MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

SIEMENS SCALANCE

6GK5748-1GD00-0AA0

SCALANCE W748 INDUSTRIAL WIRELESS CLIENT

Applicable product family: SCALANCE W industrial wireless LAN

OFFICIAL SOURCE

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The following pages are selected from the supplied manufacturer document and retain their original page content.

SIEMENS

SIMATIC NET

Industrial Wireless LAN SCALANCE W788-x / W748-1

Operating Instructions

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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 no. of the RoW version	Article no. of the US version	Article number of the Israel version
Access points			
SCALANCE W788-1 RJ-45	6GK5788-1FC00-0AA0	6GK5788-1FC00-0AB0	-
SCALANCE W788-1 M12	6GK5788-1GD00-0AA0	6GK5788-1GD00-0AB0	-
Dual access points			
SCALANCE W788-2 RJ-45	6GK5788-2FC00-0AA0	6GK5788-2FC00-0AB0	6GK5788-2FC00-0AC0
SCALANCE W788-2 M12	6GK5788-2GD00-0AA0	6GK5788-2GD00-0AB0	-
SCALANCE W788-2 M12 EEC	6GK5788-2GD00-0TA0	6GK5788-2GD00-0TB0	-
Ethernet client modules			
SCALANCE W748-1 RJ-45	6GK5748-1FC00-0AA0	6GK5748-1FC00-0AB0	-
SCALANCE W748-1 M12	6GK5748-1GD00-0AA0	6GK5748-1GD00-0AB0	-

If information relates to all the named products, the term SCALANCE W7x8 will be used.

These operating instructions apply to the following software version:

- SCALANCE W7x8 with firmware as of version 6.1

Purpose of the Operating Instructions

Using the Operating Instructions, you will be able to install and connect the SCALANCE W7x8 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-W780-W740-WBM_0.pdf and **PH_SCALANCE-W780-W740-CLI_0.pdf**

Note

Make sure that you read the explanations and instructions in the README.txt file

Description of the device

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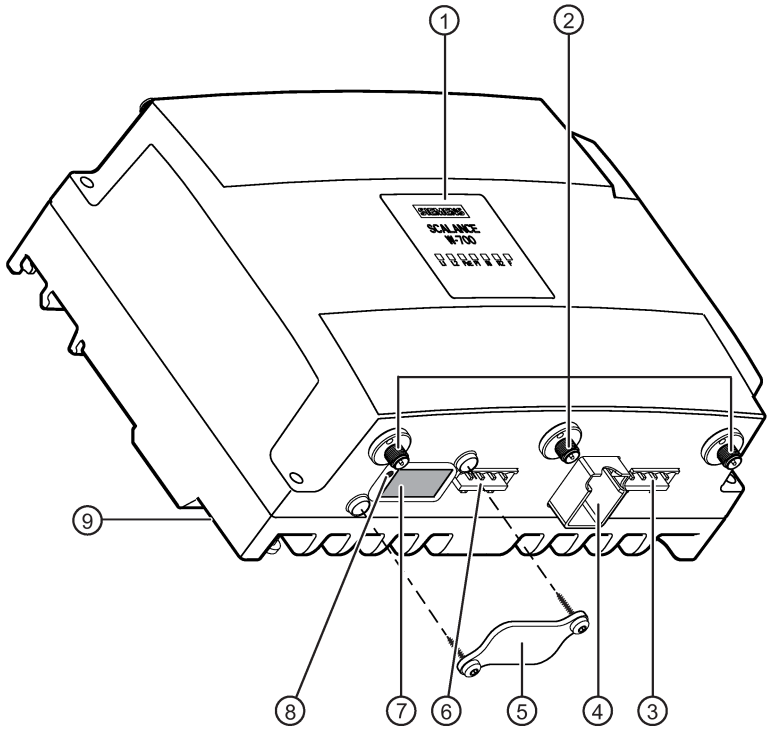
3.1 Description of the device

W7x8x-x RJ-45 - degree of protection IP30



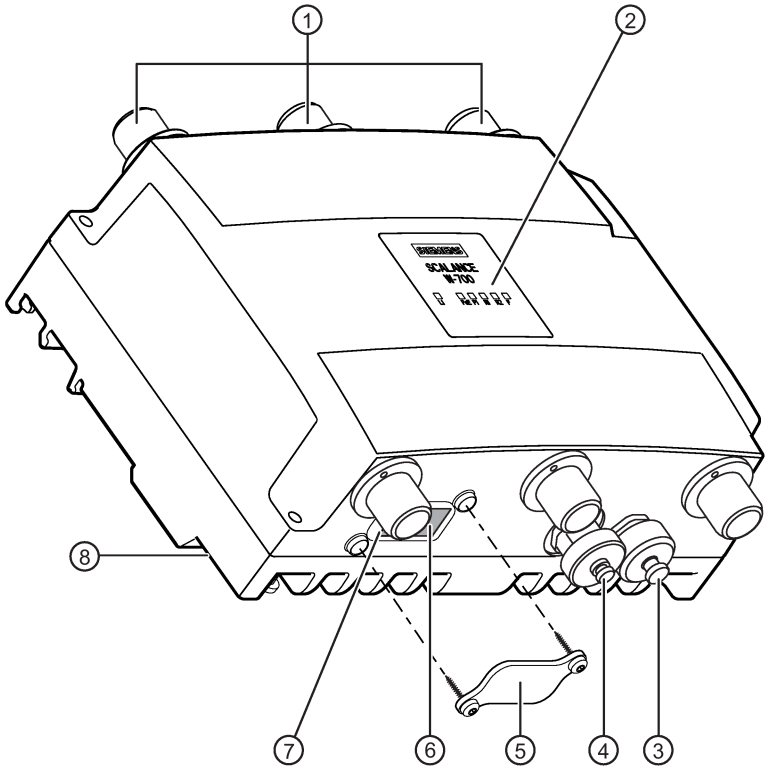
① LEDs
② Connecting connectors, R-SMA type female
- Devices with one IWLAN interface: 3 connectors on the top (covered in the figure).
- Devices with two IWLAN interfaces: 3 connectors on the top and 3 on the underside.

③ Connector for power supply
④ Connector for Ethernet, RJ-45 type
⑤ Screw-down cover for the
- reset button and the
- PLUG compartment (not with W788C)

⑥ Connector for the digital input/output (not with W788C)
⑦ PLUG compartment (not with W788C)
⑧ Reset button
⑨ Grounding connector (thread M4) on the back of the device

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

W7x8x-x M12 - degree of protection IP65



① Connecting connectors, N-Connect type female
- Devices with one IWLAN interface: 3 connectors on the top (covered in the figure).
- Devices with two IWLAN interfaces: 3 connectors on the top and 3 on the underside.

② LEDs
③ Connector for the supply voltage, type M12 (with cover)
④ Connector for Ethernet, M12 type (with cover)
⑤ Screw-down cover for the
- reset button and the
- PLUG compartment (not with W788C)

⑥ PLUG compartment (not with W788C)
⑦ Reset button (covered in the figure)
⑧ Grounding connector (thread M4) on the back of the device

Figure 3-2 Device description of the M12 variant

Mounting

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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 Securing the housing

Grounding connector

⚠ WARNING

Operation of the W7x8 only with connected grounding cable

To operate the SCALANCE W7x8 safely, the housing must make contact with a grounding cable. Do not use the SCALANCE W7x8 without a grounding cable connected.

The grounding cable is fixed to the housing with a screw. On the rear of the device there is an M4 threaded hole for this purpose, seeDrilling pattern (Page 29).

Mount the grounding cable before you mount the device

Installation options

To install the W7x8, you have the following options:

- Wall mounting
- Installing on the S7-300 standard rail
- Installing on a DIN rail

⚠ CAUTION

Danger of injury by falling objects

If the SCALANCE W7x8 is subjected to strong vibration (> 10 g), mounting on a 35 mm DIN rail does not provide adequate support. Under such conditions, the device can come out of the mounting and may cause injury.

In this case, install the device on an S7-300 standard rail or on a wall.

Installation location

There are no restrictions regarding the installation location for the device. Antennas, in particular directional antennas, must be mounted according to their characteristics.

Note

- If you are installing outdoors, use the SCALANCE W786.

- The minimum distance to fluorescent lamps should be 0.5 m.

- When installed in a cabinet, we recommend that you do not install relays on the same or on directly neighboring mounting rails.

4.2 Wall mounting

Use the holes in the housing to screw the device to the wall or on a horizontal surface. The location of the holes can be seen in the following figure:

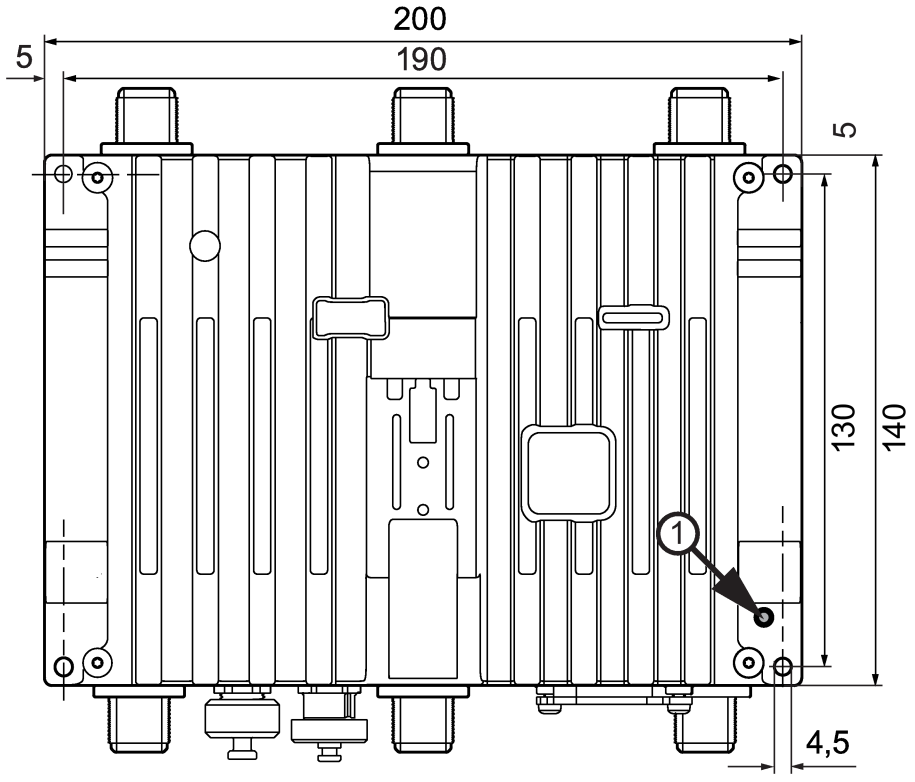

Figure 4-1 Drilling pattern (dimensions in mm)

① Ground connector (thread M4)

4.3 Installing on the S7-300 standard rail

Follow the steps below to install the SCALANCE W7x8 on a vertical S7-300 rail:

1. Place the device on the upper edge of the S7-300 standard rail (position A).
2. Screw the device to the rail using the supplied screw (position B).

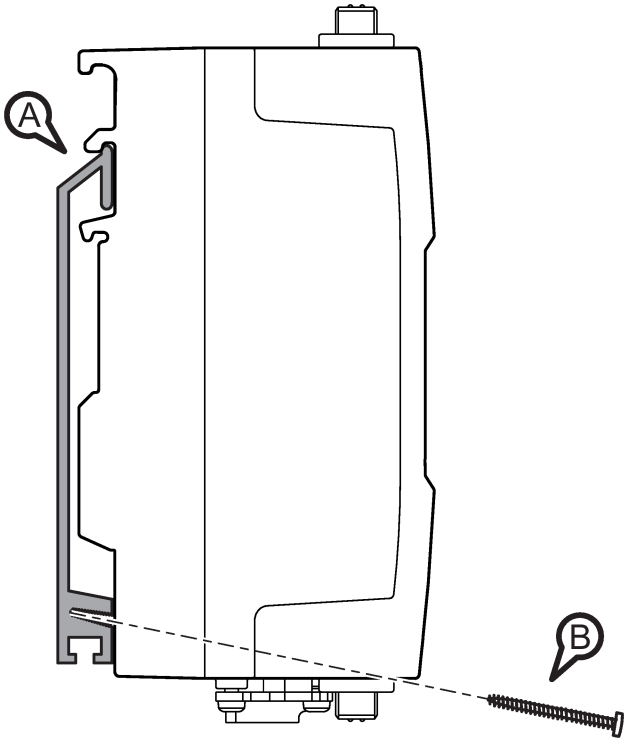

Figure 4-2 Installing on an S7-300 standard rail

4.4 Installing on a DIN rail

The SCALANCE W7x8 is suitable for rail mounting on 35 mm DIN EN 50022 rails.

Bracket for DIN rail mounting

Note

The bracket for installation on a DIN rail does not ship with the product, seeAccessories (Page 15).

The bracket consists of the following parts:

- 1 DIN rail slider
- 1 spring
- 2 screws

Mount the bracket on the rear of the device as shown in the figure below:

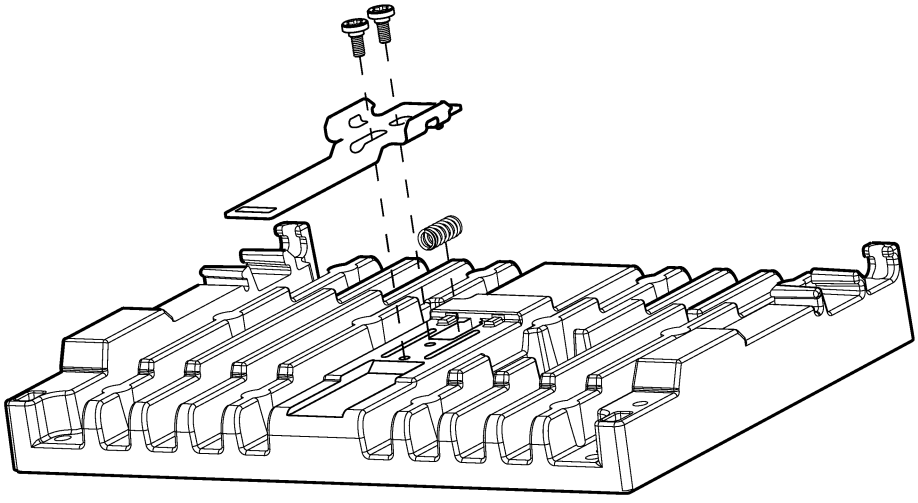

Figure 4-3 Fitting the DIN rail slider

Installing on the DIN rail

The following figure shows the W7x8 mounted on a DIN rail. Follow the steps outlined below:

1. Place the device on the upper edge of the DIN rail (position A).
2. Pull the spring-mounted DIN rail slider (position B) down and press the device against the DIN rail until it locks in place.

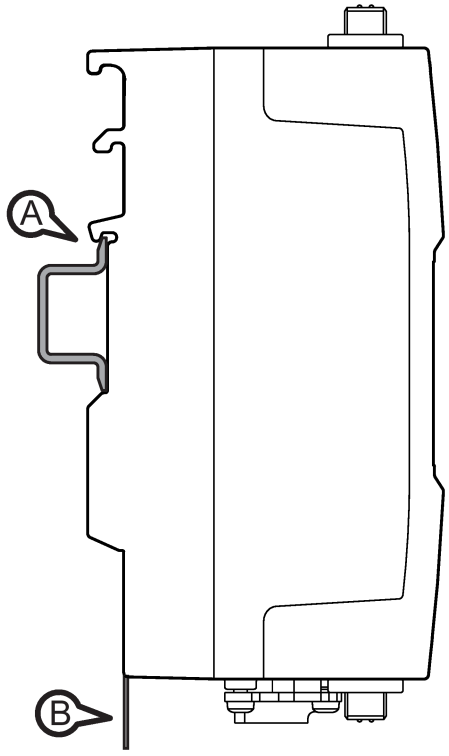

Figure 4-4 Installing on a DIN rail

Connecting up

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5.1 Safety when connecting up

Safety notices

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

⚠ WARNING

EXPLOSION HAZARD

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

⚠ WARNING

EXPLOSION HAZARD

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

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.

5.2 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
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.

General notes on use according to ATEX and IECEx

WARNING

EXPLOSION HAZARD

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

WARNING

EXPLOSION HAZARD

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

WARNING

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).

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

WARNING

EXPLOSION HAZARD

Do not connect or disconnect while the circuit is live or unless the area is known to be free of ignitible 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.

5.3 Power supply and Ethernet

Connecting the power supply

Models RJ-45 / degree of protection IP30

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

Pin	Signal	Description
1	L1+	24 VDC
2	M1	Ground
3	M2	Ground
4	L2+	24 VDC

The M12 socket for the power supply has the following pin assignment:

Pin	Signal	Description
1	L1	24 VDC
-	-	-
3	M1	Ground
-	-	-

Power over Ethernet (PoE)

With the SCALANCE W7x8, power supply using Power over Ethernet (PoE) is also possible. The devices support the standards 802.3at type 1 (IEEE 802.3af) and IEEE 803.at type 2.

- Gigabit Ethernet

  When you connect to gigabit Ethernet, the power supply is a phantom power supply over data wires 1, 2, 3 and 6. This corresponds to alternative A according to IEEE 802.3af.

- Fast Ethernet

  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.

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

No power sourcing equipment (PSE)

The W7x8 cannot be used as a PoE power supply for other devices.

Note

Grounding connector

The device has a grounding connector on the back of the device (screw M4), see position ① in the drilling pattern (Page 29). Connect the grounding cable before you mount the device. Refer to the information in the section Mounting (Page 27).

Ethernet connector

Depending on the model, the connection of the SCALANCE W7x8 to Ethernet is either via an RJ-45 interface or via an M12 interface.

5.4 Antenna connectors

Note

Tightening torque

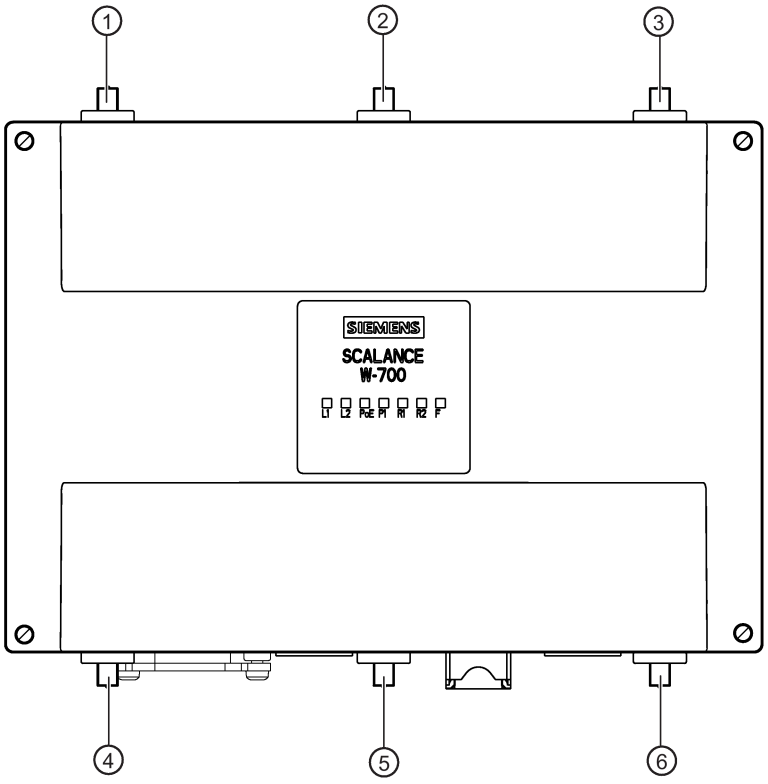
The following tightening torques apply to the connectors:

- with N-Connect connectors: 1.7 Nm
- with SMA/R-SMA connectors: 1 Nm

R-SMA for degree of protection IP30

The variants of the SCALANCE W7x8 RJ-45 have antenna sockets of the type R-SMA:

- Variants with an IWLAN interface (W7x8-1) have 3 antenna sockets on the top of the device.
- Variants with two IWLAN interfaces (W788-2) have 6 antenna sockets, 3 on the top and 3 on the underside of the device.



① R1A1
② R1A2
③ R1A3
④ R2A1
⑤ R2A2
⑥ R2A3

Figure 5-1 Antenna connector IP30

N-Connect for degree of protection IP65

The variants of the SCALANCE W7x8 M12 have antenna sockets of the type N-Connect:

- Variants with an IWLAN interface (W7x8-1) have 3 antenna sockets on the top of the device.
- Variants with two IWLAN interfaces (W788-2) have 6 antenna sockets, 3 on the top and 3 on the underside of the device.

Note

Cabinet installation

When installing the SCALANCE W7x8 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 Flexible connecting cables and antennas (Page 18).

Note

If both interfaces of access points with two IWLAN interfaces are operated in the same frequency range,

- the distance between the antennas connected to R1A1, R1A2, R1A3 and those connected to R2A1, R2A2, R2A3 must be at least 1 m.
- there may be wireless interference on one or both IWLAN interfaces if the transmit power is higher than 15 dB.

Note

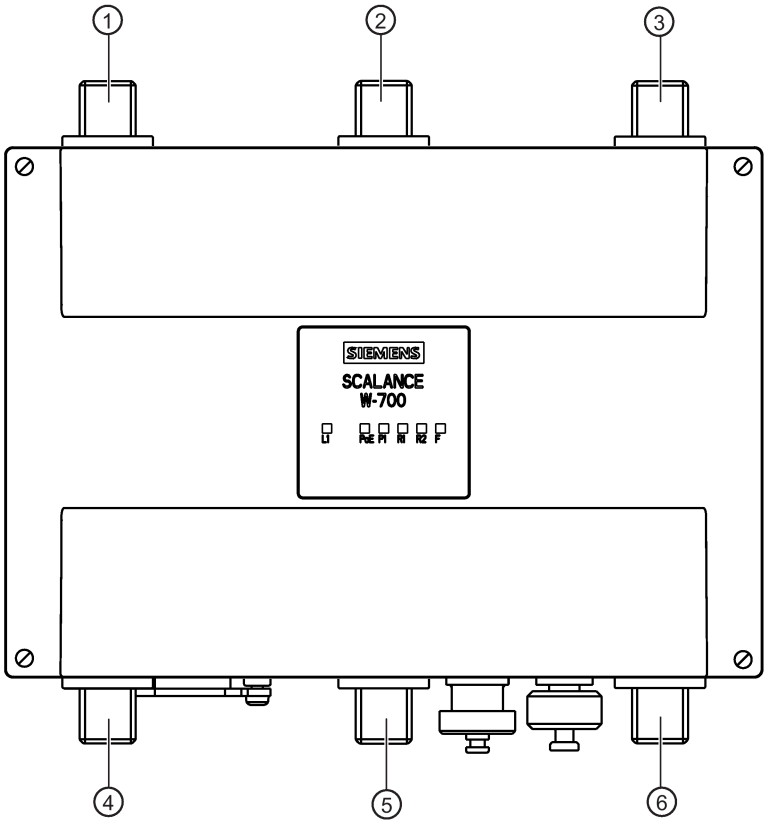
Terminating resistor

Each WLAN interface has three antenna connectors. Connectors that are not used must have a terminating resistor fitted, see Accessories.

The antennas R1A1 and R2A1 must be always be connected as soon as the associated WLAN Interface is turned on. if no antenna is connected, the relevant interface must also be disabled for RX and TX. Otherwise, there may be transmission disruptions.

You will find information on the configuration of the antennas in the following documents:

- SCALANCE W7x8
  SCALANCE W700 configuration manual, section "Configuring antennas"
- SCALANCE W7x8C
  SCALANCE WLC711 User Guide, section "Configuring wireless AP radio properties"



① R1A1
② R1A2
③ R1A3
④ R2A1
⑤ R2A2
⑥ R2A3

Figure 5-2 Antenna connector IP65

5.5 Digital input/output

A digital input/output is only available with the RJ-45 variants.

The digital input/output (relay contact) is a floating switch with which error/fault states can be signaled by breaking the contact.

NOTICE
Damage due to voltage being too high or too low The voltage at the digital input/output must not exceed 30 VDC and not fall below -30 VDC, otherwise the digital input/output will be destroyed.

The digital input/output is connected to a 4-pin plug-in terminal block with the following pin assignment:

Pin	Signal	Function
1	DQ (output)	Relay 24 VDC / 1 A
2	1L (output)	Relay 24 VDC / 1 A
3	DI (input plus)	24 VDC
4	1M (input ground)	-

5.6 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 W7x8, 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 Device description (Page 11).

Removing the PLUG

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

1. Turn off the power to the device.
2. Remove the cover of the PLUG on the underside of the device.
3. Insert a screwdriver between the front edge of the PLUG 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. Remove the cover of the PLUG on the underside of the device.
3. The housing of the PLUG has a protruding ridge on the long side. 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. Screw the cover back onto the device.

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).

Technical specifications

7

7.1 Technical specifications of the SCALANCE W7x8-1)

The following technical specifications apply to the following devices:

- SCALANCE W788-1 RJ45
- SCALANCE W788-1 M12
- SCALANCE W748-1 RJ45
- SCALANCE W748-1 M12

Note

Bridging a power outage is possible only with an input voltage of 24 VDC (-15% to +20%).

Note

You will find detailed information on the transmit power and receiver sensitivity in the document "Leistungsdaten 802.11abgn PCIe Minicard / Characteristics 802.11abgn PCIe Minicard" (REF_W700-RadioInterface.pdf).

Technical specifications		
Data transfer		
Ethernet transfer rate		10 / 100 / 1000 Mbps
Wireless transmission rate		1 ... 450 Mbps
Wireless standards supported		IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11h IEEE 802.11n
Power supply standards supported	Type	IEEE 802.3at type 1 (802.3af) IEEE 802.3at type 2 (Power over Ethernet)
	Class	Class 3 *)
Attachment to Industrial Ethernet		
RJ-45 variants	Quantity	1
	Design	RJ-45 jack
	Properties	Half duplex/full duplex, autocrossover, autonegotiation, autosensing, PoE, floating
M12 variants	Quantity	1
	Design	M12 socket
	Properties	Half duplex/full duplex, autocrossover, autonegotiation, autosensing, PoE, floating

Technical specifications		
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 IE FC TP trailing cable IE FC TP flexible cable IE FC TP FRNC cable IE FC TP festoon cable IE FC TP food cable	0 ... 85 m 0 ... 75 m + 10 m TP cord
	IE FC TP standard cable	0 ... 100 m
		0 ... 90 m + 10 m TP cord
Wireless interface		
IWLAN interface	Quantity	1
Antenna connector	Quantity	3
	Design • RJ-45 variants • M12 variants	 • R-SMA female • N Connect, female
	Impedance	50 Ω nominal
Frequency range		2412 ... 2480 MHz 4920 ... 5875 MHz
Electrical data		
Power supply	Direct 24 VDC supply • Supply voltage from terminal block/socket • Permitted range • Design – RJ-45 variants – M12 variants • Properties	 • 24 VDC Safe Extra Low Voltage (SELV) • 19.2 to 28.8 VDC – Terminal block, 4 terminals – M12 connectors • Not electrically isolated
	Supply voltage from PoE • Supply voltage from terminal block/socket • Permitted range • Design • Properties	 • 48 VDC • 36 to 57 VDC • Via RJ-45 jacks • Electrically isolating Corresponding to IEEE802.3at Insulation resistance > 2 MOhms
Fusing		2.5 A / 24 VDC
		1 A / 48 VDC PoE
Current consumption	At 24 VDC / max.	650 mA

Technical specifications		
Effective power loss	At 24 VDC / max.	15.6 W
	At 24 VDC / typical	10.7 W
Digital input	Quantity	1
	Design	Terminal block, 2 terminals
	Status "0"	13 to 30 VDC
	Status "1"	-30 to 3 VDC
	Max. input current	8 mA
	Max. cable length	30 m
	Properties	Inputs isolated from electronics.
Permitted ambient conditions		
Ambient temperature	During operation	-20 ℃ to +60 °C
	During storage	-40 ℃ to +70 °C
	During transportation	-40 °C to +70 °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		
• RJ-45 variants	• IP30	
• M12 variants	• IP65	
Weight	1.7 kg	
Dimensions (W x H x D)		
• RJ-45 variants	• 158 x 200 x 79 mm	
• M12 variants	• 175.2 x 200 x 79 mm	
Installation options	• Wall mounting • Mounting on an S7-1500 standard rail With additional holding plate • Mast mounting • Mounting on a DIN rail • Mounting on an S7-300 standard rail	
Mean time between failure (MTBF)		
	At 40 °C ambient temperature	41 years

*) The PoE class depends on the hardware version of the device. Devices with a hardware version ≥ 3 have PoE class 3. Devices with a lower hardware version have PoE class 4.

7.2 Technical specifications of the SCALANCE W7x8-2)

The following technical specifications apply to the following devices:

- SCALANCE W788-2 RJ45
- SCALANCE W788-2 M12
- SCALANCE W788-2 M12 EEC

Note

Bridging a power outage is possible only with an input voltage of 24 VDC (-15% to +20%).

Note

You will find detailed information on the transmit power and receiver sensitivity in the document "Leistungsdaten 802.11abgn PCIe Minicard / Characteristics 802.11abgn PCIe Minicard" (REF_W700-RadioInterface.pdf).

Technical specifications		
Data transfer		
Ethernet transfer rate		10 / 100 / 1000 Mbps
Wireless transmission rate		1 ... 450 Mbps
Wireless standards supported		IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11h IEEE 802.11n
Power supply standards supported	Type	IEEE 802.3at type 1 (802.3af) IEEE 802.3at type 2 (Power over Ethernet)
	Class	Class 4
Attachment to Industrial Ethernet		
RJ-45 variants	Quantity	1
	Design	RJ-45 jack
	Properties	Half duplex/full duplex, autocrossover, autonegotiation, autosensing, PoE, floating
M12 variants	Quantity	1
	Design	M12 socket
	Properties	Half duplex/full duplex, autocrossover, autonegotiation, autosensing, PoE, floating

Technical specifications		
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 IE FC TP flexible cable IE FC TP FRNC cable IE FC TP festoon cable IE FC TP food cable	0 ... 75 m + 10 m TP cord
	IE FC TP standard cable	0 ... 100 m
		0 ... 90 m + 10 m TP cord
Wireless interface		
IWLAN interface	Quantity	2
Antenna connector	Quantity	6
	Design • RJ-45 variants • M12 variants	• R-SMA female • N Connect, female
	Impedance	50 Ω nominal
Frequency range		2412 ... 2480 MHz 4920 ... 5875 MHz
Electrical data		
Power supply	Direct 24 VDC supply • Supply voltage from terminal block/socket • Permitted range – Non EEC variants – EEC variants • Design – RJ-45 variants – M12 variants • Properties	• 24 VDC Safe Extra Low Voltage (SELV) – 19.2 to 28.8 VDC – 16.8... 31.2 VDC (UL approvals only valid for 19.2 ... 28.8 VDC) – Terminal block, 4 terminals – M12 connectors • Not electrically isolated
	Supply voltage from PoE • Supply voltage from terminal block/socket • Permitted range • Design • Properties	• 48 VDC • 36 to 57 VDC • Via RJ-45 jacks • Electrically isolating Corresponding to IEEE802.3at Insulation resistance > 2 MOhms

Technical specifications		
Fusing		2.5 A / 24 VDC
		1 A / 48 VDC PoE
Current consumption	At 24 VDC / max.	650 mA
Effective power loss	At 24 VDC / max.	15.6 W
	At 24 VDC / typical	15 W
Digital input	Quantity	1
	Design	Terminal block, 2 terminals
	Status "0"	13 ... 30 VDC
	Status "1"	-30 to 3 VDC
	Max. input current	8 mA
	Max. cable length	30 m
	Properties	Inputs isolated from electronics.
Permitted ambient conditions		
Ambient temperature	During operation	-20 ℃ to +60 °C
	During storage	-40 ℃ to +70 °C
	During transportation	-40 °C to +70 °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		
• RJ-45 variants	• IP30	
• M12 variants	• IP65	
Weight	1.7 kg	
Dimensions (W x H x D)		
• RJ-45 variants	• 158 x 200 x 79 mm	
• M12 variants	• 175.2 x 200 x 79 mm	
Installation options	• Wall mounting • Mounting on an S7-1500 standard rail With additional holding plate • Mast mounting • Mounting on a DIN rail • Mounting on an S7-300 standard rail	
Mean time between failure (MTBF)		
	At 40 °C ambient temperature	41 years

Dimension drawings

8

The following dimensions are specified in mm.

Dimension drawing of the SCALANCE W7x8-2 RJ45 (degree of protection IP30)

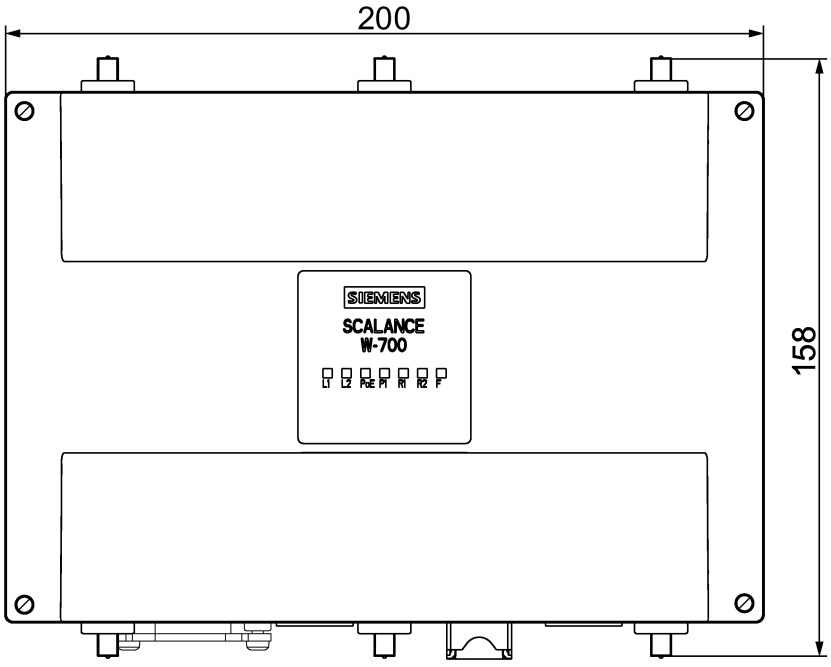


Figure 8-1 Front view RJ-45

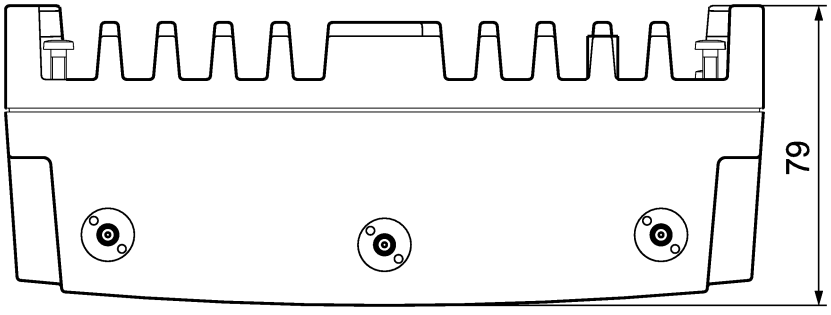


Figure 8-2 View from above RJ-45

Dimension drawing of the SCALANCE W7x8-2 M12 (degree of protection IP65)

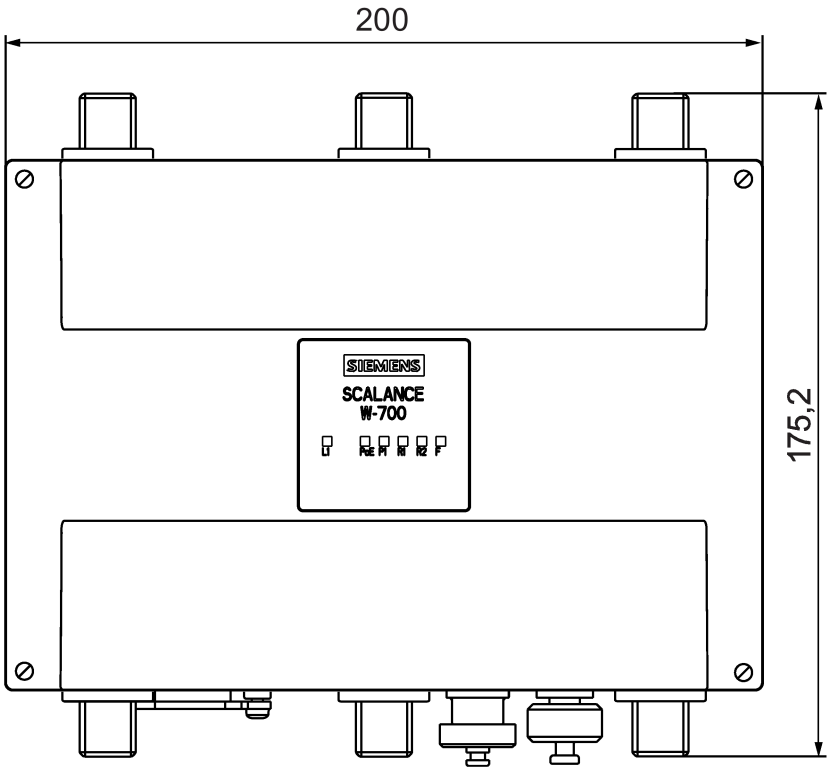


Figure 8-3 Front view M12

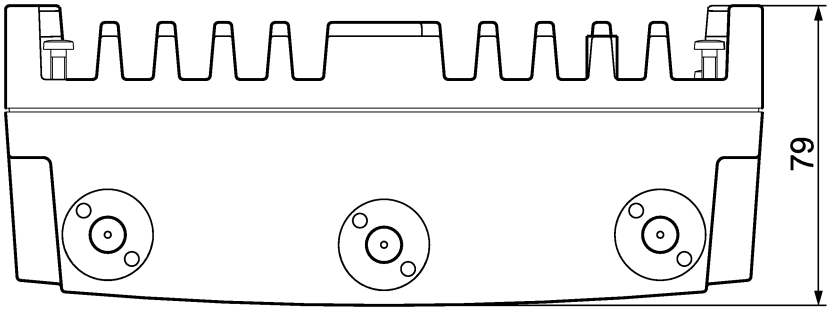


Figure 8-4 View from above M12