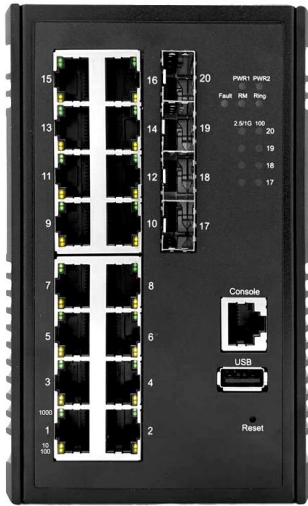


MS-1604GE

16+4 Port Industrial Managed Gigabit Ethernet Switch



- 16x Gigabit Ethernet ports
- 4x 1000F(x) SFP Slot
- Built for harsh environments and wide temperature range application
- RSTP, MSTP, ERPS, LACP for Network Redundancy
- QoS CoS/DSCP to increase determinism
- Supports IGMP Snooping v1/v2/v3, up to 512 groups
- DHCP Relay Option 82 for policies IP address assignment
- SNMP v1/v2c/v3 for network management
- Supports Storm Protection
- USB storage for configuration-free replacement
- Supports industrial automation protocols Ethernet/IP and Modbus TCP

Specifications

Technology

- IEEE 802.3 10BaseT
- IEEE 802.3u 100BaseTX
- IEEE 802.3ab 1000BaseT
- IEEE 802.3z 1000BaseX
- IEEE 802.3x Flow Control
- IEEE 802.3az Energy-Efficient Ethernet
- IEEE 802.3ad/802.1AX LACP
- IEEE 802.1D Spanning Tree Protocol
- IEEE 802.1w Rapid STP
- IEEE 802.1s Multiple STP
- ITU-T G.8032 / Y.1344 ERPS
- IEEE 802.1Q VLAN Tagging
- IEEE 802.1ad Stacked VLANs
- IEEE 802.1p Class of Service
- IEEE 802.1X Network Authentication
- IEEE 802.1AB LLDP
- IEEE 1588 PTP

Standards

Processing Type Store and Forward

Switch Properties

Switch Fabric	40Gbps
Priority Queues	8 Queues
Jumbo Frame	9216bytes
MAC Table Size	16K
Packet Buffer	4Mbits
VLAN Table Size	4094
IGMP Group	512

ACL Group 512

Software Feature

Network Redundancy	RSTP, MSTP, G.8032 ERPSv2, Port Trunking with LACP
Security	802.1X, RADIUS, TACACS+, SSL, SSH
Management	IPv4, IPv6, Web, Telnet, Serial Console, CLI, SNMP v1/v2c/v3, uPnP
Diagnostics	RMON, SNMP Inform/Trap, Syslog, SMTP, Port Mirroring, LLDP, RSPAN
Configuration	DHCP Server/Client, Relay Option 82, TFTP, USB
Filter	802.1Q VLAN, Q-in-Q, IGMP Snooping v1/v2/v3, IGMP Querier, Independent Vlan Learning
Time Sync.	NTP, IEEE1588v2 OC (Software Timestamp), TC (Hardware Timestamp)
QoS	CoS, DSCP, WRR/SPQ Queuing, Storm Protection
PoE	Powering Status, PoE Monitoring, Scheduling, PD Alive Check
Industrial Profiles	Ethernet/IP, Modbus TCP, Profinet

Interface

RJ45 Port 16x 10/100/1000T(x), auto negotiation speed duplex mode, auto MDI/MDI-X

Fiber Port	4x 1000F(x) SFP Slot
LED Indicators	Per unit: PWR1, PWR2, Fault, Ring Master, Ring State Ports: Link/Active with highest speed(Green), low speed(Amber)
Alarm Contact	1x relay output with current carrying capacity of 1A @ 24 VDC
Digital Inputs	1x isolated input from the electronics. +13 to +30V for state "1" -30 to +3V for state "0" Max. input current: 8mA
Button	Multiple functions reset button
Serial Console	1x RS232 in RJ45 connector with console cable, 115.2Kbps, 8N1
Storage	1x USB 2.0 storage for firmware update, configuration backup, restore, boot up and syslog

Power Requirements

Operation Voltage	12-48VDC, redundant dual inputs
Connection	1x removable 4-contact terminal block
Power Consumption	1.09A@24VDC
Protection	Overload Current Protected, Reverse Polarity Protected

Mechanical Construction

Enclosure	Aluminum
Protection Class	IP30
Dimensions	91x145x118 mm (WxHxD)
Weight	0.97 kg

Mounting DIN-Rail Mounting, Optional Wall Mounting Kits

Environmental Limits

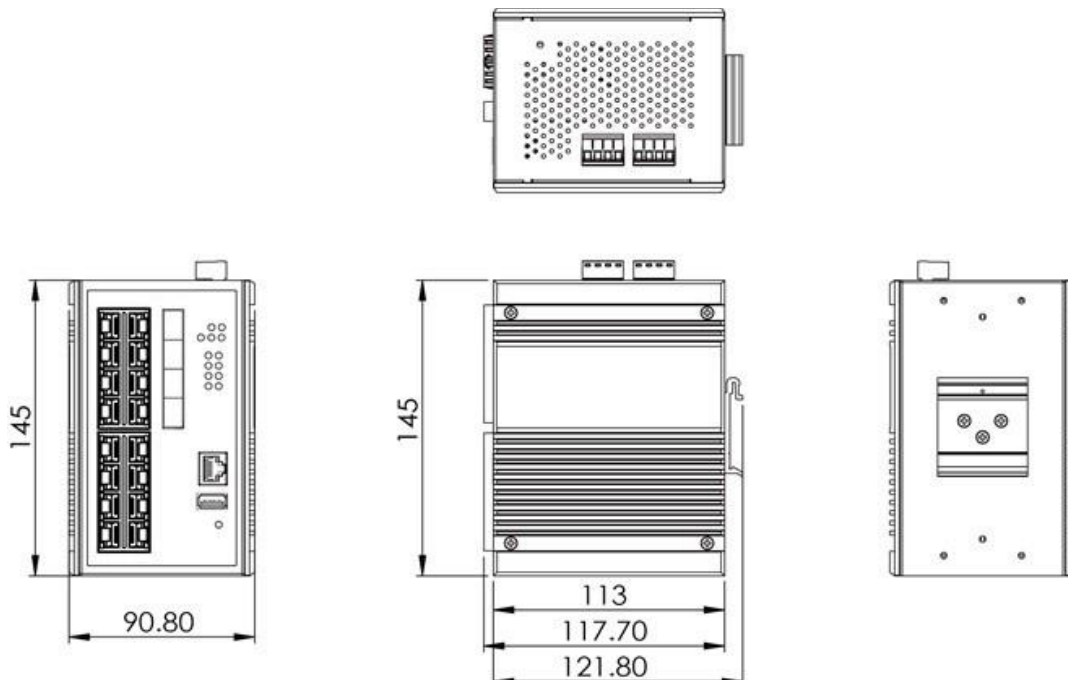
Operating Temperature	Standard: -10°C ~ 60°C (14°F ~ 140°F) Extended: -40°C ~ 75°C (-40°F ~ 167°F)
Storage Temperature	-40°C ~ 85°C (-40°F ~ 185°F)
Ambient Relative Humidity	5 to 95%, (Non-Condensing)

Regulatory Approvals

EMI	FCC Part 15 Subpart B Class A CE EN 55032 Class A
EMS	IEC61000-4-2 (ESD) IEC61000-4-3 (RS) IEC61000-4-4 (EFT) IEC61000-4-5 (Surge) IEC61000-4-6 (CS) IEC61000-4-8 (Magnetic Field)
Free Fall	IEC60068-2-32
Shock	IEC60068-2-27
Vibration	IEC60068-2-6
Green	RoHS Compliant
Certifications	UL 60950-1/62368 (Pending) IEC 61000-6-2 IEC 61000-6-4 EN 50121-4
MTBF	>100,000 hours
Warranty	5 Years

Features with star(*) implies those are under development. In a continuing effort of improvement and updated technology, product specifications are subject to change without notice.

Dimensions (unit = mm)



Ordering Information

MS-1604GE 16+4 Port Industrial Managed Gigabit Ethernet Switch
- 16x 10/100/1000T(x) + 4x 1000F(x) SFP Slot
- Operating Temperature: -10°C ~ 60°C (14°F ~ 140°F)

MS-1604GE-T 16+4 Port Industrial Managed Gigabit Ethernet Switch
- 16x 10/100/1000T(x) + 4x 1000F(x) SFP Slot
- Operating Temperature: -40°C ~ 75°C (-40°F ~ 167°F)

Optional Accessories

NDR-75-24 75W Industrial DIN-Rail Power Supply, 24VDC (metal case)

NDR-75-48 75W Industrial DIN-Rail Power Supply, 48VDC (metal case)