



SIEMENS

Ingenuity for life

SCALANCE X

The comprehensive range
of Industrial Ethernet switches

On a direct path to the optimal Industrial Ethernet switch

The demands placed on Industrial communication networks are tremendous. Our answer to these challenges is SCALANCE X. Are you already familiar with our system family? Here you'll quickly find the right Industrial Ethernet switch for your application.

PRODUCT PORTFOLIO

Operations level	Unmanaged	Managed
Control level		
Field level		
		Device versions with IRT functionality (isochronous real time)



About the specific requirements for optimal Industrial Ethernet switches

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FEATURES

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FEATURES

Communication layer



SCALANCE X covers a wide range of types and communication layers. Our rugged, easy-to-use, unmanaged switches enable to setup cost-effective Industrial Ethernet networks. Our versatile and high-performance layer 2 switches are recommended for machine-level applications and the networking of plant areas.

And our layer 2/3 devices for large networks are prepared to meet all your communication network challenges. They're known for maximum flexibility and the highest network availability.

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FEATURES

Communication layer > Unmanaged



SCALANCE X-200	SCALANCE X-300	SCALANCE X-400	SCALANCE X-500
			
Universal, ideal for setting up line, star, and ring topologies up to 1 Gbit/s.	For the powerful expansion of plant networks with Gigabit Ethernet – including harsh conditions.	Modular design, for simple and straightforward segmentation on all levels.	For the flexible and powerful connection of an industrial network to the corporate IT system.
Unmanaged	Unmanaged	Managed	Managed



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FEATURES

Communication layer > Managed layer 2

CSM	SCALANCE X-000	SCALANCE X-100	SCALANCE X-400	SCALANCE X-500
				
Unmanaged, ideal for interface extension of LOGO!, SIMATIC S7-300/ET 200M, or S7-1200.	Unmanaged, for implementing easy machine networking, including enhanced environmental conditions.	Unmanaged, robust, and with different port configurations – also available as media converter.	Modular design, for simple and straightforward segmentation on all levels.	For the flexible and powerful connection of an industrial network to the corporate IT system.
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FEATURES

Communication layer > Managed layer 2/3

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FEATURES

Diagnostics



With SCALANCE X, you benefit from complete integration into EtherNet/IP diagnostics. However, you can also use the extended diagnostic options via PROFINET, provided the use of a controller that supports extended PROFINET diagnostics.

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FEATURES

Diagnostics > PROFINET

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			→			
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FEATURES

Diagnostics > EtherNet/IP

CSM	SCALANCE X-000	SCALANCE X-100	SCALANCE X-300
			
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FEATURES

Environmental conditions



Equipped for all environmental conditions: As part of a comprehensive offering of Industrial Ethernet switches, you're sure to find the right switch for your application. We offer devices with the high IP65 degree of protection and for use under enhanced environmental conditions.

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FEATURES

Environmental conditions > Enhanced environmental conditions

CSM		SCALANCE X-100		SCALANCE X-400		SCALANCE X-500	
							
Unmanaged, ideal for interface extension of LOGO!, SIMATIC S7-300/ET 200M, or S7-1200.		Unmanaged, robust, and with different port configurations – also available as media converter.		Modular design, for simple and straightforward segmentation on all levels.		For the flexible and powerful connection of an industrial network to the corporate IT system.	
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FEATURES

Design



Whether modular, compact, flat, or as a rack switch: With SCALANCE X, you have access to a graded portfolio of Industrial Ethernet switches in different designs.

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FEATURES

Design > Modular

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FEATURES

Design > Compact

SCALANCE X-400



Modular design, for simple and straightforward segmentation on all levels.

Unmanaged

Unmanaged

Unmanaged

Managed

Managed

Managed

SCALANCE X-500



For the flexible and powerful connection of an industrial network to the corporate IT system.

Managed



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FEATURES

Design > Flat

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FEATURES

Design > Rack

CSM	SCALANCE X-000	SCALANCE X-200	SCALANCE X-400
			
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FEATURES

Support of VLAN



Virtual LANs (VLANs) enable especially large Industrial Ethernet networks to be subdivided into a number of virtual subnetworks with their own address space – and thus intelligently structured. The resulting benefits: reduction of broadcast load, separation of sensitive areas from the main network, creation of logical working groups. Communication between VLANs can be achieved with Layer 3 switching (IP routing).

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*Not all X-200 are VLAN-compatible



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FEATURES

Bandwidths



Even in terms of bandwidth, with SCALANCE X there is a choice of devices with bandwidths of up to 1 Gbit/s and up to 10 Gbit/s.

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FEATURES

Bandwidths > 1 Gbit/s

CSM



Unmanaged, ideal for interface extension of LOGO!, SIMATIC S7-300/ET 200M, or S7-1200.

Unmanaged

Unmanaged

SCALANCE X-100



Unmanaged, robust, and with different port configurations – also available as media converter.

Unmanaged

Managed

Managed

Managed

Managed



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FEATURES

Bandwidths > 10 Gbit/s

CSM	SCALANCE X-000	SCALANCE X-100	SCALANCE X-200	SCALANCE X-300	SCALANCE X-400
					
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FEATURES

Power-over-Ethernet (PoE)



With Power-over-Ethernet (PoE), devices can be connected and powered without additional power supply units or cables. This is especially convenient for places that are difficult to access – or wherever cables would get in the way. Instead, devices draw power via Industrial Ethernet switches with PoE functionality.

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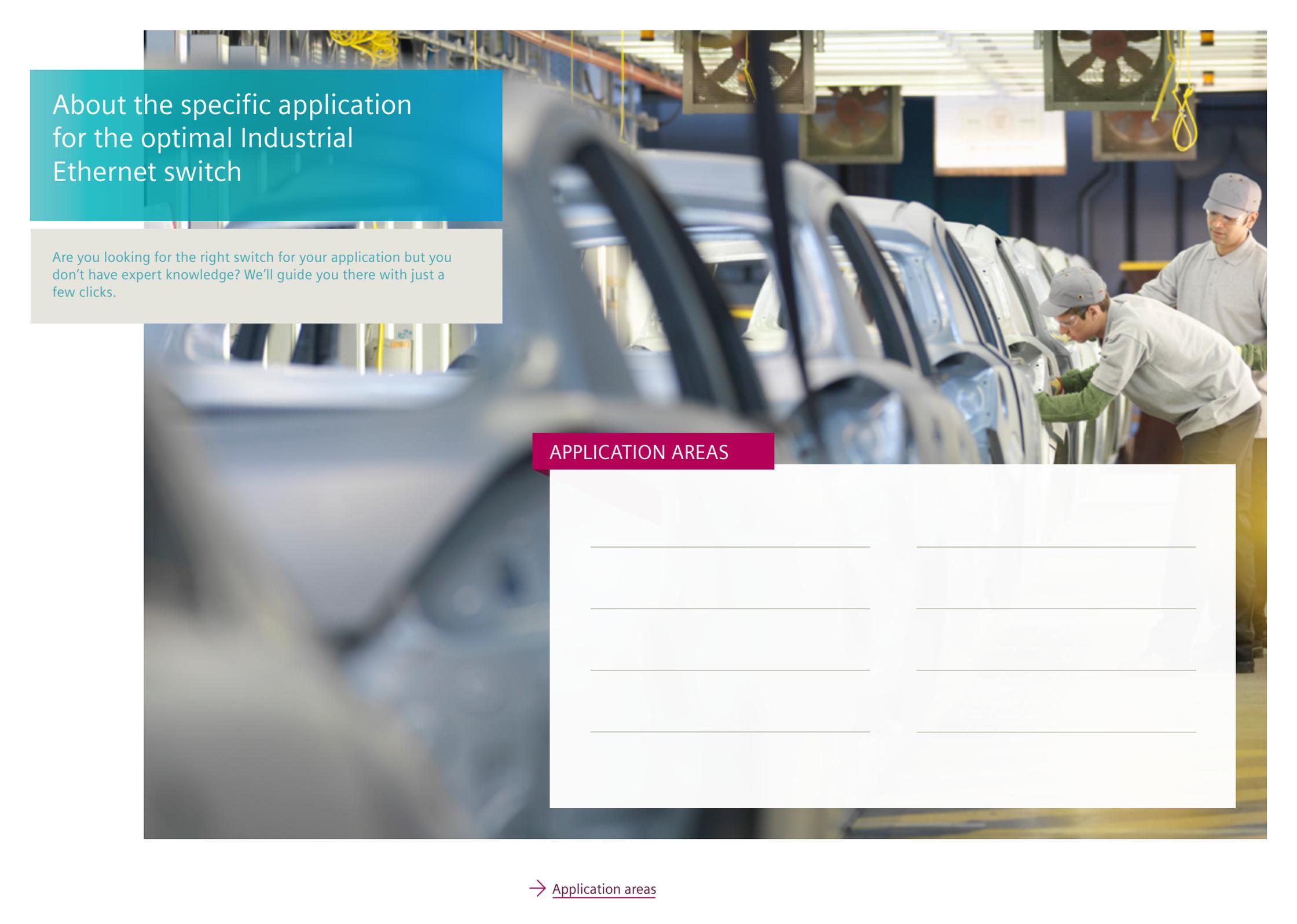
FEATURES

Power-over-Ethernet (PoE)

CSM	SCALANCE X-000					
		→	→			
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Unmanaged	Unmanaged	Unmanaged	Managed	Managed	Managed	Managed

*Not all switches are suitable for PoE





About the specific application for the optimal Industrial Ethernet switch

Are you looking for the right switch for your application but you don't have expert knowledge? We'll guide you there with just a few clicks.

APPLICATION AREAS

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APPLICATION AREAS

Connection to corporate IT system

CSM	SCALANCE X-000	SCALANCE X-100	SCALANCE X-200	SCALANCE X-300		
						
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APPLICATION AREAS

Plant networking

CSM	SCALANCE X-000	SCALANCE X-100				
			→	→	→	→
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APPLICATION AREAS

Industry-related applications

CSM	SCALANCE X-000	SCALANCE X-100				
			→	→	→	→
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APPLICATION AREAS

Power generation and distribution

CSM	SCALANCE X-000	SCALANCE X-100			SCALANCE X-400	SCALANCE X-500		
								
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APPLICATION AREAS

Machine and plant engineering

CSM	SCALANCE X-000	SCALANCE X-300	SCALANCE X-400	SCALANCE X-500
				
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APPLICATION AREAS

Plant unit networking

CSM	SCALANCE X-000	SCALANCE X-300	SCALANCE X-400	SCALANCE X-500
				
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APPLICATION AREAS

Series machines

CSM



Unmanaged, ideal for interface extension of LOGO!, SIMATIC S7-300/ET 200M, or S7-1200.

Unmanaged

Unmanaged

Unmanaged

Managed

SCALANCE X-300



For the powerful expansion of plant networks with Gigabit Ethernet – including harsh conditions.

Managed

SCALANCE X-400



Modular design, for simple and straightforward segmentation on all levels.

Managed

SCALANCE X-500



For the flexible and powerful connection of an industrial network to the corporate IT system.

Managed



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APPLICATION AREAS

Machine networking

CSM	SCALANCE X-100	SCALANCE X-200	SCALANCE X-300	SCALANCE X-400	SCALANCE X-500
					
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APPLICATION AREAS

Network setup through SIMATIC S7-300, S7-1200 or LOGO!

SCALANCE X-000	SCALANCE X-100	SCALANCE X-200	SCALANCE X-300	SCALANCE X-400	SCALANCE X-500
					
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Unmanaged	Unmanaged	Unmanaged	Managed	Managed	Managed



Compact Switch Modules (CSM)

Simply more connectivity to SIMATIC: These unmanaged switches stand for optimal interface extension for SIMATIC S7-300/ET 200M, and S7-1200.

Low-cost fan-out unit specially for LOGO! and SIMATIC S7-300/ET 200M or S7-1200. With these Compact Switch Modules, up to three stations can be quickly connected.

Your benefits at a glance

- Low-cost setup of small, local Industrial Ethernet networks
- Fast and simple connection of SIMATIC S7, ET 200M, or LOGO! logic modules to Industrial Ethernet networks
- Flexible expansion of the network thanks to simple connection of the CSM
- Space-saving design of each terminal device, such as SIMATIC or LOGO!
- Support for standalone use as an unmanaged 4-port switch for Industrial Ethernet networks

More information

Get to know all the members of the product family



Compact Switch Modules (CSM)

Simply more connectivity to SIMATIC: These unmanaged switches stand for optimal interface extension for SIMATIC S7-300/ET 200M, and S7-1200.



CSM 1277

To increase the number of interfaces for SIMATIC S7-1200.



LOGO! CSM

To increase the number of interfaces for the LOGO! logic model.



CSM 377

To increase the number of interfaces for SIMATIC S7-300, S7-mEC, or ET 200M.



SCALANCE X-000

Join the world of Industrial Ethernet network topologies: Use the SCALANCE X-000 switches to implement simple machine networks that are compact and low-cost.

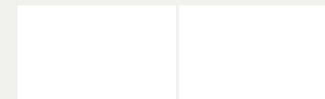
The SCALANCE X-000 unmanaged Industrial Ethernet switches are the space-saving solution for setting up small Industrial Ethernet networks with transmission rates of 10/100 Mbit/s in a line or star topology. Their small size and cost-efficiency make them the ideal entry-level solution for simple machine networking. Selected SCALANCE XB-000 versions with a network voltage of 24 V can also be used in building automation.

Your benefits at a glance

- Simple handling
- Space-saving installation in the control cabinet or wall mounting
- Industry-standard for use in machine networks
- Switched-mode power supply (24 V DC/AC)

More information

Get to know all the members of the product family



SCALANCE X-000

Join the world of Industrial Ethernet network topologies: Use the SCALANCE X-000 switches to implement simple machine networks that are compact and low-cost.

For setting up small Industrial Ethernet star and line topologies with switching functionality.

Version with plastic enclosure for use in less demanding industrial environments from -10°C to +60°C.



SCALANCE X-100

You can rely on these unmanaged Industrial Ethernet switches in machine-level applications for electrical or optical networks – even under harsh environmental conditions.

The unmanaged Industrial Ethernet switches in the SCALANCE X-100 product line are ideal for setting up Industrial Ethernet networks with transmission rates of 10/100 Mbit/s in line and star topologies. They guarantee perfect data transmission at ambient temperatures from -40°C to +70°C.

Your benefits at a glance

- Fail-safe thanks to redundant voltage infeed
- Full industrial compatibility thanks to rugged enclosure for RJ45 ports, including 19" design
- PROFINET (CC-A)
- Versions for harsh environmental conditions (-40°C to +70°C)
- High-performance in hazardous areas of Zone 2 (ATEX, IECEx)
- Cost-saving due to product versions (up to 24 ports, Power-over-Ethernet)
- Industry-compliant retaining collar for data transmission
- Fast error detection thanks to clear diagnostic LEDs
- Different device versions

More information

Get to know all the members of the product family



XB-100



XR-100WG

SCALANCE X-100

You can rely on these unmanaged Industrial Ethernet switches in machine-level applications for electrical or optical networks – even under harsh environmental conditions.

For setting up line and star topologies with switching functionality – for use in the control cabinet.

For use in control rooms and other industry-related environments.

With extended applications: e.g. in hazardous areas.

For the fast and low-cost conversion of electrical signals into optical signals.



SCALANCE X-200

Perfection for all network topologies – from machine-level applications to networked plant units: With these highly versatile Industrial Ethernet switches, you rely on a universal solution for setting up line, star, and ring topologies.

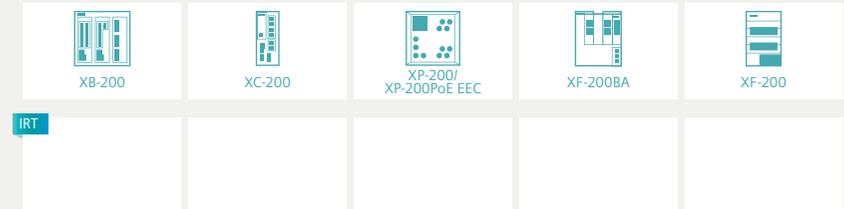
Are you planning to set up line, star, and ring topologies (10/100 Mbit/s) with high-speed redundancy in the ring for electrical or optical paths? The SCALANCE X-200 switches do just that. They also have a compact design available in various port configurations. With up to 24 electrical and optical ports in ST/BFOC and SC, as well as versatile configuration through SFP transceivers for distances of up to 200 km. The system family also includes switches with IRT functionality designed for strict real-time applications.

Your benefits at a glance

- Customized design of small and large industrial networks
- Easily expandable electrical or optical networks
- Consistent, reliable, and powerful data networks based on proven standards and redundancy procedures
- Continuous network monitoring, diagnostics, and reporting for maximum transparency in industrial networks
- Easy assembly on site without errors – using the FastConnect installation system

More information

Get to know all the members of the product family 



SCALANCE X-200

Perfection for all network topologies – from machine-level applications to networked plant units: With these highly versatile Industrial Ethernet switches, you rely on a universal solution for setting up line, star, and ring topologies.

Real-time communication supported by PROFINET and EtherNet/IP.

VLAN and the complete PROFINET or EtherNet/IP diagnostics in one device.

Up to four Gigabit ports enable the transfer of large volumes of data.

The Y-Switch functionality increases availability and helps avoid plant standstills.

For networks in which high availability or remote diagnostics options are required.

Learn about the IRT-capable members of the SCALANCE X-200 family.



SCALANCE X-200IRT

Real-time requirements on the field level, all the way to high-performance motion control applications – SCALANCE X-200IRT switches based on PROFINET meet these requirements. These extremely versatile switches for setting up isochronous real-time (IRT) Industrial Ethernet networks provide you with a universal solution for the setup of line, star, and ring topologies in time-critical applications.

IRT

For connecting non HSR-enabled and non-PRP-enabled terminal devices to networks that require high availability.

Specially designed for strict real-time applications: for use in an exceptionally wide range of applications.



SCALANCE X-200IRT PRO

For setting up IRT line and star topologies – also suitable for ring topologies and redundant ring connections.



SCALANCE XF-200IRT

For setting up IRT line and star topologies – with future-oriented switching technology.

For setting up IRT line and star topologies with polymer optical fiber (POF) – also suitable for ring topologies and redundant ring connections.



SCALANCE X-200

Production plants have been designed for and calculated to ensure high availability. This means plant failures often result in cost-intensive downtimes, high restart costs, and the loss of valuable data or materials. Redundant control systems or networks in redundant design offer protection from automation system failures. In the event of a fault, the high-availability communication can take over automatically without any consequences for the plant.

Redundancy

SCALANCE X204RNA EEC
for HSR or PRP



For connecting non-HSR-enabled and non-PRP-enabled terminal devices to networks that require high availability.



SCALANCE X-200

In the course of ongoing digitalization, the data volume in the process industry is growing at an ever increasing rate. Big data necessitates end-to-end communication down to the field level and calls for flexible and reliable communication networks – with the reliable SCALANCE X Industrial Ethernet switches. PROFINET supports flexible network architectures and also allows the integration of existing PROFINET field buses.

Process
automation

SCALANCE XF-200BA DNA



The Y-Switch functionality ensures higher availability and prevents plant downtimes.



BA 2xRJ45VD HA
BusAdapter

With SCALANCE XF-200BA Ethernet communication and existing PROFINET infrastructures.

Up to four Gigabit ports enable the transfer of large volumes of data.



Managed SCALANCE X

With their VLAN functionality, these devices make it possible to divide physical Industrial Ethernet networks into virtual subnetworks – for more flexibility in assigning devices to network segments and for improved performance and security – because VLANs offer higher protection against cyber threats.

VLAN

VLAN and complete PROFINET or EtherNet/IP diagnostics in one device.

VLAN for high availability in plant networks.

Seamless integration of automation networks into existing corporate networks by establishing virtual LANs.

For structuring Industrial Ethernet networks with a fast-growing number of users, a physically existing network can be divided into several virtual subnetworks.



SCALANCE X-300

High functionality and extreme flexibility – these are the features characterizing the SCALANCE X-300 managed Industrial Ethernet switches as compact devices or as 19" rack versions. They enable you to easily expand your plant networks with Gigabit Ethernet.



The SCALANCE X-300 switches are valued for their small mounting depth – two switches can be comfortably installed in one control cabinet. This makes them ideally suited for a wide variety of industry-related applications. The SCALANCE X-300 product family features up to 28 Gigabit ports and combo ports and can also bridge long distances thanks to their fiber optic interfaces (SFP).

Your benefits at a glance

- Cost-effective and space-saving 19" control cabinet
- Can also be used in hazardous areas
- Full integration into PROFINET or EtherNet/IP diagnostics

More information

Get to know all the members of the product family



XR-300WG



X-300



XR-300/XR-300EEC

SCALANCE X-300

High functionality and extreme flexibility – these are the features characterizing the SCALANCE X-300 managed Industrial Ethernet switches as compact devices or as 19" rack versions. They enable you to easily expand your plant networks with Gigabit Ethernet.

Thanks to modular design: plant expansion with up to 24 electrical or four optical ports.

For switched networks with high requirements in terms of availability, diagnostics, and transfer rate.

Switches with small mounting depths for saving space in the control cabinet – flexibly and economically.

Primarily for high-performance plant networks with connections to the corporate network.



SCALANCE X-400

High performance when space is restricted – that's exactly what the SCALANCE X-400 product line has to offer, thanks to its modular design. It also boasts of maximum flexibility in the automation network.

The demands placed on the communication network are growing. With a plug-in transceiver for distances up to 200 km, the SCALANCE X-400 product family offers you tremendous flexibility in the automation network. Thanks to the modular design, you can expand your Industrial Ethernet switches with additional port extenders – tool-free. But that's not all: You can improve performance even further by activating layer 3 functions.

Your benefits at a glance

- Mobile network diagnostics via smartphone or tablet
- Electrical or optical networking via combo ports – even during operation
- High performance and network availability, e.g. via virtual networks (VLANs)
- Tool-free network expansion – even during operation (hot swappable)

More information

Get to know all the members of the product family



XM-400



PE-400

SCALANCE X-400

High performance when space is restricted – that's exactly what the SCALANCE X-400 product line has to offer, thanks to its modular design. It also boasts of maximum flexibility in the automation network.

Expandable by port extenders and plug-in transceivers for a maximum configuration with up to 24 ports.

Thanks to extender modules, network expansions can be performed easily and conveniently without the use of tools – including during operation.



SCALANCE X-500

Are you planning to restructure your plant network? SCALANCE X-500 gives you the freedom to choose your connection media and use various redundancy concepts. You can easily link your plant network to your corporate IT system.



SCALANCE XR552-12M

With SCALANCE X-500, you have a genuine structure manager as a central component for your plant network that gives you new design freedom when choosing your connection media and accessing the different redundancy concepts. This allows you to connect your plant network to your corporate IT system, which in turn ensures maximum network availability – and for you this means: continued security in the future with all three basic devices in the SCALANCE X-500 product family and their different media modules up to 10 Gbit/s.

Your benefits at a glance

- Unlimited flexibility in network expansions
- Modifications thanks to full modularity
- Electrical or optical networking via combo ports (SCALANCE XR524-8C/XR526-8C) during operation
- Reduction of stock-keeping costs for different device types due to fully modular design
- Optional retrofitting of layer 3 functions without exchanging the hardware
- High availability due to redundant power supply and redundancy functions
- Diverse versions with different (AC/DC) and optionally redundant power supply for all requirements
- High device performance and transfer of large amounts of data via 10 Gbit/s ports

More information

Get to know all the members of the product family



X-500

SCALANCE X-500

Are you planning to restructure your plant network?
SCALANCE X-500 gives you the freedom to choose your connection media and use various redundancy concepts. You can easily link your plant network to your corporate IT system.

Thanks to full modularity, unlimited flexibility in network expansions with widely variable installation options.



Subject to changes and errors. The information given in this document only contains general descriptions and/or performance features which may not always specifically reflect those described, or which may undergo modification in the course of further development of the products. The requested performance features are binding only when they are expressly agreed upon in the concluded contract.

Security information

Siemens provides products and solutions with industrial security 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 security concept. Siemens' products and solutions only form one element of such a concept.

Customer is responsible to prevent unauthorized access to its plants, systems, machines and networks. Systems, machines and components should only be connected to the enterprise network or the internet if and to the extent necessary and with appropriate security measures (e.g. use of firewalls and network segmentation) in place.

Additionally, Siemens' guidance on appropriate security measures should be taken into account. For more information about industrial security, please visit <http://www.siemens.com/industrialsecurity>.

Siemens' products and solutions undergo continuous development to make them more secure. Siemens strongly recommends to apply product updates as soon as available and to always use the latest product versions. Use of product versions that are no longer supported, and failure to apply latest updates may increase customer's exposure to cyber threats.

To stay informed about product updates, subscribe to the Siemens Industrial Security RSS Feed under <http://www.siemens.com/industrialsecurity>.

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