RuggedNet® 10GPoEBT/Mi

Managed Industrial 60/100W IEEE 802.3bt 10Gigabit Ethernet Switch

SFPs not included

The RuggedNet 10GPoEBT/Mi is a managed Industrial Ethernet switch that features two 1/10G uplink ports and four 10/100/1000 RJ-45 IEEE 802.3bt 60W or 100W PoE user ports.

The RuggedNet PoE switches are Layer 2 Ethernet switches that forward 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 10GPoEBT/Mi to operate as two independent and isolated Ethernet switches.

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 PoE 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.

The switches feature a PoE Power Reset function that enables the user to remotely power-cycle and reset each PD, such as a camera or access point. They also feature a configurable Heartbeat Reset function that automatically pings the attached PDs and automatically power cycles and resets the PDs when detecting a heartbeat loss. The Power Reset and the Heartbeat Reset functions save time and expense by eliminating the need to dispatch manpower to remote network sites.

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.

KEY FEATURES

- Managed IEEE 802.3bt PoE 1/10G Ethernet Switches
- 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; Act/Act and Act/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
- PoE Watchdog Self-Healing function / PoE Heartbeat Monitoring and Configurable PoE Power Reset
- PoE power management with LLDP MED and MDI TLV, and PoE Power Multi-Day Scheduler
- 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 configured as two separate switches
- Directed Switch mode prevents flooding of multicast video traffic
- Free 24/7/365 Technical Support

ADDITIONAL FEATURES

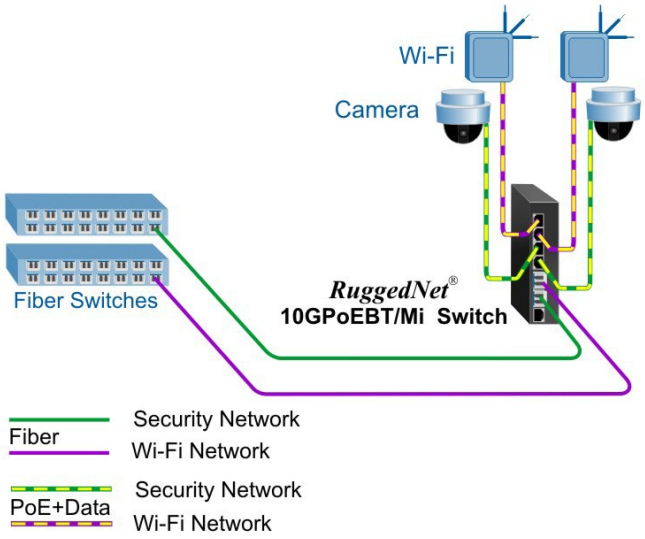
- Two 1/10G SFP/SFP+ transceiver uplink ports
- Supports copper and fiber SFP transceivers
- Supports 10M, 100M, 1G and 10Gbps copper SFP/SFP+ transceivers
- Four 10/100/1000 copper PoE user ports
- Dual DC power for redundancy
- Alarm contacts and sensors
- Wall, Rack and DIN-rail mountable
- Fan-less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

APPLICATIONS

Dual Device Mode Application

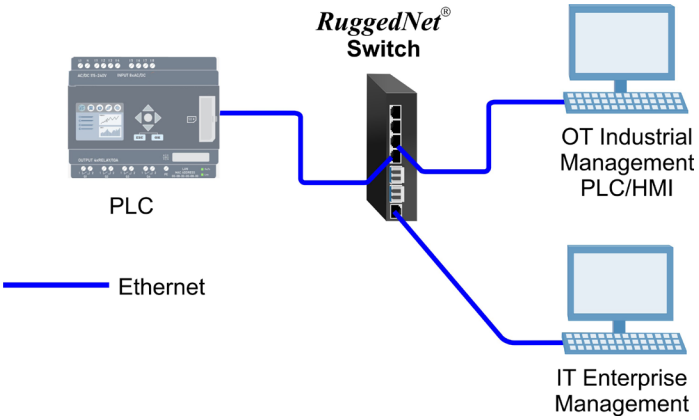
This Dual Device feature is extremely useful when two isolated networks domains share a single network distribution location.

The example below depicts a scenario where a surveillance security (green) network and a Wi-Fi (purple) network are sharing a single distribution location. Using the two uplinks and the Dual Device mode facilitates using a single PoE switch driving both the Cameras and the Wi-Fi Access Points 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).



Power / Voltage Requirements and Specifications per IEEE				
Description	**IEEE 802.3af PoE**	**IEEE 802.3at PoE+**	**IEEE 802.3.bt PoE (60W Type 3)**	**IEEE 802.3bt PoE (100W Type 4)**
Power Supply Voltage Range	46.0 to 57.0 VDC	51.0 to 57.0 VDC	51.0 to 57.0 VDC	53.0 to 57.0 VDC
Voltage Range at PSE port Output	44.0 to 56.0 VDC	50.0 to 56.0 VDC	50.0 to 56.0 VDC	52.0 to 56.0 VDC
Maximum Power from PoE/PSE port	15.4 watts	30 watts	60 watts	100 watts
Minimum Voltage at PoE/PD port input (at 100 meters using Cat5 Cable)	37.0 VDC	42.5 VDC	42.5 VDC	41.1 VDC
Minimum Power at PoE/PD port (at 100 meters using Cat5 Cable)	12.95 watts	25.5 watts	51 watts	71 watts

SPECIFICATIONS

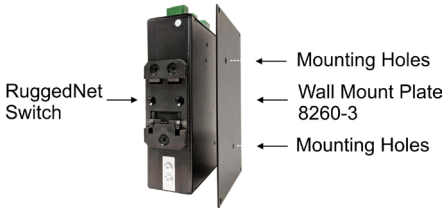
Description	**RuggedNet® 10GPoEBT/Mi** 10/100/1000BASE-T with 1/10G Fiber Uplink Ports Ruggedized Managed IEEE 802.3bt PoE 10Gigabit Ethernet Switch	
Standard Compliances	IEEE 802.3, IEEE 802.1Q, IEEE 802.1ad, IEEE 802.1ab, IEEE 802.1ax, IEEE 802.1w RSTP/MSTP, RFC 5424, RFC 4541, RFC 2710, IEC 624339-2, SMTP, SNTP, RADIUS, TACACS+, IEEE 802.1x, IEEE 802.3af (15.40 watts max), IEEE 802.3at (30 watts max), IEEE 802.3bt (60 and 100 watts max)	
Regulatory Compliances (*Pending)	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 EMC: EN 55032/24 CE Emissions/Immunity, IEC 61000-6-4 Industrial Emissions, IEC 61000-6-2 Industrial Immunity EMI: CISPR 32, FCC 47 Part 15 Subpart B Class A 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) IP Rating: IP40 Protection ACT: TAA, BAA, NDAA	
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	
PoE Modes	IEEE Alternate A (Alt A) and 4-Pair	
Frame Size	Up to 10,240 bytes	
Port Types	Copper: 10/100/1000BASE-T (RJ-45) 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 Serial: RS-232 (RJ-45)	
Cable Types	Copper: EIA/TIA 568A/B, Cat 5 UTP and higher Fiber: Multimode: 50/125, 62.5/125µm Single-mode: 9/125µm Serial: Category 3 and higher	
DC Power Requirements	60W Models: +46 to +57VDC; 4.47A @ 56VDC 2 Pin Terminal (isolated)	100W Models: +46 to +57VDC; 7.33A @ 56VDC 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	1.70 lb. (772 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)	265,000	
Warranty	5 year product warranty with 24/7/365 free Technical Support	

ORDERING INFORMATION

RuggedNet 10GPoEBT/Mi Models	
Model Number	**Description**
3360B-0-24-2Z	RuggedNet 10GPoEBT/Mi 2 x SFP/SFP+ uplink port and 4 x RJ-45 IEEE 802.3bt 60W user ports, Dual DC Terminal Connectors, Industrial Temperature
3362B-0-24-2Z	RuggedNet 10GPoEBT/Mi 2 x SFP/SFP+ uplink port and 4 x RJ-45 IEEE 802.3bt 100W 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