

RuggedNet® 10GMG/Mi

Managed Industrial Multi-Gigabit/Multi-Rate 100M, 1G, 2.5G, 5G, 10G Ethernet Switch

The RuggedNet 10GMG/M are managed industrial multi-gigabit Ethernet switches. They feature one 1/10G SFP/SFP+ or multi-gigabit/multi-rate RJ-45 uplink port and two multi-gigabit/multi-rate RJ-45 and two 10/100/1000 RJ-45 user ports.

The RJ-45 user ports support multi-gigabit/multi-rate speeds of 100Mbps, 1Gbps, 2.5Gbps, 5Gbps and 10Gbps, supporting frame sizes up to 10,240 bytes.

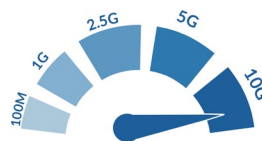
All models support Directed Switch mode, which directs multicast traffic (such as video) only to the appropriate uplink port, preventing multicast traffic from flooding other network ports.

The switches feature a Small Form Pluggable (SFP) transceiver receptacle port supporting a variety of copper and fiber transceivers. It supports 10/100/1000BASE-T, 1000BASE-T, 100M/1G/2.5G/5G/10GBASE-T multi-gigabit copper transceivers and 1G and 10G multimode or single-mode fiber, dual or single-fiber transceivers in standard, CWDM and DWDM wavelengths.

The mode of operation can be configured using easily accessible DIP-switches or using Web, Telnet, SSH, SNMPv1/v2c/v3 or Serial Console management interfaces. IPv4 and IPv6 are supported on the switches. These management interfaces provide access to filtering and security options, such as, broadcast storm prevention, IGMP, IEEE 802.1x, RADIUS, TACACS+ and Access Control Lists. Email notification and alarm reporting is provided.

An alarm relay is available to detect user configured events. The relay contact can be configured for normally open or normally closed operation. One alarm input is available for detecting external events such as door open or closed.

All models can be wall or rack mounted using a wall mount bracket and shelf or DIN-rail mounted using the included DIN-rail mounting clip. They are available with dual DC input power.



SFPs not included

KEY FEATURES

- Managed Industrial 10G multi-gigabit/multi-rate Ethernet Switch
- Modbus Industrial Protocol for device management and monitoring
- Supports IPv4 and IPv6
- IEEE 802.1x, RADIUS, TACACS+ and ACL
- Email Notification
- IEEE 802.1Q VLAN tagging and IEEE 802.1ad Q-in-Q
- Broadcast / Multicast / Unicast Storm Prevention
- DHCP Relay Option 82, DHCPv6 and DHCPv6 Relay
- IPv4 Internet Group Management (IGMP) and IPv6 Multicast Listener Discovery (MLD) snooping
- Rate Limiting, Queue prioritization and Class of Service
- IEEE 802.1ab Link Layer Discovery Protocol
- Static MAC configuration and blocking of unknown Unicast/Multicast addresses
- Management via Web, Telnet, SSH, SNMPv1/v2c/v3 and serial interfaces
- Easy to use Hierarchical Command Line Interface
- SNMP management via Omnitron's NetOutlook® management software, or third-party SNMP software
- Directed Switch mode AKA Camera mode to prevent port flooding
- Free 24/7/365 Technical Support

ADDITIONAL FEATURES

- One SFP/SFP+ transceiver uplink port or multi-gigabit/multi-rate copper port
- 1/10G SFP/SFP+ supports standard/CWDM/DWDM fiber transceiver uplink port
- Uplink port supports copper and fiber SFP/SFP+ transceivers
- Multi-gigabit/multi-rate ports support speeds of 100Mbps, 1Gbps, 2.5Gbps, 5Gbps and 10Gbps
- Two multi-gigabit/multi-rate RJ-45 and two 10/100/1000 RJ-45 user ports
- Alarm contacts and sensors
- Dual DC power for redundancy
- Wall, Rack and DIN-rail mountable
- Fan-less design for long life
- Industrial (-40 to 75° C) operating temperature
- TAA, BAA and NDAA compliant, and Made in the USA

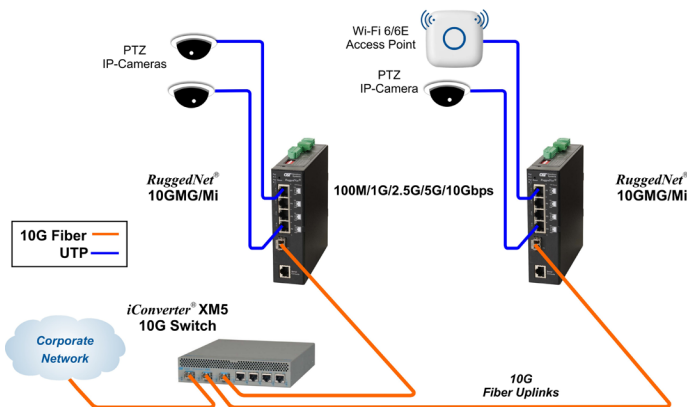
APPLICATIONS

Security and Wireless

In this industrial manufacturing application example, IP cameras and Wi-Fi 6/6E Access Points are installed throughout a large manufacturing facility. An iConverter® XM5 aggregation fiber switch is used to distribute a fiber link from a control room to RuggedNet switches with a fiber SFP port.

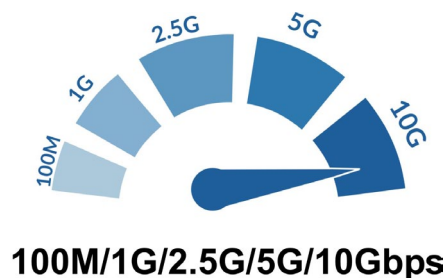
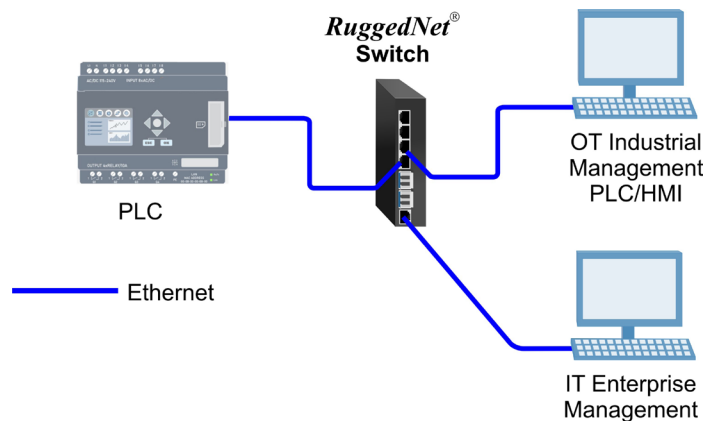
The RuggedNet 10GMG/Mi provides a fully managed solution to an IP camera and Wireless Access Point at each location, each of which can be located up to 100 meters from the switches.

The camera and access point have full bandwidth capability utilizing the 10G fiber uplink port on each 10GMG/Mi switch.



Modbus Application

Modbus is one of the oldest and most popular communication protocols used in industrial automation. Modbus-TCP is the Modbus RTU protocol with a TCP interface running on Ethernet. Omnitron's Modbus-aware switches seamlessly connect IT (Information Technology Networks) and OT (Operational Technology Networks).



SPECIFICATIONS

Description	RuggedNet® 10GMG/Mi Managed Industrial 10Gigabit Multi-Gigabit/Multi-Rate Ethernet Switch
Standard Compliances	IEEE 802.3, IEEE 802.1Q, IEEE 802.1ad, IEEE 802.1ab, RFC 5424, RFC 4541, RFC 2710, IEC 624339-2, SMTP, SNMP, RADIUS, TACACS+, IEEE 802.1x,
Regulatory Compliances (Pending)	<p>Safety: UL 62368-1, UL 60950-1, IEC 62368-1, IEC 60950-1, EN 62368-1, EN 60950-1, CAN/CSA C22.2 No. 62368-1-14, CAN/CSA C22.2 No. 60950-1, CE Mark, UKCA</p> <p>EMC: EN 55032/24 CE Emissions/Immunity, IEC 61000-6-4 Industrial Emissions, IEC 61000-6-2 Industrial Immunity</p> <p>EMI: CISPR 32, FCC 47 Part 15 Subpart B Class A</p> <p>EMS: IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m (on UTP cabling) and 20 V/m (on STP cabling) IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV, IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV, IEC 61000-4-6 CS: Signal: 10 V, IEC 61000-4-8 (Magnetic Field), 30A/m, IEC 61000-4-11 (General Immunity in Industrial Environments)</p> <p>IP Rating: IP40 Protection</p> <p>ACT: TAA, BAA, NDAA</p>
Environmental	REACH, RoHS and WEEE
Management	IPv4 and IPv6 address Web, Telnet, SSH, SNMPv1/v2c/v3 In-Band management via Ethernet port, Out-of-band management via serial port
Frame Size	Up to 10,240 bytes
Port Types	<p>Copper: 100/1000BASE-T, 2.5GBASE-T/5GBASE-T/10GBASE-T (RJ-45) 10/100/1000BASE-T (RJ-45)</p> <p>SFP/SFP+: 10GBASE-X Fiber Transceivers, 10GBASE-T Copper Transceivers 1000BASE-X Fiber Transceivers, 1000BASE-T Copper Transceivers 10/100/1000BASE-T SGMII Copper Transceivers</p> <p>Serial: RS-232 (RJ-45)</p>
Cable Types	<p>Copper: Twisted-pair cable up to 100 meters 10BASE-T: 4-pair UTP Cat 3, 4, 5, 5e, 6, 6A 100BASE-TX: 4-pair UTP Cat 5, 5e, 6, 6A 1G/2.5G: 4-pair UTP Cat 5e, 6, 6A, 7 5G: 4-pair UTP Cat 6, 6A, 7 10G: 4-pair UTP Cat 6A, 7</p> <p>Fiber: Multimode: 50/125, 62.5/125µm Single-mode: 9/125µm</p>
DC Power Requirements	+12 to +57VDC; 0.93A @ 12VDC 0.23A @ 48VDC 2 Pin Terminal (isolated)
Alarm Contact (Output)	2 form C Relay for Normally Open and Normally Closed Operation 110VDC/125VAC Maximum Voltage 2A Maximum Current
Alarm Sensor (Input)	2.0ma @ 3.3VDC Closure Detection
Dimensions (W x D x H)	1.5" x 5.2" x 5.5" (38.1 mm x 132.1 mm x 139.7 mm)
Weight	1.5 lbs. (680 grams)
Operating Temperature	Extended: -40 to 75°C Storage: -40 to 80°C
Humidity	5 to 95% (non-condensing)
Altitude	-100m to 4,000m (operational)
MTBF (hours)	229,000
Warranty	5 year product warranty with 24/7/365 free Technical Support

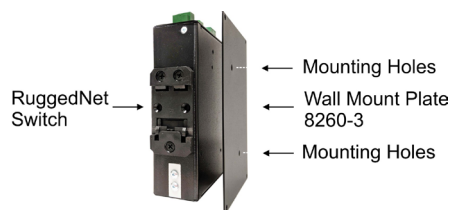
ORDERING INFORMATION

RuggedNet 10GMG/Mi Models	
Model Number	Description
9665-0-14-2Z	10GMG/Mi - 1 x SFP+ + 2 x 100/1G/2.5G/5G/10G RJ-45 ports + 2 x 10/100/1000 RJ-45 ports, dual power inputs (2-pin terminal block), industrial temperature range -40 to 75°C
9665-1-14-2Z	10GMG/Mi - 1 x 100/1G/2.5G/5G/10G RJ-45 + 2 x 100/1G/2.5G/5G/10G RJ-45 ports + 2 x 10/100/1000 RJ-45 ports, dual power inputs (2-pin terminal block), industrial temperature range -40 to 75°C

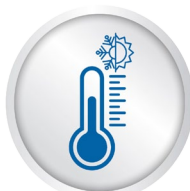
Contact Omnitron for other fiber options. Order the appropriate SFPs separately. [Visit the Omnitron Optical Transceivers web page.](#)

ACCESSORIES

Model Number	Description
8260-3	Wall Mounting Plate
8260-0	19" rack mount shelf (up to 2 modules with wall mounting plate installed)



Wall Mount Plate used to wall or rack mount the RuggedNet switch



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