RuggedNet® G/Si

Unmanaged Industrial 6 and 10 Port Gigabit Ethernet Switch

The RuggedNet G/Si is an unmanaged Industrial Ethernet switch that features fiber or copper uplink ports and four or eight 10/100/1000 RJ-45 copper user ports. The RuggedNet G/Si enables industrial network distance extension with fiber cabling.

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

The RuggedNet G/Si supports Directed Switch mode, which directs multicast traffic (such as video) only to the appropriate uplink port, preventing the multicast video traffic from flooding other network ports.

Models with two fiber or two copper uplink ports support daisy-chain configurations or redundant uplinks for critical applications that require protection and sub 50ms restoration in the event of an uplink failure.

Models with two fiber or two copper uplink ports also support Dual Device mode that enables the G/Si to operate as two independent and isolated Ethernet switches. In Dual Device mode, the G/Si provides separate and independent data traffic paths between the two uplink ports and four or eight user ports.

The G/Si modes of operation can be configured using easily accessible DIP-switches. Each DIP-switch function is labeled on the side of the RuggedNet for ease of identification and use.

Models are available with fixed ST, SC, and LC fiber connectors or Small Form Pluggable (SFP) transceiver receptacles. Fiber ports support multimode or single-mode and dual fiber or single-fiber with distances up to 140km. SFP models support a variety of distances in standard, CWDM and DWDM wavelengths.

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 single or dual DC input power options.

SFPs not included

KEY FEATURES

- Unmanaged 6 and 10 Port Gigabit Ethernet Switch
- Dual Device mode for operating as two separate switches
- Directed Switch mode prevents flooding of multicast video traffic
- Uplink redundancy on models with two uplink ports
- Two 10/100/1000 copper or 100M*/1G fiber uplink ports
- Four or eight 10/100/1000 copper user ports
- ST, SC and LC fixed fiber ports or standard, CWDM or DWDM Gigabit SFP transceivers
- Single or dual DC power for redundancy
- Wall, Rack and DIN-rail mountable
- Fan-less design for long life
- Industrial (-40 to 75ºC) operating temperature
- TAA, BAA and NDAA compliant, and Made in the USA
- Free 24/7/365 Technical Support

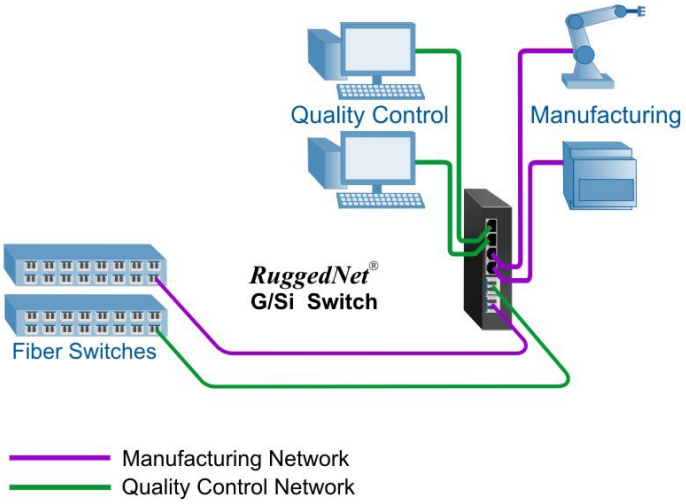
*100Mbps supported with 100M SGMII SFP Transceivers

APPLICATIONS

Dual Device Mode Application

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

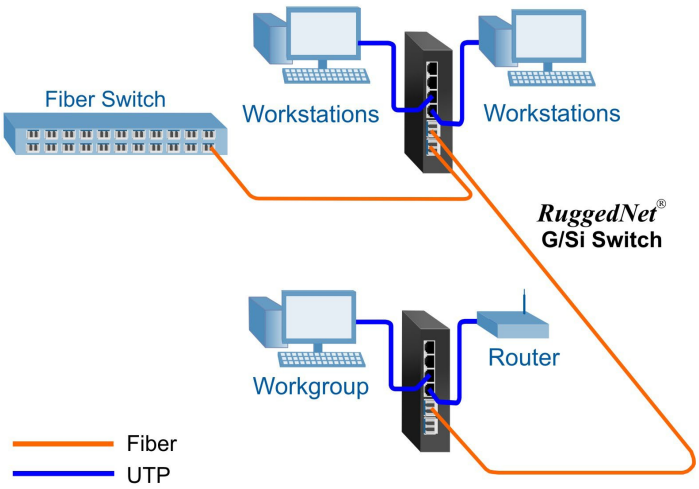
The example below depicts a scenario where the Quality Control (green) network and the Manufacturing (purple) network are sharing a single hub distribution location. Using the two uplinks and the Dual Switch mode facilitates using a single switch driving both the Quality Control and the Manufacturing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



Industrial Daisy Chain Application

This example demonstrates the daisy chain capabilities of the RuggedNet switches. In this application each RuggedNet switch connects to its neighboring switches via its uplink ports. The daisy chain can continue to additional switches using this method of connectivity.

In this application, two locations are connected using the RuggedNet switches providing connectivity between the workstations and the router.



SPECIFICATIONS

Description	**RuggedNet® G/Si** 10/100/1000BASE-T with Fiber or Copper Uplinks Industrial Unmanaged 6 and 10 Port Gigabit Ethernet Switch	
Standard Compliances	IEEE 802.3	
Regulatory Compliances	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	
Frame Size	Up to 10,240 bytes	
Port Types	Copper: RJ-45: 10/100/1000BASE-T Fiber: Fixed: ST, SC, LC 1000BASE-X Fiber SFP: 10/100/1000BASE-T SGMII Copper Transceiver or 100BASE-X SGMII Fiber Transceiver or 1000BASE-X SERDES Fiber Transceivers	
Cable Types	Copper: EIA/TIA 568A/B, Cat 5 UTP and higher Fiber: Multimode: 50/125, 62.5/125µm Single-mode: 9/125µm	
DC Power Requirements	4 RJ-45 Ports: +12 to +57VDC; 0.68A @ 12VDC 0.17A @ 48VDC 2 Pin Terminal (isolated)	8 RJ-45 Ports: +12 to +57VDC; 0.75A @ 12VDC 0.19A @ 48VDC 2 Pin Terminal (isolated)
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	Extended: -40 to 75°C Storage: -40 to 80°C	
Humidity	5 to 95% (non-condensing)	
Altitude	-100m to 4,000m (operational)	
MTBF (hours)	305,000	
Warranty	5 year product warranty with 24/7/365 free Technical Support	

ORDERING INFORMATION

Step 1: Choose the Base Part Number (xxxx-x-xy-pZ)

Fiber Type	Distance	Connector Type					Tx Lambda (nm)	Min. Tx Power (dBm)	Max. Tx Power (dBm)	Min. Rx Power (dBm)	Max. Rx Power (dBm)	Min Atten (dB)	Link Budget (dB)
		ST	SC	LC	SFP	RJ-45							
MM/DF	220/550m[1]	2880-0-1y-pZ	2882-0-1y-pZ	2886-0-1y-pZ	-	-	850/850	-10	-4	-17	-3	-	7
MM/DF	2km	-	2882-6-1y-pZ	-	-	-	1310/1310	-9.5	-3	-19.5	-3	-	10
SM/DF	12km	2881-1-1y-pZ	2883-1-1y-pZ	2887-1-1y-pZ	-	-	1310/1310	-9.5	-3	-19.5	-3	-	10
SM/DF	34km	-	2883-2-1y-pZ	-	-	-	1310/1310	-5	0	-23	-3	3	18
SM/DF	80km	-	2883-3-1y-pZ	-	-	-	1550/1550	-5	0	-23	-3	3	18
SM/DF	110km	-	2883-4-1y-pZ	-	-	-	1550/1550	0	5	-24	-3	8	24
SM/DF	140km	-	2883-5-1y-pZ	-	-	-	1550/1550	2	5	-28	-8	13	30
MM/SF[2]	220/550m[1]	-	2890-0-1y-pZ	-	-	-	1310/1550	-9	-3	-18	-3	-	9
MM/SF[2]	220/550m[1]	-	2891-0-1y-pZ	-	-	-	1550/1310	-9	-3	-18	-3	-	9
SM/SF[2]	20km	-	2890-1-1y-pZ	-	-	-	1310/1550	-9.5	-3	-20	-3	-	10.5
SM/SF[2]	20km	-	2891-1-1y-pZ	-	-	-	1550/1310	-9.5	-3	-20	-3	-	10.5
SM/SF[2]	40km	-	2890-2-1y-pZ	-	-	-	1310/1550	-3	0	-20	-3	3	17
SM/SF[2]	40km	-	2891-2-1y-pZ	-	-	-	1550/1310	-3	0	-20	-3	3	17
SFP (x1)	-	-	-	-	2899-0-1y-pZ	-	-	-	-	-	-	-	-
SFP (x2)	-	-	-	-	2899-0-2y-pZ	-	-	-	-	-	-	-	-
RJ-45 (x2)	100m	-	-	-	-	2899-1-2y-pZ	-	-	-	-	-	-	-

[1] 62.5/125µm, 100/140µm multimode fiber up to 220m. 50/125µm multimode fiber up to 550m.
[2] When using single-fiber (SF) models, the Tx wavelength on one end has to match the Rx wavelength on the other.
MM = Multimode, SM = Single-mode, DF = Dual Fiber, SF = Single-fiber

Contact Omnitron for other fiber options. Order the appropriate SFPs separately. Visit the Omnitron Optical Transceivers web page.

Step 2: Choose the number of RJ-45 Ports (xxxx-x-xy-pZ)

4 = Four RJ-45 Ports
8 = Eight RJ-45 Ports

Step 3: Choose the Power Option (xxxx-x-xy-pZ)

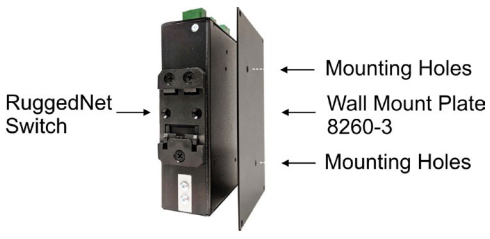
1 = Single DC 2-Pin Terminal Power Connector
2 = Dual DC 2-Pin Terminal Power Connectors

Operating Temperature Range

Z = Extended temperature (-40 to 75°C)

ACCESSORIES

Model Number	Description
8260-3	Wall Mounting Plate
8260-0	19" rack mount shelf



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