

SCX...POE 2T

Industrial outdoor PoE switch

Data sheet
109004_en_04

© Phoenix Contact

2025-05-19



1 Description

The Smart Ethernet Box is used to connect PoE end devices such as IP cameras to a video server. You can use the Smart Ethernet Box to supply voltage to PoE end devices and other external devices.

The Smart Ethernet Box is a manageable outdoor PoE switch with a power supply unit, a wiring space for the AC voltage supply, replaceable surge protective modules, and an area with an integrated 24 V DC supply and a DIN rail for mounting additional devices.

The Smart Ethernet Box integrates the functions of conventional connection boxes equipped with standard DIN rail devices in a compact device. This saves you time during planning and installation.

Numerous management and monitoring functions ensure reliable operation of the system.

Features

- Cost savings with an all-in-one solution that provides all functions in a single device
- Significant time savings with adapter for wall and mast mounting
- Minimal wiring effort
- Replaceable surge protection
- A wide range of alarm messages via SNMP, such as in the event of sabotage attempts or defective surge protection
- Advanced PoE management for reliable operation of IP cameras
- Quick and easy startup and configuration via web-based management or the FL Network Manager software
- Managed Ethernet Switch with RSTP, VLAN, SNMP, and other functions
- Up to 40 devices in the ring with RSTP, up to 70 devices in the ring with LTS

Observe this note



Make sure you always use the latest documentation.

It can be downloaded at: phoenixcontact.com/product/1108542

The additional information in the user manual must also be strictly observed.

2 Table of contents

1	Description	1
2	Table of contents	2
3	Ordering data	3
4	Technical data	5
5	Dimensions.....	10
6	Basic circuit diagram.....	12
7	UL notes.....	13
8	Housing description	15
9	Revision history	16

3 Ordering data

Description	Type	Item no.	Pcs./Pkt.
Smart Ethernet Box for connecting PoE end devices, four PoE ports, two uplink ports (RJ45), integrated managed switch and surge protection, supply voltage 100 ... 240 V AC, wall or mast mounting	SCX 4POE 2T	1108542	1
Smart Ethernet Box for connecting PoE end devices, two PoE ports, two uplink ports (RJ45), integrated managed switch and surge protection, supply voltage 100 ... 240 V AC, wall or mast mounting	SCX 2POE 2T	1108544	1
Accessories	Type	Item no.	Pcs./Pkt.
Replacement plug for the SCX Smart Ethernet Box for the N-PE path.	F-MS 12 HD ST	1224885	10
Replacement plug for the SCX Smart Ethernet Box for the L-N path.	VAL-MS 320 HD ST	1224886	10
Surge protection connector type 2 with high-capacity varistor for VAL-MS base element, thermal monitoring, visual fault warning. Design: 230 V AC	VAL-MS 230 ST	2798844	10
Surge protection connector type 2 with series connection consisting of varistor and gas-filled spark gap for VAL-MS base element, thermal monitoring, visual fault warning. Design: 350 V AC	VAL-MS 350 VF ST	2856595	10
Mast clamps, 2 pcs, with quick mounting connection for installation on masts with a diameter of 51 ... 127 mm	SCX-CLAMP 14X51-127	1175556	1
Mast clamps, 2 pcs, with quick mounting connection for installation on masts with a diameter of 102 ... 254 mm	SCX-CLAMP 14X102-254	1188634	1
Stable door lock with locking tab for securely locking the Smart Ethernet Box, protects against unauthorized access, for a padlock with a shackle diameter of up to 12 mm	SCX-DOOR-LOCK	1184401	1
Mounting adapter for mast and panel mounting of the Smart Ethernet Box (SCX ... T and SCX ... LX)	SCX-CASE-MOUNTING-PLATE	1801987	1
Flange plate incl. cable glands (5 x M25, 2 x M20) and mounting screw 3 mm x 10 mm for the Smart Ethernet Box (SCX ... T and SCX ... LX)	SCX-GLAND-PLATE	1801989	1
Door without printing incl. four door hinges for the Smart Ethernet Box (SCX ... T and SCX ... LX)	SCX-CASE-TOP	1801990	1
SNMP-based software for easy commissioning and monitoring of network components such as switches, routers, and WLAN access points	FL NETWORK MANAGER BASIC	2702889	1
Network cable, degree of protection: IP20, number of positions: 8, 1 Gbps, CAT5, cable outlet: straight, Ethernet	NBC-R4AC-R4AC-IE8/.../...	1411842	1
NPT adapter, stainless steel, M20 to 1/2-inch	SCX M20-1/2NPT	1247389	1

Accessories	Type	Item no.	Pcs./Pkt.
The FL DIN-RAIL ADAPTER 22.5 is designed to allow products 22.5 mm wide to be mounted flush to a standard 35 mm DIN rail, in any orientation.	FL DIN-RAIL ADAPTER 22.5	1085485	1
The FL DIN-RAIL ADAPTER 40 is designed to allow products 40 mm wide to be mounted flush to a standard 35 mm DIN rail, in any orientation.	FL DIN-RAIL ADAPTER 40	1085484	1
Surge protection in accordance with Class E _A (CAT6 _A), for Gigabit Ethernet (up to 10 Gbps), token ring, FDDI/CDDI, ISDN, and DS1. Suitable for Power over Ethernet (PoE++ / 4PPoE) "Mode A" and "Mode B". RJ45 attachment plug with separate grounding cable and ground connection snap-on foot for NS 35 DIN rails.	DT-LAN-CAT.6+	2881007	1
Plastic mounting bracket, with NS 35/7.5 DIN rail, to snap onto modular terminal blocks with a universal foot, profile length: 35 mm	MW 35/35	5040078	10
The FL PANEL ADAPTER 45 is designed to allow products 45 mm wide to be mounted flush to a panel, in any orientation.	FL PANEL ADAPTER 45	1456055	1
The FL DIN-RAIL ADAPTER 45 is designed to allow products 45 mm wide to be mounted flush to a standard 35 mm DIN rail, in any orientation.	FL DIN-RAIL ADAPTER 45	1456045	1

4 Technical data

Supply

Supply voltage range	100 V AC ... 240 V AC (Single-phase)
Tolerance	-15 % ... +10 %
Nominal frequency	50 Hz ... 60 Hz
Nominal current range	1.2 A ... 2.9 A
Miniature circuit breaker/fuse	Miniature circuit breaker, 6 A ... 16 A, characteristics B, C, D, K
Rated insulation voltage	3 kV AC (Input / output, IEC/EN 60950-1)
Protection class	I (Protective grounding of all conductive housing parts)
Power supply system	TN, TT

Connection method

Push-in spring connection

Stripping length	10.00 mm
Conductor cross section	
flexible	0.2 mm ² ... 6 mm ²
rigid	1 mm ² ... 6 mm ²
AWG flexible	24 ... 10
Flexible with ferrules without plastic sleeve	0.2 mm ² ... 4 mm ²
Flexible with ferrules with plastic sleeve	0.2 mm ² ... 4 mm ²
2 conductors with the same cross section, flexible, with TWIN ferrule with plastic sleeve	0.5 mm ² ... 1.5 mm ²

Cable gland

Thread type, cable screw connection	5x M20, 5x M25 in accordance with UL: 2x M20, 5x M25
Tightening torque, cable gland	
M20	2 Nm
M20, UL	4 Nm
M25	3.5 Nm
M25, UL	5 Nm
External cable diameter	
M20	6 mm ... 12 mm
M25	6 mm ... 10 mm
Strain relief	IEC 62444



For mounting in accordance with UL, use conduit fittings: 3x 1/2" NPT (L, N, PE)

PoE ports		SCX 4POE 2T	SCX 2POE 2T
Number of ports		4 (RJ45 ports)	2 (RJ45 ports)
Designation		Ethernet / Fast Ethernet / Gigabit Ethernet	
Connection method		RJ45 jack	
Note on the connection method		Auto negotiation and autocrossing	
Transmission medium		Copper	
Transmission speed		10/100/1000 Mbps	
Transmission length		100 m (per segment)	
Power over Ethernet		PoE standard IEEE 802.3bt, at, af	
Maximum output power		165 W (>55°C derating, see data sheet) 155 W (If switching output is active, >55°C derating)	
		90 W (per port POE1...3, >50°C derating, see data sheet) 30 W (POE4)	90 W (per port POE1/2, >50°C derating, see data sheet)
Uplink ports			
Number of ports		2 (RJ45 ports)	
Transmission medium		Copper	
Transmission speed		10/100/1000 Mbps	
Transmission length		100 m (per segment)	
Configuration interface			
Number of ports		1 (RJ45 port)	
Store-and-forward switch, complies with IEEE 802.3			
Management		Web-based management (HTTP/HTTPS) SNMPv2/v3 Command Line Interface (Telnet, SSH)	
Diagnostic functions		RMON History LLDP (Link Layer Discovery Protocol) SNMP traps N:1-Portmirroring ACD (Address Conflict Detection)	
Filter functions		Port prioritization VLAN (up to 32 VLANs)	
Redundancy		RSTP (Rapid Spanning Tree Protocol in accordance with IEEE 802.1D-2004) Large Tree Support FRD (Fast Ring Detection)	
Time synchronization		SNTP (Simple Network Time Protocol)	
IP parameterization		DHCP client BootP Static IP address	
Additional functions		Jumbo frames	
MAC address table		8k	

Switching output

Number of ports	1 (Push-in Technology)
Configuration	Configuration via web-based management
Output nominal voltage	24 V DC $\pm 10\%$ (Supply for devices within the Smart Ethernet Box)
Output current	300 mA (typical)
Load/output load current output	no inductive load

Connection method **Push-in spring connection**

Stripping length	10 mm
------------------	-------

Conductor cross section	
-------------------------	--

flexible	0.2 mm ² ... 1.5 mm ²
----------	---

rigid	0.2 mm ² ... 1.5 mm ²
-------	---

AWG flexible	24 ... 16
--------------	-----------

Flexible with ferrules without plastic sleeve	0.25 mm ² ... 1.5 mm ² (Stripping length 8 mm)
---	--

Flexible with ferrules with plastic sleeve	0.25 mm ² ... 0.75 mm ² (Stripping length 8 mm)
--	---



If you use the switching output, the available PoE power will be reduced by 10 W.

Surge protection

IEC test classification	II T2
Standards/regulations	IEC 61643-11 EN 61643-11

General data

Dimensions (W/H/D)	284 mm x 364 mm x 121 mm
Material	
Housing	Polycarbonate
Cable gland	Polyamide
Cable gland seal	Neoprene
Color	
Housing	light grey (7035)
Degree of protection	IP65 (in accordance with DIN EN 60529: Complete touch protection, dust cannot enter, spray water from any direction)
Impact strength	IK10 (in accordance with IEC 62262: Impact energy of 20 J, corresponds to 5 kg from a height of 40 cm)
Degree of pollution	2
Flammability rating according to UL 94	V0 (Housing, a vertically clamped sample is extinguished within 10 seconds, no flaming droplets of molten plastic, smoldering for a maximum of 60 seconds)
	V2 (Cable gland; a vertically tensioned sample is extinguished within 30 seconds; flaming droplets are permitted)
Fire protection	DIN EN 45545-2, requirement set R22, hazard level HL3
Vibration resistance in accordance with EN 60068-2-6/ IEC 60068-2-6	1g

General data

Shock in accordance with EN 60068-2-27/IEC 60068-2-27 15g, 11 ms

Halogen-free (housing, bromine: <900 ppm, chlorine: <900 ppm, total halogen content: <1,500 ppm)

IEC 61249-2-21

Other resistance

UV-resistant in accordance with UL746C, f1 listing/rating (Outdoor housing, subject to 1,000 hour xenon weather testing, 7-day water submergence test)

Mounting type

Panel mounting
Mast mounting



Enclosure (UL50/50E): UL (NEMA) Enclosure Type Rating: 4X, watertight and corrosion resistant, suitable for indoor or outdoor use

Overvoltage category

With protection modules plugged in III

Without protection modules II

MTTF (mean time to failure)**SCX 4POE 2T****SCX 2POE 2T**

SN 29500 standard, temperature 25°C, operating cycle 21%

441 Years

496 Years

SN 29500 standard, temperature 40°C, operating cycle 34.25%

224 Years

247 Years

SN 29500 standard, temperature 40°C, operating cycle 100%

92 Years

105 Years

Ambient conditions

Ambient temperature

Operation -40 °C ... 70 °C (>50°C derating)

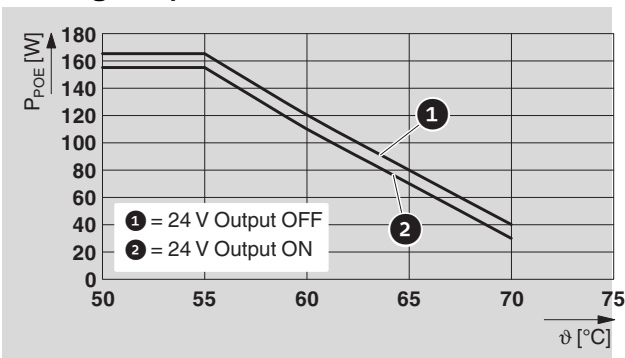
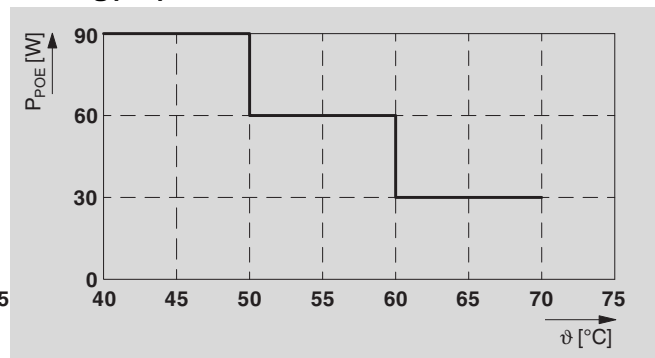
Storage/transport -40 °C ... 85 °C

Humidity

Operation 10 % ... 95 % (non-condensing)

Altitude

2000 m

Derating (PoE power total)**Derating per port**

Conformance/Approvals

CE	CE-compliant
UL, USA/Canada	Listed UL 61010-1, 3rd Edition UL 61010-2-201, 2nd Edition CAN/CSA C22.2 No. 61010-1-12 CSA C22.2 No. 61010-2-201:18
Corrosive gas test	ISA-S71.04-1985 G3 Harsh Group A

Conformance with EMC Directive 2014/30/EU**Immunity in accordance with EN 61000-6-2**

Electrostatic discharge	EN 61000-4-2	
	Contact discharge	± 6 kV
	Discharge in air	± 8 kV
	Indirect discharge	± 6 kV
	Comments	Criterion B
Electromagnetic HF field	EN 61000-4-3	
	Frequency range	80 MHz ... 3 GHz (80% amplitude modulation with 1 kHz)
	Field intensity	10 V/m
	Comments	Criterion A
Fast transients (burst)	EN 61000-4-4	
	Input	± 2.2 kV (1 minute)
	Signal	± 2.2 kV (1 minute)
	Comments	Criterion B
Surge current loads (surge)	EN 61000-4-5	
	Input	± 1 kV (AC supply, line to line) ± 2 kV (AC supply, line to ground)
Conducted interference	EN 61000-4-6	
	Frequency range	0.15 MHz ... 80 MHz (80% amplitude modulation with 1 kHz)
	Voltage	10 V
	Comments	Criterion A

Criterion A Normal operating behavior within the specified limits.

Criterion B Temporary impairment to operational behavior that is corrected by the device itself.

Noise emission

Noise emission	EN 61000-6-4, Class B, domain of use: residential and small commercial
Conducted noise emission	EN 61000-6-3 Class B, domain of use: residential and small commercial

5 Dimensions

Figure 1 Dimensions

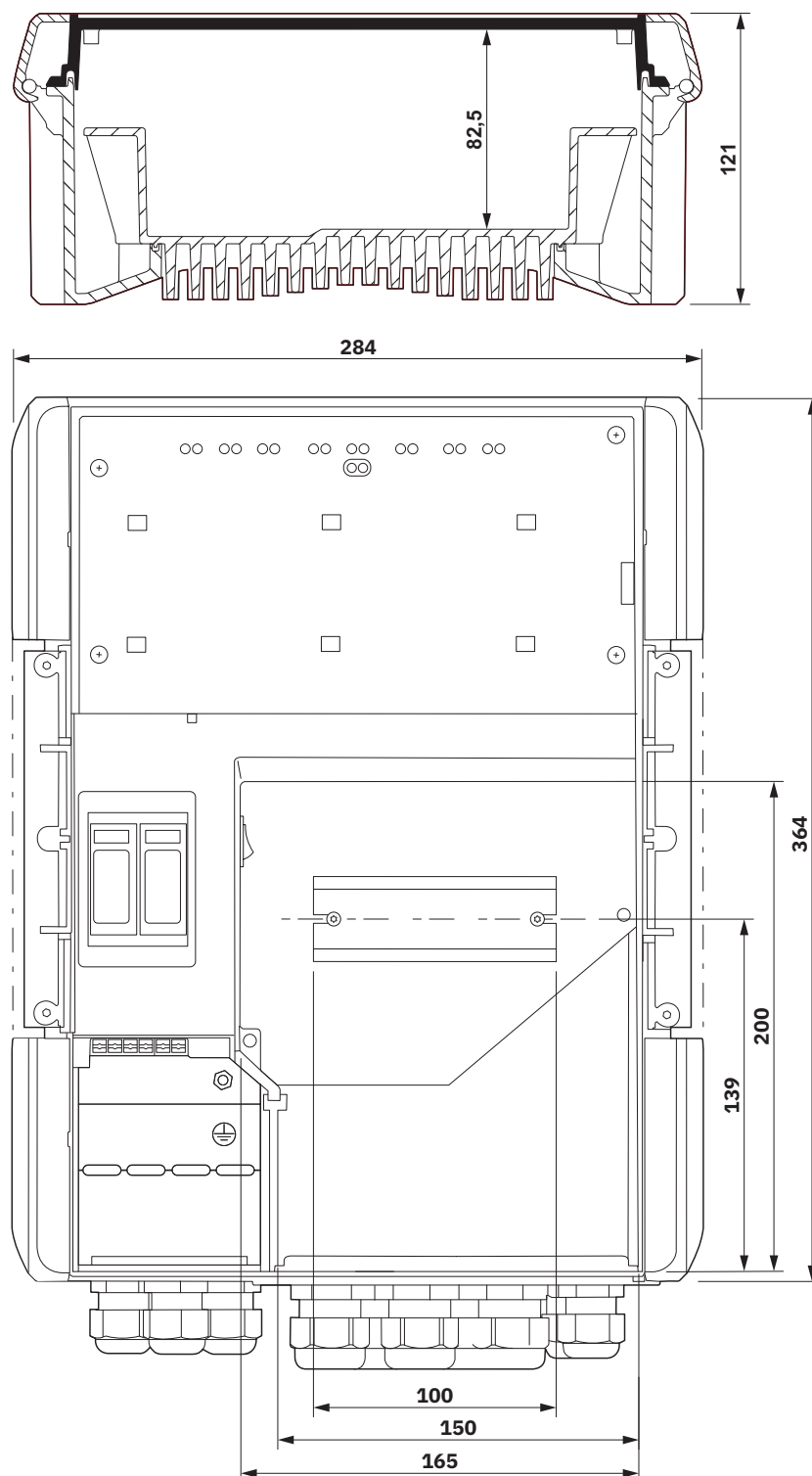
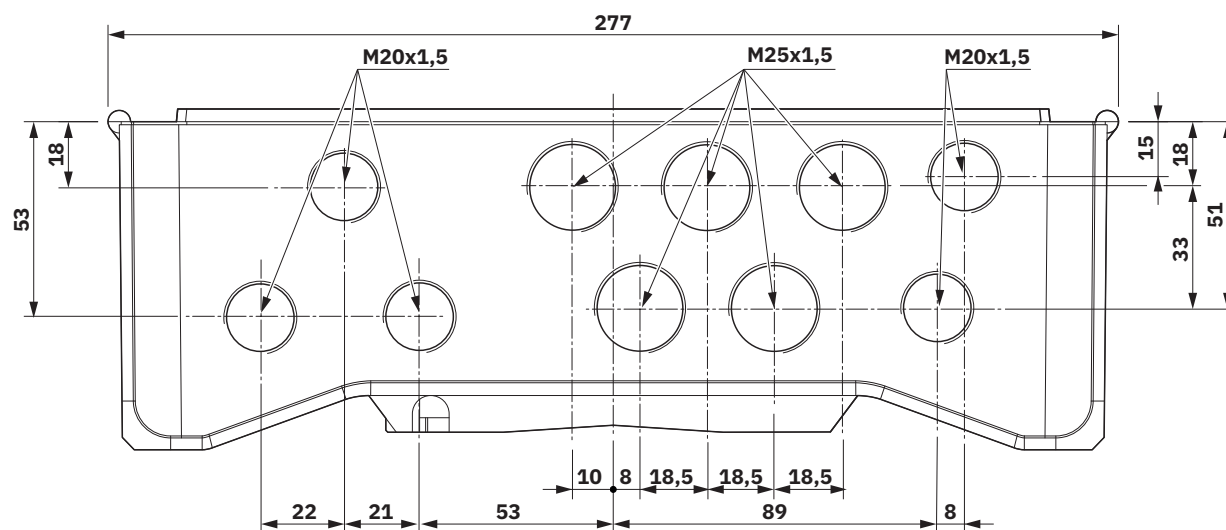
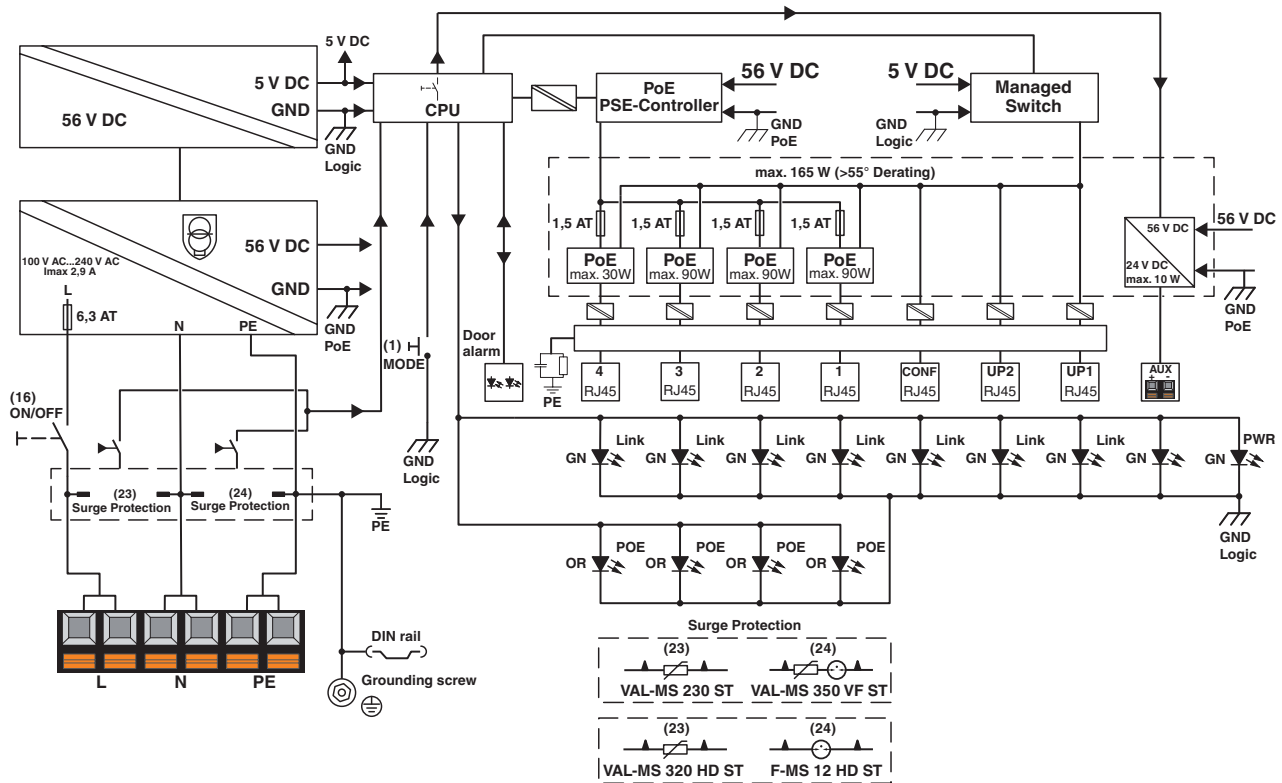


Figure 2 Underside dimensions



6 Basic circuit diagram

Figure 3 Basic circuit diagram



7 UL notes

To install the device according to the UL/CSA/IEC standard, the following rules must be observed.



CAUTION!

- The external circuits intended to be connected to this device, except for MAINS supply of the equipment, shall be galvanically separated from MAINS supply or hazardous live voltage by reinforced or double insulation and meet the requirements of Class 2 of NEC or SELV/PELV - Limited Energy of UL/CSA 61010-1, -2-201 or Limited Power Source of UL/CSA 60950.
- Communication cable shall meet the requirements of UL Standard 444 / CSA Standard (C22.2) No. 214, be suitable for the application and be marked "Outdoor" to indicate its suitability for installation outdoors on dwellings.
- SFP transceiver(s) shall meet the relevant requirements of UL 60950-1, CAN/CSA C22.2 No. 60950-1, be rated "Laser Class I" and comply with 21 CFR 1040 - Laser Class.
- The device is designed to be maintenance-free. Repairs are not permitted to be carried out.
- The hub (conduit hub adapter) shall be connected to the conduit before the hub is connected to the enclosure.



Information:

- The switch or circuit breaker must be included in the installation, be suitably located, easily reached and marked as the disconnecting device for the equipment. If there is only one device - one switch or one circuit breaker - symbols 9 and 10 of Table 1, UL/CSA/IEC 61010 are sufficient if the symbols are marked on or adjacent to the switch or circuit breaker.
 - a) Circuit breakers used as a disconnecting device shall meet the relevant requirements of UL Standard 489 / CSA Standard (C22.2) No. 5 / IEC 60947-2, be suitable for the application and installed near the equipment.
 - b) Switch used as a disconnecting device shall meet the relevant requirements of UL Standard 508 / CSA Standard (C22.2) No. 14 / IEC 60947-3, be suitable for the application and installed near the equipment.
- Equipment intended to be energized from a MAINS supply shall be protected by fuses, circuit breakers, thermal cut-outs, impedance limiting circuits or similar means, to provide protection against excessive current being drawn from the MAINS in case of a fault in the equipment.
 - a) Overcurrent protection devices shall not be fitted in the protective conductor. Fuses or single pole circuit breakers shall not be fitted in the neutral conductor of multi-phase equipment.
 - b) A single-pole circuit breaker used as an overcurrent protective device shall be connected in the ungrounded supply conductor.
 - c) A multiple-pole circuit breaker used as an overcurrent protective device or devices shall be so constructed as to interrupt all of the neutral (grounded) and ungrounded conductors of the MAINS supply simultaneously.
 - d) Fuses shall meet the relevant requirements of UL Standard 248 / CSA Standard (C22.2) No. 248 / IEC 60127, be suitable for the application and installed near the equipment.
 - e) A single fuse used as an overcurrent protective device shall be connected in the ungrounded supply conductor.

- f) Where fuses are used as overcurrent protective devices in both the neutral (grounded) and ungrounded supply conductors, the fuseholders shall be mounted adjacent to each other and the fuses shall be of the same RATING and characteristics.
- g) The screw shell of a plug fuseholder and the ACCESSIBLE contact of an extractor fuseholder connected to the ungrounded supply conductor shall be connected towards the load. The ACCESSIBLE contact or screw shell of fuseholders connected in the neutral (grounded) conductor shall be located towards the grounded supply line.
- If the equipment is not used in specified manner, the protection provided by the equipment may be impaired.
- Minimum temperature rating of the cable to be connected to the field wiring terminals (MAINS supply)
75 °C, AWG 24 ... 10
Use copper conductors only.
- Minimum temperature rating of the cable to be connected to the field wiring terminals (Digital output)
75 °C, AWG 24 ... 16
Use copper conductors only.

8 Housing description

As of hardware version 21, the optimized housing offers the following functions:

- Removable flange plate
- Expandable cable gland for supply lines

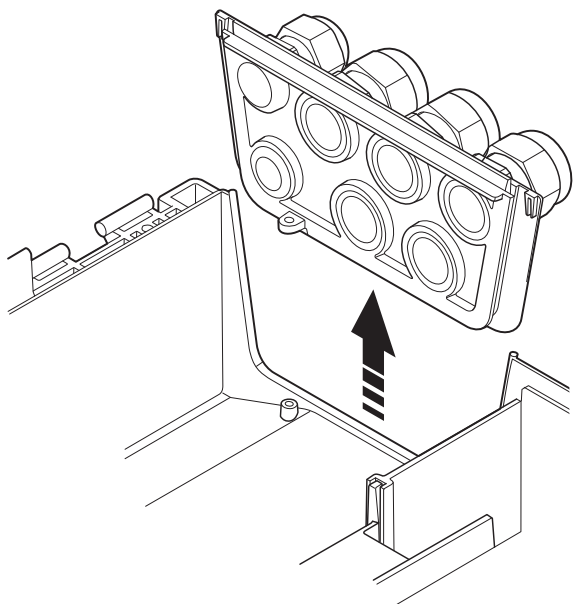
As of hardware version 21, the SCX ... 2T devices no longer contain a splice tray.

Removable flange plate

The flange plate with the cable glands can be removed.

- Tighten the mounting screw for the flange plate to a maximum of 1 Nm. The screw is only used to secure the flange plate when the cover is opened.

Figure 4 Flange plate



Expandable cable gland for supply lines

If required, you can enlarge one of the cable glands to M32. To make space, you can break the shielding plate at the perforation.

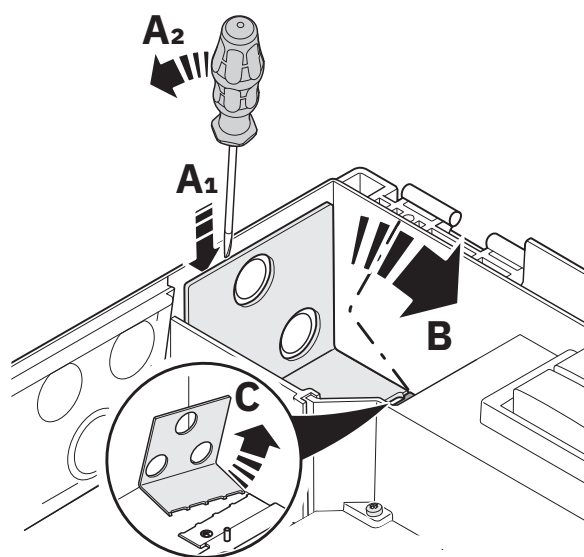


NOTE: Risk of injury

Sharp edges and burrs can result when the shielding plate is broken out.

- If necessary, deburr the edges of the breaking point.

Figure 5 Shielding plate



9 Revision history

Document revision	Hardware version	Firmware version	Date	Description
00	-	-	2020-04-16	First publication
01	11	101	2020-11-03	UL approval added to technical data, "UL notes" section added, accessories updated, dimensional drawing and basic circuit diagram added
02	-	-	2020-08-01	Accessories updated, "General data" table extended (flammability rating, freedom from halogen, other resistance), "Dimensions – lower side" illustration added
03	-	-	2023-09-21	Product designation changed to "Smart Ethernet Box"
04	21	111	2025-05-14	New housing with modified cable gland and removable flange plate: dimensional drawings updated, "Housing description" section added