

RuggedNet® 10G/Mi

Managed Industrial 6 and 10 Port 10Gigabit Ethernet Switch

The RuggedNet 10G/Mi is a managed industrial Ethernet switch that features two 1/10G uplink ports and four or eight 10/100/1000 RJ-45 user ports. The RuggedNet 10G/Mi enables industrial network distance extension with fiber or copper cabling.

The RuggedNet 10G/Mi is a Layer 2 Ethernet switch that forwards frames to any port based on their MAC address.

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 support redundant uplinks, industrial ring Media Redundancy Protocol (MRP), Spanning Tree protocol and daisy-chain configurations for high availability industrial network applications.

The switches support Dual Device mode that enables the 10G/Mi to operate as two independent and isolated Ethernet switches. In Dual Device mode, the 10G/Mi provides separate and independent data traffic paths between each uplink port and a group of user ports.

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.

The RuggedNet switches are available with Small Form Pluggable (SFP) transceiver receptacle ports. The SFP ports support 10/100/1000BASE-T, 1000BASE-T and 10GBASE-T copper transceivers. They also support 1G and 10G multimode or single-mode fiber, dual or single-fiber and standard, CWDM and DWDM wavelengths.

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.

The switches 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 1/10G Ethernet Switch
- Modbus Industrial Protocol for device management and monitoring
- Supports IPv4 and IPv6
- IEEE 802.1x, RADIUS, TACACS+ and ACL
- Email Notification
- Rapid and Multiple Spanning Tree Protocol
- Media Redundancy Protocol (MRP)
- IEEE 802.1ax LAG and LACP; Active/Active and Active/Standby
- 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 IGMP and IPv6 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
- Dual Device mode for operating as two separate switches
- Directed Switch mode prevents flooding of multicast video traffic
- Free 24/7/365 Technical Support

ADDITIONAL FEATURES

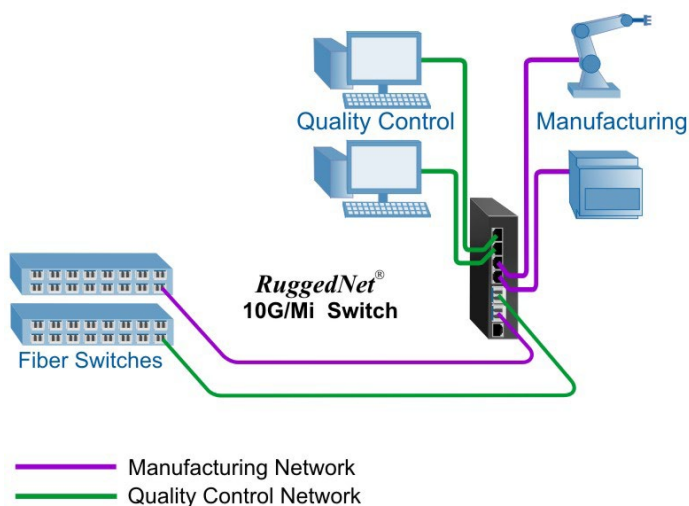
- Two 1/10G SFP/SFP+ transceiver uplink ports
- Supports copper and fiber SFP transceivers
- Supports 10M, 100M, 1G and 10Gbps copper SFP/SFP+ transceivers
- Four or eight 10/100/1000 copper user ports
- Dual DC power for redundancy
- Alarm contacts and sensors
- Wall, Rack and DIN-rail mountable
- Fan-less design for long life
- Industrial (-40 to 75°C) operating temperature
- TAA, BAA and NDAA compliant, and Made in the USA

APPLICATIONS

Dual Device Mode Application

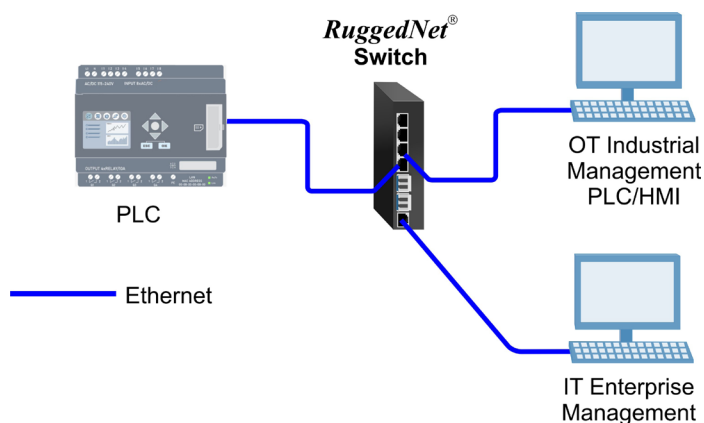
This Dual Device feature is extremely useful when two isolated networks domains share a single network distribution location.

The example below depicts a scenario where the Quality Control (green) network and the Manufacturing (purple) network are sharing a single distribution location. Using the two uplinks and the Dual Device mode facilitates using a single switch driving both the Quality Control and the Manufacturing devices while maintaining isolation between the networks.



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® 10G/Mi 10/100/1000BASE-T with 1/10G Uplink Ports Ruggedized Managed 6 and 10 Port 10Gigabit Ethernet Switch	
Standard Compliances	IEEE 802.3, IEEE 802.1Q, IEEE 802.1ad, IEEE 802.1ab, IEEE 802.1ax, IEEE 802.1w RSTP/MSTP, RFC 5424, RFC 4541, RFC 2710, IEC 624339-2, SMTP, SNTP, 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: 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: RS232 (RJ-45)</p>	
Cable Types	<p>Copper: EIA/TIA 568A/B, Cat 5 UTP and higher</p> <p>Fiber: Multimode: 50/125, 62.5/125µm Single-mode: 9/125µm</p> <p>Serial: Category 3 and higher</p>	
DC Power Requirements	4 RJ-45 Ports: +12 to +57VDC; 0.81A @ 12VDC 0.20A @ 48VDC 2 Pin Terminal (isolated)	8 RJ-45 Ports: +12 to +57VDC; 0.90A @ 12VDC 0.22A @ 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 5.5" x 5.5" (38.1 mm x 139.7 mm x 139.7 mm)	
Weight	4 RJ-45 Ports: 1.70 lb. (772 grams)	8 RJ-45 Ports: 1.77 lb. (803 grams)
Operating Temperature	Industrial: -40 to 75°C Storage: -40 to 80°C	
Humidity	5 to 95% (non-condensing)	
Altitude	-100m to 4,000m (operational)	
MTBF (hours)	285,000	
Warranty	5 year product warranty with 24/7/365 free Technical Support	

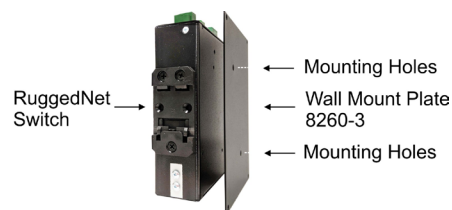
ORDERING INFORMATION

RuggedNet 10G/Mi Models	
Model Number	Description
2902-0-24-2Z	RuggedNet 10G/Mi 2 x SFP/SFP+ uplink port and 4 x RJ-45 user ports, Dual DC Terminal Connectors, Industrial Temperature
2902-0-28-2Z	RuggedNet 10G/Mi 2 x SFP/SFP+ uplink port and 8 x RJ-45 user ports, Dual DC Terminal Connectors, Industrial Temperature

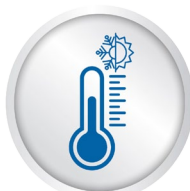
Contact Omnitron for other fiber options. Order the appropriate SFPs separately. [Visit the Omnitron Optical Transceivers web page.](#)

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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