

# MP-1604GE

## 16+4 Port Industrial Managed PoE+ Gigabit Ethernet Switch



- 16x Gigabit Ethernet ports with IEEE 802.3at PoE+
- 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
- Supports PoE PD Alive Check Function for PoE Device Power Recycle

### Specifications

#### Technology

IEEE 802.3 10BaseT  
 IEEE 802.3u 100BaseTX  
 IEEE 802.3ab 1000BaseT  
 IEEE 802.3z 1000BaseX  
 IEEE 802.3x Flow Control  
 IEEE 802.3af Power over Ethernet  
 IEEE 802.3at PoE+  
 IEEE 802.3az Energy-Efficient Ethernet  
 IEEE 802.3ad/802.1AX LACP

#### Standards

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

**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, DDM, 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, PoE Priority

**Industrial Profiles** Ethernet/IP, Modbus TCP, Profinet

#### Interface

<b>RJ45 Port</b>	16x 10/100/1000T(x) with PoE+, auto negotiation speed duplex mode, auto MDI/MDI-X
<b>Fiber Port</b>	4x 1000F(x) SFP Slot
<b>PoE Pin Out</b>	V+, V+, V-, V-, for pin 1, 2, 3, 6, Endspan, MDI Mode A
<b>LED Indicators</b>	<b>Per unit:</b> PWR1, PWR2, Fault, Ring Master, Ring State <b>Ports:</b> Link/Active(Green) <b>PoE:</b> Output Power(Amber)
<b>Alarm Contact</b>	1x relay output with current carrying capacity of 1A @ 24 VDC
<b>Digital Inputs</b>	1x isolated input from the electronics. +13 to +30V for state "1" -30 to +3V for state "0" Max. input current: 8mA
<b>Button</b>	Multiple functions reset button
<b>Serial Console</b>	1x RS232 in RJ45 connector with console cable, 115.2Kbps, 8N1
<b>Storage</b>	1x USB 2.0 storage for firmware update, configuration backup, restore, boot up and syslog

### Power Requirements

<b>Operation Voltage</b>	48-57VDC, redundant dual inputs, >50VDC for PoE+ output recommended
<b>Connection</b>	1x removable 4-contact terminal block
<b>Power Consumption</b>	0.45A@48VDC without PDs' consumption
<b>PoE Power Budget</b>	Max. 240 W for total PD consumption, Max. 30 W per PoE port
<b>Protection</b>	Overload Current Protected, Reverse Polarity Protected

### Mechanical Construction

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.

<b>Enclosure</b>	Aluminum
<b>Protection Class</b>	IP30
<b>Dimensions</b>	91x145x118 mm (WxHxD)
<b>Weight</b>	1.4 kg
<b>Mounting</b>	DIN-Rail Mounting, Optional Wall Mounting Kits

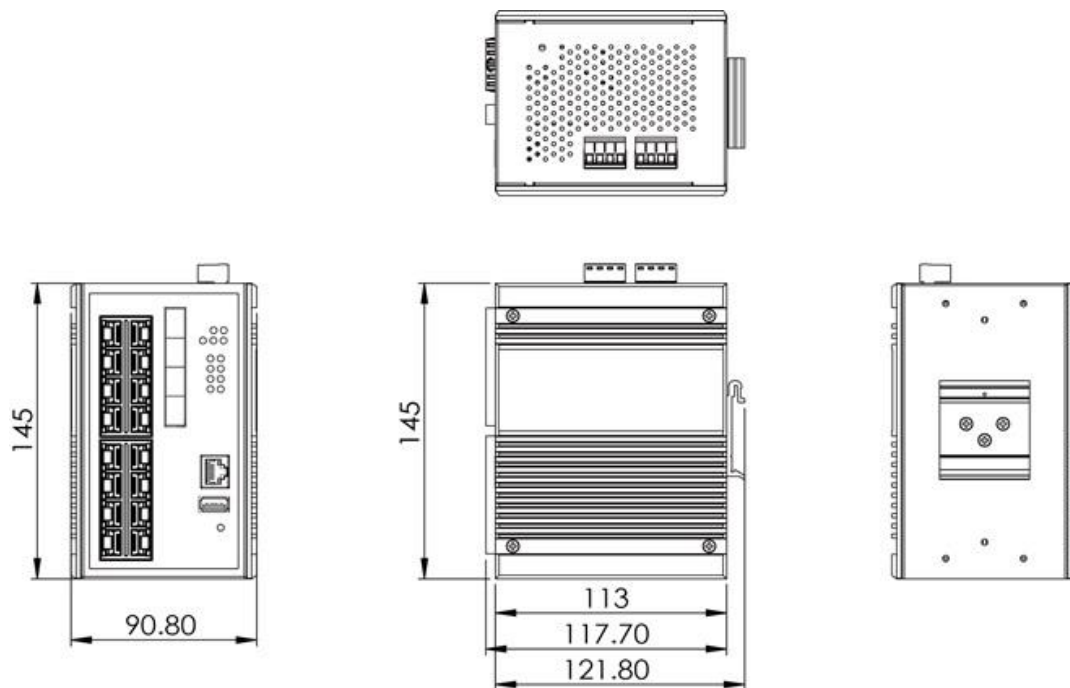
### Environmental Limits

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

### Regulatory Approvals

<b>EMI</b>	FCC Part 15 Subpart B Class A CE EN 55032 Class A
<b>EMS</b>	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)
<b>Free Fall</b>	IEC60068-2-32
<b>Shock</b>	IEC60068-2-27
<b>Vibration</b>	IEC60068-2-6
<b>Green</b>	RoHS Compliant
<b>Certifications</b>	IEC 61000-6-2 IEC 61000-6-4
<b>MTBF</b>	>100,000 hours
<b>Warranty</b>	5 Years

## Dimensions (unit = mm)



## Ordering Information

<b>MP-1604GE</b>	16+4 Port Industrial Managed PoE+ Gigabit Ethernet Switch - 16x 10/100/1000T(x) with 30W PSE + 4x 1000F(x) SFP Slot - Operating Temperature: -10°C ~ 60°C (14°F ~ 140°F)
<b>MP-1604GE-T</b>	16+4 Port Industrial Managed PoE+ Gigabit Ethernet Switch - 16x 10/100/1000T(x) with 30W PSE + 4x 1000F(x) SFP Slot - Operating Temperature: -40°C ~ 75°C (-40°F ~ 167°F)

## Optional Accessories

<b>NDR-240-48</b>	240W Industrial DIN-Rail Power Supply, 48VDC (metal case)
<b>NDR-480-48</b>	480W Industrial DIN-Rail Power Supply, 48VDC (metal case)