



IWLAN access point, SCALANCE W778-1 M12 EEC, 1 radio, 2 N-CON antenna port, iFeatures support via key plug, IEEE 802.11a/b/g/h/n, 2.4/5 GHz, gross data rate 300 Mbit/s, 2x M12 max. 100 Mbit/s, PoE integrated 2-port switch, redundant 24 V DC, M12 A-coded IP65, -30... 70 °C, plug slot WPA2/802.11i/e, conformal coating EN 50155, EN 45545, observe national approvals! CERT ID: MSN65-W1-M12-E2 Scope of delivery: Manuals on CD-ROM, English/German; M12 sealing caps, for operation in the USA

Transfer rate

Transfer rate	
<ul style="list-style-type: none"> with WLAN / maximum for Industrial Ethernet 	300 Mbit/s 10, 100 Mbit/s
Transfer rate / for Industrial Ethernet	
<ul style="list-style-type: none"> minimum maximum 	10 Mbit/s 100 Mbit/s

Interfaces

Number of electrical connections	
<ul style="list-style-type: none"> for network components or terminal equipment for power supply for redundant voltage supply 	2 1 1
Type of electrical connection	
<ul style="list-style-type: none"> for network components or terminal equipment for power supply 	M12 interface (4-pole, D-coded), PoE M12 interface (4-pole, A-coded)
design of the removable storage	
<ul style="list-style-type: none"> C-PLUG KEY-PLUG 	Yes Yes

Interfaces / wireless	
Number of radio cards / permanently installed	1
Transmission mode / for multiple input multiple output (MIMO)	2x2
Number of spatial streams	2
Number of electrical connections / for external antenna(s)	2
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"> from M12 Power Connector (A-coded) for redundant power supply 	16.8 V
Supply voltage / 2 <ul style="list-style-type: none"> from M12 Power Connector (A-coded) for redundant power supply 	31.2 V
Supply voltage <ul style="list-style-type: none"> from Power-over-Ethernet acc. to IEEE802.3at for type 1 and IEEE802.3af 	48 V
Consumed current <ul style="list-style-type: none"> at DC / at 24 V / typical with Power-over-Ethernet according to IEEE802.3at for type 1 and IEEE802.3af / typical 	0.25 A 0.125 A
Power loss [W] <ul style="list-style-type: none"> at DC / at 24 V / typical with Power-over-Ethernet according to IEEE802.3at for type 1 and IEEE802.3af / typical 	6 W 6 W

Ambient conditions	
Ambient temperature <ul style="list-style-type: none"> during operation during storage during transport 	-30 ... +75 °C -40 ... +85 °C -40 ... +85 °C
Relative humidity / at 25 °C / without condensation / during operation / maximum	95 %
Ambient condition / for operation	When used under hazardous conditions (Zone 2), the SCALANCE W778-1 M12 or W738-1 M12 product must be installed in an housing with at least IP54 degree of protection according to EN 60529 within the scope of EN 50021.
Protection class IP	IP65

Design, dimensions and weights	
Width	140 mm

Height	160 mm
Depth	45 mm
Width / of the enclosure / without antenna	140 mm
Height / of the enclosure / without antenna	149 mm
Depth / of the enclosure / without antenna	45 mm
Net weight	0.95 kg
Product feature / conformal coating	Yes
Mounting type	35 mm DIN rail mounting only per accessories
<ul style="list-style-type: none"> • S7-300 rail mounting • S7-1500 rail mounting • 35 mm DIN rail mounting • wall mounting 	<p>No</p> <p>No</p> <p>Yes</p> <p>Yes</p>

Radio frequencies

Operating frequency	
<ul style="list-style-type: none"> • for WLAN in 2.4 GHz frequency band • for WLAN in 5 GHz frequency band 	<p>2.41 ... 2.48 GHz; depending on the country approvals</p> <p>4.9 ... 5.8 GHz; depending on the country approvals</p>

Product features, product functions, product components / general

Product function / Access Point Mode	Yes
Product function / Client Mode	Yes
Number of SSIDs	4
Product function	
<ul style="list-style-type: none"> • iPCF Access Point • iPCF client • iPCF-MC Access Point • iPCF-MC client 	<p>Yes; Only in combination with the 'KEY-PLUG W780 iFeatures'</p> <p>Yes; Only in combination with the 'KEY-PLUG W780 iFeatures' or 'KEY-PLUG W740 iFeatures'</p> <p>No</p> <p>Yes; Only in combination with 'KEY-PLUG W780 iFeatures' or 'KEY-PLUG W740 iFeatures'</p>
Number of iPCF-capable radio modules	1
Product function / iREF	Yes; Only in combination with the 'KEY-PLUG W780 iFeatures' or 'KEY-PLUG W740 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"> • CLI • web-based management • MIB support • TRAPs via email • Configuration with STEP 7 • configuration with STEP 7 in the TIA Portal • operation with IWLAN controller 	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>No</p>

<ul style="list-style-type: none"> • operation with Enterasys WLAN controller • forced roaming on IP down with IWLAN • forced roaming on link down with IWLAN • WDS 	<p>No</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>
Protocol / is supported <ul style="list-style-type: none"> • Address Resolution Protocol (ARP) • ICMP • Telnet • HTTP • HTTPS • TFTP • DCP • LLDP 	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>
Identification & maintenance function <ul style="list-style-type: none"> • I&M0 - device-specific information • I&M1 – higher-level designation/location designation 	<p>Yes</p> <p>Yes</p>

Product functions / Diagnostics

Product function <ul style="list-style-type: none"> • PROFINET IO diagnosis • Link Check • connection monitoring IP-Alive • localization via Aeroscout • SysLog 	<p>Yes</p> <p>No</p> <p>No</p> <p>Yes</p> <p>Yes</p>
Protocol / is supported <ul style="list-style-type: none"> • SNMP v1 • SNMP v2 • SNMP v3 	<p>Yes</p> <p>Yes</p> <p>Yes</p>

Product functions / VLAN

Product function <ul style="list-style-type: none"> • function VLAN with IWLAN 	<p>Yes</p>
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Product functions / DHCP

Product function <ul style="list-style-type: none"> • DHCP client • DHCP server • DHCP Option 82 	<p>Yes</p> <p>Yes</p> <p>Yes</p>
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Product functions / redundancy

Protocol / is supported <ul style="list-style-type: none"> • STP/RSTP • MSTP 	<p>Yes</p> <p>Yes</p>
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- RSTP Yes

Product functions / Security

Product function	
• ACL - MAC-based	Yes
• Management security, ACL-IP based	Yes
• IEEE 802.1x (radius)	Yes
• NAT/NAPT	Yes
• access protection according to IEEE802.11i	Yes
• WPA/WPA2	Yes
• TKIP/AES	Yes
Protocol / is supported	
• SSH	Yes
• RADIUS	Yes

Product functions / time

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

Standards, specifications, approvals

Standard	
• 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
Certificate of suitability	
• 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

<ul style="list-style-type: none"> • Power-over-Ethernet according IEEE802.3at for type 1 and IEEE802.3af 	Yes
<ul style="list-style-type: none"> • Power-over-Ethernet according to IEEE802.3at for type 2 	Yes
Standard for wireless communication <ul style="list-style-type: none"> • IEEE 802.11a • IEEE 802.11b • IEEE 802.11e • IEEE 802.11g • IEEE 802.11h • IEEE 802.11i • IEEE 802.11n 	Yes Yes Yes Yes Yes Yes Yes
Wireless approval	You will find the current list of countries at: www.siemens.de/funkzulassungen
Marine classification association <ul style="list-style-type: none"> • American Bureau of Shipping Europe Ltd. (ABS) • Bureau Veritas (BV) • DNV GL • Korean Register of Shipping (KRS) • Lloyds Register of Shipping (LRS) • Nippon Kaiji Kyokai (NK) • Polski Rejestr Statkow (PRS) • Royal Institution of Naval Architects (RINA) 	Yes Yes Yes Yes Yes Yes Yes Yes

Further information / Internet-Links

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

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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)

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