

OmniConverter® G/M

Managed 6 and 10 Port Gigabit Ethernet Switch

The OmniConverter G/M is a compact gigabit Ethernet switch that features fiber or copper uplink ports and four or eight 10/100/1000 RJ-45 copper user ports. The OmniConverter G/M enables network distance extension with fiber or copper cabling.

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

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

Models with two fiber or two copper uplink ports also support Dual Device mode that enables the G/M to operate as two independent and isolated Ethernet switches. In Dual Device mode, the G/M provides separate and independent data traffic paths between the two uplink ports and four or eight RJ-45 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.

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 140 km. SFP models support a variety of distances in standard, CWDM and DWDM wavelengths.

All models can be wall mounted, rack mounted using a shelf or DIN-rail mounted using DIN-rail mounting clips. They are available with an external 100 to 240V AC power adapter or with a DC terminal connector.



SFPs not included

KEY FEATURES

- Managed 6 and 10 Port Gigabit Ethernet Switch
- Two 10/100/1000 copper or Gigabit fiber uplink ports
- Four 10/100/1000 copper user ports
- ST, SC and LC fixed fiber ports or standard, CWDM or DWDM Gigabit SFP transceivers
- Supports jumbo frames up to 10,240 bytes
- 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
- Supports IPv4 and IPv6
- IEEE 802.1x, RADIUS, TACACS+ and ACL
- Email Notification
- Rapid and Multiple Spanning Tree Protocol
- IEC 62439-2 Industrial Ring Media Redundancy
- IEEE 802.1x LAG and LACP; Active/Active and Active/Standby
- Dual Device mode for operating as two separate switches
- Directed Switch mode AKA Camera mode to prevent port flooding
- AC to DC Power Adapter or 2-Pin DC terminal
- Wall, Rack and DIN-rail mountable
- Commercial (0° to 50°C), wide (-40° to 60°C) and extended (-40° to 75°C) operating temperature ranges
- TAA, BAA and NDAA compliant, and Made in the USA
- Free 24/7/365 Technical Support

ADDITIONAL FEATURES

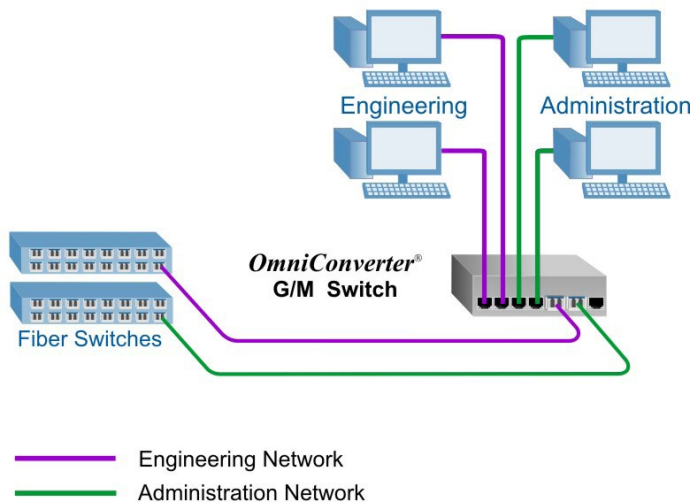
- IEEE 802.1Q VLAN tagging and IEEE 802.1ad Q-in-Q
- Port Access Control for enhanced security
- Broadcast / Multicast / Unicast Storm Prevention
- DHCP Relay Option 82, DHCPv6 and DHCPv6 Relay
- IPv4 Internet Group Management (IGMP) and IPv6 Multicast Listener Discovery (MLD) snooping
- Rate Limiting, Queue prioritization and Class of Service
- IEEE 802.1ab Link Layer Discovery Protocol
- Static MAC configuration and blocking of unknown Unicast/Multicast addresses
- SNTP / NTP and time of day

APPLICATIONS

Dual Device Mode Application

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

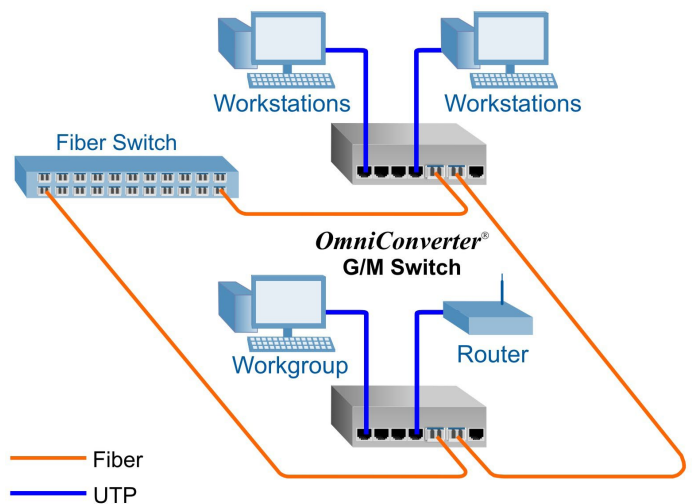
The example below depicts a scenario where the Administration (green) network and the Engineering (purple) network are sharing a single hub distribution location. Using the two uplinks and the Dual Switch mode facilitates using a single switch driving both the Administration and the Engineering workstations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



Daisy-Chain and Ring Topology Network Application

This example demonstrates the daisy chaining and ring capabilities of the OmniConverter. In this application each OmniConverter switch connects to its neighboring switches via its uplink ports eventually closing the ring. The OmniConverter switches are providing connectivity between the workstations and the router.

Using this network architecture combined with ring protection protocols such as Media Redundancy Protocol (MRP) or Rapid Spanning Tree Protocol (RSTP) facilitates a highly resilient network required in mission critical applications.



SPECIFICATIONS

Description	OmniConverter® G/M 10/100/1000BASE-T with Gigabit Fiber or Copper Uplinks Managed 6 or 10 Port Gigabit 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	<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, IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV (DC models), IEC 61000-4-4 EFT: Power: 1 kV; Signal: 1 kV (AC models), IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV (DC models), IEC 61000-4-5 Surge: Power: 1 kV Line/Line; 2 kV Line/Gnd; Signal: 2 kV (AC models), IEC 61000-4-6 CS: Signal: 10 V, IEC 61000-4-8 (Magnetic Field) 30A/m, IEC 61000-4-11 (Voltage Dips, interrupts)</p> <p>IP Rating: IP20 Protection 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: RJ-45: 10/100/1000BASE-T</p> <p>Fiber: Fixed: ST, SC, LC 1000BASE-X Fiber SFP: 10/100/1000BASE-T SGMII Copper Transceiver or 1000BASE-X Fiber Transceiver</p> <p>Serial: RJ-45: RS-232</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>	
AC Power Requirements (Models with AC/DC Adapters)	100 - 240VAC/50 - 60Hz 0.2A max at 115VAC; 0.1A max at 230VAC	
DC Power Requirements (Models with DC Terminals)	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)	6.28" x 5.2" x 1.5" (159.5 mm x 132.1 mm x 38.1 mm)	
Weight	4 RJ-45 Ports: Module Only: 1.5 lbs.; 720 grams Module with AC/DC Adapter: 2.0 lbs.; 913 grams	8 RJ-45 Ports: Module Only: 1.6 lbs.; 748 grams Module with AC/DC Adapter: 2.1 lbs.; 941 grams
Operating Temperature	<p>Commercial: 0 to 50°C</p> <p>Wide: -40 to 60°C (-20°C AC cold start)</p> <p>Extended: -40 to 75°C (-20°C AC cold start)</p> <p>Storage: -40 to 80°C</p>	
Humidity	5 to 95% (non-condensing)	
Altitude	-100m to 4,000m (operational)	
MTBF (hours)	Module Only: 289,000 AC/DC Adapter: 100,000	
Warranty	5 year product warranty with 24/7/365 free Technical Support and 2 year AC power adapter warranty	

ORDERING INFORMATION

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

OmniConverter G/M Models													
Fiber Type	Distance	Connector Type					Tx/Rx 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	2820-0-1y-pt	2822-0-1y-pt	2826-0-1y-pt	-	-	850/850	-10	-4	-17	-3	-	7
MM/DF (x2)	220/550m ¹	-	-	2826-0-2y-pt	-	-	850/850	-10	-4	-17	-3	-	7
MM/DF	2km	-	2822-6-1y-pt	-	-	-	1310/1310	-9.5	-3	-19.5	-3	-	10
SM/DF	12km	2821-1-1y-pt	2823-1-1y-pt	2827-1-1y-pt	-	-	1310/1310	-9.5	-3	-19.5	-3	-	10
SM/DF (x2)	12km	-	-	2827-1-2y-pt	-	-	1310/1310	-9.5	-3	-19.5	-3	-	10
SM/DF	34km	-	2823-2-1y-pt	-	-	-	1310/1310	-5	0	-23	-3	3	18
SM/DF	80km	-	2823-3-1y-pt	-	-	-	1550/1550	-5	0	-23	-3	3	18
SM/DF	110km	-	2823-4-1y-pt	-	-	-	1550/1550	0	5	-24	-3	8	24
SM/DF	140km	-	2823-5-1y-pt	-	-	-	1550/1550	2	5	-28	-8	13	30
MM/SF ²	220/550m ¹	-	2830-0-1y-pt	-	-	-	1310/1550	-9	-3	-18	-3	-	9
MM/SF ²	220/550m ¹	-	2831-0-1y-pt	-	-	-	1550/1310	-9	-3	-18	-3	-	9
SM/SF ²	20km	-	2830-1-1y-pt	-	-	-	1310/1550	-9.5	-3	-20	-3	-	10.5
SM/SF ²	20km	-	2831-1-1y-pt	-	-	-	1550/1310	-9.5	-3	-20	-3	-	10.5
SM/SF ²	40km	-	2830-2-1y-pt	-	-	-	1310/1550	-3	0	-20	-3	3	17
SM/SF ²	40km	-	2831-2-1y-pt	-	-	-	1550/1310	-3	0	-20	-3	3	17
SFP (x1)	-	-	-	-	2839-0-1y-pt	-	-	-	-	-	-	-	-
SFP (x2)	-	-	-	-	2839-0-2y-pt	-	-	-	-	-	-	-	-
RJ-45 (x2)	100m	-	-	-	-	2839-1-2y-pt	-	-	-	-	-	-	-

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-pt)

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

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

1 = External AC/DC Adapter, 100 - 240 VAC included, with US Power Cord
2 = External AC/DC Adapter, 100 - 240 VAC included, No Power Cord
8 = External AC/DC Adapter, 100 - 240 VAC included, PS JET/PSE Certified, with Japanese Power Cord
9 = Direct DC 2 pin terminal connector, no AC/DC power adapter

Step 4: Choose the Operating Temperature Range Option (xxxx-x-xy-pt)

<leave blank> = Commercial temperature (0 to 50°C)
W = Wide temperature (-40 to 60°C)
Z = Extended temperature (-40 to 75°C)

Accessories			
Model Number	Description	Model Number	Description
8251-0	DIN-Rail Mounting Clip	8260-0	19" rack mount shelf (up to 2 modules)

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