SIEMENS

SIMATIC NET

Industrial Wireless LAN SCALANCE W770/W730

Operating Instructions

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03/2015

C79000-G8976-C325-05

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

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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.

Siemens AG
Division Digital Factory
Postfach 48 48
90026 NÜRNBERG
GERMANY

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Information on the Internet

1

Bitte beachten Sie die Warnhinweise und zusätzlichen Informationen in der Kompaktbetriebsanleitung in Ihrer Sprache im Internet:
http://support.automation.siemens.com/ww/view/at/10806097
http://support.automation.siemens.com/ww/view/ch/10806097
http://support.automation.siemens.com/ww/view/de/10806097
http://support.automation.siemens.com/ww/view/li/10806097
http://support.automation.siemens.com/ww/view/lu/10806097

Please observe the warnings and additional information in the compact operating instructions in your language in the Internet:
http://support.automation.siemens.com/ww/view/au/10806097
http://support.automation.siemens.com/ww/view/ca/10806097
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Veuillez tenir compte des avertissements et informations supplémentaires de la notice de service dans votre langue sur Internet:
http://support.automation.siemens.com/ww/view/be/10806097
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http://support.automation.siemens.com/ww/view/lu/10806097

Si prega di tenere conto delle avvertenze e ulteriori informazioni nell'istruzione operativa compatta nella relativa lingua in Internet:
http://support.automation.siemens.com/ww/view/it/10806097

Se ruega tener en cuenta las advertencias y las informaciones complementarias contenidas en las instrucciones de servicio (resumen) en español en Internet:
http://support.automation.siemens.com/ww/view/cl/10806097
http://support.automation.siemens.com/ww/view/es/10806097

Dbejte prosím na výstražné pokyny a doplňkové informace v kompaktním návodu k obsluze ve vašem jazyce na internetu:
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Vær venligst opmærksom på de advarselsanvisninger og ekstra informationer der findes på dit sprog i kompaktdriftsvejledningen på internettet:
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Noudata lyhyen käyttöoppaan sisältämiä varoituksia ja huomio sen muutkin tiedot. Oman kielisesi käyttöoppaan löydät internetistä osoitteesta:
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Λάβετε υπόψη τις υποδείξεις προειδοποίησης και τις πρόσθετες πληροφορίες των συνοπτικών οδηγιών χρήσης που παρέχονται στη γλώσσα σας στο Διαδίκτυο:
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http://support.automation.siemens.com/ww/view/sg/10806097

Kérjük, vegye figyelembe az interneten található, az Ön anyanyelvén íródott kompakt használati útmutatóban található figyelmeztetéseket és további információkat:
http://support.automation.siemens.com/ww/view/hu/10806097

Skoðið vel viðvaranir og aðrar upplýsingar í notkunarleiðbeiningunum á ykkar tungumáli á internetinu:
http://support.automation.siemens.com/ww/view/is/10806097

インターネットサイトにある各言語の注意事項および追加情報を参照してください:
http://support.automation.siemens.com/ww/view/jp/10806097

사이트에 있는 귀하의 언어로 된 콤팩트 사용 설명서에 명시된 경고 지침 및 추가 정보를 준수하십시오:
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ارشاداث التحذير و المعلومات الإضافية المذكورة في دليل التشغيل الملخص بلغتكم و الموجود على شبكة الانترنت

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Proszę zwrócić uwagę na ostrzeżenia oraz dodatkowe informacje w kompaktowej instrukcji obsługi, dostępnej w odpowiednim języku w internecie:
http://support.automation.siemens.com/ww/view/po/10806097

Observera varningshänvisningarna och extrainformationerna i kompaktbruksanvisningen som finns på ditt språk på internet:
http://support.automation.siemens.com/ww/view/se/10806097

İnternette kendi dilinizdeki kompakt işletim kılavuzunda yer alan uyarı notlarına ve ek bilgilere lütfen dikkat edin:

http://support.automation.siemens.com/ww/view/tr/10806097

Introduction 2

2.1 Information on the Operating Instructions

Validity of the Operating Instructions

These operating instructions cover the following products:

	Article no. of the RoW version	Article no. of the US version
Access points		
SCALANCE W774-1 RJ-45	6GK5774-1FX00-0AA0	6GK5774-1FX00-0AB0
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 5.00

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

Note

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

License conditions

Note

Open source software

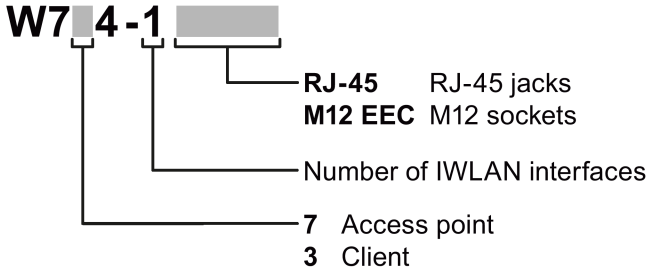
Read the license conditions for open source software carefully before using the product.

You will find license conditions in the following documents on the supplied data medium:

- DOC_License_74.pdf
- DOC_LicenseScalanceW_76.htm

2.2 Structure of the type designation

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



2.3 Security information

Siemens provides automation and drive products with industrial security functions that support the secure operation of plants or machines. They are an important component in a holistic industrial security concept. With this in mind, our products undergo continuous development. We therefore recommend that you keep yourself informed with respect to our product updates. Please find further information and newsletters on this subject at: http://support.automation.siemens.com.

To ensure the secure operation of a plant or machine it is also necessary to take suitable preventive action (e.g. cell protection concept) and to integrate the automation and drive components into a state-of-the-art holistic industrial security concept for the entire plant or machine. Any third-party products that may be in use must also be taken into account. Please find further information at: http://www.siemens.com/industrialsecurity

Description

3

3.1 Components of the product

The following components are supplied with the product:

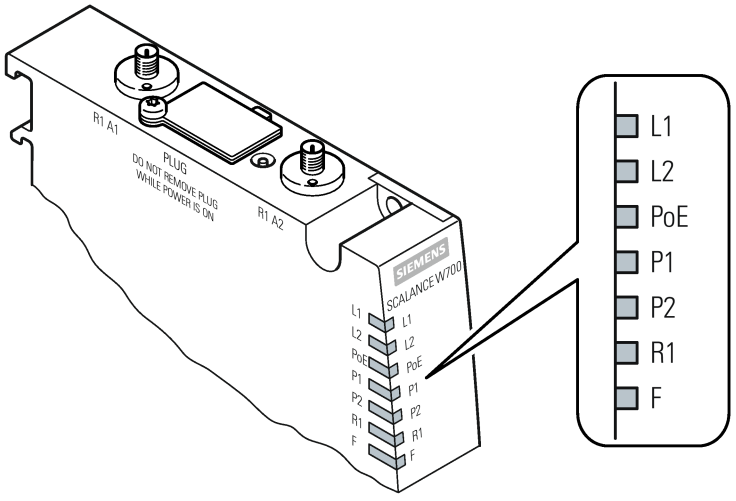
- SCALANCE W774 or SCALANCE W734
- 2 protective caps for the antenna sockets
- 1 connector for the supply voltage (only with device variant RJ-45)
- 3 protective caps for the M12 sockets (only with device variant M12)
- 1 screw for mounting on an S7-300 standard rail or S7-1500 standard rail
- SIMATIC 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.

3.2 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	Green	Power supply L1.
L2	Green	Power supply L2.
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.
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.

LED	Color	Meaning
	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.
P1 R1	Flashing yellow	"Flashing" enabled using SIMATIC NET Primary Setup Tool (PST).

Note

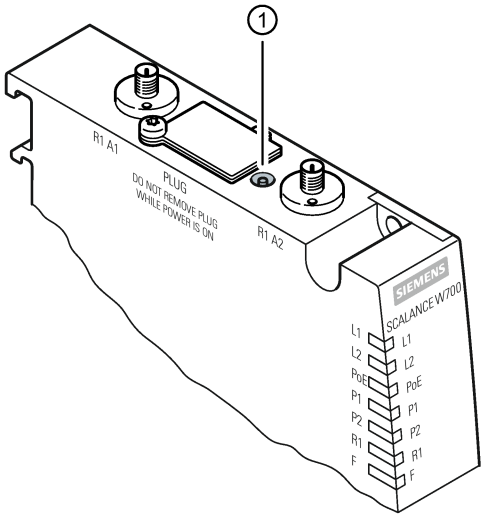
Primary user (radar) on all enabled channels

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.

3.3 Reset button

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.

- **Loading new firmware**

  If the normal procedure with the "Load & Save" menu 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 more detailed information in the configuration manual SCALANCE W770/W730 WBM.

- **Restoring the default parameters (factory defaults)**

  You will find more detailed information in the configuration manual SCALANCE W770/W730 WBM.

Mounting

4

⚠ 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

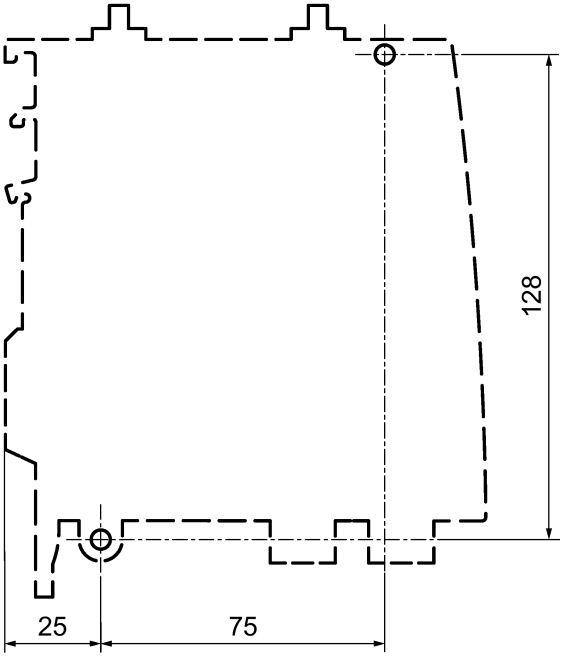
⚠ WARNING

To comply with EC Directive 94/9 (ATEX95) or the conditions of IECEx, this enclosure or cabinet must meet the requirements of at least IP54 in compliance with EN 60529.

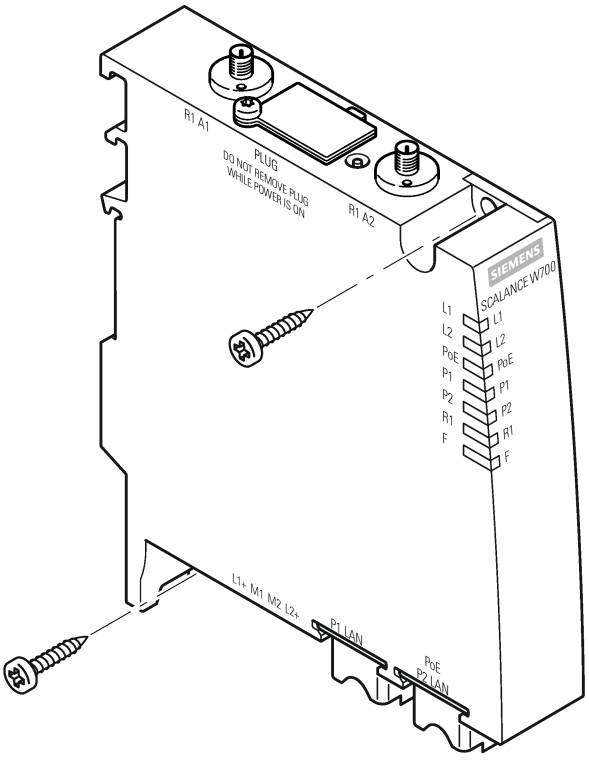
4.1 Wall mounting

Drilling template

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



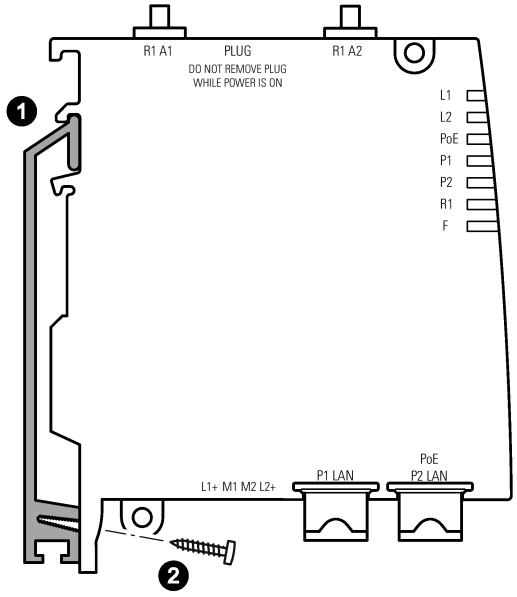
Procedure



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

4.2 Installing on an S7-300 standard rail

Procedure

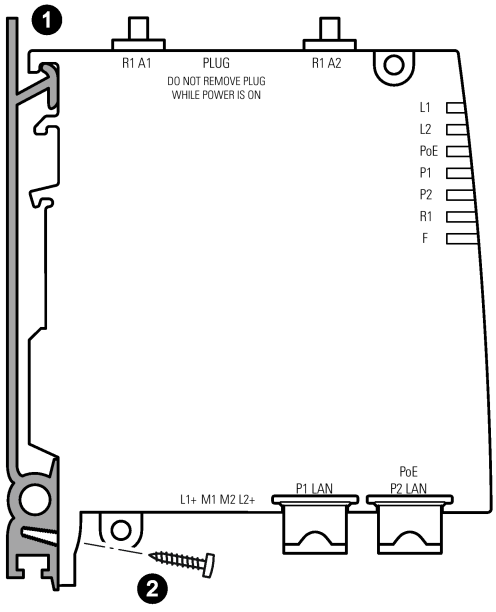


Follow the steps below to fit the SCALANCE W774/W734 to an S7-300 standard rail:

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.

4.3 Installing on an S7-1500 standard rail

Procedure

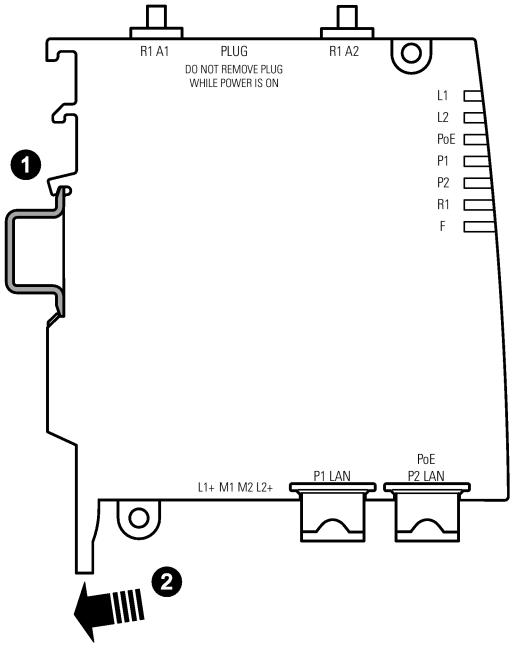


Follow the steps below to fit the SCALANCE W774/W734 to an S7-1500 standard rail:

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.

4.4 Installing on a DIN rail / removing

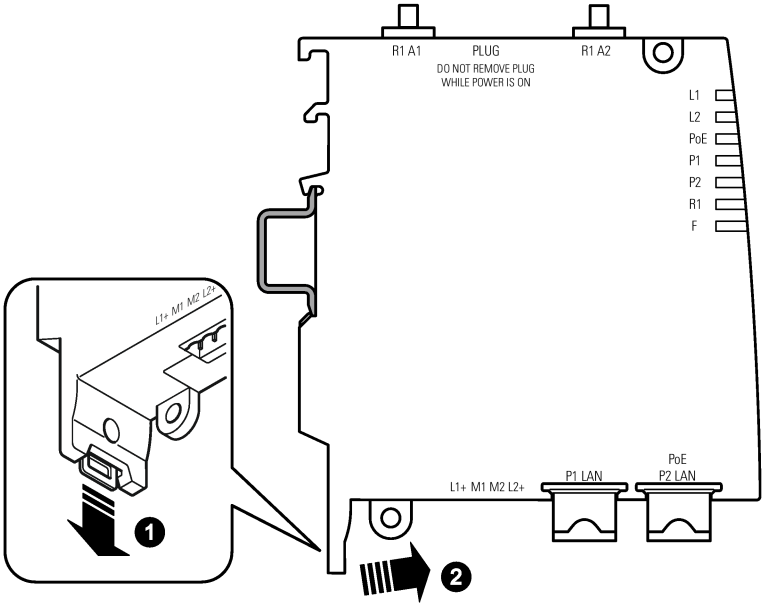
Procedure for installation



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.

Procedure when removing



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

1. Pull the DIN rail slider down with a screwdriver.
2. Tilt the SCALANCE W774/W734 forward and remove the device from the DIN rail.

Connection

5

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 range of accessories of SIMATIC NET Industrial WLAN:

- Lightning protector LP798-1N (order no. 6GK5798-2LP00-2AA6)
- Lightning protector LP798-2N (order no. 6GK5798-2LP10-2AA6)

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
type no. 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.

⚠ 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.

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

DO NOT DISCONNECT WHILE CIRCUIT IS LIVE UNLESS AREA IS KNOWN TO BE NON-HAZARDOUS.

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

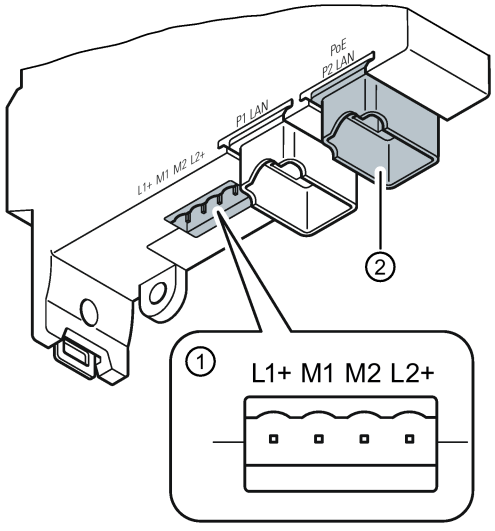
Galvanic isolation of the power supply unit

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)
- Power over Ethernet via the RJ-45 Ethernet interface P2 (position ②). The other Ethernet interface P1 is not capable of PoE.



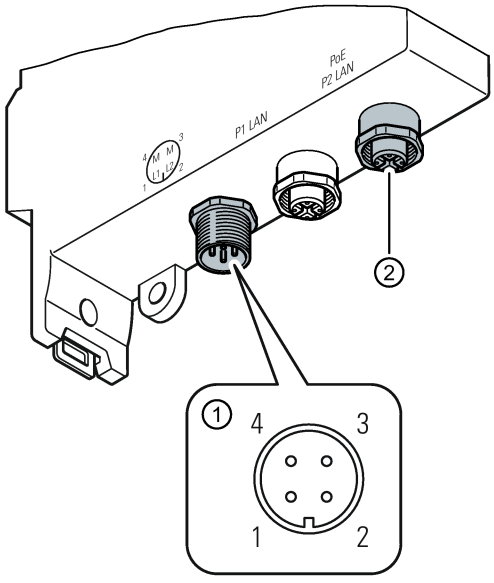
The four-pin connecting socket has the following pin assignment:

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)
- 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

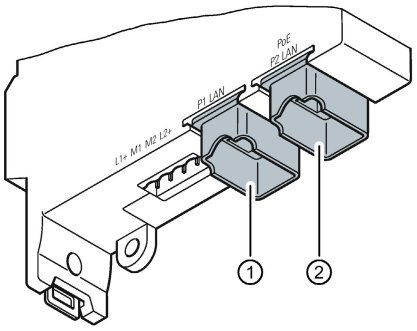
No power sourcing equipment (PSE)

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.

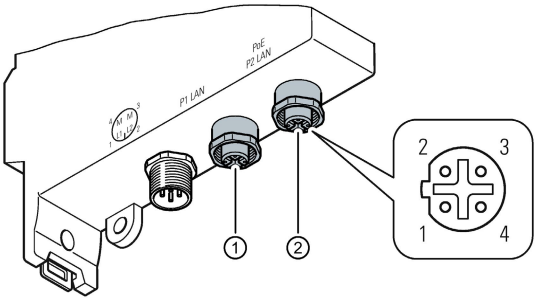
SCALANCE W774/W734 RJ-45



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 Suitable cables for power supply and Ethernet

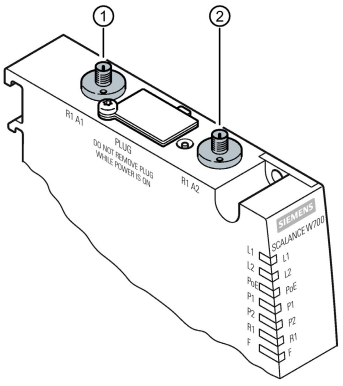
Cable specification

The following table lists the requirements for a cable depending on the application.

Application	Specification
Direct 24 VDC supply	• Round cable cross-section with 6 to 8 mm diameter. Two-wire cable with 0.5 to 1.5 mm^2 cross-section per wire. • Permitted tensile load at least 100 N. • UL listing: Type PLTC or ITC
Ethernet	1. IE FC TP standard cable GP 2 x 2 (type A) Order no.: 6XV1 840-2AH10 2. IE TP torsion cable 2 x 2 (type C) Order no.: 6XV1 870-2F 3. IE FC TP trailing cable 2 x 2 (type C) Order no.: 6XV1 840 3AH10 UL listing: Type PLTC or ITC (the three named types have this approval)

5.5 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 on the socket (key size SW8, tightening torque 0.6 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. Suitable connecting cable for a connection between SCALANCE W770/W730 and a detached antenna are available from SIMATIC NET. You will find detailed information in the following section.

5.6 Suitable antenna cables and antennas

N-Connect/R-SMA connecting cable

To connect an antenna with an N-Connector, the following cables are suitable:

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

Suitable antennas

Note

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

Type	Properties	Order number
ANT792-6MN	Omni antenna, mast/wall mounting, 6 dBi 2.4 GHz, N-Connect female	6GK5 792-6MN00-0AA6
ANT793-6MN	Omni antenna, mast/wall mounting, 5 dBi 5 GHz, N-Connect female	6GK5 793-6MN00-0AA6
ANT795-6DC	Wide angle antenna, mast/ wall mounting, 9 dBi 2.4 GHz and 5 GHz, N-Connect female	6GK5 795-6DC00-0AA0
ANT793-6DG	Wide angle antenna, mast/ wall mounting, 9 dBi 5 GHz, 2 x N-Connect female	6GK5 793-6DG00-0AA0
ANT795-6MN	Omni antenna, mounted on roof/vehicle, 6/8 dBi 2.4 GHz and 5 GHz, N-Connect female	6GK5 795-6MN10-0AA6
ANT795-4MA	Omni antenna, 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°.	6GK5 795-4MA00-0AA3
ANT792-4DN	RCoax helical antenna, circular polarization, 4 dBi, 2.4 GHz, N-connect female.	6GK5 792-4DN00-0AA6
ANT793-4MN	RCoax λ5/8 antenna with vertical polarization, 6 dBi, 5 GHz, N-connect female.	6GK5 793-4MN00-0AA6
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

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

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.

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.

Removing the PLUG

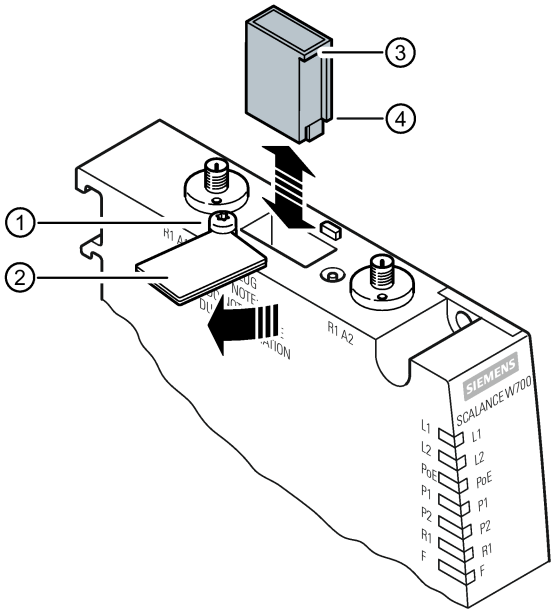


Figure 5-1 Position of the slot for PLUG on the top of the SCALANCE W774/734

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.

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:

Type	Order number
KEY-PLUG W780 iFeatures AP	6GK5907-8PA00
KEY-PLUG W740 iFeatures Client	6GK5907-4PA00
KEY-PLUG W700 Security	6GK5907-0PA00

Technical data

6

6.1 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).

SCALANCE W774/W734 RJ-45		
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	Type	IEEE 802.3at type 1 (802.3af) 802.3at type 2 (Power over Ethernet)
	Class	Class 3
Attachment to Industrial Ethernet		
Quantity	2	
Design	RJ-45 jack	
Properties	Half duplex/full duplex, autocrossover, autonegotiation, autosensing, PoE, floating	
Permitted cable lengths (Ethernet)	**(Alternative combinations per length range) ***	
0 ... 55 m	• Max. 55 m IE TP Torsion Cable with IE FC RJ45 Plug 180 • Max. 45 m IE TP Torsion Cable with IE FC RJ45 + 10 m TP Cord via IE FC RJ45 Outlet	
0 ... 85 m	• Max. 85 m IE FC TP Marine/Trailing/Flexible/FRNC/Festoon/Food Cable with IE FC RJ45 Plug 180 • Max. 75 m IE FC TP Marine/Trailing/Flexible/FRNC/Festoon/Food Cable + 10 m TP Cord via IE FC RJ45 Outlet	

SCALANCE W774/W734 RJ-45		
0 ... 100 m	• Max. 100 m IE FC TP Standard Cable with IE FC RJ45 Plug 180 • Max. 90 m IE FC TP Standard Cable + 10 m TP Cord via IE FC RJ45 Outlet	
Wireless interface		
Antenna connector	Quantity	2
	Design	R-SMA female
	Impedance	50 Ω nominal
Frequency range		2412 ... 2480 MHz 4920 ... 5875 MHz
Electrical data		
Power supply	Supply voltage from terminal block/socket	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	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	-20 °C to +60 °C
	During operation with the rack installed vertically	-20 °C to +60 °C
	During storage	-40 °C to +85 °C
	During transportation	-40 °C to +85 °C
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	
Design, dimensions and weight		
Degree of protection	IP30	
Weight	520 g	
Dimensions (W x H x D)	26 x 156 x 127 mm (height without antenna connector 147 mm)	

SCALANCE W774/W734 RJ-45		
Installation options	• Wall 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

6.2 Technical specifications W774 M12

The following technical specifications apply to the following devices:

- SCALANCE W774-1 M12 EEC

Note

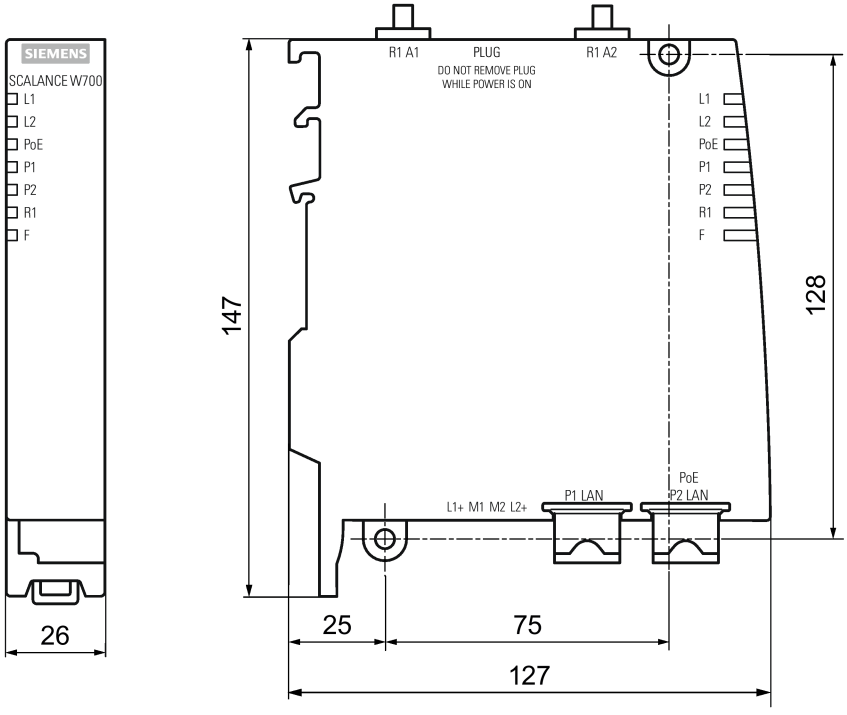
You will find detailed information on the transmit power and receiver sensitivity in the document "Performance data 802.11 abgn SCALANCE W770/W730" on the supplied data medium (REF_W770-RadioInterface.pdf).

SCALANCE W774 M12 EEC		
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	Type	IEEE 802.3at type 1 (802.3af) 802.3at type 2 (Power over Ethernet)
	Class	Class 3
Attachment to Industrial Ethernet		
Quantity	2	
Design	M12 socket	
Properties	Half duplex/full duplex, autocrossover, autonegotiation, autosensing, PoE, floating	
Permitted cable lengths (Ethernet)	**(Alternative combinations per length range) ***	
0 ... 55 m	• Max. 55 m IE TP Torsion Cable with IE FC RJ45 Plug 180 • Max. 45 m IE TP Torsion Cable with IE FC RJ45 + 10 m TP Cord via IE FC RJ45 Outlet	
0 ... 85 m	• Max. 85 m IE FC TP Marine/Trailing/Flexible/FRNC/Festoon/Food Cable with IE FC RJ45 Plug 180 • Max. 75 m IE FC TP Marine/Trailing/Flexible/FRNC/Festoon/Food Cable + 10 m TP Cord via IE FC RJ45 Outlet	
0 ... 100 m	• Max. 100 m IE FC TP Standard Cable with IE FC RJ45 Plug 180 • Max. 90 m IE FC TP Standard Cable + 10 m TP Cord via IE FC RJ45 Outlet	
Wireless interface		
Antenna connector	Quantity	2
	Design	R-SMA female
	Impedance	50 Ω nominal

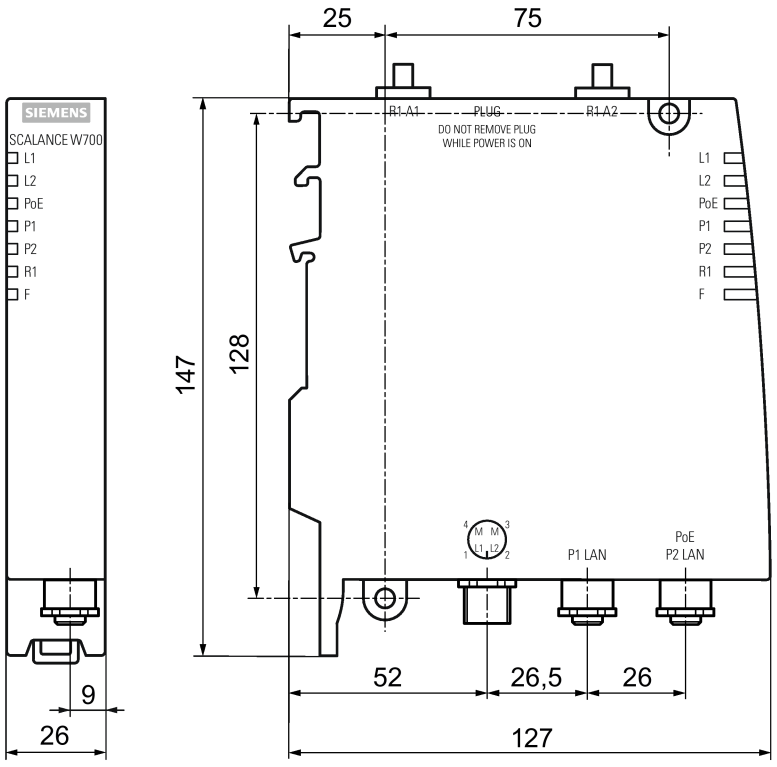
SCALANCE W774 M12 EEC		
Frequency range		2412 ... 2480 MHz 4920 ... 5875 MHz
Electrical data		
Power supply	Supply voltage from terminal block/socket	24 VDC safety extra-low voltage (SELV)
	Permitted range	19.2 to 28.8 VDC
	Design	M12 socket
	Properties	Electrically isolated, redundant design PoE to 24 VDC non-redundant design
	Supply voltage from PoE	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	-20 ℃ to +60 ℃
	During operation with the rack installed 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	
Design, dimensions and weight		
Degree of protection	IP30	
Weight	520 g	
Dimensions (W x H x D)	26 x 156 x 127 mm (height without antenna connector 147 mm)	
Installation options	• Wall 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

Dimension drawings

SCALANCE W774/734 RJ-45



SCALANCE W774 M12 EEC



Approvals

8

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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