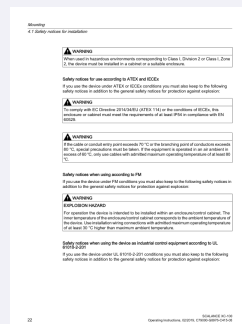


FIELD INSTALLATION QUICK GUIDE

Installation Instructions

6GK5116-0BA00-2AC2

Unmanaged Industrial Ethernet switch



PRODUCT	6GK5116-0BA00-2AC2
FAMILY	SCALANCE XC116
FUNCTION	Unmanaged Industrial Ethernet switch
SOURCE	Siemens SCALANCE XC116 manufacturer documentation; applicable pages 11, 12, 16, 18, 19, 44

01 OFFICIAL MOUNTING AND WIRING

- Disconnect the supply and follow the documented installation safety requirements.
- Secure the XC116 on the selected mounting rail or wall arrangement.
- Connect the redundant SELV supply, signaling contact and functional ground according to the manufacturer terminal drawings.
- Connect Ethernet cables and verify port indicators and signaling behavior.

AMIKON PRODUCT SUPPORT

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Mounting

4.1 Safety notices for installation

Safety notices

When installing the device, keep to the safety notices listed below.

**WARNING**

If a device is operated in an ambient temperature of more than 60 °C, the temperature of the device housing may be higher than 70 °C. The device must therefore be installed so that it is only accessible to service personnel or users that are aware of the reason for restricted access and the required safety measures at an ambient temperature higher than 60 °C.

**WARNING**

If the device is installed in a cabinet, the inner temperature of the cabinet corresponds to the ambient temperature of the device.

Safety notices on use in hazardous areas

General safety notices relating to protection against explosion

**WARNING****EXPLOSION HAZARD**

Replacing components may impair suitability for Class 1, Division 2 or Zone 2.

**WARNING**

The device is intended for indoor use only.

**WARNING**

The device may only be operated in an environment with pollution degree 1 or 2 (see IEC 60664-1).

 WARNING

When used in hazardous environments corresponding to Class I, Division 2 or Class I, Zone 2, the device must be installed in a cabinet or a suitable enclosure.

Safety notices for use according to ATEX and IECEx

If you use the device under ATEX or IECEx conditions you must also keep to the following safety notices in addition to the general safety notices for protection against explosion:

 WARNING

To comply with EC Directive 2014/34/EU (ATEX 114) or the conditions of IECEx, this enclosure or cabinet must meet the requirements of at least IP54 in compliance with EN 60529.

 WARNING

If the cable or conduit entry point exceeds 70 °C or the branching point of conductors exceeds 80 °C, special precautions must be taken. If the equipment is operated in an air ambient in excess of 60 °C, only use cables with admitted maximum operating temperature of at least 80 °C.

Safety notices when using according to FM

If you use the device under FM conditions you must also keep to the following safety notices in addition to the general safety notices for protection against explosion:

 WARNING

EXPLOSION HAZARD

For operation the device is intended to be installed within an enclosure/control cabinet. The inner temperature of the enclosure/control cabinet corresponds to the ambient temperature of the device. Use installation wiring connections with admitted maximum operating temperature of at least 30 °C higher than maximum ambient temperature.

Safety notices when using the device as industrial control equipment according to UL 61010-2-201

If you use the device under UL 61010-2-201 conditions you must also keep to the following safety notices in addition to the general safety notices for protection against explosion:

**WARNING**

The devices are "open equipment" acc. to the standard UL 61010-2-201. To fulfill requirements for safe operation with regard to mechanical stability, flame retardation, stability, and protection against contact, the following alternative types of installation are specified:

- Installation in a suitable cabinet.
- Installation in a suitable enclosure.
- Installation in a suitably equipped, enclosed control room.

**WARNING**

If the cable or housing socket exceeds 70 °C or the branching point of the cables exceeds 60 °C, special precautions must be taken. If the equipment is operated in an air ambient in excess of 40 °C, only use cables with admitted maximum operating temperature of at least 80 °C.

Further notes**NOTICE****Warming and premature aging of the network component due to direct sunlight**

Direct sunlight can heat up the device and can lead to premature aging of the network component and its cabling.

Provide suitable shade to protect the network component against direct sunlight.

4.2 Types of installation

Types of installation

The SCALANCE XC-100 can be installed in the following ways:

- DIN rail
- S7-300 standard rail
- S7-1500 standard rail
- Wall mounting

Installation clearance

Keep to the minimum clearances so that the convection ventilation of the device is not blocked.

- Below at least 10 cm
- Above at least 10 cm

4.3 Mounting on DIN rails

Installation

Note

Note the position of the securing bar, see also section "Dimension drawings (Page 47)".

When supplied, the securing bar is in the wall mounting position. To change the position of the securing bar, refer to the section "Changing the position of the securing bar (Page 28)".

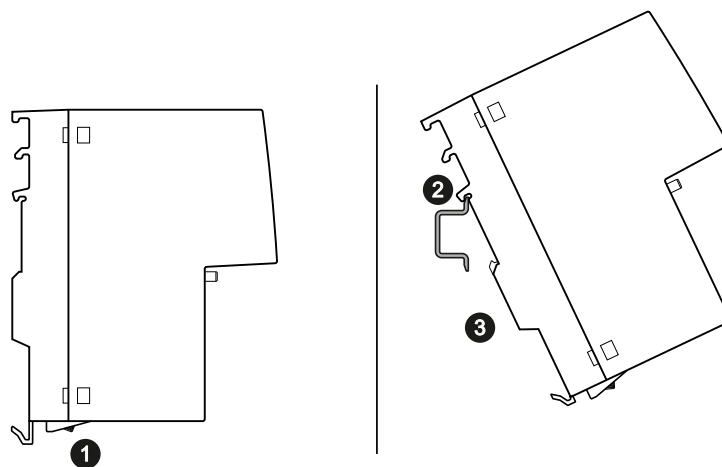


Figure 4-1 DIN rail mounting with securing bar in the wall mounting position.

Securing bar in the wall mounting position (as supplied).

To install the device on a 35 mm DIN rail complying with DIN EN 60715, follow the steps below:

1. Loosen the knurled screw with your hand or a screwdriver.
2. Place the third housing guide of the device on the top edge of the DIN rail.
3. Press the device down against the DIN rail until the spring securing bar locks in place.
4. When you tighten the knurled screw, you cannot release the securing bar (torque 0.5 Nm). The device is additionally fixed.
5. Connect the electrical connecting cables, refer to the section "Connecting up (Page 29)".

Removal

To remove the device from a DIN rail, follow the steps below:

1. Disconnect all connected cables.
2. If necessary, loosen the knurled screw with your hand or a screwdriver.
3. Lever the securing bar down using a screwdriver as far as it will go.
4. Pull the device away from the bottom of the DIN rail with the bar pulled.

Further notes

 WARNING
Safety notice for connecting with a LAN ID (Local Area Network)
A LAN or LAN segment with all the interconnected devices should be contained completely in a single low voltage power distribution in a building. The LAN is designed either for "Environment A" according to IEEE802.3 or "Environment 0" according to IEC TR 62102.
Do not connect any electrical connectors directly to the telephone network (telephone network voltage) or a WAN (Wide Area Network).

5.2 Wiring rules

When wiring use cables with the following AWG categories or cross sections.

Wiring rules for ...		Screw/spring-loaded terminals
connectable cable cross sections for flexible cables ...	without wire end ferrule	0.25 - 2.5 mm ² AWG: 24 - 13
	with wire end ferrule with plastic ferrule**	0.25 - 2.5 mm ² AWG: 24 - 13
	with wire end ferrule without plastic ferrule**	0.25 - 2.5 mm ² AWG: 24 - 13
	with TWIN wire end ferrule**	0.5 - 1 mm ² AWG: 20 - 17
Stripped length of the cable		8 - 10 mm
Wire end ferrule according to DIN 46228 with plastic ferrule**		8 - 10 mm

* AWG: American Wire Gauge

** See note "Wire end ferrules"

Note

Wire end ferrules

Use crimp shapes with smooth surfaces, such as provided by square and trapeze shaped crimp cross sections.

Crimp shapes with wave-shaped profile are unsuitable.

5.3 Power supply

Notes on the power supply



WARNING

Incorrect power supply

Never operate the device with AC voltage or DC voltage higher than 32 V DC.



CAUTION

Damage to the device due to overvoltage

The connector of the external power supply is not protected against strong electromagnetic pulses that can, for example, result from lightning strikes or switching large loads.

One of the tests used to attest the immunity of devices of the IE switches SCALANCE XC-100 to electromagnetic interference was the "surge immunity test" according to EN61000-4-5. This test requires overvoltage protection for the power supply lines. A suitable device is, for example, the Dehn Blitzductor BVT AVD 24, article number 918 422 or a comparable protective element.

Manufacturer: DEHN+SOEHNE GmbH+Co.KG, Hans-Dehn-Str.1, Postfach 1640, D92306 Neumarkt, Germany

Operate the SCALANCE XC-100 with suitable overvoltage protection.

Note

The device can be disconnected from the power supply with the terminal block.

Information on the power supply

- The power supply is connected using a 4-pin plug-in terminal block (spring-loaded terminal). The terminal block ships with the device and can also be ordered as a spare part.
- The power supply can be connected redundantly. Both inputs are isolated. There is no distribution of load.
- The power supply is connected over a high resistance with the enclosure to allow an ungrounded set up. The two power inputs are non-floating.
- Note the wiring rules.

Position and assignment

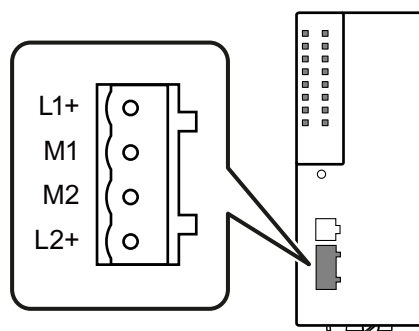


Figure 5-1 Position of the power supply on the SCALANCE XC-100 and the assignment of the terminal block

Contact	Assignment
L1+	L1+ DC 12 ... 24 V
M1	Ground
M2	Ground
L2+	L2+ DC 12 ... 24 V

5.4 Signaling contact

Information on the signaling contact

- The signaling contact is a floating switch that signals error statuses by opening the contact. The signaling contact must be operated within the range of the operating voltage. If an error/fault occurs, the signaling contact opens. In normal operation, the signaling contact is closed.
- The signaling contact is connected using a 2-pin plug-in terminal block (spring-loaded terminal). The terminal block ships with the device and can also be ordered as a spare part.
- Note the wiring rules.

NOTICE

Damage due to voltage being too high

The signaling contact can be subjected to a maximum load of 100 mA (safety extra-low voltage SELV, 24 VDC).

Higher voltages or currents can damage the device!

Position and assignment

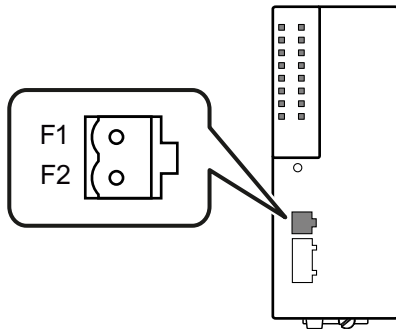


Figure 5-2 Position of the signaling contact on the SCALANCE XC-100 and the assignment of the terminal block

Contact	Assignment
F1	Fault contact 1
F2	Fault contact 2

Signaling faults

- The signaling of errors by the signaling contact is synchronized with the fault LED "F", see section "LED display (Page 18)".
All errors that the fault LED "F" indicates (freely configurable) are also signaled by the signaling contact.
- If an internal fault occurs, the fault LED "F" lights up and the signaling contact opens.
- If you connect a communications node to an unmonitored port or disconnect it, this does not cause an error message.
- The signaling contact remains open until one of the following events occurs:
 - The problem is eliminated.
 - The current status is entered in the fault mask as the new desired status.

5.5 Functional ground

EMC disturbances are diverted to ground via the functional ground. This ensures the immunity of the data transmission.

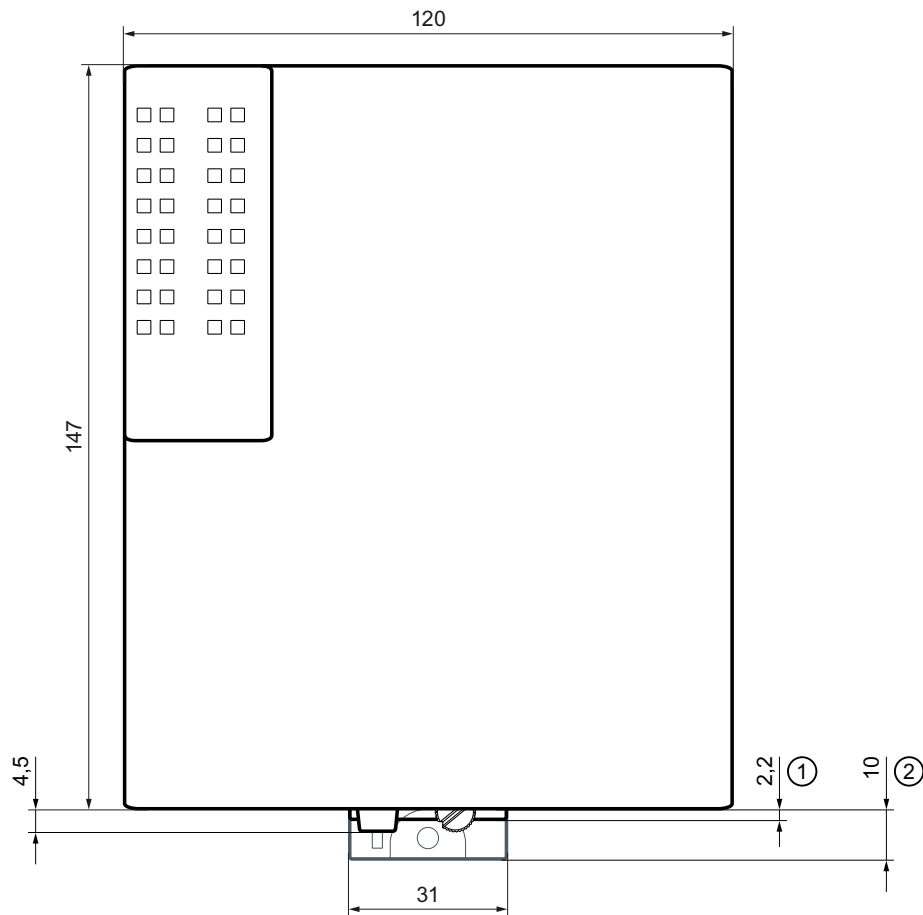
The functional ground must be implemented with low impedance. The connection of the functional ground must be established directly on the mounting plate or the DIN rail terminal.

The IE switch has a grounding screw (fillister head screw with clamping washer und disk) for functional ground, refer to the section "Device views (Page 13)".

The grounding screw is identified by the following symbol for the functional ground .

Follow the steps below to connect the functional ground:

Front view of the SCALANCE XC116, SCALANCE XC124



- ① Securing bar in the rail mounting position
- ② Securing bar in the wall mounting position (as supplied).

Figure 8-2 Width and height