

SCALANCE XR522-12; managed layer 3 IE switch, 19" rack; 20x 100/1000 Mbps RJ45 port; 2x 1G/2.5G/5G/10 Gbps RJ45 port 4x 100M/1G SFP port; 8x 1G/10G SFP+ port; LED diagnostics; error signaling contact; select/set button; PROFINET IO device; network management; integrated redundancy manager; office features (RSTP, VLAN, IGMP,...); CLP included in scope of supply; power supply 2x 230 V AC;



product type designation	
product brand name	SCALANCE
transfer rate	
transfer rate	10, 100, 1000 Mbit/s
transfer rate	2.5, 5, 10 Gbit/s
interfaces / for communication / integrated	
number of electrical connections	
• for network components or terminal equipment	22; RJ45 with securing collar
number of 10/100/1000 Mbit/s RJ45 ports	
• with securing collar	20
number of 1000/2500/5000/10000 Mbps RJ45 ports / with securing collar	2
number of electrical connections	
• for SFP	4; 100 Mbps and 1000 Mbps SFP usable
• for SFP+	8; 1000 Mbps and 10000 Mbps SFP usable
interfaces / other	
number of electrical connections	
• for operator console	1
• for signaling contact	1
• for power supply	2
design of the removable storage	
• CLP	Yes
operating voltage / of the signaling contacts	
• at DC / rated value	24 V
operational current / of the signaling contacts	
• at DC / maximum	0.1 A
supply voltage, current consumption, power loss	
product component / connection for redundant voltage supply	Yes
type of voltage supply / redundant power supply unit	Yes
<b>type of voltage / 1 / of the supply voltage</b>	
• supply voltage / 1 / rated value	100V ... 250V DC
• power loss [W] / 1 / rated value	99 W
• supply voltage / 1 / rated value	77 ... 300 V
• consumed current / 1 / maximum	0.8 A
• product component / 1 / fusing at power supply input	Yes
<b>type of voltage / 2 / of the supply voltage</b>	
• supply voltage / 2 / rated value	240 V; 100V ... 240V AC
• power loss [W] / 2 / rated value	99 W
• supply voltage / 2 / rated value	85 ... 264 V
• consumed current / 2 / maximum	0.8 A

**ambient conditions**

ambient temperature / in horizontal mounting position / during operation	-25 ... +60 °C; Starting at -25 °C; The maximum ambient temperature during operation depends on the operating height and the plug-in transceivers, see also manual.
installation altitude / at height above sea level / maximum	3000 m
relative humidity <ul style="list-style-type: none"> <li>at 25 °C / without condensation / during operation / maximum</li> </ul>	95 %
operating condition / fanless operation	Yes
protection class IP	IP20

**design, dimensions and weights**

design	19-inch rack
number of modular height units / relating to 19-inch cabinet	1
width	446 mm
height	43.6 mm
depth	374.8 mm
net weight	8.4 kg
material / of the enclosure	metal
fastening method <ul style="list-style-type: none"> <li>19-inch installation</li> </ul>	Yes

**product features, product functions, product components / general**

cascading in the case of a redundant ring / at reconfiguration time of <math>\leq 0.3\text{ s}</math>	50
cascading in cases of star topology	any (depending only on signal propagation time)
number of automatically learnable MAC addresses	16382
number of QoS queues / per port	8
product function <ul style="list-style-type: none"> <li>QoS according to IEEE 802.1Q</li> </ul>	Yes
product feature <ul style="list-style-type: none"> <li>Store &amp; Forward switching method</li> </ul>	Yes

**product functions / management, configuration, engineering**

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>RMON</li> <li>port mirroring</li> <li>multiport mirroring</li> <li>CoS</li> <li>PROFINET IO diagnosis</li> <li>switch-managed</li> </ul>	Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes
PROFINET conformity class	B
network load class / according to PROFINET	III
telegram length / for Ethernet / maximum	9194 byte
protocol / is supported <ul style="list-style-type: none"> <li>Telnet</li> <li>HTTP</li> <li>HTTPS</li> <li>TFTP</li> <li>FTP</li> <li>SFTP</li> <li>BOOTP</li> <li>NETCONF</li> <li>GMRP</li> <li>DCP</li> <li>LLDP</li> <li>EtherNet/IP</li> <li>SNMP v1</li> <li>SNMP v2</li> <li>SNMP v3</li> </ul>	Yes Yes Yes Yes Yes Yes Yes No Yes Yes Yes Yes Yes Yes Yes Yes

<ul style="list-style-type: none"> <li>IGMP (snooping/querier)</li> </ul>	Yes
identification & maintenance function	
<ul style="list-style-type: none"> <li>I&amp;M0 - device-specific information</li> </ul>	Yes
<ul style="list-style-type: none"> <li>I&amp;M1 - higher level designation/location designation</li> </ul>	Yes
<b>product functions / diagnostics</b>	
product function	
<ul style="list-style-type: none"> <li>port diagnostics</li> </ul>	Yes
<ul style="list-style-type: none"> <li>statistics Packet Size</li> </ul>	Yes
<ul style="list-style-type: none"> <li>statistics packet type</li> </ul>	Yes
<ul style="list-style-type: none"> <li>error statistics</li> </ul>	Yes
<ul style="list-style-type: none"> <li>SysLog</li> </ul>	Yes
<b>product functions / VLAN</b>	
product function	
<ul style="list-style-type: none"> <li>VLAN - port based</li> </ul>	Yes
<ul style="list-style-type: none"> <li>VLAN - protocol-based</li> </ul>	No
<ul style="list-style-type: none"> <li>VLAN - IP-based</li> </ul>	No
<ul style="list-style-type: none"> <li>VLAN dynamic</li> </ul>	Yes
number of VLANs / maximum	257
number of VLANs - dynamic / maximum	257
number of VLANs / at ring redundancy (HRP; MRP; standby link)	257
<b>product functions / DHCP</b>	
product function	
<ul style="list-style-type: none"> <li>DHCP server</li> </ul>	Yes
<ul style="list-style-type: none"> <li>DHCP client</li> </ul>	Yes
<ul style="list-style-type: none"> <li>DHCP Option 82</li> </ul>	Yes
<ul style="list-style-type: none"> <li>DHCP Option 66</li> </ul>	Yes
<ul style="list-style-type: none"> <li>DHCP Option 67</li> </ul>	Yes
<b>product functions / routing</b>	
service / routing / note	IP routing integrated
product function	
<ul style="list-style-type: none"> <li>static IP routing</li> </ul>	Yes
<ul style="list-style-type: none"> <li>static IP routing IPv6</li> </ul>	No
<ul style="list-style-type: none"> <li>dynamic IP routing</li> </ul>	Yes
<ul style="list-style-type: none"> <li>dynamic IP routing IPv6</li> </ul>	No
protocol / is supported	
<ul style="list-style-type: none"> <li>RIPv2</li> </ul>	Yes
<ul style="list-style-type: none"> <li>RIPnG for IPv6</li> </ul>	No
<ul style="list-style-type: none"> <li>OSPFv2</li> </ul>	Yes
<ul style="list-style-type: none"> <li>OSPFv3 for IPv6</li> </ul>	No
<ul style="list-style-type: none"> <li>VRRP</li> </ul>	Yes
<ul style="list-style-type: none"> <li>VRRP for IPv6</li> </ul>	No
<b>product functions / redundancy</b>	
protocol / is supported / Media Redundancy Protocol (MRP)	Yes
product function	
<ul style="list-style-type: none"> <li>media redundancy protocol (MRP) with redundancy manager</li> </ul>	Yes
<ul style="list-style-type: none"> <li>Media Redundancy Protocol Interconnection (MRP-I)</li> </ul>	Yes
<ul style="list-style-type: none"> <li>of the PROFINET IO device / is supported / PROFINET system redundancy</li> </ul>	Yes
<ul style="list-style-type: none"> <li>ring redundancy</li> </ul>	Yes
<ul style="list-style-type: none"> <li>high speed redundancy protocol (HRP) with redundancy manager</li> </ul>	Yes
<ul style="list-style-type: none"> <li>high speed redundancy protocol (HRP) with standby redundancy</li> </ul>	Yes
<ul style="list-style-type: none"> <li>redundancy procedure STP</li> </ul>	Yes
<ul style="list-style-type: none"> <li>redundancy procedure RSTP</li> </ul>	Yes
<ul style="list-style-type: none"> <li>redundancy procedure RSTP+</li> </ul>	Yes
<ul style="list-style-type: none"> <li>redundancy procedure MSTP</li> </ul>	Yes
<ul style="list-style-type: none"> <li>High-availability Seamless Redundancy (HSR)</li> </ul>	Yes
<ul style="list-style-type: none"> <li>Parallel Redundancy Protocol (PRP)/operation in the PRP-network</li> </ul>	Yes

<ul style="list-style-type: none"> <li>Parallel Redundancy Protocol (PRP)/Redundant Network Access (RNA)</li> </ul>	Yes
<ul style="list-style-type: none"> <li>passive listening</li> </ul>	Yes
protocol / is supported <ul style="list-style-type: none"> <li>LACP</li> </ul>	Yes
<b>system modification during operation</b>	
product function / configuration in RUN via CiR/H-CiR	Yes
<b>product functions / security</b>	
product function <ul style="list-style-type: none"> <li>IEEE 802.1x (radius)</li> <li>broadcast/multicast/unicast limiter</li> <li>broadcast blocking</li> </ul>	Yes Yes Yes
protocol / is supported <ul style="list-style-type: none"> <li>SSH</li> <li>SSL</li> </ul>	Yes Yes
<b>product functions / time</b>	
product function <ul style="list-style-type: none"> <li>SICLOCK support</li> <li>NTP-client</li> <li>SNTP client</li> <li>IEEE 1588 v2 transparent forwarding</li> </ul>	Yes Yes Yes Yes
protocol / is supported <ul style="list-style-type: none"> <li>NTP</li> <li>SNTP</li> </ul>	Yes Yes
accuracy / at IEEE 1588 v2 <ul style="list-style-type: none"> <li>not less than</li> <li>typical</li> </ul>	100 $\mu$ s 50 ns
<b>standards, specifications, approvals</b>	
certificate of suitability <ul style="list-style-type: none"> <li>CE marking</li> <li>UKCA marking</li> <li>EC Declaration of Conformity EN 61010, IEC 61010-1, UL 61010A-1</li> <li>KC approval</li> <li>Regulatory Compliance Mark (RCM)</li> </ul>	Yes Yes Yes Yes Yes
product conformity / according to EMC-guideline	2014/30/EU
standard <ul style="list-style-type: none"> <li>for EMC interference emission</li> <li>for immunity to EMC</li> </ul>	EN 61000-6-4, EN 50121-9 EN 61000-6-2, EN 50121-4
<b>standards, specifications, approvals / other</b>	
certificate of suitability <ul style="list-style-type: none"> <li>railway application in accordance with EN 50121-4</li> <li>railway application in accordance with EN 50125-3</li> <li>RoHS conformity</li> </ul>	Yes; use only in areas not accessible to the public Yes; Section 4.2: Class AX (up to 2000m); section 4.3: T1: Containers N.T.C and T.C. / Buildings N.C.C and C.C, T2: Containers N.T.C and T.C. / Buildings N.C.C and C.C, TX: Containers N.T.C and T.C. / Buildings N.C.C and C.C., derating according to the manual must be observed when SFP/SFP+ transceivers are used; section 4.4: T1: Containers C.C. / Buildings N.C.C and C.C., T2: Containers C.C. / Buildings N.C.C and C.C, T3: Containers C.C. / Buildings N.C.C and C.C; section 4.11: C1: Indoor, C2: Indoor (except condensation), C3: Indoor (except condensation), 4B1, 4S10, UL 62368-1, UL 61010-2-10; section 4.13: partially, Test Fc: Vibration EN 60068-2-6; IEC 60068-2-6, Test Ea: Shock EN 60068-2-27; IEC 60068-2-27, Test Ec: Rough handling, shocks EN 60068-2-31; IEC 60068-2-31; section 4.14: yes; section 4.15: yes, according to manual. Yes
resistance to air pollution / conformity according to ANSI/ISA-71.04	Yes; G3
IT security for industrial automation systems / according to IEC 62443-4-2:2019	Yes
<b>standards, specifications, approvals / marine classification</b>	
Marine classification association <ul style="list-style-type: none"> <li>American Bureau of Shipping Europe Ltd. (ABS)</li> <li>French marine classification society (BV)</li> <li>Chinese Classification Society (CCS)</li> <li>Det Norske Veritas (DNV)</li> </ul>	No No No No

- Korean Register of Shipping (KRS) No
- Lloyds Register of Shipping (LRS) No
- Nippon Kaiji Kyokai (NK) No
- Polski Rejestr Statkow (PRS) No
- Royal Institution of Naval Architects (RINA) No

**standards, specifications, approvals / Environmental Product Declaration**

Environmental Product Declaration	Yes
global warming potential [CO2 eq]	
• total	991.85 kg
• during manufacturing	225.96 kg
• during operation	765.04 kg
• after end of life	0.85 kg

**product functions / general**

MTBF	10.6 a
reference temperature / for MTBF determination	40 °C
reference code	
• according to IEC 81346-2	KF
• according to IEC 81346-2:2019	KFE
Warranty period	5 a
product function / is supported / identification link	Yes; acc. to IEC 61406-1:2022

**further information / internet links**

internet link	
• to website: Selection guide for cables and connectors	<a href="https://support.industry.siemens.com/cs/ww/en/view/109766358">https://support.industry.siemens.com/cs/ww/en/view/109766358</a>
• to web page: selection aid TIA Selection Tool	<a href="https://www.siemens.com/tstcloud">https://www.siemens.com/tstcloud</a>
• to website: Industrial communication	<a href="https://www.siemens.com/simatic-net">https://www.siemens.com/simatic-net</a>
• to web page: SiePortal	<a href="https://sieportal.siemens.com/">https://sieportal.siemens.com/</a>
• to website: Image database	<a href="https://www.automation.siemens.com/bilddb">https://www.automation.siemens.com/bilddb</a>
• to website: CAX-Download-Manager	<a href="https://www.siemens.com/cax">https://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**

security information	Siemens provides products and solutions with industrial cybersecurity functions that support the secure operation of plants, systems, machines and networks. In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial cybersecurity concept. Siemens' products and solutions constitute one element of such a concept. Customers are responsible for preventing unauthorized access to their plants, systems, machines and networks. Such systems, machines and components should only be connected to an enterprise network or the internet if and to the extent such a connection is necessary and only when appropriate security measures (e.g. firewalls and/or network segmentation) are in place. For additional information on industrial cybersecurity measures that may be implemented, please visit <a href="http://www.siemens.com/cybersecurity-industry">www.siemens.com/cybersecurity-industry</a> . Siemens' products and solutions undergo continuous development to make them more secure. Siemens strongly recommends that product updates are applied as soon as they are available and that the latest product versions are used. Use of product versions that are no longer supported, and failure to apply the latest updates may increase customer's exposure to cyber threats. To stay informed about product updates, subscribe to the Siemens Industrial Cybersecurity RSS Feed under <a href="https://www.siemens.com/cert">https://www.siemens.com/cert</a> . (V4.7)
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**Approvals / Certificates**

<b>General Product Approval</b>	<b>Test Certificates</b>
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[Type Test Certificates/Test Report](#)

<b>Environment</b>	<b>Industrial Communication</b>
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