

EOTec G408M

Industrial Gigabit Managed Ethernet Switch

The EOTec G408M is a fully managed 8 port Industrial Gigabit Ethernet Switch. The unit features advanced capabilities typically found in a managed switch plus a Self-Healing Ring function, which is compatible with Ultra's EOTec 2104 Industrial Ethernet Ring Switch (10/100 Mbps). Network traffic is rerouted in milliseconds when a fiber or cable break is detected on any of the ring ports. An alarm output, available on the terminal block, can be used to signal error conditions to a PLC or other supervisory devices. Ports 1-4 are copper only; ports 5-8 can be either copper or fiber ports. The fiber ports offer LC type connections and a variety of Small Form-factor Pluggable (SFP) fiber transceivers are available for various fiber types and distances. The aluminum housing comes ready to be panel or DIN rail mounted.



Key Features

- Eight 10/100/1000Mbps copper ports, four of which can be 100/1000Mbps Single and/or Multimode fiber ports
- Fault-tolerant Self-Healing Ring (SHR) with 30 ms plus 5 ms per hop recovery time
- Operating Temperature -40 to 75°C
- Long-haul fiber distances up to 80 km (49 miles)
- 10 to 30VDC operation, 15W
- Dual power inputs
- DIN rail mountable



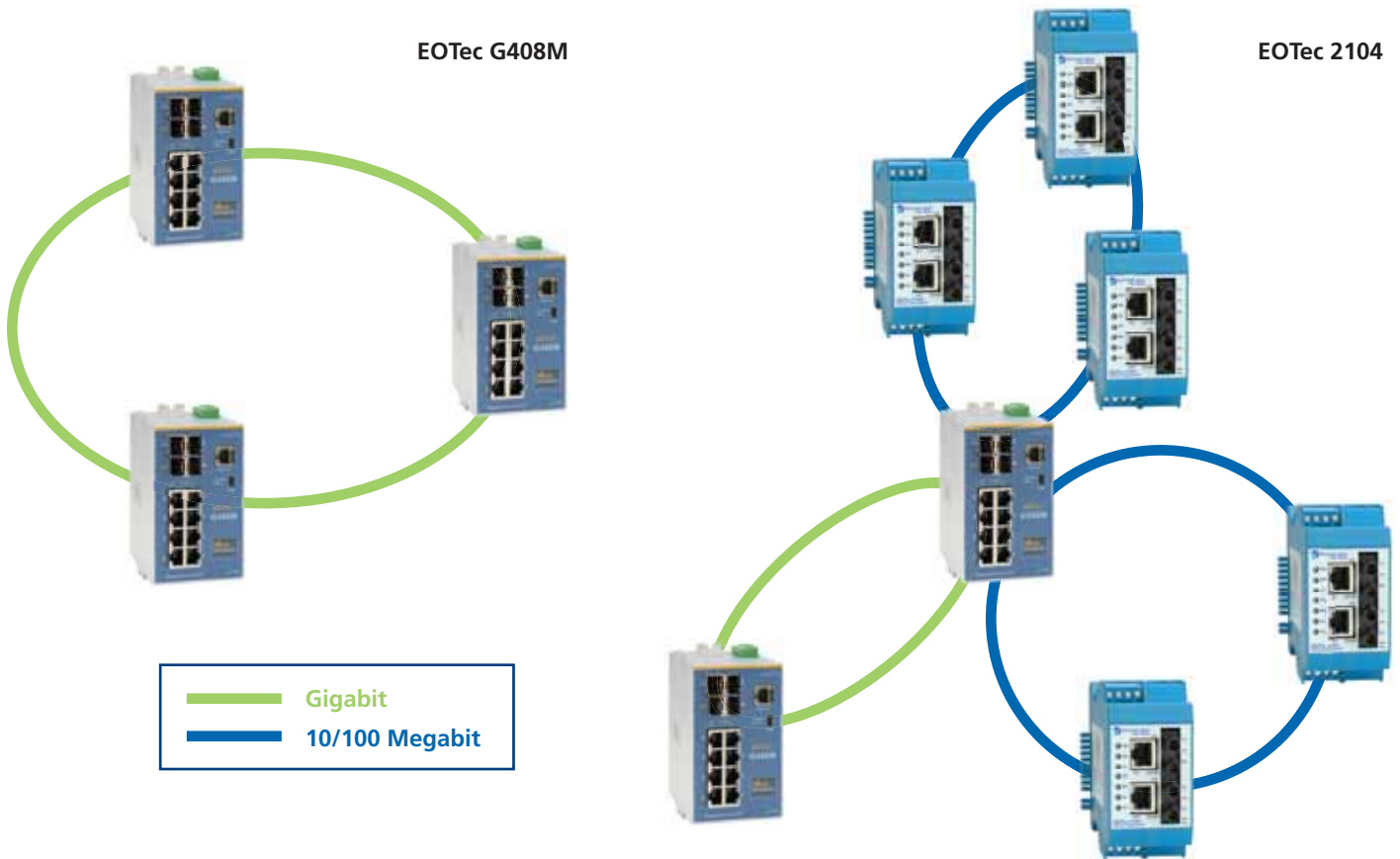
Management Features

- Rapid Spanning Tree (RST)
- SNMPv1 and v2 network management
- SNMPv3 authentication & encryption for security
- SNMP notifications (traps) for report on event
- Priority Queuing (QoS/CoS) for real-time operation
- IGMP for Multicast filtering (snooping & querying)
- VLAN for convenient traffic segregation
- Broadcast & multicast storm protection
- RMON & port mirroring for advanced diagnostics
- Security with HTTPS, SSL, SSH, SNMPv3 & more
- Easy configuration via Web, Telnet or CLI

Deterministic Performance

The EOTec G408M utilizes a special algorithm to insure very fast recovery times. The recovery time can be estimated by multiplying 5 ms times the number of switches, and then adding 30 ms (for loss of link errors) or 60 ms (for message loss errors). For example, a ring of 10 switches would have a recovery time of 80 ms for typical loss of link-type errors. A ring of 8 switches would have a recovery time of 100mS for message loss errors. Many competitive switches and hubs may take several seconds or even minutes to recover when connected in a ring configuration.

Flexible Topologies



The EOTec G408M accepts both Single and Multimode 1Gbps and 100Mbps SFP Transceivers, making it compatible with the EOTec 2104 Industrial Ring Switch. Both switches offer the same fast recovery time and are configurable for all network topologies.



Specifications

General

- Operation: Store and forward wire speed switching, non-blocking
- Modes: Full or half duplex operation with flow control supported on all ports
- Memory bandwidth: 32 Gbps
- Latency (typical): < 5 μ s plus frame time
- Ethernet isolation: 1500 Vrms 1 minute
- Console ports: USB and RS232 (RJ45) with fixed settings: 9600, 8N1 (9600 bps, 8 data bits, parity = None, stop bits = 1, flow control)
- 8192 MAC addresses

RJ45 Copper Ports

- RJ45 ports: Eight RJ45 ports that are fully IEEE 802.3 compliant
- RJ45 speed & duplex: Configurable or 10/100/100 auto-detecting for speed & duplex (full or half)
- RJ45 MDI/MDIX: Auto-mdi/mdix-crossover automatically supports either straight or crossed cables
- RJ45 Polarity: Auto-polarity for automatic correction of crossed TXD and RXD pairs

Fiber Optic Ports

- Ports 5-8 can be configured with 1000 Mbps fiber optic transceivers for distances up to 80 km. These ports can also be ordered with Fast Ethernet (100 Mbps) fiber optic transceivers
- Other transceivers: Contact Ultra for special application transceivers
- Eye safety: IEC60825-1, Class 1; FDA 21 CFR 1040.10 and 1040.11

Networking & Management

- Devices supported: All IEEE 802.3 compliant devices are supported
- Protocols: SNMPv1/v2/v3, RMON, DHCP, SNMP, TFTP, STP, RSTP, QoS/CoS/ToS/DS, IGMPv1/v2, VLAN (tag and port based), HTTP, HTTPS (SSL & TLS), Telnet, SSH and more
- Industrial protocols supported: Modbus/TCP, EtherNet/IP, PROFINet, Foundation Fieldbus HSE and others
- Standards: IEEE 802.3, 802.3u, 802.3x, 802.1D/w, 802.1p, 802.1Q, 802.3ab/z
- Management interfaces: Text (Telnet & SSH), CLI (command line interface) and SNMP (see the user manual for supported MIBs)
- Open Source Linux: The Linux Advantage - contact Ultra for more information

Power & Alarm Output

- Power input: Dual redundant power inputs for redundant power supplies
- Input voltage range: 10 to 30 VDC
- Power consumption: Typical with all ports linked and active
 - o 12 W (with no fiber transceivers)
 - o 15 W (with four fiber transceivers)
- Industrial surge and spike protection: 15 kW peak, 5 kW (10 times for 10 μ s)
- Self-test/alarm output: Same voltage as power input; 0.5 Amps max.

Environmental

- Operating temperature: -40 to 75°C (cold startup at -40°C)
- Storage temperature: -40 to 85°C
- Humidity: 5 to 95% RH (non-condensing)
- Vibration: IEC 60068-2-6
- Shock: IEC 60068-2-27
- Freefall: IEC 60068-2-32

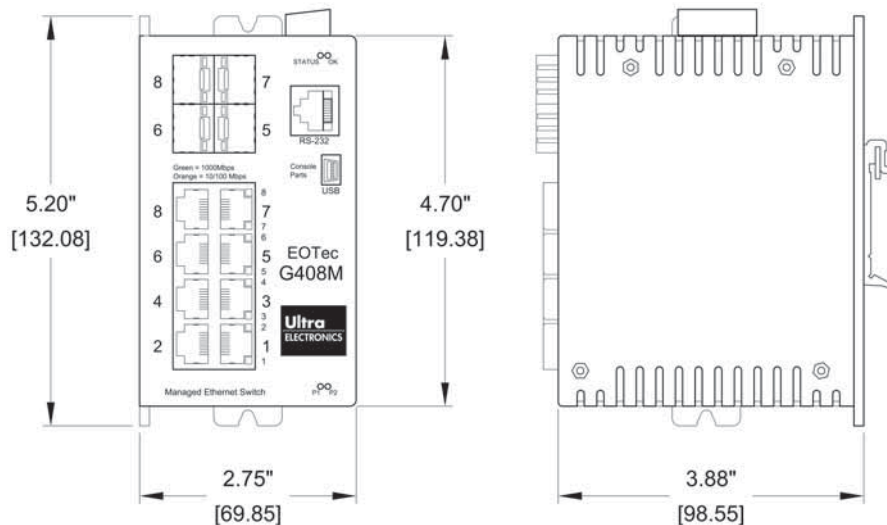
Standards & Certifications

- CE: Meets all applicable directives
- Electrical safety: UL 508 & CSA C22.2 No. 14 per CUL, EN 61010-1
- EMC: FCC part 15, ICES-003, EN 55022, IEC 61326-1
- Hazardous locations: UL 1604, CSA C22.2 No. 213 per CUL (Class I, Div. 2, Groups A, B, C, D); EN 50021/EN 60079-15 (Zone 2), ATEX Group II, Cat 3 (Zone 2), EEx nA II T4 X (-40°C \leq Ta \leq +85°C)
- MTBF: >1,000,000 hours
- RoHS and WEEE: RoHS (Pb free) and WEEE compliant
- ISO9001:2008: Certified "Total Quality" company
- Warranty: 3 years with product registration

Mechanical

- Case: Ready to be DIN rail or panel mounted
- Material: Corrosion-resistant aluminum with clear protective coating
- Protection: IP30 protection from dust and debris
- DIN rail mounting or direct to panel (no optional kits or accessories required)
- Weight: 12 oz. (0.34 kg)

Mechanical Drawing



Ordering Information

Gigabit Ethernet Switch

Part Number	Description
G408M	Industrial Gigabit Managed Ethernet Switch

1Gbps SFP Transceivers

Part Number	Wavelength	Distance	Mode
SFP85-1G1/2K	850nm	550m	MM
SFP13-1G2K	1310nm	2km	MM
SFP13-1G20K	1310nm	20km	SM
SFP13-1G40K	1310nm	40km	SM
SFP15-1G80K	1550nm	80km	SM

100 Mbps SFP Transceivers

Part Number	Wavelength	Distance	Mode
SFP13-100M2K	1310nm	2km	MM
SFP13-100M15K	1310nm	15km	SM
SFP13-100M40K	1310nm	40km	SM
SFP15-100M80K	1550nm	80km	SM

Ultra Electronics

NUCLEAR SENSORS & PROCESS INSTRUMENTATION

707 Jeffrey Way, PO Box 300
Round Rock, TX 78680-0300 USA

Tel: +1 512 434 2850

Fax: +1 512 434 2901

e-mail: fiberop@ultra-nspi.com

www.ultra-nspi.com

Ultra Electronics, Nuclear Sensors & Process Instrumentation
is a business name of Weed Instrument Co., Inc.

Ultra Electronics reserves the right
to vary these specifications
without notice.

© Ultra Electronics 2009.

Printed in the USA.

G408M/11/09