

Networks & communication **ConneXium™**

Industrial *Ethernet* solutions
for *open* architectures



Simply Smart !

Leveraging
ingenuity
and intelligence
for **ease of use.**

ConneXium™

Open Industrial Ethernet networking solutions

ConneXium products are the Ethernet-ready network hubs, switches, transceivers, bridges, and cables that can provide you with integrated Ethernet solutions to unite everything in your plant, from the device level all the way to your corporate intranet. As part of Schneider's *Transparent Ready* strategy, we are making a commitment to implement the *open* standards of the Internet within the industrial control environment in order to provide you with solutions that are *simple* and *cost-effective* to deploy.



Gateways



Transceivers

Transparent[®] Ready

**“As part of Schneider’s
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A unified communication solution based on Ethernet standards and Third party compatibility

Improved network performance

ConneXium switched networks limit the number of collisions in the media and increase overall network performance. Furthermore, ConneXium full duplex capability delivers a high level of determinism to your Ethernet network. ConneXium IP Multicast capability supports the Publish/ Subscribe and streaming protocols of today’s Industrial networks.

Standard tools to diagnose and manage installations

ConneXium switches implement SNMP protocol allowing standard network management tools to monitor and diagnose the network. A web server is embedded in every 499NxS27100 switch to deliver complementary management services that can be accessed via any web browser.

Fault-Tolerant

ConneXium Switches and Hubs incorporate a mechanism to support a high level of resilience. With their scalable redundant features, it is easy to build a network that fits the specific requirements of your environment.

Designed for Harsh Environment

- Industrial – IEC 61131-2, UL508, CSA
- Hazardous location, UL1604, 1 Class 1, Div 2 (not all products yet certified)
- Marine



Discover the ConneXium range



SWITCHES

ConneXium Switches are used to reduce the limitations of architectures based on hubs or transceivers. By separating collision domains, higher layer communication is provided between the ports and collisions at the link layer are not propagated. Certain ConneXium switches also enable redundant architectures to be created on twisted pair copper or fiber optic rings. Fiber optic modules allow the extension of an Ethernet network to tens of kilometers and also provide electrical noise immunity.

Managed switches

- Management – via the web, SNMP, Serial, port mirroring, log file
- Redundancy – dual and single ring, spanning tree, rapid spanning tree and power supply
- Security – port security, SNMP v3
- Optimized traffic (QOS) – message and port priority, flow control, multicast
- Filtering – broadcast limiter, multicast, IGMP snooping, VLAN
- Time synchronization (SNTP)
- Simple field replacement (FDR)

Unmanaged switches

- “Plug & play”
- No configuration necessary
- Remote diagnostics via alarm relays



GATEWAYS & CONVERTERS

ConneXium gateways (bridges) are used when connecting devices between Ethernet MODBUS TCP/IP and devices on MODBUS RS485/ RS232 or MODBUS Plus. ConneXium Converters, such as the TwidoPort, are tightly integrated “plug and play” devices that give you transparent access to the end device

- They allow full programming and data exchange from either of the above networks
- Messages are transferred in real-time without any type of translation or data table configuration
- ConneXium gateways are “plug and play” but can also be configured for complex routing schemes (remote or local configuration)



HUBS

ConneXium hubs are a low-cost and simple alternative for integrating devices into Ethernet networks.

- Traffic sent to one port is automatically sent to all other ports, allowing easy trouble-shooting of traffic in the network
- Fiber-optic modules can be used to build self-healing ring architectures or longer distance Ethernet segments
- Hubs are “plug and play” devices that do not require any configuration
- ConneXium hubs make it possible to create star, tree or ring topologies



TRANSCEIVERS

ConneXium Transceivers provide a connection to fiber optic networks where electromagnetic interference is a concern and for long distance communications. They are “plug and play” devices that do not require any configuration.

The use of ConneXium transceivers makes it possible to:

- Create linear fiber optic bus topologies for products with twisted pair cable Ethernet connections
- Interface products using twisted pair cable Ethernet connections with fiber optic cable



CABLES

ConneXium cables meet the highest standards of quality to provide simple, flexible and reliable installations in industrial environments.

- Shielded twisted pair cables (RJ45) come in lengths from 2m to 80m
 - They quickly connect devices to hubs, switches, transceivers or patch panels
 - Shielded twisted pair cross over and straight cables (RJ45) come in lengths from 5m to 80m for cascading hubs, switches or transceivers
 - Double shielding
 - Low smoke
 - CE – halogen free
 - UL – flame retardant
- Fiber optic cables (MT/RJ-SC, MT/RJ-ST, MT/RJ-MT/RJ) come in 5m lengths to connect devices to hubs, switches, transceivers or patch panels

Transparent Ready Industrial Ethernet Products

Plant Network / Information System

- Data Warehousing and Large Servers
- Supervision / Control Room
- Plant Management & Quality Systems

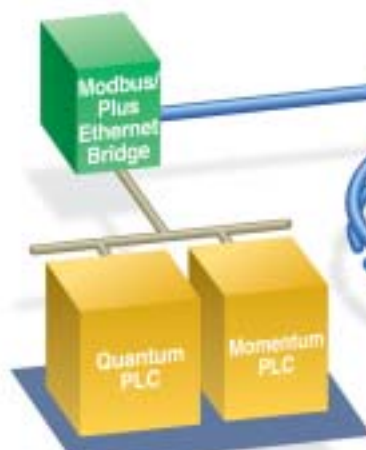
Upstream Communication to Supervision & IT systems

Open Ethernet Standards to communicate with PC, Mainframes and other PLCs

Control Network / Automation System

- PLC
- Local servers
- HMI

Synchronization between PLCs
Application & Machine Coordination

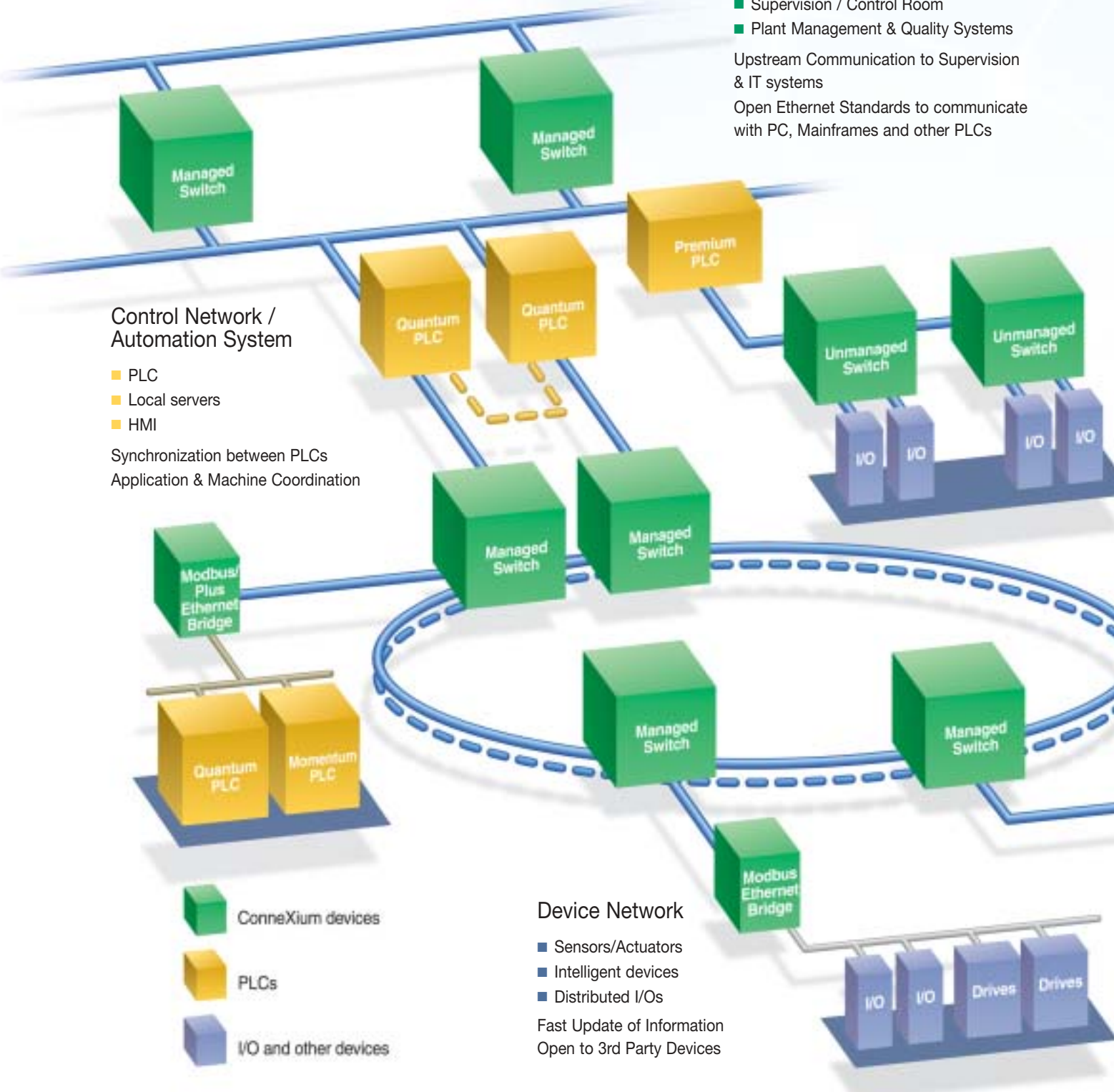


- ConneXium devices
- PLCs
- I/O and other devices

Device Network

- Sensors/Actuators
- Intelligent devices
- Distributed I/Os

Fast Update of Information
Open to 3rd Party Devices



Selection Guide

Networking tips

For highest network availability (bandwidth availability)...

Use switches and segment network properly. (understand network flow)

For high-availability applications...

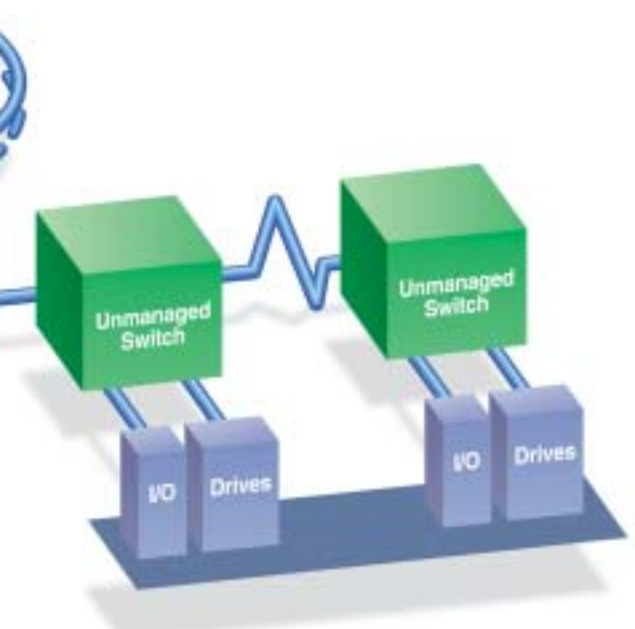
Use single or dual redundant self-healing ring architectures.

For applications requiring a high level of services and traffic administration...

Use managed switches.

When the distance between switches is longer than 100m or environment is subject to electromagnetic interference...

Use fiber optic links.



Hubs	Copper	
	499NEH10410	4x10BaseT
	499NEH14100	4x100BaseTX
	Multi mode fiber/copper	
	499NOH10510	3x10BaseT
		2x10BaseFL
Managed Switches	Copper	
	499NES27100	7x10BaseT/100BaseTX
	Multi mode fiber/copper	
	499NOS27100	5x10BaseT/100BaseTX
		2x100BaseFX
	Single mode fiber/copper	
	499NSS27100	5x10BaseT/100BaseTX
		2x100BaseFX
Unmanaged Switches	Copper	
	499NES25100	5x10BaseT/100BaseTX
	499NES18100	8x10BaseT/100BaseTX
	Multi mode fiber/copper	
	499NMS25101	4x10BaseT/100BaseTX
		1x100BaseFX
	499NMS25102	3x10BaseT/100BaseTX
		2x100BaseFX
	Single mode fiber/copper	
	499NSS25101	4x10BaseT/100BaseTX
		1x100BaseFX
	499NSS25102	3x10BaseT/100BaseTX
		2x100BaseFX
Transceivers	Multi mode copper	
	499NTR10010	1x10BaseT
		1x10BaseFL
	499NTR10100	1x100BaseTX
		1x100BaseFX
Gateways & Converters	Gateways	
	174CEV30020	Modbus to Ethernet
	174CEV20040	Modbus Plus to Ethernet
	Converters	
	499TWD01100	TwidoPort Ethernet
Cables	Copper	
	490NTW000** (EIA/ TIA 568)	Ethernet STP CAT5/RJ45 cables
	490NTW000**U (UL, CSA 22.1)	(** = 02,05,12,40, 80m length)
	490NTC000** (EIA/ TIA 568)	Ethernet STP CAT5/RJ45
	490NTC000**U (UL, CSA 22.1)	crossed cables (** = 05,15,40, 80m length)
	Fiber Optic	
	490NOC00005	SC/ MT-RJ Fiber optic adapter cable, 5m
	490NOT00005	ST/ MT-RJ Fiber optic adapter cable, 5m
	490NOR000**	MT-RJ/ MT-RJ Fiber optic adapter cable (** = 03, 05, 15m length)

The efficiency of Telemecanique branded *solutions*

Choose the efficiency of Telemecanique branded solutions. When used together, Telemecanique products offer quality solutions that will meet all your automation and control application requirements.



For complete product specifications and additional Ethernet-ready products from Schneider Electric, please refer to the Transparent Ready catalog, available online at <http://www.telemecanique.com> in the Systems and Architectures section.

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