SIEMENS

SIMATIC NET

Industrial Wireless LAN
SCALANCE W774-1 /W734-1

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.

Table of contents

Introduction

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1.1 Information on the Operating Instructions

Validity of the Operating Instructions

These operating instructions cover the following products:

	Article number of the RoW version	Article number of the US version	Article number of the IL version
Access points			
SCALANCE W774-1 RJ-45	6GK5774-1FX00-0AA0	6GK5774-1FX00-0AB0	6GK5774-1FX00-0AC0
SCALANCE W774-1 M12 EEC	6GK5774-1FY00-0TA0	6GK5774-1FY00-0TB0	-
Ethernet client module			
SCALANCE W734-1 RJ-45	6GK5734-1FX00-0AA0	6GK5734-1FX00-0AB0	_

These operating instructions apply to the following software version:

- SCALANCE W774/W734 with firmware as of version 6.2

Purpose of the Operating Instructions

Based on the operating instructions, you will be able to install and connect up the SCALANCE W774/W734 correctly. The configuration and the integration of the device in a WLAN are not described in these instructions.

Documentation on the accompanying CD

You will find detailed information about configuration in the SCALANCE W700 configuration manuals on the accompanying SIMATIC NET IWLAN CD under the file name:

PH_SCALANCE-W770-W730-WBM_76.pdf and PH_SCALANCE-W770-W730-CLI_76.pdf

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Note

Make sure that you read the explanations and instructions in the readme.htm file

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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.

Additionally, Siemens' guidance on appropriate security measures should be taken into account. For additional information on industrial security measures that may be implemented, please visit
Link (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
Link (https://www.siemens.com/industrialsecurity).

Trademarks

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SIMATIC NET, SCALANCE, C-PLUG, RCoax

Security recommendations

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To prevent unauthorized access, note the following security recommendations.

General

- You should make regular checks to make sure that the device meets these recommendations and/or other security guidelines.
- Evaluate your plant as a whole in terms of security. 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.
- For communication via non-secure networks use additional devices with VPN functionality to encrypt and authenticate the communication.
- Terminate management connections correctly (WBM. Telnet, SSH etc.).

Physical access

- Restrict physical access to the device to qualified personnel.
- The memory card or the PLUG (C-PLUG, KEY-PLUG, security PLUG) contains sensitive data such as certificates, keys etc. that can be read out and modified.

Software (security functions)

- Keep the software up to date. Check regularly for security updates of the product. You will find information on this on the Internet pages "Industrial Security (http://www.siemens.com/industrialsecurity)"
- Inform yourself regularly about security advisories and bulletins published by Siemens ProductCERT (http://www.siemens.com/cert/en/cert-security-advisories.htm).
- Only activate protocols that you really require to use the device.
- Use the security functions such as address translation with NAT (Network Address Translation) or NAPT (Network Address Port Translation) to protect receiving ports from access by third parties.
- Restrict access to the device with a firewall or rules in an access control list (ACL - Access Control List).
- If RADIUS authentication is via remote access, make sure that the communication is within the secured network area or is via a secure channel.
- The option of VLAN structuring provides good protection against DoS attacks and unauthorized access. Check whether this is practical or useful in your environment.

- Enable logging functions. Use the central logging function to log changes and access attempts centrally. Check the logging information regularly.

- Configure a Syslog server to forward all logs to a central location.

- Use WPA2/ WPA2-PSK with AES to protect the WLAN. If iPCF or iPCF-MC is used, use the AES encryption.

Passwords

- Define rules for the use of devices and assignment of passwords.

- Regularly update passwords and keys to increase security.

- Change all default passwords for users before you operate the device.

- Only use passwords with a high password strength. Avoid weak passwords for example password1, 123456789, abcdefgh.

- Make sure that all passwords are protected and inaccessible to unauthorized personnel.

- Do not use the same password for different users and systems or after it has expired.

Keys and certificates

This section deals with the security keys and certificates you require to set up HTTPS (HyperText Transfer Protocol Secured Socket Layer).

- We strongly recommend that you create your own HTTPS certificates and make them available.
  There are preset certificates and keys on the device. The preset and automatically created HTTPS certificates are self-signed.
  We recommend that you use HTTPS certificates signed either by a reliable external or by an internal certification authority. The HTTPS certificate checks the identity of the device and controls the encrypted data exchange. You can install the HTTPS certificate via the WBM (System > Load and Save).

- Handle user-defined private keys with great caution if you use user-defined SSH or SSL keys.

- Use the certification authority including key revocation and management to sign the certificates.

- Verify certificates and fingerprints on the server and client to avoid "man in the middle" attacks.

- We recommend that you use certificates with a key length of 2048 bits.

- Change keys and certificates immediately, if there is a suspicion of compromise.

Secure/non-secure protocols

- For the DCP function, enable the "DCP read-only" mode after commissioning.

- Avoid and disable non-secure protocols, for example Telnet and TFTP. For historical reasons, these protocols are still available, however not intended for secure applications. Use non-secure protocols on the device with caution.

● The following protocols provide secure alternatives:

  – SNMPv1/v2 → SNMPv3
  Check whether use of SNMPv1 is necessary. SNMPv1 is classified as non-secure. Use the option of preventing write access. The product 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 SNMPv3 in conjunction with passwords.

  – HTTP → HTTPS

  – Telnet → SSH

  – SNTP → NTP

● Use secure protocols when access to the device is not prevented by physical protection measures.

● To prevent unauthorized access to the device or network, take suitable protective measures against non-secure protocols.

● 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.

Available protocols per port

The following list provides you with an overview of the open ports on this device.

The table includes the following columns:

● **Protocol**
All protocols that the device supports

● **Port number**
Port number assigned to the protocol

● **Port status**

  – Open
  The port is always open and cannot be closed.

  – Open (when configured)
  The port is open if it has been configured.

● **Factory setting**

  – Open
  The factory setting of the port is "Open".

  – Closed
  The factory setting of the port is "Closed".
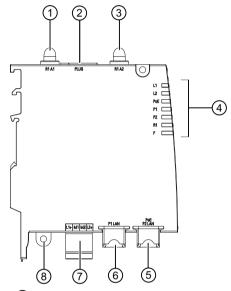
● **Authentication**
Specifies whether or not the protocol is authenticated.

Protocol	Port number	Port status	Factory setting of the port	Authentication
SSH	TCP/22	Open (when config-ured)	Open	Yes
TELNET	TCP/23	Open (when config-ured)	Open	Yes
HTTP	TCP/80	Open (when config-ured)	Open	Yes
HTTPS	TCP/443	Open (when config-ured)	Open	Yes
SNTP **NTP**	UDP/123	Open (when config-ured)	Closed	No
SNMP	UDP/161	Open (when config-ured)	Open	Yes
PROFINET	UDP/34964, UDP/49154, 49155	Open	Open	No
Syslog	UDP/514	Open (when config-ured)	Open	No
EtherNet/IP	TCP/44818, UDP/ 2222,44818	Open (when config-ured)	Open	No
DHCP	UDP/67,68	Open (when config-ured)	Closed	No
RADIUS	UDP/ 1812,1813	Open (when config-ured)	Closed	No
TFTP	UDP/69	Open (when config-ured)	Closed	No

Description of the device

<div style="text-align: right">**3**</div>

3.1 Description of the device

W774-1 /W734-1 RJ-45
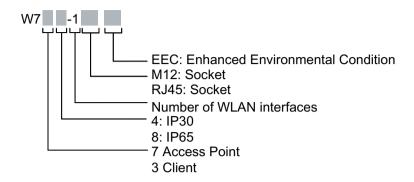
①	Antenna connector R1A1
②	PLUG slot / RESET button
③	Antenna connector R1A2
④	LEDs
⑤	Ethernet connector P2 (PoE capability)
⑥	Ethernet connector P1
⑦	Connector for power supply (L1, L2)
⑧	Eye for grounding (diameter 4.5 mm) / wall mounting

Figure 3-1   Device description of the RJ-45 variant

W774-1 /W734-1 M12
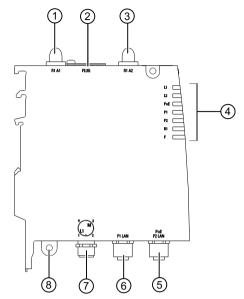

①   Antenna connector R1A1

②   PLUG slot / RESET button

③   Antenna connector R1A2

④   LEDs

⑤   Ethernet connector P2 (PoE capability)

⑥   Ethernet connector P1

⑦   Connector for power supply (L1, L2)

⑧   Eye for grounding (diameter 4.5 mm) / wall mounting

Figure 3-2   Device description of the M12 variant

3.2 Structure of the type designation

The type designation of the device is made up of several parts that have the following meaning:

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W7  -1
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EEC: Enhanced Environmental Condition
M12: Socket
RJ45: Socket
Number of WLAN interfaces
4: IP30
8: IP65
7 Access Point
3 Client

3.3 Components of the product

The following components are supplied with the product:

- SCALANCE W774 or SCALANCE W734

- 2 protective caps for the antenna sockets

- Only with device variant M12

  – 3 protective caps for the M12 sockets

- Only with device variant RJ-45:

  – 4-pin terminal block for the power supply

- 1 screw for mounting on an S7-300 standard rail or S7-1500 standard rail

- SIMATIC NET Industrial Wireless LAN CD

Please check that the consignment you have received is complete. If the consignment is incomplete, contact your supplier or your local Siemens office.

3.4 Accessories

Technical data subject to change.

You will find further information on the accessories program in the Industry Mall. (https://mall.industry.siemens.com)

PLUG

Component	Description	Article number
C-PLUG	Configuration PLUG, Exchangeable storage medium (32 MB) for the configuration data	6GK1900-0AB00
KEY-PLUG features	Enabling of iFeatures and exchangeable storage medium for storage of configuration data	
	KEY-PLUG W780 iFeatures AP	6GK5907-8PA00
	KEY-PLUG W740 iFeatures Client	6GK5907-4PA00
KEY-PLUG W700 Security	W700 Security Enabling of "Inter AP Blocking" and exchangeable storage medium for storage of configuration data	6GK5907-0PA00

M12 data plug-in connector

Component	Description		Article number
IE FC M12 PLUG PRO 2x2	M12 data plug-in connector for IE FC TP cables 2x2, IP65/67, D-coded, axial cable outlet	1 connector per package	6GK1901-0DB20-6AA0
		8 connectors per package	6GK1901-0DB20-6AA8

Cables Industrial Ethernet

Component	Description	Article number
IE FC TP STANDARD CABLE GP2X2 (PROFINET type A)	Standard bus cable, TP installation cable for connection to FC OUTLET RJ-45, for universal use, 4-wire, shielded, CAT 5E Sold by the meter	6XV1840-2AH10
IE FC TP ROBUST STANDARD CABLE GP 2X2 (PROFINET type A)	Standard bus cable, ATPE outer jacket for connection to FC RJ-45 PLUG and FC OUTLET RJ-45, fixed installation, for universal use, 4-wire, shielded, CAT 5 Sold by the meter	6XV1841-2A
IE FC TP ROBUST FLEXIBLE CABLE GP 2X2 (PROFINET type B)	Flexible bus cable, TPE outer jacket for connection to FC RJ-45 PLUG and FC OUTLET RJ-45, flexible wires, 4-wire, shielded, CAT 5 Sold by the meter	6XV1841-2B
IE FC TP FLEXIBLE CABLE GP 2X2 (PROFINET type B)	Flexible bus cable, TP installation cable, flexible wires, shielded, CAT 5 Sold by the meter	6XV1870-2B

Component	Description	Article number
IE FC TP TRAILING CA-BLE 2X2 (PROFINET type C)	Highly flexible bus cable, TP installation cable for connection to FC OUTLET RJ-45, for use in drag chains, 4-wire, shielded, CAT 5 Sold by the meter	6XV1840-3AH10
IE TP TORSION CABLE 2X2 (PROFINET type C)	Highly flexible bus cable, TP installation cable for use in highly flexible applications (torsion), 4-wire Sold by the meter	6XV1870-2F
IE CONNECTING CABLE M12-180/IE RJ45	Flexible IE connecting cable, 4-wire, preassembled with a 4-pin M12 plug (D-coded) and an IE FC RJ-45 plug 145	6XV1871-5T*
IE CONNECTING CABLE M12-180/M12-180	Flexible IE connecting cable, 4-wire, preassembled with two 4-pin M12 plugs (D-coded)	6XV1870-8A*

* Available in different lengths

Cabinet feedthrough

Component	Description	Article number
IE M12 PANEL FEEDTHROUGH	Cabinet feedthrough for conversion from M12 connector technology (D-coded, IP65) to RJ-45 connector technology (IP20) pack of 5	6GK1901-0DM20-2 AA5
IE M12 PANEL FEEDTHROUGH PRO	Cabinet feedthrough for conversion from M12 connector technology (D-coded, IP65) to M12 connector technology (D-coded, IP65) pack of 5	6GK1901-0DM30-2 AA5
IE M12 PANEL FEEDTHROUGH 4X2	Cabinet feedthrough for conversion from M12 connector technology (X-coded, IP65/67) to RJ-45 connector technology (X-coded, IP20) pack of 5	6GK1901-0DM40-2 AA5
N-Connect/N-Connect female/female Panel Feedthrough	Panel feedthrough for wall thicknesses up to a maximum of 4.5 mm, two N-Connect female connectors.	6GK5798-2PP00-2 AA6
N-Connect/SMA-Connect female/female Panel Feedthrough	Panel feedthrough for wall thicknesses up to a maximum of 5.5 mm, two N-Connect/SMA female connectors.	6GK5798-0PT00-2 AA6

Energy cable

Component	Description	Article number
Energy cable 2 x 0.75	Energy cable for connection of signaling contact and power supply 24 VDC, stranded wire 2 x 0.75 mm^2, capable of trailing, not assembled Sold by the meter	6XV1812-8A
Robust Energy Cable 4 x 0.75	Energy cable for connection of power supply 24 VDC, 4-wire stranded 4 x 0.75 mm^2, robust, flexible, not assembled Sold by the meter	6XV1801-2A
M12 PLUG-IN CABLE	Flexible plug-in power cable to connect the power supply 24 VDC, 4-wire, preassembled with a 4-pin M12 plug and an M12 socket (A-coded)	6XV1801-5D*

* Available in different lengths

Socket

Component	Description	Article number
IE POWER M12 CABLE CONNECTOR PRO	Socket for the 24 VDC power supply. 4-pin, A-coded pack of 3	6GK1907-0DC10-6AA3

Lightning protection

Component	Description	Article number
LP798-1N	Lighting protector with N/N female/female connector with gas discharge technology	6GK5798-2LP00-2AA6
LP798-2N	Lighting protector with N/N female/female connector with quarter wave technology	6GK5798-2LP10-2AA6

Terminating resistor

Component	Description	Article number
TI795-1N	Electrical connection N-Connect, male	6GK5795-1TN00-1AA0

3.4.1   Flexible connecting cables and antennas

3.4.1.1   Flexible connecting cables

Flexible connecting cable N-Connect/R-SMA

Flexible connecting cable for connecting an antenna to a SCALANCE W700 with R-SMA connectors, preassembled with a connector N-male and R-SMA male

Length	Article number
0.3 m	6XV1875-5CE30
1 m	6XV1875-5CH10
2 m	6XV1875-5CH20
5 m	6XV1875-5CH50
10 m	6XV1875-5CN10

For railway applications, the following connecting cable are available:

Length	Article number
1 m	6XV1875-5TH10
2 m	6XV1875-5TH20
5 m	6XV1875-5TH50

Flexible connecting cable N-Connect/N-Connect

Flexible connecting cable for connecting an antenna to a SCALANCE W700 with N-Connect connectors.
Preassembled with two N male connectors:

Length	Article number
1 m	6XV1875-5AH10
2 m	6XV1875-5AH20
5 m	6XV1875-5AH50
10 m	6XV1875-5AN10

For railway applications, the following connecting cable are available:

Length	Article number
1 m	6XV1875-5SH10
2 m	6XV1875-5SH20
5 m	6XV1875-5SH50

Flexible connecting cable IWLAN QMA/N-Connect male/female

Adapter cable for connecting a MIMO antenna with QMA connectors with the flexible connecting cables. Preassembled with two connectors QMA male and N-Connect female. pack of 3

Length	Article number
1 m	6XV1875-5JH10

For railway applications, the following connecting cable is available Note: Scope of delivery: Pack of 1

Length	Article number
1 m	6XV1875-5VH10

3.4.1.2 Antennas

Note

When you select an antenna, keep in mind the national approvals for your device.

You will find more information in the following Link (http://www.siemens.com/wireless-approvals)

Type	Properties	Article number
ANT792-4DN	RCoax helical antenna, circular polarization, 4 dBi, 2.4 GHz, N-Connect female.	6GK5792-4DN00-0AA6
ANT792-6MN	Omni antenna, mast/wall mounting, 6 dBi 2.4 GHz, N-Connect female	6GK5792-6MN00-0AA6
ANT792-8DN	Directional antenna, mast/wall mounting, 14 dBi 2.4 GHz, N-Connect female	6GK5792-8DN00-0AA6
ANT793-4MN	RCoax λ5/8 antenna with vertical polarization, 6 dBi, 5 GHz, N-Connect female.	6GK5793-4MN00-0AA6
ANT793-6DG	Wide angle antenna, mast/wall mounting, 9 dBi 5 GHz, 2 x N-Connect female	6GK5793-6DG00-0AA0
ANT793-6DT	Wide angle antenna (MIMO), mast/wall mounting, 8 dBi 5 GHz, 3 x QMA connector female	6GK5793-6DT00-0AA0
ANT793-6MN	Omni antenna, mast/wall mounting, 5 dBi 5 GHz, N-Connect female	6GK5793-6MN00-0AA6
ANT793-8DJ	Directional antenna, mast/wall mounting, 18 dBi 5 GHz, 2 x N-Connect female	6GK5793-8DJ00-0AA0
ANT793-8DK	Directional antenna, mast/wall mounting, 23 dBi 5 GHz, 2 x N-Connect female	6GK5793-8DK00-0AA0

Type	Properties	Article number
ANT795-4MA	Omni antenna, directly on the device, 3/5 dBi 2.4 GHz and 5 GHz, IP30, R-SMA connector male for direct mounting on the device, connector angle adjustable 0° to 180°.	6GK5795-4MA00-0AA3
ANT795-4MC	Omnidirectional antenna, 3/5 dBi, 2.4 GHz and 5 GHz, IP65, N-Connect male for direct installation on the device, straight connector.	6GK5795-4MC00-0AA3
ANT795-4MD	Omnidirectional antenna, 3/5 dBi, 2.4 GHz and 5 GHz, IP65, N-Connect male for direct installation on the device, 90° connector.	6GK5795-4MD00-0AA3
ANT795-6DC	Wide angle antenna, mast/wall mounting, 9 dBi 2.4 GHz and 5 GHz, N-Connect female	6GK5795-6DC00-0AA0
ANT795-4MB	Omnidirectional antenna, 2/3 dBi 2.4 GHz and 5 GHz, IP30, R-SMA connector female for direct mounting on the device, connector angle adjustable 0° to 90°.	6GK5795-4MB00-0Ax0
ANT795-6MN	Omni antenna, mounted on roof/vehicle, 6/8 dBi 2.4 GHz and 5 GHz, N-Connect female	6GK5795-6MN10-0AA6
ANT795-6MT	Omni antenna (MIMO), mounted on roof/vehicle/ceiling, 5/7 dBi 2.4 GHz and 5 GHz, 3 x QMA connector female	6GK5795-6MT00-0AA0
ANT793-8DL	Directional antenna vertical-horizontal polarized, 5 GHz, 14dBi, IP66, 2xN-Connect female	6GK5793-8DL00-0AA0
ANT793-8DP	Directional antenna, mast/wall mounting, 13 / 13.5 dBi 4.9 GHz and 5 GHz, N-Connect female	6GK5793-8DP00-0AA0
ANT795-4MX	Omnidirectional antenna, 2/2,5 dBi, 2.4 GHz and 5 GHz, IP69K, N-Connect male	6GK5795-4MX00-0AA0
ANT795-6MP	Omnidirectional antenna, 5/7 dBi, 2.4 GHz and 5 GHz, IP65/67, N-Connect female	6GK5795-6MP00-0AA0
ANT896-6MM	Omnidirectional antenna for mobile wireless, WLAN and GPS, WLAN: 6/7 dBi, 2.4 GHz and 5 GHz, IP68, IP69 K, QMA-Connect female, port 2	6GK5896-6MM00-0AA0
IWLAN RCoax Cable 2,4 GHz PE 1/2"	Omni antenna, 0 dBi 2.400 - 2.485 GHz, N-Connect female.	6XV1875-2A
IWLAN RCoax Cable 5 GHz PE 1/2"	Omni antenna, 0 dBi 5.150 – 5.875 GHz, N-Connect female.	6XV1875-2D

NOTICE

ANT795-4MA

The ANT795-4MA antenna has degree of protection IP30 and is therefore only suitable for dry environments.

Note

ANT793-8DJ

The antenna ANT793-8DJ may only be used with the flexible connecting cable 6XV1875-5CH50 (5 m length) or 6XV1875-5CN10 (10 m length). Other flexible connecting cables are not permitted.

Notice for USA/Canada

Only one antenna per device can be used (connected to R1A1, R1A2 or R2A1, R2A2).

Note

ANT793-8DK

The antenna ANT793-8DK may only be used with the flexible connecting cable 6XV1875-5CN10 (10 m length). Other flexible connecting cables are not permitted.
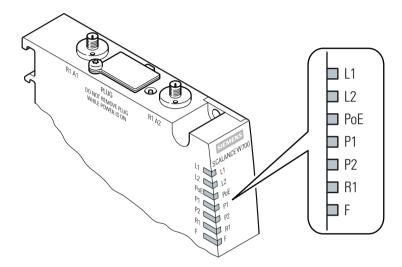
Notice for USA/Canada

Only one antenna per device can be used (connected to R1A1, R1A2 or R2A1, R2A2).

3.5 LED display

Information on operating status and data transfer

On the front of the housing, several LEDs provide information on the operating status of the device:

LED	Color	Meaning
L1	Off	Power supply too low
	Green	Power supply L1 is applied.
L2	Off	Power supply too low
	Green	Power supply L2 is applied.
PoE	Green	Power supply using Power over Ethernet.
P1	Green	There is a connection via the first Ethernet interface (Link).
	Green and yellow flashing alternately	Data transfer via the first Ethernet interface.
P2	Green	There is a connection via the second Ethernet interface (Link).
	Green and yellow flashing alternately	Data transfer via the second Ethernet interface.

LED	Color	Meaning
R1	Green	*SCALANCE W774 in access point mode:* The WLAN interface is initialized and ready for operation. *SCALANCE W774 in client mode or SCALANCE W734:* There is a connection via the WLAN interface.
	Green and yellow flashing alternately	Data transfer over the WLAN interface.
	Green flashing briefly	*SCALANCE W774 in access point mode:* With 802.11h, the channel is scanned for one minute for primary users before the channel can be used for data traffic. *SCALANCE W774 in client mode or SCALANCE W734:* The client waits for the MAC address due to the setting "Automatic" for the "MAC mode" parameter and is connected to no access point.
	Green flashing 3 x short, 1 x long	*SCALANCE W774 in client mode or SCALANCE W734:* The client waits for the MAC address due to the setting "Automatic" for the "MAC mode" parameter and is connected to an access point.
F	Red	An error occurred during operation with the device.
	Red R1 flashing yellow at the same time	A primary user was found on all enabled channels.
	Red: Flashes at the interval: 2 sec. on / 0.2 sec. off	An upgrade/downgrade of the firmware is installed from the plug: Afterwards the device is restarted and the device configuration incl. users and certificates stored on the PRESET-PLUG is transferred to the device.
P1 P2 R1	Flashing yellow	"Flashing" enabled using SIMATIC NET Primary Setup Tool (PST).

Note

Primary user (radar) on all enabled channels

If the device detects a primary user (for example radar signals) on all enabled channels of the WLAN interface, the LED **F** is lit and **R1** flashes. No data traffic is then possible for the next 30 minutes. After this time, the device runs the scan again and checks whether a primary user still exists. If no primary user is detected, data traffic is possible again.

The wait time of 30 minutes is necessary due to legal requirements and cannot be shortened even by restarting the device.
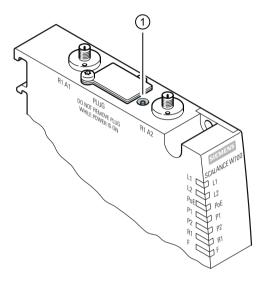

3.6 Reset button

Position

NOTICE
Loss of water and dust protection
If the cover is not mounted correctly, the device is not water and dust proof.

The reset button (position ①) is on the top of the housing:

Functions of the reset button

The reset button has the following functions:

- **Restart of the device**
  To restart the device, press the Reset button briefly.

  Note

  If you make changes to the configuration and restart immediately afterwards with the reset button, the changes may be lost. If you restart the device using the WBM (menu command "System > Restart") or using the CLI (command "restart" in the Privileged EXEC Modus), the configuration changes are always retained.

  Upkeep and maintenance

- **Loading new firmware**
  If the "Load & Save" menu command of Web Based Management is unsuccessful, the reset button can be used to load new firmware. This situation can occur if there is a power outage during the normal firmware update. You will find further information in the configuration manual in Downloading new firmware using TFTP without WBM and CLI.

- **Resetting the device to the factory defaults**
  The device can be reset to the factory defaults during operation. You will find more detailed information in the configuration manual in Resetting the device to factory defaults.

NOTICE
Previous settings
If you reset, all the changes 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 further consequences.

Mounting

<div style="text-align: right; font-size: 3em;">4</div>

> ⚠️ **CAUTION**
>
> **Minimum distance to antennas**
>
> Fit the device so that there is a minimum clearance of 20 cm between antennas and persons.

> ⚠️ **WARNING**
>
> If a device is operated in an ambient temperature of more than 50 °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 50 °C.

> ⚠️ **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.

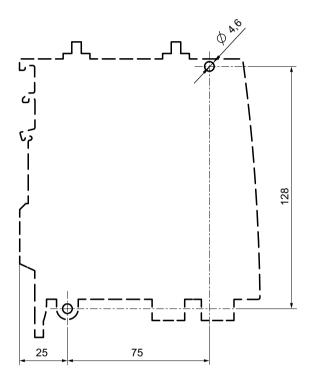**General notes on use according to ATEX and IECEx**

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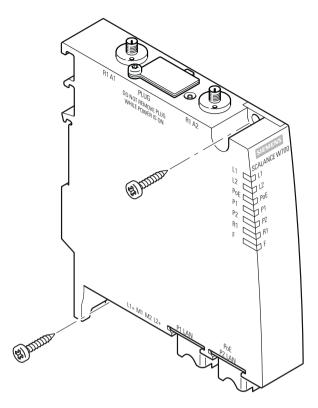
4.1 Wall mounting

Drilling template

The location of the holes for mounting the SCALANCE W774/W734 on a wall is shown in the following figure:

Procedure

1. Prepare the drill holes for wall mounting. For the precise dimensions, refer to the drilling template.

2. Secure the device to the wall with two screws (M4). The screws are not supplied with the device.
   The type and length of the screws depend on the type of wall.

3. Mount the connecting cables and the antenna, see section "Connecting up (Page 35)".

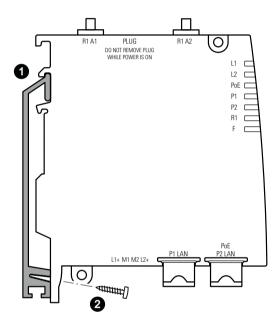## 4.2 Installing on an S7-300 standard rail

Procedure

> ⚠ **WARNING**
>
> **Danger of injury by falling objects**
>
> When used in an area with heavy load, the device is not adequately supported on an S7-300 standard rail. Under such conditions, the device can come out of the mounting.
>
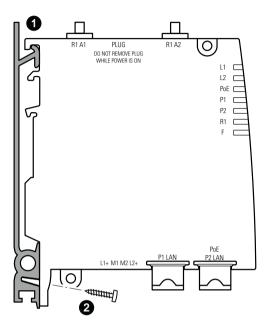> If you use the device in a heavy load area, mount it on an S7-1500 mounting rail or on the wall.

Follow the steps below to fit the SCALANCE W774/W734 to an S7-300 standard rail:

1. Place the device on the upper edge of the S7-300 standard rail as shown in the figure.

2. Screw the housing to the S7-300 standard rail. The required screw ships with the SCALANCE W774/W734.

3. Mount the connecting cables and the antenna, see section "Connecting up (Page 35)".

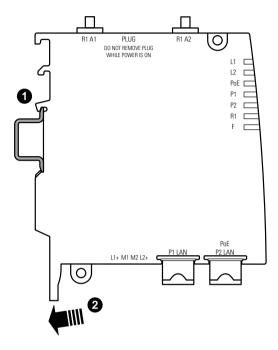# 4.3 Installing on an S7-1500 standard rail

Procedure

Follow the steps below to fit the SCALANCE W774/W734 to an S7-1500 standard rail:

1. Place the device on the upper edge of the S7-1500 standard rail as shown in the figure.

2. Screw the housing to the S7-1500 standard rail. The required screw ships with the device.

3. Mount the connecting cables and the antenna, see section "Connecting up (Page 35)".

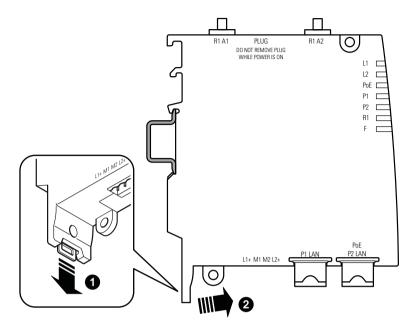## 4.4   Installing on a DIN rail / removing

Procedure for installation

Follow the steps below to fit the SCALANCE W774/W734 to a DIN rail:

1. Place the device on the upper edge of the DIN rail as shown in the figure.

2. Press the device against the DIN rail until the DIN rail slider catch locks in place.

3. Mount the connecting cables and the antenna, see section "Connecting up (Page 35)".

Procedure when removing

Follow the steps below to remove the SCALANCE W774/W734 from a DIN rail:

1. Turn off the power to the device.

2. Disconnect all connected cables.

3. Pull the DIN rail slider down with a screwdriver.

4. Tilt the SCALANCE W774/W734 forward and remove the device from the DIN rail.

Connection 5

Safety notices

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

> ⚠ **WARNING**
>
> **EXPLOSION HAZARD**
>
> SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2 OR ZONE 2.

> ⚠ **WARNING**
>
> **EXPLOSION HAZARD**
>
> DO NOT OPEN WHEN ENERGIZED.

Note

Strain relief of the interfaces

To prevent weights or mechanical movement that can affect an interface causing interrupted contact, fix the cables to a cable guide or rail at short intervals.

Note

Close unused sockets

Close all unused M12 sockets with protective caps (torque at least 0.4 Nm) to achieve the specified type of protection.

5.1 Lightning protection, power supply and grounding

Lightning protection

⚠ WARNING
Danger due to lightning strikes
Antennas installed outdoors must be within the area covered by a lightning protection system. Make sure that all conducting systems entering from outdoors can be protected by a lightning protection potential equalization system.
When implementing your lightning protection concept, make sure you adhere to the VDE 0182 or IEC 62305 standard.

Suitable lightning protectors are available in the accessories (Page 15) of SIMATIC NET Industrial WLAN.

Note

We recommend that you use the maintenance-free lightning protector LP798-2N.

Exception: When there is also DC power supplied via the antenna cable. In this case, only the lightning protector LP798-1N can be used.

⚠ WARNING
Danger due to lightning strikes
Installing this lightning protector between an antenna and a SCALANCE W700 is not adequate protection against a lightning strike. The LP798-1N lightening protector only works within the framework of a comprehensive lightning protection concept. If you have questions, ask a qualified specialist company.

Note

The requirements of EN61000-4-5, surge immunity tests on power supply lines, are met only when a Blitzductor is used with 24 VDC:

BVT AVD 24
article number: 918 422
Manufacturer: DEHN+SÖHNE GmbH+Co.KG, Hans Dehn Str. 1, Postfach 1640,
D - 92306 Neumarkt, Germany

Supply voltage

> **⚠ WARNING**
>
> **Safety extra low voltage**
>
> The equipment is designed for operation with Safety Extra-Low Voltage (SELV) by a Limited Power Source (LPS).
>
> This means that only SELV / LPS (Limited Power Source) complying with IEC 60950-1 / EN 60950-1 / VDE 0805-1 must be connected to the power supply terminals or the power supply unit for the equipment power supply must comply with NEC Class 2, as described by 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**
>
> **Transient overvoltages**
>
> Take measures to prevent transient voltage surges of more than 40% of the rated voltage. This is the case if you only operate devices with SELV (safety extra-low voltage).

Grounding

> **⚠ WARNING**
>
> **Danger to life from overvoltage, fire hazard**
>
> When using outdoor antennas, the shared or even grounded pin of the circuit must be connected to the shield of the coaxial cable and with all touchable conductive parts and circuits. Otherwise, in the event of a fault there may be illegally high voltages on touchable parts.

> **NOTICE**
>
> **Damage to the device due to potential differences**
>
> To fully eliminate the influence of electromagnetic interference, the device must be grounded. There must be no potential difference between the following parts, otherwise the device or other connected device could be severely damaged:
> * Housing of the SCALANCE W700 and the ground potential of the antenna.
> * Housing of the SCALANCE W700 and the ground potential of a device connected over Ethernet.
> * Housing of the SCALANCE W700 and the shield contact of the connected Ethernet cable.
>
> Connect both grounds to the same foundation earth or use an equipotential bonding cable.

General notes on use according to ATEX and IECEx

⚠ WARNING
EXPLOSION HAZARD
DO NOT CONNECT OR DISCONNECT EQUIPMENT WHEN A FLAMMABLE OR COMBUSTIBLE ATMOSPHERE IS PRESENT.

General notes on use in hazardous areas according to UL-HazLoc

⚠ 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.

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.

5.2 Power supply

Note

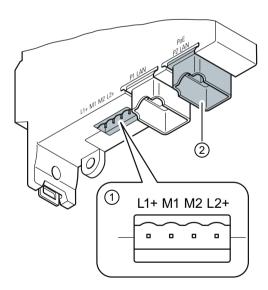**Galvanic isolation of the power supply unit**

To ensure dielectric strength according to IEEE 802.3, the supplying 24 V power supply unit must be galvanically isolated with a dielectric strength of 1500 VAC. The galvanic isolation must also not be bridged by other devices connected to the same power supply unit.

SCALANCE W774/W734 RJ-45

For the power supply, there are two options with the SCALANCE W774/W734:

- Direct feed in via the four-pin socket (position ①)
  For the direct feed-in power supply use copper cables with the following properties:

  - Round cable cross-section with 6 to 8 mm diameter.

  - Two-wire cable with 0.5 to 1.5 mm2 cross-section per wire.

  - Permitted tensile load at least 100 N. - UL

  - Listing of the cables according to the national installation regulations. In areas where NEC or CEC applies: Type PTLC or ITC

- Power over Ethernet via the RJ-45 Ethernet interface P2 (position ②). The other Ethernet interface P1 is not capable of PoE.
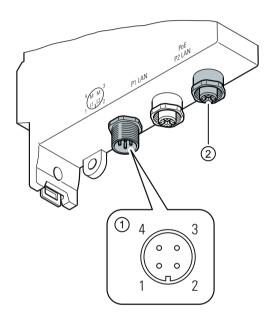
The four-pin connecting socket has the following pin assignment:

Pin	Assignment
L1+	24 VDC
M1	Ground
M2	Ground
L2+	24 VDC

SCALANCE W774 M12 EEC

For the power supply, there are two options with the SCALANCE W774 M12 EEC:

- Direct feed in via the four-pin M12 socket (position ①)

  – Round cable cross-section with 6 to 8 mm diameter.

  – Two-wire cable with 0.5 to 1.5 mm2 cross-section per wire.

  – Permitted tensile load at least 100 N. - UL

  – Listing of the cables according to the national installation regulations. In areas where NEC or CEC applies: Type PTLC or ITC

- Power over Ethernet via the M12 Ethernet interface P2 (position ②). The other Ethernet interface P1 is not capable of PoE.


The four-pin M12 socket has the following pin assignment:

Pin	Signal	Assignment
1	L1+	24 VDC
2	L2+	24 VDC
3	M	Ground
4	M	Ground

Power over Ethernet

The two following variants are available for power supply via an Ethernet cable:

- **IEEE 802.3at type 1 (IEEE 802.3af)**
  On an 8-wire Fast Ethernet cable, the power is supplied via the free data wires 4, 5, 7 and 8. This corresponds to alternative B according to IEEE 802.3af.

- **IEEE 802.3 at type 2**
  The power supply is known as phantom power via the wire pairs carrying signals (1/2 and 3/6).

The SCALANCE W774/W734 RJ-45 devices support the standards IEEE 802.3at type 1 (IEEE 802.3af) and IEEE 802.3.at type 2.

Note

Disabling the PoE power supply

Before you pull a plug via which the device is supplied with power using PoE, disable the relevant PoE power supply.

Note

"Phantom power" only with SCALANCE W774 M12 EEC

The SCALANCE W774 M12 EEC device only supports the standard IEEE 802.3 at type 2. With this device, the attachment to Ethernet is only possible using four-wire cables. For this reason, no PSE (Power Sourcing Equipment) can be used that only supplies the power via the free wire pairs.

Ethernet cables with M12 connectors for the SCALANCE W788-x M12 (Gigabit Ethernet, eight-wire) cannot be used for the SCALANCE W774 M12 EEC.
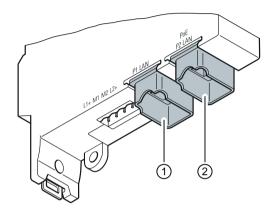

Note

No power sourcing equipment (PSE)

The SCALANCE W774/W734 devices cannot be used as a PoE power supply for other devices.

5.3 Ethernet
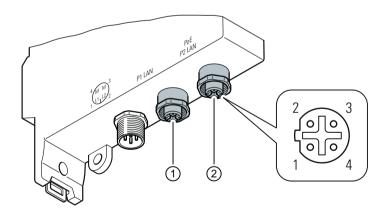
The SCALANCE W774/W734 devices have two Ethernet interfaces located on the underside of the device. Depending on the version, either RJ-45 or M12 sockets are available.

SCALANCE W774/W734 RJ-45

①   Ethernet interface P1

②   Ethernet interface P2
The power can also be supplied via this interface (Power over Ethernet).

SCALANCE W774/W734 M12 EEC

①   Ethernet interface P1

②   Ethernet interface P2
The power can also be supplied via this interface (Power over Ethernet).

The four-pin connecting socket has the following pin assignment:

Pin	Assignment
1	TX
2	RX
3	TX
4	RX

5.4 Antenna connectors

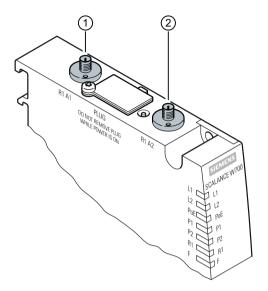The SCALANCE W774/W734 has two antenna connectors of the type R-SMA located on the top of the device.

①	Antenna connector R1 A1
②	Antenna connector R1 A2

Procedure

Follow the steps below to connect a cable for an external antenna to a SCALANCE W774/734:

1. Insert the connector on the antenna cable into the R-SMA socket and tighten the sleeve nut of the plug on the socket (key size SW8, tightening torque 1 Nm). If you only use one antenna, you need to connect this to the device via antenna connector R1 A1 (position ①).

2. Screw a terminating resistor to the unused antenna socket R1 R2 (position ②) if you are only using one antenna.

NOTICE
UL approval only for use in buildings
Within the area of authority of the NEC and CEC, the SCALANCE W770/W730 devices and the antennas connected to them may only be used in a closed building. For this reason, do not lead antennas into the outdoor area if you need to meet UL requirements.

Note

Cabinet installation

When installing the SCALANCE W770/W730 in a cabinet, you need to use detached antennas. A suitable flexible connecting cable for a connection between SCALANCE W778/W738 and a detached antenna are available from SIMATIC NET. You will find detailed information in the section AUTOHOTSPOT.

5.5   Replacing the PLUG (C-PLUG or KEY-PLUG)

NOTICE

Do not remove or insert a C-PLUG / KEY-PLUG during operation!

A PLUG may only be removed or inserted when the device is turned off.

The device checks whether or not a PLUG is inserted at one second intervals. If it is detected that the PLUG was removed, there is a restart.

If a KEY-PLUG was inserted in the device, the device changes to a defined error state following the restart. With SCALANCE W, the available wireless interfaces are deactivated in this case.

NOTICE

Loss of water and dust protection

If the cover is not mounted correctly, the device is not water and dust proof.

How it works

If a new C-PLUG or KEY-PLUG with a valid license is inserted in a SCALANCE W786, the configuration stored locally on the device is saved on the PLUG.

If an incorrect PLUG, for example from another product or a damaged plug is inserted, the device signals an error with the red LED. The user then has the choice of either removing the PLUG again or selecting the option to reformat the PLUG.

In terms of the PLUG, the WLAN devices work in two modes:

- Without PLUG
  The device stores the configuration in internal memory. This mode is active when no PLUG is inserted.

- With PLUG
  The configuration stored on the PLUG is displayed over the user interfaces. If changes are made to the configuration, the device stores the configuration directly on the PLUG and in the internal memory. This mode is active as soon as a PLUG is inserted. As soon as the device is started with a PLUG inserted, the SCALANCE W700 starts up with the configuration data on the PLUG.

Position

The PLUG slot is on the top of the device housing under a cover, see Reset button (Page 24).

Removing the PLUG
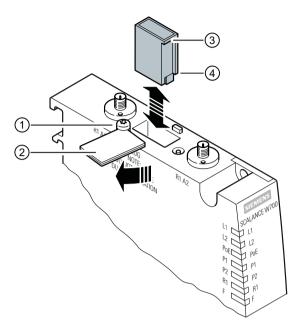
Figure 5-1   Position of the slot for PLUG on the top of the SCALANCE W774/734

Follow the steps below to remove a PLUG from the device:

1. Turn off the power to the device.

2. Release the screw slot cover (position ①) and swing the slot cover to the side (position ②).

3. Insert a screwdriver between the front edge of the PLUG (Position ③) and the slot and release the PLUG.

4. Remove the PLUG from the slot.

5. Screw the cover back onto the device.

Note

Loss of the configuration

The reset button is directly beside the slot for the PLUG. The reset button cannot be used to remove the PLUG.

If you press and hold down the reset button you reset all the settings of the device to the factory defaults.

Inserting the PLUG

Follow the steps below to insert a PLUG in the device:

1. Turn off the power to the device.

2. Release the screw slot cover (position ①) and swing the slot cover to the side (position ②).

3. The housing of the PLUG has a protruding ridge on the long side (position ④). The slot has a groove at this position. Insert the PLUG correctly oriented into the slot. The PLUG is correctly inserted when it is completely inside the device and does not jut out of the slot.

4. Close the slot cover (position ②).

5. Tighten the screw at position ① to secure the slot cover.

Licenses on the KEY-PLUG

A C-PLUG only stores information about the configuration of a device. In addition to the configuration, a KEY-PLUG also contains a license with which you can enable special functions, for example iFeatures. You will find the article numbers in Accessories (Page 15).

5.6 Grounding

Grounding with wall mounting

The device is grounded by the securing screw in the unpainted hole (diameter 4.5 mm) see position ⑧ of the Device description (Page 11).

If the device is mounted on a non-conductive base, a grounding cable must be fitted. The grounding cable is not supplied with the device. Connect the paint-free surface of the device to the nearest grounding point using the grounding cable.

Grounding when installing on a DIN rail / S7 standard rail

The device is grounded via the rear of the device.

Upkeep and maintenance

6.1 Device configuration with PRESET-PLUG

Please not the additional information and security notes in the operating instructions of your device.

NOTICE
Do not remove or insert a PLUG during operation
A PLUG may only be removed or inserted when the device is turned off.

Note

Support as of V6.0

The PRESET-PLUG functionality is supported as of firmware version V6.0.

With the PRESET-PLUG, you can install the same device configuration (start configuration, user accounts, certificates) including the corresponding firmware on multiple devices.

The PRESET PLUG is write-protected.

You configure the PRESET PLUG using the Command Line Interface (CLI).

Creating a PRESET-PLUG

You create the PRESET PLUG using the Command Line Interface (CLI). You can create a PRESET-PLUG from any PLUG. To do this, follow the steps outlined below:

Note

Using configurations with DHCP

Create a PRESET-PLUG only from device configurations that use DHCP. Otherwise disruptions will occur in network operation due to multiple identical IP addresses.

You assign fixed IP addresses extra following the basic installation.

Requirement

- A PLUG is inserted in the device on which you want to configure the PRESET-PLUG functionality.

Procedure

1. Start the remote configuration using Telnet (CLI) and log on with a user with the "admin" role.
2. Change to the Global configuration mode with the command "configure terminal".
3. You change to the PLUG configuration mode with the "plug" command.

4. Create the PRESET-PLUG with the "presetplug" command.
   The firmware version of the device and the current device configuration incl. user accounts and certificates are stored on the PLUG and the PLUG is then write protected.

5. Turn off the power to the device.

6. Remove the PRESET-PLUG.

7. Start the device either with a new PLUG inserted or with the internal configuration.

Procedure for installation with the aid of the PRESET-PLUG

1. Turn off the power to the device.

2. If it exists, remove the PLUG from the slot. You will find further information on this in the operating instructions of your device.

3. Insert the PRESET-PLUG correctly oriented into the slot. The PRESET-PLUG is correctly inserted when it is completely inside the device and does not jut out of the slot.

4. Turn on the power to the device again.
   If there is a different firmware version on the device to be installed compared with that on the PRESET-PLUG, an upgrade/downgrade of the firmware is performed. You can recognize this by the red F-LED flashing (flashing interval 2 sec. on/2 sec. off). Afterwards the device is restarted and the device configuration incl. users and certificates on the PRESET-PLUG is transferred to the device.

5. Wait until the device has fully started up.
   (the red F-LED is off)

6. Turn off the power to the device after the installation.

7. Remove the PRESET-PLUG.

8. Start the device either with a new PLUG inserted or with the internal configuration.

Note
KEY-PLUG

If you have created the PRESET-PLUG from a KEY-PLUG, for operation with this configuration, you require an inserted KEY-PLUG.

IN this case before recommissioning the device you need to insert the relevant KEY-PLUG.

Note
Restore factory defaults and restart with a PRESET PLUG inserted

If you reset a device to the factory defaults, when the device restarts an inserted PRESET PLUG is formatted and the PRESET PLUG functionality is lost. You then need to create a new PRESET PLUG. The keys stored on the KEY-PLUG for releasing functions are retained.

We recommend that you remove the PRESET PLUG before you reset the device to the factory settings.

Formatting a PRESET-PLUG (resetting the preset function)

You format the PRESET PLUG using the Command Line Interface (CLI) to reset the preset function. To do this, follow the steps outlined below:

1. Start the remote configuration using Telnet (CLI) and log on with a user with the "admin" role.

2. Change to the Global configuration mode with the command "configure terminal".

3. You change to the PLUG configuration mode with the "plug" command.

4. Enter the command "factoryclean".
   The PRESET-PLUG is formatted and the preset function is reset.

5. Write the current configuration of the device with the "write" command.

6.2 Downloading new firmware using TFTP without WBM and CLI

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, make sure you adhere to the instructions in the section "Reset button".

Follow the steps below to load new firmware using TFTP:

1. Turn off the power to the device.

2. Loosen the screws of the cover.

3. Remove the cover.

4. Press and hold down the reset button.

5. Connect the device to the power supply again while holding down the button.

6. Hold down the button until the red fault LED "F" starts to flash after approximately 2 seconds.

7. Release the button.
   The bootloader waits in this state for a new firmware file that you can download using TFTP.

8. Connect a PC to the device over the Ethernet interface.

9. Assign an IP address to the device using DHCP or the Primary Setup Tool.

10. Open a DOS box and change to the directory where the file with the new firmware is located and then execute the following command:
    ```
    tftp -i <IP address> put <firmware file>
    ```
    As an alternative, you can use a different TFTP client.
    Once the firmware has been transferred completely to the device, there is an automatic restart on the device. This process can take several minutes.

11. Close the cover (tightening torque 0.8 Nm), to ensure that the device is closed and water and dust proof.

6.3 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 a configured network with further consequences.

With the reset button

When pressing the button, make sure you adhere to the instructions in the section "Reset button".

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. Loosen the screws of the cover.

3. Remove the cover.

4. Press the reset button and reconnect the device to the power supply while holding down the button.

5. Hold down the button until the red error LED "F" stops flashing after approximately 10 seconds and is permanently lit.

6. Release the button and wait until the fault LED "F" goes off.
   The device starts automatically with the factory settings.

7. Close the cover (tightening torque 0.8 Nm), to ensure that the device is closed and water and dust proof.

With the Primary Setup Tool

Follow the steps below to reset the device parameters to the factory defaults with the Primary Setup Tool.

1. Select the device whose parameters you want to reset.

2. Click on the menu item "Reset" in the "Module" tab.

3. Confirm the prompt with "OK".

Via the configuration

You will find detailed information on resetting the device parameters using the WBM and CLI in the configuration manuals:

● Web Based Management, section "Restart"

● Command Line Interface, section "Reset and Defaults"

Technical data

7

7.1 Technical specifications W774/W734 RJ-45

The following technical specifications apply to the following devices:

- SCALANCE W774-1 RJ-45
- SCALANCE W734-1 RJ-45

Note

You will find detailed information on the transmit power and receiver sensitivity in the document "Performance data 802.11 abgn SCALANCE W770/W730" on the supplied data medium (REF_W770-RadioInterface.pdf).

Technical specifications		
Data transfer		
Ethernet transfer rate		10 / 100 Mbps
Wireless transmission rate		1 ... 300 Mbps
Wireless standards supported		IEEE 802.11a
		IEEE 802.11b
		IEEE 802.11g
		IEEE 802.11n
Power supply standards supported	Standards	IEEE 802.3at type 1 (802.3af)
		802.3at type 2 (Power over Ethernet)
	Class	Class 2 *)
	Mode	Mode A (phantom power)
Attachment to Industrial Ethernet		
	Quantity	2
	Design	RJ-45 jack
	Properties	Half duplex/full duplex, autocrossover, auto-negotiation, autosensing, PoE, floating
Permitted cable lengths (Ethernet)	**(Alternative combinations per length range)**	

Technical specifications

	IE TP torsion cable	0 ... 55 m
		0 ... 45 m + 10 m TP cord
	IE FC TP marine cable	0 ... 85 m
	IE FC TP trailing cable	0 ... 75 m + 10 m TP cord
	IE FC TP flexible cable	
	IE FC TP FRNC cable	
	IE FC TP festoon cable	
	IE FC TP food cable	
	IE FC TP standard cable	0 ... 100 m
		0 ... 90 m + 10 m TP cord

Wireless interface

Antenna connector	Quantity	2
	Design	R-SMA female
	Impedance	50 Ω nominal
Frequency range		2412 ... 2480 MHz
		4920 ... 5875 MHz

Electrical data

Direct 24 VDC supply	Supply voltage from terminal block	24 VDC Safe Extra Low Voltage (SELV)
	Permitted range	19.2 to 28.8 VDC
	Design	Terminal block, 4 terminals
	Properties	Electrically isolated, redundant design
		PoE to 24 VDC non-redundant design
Supply voltage from PoE	Power supply	48 VDC
	Permitted range	36 to 57 VDC
Fusing		2 A / 24 VDC
		1 A / 48 V PoE
Current consumption	At 24 VDC / typical	250 mA
	With PoE / typical	125 mA
Power loss at 24 VDC	At 24 VDC / typical	6 W
	With PoE / typical	6 W

Permitted ambient conditions

Ambient temperature	During operation with the rack installed horizontally / vertically	-20 ℃ to +60 ℃
	During storage	-40 ℃ to +85 ℃
	During transportation	-40 ℃ to +85 ℃
Relative humidity	During operation	≤ 95% at 25 °C, no condensation
Operating altitude	During operation	≤ 2,000 m above sea level at max. 60 °C ambient temperature
Contaminant concentration		According to IEC 60721

Degree of protection

	IP code	IP30

Dimensions and weight

Technical specifications		
Dimensions	W x H x D	26 x 156 x 127 mm
		(height without antenna connector 147 mm)
Weight		520 g
Installation options		
Direct	Wall mounting	
With additional holding plate	Mast mounting	
	Installation on a DIN rail	
	Installation on an S7-300 standard rail	
	Installation on an S7-1500 standard rail	
Mean time between failure (MTBF)		
	at 40 °C ambient temperature	61.85 years

*) The PoE class depends on the hardware version of the device. Devices with a hardware version ≥ 3 have PoE class 2. Devices with a lower hardware version have PoE class 3.

7.2 Technical specifications W774 M12

The following technical specifications apply to the following devices:

- SCALANCE W774-1 M12 EEC

Note

You will find detailed information on the transmit power and receiver sensitivity in the document "Performance data 802.11 abgn SCALANCE W770/W730" on the supplied data medium (REF_W770-RadioInterface.pdf).

Technical specifications		
Data transfer		
Ethernet transfer rate		10 / 100 Mbps
Wireless transmission rate		1 ... 300 Mbps
Wireless standards supported		IEEE 802.11a
		IEEE 802.11b
		IEEE 802.11g
		IEEE 802.11n
Power supply standards supported	Standards	IEEE 802.3at type 1 (802.3af)
		802.3at type 2 (Power over Ethernet)
	Class	Class 2 *)
	Mode	Mode A (phantom power)
Attachment to Industrial Ethernet		
	Quantity	2
	Design	M12 socket
	Properties	Half duplex/full duplex, autocrossover, auto-negotiation, autosensing, PoE, floating
Permitted cable lengths (Ethernet)	(Alternative combinations per length range)	
	IE TP torsion cable	0 ... 55 m
		0 ... 45 m + 10 m TP cord
	IE FC TP marine cable	0 ... 85 m
	IE FC TP trailing cable	0 ... 75 m + 10 m TP cord
	IE FC TP flexible cable	
	IE FC TP FRNC cable	
	IE FC TP festoon cable	
	IE FC TP food cable	
	IE FC TP standard cable	0 ... 100 m
		0 ... 90 m + 10 m TP cord
Wireless interface		
Antenna connector	Quantity	2
	Design	R-SMA female
	Impedance	50 Ω nominal
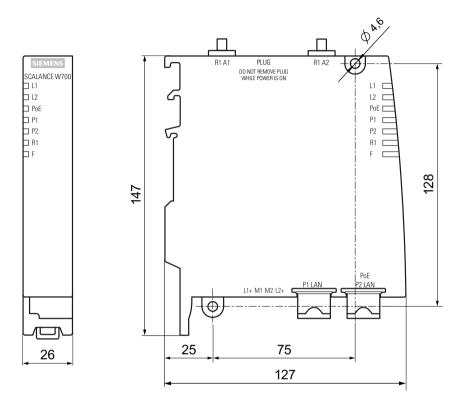
Technical specifications			
Frequency range			2412 ... 2480 MHz
			4920 ... 5875 MHz
Electrical data			
Direct 24 VDC supply	Supply voltage from socket		24 VDC Safe Extra Low Voltage (SELV)
	Permitted range	+/- 20 %	19.2 to 28.8 VDC (meets UL requirements)
		+/- 30 %	16.8 to 31.2 VDC
	Design		M12 socket
	Properties		Electrically isolated, redundant design
			PoE to 24 VDC non-redundant design
Supply voltage from PoE	Power supply		48 VDC
	Permitted range		36 to 57 VDC
Fusing			2 A / 24 VDC
			1 A / 48 V PoE
Current consumption	At 24 VDC / typical		250 mA
	With PoE / typical		125 mA
Power loss at 24 VDC	At 24 VDC / typical		6 W
	With PoE / typical		6 W
Permitted ambient conditions			
Ambient temperature	During operation with the rack installed horizontally / vertically		-30 ℃ to +65 ℃
	During storage		-40 ℃ to +85 ℃
	During transportation		-40 ℃ to +85 ℃
Relative humidity	During operation		≤ 95% at 25 °C, no condensation
Operating altitude	During operation		≤ 2,000 m above sea level at max. 60 °C ambient temperature
Contaminant concentration			According to IEC 60721
Degree of protection			
	IP code		IP30
Dimensions and weight			
Dimensions	W x H x D		26 x 156 x 127 mm
			(height without antenna connector 147 mm)
Weight			520 g
Installation options			
Direct	Wall mounting		
With additional holding plate	Mast mounting		
	Installation on a DIN rail		
	Installation on an S7-300 standard rail		
	Installation on an S7-1500 standard rail		
Mean time between failure (MTBF)			
	at 40 °C ambient temperature		61.85 years

*) The PoE class depends on the hardware version of the device. Devices with a hardware version ≥ 2 have PoE class 2. Devices with a lower hardware version have PoE class 3.
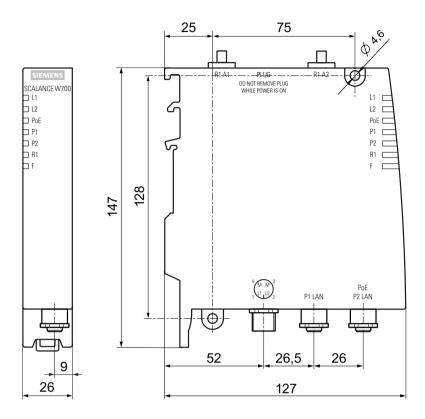
Dimension drawings

<div style="text-align: right">8</div>

SCALANCE W774/734 RJ-45

SCALANCE W774 M12 EEC

Approvals 9

You will find the approvals of the products in the reference work "Approvals SCALANCE W700 802.11n" on the Internet pages of Siemens Industry Online Support:

- Using the search function:
  support.automation.siemens.com (http://support.automation.siemens.com/WW/view/en)
  Enter the entry ID of the relevant manual as the search item.

- In the navigation panel on the left-hand side in the area "Industrial Communication":
  Industrial communication (http://support.automation.siemens.com/WW/view/en/10805878/133300)
  Go to the required product group and make the following settings:
  "Entry list" tab, Entry type "Manuals / Operating Instructions"

You will find the documentation for the SIMATIC NET products relevant here on the data storage medium that ships with some products:

- Product CD / product DVD

- SIMATIC NET Manual Collection

- SIMATIC NET IWLAN CD

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