

Total Networking Solutions for IT/OT Convergence





Be certain. Belden.

Total networking solutions that can improve security, productivity and operational efficiency today, while laying the foundations for tomorrow's intelligent manufacturing opportunities.

HIRSCHMANN IT

A BELDEN BRAND





Easy to implement, intelligent and secured IT/OT converged solutions for networks ranging from small to large size.

Belden IT/OT converged solutions

Belden has over 30 year's experiences on offering integrated network solutions for complex industrial facilities and systems. As the size of industrial facility network and demand for higher efficiency increase, the IT network is required to converge with industrial network. At the same time, lots of IT technologies, including big-data, Al, visual identity and robotics, keep pushing the industrial network evolution forward.

With Belden's strong R & D capability and experiences on network solutions, new IT networking product portfolios with more powerful features, more flexibility and larger bandwidth are offered to cope with the trend of IT/OT convergence. These products will help customer achieve their goals of lower production costs, less inventory and higher production efficiency. What's more, these products and solutions can minimize system failure rate and offer more flexibility, which help simplify the system monitoring and management, thus reduce the total cost of ownership.

Our Synergy Ensures Continuous Performance

With the Hirschmann IT, Hirschmann and Tripwire product line additions to the Belden offering, our line of comprehensive networking solutions are uniquely positioned to provide the best network and communications infrastructure possible. Belden products and systems expertise mean that you can have a network for mission critical applications, in which ongoing operations are maintained without interruption and costly downtime in any environment, and at the same time for extreme large scale data transmission. Here are a few more good reasons why Belden is your best choice for IT/OT networking:

 We have the expertise to integrate your industrial and IT networks.

- We offer the broadest selection of products, for a complete, end-to-end network solution.
- Our sales and engineering professionals can audit, recommend/design, configure and assemble the products and systems to your specific requirements.
- Our global manufacturing, distribution and support network makes our products and services available to you globally.

Offering Comprehensive Service & Support

Belden recognizes that comprehensive know-how is necessary to ensure an optimized, homogenous solution. We also know that consultation, support and training requires more than just a general understanding of the products, technologies and market trends. It requires a solid understanding of the application and the ability to provide the type of support that is needed – when and where it is needed. It requires the 5 key service and support areas that are critical to success:

- Network design and cyber security consulting
- Training
- · Technical support
- Professional Service
- System performance

Network Design and Cyber Security Consulting

Belden eliminates your design challenges because we understand the issues surrounding the design and operation of networks in IT/OT situation and mission-critical environments. Our engineers are available to work with you to deliver high-availability networks that meet your enterprise-wide IT needs. Whether it's designing systems for Greenfield facilities, or integrating into existing IT environments, our highly-trained staff lifts the design burden from your shoulders to ours.

We will consult with you to develop a strategy or we will develop and implement your full design – either way our staff is available to you.

Training

Backed by years of meeting and exceeding the needs of a broad range of end-user applications, Belden is ideally suited to offer beginners and networking experts alike the opportunity to expand their understanding of mission-critical networks.

Belden has developed a series of training programs that are given by Belden-certified individuals – all experts in industrial networking and cabling.

Technical Support

At Belden, our personnel are poised to assist our customers – ensuring maximum uptime and reliability. And with offices in North America, Asia and Europe, Belden can respond globally.

Professional Service

Belden provides professional services, especially in cyber security. Our engineers are always ready to make sure the projects are successfully delivered.

System Performance

If Belden designs it, we guarantee performance period. We are committed to ensuring world-class signal connectivity and to significantly improve your operational uptime. All Belden components are "designed" to deliver optimum performance: from cable, to connectors, to switches and routers. Based on this comprehensive product portfolio, we have the necessary industrial solutions DNA to deliver reliability.

For more information on our service and support offering, including our warranties, please go to the Belden web site at www.belden.com to locate a Belden sales representative near you.



The Hirschmann IT High Performance and Multi-purpose Switches Portfolio Set the Standard for Quality, Reliability and Service



Hirschmann IT Switches maximize performance, diversify applications, and reduce overall costs. Hirschmann IT, a Belden brand provides competitive products with rich feature set, high quality and high reliability, for IT/OT convergence and IT networking.

Flexible Redundancy Technology

Hirschmann IT Mammuthus series switches support multiple link redundancy functions, including not only STP/RSTP/MSTP but also ERPS. ERPS is robust Ethernet redundancy protocol which can provide great convergence performance. ERPS can help to improve network stability during heavy traffic, it can also help to reduce wiring complexity without reducing network reliability.

All MTS switches support stacking which can merge up to 8 devices into one management plane. Switches are also designed to have highly reliable hardware architecture with redundant fans and PSUs*.

* MTS2600 series switch only has one fixed PSU.

Easy to Configure

Our managed switches are easy to configure with an integrated password controlled web interface, via SNMP or CLI (command line interface), providing secure remote configuration through the network.

Configuration data and device Operating System can be saved and stored on an external flash-based configuration storage device, simplifying and automating commissioning and device replacement.

Security and Authentication

The Mammuthus series switches provide a full complement of port security features, including Dynamic Host Configuration
Protocol (DHCP) snooping, dynamic ARP inspection (DAI), IP source guard, and media access control (MAC) limiting (per port and per VLAN), to defend against internal and external spoofing, man-in-the-middle and denial-of-service (DoS) attacks.

MTS series switches also provide user authentication based on AAA, port security, ACL and 802.1x. These features can help customer to manage their network in a more secured way.

Broad Product Line

The Mammuthus series switches have various interfaces including GE TX, SFP, SFP+ and OSFP, and the configuration varies from 1RU fixed switch to more than 6RUs modular switch. Software feature set varies from basic level, which includes full L2 switching feature, to advanced level, which supports many advanced L3 function such as MPLS and SDN. Thus, any requirements can be matched with a certain model without needless budget spending.

Persistent PoE

In IoT situation, continuous power supply may be expected in any cases. The Mammuthus series switches support PoE/PoE+ function, power supplying will not be interrupted during device rebooting.

Network Software

Monitoring and visualizing your network is made easy with the use of our Industrial HiVision network management software. Requiring little or no IT knowledge, Industrial HiVision allows users to monitor alarms, bandwidth utilization, and availability of networked devices – not just switches. Industrial HiVision allows the user to configure a single switch or multiple switches at the same time, significantly simplifying commissioning.



Technologies

Technology Topics to IT Networking

Hirschmann (IT) is one of the most highly experienced manufacturers of total networking solutions based on Industrial OT Ethernet and IT applications. As an expert in system components, accessories and unified management software with a global presence, we make available our comprehensive expertise to our clients

Power over Ethernet (PoE)



PoE allows to supply power to device such as an IP camera via the same twisted pair cable for data communications. The PoE ports support Power over Ethernet according to IEEE 802.3af delivering a maximum 15.4 Watts per port.

SDN Ready



SDN (Software Defined Network) is a forwarding architecture in modern IP core network. Centralized management and distributed forwarding give SDN capacities for supporting large scaling/high performance network, while keep micromanagement in network maintenance.

Stack



Stacking is a common topological method which is used to provide better performance and more robust network architecture. This technology can seamlessly merge all the ports in different devices into a single management node, which can provide higher port density and better reliability. Specific bi-directional action monitoring technology can avoid the split-brain failure owing to link mistake and configuration mistake.

MPLS



MPLS (Multi-Protocol Label Switching) is scalable and protocol-independent. In an MPLS network, data packets are assigned labels. Packet-forwarding decisions are made solely on the contents of this label, without the need to examine the packet itself. This allows one to create end-to-end circuits across any type of transport medium, using any protocol. MTS support all standard MPLS IP model, for example L3VPN, L2VPN, MPLS multicast, and TE.

Power over Ethernet Plus (PoE+)



PoE+ is the further development of PoE according to the standard IEEE 802.3at supporting up to 30 Watt. While PoE requires two pairs of the twisted pair cables, PoE+ uses all 4 pairs to power end devices which require power above 15.4 Watts.

IPv6



Although the next generation of the Internet Protocol, version 6, is rarely deployed in industrial environments, the latest generation of Hirschmann IT devices is able to server future customer demands for IPv6 in the same way like it is required today with IPv4.

Storm control



Data storm (unknown unicast, multicast or broadcast, aka UMB) is potential risk in network operation. In large 3-party inter-operation network, virtualization network or ring topology environment, UMB data storm can exhaust network resource rapidly once it occurs. Hardware based storm control can mitigate the impact of UMB storm in low level and does not affect network operation.

ERPS



ERPS (Ethernet Ring Protection Switching) is a kind of Ethernet ring network protection technologies. It is described in ITU-TG.8032 as an advanced open protocol of ring network. This protocol has the advantage of various ring network protection technologies such as EAPS, RPR, SDH, STP and so on. It can realize switchover down to 50ms under various working mode such as master-slave, load balance and so on.

Layer 3 - Wire-Speed Routing with Standardized Routing Protocols



The Layer-3 routing functionality in Hirschmann IT switches focusing on maximum performance and lowest latency. Layer-3 can help to split the broadcast domain and more complex security policies or routing policies can be deployed into network. Hirschmann IT switches contain varies standard routing protocols such as OSPF, BGP, ISIS and so forth*. Multicast features are also supported.

* depends on different software level



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Product, Hardware and Performance Matrix

Product Category	Product Code	Ports	PSU	Heat Radiation	Stackable
MTS2600 Series Switch	MTS2624-4X-B	24 × FE/GE TX, 4 × 1/10G SFP+ slots	Fixed single power supply	Fixed fan	Yes
	MTS2724-4X-FP-S	24 × FE/GE POE/POE+, 4 × 1/10G SFP+ slots	2 × Fixed redundant PSUs	Fixed fan	Yes
MTS2700 Series Switch	MTS2724-6X-MP-E	24 × FE/GE POE/POE+, 4 × 1/10G SFP+ slots, 1 × extended media module slot for additional 2 × 1/10G SFP+ slot	2 × Modular redundant PSUs	Fixed fan	Yes
	MTS2748-6X-MP-E	48 × FE/GE POE/POE+, 4 × 1/10G SFP+ slots, 1 × extended media module slot for additional 2 × 1/10G SFP+ slot	2 × Modular redundant PSUs	Fixed fan	Yes
	MTS2832TF-4X-E	24 × 10/100/1000M SFP slots, 8 × FE/GE TX, 4 × 1/10G SFP+ slots	2 × Fixed redundant PSUs	Fixed fan	Yes
	MTS2824F-4X-S	$24 \times 10/100/1000$ M SFP slots, $4 \times 1/10$ G SFP+ slots	2 × Fixed redundant PSUs	Fixed fan	Yes
MTS2800	MTS2824-4X-S	24 × FE/GE TX, 4 × 1/10G SFP+ slots	2 × Fixed redundant PSUs	Fixed fan	Yes
Series Switch	MTS2848-6X-S	48 × FE/GE TX, 6 × 1/10G SFP+ slots	$2\times \text{Fixed redundant PSU}$	Fixed fan	Yes
	MTS2824-6X-E	24 × FE/GE TX, 6 × 1/10G SFP+ slots	2 × Fixed redundant PSUs	Fixed fan	Yes
	MTS2848-6X-E	48 × FE/GE TX, 6 × 1/10G SFP+ slots	2 × Fixed redundant PSUs	Fixed fan	Yes
MTS2900 Series Switch	MTS2948X-6Q-A	48 × 1/10G SFP+ slots, 6 × 40G QSFP+ slots	2 × Modular redundant PSUs	4 × Modular fan tray	Yes
MTS8000 Series Switch	MTS8003-Chassis	Dual Engine, 3 × media modules	4 × Modular redundant PSUs	2 × Modular fan tray	Yes



Software Functionality

Switch Feature	2XXX-B Basic	2XXX-S Standard	2XXX-E Enhanced	2XXX-A Advanced	8003 software
MAC limitation	•	•	•	•	•
Static MAC address entry	•	•	•	•	•
MAC blackhole	•	•	•	•	•
Static/Dynamic ARP	•	•	•	•	•
GARP	•	•	•	•	•
ARP proxy	•	•	•	•	•
VLAN (802.1Q)	•	•	•	•	•
Flow control(802.3x, 802.3p)	•	•	•	•	•
Port Aggregration(802.3ad)	•	•	•	•	•
QinQ	•	•	•	•	•
Flexible QinQ	•	•	•	•	•
VLAN mapping	•	•	•	•	•
STP/RSTP/MSTP	•	•	•	•	•
GARP VLAN Registration Protocol (GVRP)	•	•	•	•	•
Super VLAN	•	•	•	•	•
Private VLAN	•	•	•	•	•
Voice VLAN	•	•	•	•	•
BPDU Tunnel	•	•	•	•	•
N:1/N:N port monitoring	•	•	•	•	•
Remote SPAN	•	•	•	•	•
ERSPAN				•	•
Flow mirroring	•	•	•	•	•
ERPS	•	•	•		
UDLD	•	•	•	•	•
OAM	•	•	•	•	•
sFlow	•	•	•	•	•
MPLS				•	•
MPLS QoS				•	
MPLS L3VPN				•	•
VXLAN			•	•	•
EVPN			•	•	•
TRILL				•	•



Software Functionality (Continued)

Feature Security	2XXX-B Basic	2XXX-S Standard	2XXX-E Enhanced	2XXX-A Advanced	8003 software
AAA	•	•	•	•	•
802.1x	•	•	•	•	•
RADIUS	•	•	•	•	•
TACACS+	•	•	•	•	•
SSH Client	•	•	•	•	•
Port security	•	•	•	•	•
Port isolation	•	•	•	•	•
UNI/NNI isolation	•	•	•	•	•
DHCP snooping		•	•	•	•
Dynamic ARP Inspection (DAI)	•	•	•	•	•
IP Source Guard	•	•	•	•	•
CPU protection	•	•	•	•	•
uRPF	•	•	•	•	•
LAND attack protection	•	•	•	•	•
SYN flooding protection	•	•	•	•	•
Ping flooding protection	•	•	•	•	•
TearDrop protection	•	•	•	•	•
Ping of Death protection	•	•	•	•	•
TCP flooding protection	•	•	•	•	•
ICMP flooding protection	•	•	•	•	•
Unicast storm control	•	•	•	•	•
Multicast storm control	•	•	•	•	•
Broadcast storm control	•	•	•	•	•
IPv4/v6 Standard/Extended ACL	•	•	•	•	•
MAC ACL	•	•	•	•	•
Port ACL	•	•	•	•	•
ACL log	•	•	•	•	•



Software Functionality (Continued)

Feature Routing	2XXX-B Basic	2XXX-S Standard	2XXX-E Enhanced	2XXX-A Advanced	8003 software
Static route	•	•	•	•	•
RIP v1/v2		•	•	•	•
OSPF		•	•	•	•
BGP			•	•	•
ISIS			•	•	•
RIPng			•	•	•
BGP4+			•	•	•
OSPF v3			•	•	•
ISIS v6			•	•	•
IGMP v1/v2	•	•	•	•	•
IGMP v3				•	•
IGMP filter	•	•	•	•	•
MLD v1/v2	•	•	•	•	•
IGMP snooping	•	•	•	•	•
MLD v1/v2 snooping	•	•	•	•	•
PIM DM			•	•	•
PIM SM			•	•	•
PIM SM v6				•	•
PIM SDM			•	•	•
PIM SSM			•	•	•
DHCP Client	•	•	•	•	•
DHCP Server		•	•	•	•
DHCP relay		•	•	•	•
DHCP v6 Server/Client		•	•	•	•
DHCP v6 relay		•	•	•	•
DNS	•	•	•	•	•
FTP Server/Client	•	•	•	•	•
NTP	•	•	•	•	•
IPv6	•	•	•	•	•
IPv6 tunnel			•	•	•
GRE			•	•	•
6to4 tunnel			•	•	•
ISATAP tunnel			•	•	•
BFD			•	•	•
VRRP		•	•	•	•
VRRP v6			•	•	•
IRMP				•	•



Software Functionality (Continued)

Feature Management	2XXX-B Basic	2XXX-S Standard	2XXX-E Enhanced	2XXX-A Advanced	8003 software
Console	•	•	•	•	•
Telnet	•	•	•	•	•
SSH v1/v2	•	•	•	•	•
SNMP v1/v2	•	•	•	•	•
SNMP v3	•	•	•	•	•
RMON	•	•	•	•	•
TR069				•	•
IPFIX				•	•
OAM(802.3ah, 802.1ag, ITU Y.1731)	•	•	•	•	•
Web UI	•	•	•		

Q ₀ S Feature	2XXX-B Basic	2XXX-S Standard	2XXX-E Enhanced	2XXX-A Advanced	8003 software
Class based QoS schedule	•	•	•	•	•
CAR	•	•	•	•	•
SP	•	•	•	•	•
WRR	•	•	•	•	•
SP+WRR	•	•	•	•	•
RED	•	•	•	•	•
WRED	•	•	•	•	•
Traffic shaping	•	•	•	•	•
Traffic policy	•	•	•	•	•
802.1p mapping				•	•
DSCP mapping				•	•

Virtualization Feature	2XXX-B Basic	2XXX-S Standard	2XXX-E Enhanced	2XXX-A Advanced	8003 software
Stack	•	•	•	•	•
Inter-chassis LAG	•	•	•	•	•

SDN*	2XXX-B Basic	2XXX-S Standard	2XXX-E Enhanced	2XXX-A Advanced	8003 software
OpenFlow				•	•
XML API/NETCONF	•	•	•	•	•

^{*} SDN is fully supported on MTS8000 series and MTS2XXX-A products. MTS2824-6X-E, MTS2848-6X-S, MTS2748-6X-MP-E, MTS2724-6X-MP-E, MTS2848-6X-E and MTS2832TF-4X-E are hardware ready for Openflow only.





MTS2600 Series Switch - MAMMUTHUS Layer2 Gigabit Ethernet Switch with 10G Uplink Ports

Entry-level access and port extension switch

MTS2600 series switch is the entry level access switch in Mammuthus series, providing sufficient performances and flexible functions. 10 Gigabit port is available so uplink speed to core switch is assured.

All RJ45 ports in MTS2600 series switch support auto-negotiation and MDI/MDI-X, and all SFP+ slots can work under 1/10G mode. All SFP+ slots support 1G and 10G MTS SFP modules, including fiber and UTP/STP*.

* detailed information please see SFP chapter in this brochure.

For higher port density and performance at access level, MTS2600 supports stacking and downlink-oversubscribe design, in which 24 GE access ports couples with 4 10G SFP+ uplink ports. Since the MTS2600 series switch supports ERPS and have hardware based broadcast control, the switch can be deployed in ring topology.











Technical Information

Product description	
Туре	MTS2624-4X-B
Description	1U rack mount, 24 × FE/GE TX, 4 × 1/10G SFP+ slots, fixed single power supply, basic software
Port type and quantity	$24 \times$ FE/GE TX, $4 \times$ 1/10G SFP+, $1 \times$ RJ45 Console port, $1 \times$ USB 2.0, $1 \times$ Reset Button
Power supply	Fixed single power supply
Heat radiation	Fixed fan
Order No.	942999847
Mechanical construction	
Dimensions (W×D×H)	442mm × 220mm × 44.2mm
Weight	3.6kg
Mounting	Rack mount
Power requirement	
Operating voltage	100-240VAC, 50-60HZ or 200-240VDC
Power consumption	26W
Ambient conditions	
Operating temperature	-10°C55°C
Storage/transport temperature	-40°C70°C
Relative humidity(non-condensing)	10%90%
Storage/transport humidity(non-condensing)	5%95%
Software	
Software level	Basic software
Stacking	Stackable, up to 8 devices in one stack
Approvals	
CE/FCC	Compliant
RoHS compliance	RoHS((EU) 2015/863) and RoHS(GB/T26572-2011) compliant
Scope of delivery and accessories	
	Device, console cable, installation package
Scope of delivery	Device, console caple, installation package



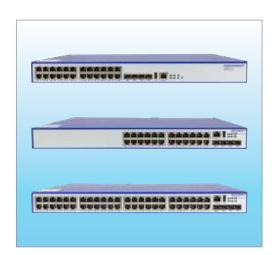
MTS2700 Series Switch - MAMMUTHUS Layer3 PoE/PoE+Gigabit Ethernet Switch with 10G Uplink Ports

Access/aggregation switches that have comprehensive function with PoE/PoE+

MTS2700 series switches provides a whole set of access solution, which is able to support complex network design. The switches can prevent unauthorized network access or mitigate the impact of network attacks via plenty of security features.

All RJ45 ports in MTS2700 series switches support PoE/PoE+ function, which are able to provide up to 30W power supply for the PoE PD device, such as webcam, IP telephone etc. What's more, modular PSUs can provide FRU and the device can work properly under maximum temperature up to 55°C.

MTS2700 switches have comprehensive L2/L3 feature set, which can provide flexible, reliable and secure choice for network planning. Network consultant can enhance network security via DAI/DHCP snooping or can optimize multicast via IGMP snooping or can use broadcast control to ensure the network stability when UMB flooding.

















Technical Information

			FII
Product description			
Туре	MTS2724-4X-FP-S	MTS2724-6X-MP-E	MTS2748-6X-MP-E
Description	1U rack mount, 24 \times FE/GE P0E/P0E+, 4 \times 1/10G SFP+ slots, fixed redundancy power supply, PoE output 380W, standard software	1U rack mount, $24 \times$ FE/GE P0E/P0E+, $4 \times$ 1/10G SFP+ slots, redundant PSU, enhanced software	1U rack mount, 48 \times FE/GE POE/POE+, 4 \times 1/10G SFP+ slots, redundant PSU, enhanced software
Port type and quantity	$24\times FE/GE$ P0E/P0E+, $4\times 1/10G$ SFP+ slots, $1\times RJ45$ Console port, $1\times USB$ 2.0, $1\times Reset$ Button	$24\times FE/GE\ POE/POE+,\ 4\times 1/10G\ SFP+\ slots,\ 1\times RJ45\ Console\ port,\ 1\times USB\ 2.0,\ no\ Reset\ Button$	$48\times FE/GE$ POE/POE+, $4\times 1/10G$ SFP+ slots 1 \times RJ45 Console port, 1 \times USB 2.0, no Reset Button
Power supply	2 × fixed redundant PSUs	2 × modular redundant PSUs, hot swappable	2 × modular redundant PSUs, hot swappable
Extended media module	None	1 × extended media module	1 × extended media module slot
Heat radiation	Fixed fan		
Order No.	942999835	942999832	942999831
Mechanical construction			
Dimensions (W×D×H)	442mm × 380mm × 44.2mm	442mm × 420mm × 44.2mm	442mm × 420mm × 44.2mm
Weight	6.4kg	7.4kg	7.8kg
Mounting	Rack mount		
Power requirement			
Operating voltage	100-240VAC, 50-60HZ or 200-240VDC, redundan	cy PSU supported	
Power consumption	29W	34W	46W
Ambient conditions			
Operating temperature	-10°C55°C		
Storage/transport temperature	-40°C70°C		
Relative humidity(non-condensing)	10%90%		
Storage/transport humidity (non-condensing)	5%95%		
Software			
Software level	Standard software	Enhanced software	Enhanced software
Stacking	Stackable, up to 8 devices in one stack		
Approvals			
CE/FCC	Compliant		
RoHS compliance	RoHS((EU) 2015/863) and RoHS(GB/T26572-20	11) compliant	
Scope of delivery and acce	ssories		
Scope of delivery	Device, console cable, installation package		
Accessories to order separately	Network Management Industrial HiVision, SFP, ext	ended media module	

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Extended Media module					
Product No.	Name	Number of ports	31.7.4	Accessories to order separately	
942999836	MTM2700-2X	2	2 × 1/10G SFP+ slot	SFP	





Product description AC/DC 120W PSU; Input 100-240V/2.0A; Output 12V/10A; Without PoE support Order No. 942999834 942999833 Service Diagnostics LEDs (PWR) at basic device Current consumption Activation current typ. < 40A at 220VAC and cold start Technical data Operating voltage 100-240VAC or 200-240VDC Operating temperature -10°C55°C Input frequency 50-60HZ Nominal power of voltage supply 120W (220V/110V) 500W (220V/110V) Power requirements Current consumption 1A (220V, 2A (110V) 3.5A (220V), 7A (110V) Scope of delivery and accessories	Enterprise Ethernet: MTS270	0 series switches accesso	ories: PSU	
Description AC/DC 120W PSU; Input 100-240V/2.0A; Output 12V/10A; Without PoE support Order No. 942999834 942999833 Service Diagnostics LEDs (PWR) at basic device Current consumption Activation current typ. < 40A at 220VAC and cold start Technical data Operating voltage 100-240VAC or 200-240VDC Operating temperature -10°C55°C Input frequency Nominal power of voltage supply 120W (220V/110V) Power requirements Current consumption 1A (220V), 2A (110V) Scope of delivery and accessories	Name	MTM2700-PSU120 MTM2700-PSU500		
100-240V/2.0A; Output 12V/10A; Without PoE support 100-240V/7.0A; Output 12VDC/10A, 53.5VDC/7A; POE supported Order No. 942999834 942999833 Service Diagnostics LEDs (PWR) at basic device Current consumption Activation current typ. < 40A at 220VAC and cold start Technical data Operating voltage 100-240VAC or 200-240VDC Operating temperature -10°C55°C Input frequency Nominal power of voltage supply 120W (220V/110V) Fower requirements Current consumption 1A (220V), 2A (110V) Scope of delivery and accessories	Product description			
Service Diagnostics LEDs (PWR) at basic device Current consumption Activation current typ. < 40A at 220VAC and cold start Technical data Operating voltage 100-240VAC or 200-240VDC Operating temperature -10°C55°C Input frequency 50-60HZ Nominal power of voltage supply 120W (220V/110V) 500W (220V/110V) Power requirements Current consumption 1A (220V), 2A (110V) 3.5A (220V), 7A (110V) Scope of delivery and accessories	Description	100-240V/2.0A; Output 12V/10A;	100-240V/7.0A; Output 12VDC/10A,	
Diagnostics Current consumption Activation current typ. < 40A at 220VAC and cold start Technical data Operating voltage 100-240VAC or 200-240VDC Operating temperature -10°C55°C Input frequency 50-60HZ Nominal power of voltage supply 120W (220V/110V) 500W (220V/110V) Power requirements Current consumption 1A (220V), 2A (110V) 3.5A (220V), 7A (110V) Scope of delivery and accessories	Order No.	942999834	942999833	
Current consumption Activation current typ. < 40A at 220VAC and cold start Technical data Operating voltage 100-240VAC or 200-240VDC Operating temperature -10°C55°C Input frequency 50-60HZ Nominal power of voltage supply 120W (220V/110V) 500W (220V/110V) Power requirements Current consumption 1A (220V), 2A (110V) 3.5A (220V), 7A (110V) Scope of delivery and accessories	Service			
Activation current typ. < 40A at 220VAC and cold start Technical data Operating voltage 100-240VAC or 200-240VDC Operating temperature -10°C55°C Input frequency 50-60HZ Nominal power of voltage supply 120W (220V/110V) 500W (220V/110V) Power requirements Current consumption 1A (220V), 2A (110V) 3.5A (220V), 7A (110V) Scope of delivery and accessories	Diagnostics	LEDs (PWR) at basic device		
Technical data Operating voltage 100-240VAC or 200-240VDC Operating temperature -10°C55°C Input frequency 50-60HZ Nominal power of voltage supply 120W (220V/110V) 500W (220V/110V) Power requirements Current consumption 1A (220V), 2A (110V) 3.5A (220V), 7A (110V) Scope of delivery and accessories	Current consumption			
Operating voltage 100-240VAC or 200-240VDC Operating temperature -10°C55°C Input frequency 50-60HZ Nominal power of voltage supply 120W (220V/110V) 500W (220V/110V) Power requirements Current consumption 1A (220V), 2A (110V) 3.5A (220V), 7A (110V) Scope of delivery and accessories	Activation current	typ. < 40A at 220VAC and cold start		
Operating temperature -10°C55°C Input frequency 50-60HZ Nominal power of voltage supply 120W (220V/110V) 500W (220V/110V) Power requirements Current consumption 1A (220V), 2A (110V) 3.5A (220V), 7A (110V) Scope of delivery and accessories	Technical data			
Input frequency So-60HZ Nominal power of voltage supply 120W (220V/110V) Power requirements Current consumption 1A (220V), 2A (110V) Scope of delivery and accessories	Operating voltage	100-240VAC or 200-240VDC		
Nominal power of voltage supply 120W (220V/110V) 500W (220V/110V) Power requirements Current consumption 1A (220V), 2A (110V) 3.5A (220V), 7A (110V) Scope of delivery and accessories	Operating temperature	-10°C55°C		
Power requirements Current consumption 1A (220V), 2A (110V) 3.5A (220V), 7A (110V) Scope of delivery and accessories	Input frequency	50-60HZ		
Current consumption 1A (220V), 2A (110V) 3.5A (220V), 7A (110V) Scope of delivery and accessories	Nominal power of voltage supply	120W (220V/110V)	500W (220V/110V)	
Scope of delivery and accessories	Power requirements			
	Current consumption	1A (220V), 2A (110V)	3.5A (220V), 7A (110V)	
Scope of delivery PSU module	Scope of delivery and access	sories		
	Scope of delivery	PSU module		



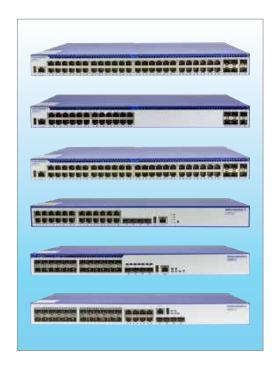
MTS2800 series switch - MAMMUTHUS Layer3 Gigabit Ethernet Switch with 10G Uplink Ports

Access/aggregation switches that can offer comprehensive L2/L3 feature sets

MTS2800 series switches provide a whole set of access and aggregation solution. All switches in this series are equipped with redundant PSUs. The switches has compact mechanical design with low noise which can fit in with $600 \text{mm} \times 600 \text{mm}$ compact cabinet. In addition, the switches can work properly under maximum temperature up to 55°C .

All the RJ45 ports in MTS2800 series switches support auto-negotiation and MDI/MDI-X. The switches can be applied to various working situations such as desktop, ELV room and data aggregation layer. The switches have 4 or 6 SFP+ slots and support stacking configuration, which can eliminate single point of failure and provide MC-LAG.

MTS2800 series switches have comprehensive L2/L3 feature sets and furthermore can provide flexible, reliable and secure choice for network planning. The general security and flow control technology such as DAI, DHCP snooping, IGMP snooping and 802.1x that the switches have can help administrator to deploy a secure & robust network infrastructure.















Technical Information

Product description						
Туре	MTS2848-6X-E	MTS2824-6X-E	MTS2848-6X-S	MTS2824-4X-S	MTS2824F-4X-S	MTS2832TF-4X-E
Description	1U rack mount, 48 × FE/ GE TX, 6 × 1/10G SFP+ slots, fixed redundancy power supply, enhanced software	1U rack mount, 24 × FE/ GE TX, 6 × 1/10G SFP+ slots, fixed redundancy power supply, enhanced software	GE TX, 6 × 1/10G SFP+	1U rack mount, 24 × FE/ GE TX, 4 × 1/10G SFP+ slots, fixed redundancy power supply, standard software	1U rack mount, 24 × 100/1000M SFP slots, 4 × 1/10G SFP+ slots, fixed redundancy power supply, standard software	1U rack mount, 24 × 100/1000M SFP slots, 8 × FE/GE TX, 4 × 1/10G SFP+ slots, fixed redundancy power supply, enhanced software
Port type and quantity	' '	24 \times FE/GE TX, 6 \times 1/10G SFP+ slots, 1 \times RJ45 Console port, 1 \times USB 2.0, no Reset Button	1/10G SFP+ slots, 1 ×	$24 \times \text{FE/GE TX, } 4 \times \\ 1/10G \text{SFP+ slots, } 1 \times \\ \text{RJ45 Console port, } 1 \times \\ \text{USB } 2.0, 1 \times \\ \text{Reset Button}$	$24\times100/1000M\ SFP$ slots, $4\times1/10G\ SFP+$ slots, $1\times RJ45\ Console$ port, $1\times USB\ 2.0,\ 1\times$ Reset Button	$24\times100\text{M}/1000\text{M SFP}$ slots, $8\times\text{FE/GE}$ TX, $4\times$ $1/10\text{G}$ SFP+ slots, $1\times$ Console port, $1\times\text{USB}$ 2.0, no Reset Button
Power supply	2 × Fixed redundant PSUs			,	,	
Heat radiation	Fixed fan					
Order No.	942999841	942999842	942999843	942999844	942999845	942999846



Technical Information

Туре	MTS2848-6X-E	MTS2824-6X-E	MTS2848-6X-S	MTS2824-4X-S	MTS2824F-4X-S	MTS2832TF-4X-E
Mechanical construct	tion					
Dimensions (W×D×H)	442mm × 320mm × 44.2mm	442mm × 320mm × 44.2mm	442mm × 320mm × 44.2mm	442mm × 220mm × 44.2mm	442mm × 320mm × 44.2mm	442mm × 320mm × 44.2mm
Weight	5.8kg	5.4kg	5.8kg	3.8kg	5.8kg	5.6kg
Mounting	Rack mount					
Power requirement						
Operating voltage	100-240VAC, 50-60HZ or	200-240VDC, redundancy	PSU supported			
Power consumption	55W	37W	55W	26W	38W	60W
Ambient conditions						
Operating temperature	-10°C55°C					
Storage/trans-port temperature	-40°C70°C					
Relative humidity (non-condensing)	10%90%	10%90%				
Storage/trans-port humidity(non-condensing)	5%95%	5%95%				
Software						
Software level	Enhanced software	Enhanced software	Standard software	Standard software	Standard software	Enhanced software
Stacking	Stackable, up to 8 device	s in one stack				
Approvals						
CE/FCC	Compliant					
RoHS Compliance	RoHS((EU) 2015/863) and RoHS(GB/T26572-2011) compliant					
Scope of delivery and	Scope of delivery and accessories					
Scope of delivery	Device, console cable, ins	Device, console cable, installation package				
Accessories to order separately	Network Management Industrial HiVision, SFP					



MTS2900 Series Switch - MAMMUTHUS Layer3 10Gigabit Ethernet Core Switch with 40G Uplink Ports

High capacity aggregation/core switch

MTS2900 series switch provides industry leading ports density and switching speed. It not only serves as a core switch, combined with MTS2600/MTS2700/MTS2800 to offer compact data network solutions, but also works as a aggregation switch, with MTS8000 to offer large network solutions.

MTS2900 series switch offers 48 SFP+ slots, all these slots support 1G/10G SFP modules and support multiple SFP application that varies from 550m multi-mode SFP to 80km single-mode SFP+. The 40G QSFP in MTS2900 can offer high-speed uplink/interconnection links. The switch can be used in deployment model basing on spine-leaf and can support openflow 1.3 SDN controller.

MTS2900 series switch has enhanced L2/L3 feature set. It is able to support database level network and offer amazing configuration flexibility in the meantime. The switch support router protocols such as OSPF/BGP/ISIS and so on, it also support core routing protocol such as MPBGP/MPLS. In addition, MTS2900 support all switching/routing feature sets of MTS2700 & MTS2800 and can offer continuous security strategy and configuration logic.















Technical Information

reclinical information	FIL	
Product description		
Туре	MT\$2948X-6Q-A	
Description	1U rack mount 40G Core Switch, $48 \times 1/10$ G SFP+ slots, 6×40 G QSFP+ slots, redundant PSU, advanced software	
Port type and quantity	$48 \times 1/10G$ SFP+ slots, $6 \times 40G$ QSFP+ slots, $1 \times USB$, $2 \times RJ45$ console port, $1 \times FE/GE$ RJ45 out of band management port, $1 \times RSE$ Button	
Power supply	2 × modular redundant PSUs, hot swappable	
Heat radiation	Modular fans	
Order No.	942999824	
Mechanical construction		
Dimensions (W×D×H)	440mm × 560mm × 44.2mm	
Weight	12.4kg	
Mounting	Rack mount	
Power requirement		
Operating voltage	100-240VAC 50-60Hz or 240VDC, redundancy PSU supported	
Power consumption	00W	
Ambient conditions		
Operating temperature	-10°C55°C	
Storage/transport temperature	-40°C70°C	
Relative humidity(non-condensing)	10%90%	
Storage/transport humidity(non-condensing)	5%95%	
Software		
Software level	Advanced software	
Stacking	Stackable, up to 8 devices in one stack	
Approvals		
CE/FCC	Compliant	
RoHS compliance	RoHS((EU) 2015/863) and RoHS(GB/T26572-2011) compliant	
Scope of delivery and accessories		
Scope of delivery	Device, console cable, installation package	
Accessories to order separately	Network Management Industrial HiVision, SFP, PSU module, fan module*	

 $^{^{\}star}$ A MTS2948X-6Q-A switch must have four fan modules to make it work properly.

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Enterprise Ethernet: MTS2900 series switch accessories: PSU			
Name	MTM2900-PSU250		
Product description			
Description	AC/DC 250W PSU; AC Input 100-240V; DC Input 192~288V, 3.5A; Output 12V/20.8A, 5VSB/2A; Hot-Swap supported.		
Order No.	942999822		
Service			
Diagnostics	LEDs (PWR) at basic device		
Current consumption			
Activation current	typ. < 40A at 220VAC and cold start		
Technical data			
Operating voltage	100-240VAC or 240VDC		
Operating temperature	-10°C55°C		
Input frequency	50-60Hz		
Nominal power of voltage supply	250W (220V/110V)		
Power requirements			
Current consumption	1.7A (220V), 3.4A (110V)		
Scope of delivery and accessor	ies		
Scope of delivery	PSU module		



Enterprise Ethernet: MTS2900 series switch accessories: Fan			
Name	MTM2900-FAN		
Product description			
Description	Modular Fan, Hot-Swap supported, 4 units fan are mandatory for MTS2948X-6Q-A		
Order No.	942999823		
Service			
Diagnostics	LEDs (FAN) at basic device		
Technical data			
Operating temperature	-10°C55°C		
Scope of delivery and ac	cessories		
Scope of delivery	Fan module		



MTS8000 Series Switch - MAMMUTHUS Layer3 Modular Core Switch

Modular core switch

MTS8000 series switch has compact configuration and powerful extension capability. The switch provides industry-leading SFP+/QSFP port density inside 6U outline. Besides, it provides lots of port in various types and can support PoE/PoE+. MTS8000, together with other switches in Mammuthus series, provides an end-to-end total network solution.

MTS8000 series switch have dual redundant engines and 3 media module slots and it is able to support GE, SFP, SFP+ and OSFP type of ports. Moreover, all software function can be implemented on all these ports. No matter serve as a spine node in spine-leaf topology or as a core node in traditional topology, MTS8000 can play its best part. The device support openflow 1.3 SDN controller.

MTS8000 has enhanced L2/L3 feature set and is able to support data center level network. The switch support router protocols such as OSPF/BGP/ISIS and so on, it also support core routing protocol such as MPBGP/MPLS. The switch also supports stacking and MCLAG, which can provide a higher level network redundancy and performance. Besides, MTS8000 support all switching/routing feature sets of MTS2700 & MTS2800 and can offer continuous security strategy and configuration logic.

















Technical Information

Total 5 slots, including 2 × engine slots, 3 × Media module slots anagement ports on engine 1 × USB, 1 × SD port, 1 × RJ45 console port, 1 × RJ45 CMM port, 1 × micro USB console port, 1 × out-of-band port, 1 × reset button 1 × USB, 1 × SD port, 1 × RJ45 console port, 1 × RJ45 CMM port, 1 × micro USB console port, 1 × out-of-band port, 1 × reset button 1 × USB, 1 × SD port, 1 × RJ45 console port, 1 × RJ45 CMM port, 1 × micro USB console port, 1 × out-of-band port, 1 × reset button 1 × Wes 2 × modular redundant PSUs, hot swappable 2 × modular redundant Fan trays, hot swappable 2 × modular redundant Fan trays, hot swappable 2 × modular redundant PSUs, hot	Product description		
anagement ports on engine 1 × USB, 1 × SD port, 1 × RJ45 console port, 1 × micro USB console port, 1 × out-of-band port, 1 × reset button 1 vest button 1 × USB, 1 × SD port, 1 × RJ45 console port, 1 × micro USB console port, 1 × out-of-band port, 1 × reset button 1 vest button 1 × USB, 1 × SD port, 1 × RJ45 console port, 1 × micro USB console port, 1 × out-of-band port, 1 × reset button 1 vest button 1 × USB, 1 × SD port, 1 × RJ45 console port, 1 × micro USB console port, 1 × out-of-band port, 1 × reset button 1 × use of the set button 1 × USB, 1 × SD port, 1 × RJ45 console port, 1 × micro USB console port, 1 × out-of-band port, 1 × reset button 1 × use of the set button 1 × use of	Description	6U rack mount, dual engine, $3 \times$ switch modules, $4 \times$ modular PSUs, advanced software	
reset button reset button swappable 2 × modular redundant PSUs, hot swappable reset but on swappable 2 × modular redundant PSUs, hot swappable reset button rese	Slot type and quantity	Total 5 slots, including 2 \times engine slots, 3 \times Media module slots	
piwer supply 4 modular redundant PSUs, hot swappable eat radiation 2 modular redundant Fan trays, hot swappable echanical construction Imensions (WxDxH) 440mm × 430mm × 266mm ounting Rack mount ower requirement perating voltage 100-240VAC, 50-60HZ or 200-240VDC mage/transport temperature 0°C55°C orage/transport temperature 40°C70°C elative humidity(non-condensing) 10%90% orage/transport humidity(non-condensing) 5%95% offware offware level Advanced software perating temperature pottewel Advanced software sacking Stackable, up to 8 devices in one stack perprovals E/E/CC Compliant RoHS ((EU) 2015/863) and RoHS (GB/T26572-2011) compliant cope of delivery and accessories stackable installation package	Management ports on engine		
ast radiation 2 × modular redundant Fan trays, hot swappable dechanical construction imensions (W×D×H) 440mm × 430mm × 266mm ounting Rack mount over requirement perating voltage 100-240VAC, 50-60HZ or 200-240VDC mbient conditions perating lemperature 0°C55°C orage/transport temperature -40°C70°C elative humidity(non-condensing) 10%90% orage/transport humidity(non-condensing) 5%95% oftware oftware oftware perovals E/FCC Compliant RoHS ((EU) 2015/863) and RoHS (GB/T26572-2011) compliant cope of delivery and accessories cope of delivery Device, console cable, installation package	Engine redundancy	Yes	
lechanical construction Imensions (WxDxH)	Power supply	$4 \times$ modular redundant PSUs, hot swappable	
### star	Heat radiation	2 × modular redundant Fan trays, hot swappable	
Rack mount ower requirement perating voltage mbient conditions perating temperature orage/transport temperature elative humidity(non-condensing) oftware oftware oftware oftware peroce peroce oftware oftwar	Mechanical construction		
over requirement perating voltage 100-240VAC, 50-60HZ or 200-240VDC mbient conditions perating temperature 0°C55°C proage/transport temperature -40°C70°C elative humidity(non-condensing) 10%90% porage/transport humidity(non-condensing) 5%95% oftware oftware level Advanced software sacking Stackable, up to 8 devices in one stack pprovals E/FCC Compliant OMS compliance ROHS((EU) 2015/863) and ROHS(GB/T26572-2011) compliant cope of delivery and accessories cope of delivery and accessories cope of delivery Device, console cable, installation package	Dimensions (W×D×H)	440mm × 430mm × 266mm	
perating voltage 100-240VAC, 50-60HZ or 200-240VDC mbient conditions perating temperature 0°C55°C corage/transport temperature -40°C70°C elative humidity(non-condensing) 10%90% corage/transport humidity(non-condensing) 5%95% coftware coftware level Advanced software acking Stackable, up to 8 devices in one stack pprovals E/FCC Compliant RoHS ((EU) 2015/863) and RoHS (GB/T26572-2011) compliant cope of delivery and accessories cope of delivery Device, console cable, installation package	Mounting	Rack mount	
mbient conditions perating temperature 0°C55°C proage/transport temperature -40°C70°C pelative humidity(non-condensing) 10%90% proage/transport humidity(non-condensing) 5%95% poftware poftware level Advanced software packing Stackable, up to 8 devices in one stack pprovals E/FCC Compliant phS compliance RoHS((EU) 2015/863) and RoHS(GB/T26572-2011) compliant percope of delivery and accessories poever of delivery and accessories poever of delivery and accessories proved to the condensity of the co	Power requirement		
perating temperature 0°C55°C proage/transport temperature -40°C70°C pelative humidity(non-condensing) 10%90% porage/transport humidity(non-condensing) 5%95% portware portware level Advanced software packing Stackable, up to 8 devices in one stack pprovals percompliance Compliant phS compliance RoHS((EU) 2015/863) and RoHS(GB/T26572-2011) compliant percope of delivery and accessories port or delivery and accessories port or delivery and accessories prove console cable, installation package	Operating voltage	100-240VAC, 50-60HZ or 200-240VDC	
corage/transport temperature -40°C70°C elative humidity(non-condensing) 10%90% corage/transport humidity(non-condensing) 5%95% coftware coftware level Advanced software cacking Stackable, up to 8 devices in one stack pprovals E/FCC Compliant cope of delivery and accessories cope of delivery Device, console cable, installation package	Ambient conditions		
elative humidity(non-condensing) forage/transport humidity(non-cond	Operating temperature	0°C55°C	
torage/transport humidity(non-condensing) 5%95% oftware oftware level acking Stackable, up to 8 devices in one stack pprovals E/FCC Compliant oHS compliance RoHS((EU) 2015/863) and RoHS(GB/T26572-2011) compliant cope of delivery and accessories cope of delivery Device, console cable, installation package	Storage/transport temperature	-40°C70°C	
oftware oftware level Advanced software acking Stackable, up to 8 devices in one stack pprovals E/FCC Compliant oHS compliance RoHS((EU) 2015/863) and RoHS(GB/T26572-2011) compliant cope of delivery and accessories cope of delivery Device, console cable, installation package	Relative humidity(non-condensing)	10%90%	
Advanced software acking Stackable, up to 8 devices in one stack pprovals E/FCC Compliant ROHS compliance ROHS (EU) 2015/863) and ROHS (GB/T26572-2011) compliant cope of delivery and accessories cope of delivery Device, console cable, installation package	Storage/transport humidity(non-condensing)	5%95%	
sacking Stackable, up to 8 devices in one stack pprovals E/FCC Compliant PHS compliance RoHS((EU) 2015/863) and RoHS(GB/T26572-2011) compliant cope of delivery and accessories cope of delivery Device, console cable, installation package	Software		
pprovals E/FCC Compliant phS compliance RoHS((EU) 2015/863) and RoHS(GB/T26572-2011) compliant cope of delivery and accessories cope of delivery Device, console cable, installation package	Software level	Advanced software	
Compliant ROHS compliance ROHS (EU) 2015/863) and ROHS (GB/T26572-2011) compliant cope of delivery and accessories cope of delivery Device, console cable, installation package	Stacking	Stackable, up to 8 devices in one stack	
RoHS compliance RoHS (EU) 2015/863) and RoHS (GB/T26572-2011) compliant cope of delivery and accessories cope of delivery Device, console cable, installation package	Approvals		
cope of delivery and accessories cope of delivery Device, console cable, installation package	CE/FCC	Compliant	
cope of delivery Device, console cable, installation package	RoHS compliance	RoHS((EU) 2015/863) and RoHS(GB/T26572-2011) compliant	
, , , , ,	Scope of delivery and accessories		
ccessories to order separately Engine, PSU, fan*, Media module, Network Management Industrial HiVision, SFP	Scope of delivery	Device, console cable, installation package	
	Accessories to order separately	Engine, PSU, fan*, Media module, Network Management Industrial HiVision, SFP	

^{*} MTS8003 must have 2 units of fan module to make it work properly.



Managed Enterprise Ethernet MTS8000 series switch: Media module			
Media module	Number of Ports	Port Type/Speed	MTS8003 switch min/max ports
MTM8000-48F2X-S	50	48 × 100M/1000M SFP slots, 2 × 1/10G SFP+ slots	50/150
MTM8000-48T2X-S	50	48 × FE/GE TX ports, 2 × 1/10G SFP+ slots	50/150
MTM8000-48TP2X-S	50	48 × FE/GE TX PoE ports, 2 × 1/10G SFP+ slots	50/150
MTM8000-24T24F2X-S	50	$24 \times$ FE/GE TX ports, $24 \times$ 100M/1000M SFP slots, $2 \times$ 1/10G SFP+ slots	50/150
MTM8000-16X-S	16	16 × 1/10G SFP+ slots	16/48
MTM8000-16X4Q-S	20	16 × 1/10G SFP+ slots, 4 × 40G QSFP+ slots	20/60
MTM8000-16Q-A	16	16 × 40G QSFP+ slots	16/48
MTM8000-52X-A	52	52 × 1/10G SFP+ slots	52/156



Entorpriso Ethornoti MTS90	000 series switch accessories: PSU	
Name	MTM8000-PSU800	
Product description		
Description	MTS8003 800W Power Supply, Min. 1*PSU, Max. 4*PSUs	
Order No.	942999803	
Service		
Diagnostics	LEDs (PWR) at basic device	
Current consumption		
Activation current	typ. < 40A at 220VAC and cold start	
Technical data		
Operating voltage	100-240VAC or 200-240VDC	
Operating temperature	0°C55°C	
Input frequency	50-60HZ	
Nominal power of voltage supply	800W (220V/110V)	
Power requirements		
Current consumption	5A (220 V), 10A (110V)	
Scope of delivery		
Scope of delivery	PSU	





Enterprise Ethernet: MTS8000 series switch accessories: Fan			
Name	MTM8003-FAN		
Product description	n		
Description	Modular Fan, Hot-Swap supported, 2 units of the fan module are mandatory for MTS8003		
Order No.	942999804		
Service			
Diagnostics	LEDs (FAN) at basic device		
Technical data	Technical data		
Operating temperature	0°C55°C		
Scope of delivery	and accessories		
Scope of delivery	Fan module		

Order Information				
Product Number	Product Code	Description		
942999801	MTS8003-Chassis	MTS8003 Chassis, 6U, MUST have 2 × FAN Modules		
942999802	MTM8000-Engine	MTS8000 Engine Module, Max. 2 × Engines		
942999803	MTM8000-PSU800	MTS8000 800W Power Supply, Min. 1 × PSU, Max. 4 × PSUs		
942999804	MTM8003-FAN	MTS8003 Fan Modules		
942999806	MTM8000-48F2X-S	MTS8000 Media module; 48 × 100M/1000M SFP slots, 2 × 1/10G SFP+ slots		
942999807	MTM8000-48T2X-S	MTS8000 Media module; 48 × FE/GE TX ports, 2 × 1/10G SFP+ slots		
942999808	MTM8000-48TP2X-S	MTS8000 Media module; 48 × FE/GE TX PoE ports, 2 × 1/10G SFP+ slots		
942999809	MTM8000-24T24F2X-S	MTS8000 Media module; 24 \times FE/GE TX ports, 24 \times 100M/1000M SFP slots, 2 \times 1/10G SFP+ slots		
942999810	MTM8000-16X-S	MTS8000 Media module; 16 × 1/10G SFP+ slots		
942999811	MTM8000-16X4Q-S	MTS8000 Media module; 16 × 1/10G SFP+ slots, 4 × 40G QSFP+ slots		
942999812	MTM8000-16Q-A	MTS8000 Media module; 16 × 40G QSFP+ slots, high performance		
942999814	MTM8000-52X-A	MTS8000 Media module; 52 × 1/10G SFP+ slots, high performance		
942999815	MTM8000-ModuleCover	Switch module slot cover		
942999816	MTM8000-EngineCover	Switch Engine slot cover		
942999817	MTM8000-PSUCover	Switch PSU slot cover		

SFP Transceiver Modules



1G SFP modu	1G SFP module				
Product Number	Product Code	Description			
942999854	MTS-SFP-1G-TX/RJ45	1Gbps,SFP TX/RJ45			
942999855	MTS-SFP-1G-SX/LC	1Gbps,100Mbps compatible*,Multi-mode,850nm,LC,550m,DDMI			
942999856	MTS-SFP-1G-LX/LC	1Gbps,100Mbps compatible*,Single-mode,1310nm,LC,20Km,DDMI			
942999857	MTS-SFP-1G-LX+/LC	1Gbps,100Mbps compatible*,Single-mode,1310nm,LC,40Km,DDMI			
942999858	MTS-SFP-1G-LH/LC	1Gbps,100Mbps compatible*,Single-mode,1310nm,LC,80Km,DDMI			
942999859	MTS-SFP-1G-LH+/LC	1Gbps,100Mbps compatible*,Single-mode,1550nm,LC,100Km, DDMI			
942999860	MTS-SFP-1G-BIDI-TypeA-LX/LC	1Gbps,100Mbps compatible*,Single-mode,TX1310nm,RX1550nm, LC,10Km-TYPE A			
942999861	MTS-SFP-1G-BIDI-TypeB-LX/LC	1Gbps,100Mbps compatible*,Single-mode,TX1550nm,RX1310nm, LC,10Km-TYPE B			
942999862	MTS-SFP-1G-LX+/LC-1550	1Gbps,100Mbps compatible*,Single-mode,1550nm,LC,40Km,DDMl			

^{*} Need to assign duplex mode.



10G SFP module					
Product Number	Product Number Product Code Description				
942999851	MTS-SFP-10G-SR/LC	10Gbps,Multi-mode,850nm,LC,300m,DDMI			
942999852	MTS-SFP-10G-LR/LC	10Gbps,Single-mode,1310nm,LC,10Km,DDMI			
942999853	MTS-SFP-10G-ER/LC	10Gbps,Single-mode,1550nm,LC,40Km,DDMI			
942999867	MTS-SFP-10G-TX/RJ45	SFP TX/RJ45, 10Gbps full duplex auto neg.			



40G SFP module					
Product Number	Product Code	Description			
942999863	MTS-SFP-40G-SR/LC	40Gbps,Multi-mode,850nm,MP0,100m(OM3),150m(OM4),DDMI			
942999864	MTS-SFP-40G-LR/LC	40Gbps,Single-mode,1310nm,LC,10Km,DDMI			



SFP Applicable Matrix

	Applicable Matrix*			MTS2600 Series Switch		MTS2800 Series Switch		MTS2900 Series Switch		MTS8000 series switch		
				10G SFP+ port	10G SFP+ port	1G SFP port	10G SFP+ port	10G SFP+ port	40G QSFP port	1G SFP port	10G SFP+ port	40G QSFP port
1		942999854	MTS-SFP-1G-TX/RJ45			•						
2		942999855	MTS-SFP-1G-SX/LC	•	•	•	•					
3		942999856	MTS-SFP-1G-LX/LC	•	•	•	•	•				
4		942999857	MTS-SFP-1G-LX+/LC	•	•	•	•					
5	1G SFP Module	942999858	MTS-SFP-1G-LH/LC	•	•	•	•					
6		942999859	MTS-SFP-1G-LH+/LC	•	•	•	•	•		•		
7		942999860	MTS-SFP-1G-BIDI-TypeA-LX/LC	•	•	•	•	•				
8		942999861	MTS-SFP-1G-BIDI-TypeB-LX/LC	•	•	•	•	•				
9		942999862	MTS-SFP-1G-LX+/LC-1550	•	•	•	•	•				
10		942999851	MTS-SFP-10G-SR/LC	•	•		•					
11	10G SFP Module	942999852	MTS-SFP-10G-LR/LC	•	•		•	•				
12		942999853	MTS-SFP-10G-ER/LC	•	•		•	•				
13		942999867	MTS-SFP-10G-TX/RJ45					•			•	
14	40G SFP Module	942999863	MTS-SFP-40G-SR/LC						•			•
15	406 SFP Module	942999864	MTS-SFP-40G-LR/LC						•			•

^{*} Marked with point means the SFP can be used in the port of certain type of switch and blank means the SFP cannot.

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Stacking Cable



10G Stacking Cable					
Product Number Product Code Description					
942999868	MTS-Cable-10G-1M	10G Stacking Cable, 1M, Including 2*SFP+ Connectors			
942999869	MTS-Cable-10G-3M	10G Stacking Cable, 3M, Including 2*SFP+ Connectors			



40G Stacking Cable					
Product Number	Product Code	Description			
942999865	MTS-Cable-40G-1M	40G Stacking Cable, 1M, Including 2*QSFP Connectors			
942999866	MTS-Cable-40G-3M	40G Stacking Cable, 3M, Including 2*QSFP Connectors			





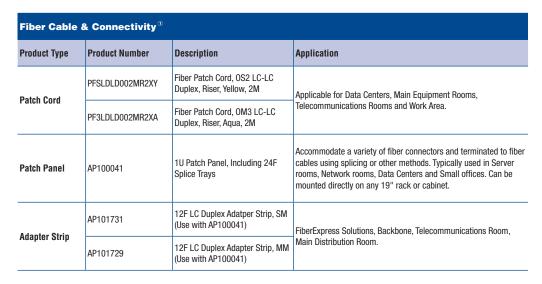


Other Accessories



Copper Cable & Connectivity [®]						
Product Type	Product Number	Description	Application			
Category Cable	7814ANH 006A305M	CAT6 U/UTP Cable 24AWG, LSZH, Blue, 305M	Premise Horizontal Cable, Gigabit Ethernet, 100BaseTX, 100BaseVG ANYLAN, 155ATM, 622ATM, NTSC/PAL Component or Composite Video, AES/EBU, Digital Video, RS-422, 250MHz Category 6 and PoE application.			
Patch Cord	C654106001M CAT6 Patch Cord UTP 24AWG LSZH, Black, 1M		Horizontal and building cabling. Support current and future Category 6 and 5e applications, such as 1000Base-T (Gigabit Ethernet), 100Base-T, 10Base-T, FDDI, ATM			
Patch Panel	ch Panel AX106504-AP Shielded Patch Panel 1U 24Port		Compatible with a variety of modules that are suitable for use with Belden IBDN Systems 10GX, 4800, 3600, 2400 and 1200.			
Bar Kit	AX105931	Long Bracket / Bar Kit for PP (Use with AX106504-AP together)	peluen ibbin Systems Tuga, 4600, 3600, 2400 and 1200.			
Modular Jack	AX101321	CAT6 Modular Jack, Black	Applicable for IBDN Systems 2400, 3600 and 4800, TIA Category 6+, ISO Class E, 1000 BASE-T			







Rack & Cabinet®						
Product Type	Product Number	Description	Application			
Rack & Cabinet		800KG, Networking Distribution Cabinet, 42U,800(W)* 1200(D), Black	Applicable for 19" Data, Telecommunications, LAN and Server. Varying depths are available for customer specific requirements.			



 $[\]textcircled{1} \textbf{ Typical Product Numbers Listed Only. Please Approach Your Sales Representative for More Enterprise Products.}$



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Working with us means working with our committed partner network, across all Belden brands. We combine our resources, intelligence and skills to take Belden products and solutions to the next level.

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At Belden every new challenge is considered unique, whether a standard solution is sufficient or a customized solution is needed. Whenever necessary, we adapt our products and services to your requirements and demands. Although flexibility is key, there are always ten clear benefits that you can rely on. They underlie the way we work, regardless of a project's size or nature. These are our ten most important benefits to you:

- 1 A wide range of standard and tailored signal transmission solutions from one single source.
- 2 Hassle-free and secure signal transmissions under the toughest conditions.
- **3** Reducing total cost of ownership.
- 4 Best-in-class products with proven superior performance.
- **5** Reliability for maximum uptime and minimum maintenance.
- **6** Fast delivery of solutions and ease of installation.
- 7 Local technical support backed by extensive global resources.
- **8** Belden, Hirschmann and Tripwire: brands with a long history and an excellent reputation.
- 9 Design support and innovation.
- 10 Continued analysis of market needs for continuous development of effective solutions.

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