

### product type designation



### 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	
<ul style="list-style-type: none"> <li>with WLAN / maximum</li> <li>for Industrial Ethernet</li> </ul>	450 Mbit/s 10, 100, 1000 Mbit/s
transfer rate / for Industrial Ethernet	
<ul style="list-style-type: none"> <li>minimum</li> <li>maximum</li> </ul>	10 Mbit/s 1000 Mbit/s

### interfaces

number of electrical connections	
<ul style="list-style-type: none"> <li>for network components or terminal equipment</li> <li>for power supply</li> <li>for redundant voltage supply</li> </ul>	1 1 1
type of electrical connection	
<ul style="list-style-type: none"> <li>for network components or terminal equipment</li> <li>for power supply</li> </ul>	M12 interface (8-pole, X-coded), PoE M12 interface (4-pole, A-coded)
design of the removable storage	
<ul style="list-style-type: none"> <li>C-PLUG</li> <li>KEY-PLUG</li> </ul>	Yes Yes

### memory

design of the removable storage	
<ul style="list-style-type: none"> <li>C-PLUG</li> <li>KEY-PLUG</li> </ul>	Yes 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	
<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
<b>supply voltage / 1</b> <ul style="list-style-type: none"> <li>• from M12 Power Connector (A-coded) for redundant power supply</li> </ul>	19.2 V
<b>supply voltage / 2</b> <ul style="list-style-type: none"> <li>• from M12 Power Connector (A-coded) for redundant power supply</li> </ul>	28.8 V
<b>ambient conditions</b>	
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
<b>design, dimensions and weights</b>	
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
fastening method <ul style="list-style-type: none"> <li>• S7-300 rail mounting</li> <li>• S7-1500 rail mounting</li> <li>• 35 mm top hat DIN rail mounting</li> <li>• wall mounting</li> </ul>	For 35 mm DIN rail mounting an additional mounting adapter is required Yes Yes Yes Yes
<b>radio frequencies</b>	
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; depending on the country approvals 4.9 ... 5.8 GHz; depending on the country approvals
<b>product features, product functions, product components / general</b>	
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
<b>product functions / management, configuration, engineering</b>	
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> </ul>	Yes Yes Yes Yes Yes Yes No

<ul style="list-style-type: none"> <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> <li>• WDS</li> </ul>	<p>No</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>
<p>protocol / is supported</p> <ul style="list-style-type: none"> <li>• Address Resolution Protocol (ARP)</li> <li>• ICMP</li> <li>• Telnet</li> <li>• HTTP</li> <li>• HTTPS</li> <li>• TFTP</li> <li>• DCP</li> <li>• LLDP</li> </ul>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>
<p>identification &amp; maintenance function</p> <ul style="list-style-type: none"> <li>• I&amp;M0 - device-specific information</li> <li>• I&amp;M1 – higher level designation/location designation</li> </ul>	<p>Yes</p> <p>Yes</p>
<b>product functions / diagnostics</b>	
<p>product function</p> <ul style="list-style-type: none"> <li>• PROFINET IO diagnosis</li> <li>• link check</li> <li>• connection monitoring IP-Alive</li> <li>• localization via Aeroscout</li> <li>• SysLog</li> </ul>	<p>Yes</p> <p>No</p> <p>No</p> <p>Yes</p> <p>Yes</p>
<p>protocol / is supported</p> <ul style="list-style-type: none"> <li>• SNMP v1</li> <li>• SNMP v2</li> <li>• SNMP v3</li> </ul>	<p>Yes</p> <p>Yes</p> <p>Yes</p>
<b>product functions / VLAN</b>	
<p>product function</p> <ul style="list-style-type: none"> <li>• function VLAN with IWLAN</li> </ul>	<p>Yes</p>
<b>product functions / DHCP</b>	
<p>product function</p> <ul style="list-style-type: none"> <li>• DHCP client</li> <li>• DHCP server</li> <li>• DHCP Option 82</li> </ul>	<p>Yes</p> <p>Yes</p> <p>Yes</p>
<b>product functions / redundancy</b>	
<p>protocol / is supported</p> <ul style="list-style-type: none"> <li>• STP/RSTP</li> <li>• MSTP</li> <li>• RSTP</li> </ul>	<p>Yes</p> <p>Yes</p> <p>Yes</p>
<b>product functions / security</b>	
<p>product function</p> <ul style="list-style-type: none"> <li>• ACL - MAC-based</li> <li>• management security, ACL-IP based</li> <li>• IEEE 802.1x (radius)</li> <li>• NAT/NAPT</li> <li>• access protection according to IEEE802.11i</li> <li>• WPA/WPA2</li> <li>• TKIP/AES</li> </ul>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>No</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>
<p>protocol / is supported</p> <ul style="list-style-type: none"> <li>• SSH</li> <li>• RADIUS</li> </ul>	<p>Yes</p> <p>Yes</p>
<b>product functions / time</b>	
<p>protocol / is supported</p> <ul style="list-style-type: none"> <li>• NTP</li> <li>• SNTP</li> <li>• SIMATIC time synchronization (SIMATIC Time)</li> </ul>	<p>Yes</p> <p>Yes</p> <p>Yes</p>
<b>standards, specifications, approvals</b>	
<p>standard</p>	

<ul style="list-style-type: none"> <li>• for FM</li> </ul>	FM 3611: Class I, Division 2, Groups A,B,C,D, T4 / Class 1, Zone 2, Group IIC, T4
<ul style="list-style-type: none"> <li>• for safety / from CSA and UL</li> </ul>	UL 60950-1, CSA C22.2 No. 60950-1
certificate of suitability	
<ul style="list-style-type: none"> <li>• EC Declaration of Conformity</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• CE marking</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• C-Tick</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• E1 approval</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• railway application in accordance with EN 50155</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• railway application in accordance with EN 50121-4</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• fire protection in accordance with EN 45545-2</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• NEMA TS2</li> </ul>	No
<ul style="list-style-type: none"> <li>• IEC 61375</li> </ul>	No
<ul style="list-style-type: none"> <li>• IEC 61850-3</li> </ul>	No
<ul style="list-style-type: none"> <li>• NEMA4X</li> </ul>	No
<ul style="list-style-type: none"> <li>• Power-over-Ethernet according to IEEE802.3at for type 1 and IEEE802.3af</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Power-over-Ethernet according to IEEE802.3at for type 2</li> </ul>	Yes
standard for wireless communication	
<ul style="list-style-type: none"> <li>• IEEE 802.11a</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• IEEE 802.11b</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• IEEE 802.11e</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• IEEE 802.11g</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• IEEE 802.11h</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• IEEE 802.11i</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• IEEE 802.11n</li> </ul>	Yes
wireless approval	You will find the current list of countries at: <a href="http://www.siemens.de/funkzulassungen">www.siemens.de/funkzulassungen</a>

#### standards, specifications, approvals / marine classification

Marine classification association	
<ul style="list-style-type: none"> <li>• American Bureau of Shipping Europe Ltd. (ABS)</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• French marine classification society (BV)</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• DNV GL</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Korean Register of Shipping (KRS)</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Lloyds Register of Shipping (LRS)</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Nippon Kaiji Kyokai (NK)</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Polski Rejestr Statkow (PRS)</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Royal Institution of Naval Architects (RINA)</li> </ul>	Yes

#### standards, specifications, approvals / hazardous environments

standard / for hazardous zone	EN 60079-15:2005, EN 60079-0:2006, II 3 G Ex nA II T4 KEMA 07 ATEX 0145X
<ul style="list-style-type: none"> <li>• from CSA and UL</li> </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
certificate of suitability / CCC / for hazardous zone according to GB standard	Yes

#### further information / internet-Links

Internet-Link	
<ul style="list-style-type: none"> <li>• to website: TIA Selection Tool</li> </ul>	<a href="http://www.siemens.com/tia-selection-tool">http://www.siemens.com/tia-selection-tool</a>
<ul style="list-style-type: none"> <li>• to web page: selection aid TIA Selection Tool</li> </ul>	<a href="http://www.siemens.com/tia-selection-tool">http://www.siemens.com/tia-selection-tool</a>
<ul style="list-style-type: none"> <li>• to the website: IWLAN</li> </ul>	<a href="http://www.siemens.com/iwlan">http://www.siemens.com/iwlan</a>
<ul style="list-style-type: none"> <li>• to website: Industry Mall</li> </ul>	<a href="https://mall.industry.siemens.com">https://mall.industry.siemens.com</a>
<ul style="list-style-type: none"> <li>• to website: Information and Download Center</li> </ul>	<a href="http://www.siemens.com/industry/infocenter">http://www.siemens.com/industry/infocenter</a>
<ul style="list-style-type: none"> <li>• to website: Image database</li> </ul>	<a href="http://automation.siemens.com/bilddb">http://automation.siemens.com/bilddb</a>
<ul style="list-style-type: none"> <li>• to website: CAx-Download-Manager</li> </ul>	<a href="http://www.siemens.com/cax">http://www.siemens.com/cax</a>
<ul style="list-style-type: none"> <li>• to website: Industry Online Support</li> </ul>	<a href="https://support.industry.siemens.com">https://support.industry.siemens.com</a>

#### security information

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
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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)

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