

### Product type designation

### SCALANCE W788-1 M12

IWLAN Access Point, SCALANCE W788-1 M12, 1 radio, 3 N-CON antenna port, iFeatures support via key plug, IEEE 802.11a/b/g/h/n, 2.4/5GHz, gross 450 Mbit/s per radio, 1x M12 max. 1 Gbit/s, PoE, redundant 24 V DC, M12 A-coded IP65, -20..+60 °C, plug slot, WPA2/802.11i/e, observe national approvals! CERT ID: RAPN-W1-M12-E3, includes: MPCIE-R1-ABGN-U3, scope of delivery: Manuals on CD-ROM, German/English, M12 sealing caps, for operation outside of USA/Israel



### Transfer rate

#### Transfer rate

- with WLAN / maximum 450 Mbit/s
- for Industrial Ethernet 10, 100, 1000 Mbit/s

#### Transfer rate / for Industrial Ethernet

- minimum 10 Mbit/s
- maximum 1000 Mbit/s

### Interfaces

#### Number of electrical connections

- for network components or terminal equipment 1
- for power supply 1
- for redundant voltage supply 1

#### Type of electrical connection

- for network components or terminal equipment M12 interface (8-pole, X-coded), PoE
- for power supply M12 interface (4-pole, A-coded)

#### design of the removable storage

- C-PLUG Yes

- KEY-PLUG

Yes

### Interfaces / wireless

Number of radio cards / permanently installed	1
Transmission mode / for multiple input multiple output (MIMO)	3x3
Number of spatial streams	3
Number of electrical connections / for external antenna(s)	3
Type of electrical connection / for external antenna(s)	N-Connect (socket)
Product feature / external antenna can be mounted directly on device	Yes

### Supply voltage, current consumption, power loss

Type of voltage / of the supply voltage	DC
Supply voltage / 1 <ul style="list-style-type: none"> <li>• from M12 Power Connector (A-coded) for redundant power supply</li> </ul>	19.2 V
Supply voltage / 2 <ul style="list-style-type: none"> <li>• from M12 Power Connector (A-coded) for redundant power supply</li> </ul>	28.8 V
Supply voltage <ul style="list-style-type: none"> <li>• from Power-over-Ethernet acc. to IEEE802.3at for type 1 and IEEE802.3af</li> <li>• from Power-over-Ethernet acc. to IEEE802.3at for type 2</li> </ul>	48 V 50 V
Consumed current <ul style="list-style-type: none"> <li>• at DC / at 24 V / typical</li> <li>• with Power-over-Ethernet according to IEEE802.3at for type 1 and IEEE802.3af / typical</li> </ul>	0.45 A 0.22 A
Power loss [W] <ul style="list-style-type: none"> <li>• at DC / at 24 V / typical</li> </ul>	10.7 W

### Ambient conditions

Ambient temperature <ul style="list-style-type: none"> <li>• during operation</li> <li>• during storage</li> <li>• during transport</li> </ul>	-20 ... +60 °C -40 ... +85 °C -40 ... +85 °C
Relative humidity / at 25 °C / without condensation / during operation / maximum	90 %
Ambient condition / for operation	When used under hazardous conditions (Zone 2), the SCALANCE W788-x or W748-x product must be installed in an enclosure. To comply with EN 50021, this enclosure must meet the requirements of at least IP 54 in compliance with EN 60529.
Protection class IP	IP65

### Design, dimensions and weights

Width / of the enclosure / without antenna	200 mm
Height / of the enclosure / without antenna	176 mm
Depth / of the enclosure / without antenna	79 mm
Net weight	1.7 kg
Mounting type	For 35 mm DIN rail mounting an additional mounting adapter is required
<ul style="list-style-type: none"> <li>• S7-300 rail mounting</li> <li>• S7-1500 rail mounting</li> <li>• 35 mm DIN rail mounting</li> <li>• wall mounting</li> </ul>	Yes Yes Yes Yes

### Radio frequencies

Operating frequency	
<ul style="list-style-type: none"> <li>• for WLAN in 2.4 GHz frequency band</li> <li>• for WLAN in 5 GHz frequency band</li> </ul>	2.41 ... 2.48 GHz 4.9 ... 5.8 GHz

### Product features, product functions, product components / general

Product function / Access Point Mode	Yes
Product function / Client Mode	Yes
Number of SSIDs	8
Product function	
<ul style="list-style-type: none"> <li>• iPCF Access Point</li> <li>• iPCF client</li> <li>• iPCF-MC Access Point</li> <li>• iPCF-MC client</li> </ul>	Yes; Only in combination with the 'KEY-PLUG W780 iFeatures' Yes; Only in combination with the 'KEY-PLUG W780 iFeatures' or 'KEY-PLUG W740 iFeatures' No Yes; Only in combination with 'KEY-PLUG W780 iFeatures' or 'KEY-PLUG W740 iFeatures'
Number of iPCF-capable radio modules	1
Product function / iREF	Yes; In combination only with 'KEY-PLUG W780 iFeatures'
Number of iREF-capable radio modules	1
Product function / iPRP	Yes; In combination with the 'KEY-PLUG W780 iFeatures' only

### Product functions / management, configuration, engineering

Number of manageable IP addresses / in client	8
Product function	
<ul style="list-style-type: none"> <li>• CLI</li> <li>• web-based management</li> <li>• MIB support</li> <li>• TRAPs via email</li> <li>• Configuration with STEP 7</li> <li>• configuration with STEP 7 in the TIA Portal</li> <li>• operation with IWLAN controller</li> <li>• operation with Enterasys WLAN controller</li> <li>• forced roaming on IP down with IWLAN</li> <li>• forced roaming on link down with IWLAN</li> </ul>	Yes Yes Yes Yes Yes Yes No No Yes Yes

• WDS	Yes
Protocol / is supported	
• Address Resolution Protocol (ARP)	Yes
• ICMP	Yes
• Telnet	Yes
• HTTP	Yes
• HTTPS	Yes
• TFTP	Yes
• DCP	Yes
• LLDP	Yes
Identification & maintenance function	
• I&M0 - device-specific information	Yes
• I&M1 – higher-level designation/location designation	Yes

### Product functions / Diagnostics

Product function	
• PROFINET IO diagnosis	Yes
• Link Check	No
• connection monitoring IP-Alive	No
• localization via Aeroscout	Yes
• SysLog	Yes
Protocol / is supported	
• SNMP v1	Yes
• SNMP v2	Yes
• SNMP v3	Yes

### Product functions / VLAN

Product function	
• function VLAN with IWLAN	Yes

### Product functions / DHCP

Product function	
• DHCP client	Yes
• DHCP server	Yes
• DHCP Option 82	Yes

### Product functions / redundancy

Protocol / is supported	
• STP/RSTP	Yes
• MSTP	Yes
• RSTP	Yes

### Product functions / Security

Product function	
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• ACL - MAC-based	Yes
• Management security, ACL-IP based	Yes
• IEEE 802.1x (radius)	Yes
• NAT/NAPT	No
• access protection according to IEEE802.11i	Yes
• WPA/WPA2	Yes
• TKIP/AES	Yes
<b>Protocol / is supported</b>	
• SSH	Yes
• RADIUS	Yes

### Product functions / time

<b>Protocol / is supported</b>	
• NTP	Yes
• SNTP	Yes
• SIMATIC time synchronization (SIMATIC Time)	Yes

### Standards, specifications, approvals

<b>Standard</b>	
• for FM	FM 3611: Class I, Division 2, Groups A,B,C,D, T4 / Class 1, Zone 2, Group IIC, T4
• for hazardous zone	EN 60079-15:2005, EN 60079-0:2006, II 3 G Ex nA II T4 KEMA 07 ATEX 0145X
• for safety / from CSA and UL	UL 60950-1, CSA C22.2 No. 60950-1
• for hazardous zone / from CSA and UL	ANSI/ISA 12.12.01-2013, CAN/CSA C22.2 No.213-M1987, CL. 1, Div. 2, GP. A,B,C,D, T4 / CL. 1, Zone 2, GP IIC
<b>Certificate of suitability</b>	
• EC declaration of conformity	Yes
• CE marking	Yes
• C-Tick	Yes
• E1 approval	Yes
• Railway application in accordance with EN 50155	Yes
• Railway application in accordance with EN 50121-4	Yes
• Fire protection in accordance with EN 45545-2	Yes
• NEMA TS2	No
• IEC 61375	No
• IEC 61850-3	No
• NEMA4X	No
• Power-over-Ethernet according IEEE802.3at for type 1 and IEEE802.3af	Yes
• Power-over-Ethernet according to IEEE802.3at for type 2	Yes

Standard for wireless communication	
• IEEE 802.11a	Yes
• IEEE 802.11b	Yes
• IEEE 802.11e	Yes
• IEEE 802.11g	Yes
• IEEE 802.11h	Yes
• IEEE 802.11i	Yes
• IEEE 802.11n	Yes
Wireless approval	You will find the current list of countries at: <a href="http://www.siemens.de/funkzulassungen">www.siemens.de/funkzulassungen</a>
Marine classification association	
• American Bureau of Shipping Europe Ltd. (ABS)	Yes
• Bureau Veritas (BV)	Yes
• DNV GL	Yes
• Lloyds Register of Shipping (LRS)	Yes
• Nippon Kaiji Kyokai (NK)	Yes
• Polski Rejestr Statkow (PRS)	Yes
• Royal Institution of Naval Architects (RINA)	Yes

#### Further information / Internet-Links

Internet-Link	
• to website: TIA Selection Tool	<a href="http://www.siemens.com/tia-selection-tool">http://www.siemens.com/tia-selection-tool</a>
• to the website: IWLAN	<a href="http://www.siemens.com/iwlan">http://www.siemens.com/iwlan</a>
• to website: Industry Mall	<a href="https://mall.industry.siemens.com">https://mall.industry.siemens.com</a>
• to website: Information and Download Center	<a href="http://www.siemens.com/industry/infocenter">http://www.siemens.com/industry/infocenter</a>
• to website: Image database	<a href="http://automation.siemens.com/bilddb">http://automation.siemens.com/bilddb</a>
• to website: CAx Download Manager	<a href="http://www.siemens.com/cax">http://www.siemens.com/cax</a>
• to website: Industry Online Support	<a href="https://support.industry.siemens.com">https://support.industry.siemens.com</a>

#### Security information

Siemens provides products and solutions with industrial security functions that support the secure operation of plants, solutions, machines, equipment and/or networks. They are important components in a holistic industrial security concept. With this in mind, Siemens' products and solutions undergo continuous development. Siemens recommends strongly that you regularly check for product updates. For the secure operation of Siemens products and solutions, it is necessary to take suitable preventive action (e.g. cell protection concept) and integrate each component into a holistic, state-of-the-art industrial security concept. Third-party products that may be in use should also be considered. For more information about industrial security, visit <http://www.siemens.com/industrialsecurity>. To stay informed about product updates as they occur, sign up for a product-specific newsletter. For more information, visit <http://support.automation.siemens.com>. (V3.4)

**last modified:**

12/16/2019