SIEMENS

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Approvals

SIMATIC NET

Industrial Ethernet switches SCALANCE XR-300WG

Operating Instructions

Legal information

Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

DANGER

indicates that death or severe personal injury will result if proper precautions are not taken.



WARNING

indicates that death or severe personal injury may result if proper precautions are not taken.



CAUTION

indicates that minor personal injury can result if proper precautions are not taken.

NOTICE

indicates that property damage can result if proper precautions are not taken.

If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

Qualified Personnel

The product/system described in this documentation may be operated only by personnel qualified for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems.

Proper use of Siemens products

Note the following:



WARNING

Siemens products may only be used for the applications described in the catalog and in the relevant technical documentation. If products and components from other manufacturers are used, these must be recommended or approved by Siemens. Proper transport, storage, installation, assembly, commissioning, operation and maintenance are required to ensure that the products operate safely and without any problems. The permissible ambient conditions must be complied with. The information in the relevant documentation must be observed.

Trademarks

All names identified by ® are registered trademarks of Siemens AG. The remaining trademarks in this publication may be trademarks whose use by third parties for their own purposes could violate the rights of the owner.

Disclaimer of Liability

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

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Introduction

Purpose of the Operating Instructions

These operating instructions support you when installing and connecting up devices of the SCALANCE XR-300WG product group.

The configuration and the integration of the devices in a network are not described in these operating instructions.

Validity of the Operating Instructions

These operating instructions apply to the following devices:

- SCALANCE XR324WG
- SCALANCE XR326-2C PoE WG Including SCALANCE PSR9230PoE accessories
- SCALANCE XR328-4C WG

Unless mentioned otherwise, the descriptions in these operating instructions refer to all devices of the SCALANCE XR-300WG product group named above in the section on validity.

Designations used

Classification	Description	Terms used
Product line	The product line includes all devices and variants of all product groups.	SCALANCE X-300
	If information applies to all product groups within the product line, the term SCALANCE X-300 is used.	
Product group	If information applies to all devices and variants of a product group, the term SCALANCE XR-300WG is used.	SCALANCE XR-300WG
Device	If information relates to a specific device, the device name is used.	e.g. SCALANCE XR328-4C WG
Device group	If information applies to all SCALANCE XR-300WG with Power over Ether-	SCALANCE XR-300PoE WG,
	net, the following terms are used.	PoE variants
	You can recognize the PoE variants by the suffix "PoE" in the type designation.	
Variant	For a variant of the device, the device name has the appropriate variant added to it in brackets. or the characteristic of the variant.	e.g. SCALANCE XR328-4C WG (GE) or 24 VDC variant
	With the variant SCALANCE XR328-4C WG (GE), all ports are capable of Gigabit Ethernet.	

Additional documentation

In addition, note the Operating Instructions of the pluggable transceivers.

When working with the PoE variants, observe the documentation of the PoE power supply SCALANCE PSR9230PoE

You will find the supplementary documentation here:

- On the data medium that ships with some products:
 - Product CD / product DVD
 - SIMATIC NET Manual Collection
- On the Internet pages of Siemens Industry Online Support (https://support.industry.siemens.com/cs/ww/en/ps/15247)

Documentation on configuration

You will find detailed information on configuring the devices in the following configuration manuals:

- SCALANCE XB-200/XC-200/XF-200BA/XF-200G/XP-200/XR-300WG Web Based Management
- SCALANCE XB-200/XC-200/XF-200BA/XF-200G/XP-200/XR-300WG Command Line Interface

You will find the configuration manuals here:

- on the data medium that ships with some products:
 - Product CD / product DVD
 - SIMATIC NET Manual Collection
- On the Internet pages of Siemens Industry Online Support (https://siemens.com/cs/ww/en/ps/24678/man).

Further documentation

In the system manuals "Industrial Ethernet / PROFINET Industrial Ethernet" and "Industrial Ethernet / PROFINET passive network components", you will find information on other SIMATIC NET products that you can operate along with the devices of this product line in an Industrial Ethernet network.

There, you will find among other things optical performance data of the communications partner that you require for the installation.

You will find the system manuals here:

- On the data medium that ships with some products:
 - Product CD / product DVD
 - SIMATIC NET Manual Collection
- On the Internet pages of Siemens Industry Online Support:
 - Industrial Ethernet / PROFINET Industrial Ethernet System Manual (https://support.industry.siemens.com/cs/ww/en/view/27069465)
 - Industrial Ethernet / PROFINET Passive Network Components System Manual (https://example.com/cs/ww/en/view/84922825)

SIMATIC NET manuals

You will find the SIMATIC NET manuals here:

On the Internet pages of Siemens Industry Online Support (https://siemens.com/cs/ww/en/ps/15247).

SIMATIC NET glossary

Explanations of many of the specialist terms used in this documentation can be found in the SIMATIC NET glossary.

You will find the SIMATIC NET glossary here:

- SIMATIC NET Manual Collection or product DVD The DVD ships with certain SIMATIC NET products.
- On the Internet under the following address: 50305045 (https://support.industry.siemens.com/cs/ww/en/view/50305045)

Security information

1.1 Security information

Siemens provides products and solutions with industrial security functions that support the secure operation of plants, systems, machines and networks.

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens' products and solutions constitute one element of such a concept.

Customers are responsible for preventing unauthorized access to their plants, systems, machines and networks. Such systems, machines and components should only be connected to an enterprise network or the internet if and to the extent such a connection is necessary and only when appropriate security measures (e.g. firewalls and/or network segmentation) are in place.

For additional information on industrial security measures that may be implemented, please visit

https://www.siemens.com/industrialsecurity (https://www.siemens.com/industrialsecurity).

Siemens' products and solutions undergo continuous development to make them more secure. Siemens strongly recommends that product updates are applied as soon as they are available and that the latest product versions are used. Use of product versions that are no longer supported, and failure to apply the latest updates may increase customer's exposure to cyber threats.

To stay informed about product updates, subscribe to the Siemens Industrial Security RSS Feed under

https://www.siemens.com/cert (https://www.siemens.com/cert).

1.1 Security information

Note on firmware/software support

Check regularly for new firmware/software versions or security updates and apply them. After the release of a new version, previous versions are no longer supported and are not maintained.

Catalogs

You will find the article numbers for the Siemens products of relevance here in the following catalogs:

- SIMATIC NET Industrial Communication / Industrial Identification, catalog IK PI
- SIMATIC Products for Totally Integrated Automation and Micro Automation, catalog ST 70
- Industry Mall catalog and ordering system for automation and drive technology, Online catalog (https://mall.industry.siemens.com/goos/WelcomePage.aspx?regionUrl=/de&language=en)

You can request the catalogs and additional information from your Siemens representative.

Device defective

If a fault develops, send the device to your SIEMENS representative for repair. Repairs on-site are not possible.

Decommissioning

Shut down the device properly to prevent unauthorized persons from accessing confidential data in the device memory.

To do this, restore the factory settings on the device.

Recycling and disposal



The products are low in pollutants, can be recycled and meet the requirements of the WEEE directive 2012/19/EU for the disposal of electrical and electronic equipment.

Do not dispose of the products at public disposal sites.

For environmentally friendly recycling and the disposal of your old device contact a certified disposal company for electronic scrap or your Siemens contact (Product return (https://support.industry.siemens.com/cs/ww/en/view/109479891)).

Note the different national regulations.

Trademarks

The following and possibly other names not identified by the registered trademark sign * are registered trademarks of Siemens AG:

SCALANCE, C-PLUG, OLM

Safety notices

Read the safety notices

Note the following safety notices. These relate to the entire working life of the device.

You should also read the safety notices relating to handling in the individual sections, particularly in the sections "Installation" and "Connecting up".



To prevent injury and damage, read the manual before using the device.

Safety notices on use in hazardous areas

General safety notices relating to protection against explosion



EXPLOSION HAZARD

Do not open the device when the supply voltage is turned on.

Safety instructions for use in hazardous locations according to UL/FM HazLoc

If you use the device under UL or FM HazLoc conditions, you must also adhere to the following safety instructions in addition to the general safety instructions for protection against explosion:

This equipment is suitable for use in Class I, Division 2, Groups A, B, C and D or non-hazardous locations only.

This equipment is suitable for use in Class I, Zone 2, Group IIC or non-hazardous locations only.

Security recommendations

NOTICE

Information security

Connect to the device and change the standard password for the user set in the factory "admin" and "" before you operate the device.

To prevent unauthorized access to the device and/or network, observe the following security recommendations.

General

- Check the device regularly to ensure that these recommendations and/or other internal security policies are complied with.
- Evaluate the security of your location and use a cell protection concept with suitable products (https://www.industry.siemens.com/topics/global/en/industrial-security/pages/default.aspx).
- When the internal and external network are disconnected, an attacker cannot access internal data from the outside. Therefore operate the device only within a protected network area.
- No product liability will be accepted for operation in a non-secure infrastructure.
- Use VPN to encrypt and authenticate communication from and to the devices.
- For data transmission via a non-secure network, use an encrypted VPN tunnel (IPsec, OpenVPN).
- Separate connections correctly (WBM, SSH etc.).
- Check the user documentation of other Siemens products that are used together with the device for additional security recommendations.
- Using remote logging, ensure that the system protocols are forwarded to a central logging server. Make sure that the server is within the protected network and check the protocols regularly for potential security violations or vulnerabilities.

Physical access

- Restrict physical access to the device to qualified personnel.
- Lock unused physical ports on the device. Unused ports can be used to gain forbidden access to the plant.

Software (security functions)

- Keep the firmware up to date. Check regularly for security updates for the device. You can
 find information on this at the Industrial Security (https://www.siemens.com/
 industrialsecurity) website.
- Inform yourself regularly about security recommendations published by Siemens ProductCERT (https://www.siemens.com/cert/en/cert-security-advisories.htm).
- Only activate protocols that you require to use the device.
- Restrict access to the management of the device with rules in an access control list (ACL).
- The option of VLAN structuring provides protection against DoS attacks and unauthorized access. Check whether this is practical or useful in your environment.
- Use a central logging server to log changes and accesses. Operate your logging server within the protected network area and check the logging information regularly.

Authentication

Note

Accessibility risk - Risk of data loss

Do not lose the passwords for the device. Access to the device can only be restored by resetting the device to factory settings which completely removes all configuration data.

- Replace the default passwords for all user accounts, access modes and applications (if applicable) before you use the device.
- Define rules for the assignment of passwords.
- Use passwords with a high password strength. Avoid weak passwords, (e.g. password1, 123456789, abcdefgh) or recurring characters (e.g. abcabc).
 This recommendation also applies to symmetrical passwords/keys configured on the device.
- Make sure that passwords are protected and only disclosed to authorized personnel.
- Do not use the same passwords for multiple user names and systems.
- Store the passwords in a safe location (not online) to have them available if they are lost.
- Regularly change your passwords to increase security.
- A password must be changed if it is known or suspected to be known by unauthorized persons.
- When user authentication is performed via RADIUS, make sure that all communication takes
 place within the security environment or is protected by a secure channel.
- Watch out for link layer protocols that do not offer their own authentication between endpoints, such as ARP or IPv4. An attacker could use vulnerabilities in these protocols to attack hosts, switches and routers connected to your layer 2 network, for example, through manipulation (poisoning) of the ARP caches of systems in the subnet and subsequent interception of the data traffic. Appropriate security measures must be taken for non-secure layer 2 protocols to prevent unauthorized access to the network. Physical access to the local network can be secured or secure, higher layer protocols can be used, among other things.

Certificates and keys

- There is a preset SSL/TLS (RSA) certificate with 2048 bit key length in the device. Replace this certificate with a user-generated, high-quality certificate with key. Use a certificate signed by a reliable external or internal certification authority. You can install the certificate via the WBM ("System > Load and Save").
- Use certificates with a key length of 4096 bits.
- Use the certification authority including key revocation and management to sign the certificates.
- Make sure that user-defined private keys are protected and inaccessible to unauthorized persons.
- If there is a suspected security violation, change all certificates and keys immediately.
- Use password-protected certificates in the format "PKCS #12".
- Verify certificates based on the fingerprint on the server and client side to prevent "man in the middle" attacks. Use a second, secure transmission path for this.
- Before sending the device to Siemens for repair, replace the current certificates and keys with temporary disposable certificates and keys, which can be destroyed when the device is returned.

Secure/non-secure protocols and services

- Avoid or disable non-secure protocols and services, for example HTTP, Telnet and TFTP. For
 historical reasons, these protocols are available, however not intended for secure
 applications. Use non-secure protocols on the device with caution.
- Check whether use of the following protocols and services is necessary:
 - Non authenticated and unencrypted ports
 - MRP, HRP
 - IGMP snooping
 - LLDP
 - DCP
 - Syslog
 - RADIUS
 - DHCP Options 66/67
 - TFTP
 - GMRP and GVRP

- The following protocols provide secure alternatives:
 - HTTP → HTTPS
 - Telnet → SSH
 - SNMPv1/v2c → SNMPv3

Check whether use of SNMPv1/v2c. is necessary. SNMPv1/v2c is classified as non-secure. Use the option of preventing write access. The device provides you with suitable setting options.

If SNMP is enabled, change the community names. If no unrestricted access is necessary, restrict access with SNMP.

Use the authentication and encryption mechanisms of SNMPv3.

- TFTP → SFTP
- NTP → NTPsecure
- Use secure protocols when access to the device is not prevented by physical protection measures.
- If you require non-secure protocols and services, operate the device only within a protected network area.
- Restrict the services and protocols available to the outside to a minimum.
- If you use RADIUS for management access to the device, activate secure protocols and services.

Interfaces security

- Disable unused interfaces.
- Use IEEE 802.1X for interface authentication.
- Use the function "Locked Ports" to block interfaces for unknown nodes.
- Use the configuration options of the interfaces, e.g. the "Edge Type".
- Configure the receive ports so that they discard all untagged frames ("Tagged Frames Only").

Available protocols

The following list provides you with an overview of the open protocol ports.

The table includes the following columns:

- Protocol
- Port
- Default port status
 - Open

The factory setting of the port is "Open".

Closed

The factory setting of the port is "Closed".

• Configurable port

- /

The port status can be changed.

_ -

The port status cannot be changed.

• Authentication

Specifies whether the communication partner is authenticated.

• Encryption

Specifies whether or not the transfer is encrypted.

List of available services

The following is a list of all available services and their ports through which the device can be accessed.

The table includes the following columns:

Service

The services that the device supports

• Default port status

This is the status of the port in the delivery state (factory setting).

• Configurable port/service

Indicates whether the port number or the service can be configured via WBM / CLI.

• Authentication

Specifies whether the communication partner is authenticated.

If optional, the authentication can be configured as required.

• Encryption

Specifies whether the transfer is encrypted.

If optional, the encryption can be configured as required.

The following is a list of all available protocols and services as well as their ports through which the device can be accessed.

Service	Protocol / Port	Default port	Configurable		Configurable Authentication	
	number	status	Port	Service		
DHCPv4 Server	UDP/67	Closed	-	1	-	-
DHCPv4 Client	UDP/68	Open	-	1	-	-
EtherNet/IP	TCP/44818 UDP/2222 UDP/44818	Closed (Open with EtherNetIP var- iants)	-	✓	-	-
HTTP Server/Client 3)	TCP/80	Closed	✓	✓	✓	-
HTTPS WBM Server/ Client	TCP/443	Open	✓	1	✓	✓
NTP Client	UDP/123	Closed	✓	1	-	-
NTP (secure)	UDP/123	Closed	\	1	✓	-

Service	Protocol / Port	Default port	Config	onfigurable Authentication		Encryption 5)	
	number	status	Port	Service			
PROFINET	UDP/34964	Open		✓	-	-	
	UDP/49151 49159 ¹⁾						
RADIUS Client	UPD/1812 4)	Outbound only	✓	1	-	-	
	UPD/1813 4)						
	UDP/3799	Open	✓	1	-	-	
SFTP Server	UDP/22	Outbound only	✓	1	✓	✓	
SMTP Client	TCP/25	Closed	✓	1	-	-	
SMTP Client (secure)	TCP/465	Closed	✓	✓	✓	✓	
SNMPv1/v2c ^{2) 3)}	UDP/161	Open	✓	✓	-	-	
SNMPv3	UDP/161	Open	✓	✓	Optional	Optional	
SNMP Traps	UDP/162	Outbound only		1	-	-	
SNTP Client	UDP/123	Closed	✓	1	-	-	
SSH CLI Server	TCP/22	Open	✓	1	✓	✓	
Syslog Client	UDP/514	Closed	✓	1	-	-	
Syslog (secure) Client	TCP/6514	Closed	✓	✓	-	✓	
Telnet 3)	TCP/23	Closed	✓	1	✓	-	
TFTP Client	UDP/69	Outbound only	✓	✓	-	-	

¹⁾ Port number can be configured via the WBM.

- 2) Read-only access only.
- 3) Protocol according to Security by Default.
- 4) The port is closed by default and is displayed when a RADIUS server is configured. Port number can be configured via the WBM.
- 5) You can find additional information on the encryption methods used in the WBM appendix "Ciphers used".

The following is a list of all available Layer 2 services through which the device can be accessed.

The table includes the following columns:

• Layer 2 service

The Layer 2 services that the device supports.

Default status

The default status of the service (open or closed).

• Service configurable

Indicates whether the service can be configured via WBM / CLI.

Layer 2 service	Default status	Service configura- ble
DCP	Setup mode 1)	✓
LLDP	Open	✓

Layer 2 service	Default status	Service configura- ble
RSTP	Closed	✓
MSTP	Open	✓

¹⁾ Setting according to Security by Default.

Description of the device

4

4.1 Product overview

Article numbers

Device	Properties	Article number
SCALANCE	24 V DC variant	6GK5 324-0BA00-2AR3
XR324WG	• 24 x 10/100 Mbps RJ45 ports	
	• 2 x 24 VDC, connector for the power supply on the front	
	Grounding screw on the front of the device	
	240 V AC variant	6GK5 324-0BA00-3AR3
	• 24 x 10/100 Mbps RJ45 ports	
	1 x 100 to 240 V AC, power supply connector at rear	
	Grounding screw on the front of the device	
SCALANCE	1 x 100 to 240 V AC, power supply connector at rear	6GK5 326-2QS00-3AR3
XR326-2C PoE WG	• 24 x 10/100/1000 Mbps RJ45 ports	
	• 2 x combo ports (2 x 100/1000/10000 Mbps RJ45 ports/2 x pluggable transceiver slots with 1000/10000 Mbps)	
	Grounding bolt on the back of the device	
	Power over Ethernet at 26 ports	
	1 x 100 to 240 V AC, power supply connector at rear	6GK5 326-2QS00-3RR3
	• 24 x 10/100/1000 Mbps RJ45 ports	
	• 2 x combo ports (2 x 100/1000/10000 Mbps RJ45 ports/2 x pluggable transceiver slots with 1000/10000 Mbps)	
	Grounding bolt on the back of the device	
	Power over Ethernet at 26 ports	
	Reduced approvals	

4.1 Product overview

Device	Properties	Article number
SCALANCE	24 V DC variant	6GK5 328-4FS00-2AR3
XR328-4C WG	• 24 x 10/100 Mbps RJ45 ports	
	• 4 x combo ports (4 x 10/100/1000 Mbps RJ45 ports/4 x pluggable transceiver slots with 1000 Mbps)	
	• 2 x 24 VDC, connector for the power supply on the front	
	Grounding screw on the front of the device	
	240 V AC variant	6GK5 328-4FS00-3AR3
	• 24 x 10/100 Mbps RJ45 ports	
	• 4 x combo ports (4 x 10/100/1000 Mbps RJ45 ports/4 x pluggable transceiver slots with 1000 Mbps)	
	1 x 100 to 240 V AC, power supply connector at rear	
	Grounding screw on the front of the device	
	24 V DC variant	6GK5 328-4FS00-2RR3
	• 24 x 10/100 Mbps RJ45 ports	
	• 4 x combo ports (4 x 10/100/1000 Mbps RJ45 ports/4 x pluggable transceiver slots with 1000 Mbps)	
	• 2 x 24 VDC, connector for the power supply on the front	
	Grounding screw on the front of the device	
	Reduced approvals	
	240 V AC variant	6GK5 328-4FS00-3RR3
	• 24 x 10/100 Mbps RJ45 ports	
	• 4 x combo ports (4 x 10/100/1000 Mbps RJ45 ports/4 x pluggable transceiver slots with 1000 Mbps)	
	• 1 x 100 to 240 V AC, power supply connector at rear	
	Grounding screw on the front of the device	
	Reduced approvals	
	24 VDC variant (GE) 1)	6GK5 328-4SS00-2AR3
	• 24 x 10/100/1000 Mbps RJ45 ports	
	• 4 x combo ports (4 x 10/100/1000 Mbps RJ45 ports/4 x pluggable transceiver slots with 1000 Mbps)	
	• 2 x 24 VDC, connector for the power supply on the front	
	Grounding screw on the front of the device	
	240 VAC variant (GE) 1)	6GK5 328-4SS00-3AR3
	• 24 x 10/100/1000 Mbps RJ45 ports	
	• 4 x combo ports (4 x 10/100/1000 Mbps RJ45 ports/4 x pluggable transceiver slots with 1000 Mbps)	
	1 x 100 to 240 V AC, power supply connector at rear	
	Grounding screw on the front of the device	

 $^{^{1)}}$ variant SCALANCE XR328-4C WG (GE): With the variant SCALANCE XR328-4C WG (GE), all ports are capable of Gigabit Ethernet.

Factory settings: Industrial Ethernet profile

• Industrial Ethernet protocol: PROFINET

• Base Bridge Mode: 802.1Q VLAN Bridge

Redundancy mechanism: RSTP

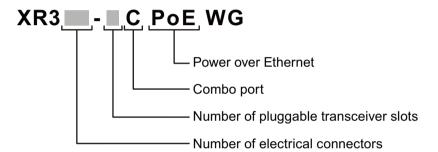
Trust mode: Trust CoS-DSCP

• IGMP Snooping/IGMP Querier: Off

• IPv4 Address Collision Detection: Never give up

Type designation

The type designation of a SCALANCE XR-300WG is made up of several parts that have the following meaning:



Components of the product

The following components are supplied with a SCALANCE XR-300WG:

- One device
- One product DVD with documentation and software

The following components are also supplied with a 24 VDC variant:

• Two 2-terminal blocks for the power supply 24 V DC

The following components are also supplied with a SCALANCE XR-300WG with combo ports:

• 1 cover per pluggable transceiver slot

4.1 Product overview

Unpacking and checking



WARNING

Do not use any parts that show evidence of damage

If you use damaged parts, there is no guarantee that the device will function according to the specification.

If you use damaged parts, this can lead to the following problems:

- Injury to persons
- Loss of the approvals
- Violation of the EMC regulations
- Damage to the device and other components

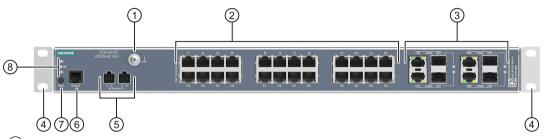
Use only undamaged parts.

- 1. Make sure that the package is complete.
- 2. Check all the parts for transport damage.

4.2 Device views

4.2.1 Device view of a 24 VDC variant

The following figure shows an overview of the components of a 24 VDC variant of a SCALANCE XR-300WG based on the example of a SCALANCE XR328-4C WG.

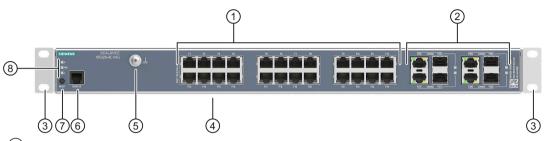


- (1) Grounding screw
- ② Electrical ports with port LEDs
- 3 Combo port ports with port LEDs
- (4) Integrated brackets for 19" rack mounting
- 5 24 VDC power supply, redundant
- 6 Serial interface
- (7) "RESET" button
- 8 LED display
 - The "F" LED for faults
 - The "RM" LED for the redundancy manager function
 - LED "L" for the power supply

4.2 Device views

4.2.2 Device view of 240 VAC variant

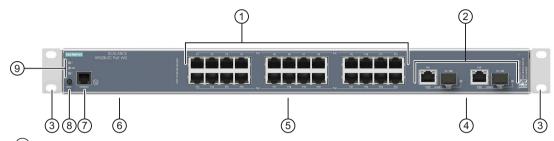
The following figure shows an overview of the components of a 240 VAC variant of a SCALANCE XR-300WG based on the example of a SCALANCE XR328-4C WG.



- 1 Electrical ports with port LEDs
- 2 Combo port ports with port LEDs
- 3 Integrated brackets for 19" rack mounting
- 4 240 V AC power supply (rear)
- (5) Grounding screw
- 6 Serial interface
- (7) "RESET" button
- (8) LED display
 - The "F" LED for faults
 - The "RM" LED for the redundancy manager function
 - LED "L" for the power supply

4.2.3 Device view of a PoE variant

The following figure provides an overview of the components of a PoE variant of a SCALANCE XR 300WG using the example of a SCALANCE XR326-2C PoE WG.



- 1 Electrical ports with port LEDs
- (2) Combo port ports with port LEDs
- (3) Integrated brackets for 19" rack mounting
- 4 240 V AC power supply (rear)
- (5) Grounding bolts (rear)
- 6 Connection for PoE power expansion through external power supply units (rear)
- (7) Serial interface
- (8) "RESET" button
- 9 LED display
 - The "F" LED for faults
 - The "RM" LED for the redundancy manager function
 - LED "L" for the power supply

4.3 Accessories

The following accessories are available for SCALANCE XR-300WG:

Cable

Component	Description	Article number
	Preassembled, serial cable with RJ-11 and RS-232 plug,	6GK5 980-3BB00-0AA5
ble	Length: 3 m	
(RJ-11/RS-232)	pack of 1	

Power cable

Туре	Description	Article number
Power cable	For Germany, France, Spain, Nether-	6ES7 900-0AA00-0XA0
100 to 240 VAC, straight, 3 m	lands, Belgium, Sweden, Austria, Finland	
Power cable	For Great Britain	6ES7 900-0BA00-0XA0
100 to 240 VAC, straight, 3 m		

4.3 Accessories

Туре	Description	Article number
Power cable	For Switzerland	6ES7 900-0CA00-0XA0
100 to 240 VAC, straight, 3 m		
Power cable	For America	6ES7 900-0DA00-0XA0
100 to 240 VAC, straight, 3 m		
Power cable	For Italy	6ES7 900-0EA00-0XA0
100 to 240 VAC, straight, 3 m		
Power cable	For China	6ES7 900-0FA00-0XA0
100 to 240 VAC, straight, 3 m		

PoE power supply

Туре	Input voltage	Output voltage	Output current	Article number
SCALANCE PSR9230PoE	100/240 VAC	54 V DC	4 A	6GK5 923-0PS00-2RA3
	50/60 Hz			

Active plug-in transceiver SFP (100 Mbps)

With active plug-in transceivers, Gigabit slots can be used as Fast Ethernet interfaces.

Туре	Property	Article number
SFP991-1A	1 x 100 Mbps, LC port optical for glass FO cable (multimode), up to max. 5 km	6GK5 991-1AD00-8GA0
SFP991-1LD A	$1 \times 100 \text{ Mbps LC port optical for glass FO cable (single mode) up to max. 26 km}$	6GK5 991-1AF00-8GA0

Note

Active plug-in transceivers can be used with the following devices:

SCALANCE XR328-4C WG

Pluggable transceiver SFP (1000 Mbps)

Туре	Property	Article number
SFP992-1	1 x 1000 Mbps, LC port optical for glass FO cable (multimode), up to max. 750 m	6GK5 992-1AL00-8AA0
	10 packing unit (VPE 10)	6GK5 992-1AL00-8AC0
SFP992-1 (C)	1 x 1000 Mbps, LC port optical, for glass FO cable (multimode), up to max. 750 m, varnished	6GK5 992-1AL00-8FA0
SFP992-1+	1 x 1000 Mbps, LC port optical for glass FO cable (multimode), up to max. 2 km	6GK5 992-1AG00-8AA0
SFP992-1LD	1 x 1000 Mbps LC port optical for glass FO cable (single mode) up to max. 10 km	6GK5 992-1AM00-8AA0
	10 packing unit (VPE 10)	6GK5 992-1AM00-8AC0

Туре	Property	Article number
SFP992-1LD (C)	1 x 1000 Mbps LC port optical for glass FO cable (single mode) up to max. 10 km, varnished	6GK5 992-1AM00-8FA0
SFP992-1LD+	1 x 1000 Mbps LC port optical for glass FO cable (single mode) up to max. 30 km	6GK5 992-1AM30-8AA0
SFP992-1LH	1 x 1000 Mbps LC port optical for glass FO cable (single mode) up to max. 40 km	6GK5 992-1AN00-8AA0
SFP992-1LH+	1 x 1000 Mbps LC port optical for glass FO cable (single mode) up to max. 70 km	6GK5 992-1AP00-8AA0
SFP992-1ELH	1 x 1000 Mbps LC port optical for glass FO cable (single mode) up to max. 120 km	6GK5 992-1AQ00-8AA0

Pluggable transceivers with the supplement (C) in the type name have varnished printed circuit boards (conformal coating).

Note

Restriction for pluggable transceivers

The maximum ambient temperature changes if you use pluggable transceivers:

• If you use pluggable transceivers of the types LH, LH+ or ELH, the maximum ambient temperature is reduced to 50 $^{\circ}$ C.

For the values of the ambient temperature without pluggable transceivers, refer to the section "Technical specifications (Page 67)".

Bidirectional plug-in transceiver SFP

Bidirectional plug-in transceivers feature only one fiber connection. They transmit and receive on two different wavelengths. To establish a connection, you need two matching bidirectional SFPs. The connected SFPs must respectively transmit on the wavelength at which the connection partner receives.

Туре	Properties	Article number
SFP992-1BXMT	1 x 1000 Mbps LC port optical for glass FO (multimode) with max. 500 m, transmits at 1550 nm, receives at 1310 nm	6GK5 992-1AL00-8TA0
SFP992-1BXMR	1 x 1000 Mbps LC port optical for glass FO (multimode) with max. 500 m, transmits at 1310 nm, receives at 1550 nm	6GK5 992-1AL00-8RA0
SFP992-1BX10T	1 x 1000 Mbps LC port optical for glass FO (single mode) with max. 10 km, transmits at 1550 nm, receives at 1310 nm	6GK5 992-1AM00-8TA0
SFP992-1BX10R	1 x 1000 Mbps LC port optical for glass FO (single mode) with max. 10 km, transmits at 1310 nm, receives at 1550 nm	6GK5 992-1AM00-8RA0

SFP+ transceiver

Туре	Properties	Article number
SFP993-1	1 x 10 Gbps, LC port optical for glass FO cable (multimode), up to max. 550 m	6GK5 993-1AT00-8AA0
SFP993-1LD	1 x 10 Gbps, LC port optical for glass FO cable (single mode), up to max. 10 km	6GK5 993-1AU00-8AA0
SFP993-1LH	1 x 10 Gbps, LC port optical for glass FO cable (single mode), up to max. 40 km	6GK5 993-1AV00-8AA0

Can only be operated in SFP+ slots.

Note

Restriction for pluggable transceivers

The maximum ambient temperature changes if you use pluggable transceivers:

• If you use pluggable transceiver SFP993-1LH, the maximum ambient temperature is reduced to 50 $^{\circ}$ C.

For the values of the ambient temperature without pluggable transceivers, refer to the section "Technical specifications (Page 67)".

4.4 LED display

4.4.1 Fault LED "F"

The fault LED "F" indicates the incorrect functioning of the device.

LED color	LED status	Meaning
-	Off	The device is switched off or has not detected a problem.
Red	Lit	The device has detected a problem.
		Using the WBM and CLI, you can set when the device signals an error and which errors should be signaled.

4.4.2 "RM" LED

The "RM" LED indicates whether or not the device is a redundancy manager and whether or not the ring is operating free of error.

LED color	LED status	Meaning
-	Off	The device is not a redundancy manager.
Green	On	The device is a redundancy manager.
		The ring is working without problems, monitoring is activated.
Green	Flashing	The device is a redundancy manager.
		An interruption has been detected on the ring and the device has switched through.

4.4.3 LED "L"

The LED "L" shows whether the power supply is connected.

LED color	LED status	Meaning
Green	Lit	The power supply is connected.
		With a redundant power supply, you can use the configuration to show which power supply is connected.
-	Off	No external power supply is connected.

4.4.4 Port LEDs "P"

The port LEDs indicate the status of the ports.

RJ-45 ports

Each RJ-45 port has 2 integrated LEDs.

The upper green LED shows the status of the link.

LED color	LED status	Meaning
Green	Lit	link exists
-	Off	No link exists

The lower yellow LED shows the status of data reception.

LED color	LED status	Meaning
Yellow	Flashing	Data transfer at the port
-	Off	No data transfer at the port

4.5 RESET button

Pluggable transceiver slots

There is an LED for each plug-in transceiver slot.

LED color	LED status	Meaning
Green	Lit	Link exists
Yellow	Flashing	Data transfer at the port
-	Off	No link exists

4.5 RESET button



EXPLOSION HAZARD

Do not press the RESET button if there is a potentially explosive atmosphere.

Position

The "RESET" button is located on the front of the SCALANCE XR-300WG.

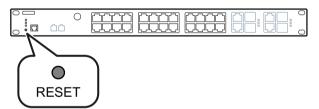


Figure 4-1 Position of the "RESET" button on the SCALANCE XR-300WG

Resetting the device to factory defaults

NOTICE

Previous settings

If you reset, all the settings you have made will be overwritten by factory defaults.

NOTICE

Inadvertent reset

An inadvertent reset can cause disturbances and failures in the configured network.

Requirement

- The device is in operation.
- The function "Reset to factory defaults" is enabled for the RESET button.

Note

Reset despite disabled "RESET" button

If you have disabled the "Reset to Factory Defaults" function for the "RESET" button in the configuration, this does not apply during the startup phase, see section "Restoring the factory settings (Page 64)"

If the function has been disabled in the configuration, it is only disabled on completion of the startup phase.

Procedure

To reset the device to the factory defaults during operation, follow the steps below:

- 1. Press the "RESET" button.
- 2. Hold down the button for approximately 12 seconds. After 9 seconds, the fault LED "F" flashes for 3 seconds.
 - If you release the button after approximately 12 seconds, the device is restarted and the factory settings are restored.
 - If you release the button before the 12 seconds have elapsed, the reset is canceled.

Enabling and disabling the button

In the configuration, you can enable or disable the button function.

4.6 Combo ports

Characteristics

Combo port is the name for two communication ports. A combo port has the two following jacks:

- a fixed RJ-45 port
- an SFP transceiver slot that can be equipped individually

Of these two ports, only one can ever be active. Using the mode, you can decide how the ports are prioritized.

The port name is the same on both jacks of the combo port, for example "PxC".

There is an LED for each plug-in slot. The LEDs for the RJ-45 ports are located directly at the ports. THE LEDs for the pluggable transceiver slots are located to the right and labeled with the port name "PxC"

4.7 Power over Ethernet

Setting the mode

The following modes can be configured for a combo port:

Mode 1: auto

The SFP transceiver port has priority. As soon as an SFP transceiver is plugged in, an existing connection at the fixed RJ-45 port is terminated. If no SFC transceiver is plugged in, a connection can be established via the fixed RJ-45 port.

• Mode 2: **rj45**

The fixed RJ-45 port is independent of the SFP transceiver port.

• Mode 3: **sfp**

The pluggable transceiver port is used independent of the fixed RJ-45 port.

The factory setting for the combo ports is mode 1: auto

You configure the mode with Web Based Management or the Command Line Interface.

4.7 Power over Ethernet

Function

The "Power over Ethernet" function supplies connected devices with power via the Ethernet cable. Devices supplied with power via an Ethernet cable do not require a separate voltage source

PoE-compliant devices can be divided into the following groups:

- Power source (PSE Power Sourcing Equipment) These inject power onto the Ethernet cable.
- Power consumer (PD Powered Device)
 These are supplied with power via the Ethernet cable.

4.7.1 Power and voltage range according to the standard

Note the values specified for the power of the power source, so that the power supply is ensured at the power consumers according to the standard.

PoE class	Power supplied by the power source	Available power at the power source	Туре	Standard	Designation
0	15.4 W	12.95 W	1	IEEE802.3af	PoE
1	4	3.84 W			
2	7	6.49 W			
3	15.4 W	12.95 W			
4	30	25.5 W	2	IEEE802.3at	PoE+
5	45	40 W	3	IEEE802.3bt	4-pair PoE
6	60	51 W			

4.7.2 PoE properties of the devices

Note

Turn off the power source before you disconnect the PoE cable of a power consumer.

Power source

- The device can supply energy consumers of the standards IEEE802.af Type 1, IEEE802.at Type 2 or IEEE802.3bt Type 3.
- A power source can make provide a total of 210 W available (including line losses). The power can be distributed to the ports as desired.
- The total PoE power available can be expanded to up to 570 W using up to two additional SCALANCE PSR9230PoE power supply units. For more information, refer to section "PoE power supply (power expansion) (Page 55)".

PoE ports

- The PoE ports are not isolated from each other. This means that they meet the conditions named in Environment A (IEEE 802.3): Power supply over Ethernet within a power supply system.
- The electrical isolation of the ports is designed for 1500 Vrms (1 minute).
- Ports P1 to P24 support PoE classes 0 to 4. They supply connected devices with up to 30 W per port (according to IEEE802.3af and IEEE802.3at).
- Ports P25 and P26 support PoE classes 0 to 6. They supply connected devices with up to 60 W per port (according to IEEE802.3af, IEEE802.3at and IEEE802.3bt).

Power

- The maximum output power can be configured, e.g. using the WBM.
- If the maximum power is exceeded, the supply is switched off port by port. The order in which the ports are switched off depends on the priority of the ports. The priority can be configured, e.g. using the WBM.
- If the device should provide more power than is available, e.g. due to an incorrect configuration, the output voltage decreases. If the minimum permissible power according to IEEE 802.3bt is fallen below, the supply is switched off port by port (according to priority).

4.7.3 Power transfer and pin assignment (ports P1 - P24)

The table below shows the most important power transfer and pin assignment for ports P1 to P24.

Pin number	Assignment	
Pin 1	Negative power supply	
Pin 2	Negative power supply	
Pin 3	Positive power supply	
Pin 4	-	

4.7 Power over Ethernet

Pin 5	-
Pin 6	Positive power supply
Pin 7	-
Pin 8	-

4.7.4 Power transfer and pin assignment (ports P25 and P26)

The table below shows the most important power transfer and pin assignment for ports P25 and P26.

Pin number	Assignment
Pin 1	Negative power supply
Pin 2	Negative power supply
Pin 3	Positive power supply
Pin 4	Positive power supply
Pin 5	Positive power supply
Pin 6	Positive power supply
Pin 7	Negative power supply
Pin 8	Negative power supply

4.7.5 Configuration

How you activate and configure PoE is described in the configuration manuals, see section "Introduction", section "Documentation on configuration".

Installation and disassembly

Safety notices for installation 5.1

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 40 °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 40 °C.



WARNING

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



▲ WARNING

If the temperature of the cable or housing socket 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 50 °C to 60 °C, only use cables with a permissible operating temperature of at least 85 °C.

NOTICE

Improper mounting

Improper mounting may damage the device or impair its operation.

- Before mounting the device, always ensure that there is no visible damage to the device.
- Mount the device using suitable tools. Observe the information in the respective section about mounting.

5.1 Safety notices for installation

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 of contamination class 1 or 2 (see EN/IEC 60664-1, GB/T 16935.1).



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.

Notes for use in hazardous locations according to ATEX, IECEx, UKEX and CCC Ex

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



WARNING

To comply with EU Directive 2014/34 EU (ATEX 114), UK-Regulation SI 2016/1107 or the conditions of IECEx or CCC-Ex, the housing or cabinet must meet the requirements of at least IP54 (according to EN/IEC 60529, GB/T 4208) in compliance with EN IEC/IEC 60079-7, GB 3836.3.



WARNING

If the temperature of the cable or housing socket exceeds 60 °C or the temperature at the branching point of the cables 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

To fulfill the requirements of the FM approval rack mounting is only possible in a vent free, toolsecured enclosure.



WARNING

Substitution of components may impair suitability for Division 2.



WARNING

Do not remove or replace while circuit is live when a flammable or combustible atmosphere is present.



WARNING

Explosion hazard

Do not disconnect equipment when a flammable or combustible atmosphere is present.



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

Open equipment

The devices are "open equipment" according to the standard IEC 61010-2-201 or UL 61010-2-201 / CSA C22.2 No. 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.

5.2 Types of installation



WARNING

If the temperature at the cable or housing socket or at the branching points of the cables exceeds 60 °C, special precautions must be taken. If the equipment is operated at ambient temperatures in excess of 40 °C, only use cables with permitted operating temperature of at least 80 °C.

Additional notes



CAUTION

Use only approved components

If you use components and accessories that are not approved for SIMATIC NET devices or their target systems, this may violate the requirements and regulations for safety and electromagnetic compatibility.

Only use components approved for the SIMATIC NET devices.

NOTICE

Warming and premature aging of the IE switch due to direct sunlight

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

Provide suitable shade to protect the IE switch against direct sunlight.

Note

During installation and operation, keep to the installation guidelines and safety notices described in this document and in the system manuals "Industrial Ethernet / PROFINET Industrial Ethernet" and "Industrial Ethernet / PROFINET passive network components".

You will find information on the system manuals in the section "Introduction", under "Further documentation".

5.2 Types of installation

The devices can be installed in the following ways:

- 19" rack mounting
- DIN rail
- Wall mounting

Installation position for PoE variants

Horizontal installation position is recommended for PoE variants (inscription is in the read direction). Vertical installation position is also permissible.

5.3 19" rack mounting

Mounting



CAUTION

Risk of injury if subjected to irregular mechanical strain

The device must be mounted in the 19" rack so that even if there is irregular mechanical strain, no dangerous situation can result.

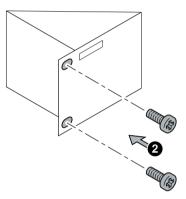


Figure 5-1 19" rack mounting

To install the device in a 19" rack, follow the steps below:

- 1. Position the device at the required location in the 19" rack.
- 2. Screw the two brackets to the 19" rack in each case with 2 securing screws ②.
- 3. Connect the cables, see section "Connecting up (Page 45)".

Uninstalling

To remove the device from a 19" rack, follow the steps below:

- 1. Disconnect all connected cables.
- 2. Undo the securing screws on the mounting brackets
- 3. Remove the device from the 19" rack.

5.4 DIN rail mounting / wall mounting

NOTICE

Rack-mount instructions

- A) Elevated Operating Ambient If installed in a closed or multi-unit rack, the operating ambient temperature of the rack environment may be greater than the room ambient. Therefore consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.
- B) Reduced Air Flow Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.
- C) Mechanical Loading Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
- D) Circuit Overloading Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
- E) Reliable Earthing Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e. g. use of power strips).

5.4 DIN rail mounting / wall mounting

Installation

DIN rail mounting and wall mounting are described in this section, because a DIN rail is required also for wall mounting.

Note that PoE variants have a different guide rail.

Follow these steps to install the device with a DIN rail:

1. In the recess on the top of the housing, there are two guides for receiving a DIN rail. Push the DIN rail into the guides as shown in the following figure:

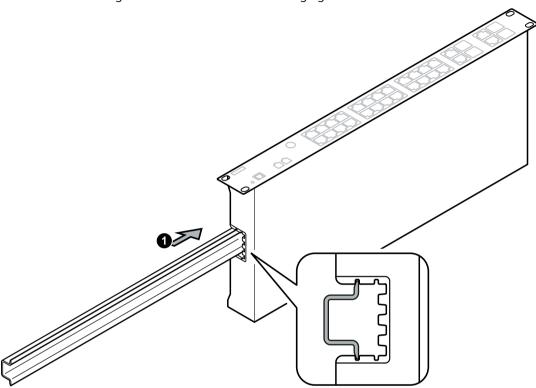


Figure 5-2 Connecting SCALANCE and DIN rail

5.4 DIN rail mounting / wall mounting

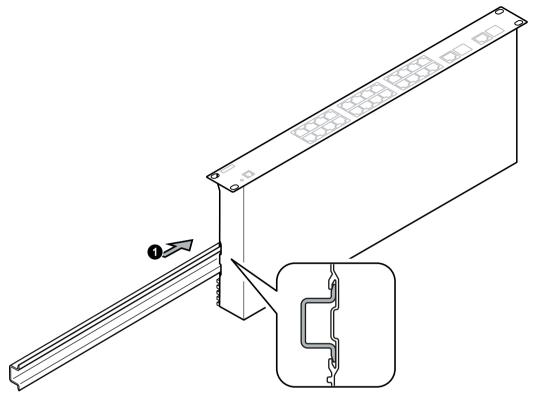
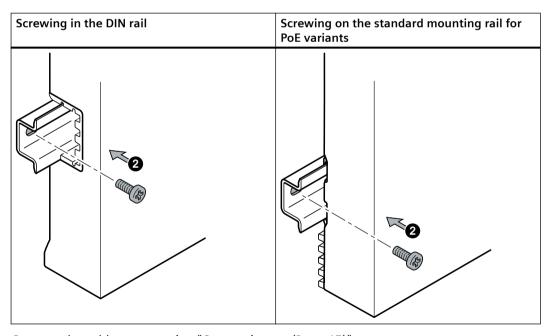


Figure 5-3 Assembling PoE variants and standard mounting rail

2. Screw the protruding ends of the DIN rail to the wall or other surface for attaching the DIN rail.



3. Connect the cables, see section "Connecting up (Page 45)"

Uninstalling

To uninstall the device, follow the steps below:

- 1. Remove all connected cables.
- 2. Loosen the screws of the DIN rail.
- 3. Take the DIN rail out of the housing.

Inserting and removing pluggable transceivers 5.5

5.5.1 General notes for SFP transceivers



⚠ WARNING

Use only approved SFP transceivers

If you use SFP transceivers that have not been approved by Siemens AG, there is no quarantee that the device will function according to its specifications.

If you use unapproved SFP transceivers, this can lead to the following problems:

- Damage to the device
- Loss of the approvals
- · Violation of the EMC regulations

Use only approved pluggable transceivers.

Note

Plugging and pulling during operation

You can plug and pull pluggable transceivers with the device in operation.

Documentation for SFP transceivers

You will find detailed information in the operating instructions of the pluggable transceivers, see the chapter "Introduction (Page 5)" section "Additional documentation".

5.5.2 Using a pluggable transceiver (SFP)

Follow the steps below to insert a pluggable transceiver:

- 1. Remove the sealing plug of the pluggable transceiver slot.
- 2. Close the clip of the pluggable transceiver.

5.6 Disassembly

- 3. Insert the pluggable transceiver in the pluggable transceiver slot until you hear it engage. The pluggable transceiver is then firmly secured.
- 4. Insert the connecting cable into the pluggable transceiver until you hear it engage. The connecting cable is then firmly secured.

5.5.3 Removing a pluggable transceiver (SFP)

Notes on deinstallation





Risk of burns due to the high temperatures of the pluggable transceiver

The pluggable transceivers can be plugged and pulled during operation. Leave the transceiver to cool down.

Procedure

Follow the steps below to remove a pluggable transceiver:

- 1. Remove the connecting cable of the pluggable transceiver.
- 2. Open the clip of the pluggable trabsceiver.
- 3. Remove the pluggable transceiver from the pluggable transceiver slot.

Note

Do not use force

It must be possible to remove the pluggable transceiver easily and without applying any force.

4. Close the pluggable transceiver slot with a sealing plug.

5.6 Disassembly



WARNING

Improper disassembly

Improper disassembly may result in a risk of explosion in hazardous areas.

For proper disassembly, observe the following:

- Before starting work, ensure that the electricity is switched off.
- Secure remaining connections so that no damage can occur as a result of disassembly if the system is accidentally started up.

Connecting up

6.1 Safety when connecting up

Safety notices

When connecting up the device, keep to the safety notices listed below.

If using power sources according to NEC Class 2 or LPS, please note the following information:



WARNING

Power supply

The device is designed for operation with a directly connectable safety extra low voltage (SELV) from a limited power source (LPS).

The power supply therefore needs to meet at least one of the following conditions:

- Only safety extra low voltage (SELV) with limited power source (LPS) complying with IEC 60950-1 / EN 60950-1 / VDE 0805-1 or IEC 62368-1 / EN 62368-1 / VDE 62368-1 may be connected to the power supply terminals.
- The power supply unit for the device must meet NEC Class 2 according to the National Electrical Code (r) (ANSI / NFPA 70).

If the equipment is connected to a redundant power supply (two separate power supplies), both must meet these requirements.



WARNING

Do not remove or replace while circuit is live when a flammable or combustible atmosphere is present.

Note

No light power measurement (PROFINET diagnostics)

The devices do not support diagnostics with light power measurement.

6.1 Safety when connecting up

Safety notices on use in hazardous areas

General safety notices relating to protection against explosion



WARNING

EXPLOSION HAZARD

Do not connect or disconnect cables to or from the device when a flammable or combustible atmosphere is present.



WARNING

EXPLOSION HAZARD

Do not press the RESET button if there is a potentially explosive atmosphere.



WARNING

Suitable cables at high ambient temperatures in hazardous area

At an ambient temperature of \geq 60 °C, use heat-resistant cables designed for an ambient temperature at least 20 °C higher. The cable entries used on the enclosure must comply with the IP degree of protection required by EN IEC / IEC 60079-0, GB 3836.1.



WARNING

Unsuitable cables or connectors

Risk of explosion in hazardous areas

- Only use connectors that meet the requirements of the relevant type of protection.
- If necessary, tighten the connector screw connections, device fastening screws, grounding screws, etc. according to the specified torques.
- Close unused cable openings for electrical connections.
- Check the cables for a tight fit after installation.



WARNING

Lack of equipotential bonding

If there is no equipotential bonding in hazardous areas, there is a risk of explosion due to equalizing current or ignition sparks.

• Ensure that equipotential bonding is available for the device.



▲ WARNING

Unprotected cable ends

There is a risk of explosion due to unprotected cable ends in hazardous areas.

Protect unused cable ends according to IEC/EN 60079-14.



WARNING

Improper installation of shielded cables

There is a risk of explosion due to equalizing currents between the hazardous area and the non-hazardous area.

- Ground shielded cables that cross hazardous areas at one end only.
- Lay a potential equalization conductor when grounding at both ends.



▲ WARNING

Insufficient isolation of intrinsically safe and non-intrinsically safe circuits

Risk of explosion in hazardous areas

- When connecting intrinsically safe and non-intrinsically safe circuits, ensure that the galvanic isolation is performed properly in compliance with local regulations (e.g. IEC 60079-14).
- Observe the device approvals applicable for your country.

Notes for use in hazardous locations according to ATEX, IECEX, UKEX and CCC Ex

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



WARNING

Transient overvoltages

Take measures to prevent transient overvoltages of more than 40% of the rated voltage (or more than 119 V). This is the case if you only operate devices with SELV (safety extra-low voltage).

Safety instructions for use in hazardous locations according to UL/FM HazLoc

If you use the device under UL or FM HazLoc conditions, you must also adhere to the following safety instructions in addition to the general safety instructions for protection against explosion:

6.2 Industrial Ethernet



WARNING

EXPLOSION HAZARD

You may only connect or disconnect cables carrying electricity when the power supply is switched off or when the device is in an area without inflammable gas concentrations.



WARNING

Explosion hazard

Do not disconnect equipment when a flammable or combustible atmosphere is present.



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).

6.2 Industrial Ethernet

6.2.1 Electrical

Note

Strain relief for the Ethernet cables

In order to avoid mechanical stress on the Ethernet cables and resulting interruption of the contact, fasten the cables at a short distance from the connector using a cable guide or busbar.

R-45 connector technology

The attachment to Industrial Ethernet uses RJ-45 connected technology with MDI-X assignment.

Pin assignment

The following table shows the pin assignment of the RJ45 connectors.

Pin number	Assignments for ports up to			RJ45 connector
	Max. 100 Mbps	Max. 1000 Mbps	Max. 10000 Mbps	
Pin 1	RD+	D1+	D1+	
Pin 2	RD-	D1-	D1-	
Pin 3	TD+	D2+	D2+	
Pin 4	n. c. (Not connected)	D3+	D3+	12345678
Pin 5	n. c. (Not connected)	D3-	D3-	
Pin 6	TD-	D2-	D2-	
Pin 7	n. c. (Not connected)	D4+	D4+	
Pin 8	n. c. (Not connected)	D4-	D4-	

MDI / MDI-X autocrossover

With the MPI/MDI-X autocrossover function, the send and receive contacts of an Ethernet port are assigned automatically. The assignment depends on the cable with which the communications partner is connected. This means that it does not matter whether the port is connected using a patch cable or crossover cable. This prevents malfunctions resulting from mismatching send and receive wires. This makes installation much easier for the user.

Note

Formation of loops

Please note that the direct connection of two ports on the IE switch or accidental connection over several IE switches causes an illegal loop. Such a loop can lead to network overload and network failures.

Autonegotiation

Autonegotiation means the automatic detection/negotiation of the transmission rate and the operating mode of ports at the opposite end. This makes it possible to configure different devices automatically.

6.2 Industrial Ethernet

Two components connected to a link segment can exchange information about the transfer and can adapt their settings to each other. The mode with the highest possible speed is set.

Note

- If a port is set permanently to full duplex, the connected partner port must also be set to full duplex.
- If a port operating in the "Auto negotiation" mode is connected to a partner port that is not operating in the "Auto negotiation" mode, the partner port setting must be fixed at 100 Mbps or 10 Mbps half duplex mode.
- If you disable the "Auto negotiation" function, the "MDI/MDI-X autocrossover" function is also turned off. Then use a crossover cable.

Fast Retrain

The devices support the Fast Retrain function in accordance with standard IEEE 802.3. The Fast Retrain function ensures that no link interruptions occur in the case of electromagnetic interferences (EMI) on the connection cable to the partner.

If a Fast Retrain event occurs, the device tries to reestablish the communication to the partner device for a duration of up to 30 ms. Only if this is unsuccessful, is the link disconnected.

During the Fast Retrain procedure no telegrams are transferred via the affected connection.

Note

The function is always enabled and cannot be deactivated.

The function is relevant only for 10 Gbps ports.

There are no Fast Retrain events for port speeds ≤ 1 Gbps.

6.2.2 Optical

NOTICE

Failure of the data traffic due to contamination of optical plug-in connections

Optical sockets and plugs are sensitive to contamination of the end face. Contamination can lead to the failure of the optical transmission network. Take the following precautions to avoid functional impairments:

- Clean the end face of field-assembled connectors carefully before connecting. No residues of processing may remain on the connector.
- Only remove the dust caps of optical transceivers and pre-configured cables shortly before connecting the cables.
- Close unused optical sockets and plugs as well as pluggable transceivers and slots with the supplied protective caps.

LC connector technology

The attachment to Industrial Ethernet uses LC connector technology (Lucent Connector).





Pluggable transceiver slot/ plugged in transceiver

6.3 Wiring rules

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

Wiring rules for		Spring-loaded terminals
connectable cable cross sec-	without wire end ferrule	0.75 - 2.5 mm ²
tions for flexible cables		AWG: 20 - 14
	with wire end ferrule**	0.75 - 2.5 mm ²
		AWG: 20 - 14
	with TWIN wire end ferrule**	0.75 - 1 mm ²
		AWG: 20 - 18
Stripped length of the cable	8 - 10 mm	
Wire end ferrule according to I	8 - 10 mm	

^{*} AWG: American Wire Gauge

^{**} See note "Wire end ferrules"

6.4 24 VDC power supply

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.

6.4 24 VDC power supply

Safety extra low voltage



WARNING

Power supply

The device is designed for operation with a directly connectable safety extra-low voltage (SELV).

NOTICE

Suitable fusing for the power supply cables

The current on the terminal may not exceed 5 A. Use a fuse that protects against currents > 5 A. The fuse must meet the following requirements:

- In areas where NEC or CEC applies:
 - Suitable for DC (min. 60 V / max. 5 A)
 - Breaking current at least 10 kA
 - Approval according to ANSI/UL 248-1 or CSA C22.2 No. 248.1
 - Classes R, J, L, T or CC
 - Suitable for the protection of DC power supply circuits
- In other areas:
 - Suitable for DC (min. 60 V / max. 5 A)
 - Breaking current at least 10 kA
 - Approval in compliance with IEC 60127-1 / EN 601127-1
 - Switch off characteristics: B or C for circuit breakers and fuses
 - Suitable for the protection of DC power supply circuits

You do not need to fuse the supply cable if you only use power sources with a limited power source (LPS) or power sources according to NEC Class 2 for the power supply of the devices.



Overvoltage protection for the power supply cables

If SCALANCE XR-300WGs are supplied over long 24 V power supply lines or networks, measures are necessary to prevent interference by strong electromagnetic pulses on the supply lines. These can result, for example, due to lightning or switching of large inductive loads.

One of the tests used to attest the immunity of the SCALANCE XR-300WG to electromagnetic interference is the "surge immunity test" according to EN 61000-4-5. This test requires overvoltage protection for the power supply lines. The following type is, for example, suitable:

Dehn Blitzductor BVT AVD 24, order number 918 422

Manufacturer: DEHN + SÖHNE GmbH + Co. KG, Hans Dehn Str. 1, Postfach 1640, D-92306 Neumarkt, Germany.

Information on the power supply

- The power supply is connected using two 2-pin plug-in terminal blocks). The terminal blocks ship with the device.
- The power supply can be connected redundantly. Both inputs are isolated. There is no distribution of load. When a redundant power supply is used, the power supply unit with the higher output voltage supplies the SCALANCE XR-300WG alone.
- 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

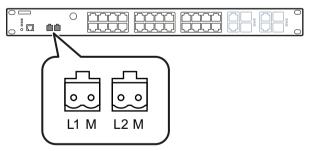


Figure 6-1 Position of the terminal block on the SCALANCE XR-300WG

Contact	Assignment	Contact	Assignment
L1	+24 VDC	L2	+24 VDC
M	Ground	М	Ground

6.5 Power supply 240 VAC

Notes on the power supply



WARNING

Danger from line voltage for devices with a 240 VAC power supply

This device can only function correctly and safely if it is transported, stored, set up, and installed correctly, and operated and maintained as recommended.

Connecting and disconnecting may only be performed by an electrical specialist.

Connect or disconnect power supply cables only when the power is turned off!



WARNING

Devices with a 240 VAC voltage supply do not have an approval for hazardous areas

Devices with a 240 VAC power supply are not approved for use in hazardous areas according to ATEX, IECEx, FM and UL HazLoc.

NOTICE

Securing cables with dangerous voltage

Make sure that the connector cannot be released accidentally by pulling on the connecting cable. Lay the cables in cable ducts or cable channels and secure the cables, where necessary, with cable ties.

Note

Use in IT networks

When used in IT networks, the power supply 240 VAC also applies to the connected IT network: Phase-to-phase.

Information on the power supply

- The power supply is connected using an IEC plug C13/C14. The device installation plug C14 is located on the rear panel of the device.
- The device installation plug is three pin with neutral conductor ①, protective conductor ② and external conductor ③.
- The device is grounded via the power cable.
- The power supply is single (1 x 240 VAC).
- To connect the power supply, use the power cable listed in the section "Accessories (Page 25)".

Position

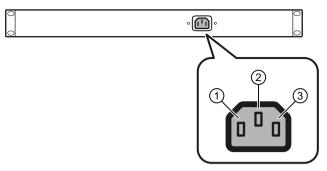


Figure 6-2 Position of the device installation connector

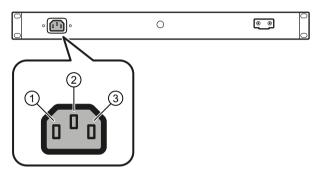


Figure 6-3 Position of the device installation connector in PoE variants

6.6 PoE power supply (power expansion)

Notes on the PoE power supply



WARNING

Danger from line voltage for devices with a 240 VAC power supply

This device can only function correctly and safely if it is transported, stored, set up, and installed correctly, and operated and maintained as recommended.

Connecting and disconnecting may only be performed by an electrical specialist.

Connect or disconnect power supply cables only when the power is turned off!



WARNING

Devices with a 240 VAC voltage supply do not have an approval for hazardous areas

Devices with a 240 VAC power supply are not approved for use in hazardous areas according to ATEX, IECEx, FM and UL HazLoc.

6.6 PoE power supply (power expansion)



WARNING

Restricted access with power expansion

If you expand the PoE power of the device with 1 or 2 power supply units, operate the device including the power supply units in a Restricted access area according to IEC 62368-1.

$oldsymbol{\Lambda}$

WARNING

Only use supplied cable to connect power expansion

A maximum of two SCALANCE PSR9230PoE power supply units are permissible for power expansion of the devices. For the connection, use the supplied power cable (article no. A5E49168671).

The cable is pre-assembled for connection to a switch of the SCALANCE XR-300PoE WG device group.

To connect two SCALANCE PSR9230PoE power supply units to a switch of the SCALANCE XR-300PoE WG device group, connect the two supplied power cables; see section "Power cables for SCALANCE XR326-2C PoE WG". The work must be performed by a specialist according to IEC 62368-1.

NOTICE

Securing cables with dangerous voltage

Make sure that the connector cannot be released accidentally by pulling on the connecting cable. Lay the cables in cable ducts or cable channels and secure the cables, where necessary, with cable ties.

Note

Use in IT networks

When used in IT networks, the power supply 240 VAC also applies to the connected IT network: Phase-to-phase.

Information on the PoE power supply

- The total available PoE power of the SCALANCE XR326-2C PoE WG can be expanded using up to two additional SCALANCE PSR9230PoE power supplies. The expansion must be performed by a specialist.
 - With one additional power supply, the total available PoE power is 390 W.
 - With two additional power supplies, the total available PoE power is 570 W.
- A SCALANCE PSR9230PoE power supply is connected via a 2-pin plug-in terminal block. The connection is located on the back of the device under a cover.
- To connect the PoE power supply, use the power cable (article no. A5E49168671) supplied with the SCALANCE PSR9230PoE power supply unit.

- To connect two SCALANCE PSR9230PoE, connect the two supplied power cables; see section "Power cables for SCALANCE XR326-2C PoE WG".
- Close the connector with the cover when not using the PoE power supply.

Position

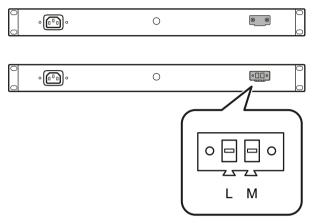


Figure 6-4 Position of the terminal block for the PoE power supply with/without cover

Contact	Assignment
L	+54 V DC
M	Ground

Power cables for SCALANCE XR326-2C PoE WG

To connect a SCALANCE PSR9230PoE PoE power supply, use the preassembled power cable supplied 1.

To connect two SCALANCE PSR9230PoE, you need two power cables ①. Disconnect the plug from one cable. Connect the two free single cores with a plug of the other cable ② as illustrated. The work must be performed by a specialist.

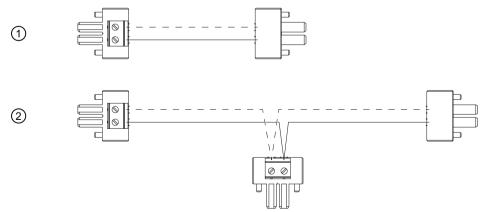


Figure 6-5 Connecting the power cable

6.7 Serial interface

Single core	Assignment
Dashed	+54 V DC
Solid	Ground

Connecting the PoE power supply

You needed the following tools:

- Torx screwdriver, size T10
- Slotted screwdriver, blade width 3.5 mm

Connecting up

To connect the PoE power supply, proceed as follows:

- 1. Loosen the screws of the cover with a Torx screwdriver.
- 2. Remove the cover.
- 3. Insert and screw the plug with a slotted screwdriver (torque 0.5 Nm 0.6 Nm).

Disconnecting

To disconnect the PoE power supply, proceed as follows:

- 1. Switch off the PoE power supply.
- 2. Loosen the screw connection with a slotted screwdriver and pull out the plug.
- 3. Screw the cover with a Torx screwdriver (torque 0.4 Nm).

Documentation

You can find detailed information on the SCALANCE PSR9230PoE PoE power supply in the corresponding operating instructions, see the section "Introduction (Page 5)", "Additional documentation".

6.7 Serial interface

Information on the serial interface

- Via the serial interface (RJ-11 jack), you can access the CLI of the device directly via an RS-232 connection (115200 8N1) without assigning an IP address.
- Access to the device is also possible independent of the Ethernet ports.
- To connect the serial interface to the PC, you require a cable with an RJ-11 plug and 9-pin D-sub female connector. You can order the connecting cable for the serial interface as an accessory.

Position and assignment

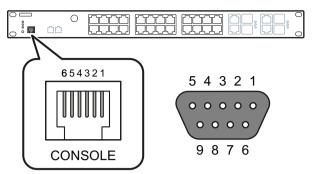


Figure 6-6 Position and pin assignment of the serial interface (RJ-11 socket) on the SCALANCE XR-300WG and pin assignment of the D-sub socket

Assignment of the connecting cable

The connecting cable listed in the "Accessories" section has the following pin assignment:

Contact	Pin assignment of the RJ-11 plug	Pin assignment of the D-sub female connector
1	-	-
2	-	TD (Transmit Data)
3	TD (Transmit Data)	RD (Receive Data)
4	SG (Signal Ground)	-
5	RD (Receive Data)	SG (Signal Ground)
6	-	-
7		-
8		-
9		-

Note

Pin assignment of the RJ-11 jack on the device

The RJ-11 jack on the device has a pinout to match the RJ-11 plug of the connecting cable mentioned above.

6.8 Functional ground

Grounding options

Grounding (functional grounding) takes place via the mounting bracket on the device or via the grounding screw at the front of the device.

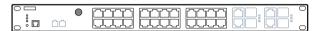


Figure 6-7 Position of the grounding screw on the front of the device.

With 240 VAC variants the device is grounded via the power cable.

Functional ground

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

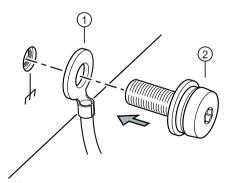
According to EN60204-1 (DIN/VDE 0113 T1) electrical circuits must be grounded. The chassis (0 V) is grounded at one defined point. Grounding is implemented with the lowest leakage resistance to ground in the vicinity of the power feed-in.

With automation components, functional ground also ensures interference-free operation of a controller. Via the functional ground, interference currents coupled in via the connecting cables are discharged to ground.

Connect functional grounding via a grounding screw

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.

To connect the functional ground, use a copper cable of category 20 AWG or a cable with a cross-section $\geq 0.75 \text{ mm}^2$.



- (1) Grounding terminal with cable
- (2) Grounding screw with spring washer and washer

6.9 Protective grounding (PoE variants)

To connect the functional grounding for devices with a grounding screw, proceed as follows:

- 1. Loosen the grounding screw.
- 2. Put the grounding terminal ①, and the grounding screw ② together as shown in the drawing.
- 3. Tighten the grounding screw ② with a maximum tightening torque of 1.5 Nm.

6.9 Protective grounding (PoE variants)

Grounding options

For PoE variants, grounding (protective grounding) takes place using the grounding bolts on the rear of the device.



Figure 6-8 Position of the grounding bolt on the back of the device for PoE variants

Protective grounding

The connection of the reference potential surface with the protective conductor system is normally in the control cabinet close to the power feed-in. This grounding conducts fault currents to ground safely and according to DIN/VDE 0100 is protective grounding to protect people, animals and property from too high contact voltages.

Connect protective grounding via a grounding bolt



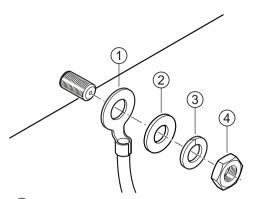
WARNING

Connect the second protective conductor

Due to the possible leakage currents, it is imperative that you connect a second protective conductor permanently to the device. The work must be performed by a specialist according to IEC 62368-1.

To wire a permanently connected protective grounding, use copper cables with a cross-section of $\geq 2.5 \text{ mm}^2$, if the cables are mechanically protected. If the cables are not mechanically protected, use cables with a cross-section of 4.0 mm².

6.9 Protective grounding (PoE variants)



- 1 Grounding terminal with cable
- (2) Washer
- 3 Spring washer
- 4 Nut

To connect the functional grounding for devices with a grounding bolt, proceed as follows:

- 1. Put the parts ①, ② and ③ together on the grounding bolt as shown in the drawing.
- 2. Tighten the nut 4 with a maximum tightening torque of 1.5 Nm.

Upkeep and maintenance

WARNING

Unauthorized repair of devices in explosion-proof design

Risk of explosion in hazardous areas

Repair work may only be performed by personnel authorized by Siemens.

WARNING

Impermissible accessories and spare parts

Risk of explosion in hazardous areas

- Only use original accessories (Page 25) and original spare parts.
- Observe all relevant installation and safety instructions described in the manuals for the device or supplied with the accessories or spare parts.





CAUTION

Hot surfaces

Risk of burns during maintenance work on parts with a surface temperature above 70 °C (158 °F).

- Take appropriate protective measures, for example, wear protective gloves.
- Once maintenance work is complete, restore the touch protection measures.

NOTICE

Cleaning the housing

If the device is not in a hazardous area, only clean the outer parts of the housing with a dry cloth. If the device is in a hazardous area, use a slightly damp cloth for cleaning.

Do not use solvents.

7.1 Downloading new firmware using TFTP without WBM and CLI

Firmware

The firmware is signed and encrypted. This ensures that only firmware created by Siemens can be downloaded to the device.

7.2 Restoring the factory settings

Procedure with Microsoft Windows

You can download new firmware to the device using TFTP. To do this, the device does not need to be reachable either using Web Based Management (WBM) or using the Command Line Interface (CLI). This can be the case if there was a power failure during a firmware update.

When pressing the button, observe the information in the section "AUTOHOTSPOT".

Follow the steps below to load new firmware using TFTP:

- 1. Turn off the power to the device.
- 2. Press the SELECT/SET button and reconnect the device to the power supply with the button pressed.
- 3. Hold down the button until the red fault LED "F" starts to flash.
- Release the button as long as the red error LED is still flashing..
 This time only lasts a few seconds.
 The bootloader of the device waits in this status for a new firmware file that you can download by TFTP.
- 5. Connect a PC to an Ethernet port of the device with an Ethernet cable.
- 6. Assign an IP address to the device using DHCP or SINEC PNI.
- 7. In a Windows command prompt, go to the directory where the file with the new firmware is located and use the following command:

```
tftp -i <IP address> put <firmware file>.
```

Note

You can enable TFTP in Microsoft Windows as follows:

"Control Panel" > "Programs and Features" > "Turn Windows features on or off" > "TFTP Client".

Once the firmware has been transferred completely to the device and validated, the device restarts. This may take a few minutes.

7.2 Restoring the factory settings

NOTICE

Previous settings

If you reset, all the settings you have made will be overwritten by factory defaults.

NOTICE

Inadvertent reset

An inadvertent reset can cause disturbances and failures in the configured network.

With the "RESET" button

Restoring the factory settings during the startup phase

NOTICE

Reset despite disabled "RESET" button

Using the "RESET" button, you can always reset the device parameters to the factory settings during the startup phase of the device. This applies also if the "Reset to Factory Defaults" function was disabled in the configuration. This allows you to reset the device to the factory defaults in an emergency.

If the function has been disabled in the configuration, it is only disabled on completion of the startup phase.

To reset the device to the factory defaults during the startup phase, follow the steps below:

- 1. Turn off the power to the device.
- 2. Now press the "RESET" button and reconnect the power supply to the device while holding down the button.
- 3. Hold down the button until the red error LED "F" stops flashing and is permanently lit.
- 4. Now release the button and wait until the fault LED "F" goes off again.
- 5. The device starts automatically with the factory defaults.

Restoring the factory defaults during operation

You can also reset the device to the factory defaults during operation, see section "RESET button (Page 30)".

Via the configuration

You will find detailed information on resetting the device parameters using the WBM and CLI in the configuration manuals see also section "Introduction (Page 5)":

7.2 Restoring the factory settings

Technical specifications

8.1 Technical specifications of the SCALANCE XR324WG

8.1.1 24 VDC variant

The following technical specifications apply to the 24 VDC variant of the SCALANCE XR324WG.

Technical specifications		
Connection to Industrial	Ethernet	
Electrical connectors	Quantity	24
	Connector	RJ45 jack
	Properties	Half/full duplex, MDI-X pinning
	Transmission speed	10 / 100 Mbps
Diagnostics interface		
Serial interface	Quantity	1
	Connector	RJ-11 jack
Electrical data		
Power supply	Design	Terminal block, 2 terminals
	Rated voltage	24 VDC
	Voltage range	19.2 to 28.8 VDC Safe Extra Low Voltage (SELV)
	Cable cross section	≥ 0.75 mm ² (20 AWG)
	Property	Implemented redundantly
Fusing		5 A / at least 60 V
		Or power supply with LPS or NEC class 2
Current consumption		300 mA
Effective power loss		7.2 W
Permitted ambient cond	itions	
Ambient temperature	During operation up to 3000 m above mean sea level	0 °C to +60 °C
	During operation up to 4000 m above mean sea level	0 °C to +50 °C
	During storage	-40 °C to +85 °C
	During transportation	-40 °C to +85 °C
Relative humidity	During operation at 25 ℃	≤ 95% without condensation
Housing, dimensions and	d weight	
Design	Rack	
Housing material	Metal	
Degree of protection	IP30	
Dimensions (W x H x D)	482.6 x 43.6 x 127 mm	

8.1 Technical specifications of the SCALANCE XR324WG

Technical specifications		
Weight	2700 g	
Installation options	19" rack mounting	
	DIN rail	
	Wall mounting	
Mean time between failure (MTBF)		
MTBF (EN/IEC 61709; 40 °C) > 56 years		

8.1.2 240 VAC variant

The following technical specifications apply to the 240 VAC variant of the SCALANCE XR324WG.

Technical specifications		
Connection to Industrial I	Ethernet	
Electrical connectors	Quantity	24
	Connector	RJ45 jack
	Properties	Half/full duplex, MDI-X pinning
	Transmission speed	10 / 100 Mbps
Diagnostics interface		
Serial interface	Quantity	1
	Connector	RJ-11 jack
Electrical data		
Power supply	Design	Socket, 3 pin
	Rated voltage	100 to 240 V AC
	Voltage range	85 to 264 VAC
	Frequency	50 Hz to 60 Hz
	Frequency range	47 Hz to 63 Hz
	Properties	Not implemented redundantly
Current consumption	At 100 VAC	200 mA
	At 240 V AC	100 mA
Effective power loss		9 W
Permitted ambient condi	tions	
Ambient temperature	During operation up to 3000 m above mean sea level	0 °C to +60 °C
	During storage	-40 °C to +85 °C
	During transportation	-40 °C to +85 °C
Relative humidity	During operation at 25 ℃	≤ 95% without condensation
Housing, dimensions and	weight	
Design	Rack	
Housing material	Metal	
Degree of protection	IP30	
Dimensions (W x H x D)	482.6 x 43.6 x 177 mm	
Weight	3300 g	
Installation options	19" rack mounting	
	DIN rail	
	Wall mounting	
Mean time between failu	re (MTBF)	
MTBF (EN/IEC 61709; 40 °C	C) > 50 years	

8.2 Technical specifications of SCALANCE XR326-2C PoE WG

The following technical specifications apply to the SCALANCE XR326-2C PoE WG.

Connection to	Industrial Ethernet		
Electrical conne		Quantity	24
Liectrical confile	cciois	Connector	RJ45 jack
		Properties	Half/full duplex, MDI-X pinning
Contract	0	Transmission speed	10 / 100 / 1000 Mbps
Combo ports	Quantity	O	2
	Electrical connec- tors	Quantity	2
	1013	Connector	RJ45 jack
		Properties	Half/full duplex, MDI-X pinning
		Transmission speed	100 / 1000 / 10000 Mbps
	Slots for pluggable transceivers	Quantity	2
	transceivers	Connector	SFP transceiver
		Transmission speed	1000 / 10000 Mbps
Diagnostics int	terface		
Serial interface		Quantity	1
		Connector	RJ-11 jack
Electrical data			
Power supply		Design	Socket, 3 pin
		Rated voltage	100 to 240 V AC
		Voltage range	85 to 264 VAC
		Frequency	50 Hz to 60 Hz
		Frequency range	47 Hz to 63 Hz
		Properties	Not implemented redundantly
Current consum	nption	At 100 VAC	Max. 4 A
		At 240 V AC	-
Effective power	loss		Max. 280 W
·			Depending on the effective power loss of the connected PoE consumers
Permitted amb	ient conditions		
Ambient tempe	rature	During operation up to 3000 m above mean sea level	During operation in permitted installation positions $0 ^{\circ}$ C to +60 $^{\circ}$ C
		During storage	-40 °C to +85 °C
		During transportation	-40 °C to +85 °C
Relative humidity		During operation at 25 ℃	≤ 95% without condensation
	nsions and weight	<u> </u>	
Design		Rack	
Housing material		Metal	
Degree of protection		IP30	
Dimensions (W x H x D)		482.6 x 43.6 x 227.3 mm	

Technical specifications		
Weight	4700 g	
Installation options	19" rack mounting	
	DIN rail	
	Wall mounting	
Mean time between failure (MTBF)		
MTBF (EN/IEC 61709; 40 °C)	> 25 years	

8.3 Technical specifications of the SCALANCE XR328-4C WG

8.3.1 24 VDC variant

The following technical specifications apply to the 24 VDC variant of the SCALANCE XR328-4C WG.

Technical spec	ifications		
Connection to	Industrial Ethernet		
Electrical connectors		Quantity	24
		Connector	RJ45 jack
		Properties	Half/full duplex, MDI-X pinning
		Transmission speed	10 / 100 Mbps
Combo ports	Quantity		4
	Electrical connec-	Quantity	4
	tors	Connector	RJ45 jack
		Properties	Half/full duplex, MDI-X pinning
		Transmission speed	10 / 100 / 1000 Mbps
	Slots for pluggable	Quantity	4
	transceivers	Connector	SFP transceiver
		Transmission speed	1000 Mbps
Diagnostics in	terface		
Serial interface		Quantity	1
		Connector	RJ-11 jack
Electrical data			
Power supply		Design	Terminal block, 2 terminals
		Rated voltage	24 VDC
		Voltage range	19.2 to 28.8 VDC Safe Extra Low Voltage (SELV)
		Cable cross section	≥ 0.75 mm² (20 AWG)
		Property	Implemented redundantly
Fusing			5 A / at least 60 V
			Or power supply with LPS or NEC class 2

8.3 Technical specifications of the SCALANCE XR328-4C WG

Technical specifications		
Current consumption		500 mA
Effective power loss		12 W
Permitted ambient conditions		
Ambient temperature 1)	During operation up to 3000 m above mean sea level	0 °C to +60 °C
	During operation up to 4000 m above mean sea level	0 °C to +50 °C
	During storage	-40 °C to +85 °C
	During transportation	-40 °C to +85 °C
Relative humidity	During operation at 25 ℃	≤ 95% without condensation
Housing, dimensions and weigh	nt	
Design	Rack	
Housing material	Metal	
Degree of protection	IP30	
Dimensions (W x H x D)	482.6 x 43.6 x 127 mm	
Weight	2800 g	
Installation options	 19" rack mounting 	
	• DIN rail	
	 Wall mounting 	
Mean time between failure (MT	BF)	
MTBF (EN/IEC 61709; 40 °C)	> 43 years	

¹⁾ Depending on which pluggable transceiver you use, the maximum ambient temperature can change, see section "Accessories (Page 25)".

8.3.2 240 VAC variant

The following technical specifications apply to the 240 VAC variant of the SCALANCE XR328-4C WG.

on speed	24 RJ45 jack Half/full duplex, MDI-X pinning 10 / 100 Mbps 4
on speed	RJ45 jack Half/full duplex, MDI-X pinning 10 / 100 Mbps 4
on speed	Half/full duplex, MDI-X pinning 10 / 100 Mbps 4
	10 / 100 Mbps 4
	4
	4
	RJ45 jack
	Half/full duplex, MDI-X pinning
on speed	10 / 100 / 1000 Mbps
	4
	SFP transceiver
on speed	1000 Mbps
	1
	RJ-11 jack
	Socket, 3 pin
age	100 to 240 V AC
nge	85 to 264 VAC
	50 Hz to 60 Hz
range	47 Hz to 63 Hz
Properties Not implemented redunda	
 C	300 mA
At 240 V AC 150 mA	
	15 W
eration up to 3000 m an sea level	°C to +60 °C
rage	-40 °C to +85 °C
nsportation	-40 °C to +85 °C
eration at 25 ℃	≤ 95% without condensation
3.6 x 177 mm	
	on speed age nge range

8.4 Technical specifications of the SCALANCE XR328-4C WG (GE)

Technical specifications		
Installation options	•	19" rack mounting
	•	DIN rail
	•	Wall mounting
Mean time between failure (MTB	F)	
MTBF (EN/IEC 61709; 40 °C)	> .	39 years

¹⁾ Depending on which pluggable transceiver you use, the maximum ambient temperature can change, see section "Accessories (Page 25)".

8.4 Technical specifications of the SCALANCE XR328-4C WG (GE)

8.4.1 24 VDC variant

The following technical specifications apply to the 24 VDC variant of the SCALANCE XR328-4C WG (GE).

Technical spec	ifications		
Connection to	Industrial Ethernet		
Electrical connectors		Quantity	24
		Connector	RJ45 jack
		Properties	Half/full duplex, MDI-X pinning
		Transmission speed	10 / 100 / 1000 Mbps
Combo ports	Quantity		4
	Electrical connec-	Quantity	4
	tors	Connector	RJ45 jack
Slots for pluggable transceivers		Properties	Half/full duplex, MDI-X pinning
		Transmission speed	10 / 100 / 1000 Mbps
	Quantity	4	
	Connector	SFP transceiver	
		Transmission speed	1000 Mbps
Diagnostics in	terface		
Serial interface		Quantity	1
		Connector	RJ-11 jack
Electrical data			
Power supply		Design	Terminal block, 2 terminals
		Rated voltage	24 VDC
		Voltage range	19.2 to 28.8 VDC Safe Extra Low Voltage (SELV)
		Cable cross section	≥ 0.75 mm ² (20 AWG)
		Property	Implemented redundantly

8.4 Technical specifications of the SCALANCE XR328-4C WG (GE)

Technical specifications		
Fusing		5 A / at least 60 V
		Or power supply with LPS or NEC class 2
Current consumption		900 mA
Effective power loss		21.6 W
Permitted ambient conditions		
Ambient temperature 1)	During operation up to 3000 m above mean sea level	0 °C to +60 °C
	During operation up to 4000 m above mean sea level	0 °C to +50 °C
	During storage	-40 °C to +85 °C
	During transportation	-40 °C to +85 °C
Relative humidity	During operation at 25 ℃	≤ 95% without condensation
Housing, dimensions and weight	i .	
Design	Rack	
Housing material	Metal	
Degree of protection	IP30	
Dimensions (W x H x D)	482.6 x 43.6 x 127 mm	
Weight	2800 g	
Installation options	• 19" rack mounting	
	• DIN rail	
	 Wall mounting 	
Mean time between failure (MTE	BF)	
MTBF (EN/IEC 61709; 40 °C)	> 33 years	

¹⁾ Depending on which pluggable transceiver you use, the maximum ambient temperature can change, see section "Accessories (Page 25)".

8.4.2 240 VAC variant

The following technical specifications apply to the 240 VAC variant of the SCALANCE XR328-4C WG (GE).

Connection to	Industrial Ethernet			
Electrical conne		Quantity	24	
		Connector	RJ45 jack	
		Properties	Half/full duplex, MDI-X pinning	
		Transmission speed	10 / 100 / 1000 Mbps	
Combo ports	Quantity	· · · · · · · · · · · · · · · · · · ·	4	
·	Electrical connec-	Quantity	4	
	tors	Connector	RJ45 jack	
		Properties	Half/full duplex, MDI-X pinning	
		Transmission speed	10 / 100 / 1000 Mbps	
	Slots for pluggable	Quantity	4	
	transceivers	Connector	SFP transceiver	
		Transmission speed	1000 Mbps	
Diagnostics int	erface	·		
Serial interface		Quantity	1	
		Connector	RJ-11 jack	
Electrical data				
Power supply		Design	Socket, 3 pin	
		Rated voltage	100 to 240 V AC	
		Voltage range	85 to 264 VAC	
		Frequency	50 Hz to 60 Hz	
		Frequency range	47 Hz to 63 Hz	
		Properties	Not implemented redundantly	
Current consumption		At 100 VAC	400 mA	
		At 240 V AC	200 mA	
Effective power	loss		27 W	
Permitted amb	ient conditions			
Ambient tempe	rature	During operation up to 3000 m above mean sea level	0 °C to +60 °C	
		During storage	-40 °C to +85 °C	
		During transportation	-40 °C to +85 °C	
Relative humidity		During operation at 25 ℃	≤ 95% without condensation	
Housing, dime	nsions and weight			
Design		Rack		
Housing materi	al	Metal		
Degree of prote	ction	IP30		
Dimensions (W	x H x D)	482.6 x 43.6 x 177 mm		
Weight		3400 g		

Technical specifications		
Installation options	•	19" rack mounting
	• [DIN rail
	• \	Wall mounting
Mean time between failure (MT	3F)	
MTBF (EN/IEC 61709; 40 °C)	> 31	31 years

8.5 Mechanical stability (in operation)

The following technical specifications apply to SCALANCE XR-300WG.

IEC 60068-2-27 shock	IEC 60068-2-6 vibration
15 g, 11 ms duration 6 shocks per axis	10 - 58 Hz: 0.075 mm 85 - 150 Hz: 1 g 1 octave/min, 20 sweeps

8.6 Cable lengths

The cable lengths listed below apply to the SCALANCE XR-300WG.

Cable	Permitted cable length	
IE TP torsion cable	0 to 45 m	
with IE FC Outlet RJ-45 + 10 m TP cord	+ 10 m TP cord	
IE TP torsion cable	0 to 55 m	
with IE FC RJ-45 Plug 180		
IE FC TP Marine / Trailing / Flexible cable	0 to 75 m	
with IE FC Outlet RJ-45 + 10 m TP cord	+ 10 m TP cord	
IE FC TP Marine / Trailing / Flexible cable	0 to 85 m	
with IE FC RJ-45 Plug 180		
IE FC TP standard cable	0 to 90 m	
with IE FC Outlet RJ-45 + 10 m TP cord	+ 10 m TP cord	
IE FC TP standard cable	0 to 100 m	
with IE FC RJ-45 Plug 180		

8.7 Switching properties

The switching properties listed below apply to the SCALANCE XR-300WG.

Switching properties	
Aging time	Can be configured (default value: 30 seconds)
Maximum frame size	2048

8.7 Switching properties

Switching properties				
Max. number of learnable addresses	16382			
Response to LLDP frames	Blocking			
Response to spanning tree BPDU frames	Forwarding			
CoS acc. to IEEE 802.1Q	Yes			
QoS priority queues	4			
Switching technique	Store and forward			
Latency	10 microseconds			
Full wire speed switching	Frame length (bytes)	Number of frames per second		
		At 100 Mbps	At 1000 Mbps	At 10000 Mbps
	64	148810	1488095	13253340
	128	84459	844595	7772816
	256	45290	452899	4346748
	512	23496	234962	2301748
	1024	11973	119732	1184220
	1280	9615	96154	951896
	1518	8127	81274	805448

Note

The number of SCALANCE XR-300WG modules connected in a line influences the frame delay. When a frame passes through IE switches of the SCALANCE XR-300WG product line, it is delayed by the store and forward function of the device:

- with a 64 byte frame length by approx. 10 microseconds (at 100 Mbps)
- with a 1500 byte frame length by approx. 130 microseconds (at 100 Mbps)

This means the more devices of the SCALANCE XR-300WG product line that the frame passes through, the longer the frame delay.

Dimension drawings

Note

Dimensions are specified in mm.

Front view of the SCALANCE XR-300WG

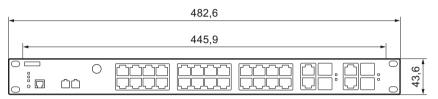


Figure 9-1 Width and height based on the example of a 24 V DC variant

SCALANCE XR-300WG 24 VDC variant view from above

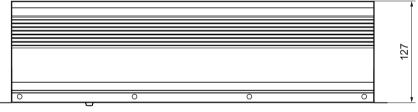


Figure 9-2 Depth

SCALANCE XR-300WG 240 VAC variant view from above

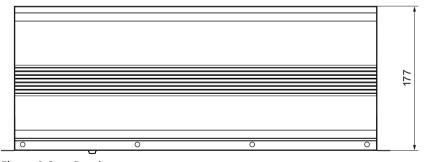


Figure 9-3 Depth

SCALANCE XR-300WG PoE variant view from above

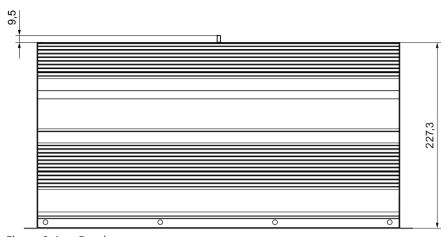


Figure 9-4 Depth

Approvals

The SIMATIC NET products described in these Operating Instructions have the approvals listed below.

Note

Issued approvals on the type plate of the device

The specified approvals apply only when the corresponding mark is printed on the product. You can check which of the following approvals have been granted for your product by the markings on the type plate.

Current approvals on the Internet

You will find the current approvals for the product on the Internet pages of Siemens Industry Online Support (https://support.industry.siemens.com/cs/ww/en/ps/15273/cert).

Notes for the manufacturers of machines

This product is not a machine in the sense of the EC Machinery Directive or the Supply of Machinery (Safety) Regulations (UK).

There is therefore no declaration of conformity relating to the EC Machinery Directive 2006/42/EEC or the Supply of Machinery (Safety) Regulations 2008 (UK) for this product.

If the product is part of the equipment of a machine, it must be included in the procedure for obtaining the EU/UK conformity assessment by the manufacturer of the machine.

Machinery directive

The product is a component in compliance with the EC Machinery Directive 2006/42/EEC and the Supply of Machinery (Safety) Regulations 2008 (UK).

According to the Machinery Directive respectively the Supply of Machinery (Safety) Regulations (UK), we are obliged to point out that the product described is intended solely for installation in a machine.

Before the final product can be put into operation, it must be tested to ensure that it conforms with the Machinery Directive 2006/42/EEC and the Supply of Machinery (Safety) Regulations 2008 (UK).

EC declaration of conformity



The SIMATIC NET products described in these operating instructions meet the requirements and safety objectives of the following EU directives and comply with the harmonized

European standards (EN) which are published in the official documentation of the European Union and here.

2014/34/EU (ATEX explosion protection directive)

Directive of the European Parliament and the Council of 26 February 2014 on the approximation of the laws of the member states concerning equipment and protective systems intended for use in potentially explosive atmospheres, official journal of the EU L96, 29/03/2014, p. 309-356

Note

Only variants with 24 V DC power supply meet the requirements of this approval.

• 2014/35/EU (Low Voltage Directive)

Directive of the European Parliament and of the Council of 26 February 2014 on the harmonization of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits; official journal of the EU L96, 29/03/2014, p. 357-374.

Note

Only variants with 240 V AC power supply meet the requirements of this approval.

2014/30/EU (EMC)

EMC directive of the European Parliament and of the Council of February 26, 2014 on the approximation of the laws of the member states relating to electromagnetic compatibility; official journal of the EU L96, 29/03/2014, p. 79-106

2011/65/EU (RoHS)

Directive of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment, official journal of the EC L174, 01/07/2011, p. 88-110

You will find the EC declaration of conformity for these products on the Internet pages of Siemens Industry Online Support (https://support.industry.siemens.com/cs/ww/en/ps/15273/ cert).

The EC Declaration of Conformity is available for all responsible authorities at:

Siemens Aktiengesellschaft

Digital Industries DE-76181 Karlsruhe Germany

UK Declaration of Conformity



The UK declaration of conformity is available to all responsible authorities at:

Siemens Aktiengesellschaft Digital Industries Process Automation DE-76181 Karlsruhe Germany

Importer UK:

Siemens plc, Manchester M20 2UR

You can find the current UK Declaration of Conformity for these products on the Internet pages under Siemens Industry Online Support (https://support.industry.siemens.com/cs/ww/en/ps/15273/cert).

The SIMATIC NET products described in this document meet the requirements of the following directives:

- UK-Regulation
 SI 2016/1107 Equipment and Protective Systems Intended for use in Potentially Explosive Atmospheres Regulations 2016, and related amendments
- Low-Voltage Directive
 SI 2016/1101 Electrical Equipment (Safety) Regulations 2016
- EMC Regulation
 SI 2016/1091 Electromagnetic Compatibility Regulations 2016, and related amendments
- RoHS Regulation
 SI 2012/3032 Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012, and related amendments

ATEX, IECEx, UKEX and CCC Ex certification



WARNING

Risk of explosion in hazardous areas

When using SIMATIC NET products in hazardous area zone 2, make absolutely sure that the associated conditions in the following document are adhered to:

"SIMATIC NET Product Information Use of subassemblies/modules in a Zone 2 Hazardous Area".

You will find this document

- on the data medium that ships with some devices.
- on the Internet pages under Siemens Industry Online Support (https://support.industry.siemens.com/cs/ww/en/view/78381013).

Enter the document identification number "C234" as the search term.

The markings of the electrical devices are:







II 3 G Ex ec IIC T4 Gc DEKRA 18ATEX0025 X DEKRA 21UKEX0001 X IECEx DEK 18.0017X Importer UK: Siemens plc, Manchester

M20 2UR



(Ex ec IIC T4 Gc, not on the nameplate)



The products meet the requirements of the following standards:

- EN/IEC 60079-7, GB 3836.3
- EN IEC/IEC 60079-0, GB 3836.1

You will find the current versions of the standards in the currently valid certificates.

Note

Only variants with 24 VDC power supply meet the requirements of this approval.

Note for devices with CLASS 1 LASER

Important note on products certified according to Type Examination Certificate KEMA 07ATEX0145 X as of Issue 95 / DEKRA 18ATEX0025 X and IECEx Certificate of Conformity DEK 14.0025X as of Issue 43 / DEK 18.0017X and containing Class 1 optical radiation sources.

Note

CLASS 1 LASER

The device contains optical radiation sources which comply with the limits of Class 1 according to IEC 60825-1. Fiber-optic cables connected to these optical radiation sources may therefore be routed either to or through hazardous areas requiring Category 2G, 3G, 2D or 3D equipment.

Safety of electrical equipment (Low Voltage Directive)

The SIMATIC NET products described in these operating instructions meet the requirements of EU directive 2014/35/EU "Low Voltage Directive".

Applied standard:

EN 62368-1 Equipment for audio/video, information and communication technology – Part 1: Safety requirements

Note

Only variants with 100 to 240 V AC power supply meet the requirements of this approval.

EMC (electromagnetic compatibility)

The SIMATIC NET products described in these operating instructions meet the electromagnetic compatibility requirements according to the EU Directive 2014/30/EU as well as the UK-Regulation SI 2016/1091 and their associated amendments.

Applied standards:

- EN 61000-6-2 Electromagnetic compatibility (EMC) Part 6-2: Generic standards Immunity for industrial environments
- EN 61000-6-4 Electromagnetic compatibility (EMC) Part 6-4: Generic standards Emission standard for industrial environments

You will find the current versions of the standards in the currently valid EC/UK Declaration of Conformity.

RoHS

The SIMATIC NET products described in these operating instructions meet the requirements on the restriction of the use of certain hazardous substances in electrical and electronic equipment according to the EU Directive 2011/65/EU as well as the UK-Regulation SI 2012/3032 and their associated amendments.

Applied standard:

EN IEC 63000

FM

The product meets the requirements of the standards:

- Factory Mutual Approval Standard Class Number 3611
- FM Hazardous (Classified) Location Electrical Equipment: Non Incendive / Class I / Division 2 / Groups A,B,C,D / T4 and Non Incendive / Class I / Zone 2 / Group IIC / T4

Note

Only variants with 24 VDC power supply meet the requirements of this approval.

cULus approval for industrial control equipment



cULus Listed IND. CONT. EQ.

Underwriters Laboratories Inc. complying with

- UL 61010-2-201
- CAN/CSA-IEC 61010-2-201

Report no. E85972

cULus Approval for Information Technology Equipment

cULus Listed I. T. E.

Underwriters Laboratories Inc. according to either

- UL 60950-1 (information technology equipment)
- CSA C22.2 No. 60950-1 (information technology equipment)

or

- UL 62368-1 (information/communication technology)
- CSA C22.2 No. 62368-1 (information/communication technology)

Report no. E115352

cULus Approval Hazardous Location



cULus Listed I. T. E. FOR HAZ. LOC.

Underwriters Laboratories Inc. complying with

- UL 60950-1 (Information Technology Equipment)
- ANSI/ISA 12.12.01-2007
- CSA C22.2 No. 213-M1987

Approved for use in Cl. 1, Div. 2, GP A, B, C, D T4 Cl. 1, Zone 2, GP IIC T4

Report no. E240480

Note

Only variants with 24 VDC power supply meet the requirements of this approval.

Note for Australia - RCM

The product meets the requirements of the RCM standard.

Applied standards:

- AS/NZS CISPR11 (Industrial, scientific and medical equipment Radio-frequency disturbance characteristics Limits and methods of measurement).
- EN 61000-6-4 Electromagnetic compatibility (EMC) Part 6-4: Generic standards Emission standard for industrial environments

You will find the current versions of the standards in the currently valid RCM SDoCs (Self-Declaration of Conformity).

MSIP 요구사항 - For Korea only

A급 기기(업무용 방송통신기자재)

이 기기는 업무용(A급) 전자파 적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정 외의 지역에서 사용하는것을 목적으로 합니다.

Marking for the customs union



EAC (Eurasian Conformity)

Eurasian Economic Union of Russia, Belarus, Armenia, Kazakhstan and Kyrgyzstan

Declaration of conformity according to the technical regulations of the customs union (TR ZU)

FDA and IEC marking

The following devices meet the FDA and IEC requirements listed below:

Device	CLASS 1 LASER Product	
SCALANCE XR324WG	-	
SCALANCE XR328-4C WG	(*)	

^{*} In modular devices, you can find the marking on the plug-in transceiver used or in the relevant operating instructions.



CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Installation guidelines

The devices meet the requirements if you adhere to the installation and safety instructions contained in this documentation and in the following documentation when installing and operating the devices.

- "Industrial Ethernet / PROFINET Industrial Ethernet" System Manual (https:// support.industry.siemens.com/cs/ww/en/view/27069465)
- "Industrial Ethernet / PROFINET Passive Network Components" System Manual (https:// support.industry.siemens.com/cs/ww/en/view/84922825)
- "EMC Installation Guidelines" configuration manual (https:// support.industry.siemens.com/cs/ww/en/view/60612658)



WARNING

Personal injury and property damage can occur

The installation of expansions that are not approved for SIMATIC NET products or their target systems may violate the requirements and regulations for safety and electromagnetic compatibility.

Only use expansions that are approved for the system.

Note

The test was performed with a device and a connected communications partner that also meets the requirements of the standards listed above.

When operating the device with a communications partner that does not comply with these standards, adherence to the corresponding values cannot be guaranteed.

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