-T-9-SWD</b> 170111	<b>EMS-ROS-T-2,4-SWD</b> 170112	<b>EMS-ROS-T-9-SWD</b> 169790
IEC EN 61000-4-2, Level 3	IEC EN 61000-4-2, Level 3	IEC EN 61000-4-2, Level 3	IEC EN 61000-4-2, Level 3	IEC EN 61000-4-2, Level 3
8	8	8	8	8
6	6	6	6	6
IEC/EN 61000-4-3	IEC/EN 61000-4-3	IEC/EN 61000-4-3	IEC/EN 61000-4-3	IEC/EN 61000-4-3
800 - 1000 MHz: 10 1.4 - 2 GHz: 10 2.0 - 2.7 GHz: 3				
EN 55011, Class A (emitted interference, line-conducted) EN 61000-6-3, Class A (emitted interference, radiated)				
2	2	2	2	2
IEC/EN 61000-4-4, level 3	IEC/EN 61000-4-4, level 3	IEC/EN 61000-4-4, level 3	IEC/EN 61000-4-4, level 3	IEC/EN 61000-4-4, level 3
1 kV (symmetrical) 2 kV (asymmetrical) according to IEC/EN 61000-4-5				
10	10	10	10	10

			DS7-34DSX...			
			...004N0-D	...007N0-D	...009N0-D	...012N0-D
			134943	134945	134946	134947
<b>General</b>						
Standards			IEC/EN 60947-4-2 UL 508 CSA22.2-14	IEC/EN 60947-4-2 UL 508 CSA22.2-14	IEC/EN 60947-4-2 UL 508 CSA22.2-14	IEC/EN 60947-4-2 UL 508 CSA22.2-14
Ambient temperature						
Operation	θ	°C	-5 - +40 higher than 40 °C with 2 % derating per Kelvin temperature rise, max. +60 °C			
Storage / Transport	θ	°C	-25 - +60			
Altitude		m	0 - 1000 m, above that 1 % derating per 100 m, up to 2000 m			
Mounting position			Vertical	Vertical	Vertical	Vertical
Degree of protection			IP20	IP20	IP20	IP20
Protection against direct contact			Finger- and back-of-hand proof			
Overvoltage category/pollution degree			II/2	II/2	II/2	II/2
Shock resistance			8 g/11 ms	8 g/11 ms	8 g/11 ms	8 g/11 ms
Vibration resistance to EN 60721-3-2			2M2	2M2	2M2	2M2
Radio interference level (IEC/EN 55011)			B	B	B	B
Static heat dissipation, non-current-dependent	P <sub>vs</sub>	W	0.2	0.35	0.45	0.6
Weight		kg	0.41	0.41	0.41	0.41
<b>Main conducting paths</b>						
Rated operating voltage	U <sub>e</sub>	V AC	200 - 480	200 - 480	200 - 480	200 - 480
Supply frequency	f <sub>LN</sub>	Hz	50/60	50/60	50/60	50/60
Assigned motor rating (Standard connection, In-Line)						
at 230 V, 50 Hz	P	kW	0.75	1.5	2.2	3
at 400 V, 50 Hz	P	kW	1.5	3	4	5.5
at 200 V, 60 Hz	P	HP	0.75	2	2	3
at 230 V, 60 Hz	P	HP	1	2	3	3
at 460 V, 60 Hz	P	HP	2	5	5	10
Overload cycle to IEC/EN 60947-4-2						
AC-53a (without bypass)			4 A: AC-53a: 3 - 5: 75 - 10	7 A: AC-53a: 3 - 5: 75 - 10	9 A: AC-53a: 3 - 5: 75 - 10	12 A: AC-53a: 3 - 5: 75 - 10
AC-53b (with bypass)			✓	✓	✓	✓
Internal bypass contacts						
Short-circuit rating						
Type "1" coordination			PKM0-4 (+ CL-PKZ0)	PKM0-10 (+ CL-PKZ0)	PKM0-10 (+ CL-PKZ0)	PKM0-12 (+ CL-PKZ0)
Type „2“ coordination (additional with the fuses for coordination type „1“)			3 x 170M1359	3 x 170M1361	3 x 170M1362	3 x 170M1362
Fuse base (number x part no.)			3 x 170H1007	3 x 170H1007	3 x 170H1007	3 x 170H1007
<b>Terminal capacities</b>						
Cable lengths						
Solid		mm <sup>2</sup>	1 x (0.75 - 4) 2 x (0.75 - 2.5)	1 x (0.75 - 4) 2 x (0.75 - 2.5)	1 x (0.75 - 4) 2 x (0.75 - 2.5)	1 x (0.75 - 4) 2 x (0.75 - 2.5)
Flexible with ferrule		mm <sup>2</sup>	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)
Flexible with cable lug		mm <sup>2</sup>	-	-	-	-
Stranded		mm <sup>2</sup>	-	-	-	-
Stranded with cable lug		mm <sup>2</sup>	-	-	-	-
Solid or stranded		AWG	18 - 10	18 - 10	18 - 10	18 - 10
Copper band		MM				
Tightening torque		Nm	1.2	1.2	1.2	1.2
Screwdriver (PZ: Pozidriv)		mm	PZ2; 1 x 6 mm	PZ2; 1 x 6 mm	PZ2; 1 x 6 mm	PZ2; 1 x 6 mm
Control cables						
Solid		mm <sup>2</sup>	1 x (0.75 - 4) 2 x (0.75 - 2.5)	1 x (0.75 - 4) 2 x (0.75 - 2.5)	1 x (0.75 - 4) 2 x (0.75 - 2.5)	1 x (0.75 - 4) 2 x (0.75 - 2.5)
Flexible with ferrule		mm <sup>2</sup>	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)
Stranded		mm <sup>2</sup>	-	-	-	-
Solid or stranded		AWG	18 - 10	18 - 10	18 - 10	18 - 10
Tightening torque		Nm	1.2	1.2	1.2	1.2
Screwdriver		mm	0,8 x 5,5 1 x 6	0,8 x 5,5 1 x 6	0,8 x 5,5 1 x 6	0,8 x 5,5 1 x 6



DS7-34DSX...											
...016N0-D	...024N0-D	...032N0-D	...041N0-D	...055N0-D	...070N0-D	...081N0-D	...100N0-D	...135N0-D	...160N0-D	...200N0-D	
134948	134949	134950	134952	134953	134954	134955	134956	134957	134958	134959	
IEC/EN 60947-4-2 UL 508 CSA22.2-14											
-5 - +40 higher than 40 °C with 2 % derating per Kelvin temperature rise, max. +60 °C											
-25 - +60	-25 - +60	-25 - +60	-25 - +60	-25 - +60	-25 - +60	-25 - +60	-25 - +60	-25 - +60	-25 - +60	-25 - +60	
0 - 1000 m, above that 1 % derating per 100 m , up to 2000 m											
Vertical	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical	
IP20	IP20	IP20	IP20 (terminals IP00)								
Finger- and back-of-hand proof											
II/2	II/2	II/2	II/2	II/2	II/2	II/2	II/2	II/2	II/2	II/2	
8 g/11 ms	8 g/11 ms	8 g/11 ms	8 g/11 ms	8 g/11 ms	8 g/11 ms	8 g/11 ms	8 g/11 ms	8 g/11 ms	8 g/11 ms	8 g/11 ms	
2M2	2M2	2M2	2M2	2M2	2M2	2M2	2M2	2M2	2M2	2M2	
B	B	B	B	B	B	B	B	B	B	B	
0.8	1.1	1.5	7	10	13	18	25	24	30	42	
0.46	0.46	0.46	1.8	1.8	1.8	1.8	1.8	3.7	3.7	3.7	
200 - 480	200 - 480	200 - 480	200 - 480	200 - 480	200 - 480	200 - 480	200 - 480	200 - 480	200 - 480	200 - 480	
50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60	
4	5.5	7.5	11	15	15	22	30	30	45	55	
7.5	11	15	22	30	37	45	55	75	90	110	
5	7.5	10	10	15	20	25	30	40	50	60	
5	7.5	10	15	20	25	30	30	50	60	75	
10	15	25	30	40	50	60	75	100	125	150	
16 A: AC-53a: 3 - 5: 75 - 10	24 A: AC-53a: 3 - 5: 75 - 10	32 A: AC-53a: 3 - 5: 75 - 10	41 A: AC-53a: 3 - 5: 75 - 10	55 A: AC-53a: 3 - 5: 75 - 10	68 A: AC-53a: 3 - 5: 75 - 10	81 A: AC-53a: 3 - 5: 75 - 10	99 A: AC-53a: 3 - 5: 75 - 10	135 A: AC-53a: 3 - 5: 75 - 10	160 A: AC-53a: 3 - 5: 75 - 10	200 A: AC-53a: 3 - 5: 75 - 10	
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
PKM0-16 (+ CL-PKZ0)	PKM0-25 (+ CL-PKZ0)	PKM0-32 (+ CL-PKZ0)	NZMN1-M50/ PKZM4-49	NZMN1-M63/ PKZM4-57	NZMN1-M80	NZMN1- M100	NZMN1- M100	NZMN2- M160	NZMN2- M200	NZMN2- M200	
3 x 170M1364	3 x 170M1365	3 x 170M1366	3 x 170M3013	3 x 170M3013	3 x 170M4008	3 x 170M4008	3 x 170M4008	3 x 170M4010	3 x 170M5008	3 x 170M5008	
3 x 170H1007	3 x 170H1007	3 x 170H1007	3 x 170H3004	3 x 170H3004	3 x 170H3004	3 x 170H3004	3 x 170H3004	3 x 170H3004	3 x 170H3004	3 x 170H3004	
1 x (0.75 - 16) 2 x (0.75 - 10)	1 x (0.75 - 16) 2 x (0.75 - 10)	1 x (0.75 - 16) 2 x (0.75 - 10)	1 x (25 - 70) 2 x (6 - 25)	1 x (25 - 70) 2 x (6 - 25)	1 x (25 - 70) 2 x (6 - 25)	1 x (25 - 70) 2 x (6 - 25)	1 x (25 - 70) 2 x (6 - 25)	1 x (25 - 70) 2 x (6 - 25)	1 x (4 - 185) 2 x (4 - 70)	1 x (4 - 185) 2 x (4 - 70)	
1 x (0.75 - 16) 2 x (0.75 - 10)	1 x (0.75 - 16) 2 x (0.75 - 10)	1 x (0.75 - 16) 2 x (0.75 - 10)	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	
1 x 16	1 x 16	1 x 16	1 x (25 - 70) 2 x (6 - 25)	1 x (25 - 70) 2 x (6 - 25)	1 x (25 - 70) 2 x (6 - 25)	1 x (25 - 70) 2 x (6 - 25)	1 x (25 - 70) 2 x (6 - 25)	1 x (25 - 70) 2 x (6 - 25)	1 x (4 - 185) 2 x (4 - 70)	1 x (4 - 185) 2 x (4 - 70)	
-	-	-	-	-	-	-	-	-	-	-	
18 - 6	18 - 6	18 - 6	1 x (12 - 2/0)	1 x (12 - 2/0)	1 x (12 - 2/0)	1 x (12 - 2/0)	1 x (12 - 2/0)	1 x (12 - 2/0)	1 x (12 - 350 kcmil) 2 x (12 - 00)		
			2 x 9 x 0.89 x 9 x 0.8					2 x 9 x 0.810 x 16 x 0.8			
3.2	3.2	3.2	6 (≤ 10 mm <sup>2</sup> ); 9 (> 10 mm <sup>2</sup> )					5 (≤ 10 mm <sup>2</sup> ); 14 (> 10 mm <sup>2</sup> )			
PZ2; 1 x 6 mm	PZ2; 1 x 6 mm	PZ2; 1 x 6 mm	PZ2; 1 x 6 mm	PZ2; 1 x 6 mm	PZ2; 1 x 6 mm	PZ2; 1 x 6 mm	PZ2; 1 x 6 mm	PZ2; 1 x 6 mm	PZ2; 1 x 6 mm	PZ2; 1 x 6 mm	
1 x (0.5 - 2.5) 2 x (0.5 - 1.0)	1 x (0.75 - 4) 2 x (0.75 - 4)	1 x (0.5 - 2.5) 2 x (0.5 - 1.0)	1 x (0.5 - 2.5) 2 x (0.5 - 1.0)	1 x (0.5 - 2.5) 2 x (0.5 - 1.0)	1 x (0.5 - 2.5) 2 x (0.5 - 1.0)	1 x (0.5 - 2.5) 2 x (0.5 - 1.0)	1 x (0.5 - 2.5) 2 x (0.5 - 1.0)	1 x (0.5 - 2.5) 2 x (0.5 - 1.0)	1 x (0.5 - 2.5) 2 x (0.5 - 1.0)	1 x (0.5 - 2.5) 2 x (0.5 - 1.0)	
1 x (0.5 - 1.5) 2 x (0.5 - 0.75)	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)	1 x (0.5 - 1.5) 2 x (0.5 - 0.75)	1 x (0.5 - 1.5) 2 x (0.5 - 0.75)	1 x (0.5 - 1.5) 2 x (0.5 - 0.75)	1 x (0.5 - 1.5) 2 x (0.5 - 0.75)	1 x (0.5 - 1.5) 2 x (0.5 - 0.75)	1 x (0.5 - 1.5) 2 x (0.5 - 0.75)	1 x (0.5 - 1.5) 2 x (0.5 - 0.75)	1 x (0.5 - 1.5) 2 x (0.5 - 0.75)	1 x (0.5 - 1.5) 2 x (0.5 - 0.75)	
-	-	-	1 x (0.5 - 1.5) 2 x (0.5 - 1.0)	1 x (0.5 - 1.5) 2 x (0.5 - 1.0)	1 x (0.5 - 1.5) 2 x (0.5 - 1.0)	1 x (0.5 - 1.5) 2 x (0.5 - 1.0)	1 x (0.5 - 1.5) 2 x (0.5 - 1.0)	1 x (0.5 - 1.5) 2 x (0.5 - 1.0)	1 x (0.5 - 1.5) 2 x (0.5 - 1.0)	1 x (0.5 - 1.5) 2 x (0.5 - 1.0)	
18 - 14	18 - 14	18 - 14	1 x (21 - 14) 2 x (21 - 18)	1 x (21 - 14) 2 x (21 - 18)	1 x (21 - 14) 2 x (21 - 18)	1 x (21 - 14) 2 x (21 - 18)	1 x (21 - 14) 2 x (21 - 18)	1 x (21 - 14) 2 x (21 - 18)	1 x (21 - 14) 2 x (21 - 18)	1 x (21 - 14) 2 x (21 - 18)	
1.2	1.2	1.2	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	
0,6 x 5,5 1 x 6	0,6 x 5,5 1 x 6	0,6 x 5,5 1 x 6	0,6 x 3,5	0,6 x 3,5	0,6 x 3,5	0,6 x 3,5	0,6 x 3,5	0,6 x 3,5	0,6 x 3,5	0,6 x 3,5	

			DS7-34DSX...				
			...004N0-D	...007N0-D	...009N0-D	...012N0-D	
			134943	134945	134946	134947	
<b>Control circuit</b>							
Digital inputs							
Control voltage							
DC-operated			V DC	24 V DC +10 %/- 15 % oder über SWD			
Current consumption 24 V							
External 24 V			mA	1.6	1.6	1.6	1.6
Pick-up voltage							
DC-operated			V DC	17.3 - 27	17.3 - 27	17.3 - 27	17.3 - 27
Drop-out voltage							
DC operated			V DC	0 - 3	0 - 3	0 - 3	0 - 3
Pick-up time							
DC operated			ms	250	250	250	250
Drop-out time							
DC operated			ms	350	350	350	350
Regulator supply							
Voltage			$U_s$	V	24 V DC +10 %/- 15 %		
Current consumption			$I_e$	mA	50	50	50
Current consumption at peak performance (close bypass) at 24 V DC			$I_{Peak}$	A/ms	-	-	-
Notes			External supply voltage				
Built-in interfaces			SmartWire-DT		SmartWire-DT	SmartWire-DT	SmartWire-DT
<b>Notes</b>							
Rated impulse withstand voltage:							
<ul style="list-style-type: none"> <li>• 1.2 <math>\mu</math>s/50 <math>\mu</math>s (rise time/fall time of the pulse to IEC/EN 60947-2 or -3)</li> <li>• Applies for control circuit/power section/enclosure</li> </ul>							

DS7-34DSX...										
...016N0-D	...024N0-D	...032N0-D	...041N0-D	...055N0-D	...070N0-D	...081N0-D	...100N0-D	...135N0-D	...160N0-D	...200N0-D
134948	134949	134950	134952	134953	134954	134955	134956	134957	134958	134959
24 V DC +10 %/- 15 % oder über SWD										
1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
17.3 - 27	17.3 - 27	17.3 - 27	17.3 - 27	17.3 - 27	17.3 - 27	17.3 - 27	17.3 - 27	17.3 - 27	17.3 - 27	17.3 - 27
0 - 3	0 - 3	0 - 3	0 - 3	0 - 3	0 - 3	0 - 3	0 - 3	0 - 3	0 - 3	0 - 3
250	250	250	250	250	250	250	250	250	250	250
350	350	350	350	350	350	350	350	350	350	350
24 V DC +10 %/- 15 %										
50	50	50	50	50	50	50	50	50	50	50
-	-	-	0,6/50	0,6/50	0,6/50	0,6/50	0,6/50	0,6/50	0,6/50	0,6/50
External supply voltage										
SmartWire-DT										

Rated impulse withstand voltage:

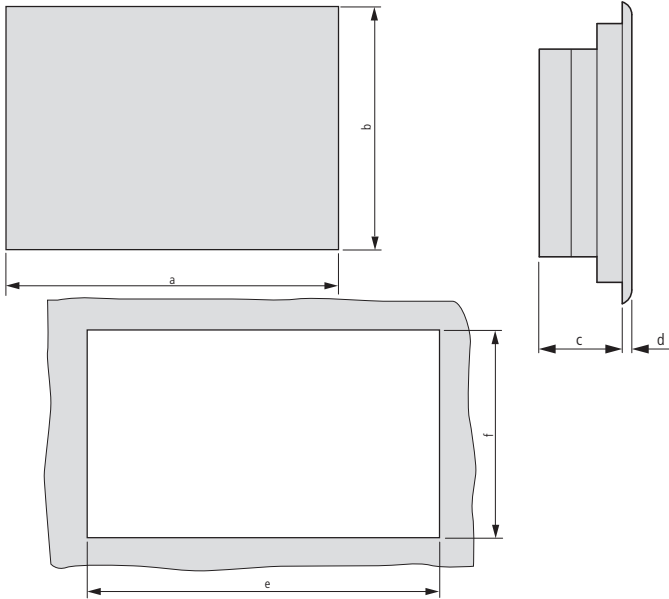
- 1.2 μs/50 μs (rise time/fall time of the pulse to IEC/EN 60947-2 or -3)
- Applies for control circuit/power section/enclosure

			EU5C-SWD-PF1-1 116309	EU5C-SWD-PF2-1 116380	EU1S-SWD-PF1-2 174724
<b>General</b>					
Standards			IEC/EN 61131-2 EN 50178	IEC/EN 61131-2 EN 50178	IEC/EN 61131-2, EN50178, IEC/EN 60529
Dimensions (W x H x D)		mm	35 x 90 x 124	35 x 90 x 124	85.6 x 20.1 x 56.9
Weight		kg	0.11	0.17	0.1
Weight		g	-	-	-
Mounting			Top-hat rail IEC/EN 60715, 35 mm	Top-hat rail IEC/EN 60715, 35 mm	DIN-rail, screw fixing (M4), mounting section (Clip M20)
Mounting position			As required	As required	As required
<b>Ambient conditions, mechanical</b>					
Protection type (IEC/EN 60529, EN50178, VBG 4)			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 1 g		Hz	8.4 - 150	8.4 - 150	8.4 - 150
Mechanical shock resistance (IEC/EN 60068-2-27) semi-sinusoidal 15 g/11 ms					
Drop to IEC/EN 60068-2-31	Drop height	mm	50	50	50
Free fall, packaged (IEC/EN 60068-2-32)		m	0.3	0.3	0.3
<b>Electromagnetic compatibility (EMC)</b>					
Overvoltage category					
			II	II	II
Pollution degree					
			2	2	3
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)					
Radio interference suppression			Class A	Class A	Class A
Burst (IEC/EN 61131-2:2008, Level 3)					
Supply cable		kV	2	2	2
CAN/DP bus cable					
Signal lines		kV	-	-	1
SmartWire-DT cable					
SmartWire-DT cables		kV	1	1	1
Surge (IEC/EN 61131-2:2008, Level 1)					
Supply cable		kV	0.5	0.5	0.5
Radiated RFI (IEC/EN 61131-2:2008, Level 3)					
		V	10	10	10
<b>Climatic environmental conditions</b>					
Climatic proofing					
			Dry heat to IEC 60068-2-2 Damp heat as per EN 60068-2-3		
Air pressure (operation)		hPa	795 - 1080	795 - 1080	795 - 1080
Operating ambient temperature (IEC 60068-2)		°C	- 25 - +55	- 25 - +55	- 25 - +70
Storage / Transport		°C	- 40 - + 70	- 40 - + 70	- 40 - + 70
Relative humidity					
Condensation					
relative humidity		%	-	-	-
Relative humidity, non-condensing (IEC/EN 60068-2-30)		%	5 - 95	5 - 95	-
<b>Supply voltage U<sub>Aux</sub></b>					
Rated operational voltage	U <sub>Aux</sub>	V	24 V DC (-15/+20%)	24 V DC (-15/+20%)	24 V DC (-15/+20%)
Residual ripple on the input voltage		%	≤ 5	≤ 5	5
Protection against polarity reversal			Yes	Yes	Yes
Max. current	I <sub>max</sub>	A	3	3	4
Short-circuit rating			no, external fuse FAZ Z3		
Power loss	P	W	Normally 1	Normally 2.7	Normally 1
Potential isolation			No	No	No
Rated operating voltage of 24-V-DC slaves		V	typ. U <sub>Aux</sub> - 0.2	typ. U <sub>Aux</sub> - 0.2	typ. U <sub>Aux</sub> - 0.2

			EU5C-SWD-PF1-1 116309	EU5C-SWD-PF2-1 116380	EU1S-SWD-PF1-2 174724
<b>Supply voltage U<sub>Pow</sub></b>					
Supply voltage	U <sub>Pow</sub>	V	-	24 DC -15 % + 20 %	-
Input voltage ripple		%	-	≅ 5	-
Siemens MPI, (optional)			yes	yes	-
Rated current	I	A	-	0.7	-
Overload proof			-	yes	-
Inrush current and duration		A	-	12.5 A/6 ms	-
Heat dissipation at 24 V DC		W	-	3.8	-
Potential isolation between U <sub>Pow</sub> and 15 V SmartWire-DT supply voltage			-	Yes	-
Bridging voltage dips		ms	-	10	-
Repetition rate		s	-	1	-
Status indication		LED	-	yes	-
<b>SmartWire-DT supply voltage</b>					
Rated operating voltage	U <sub>e</sub>	V	-	14,5 ± 3 %	-
max. current	I <sub>max</sub>	A	-	0.7	-
Short-circuit rating			-	Yes	-
<b>Connection supply voltages</b>					
Connection type			Push in terminals	Push in terminals	5-pin M12 socket (A-keyed)
Solid		mm <sup>2</sup>	0.2 - 1.5	0.2 - 1.5	-
Flexible with ferrule		mm <sup>2</sup>	0.25 - 1.5	0.25 - 1.5	-
UL/CSA solid or stranded		AWG	24 - 16	24 - 16	-
<b>SmartWire-DT network</b>					
Station type			-	-	-
Number of SmartWire-DT slaves			-	-	-
Baud Rates		kBd	-	-	-
Address allocation			-	-	-
Status indication		LED	-	-	-
Connections			2 x plug, 8-pole	2 x plug, 8-pole	Socket, plug M12 (A-keyed), 5 pole
Plug connectors			2 blade terminals SWD4-8MF2		SWD4-SM5-67 SWD4-SF5-67

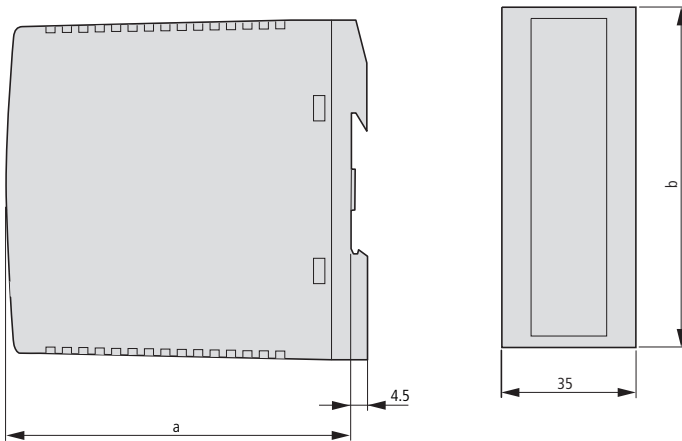
Dimensions

Touch display (HMI-PLC)



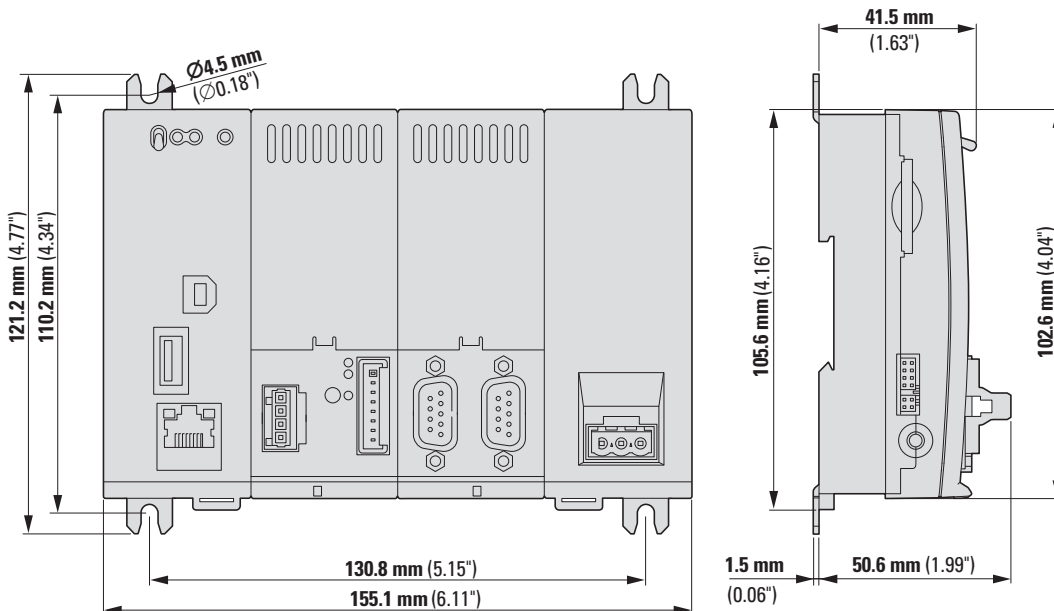
Part no.	a	b	c	d	e	f
XV-102-...-35...	136	100	25	5	123	87
NZM-...-MDISP35-SWD	136	100	25	5	132	87
XV-102-...-57...	170	130	34	5	157	117
XV-102-...-70...	210	135	33	5	197	122
NZM-...-MDISP70-SWD	210	135	33	5	197	122
XV-152-...-57...	212	156	47.5	5	198	142
XV-152-...-84...	275	208	47.5	5	261	194
XV-152-...-10...	345	260	49	5	329	238
XV-303-70-...	196	135	43.1	7	183	122
XV-303-10-...	269	174	50.1	7	255.5	160.5
XV-303-15-...	404	255	50.1	7,5	388	239

Gateways, easy800, Power feeder module, Input/output modules (IP20)



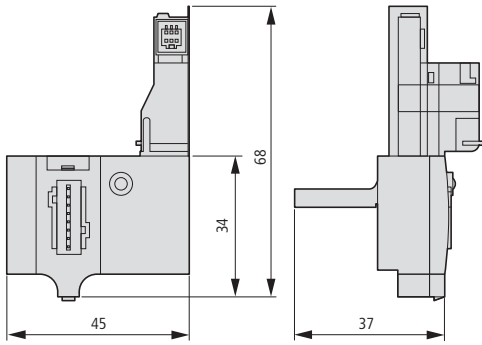
	a	b
EU5C-SWD-DP	127	90
EU5C-SWD-CAN	122	90
EU5E-SWD-...	97	90
EU5C-SWD-PF...	120	90
EU5C-SWD-EIP-MODTCP...	124	90
EU5C-SWD-PROFINET	120	90
EU5C-SWD-ETHERCAT	120	90
EU5C-SWD-POWERLINK	120	90
EU5C-SWD-SERCOS	120	90
NZM-XSWD-704...	97	90
EASY8...DC-SWD	120	100

XC compact PLCs

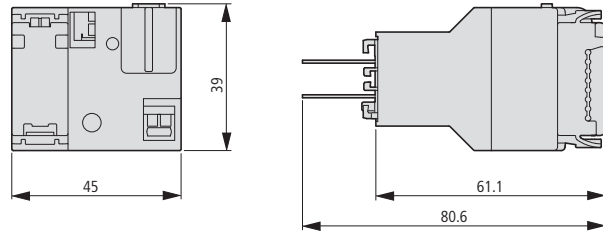


SWD PKE modules

PKE-SWD-SP, PKE-SWD-CP

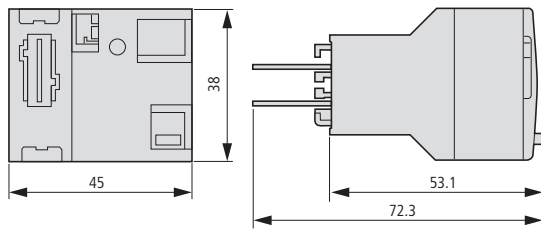


PKE-SWD-32



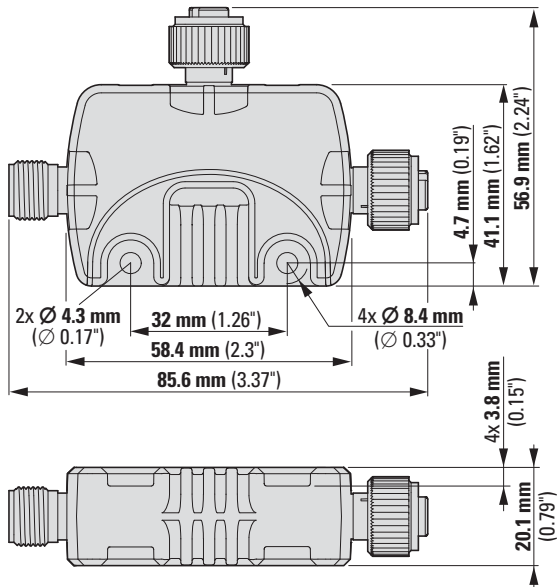
SWD contactor modules

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

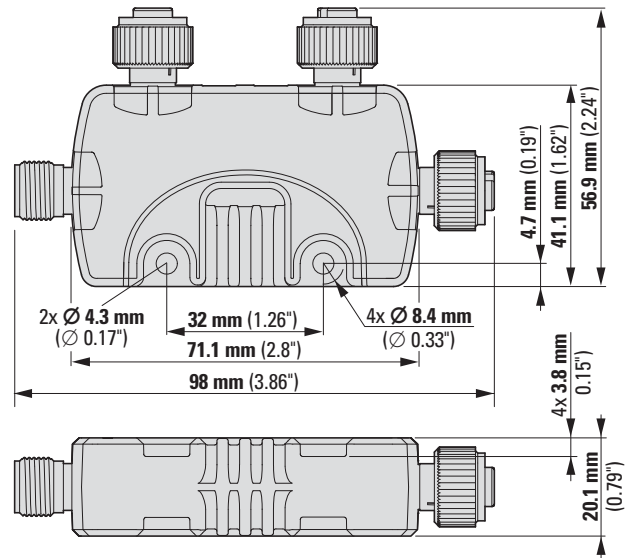


Input/output modules (IP67) T-Connector

EU1E-SWD-...

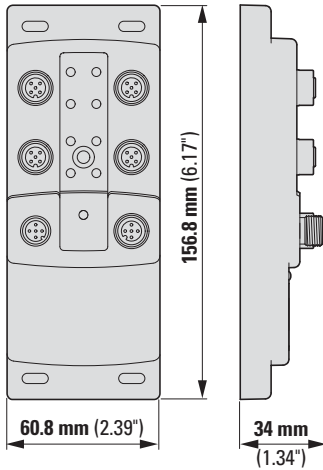


EU2E-SWD-...

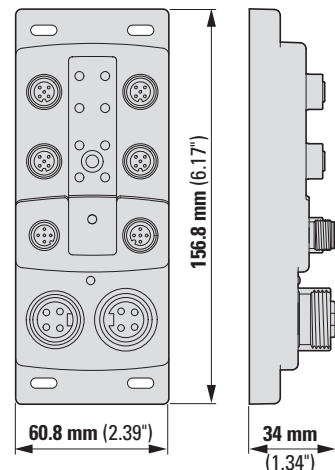


Input/output modules (IP67) Block module

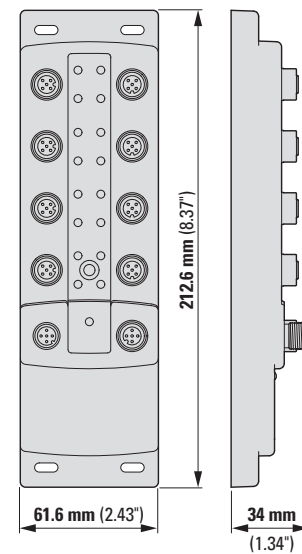
EU6E-SWD-...



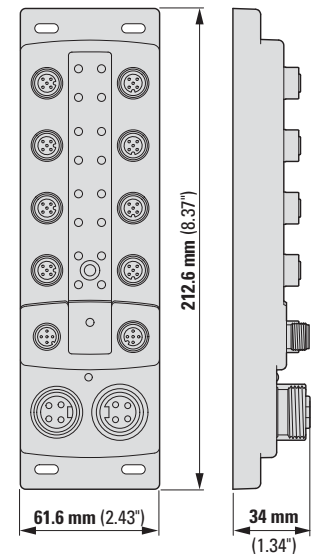
EU6E-SWD-... with supply



EU8E-SWD-...

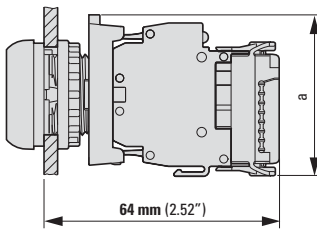


EU8E-SWD-... with supply

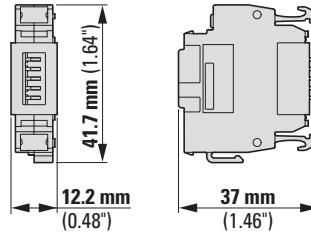


RMQ connections

- M22-SWD-K11...      M22-SWD-K11LED...    M22-SWD-INC
- M22-SWD-K22...      M22-SWD-K22LED...    M22-SWD-R
- M22-SWD-LED-...

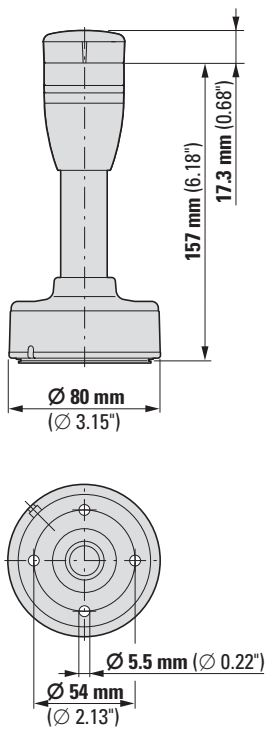


	a
M22-A	44
M22-SWD-A4	48

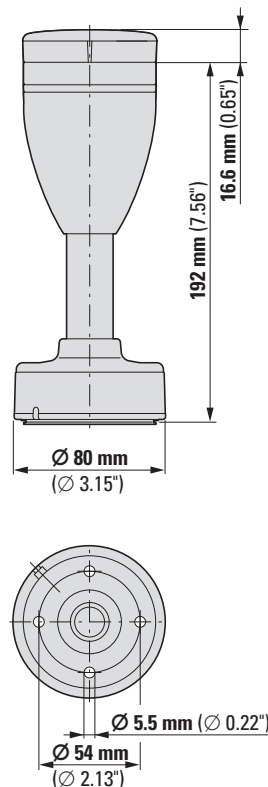


Signal towers Basic modules

SL4-SWD



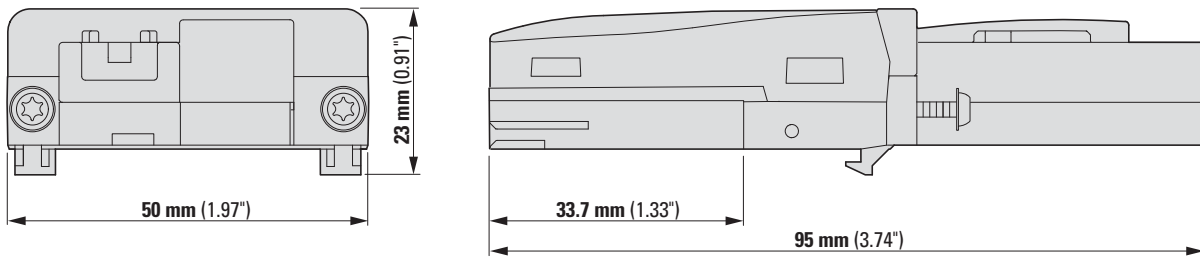
SL7-SWD



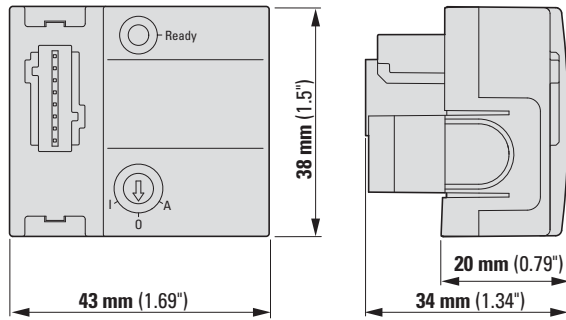


SWD function element Fieldbus connection (optional)

DX-NET-SWD1



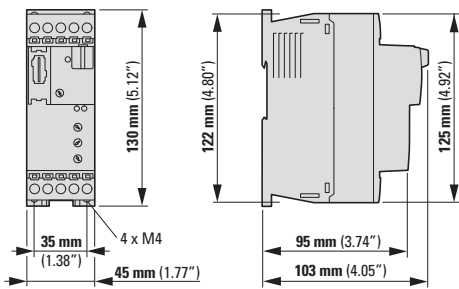
DX-NET-SWD3



Soft starters

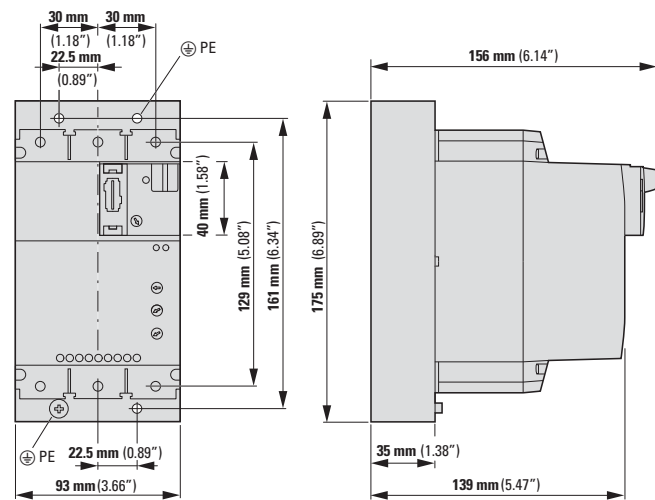
DS7-34DSX004N0-D  
DS7-34DSX007N0-D

DS7-34DSX009N0-D  
DS7-34DSX012N0-D



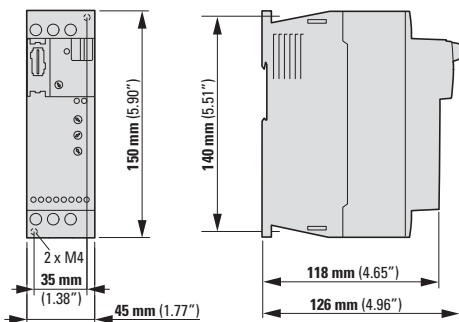
DS7-34DSX041N0-D  
DS7-34DSX055N0-D  
DS7-34DSX070N0-D

DS7-34DSX081N0-D  
DS7-34DSX100N0-D



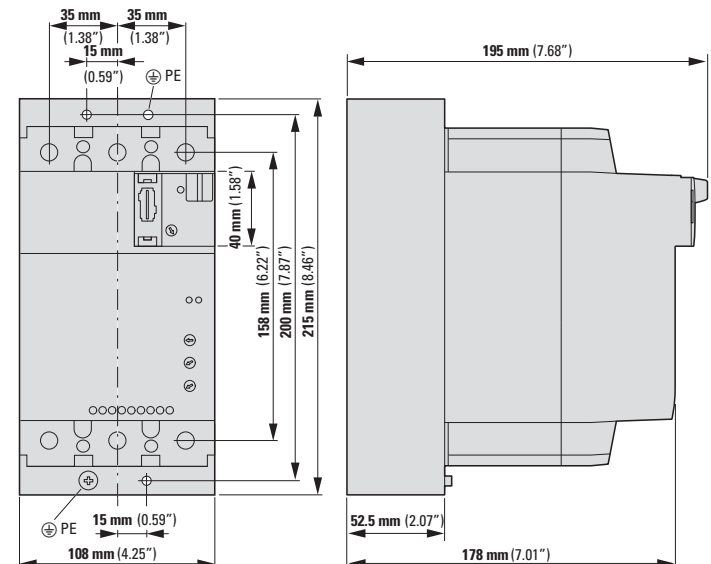
DS7-34DSX016N0-D  
DS7-34DSX024N0-D

DS7-34DSX032N0-D



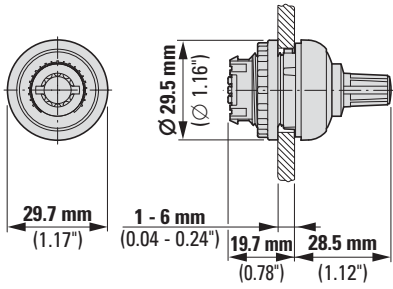
DS7-34DSX135N0-D  
DS7-34DSX160N0-D

DS7-34DSX200N0-D



Potentiometer

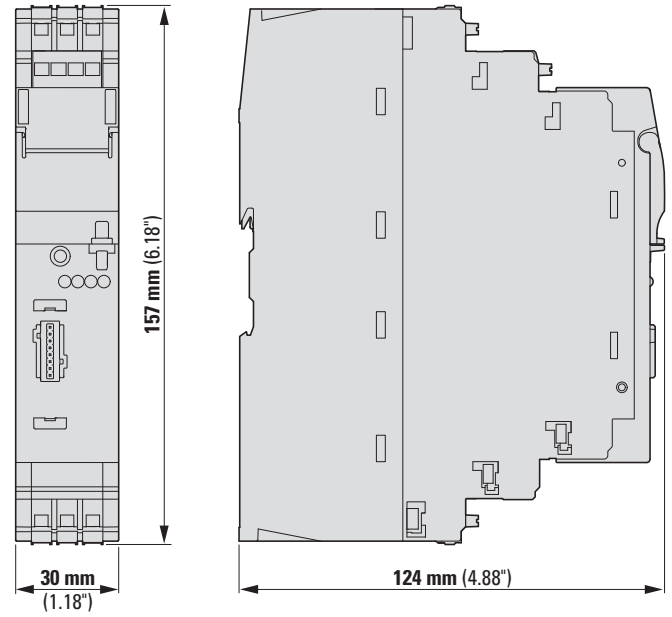
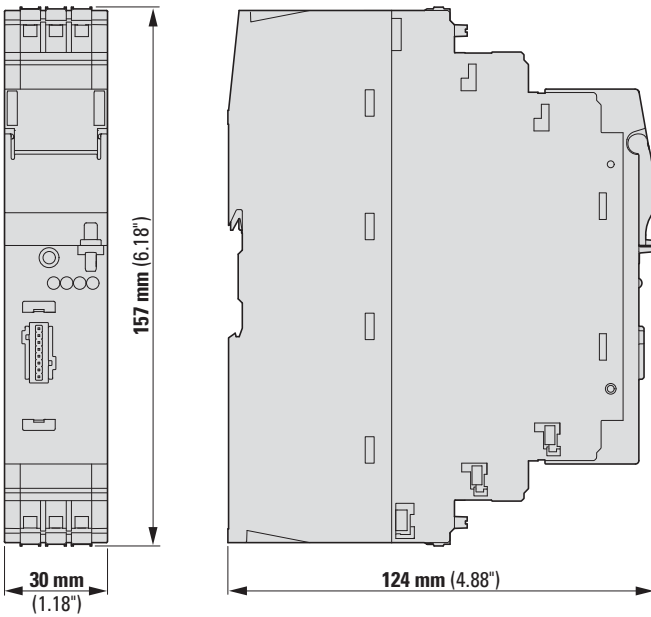
M22-R-SWD



Electronic motor starter

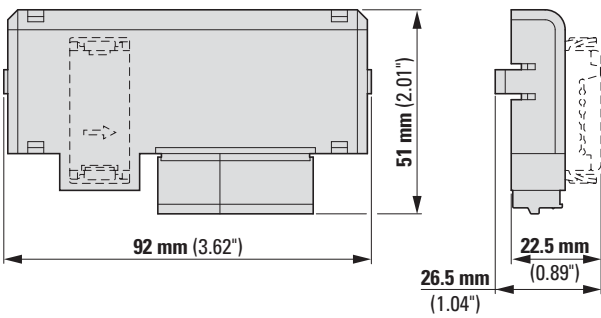
EMS-DO-T-2,4-SWD  
EMS-DO-T-9-SWD

EMS-DOS-T-2,4-SWD  
EMS-DOS-T-9-SWD



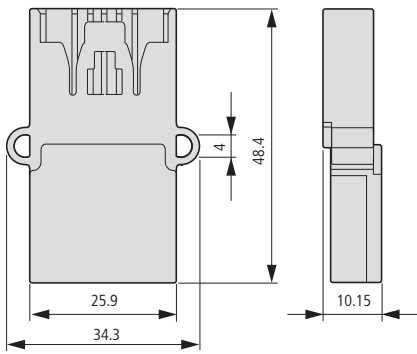
SWD-XNH module (NH fuse switch-disconnector)

XNH-SWD-2DX...

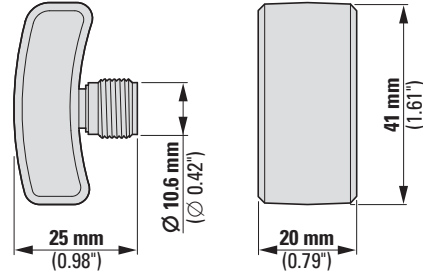


Bus termination

SWD4-RC8-10

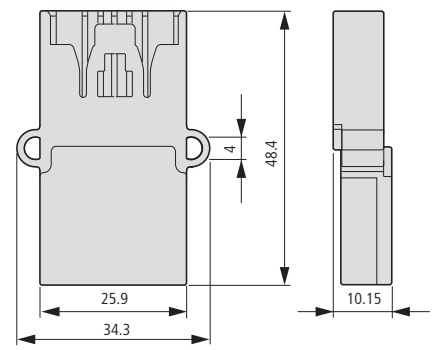


SWD4-RC8-10



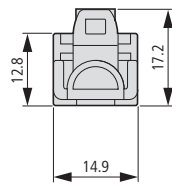
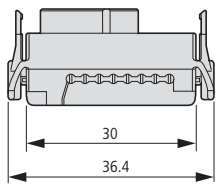
Coupling

SWD4-8SF2-5

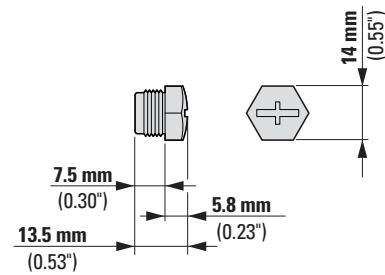


SWD plug connector and plug-in connection

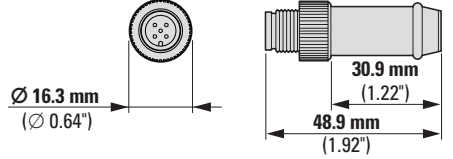
SWD4-8SF2-5



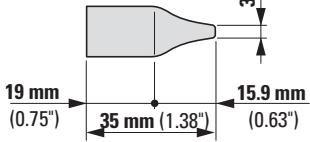
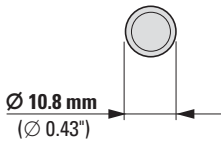
SWD4-PCAP-F



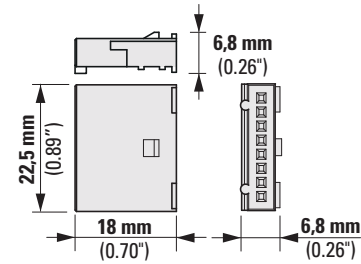
SWD4-ACAP-10



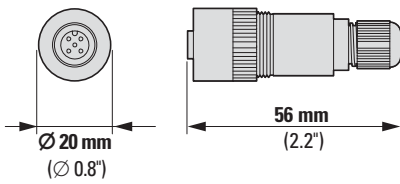
SWD4-PCAP-M



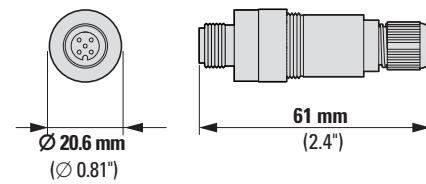
SWD4-8MF2



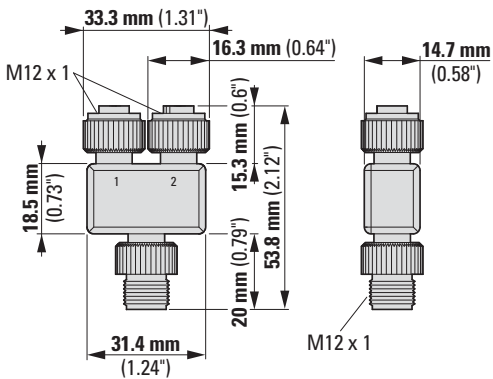
SWD4-SF5-67



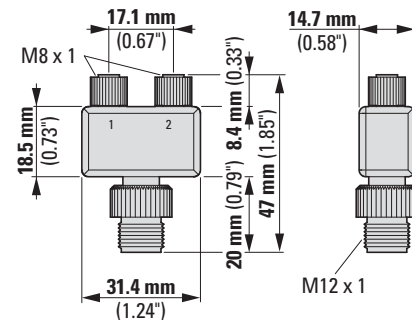
SWD4-SM5-67



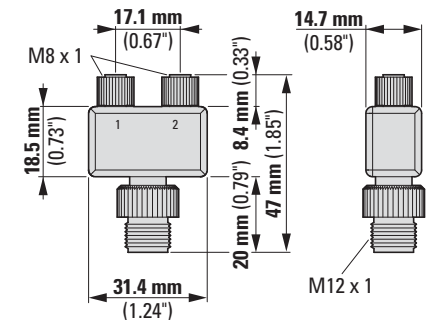
SWD4-SP-41..



SWD4-SP-40..

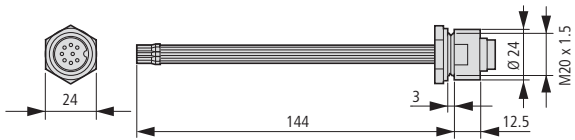


SWD4-SP-3084

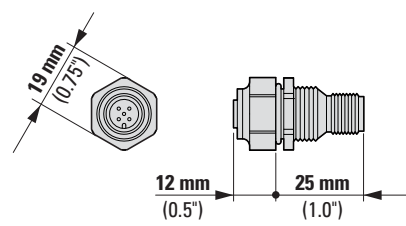


Housing bushing plug

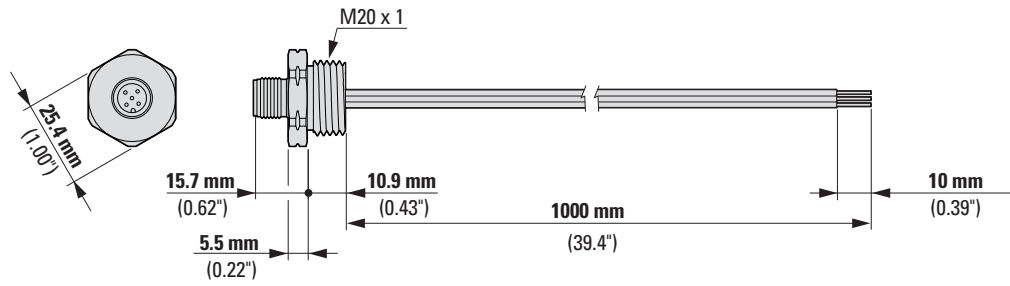
SWD4-SM8-20



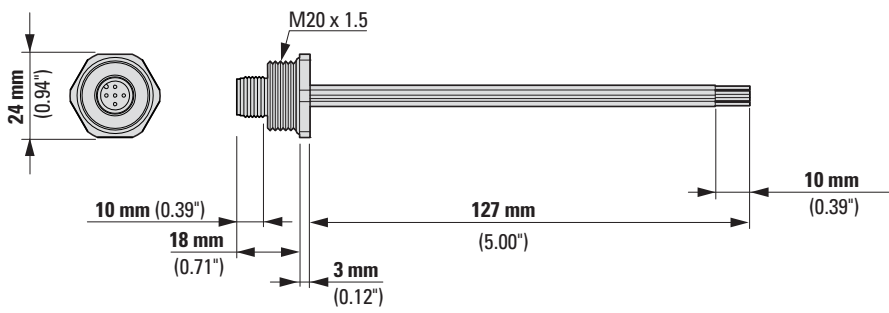
SWD4-SML5-12



SWD4-PRM5-1-S

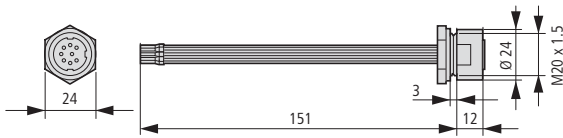


SWD4-PRM5-2-S

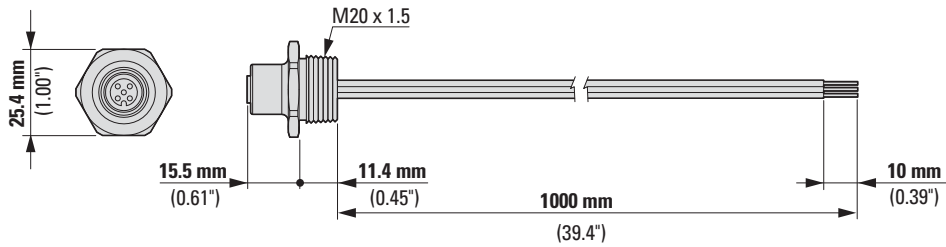


Housing bushing socket

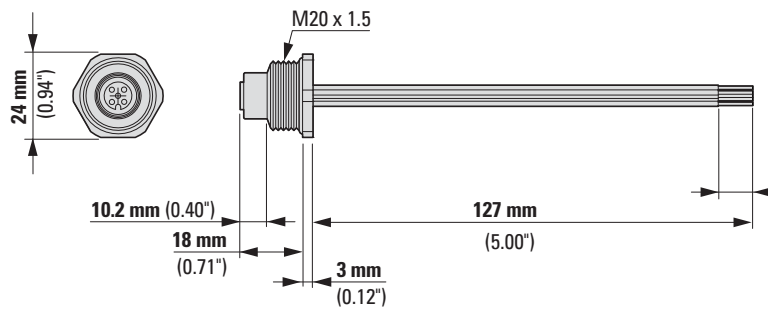
SWD4-SF8-20



SWD4-PRF5-1-S

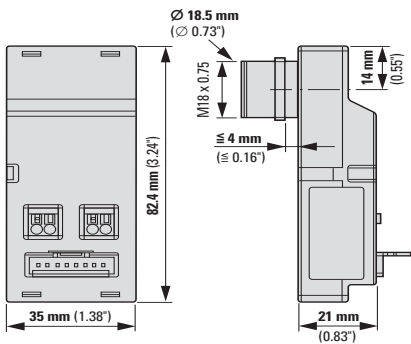


SWD4-PRF5-2-S



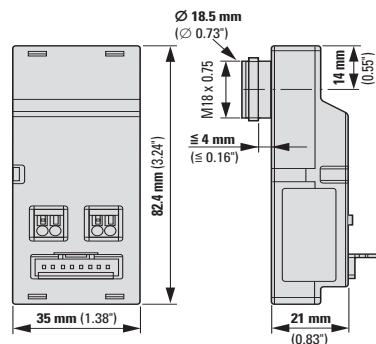
Switch cabinet bushing Plug

SWD4-SML8-20

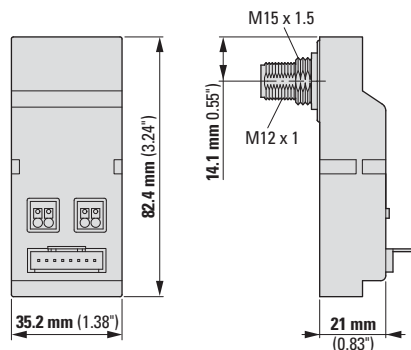


Switch cabinet bushing Socket

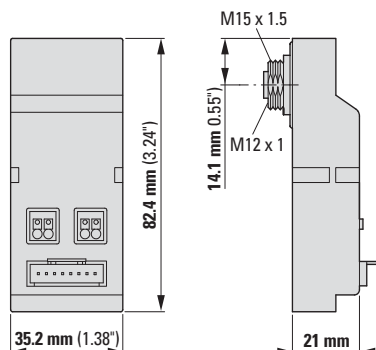
SWD4-SFL8-20



SWD4-SML8-20

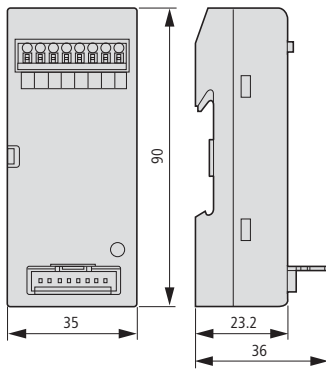


SWD4-SFL8-12



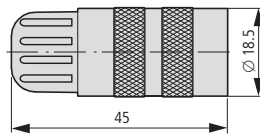
Component adapter flat cable (plug) on round cable (terminal)

SWD4-8FRF-10

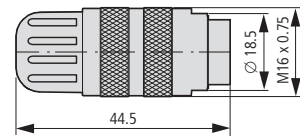


Plug connectors for SmartWire-DT round cables, flat

SWD4-SF8-67

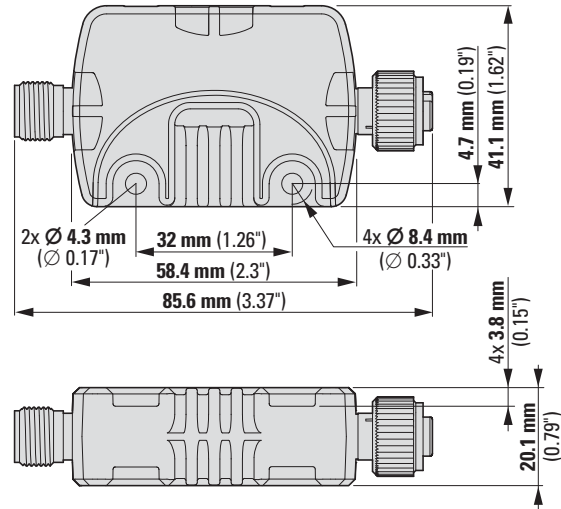


SWD4-SM8-67



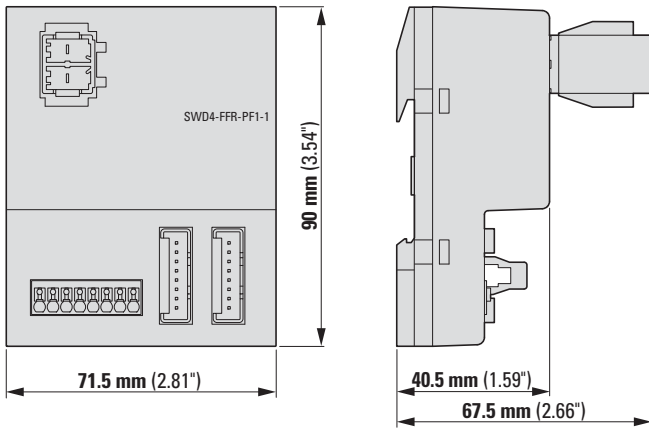
Universal module

EU1M-SWD-NOP

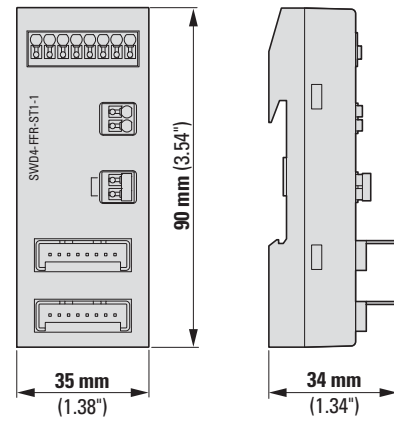


Cable adapters

SWD4-FFR-PF1-1

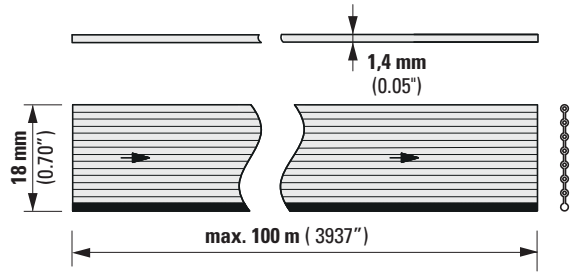


SWD4-FFR-ST1-1

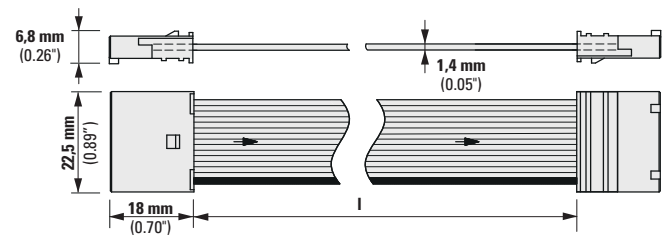


SWD Connection cables

SWD4 flat cable



SWD4-...LF8-24-2S



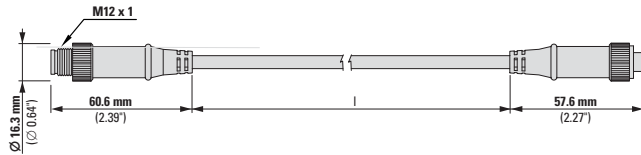
SWD4 round cable



	d	l
SWD4-FFR-ST1-1	8,2	50
SWD4-FFR-ST1-1	8,2	250
SWD4-250LR5	5,6	250

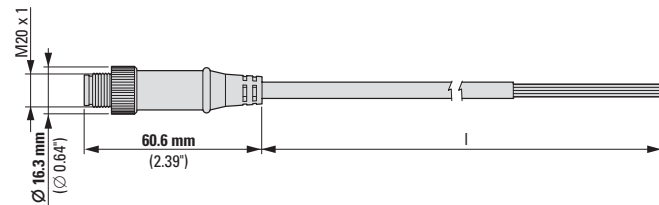
SWD4 round cable M12

SWD4-...LR5-2S

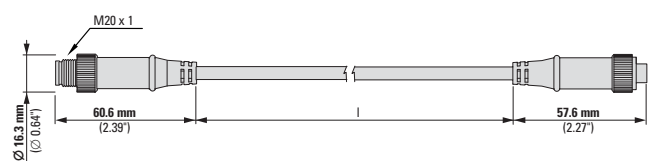


M12 I/O round cable

SWD4-...LR5-S

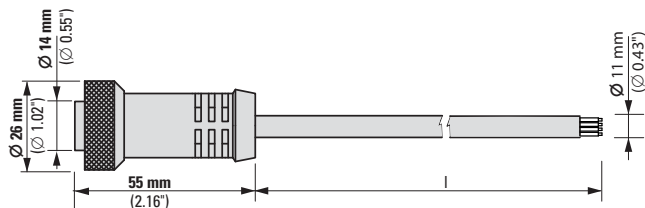


SWD4-...LR5-2S

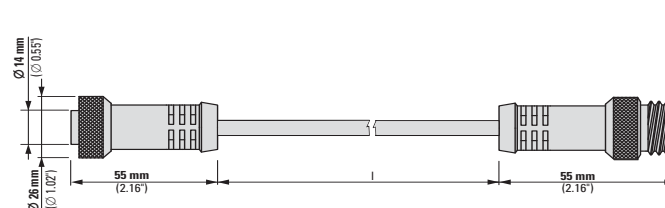


M22 supply cable

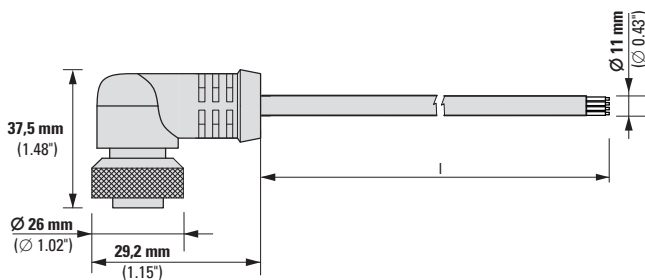
SWD4-...LPR4P-S



SWD4-...LPR4P-2S



SWD4-...LPR4P-R



# SmartWire-DT in system applications.



## Putting power into potato-sorting

SmartWire-DT helps to increase productivity and uptime and simplify maintenance for end users, reducing engineering time and increasing flexibility when designing, installing and commissioning plant.

**Background:** German company Schaltanlagenbau Gormanns GmbH was responsible for the electrical power supply and drives in a fully automated potato sorting plant that was part of an extensive new building project.

**Challenge:** The plant, designed to process 120 tons of potatoes per hour, had to be up and running on time for harvesting season and needed to be simple to operate. The project required the installation of 250 drives for conveyor belts, pumps, fans and machines as well as 50 command points.

**Solution:** Eaton's SmartWire-DT intelligent wiring system meant project completion in just four months, with wiring reduced to an eighth of a conventional wiring solution. Cross wiring was reduced from 1km to 50m, and the cabling required for the control circuit devices on the machines reduced by around 40%.



### Results

"I was sceptical about whether SmartWire-DT could do what it promised," says Sebastian Gormanns, Managing Director at Schaltanlagenbau Gormanns GmbH. "I have seldom seen anything so simple. Instead of the two weeks required for commissioning our previous sorting plant project, we only needed 1.5 days with this project. And when a problem comes up, we can explore the system remotely, diagnose and correct it."





**Background:** Acque del Basso Livenza S.p.A. runs one of the largest purification plants in Italy, serving over 140,000 customers in nineteen municipalities. The company has always been committed to offering its customers a high standard of service efficiency and quality, as well as facing the challenges posed by recent liberalization of water supply services and the resulting competition.

**Challenge:** The plant is entirely automated and operates in a continuous cycle. So whenever one of the motors or pumps in a plant malfunctions, off-site technicians need to be notified of the event and need to be on call 24 hours a day. Problems reduce overall plant productivity and involve considerable personnel management costs.

**Solution:** Using SmartWire-DT, the company can remotely control each single piece of machinery in the plant. A remote connection via VNC enables technicians to monitor in real-time the amount of current absorbed by each motor and, in the event of overload or a technical stop, immediately re-energise the motor simply by tapping the screen of a tablet or smartphone.

### Results

The new system has radically changed plant management for the company in terms of efficiency, productivity and personnel management costs.



**Background:** Austrian contractor Keckeis was engaged to upgrade a crusher and screening plant operating in harsh conditions that undermined optimal productivity.

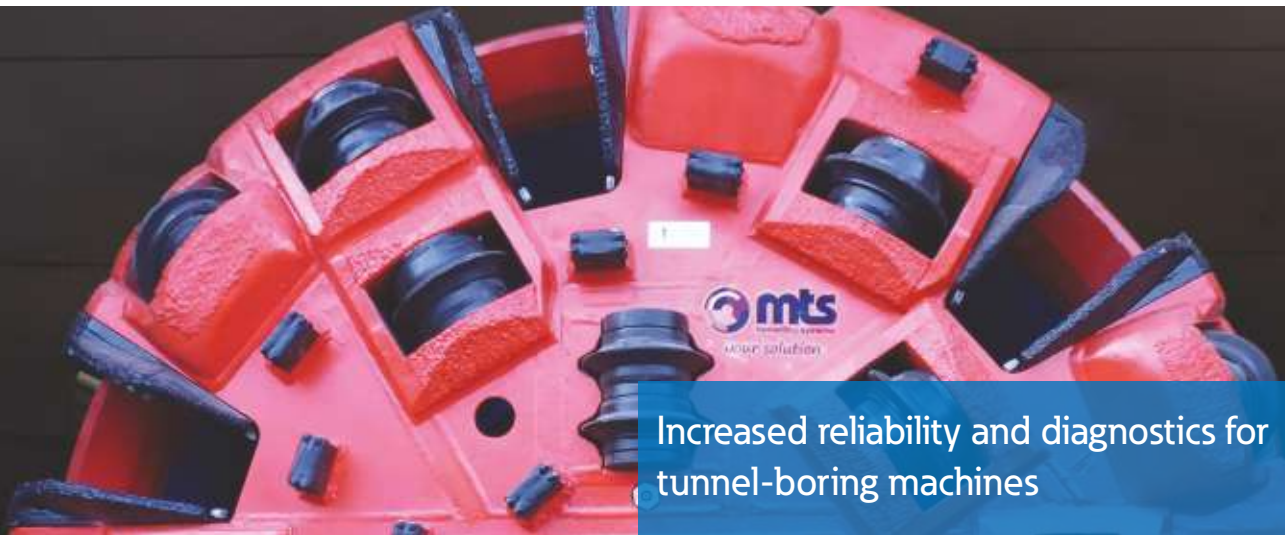
**Challenge:** When starting iced-up elevating conveyors in cold temperatures, frozen water in the belt pockets can cause motor currents to overload, shutting down the conveyor and requiring a restart.

**Solution:** After upgrading the sand and gravel plant with SmartWire-DT, the iced up belt can be automated to 'run warm' until the operating current has dropped to 'idle running', and only then is material conveying enabled. Accidental material conveying and excessive warm running are prevented. A far greater benefit is the controlled operation of the plant close to its maximum output limit for optimized and safe plant operation.

### Results

"Using SmartWire-DT in combination with Eaton's PKE electronic motor protection has not only paid for itself very quickly in terms of investment but also in terms in system availability. As well as the neat and extremely fast wiring of SmartWire-DT, its space-saving design was ideal for the limited space available in the control room," says Manfred Keckeis, general manager at Keckeis Elektrotechnik.

# SmartWire-DT in machine applications.



Increased reliability and diagnostics for tunnel-boring machines

SmartWire-DT can help to reduce installation cost by up to 85%, increase commercial flexibility and machine availability whilst providing MOEMs and customers with rich data from their machines, leading to intelligent decision-making that maximizes the potential from Industrie 4.0.

**Background:** German company mts Perforator develops and manufactures tunnel-boring machines for trenchless pipe jacking of supply and disposal tunnels, as deep as 40m below the ground.

**Challenge:** In remote underground environments, where precision and reliability of operation are vital, conventional point-to-point control wiring of components such as switching devices, sensors and actuators carries the risk of errors and malfunctions.

**Solution:** Using SmartWire-DT, mts benefits from a considerably faster assembly, fewer errors and less risk of manipulation, along with detailed remote diagnostic functions. The combination of PKE and SmartWire-DT delivers enhanced drive monitoring, with process-relevant data monitored continuously and analyzed without costly analog I/O technology.



## Results

The company is able to monitor the current states of the 50 tunnelling machines presently in operation worldwide. It can quickly carry out remote diagnostics in the event of a fault, provide a solution and ensure improved system availability for end customers. "Eaton's smart devices enable us to implement detailed data access worldwide down to the field level," says Norbert Simdon, working in electronic support at mts.



## Cleaner wiring solution

**Background:** US-based Renegade Parts Washers manufactures heavy-duty parts washing machines for numerous applications. Founded in 1996, the company has grown from offering a single solution to now having the capability to manufacture customized solutions built to their customers' specifications.

**Challenge:** Customers depend on a solution that will quickly and efficiently clean a high volume of parts and demand the shortest lead time between production and final end-user installation. With the increasing complexity of its machines, Renegade was looking for ways to optimize its production processes.

**Solution:** A machine control system based on the SmartWire-DT communication system cut wiring time, improved flexibility, and supported the implementation of advanced diagnostic features. This meant simpler machines at a lower cost and with added functionality. Extension up to 600m outside the control panel also allowed the connection of sensors and other machine-mounted devices.

### Results

"SmartWire-DT has transformed our control systems," says Dave Barney, owner of Renegade Parts Washers. "It has allowed us to cut our wiring times while improving the flexibility of our systems and adding advanced diagnostic facilities that are a big selling point when we talk to our customers. We'll certainly be using SmartWire-DT on all of the automated machines we build in the future."



## Packed with benefits

**Background:** Macchi SpA is a leading Italian manufacturer of plastics processing equipment. The company produces plastic stretch-wrap film widely used for packaging in almost every industry, typically for wrapping pallets loaded with products.

**Challenge:** Macchi needed to develop a control system for the extruders, coil winders and cutters on a sophisticated new film-manufacturing machine that helps to cut end user costs and delivers significant environmental advantages through using less film.

**Solution:** SmartWire-DT wiring technology brings important benefits, including a smaller control cabinet, reduced wiring complexity and easier testing. Significant time savings in the manufacture, testing and commissioning of the machine were achieved, and the flexibility of the SmartWire-DT system makes it easy to incorporate future upgrades and modifications.

### Results

"The project has been a great success," says Mauro Andreoli, Sales Manager at Macchi. "We expect to be using SmartWire-DT technology again in the very near future, and consider it to be a big and very important step forward in control system technology."

At Eaton, we're energized by the challenge of powering a world that demands more. With over 100 years experience in electrical power management, we have the expertise to see beyond today. From groundbreaking products to turnkey design and engineering services, critical industries around the globe count on Eaton.

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