

## REAL-TIME-RING™ ETHERNET SWITCH WITH 9 PORTS

The ET-9RS is a 9 port industrial Ethernet switch featuring Sixnet's Real-Time-Ring™ which provides very fast, fault-tolerant network redundancy and prioritized message delivery needed in critical real-time systems. These Rings self-configure and just run, without the complex configuration steps required by alternative solutions. This advanced technology delivers reliability and performance, saves you money, and makes your job easier.

### PRODUCT HIGHLIGHTS

- 9 ports with up to two fiber optic ports
- Super-fast, fault tolerant ring redundancy
- Pre-configured for true plug and play simplicity
- Truly rugged design with -40 to 85°C operation
- Dual power with MIL-STD-1275 protection

### REAL-TIME FAULT-TOLERANT RINGS

- Recovery time of 30 mS plus 5 mS per hop!
- Ideal for deterministic systems and PLCs
- Real-time Modbus over Ethernet monitoring

### REAL-TIME TRAFFIC PRIORITIZATION

- Assure delivery of real-time data
- Improve network utilization
- User settable priority assignments

### MANAGED SWITCH FEATURES

- User configurable port settings
- Port mirroring for traffic diagnostics
- Message filtering to prevent broadcast storms

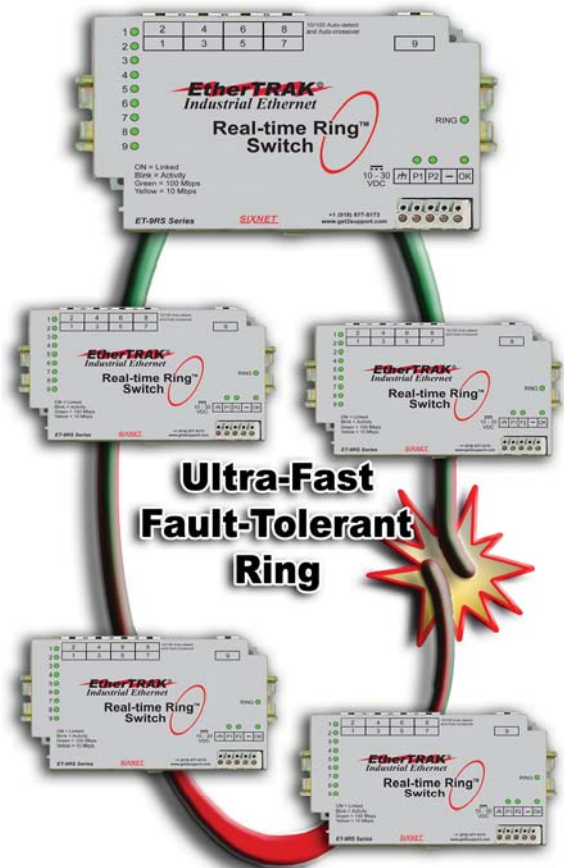
### TROUBLE FREE OPERATION

- Firmware upgrades are FREE forever
- Ultra-reliable 1,000,000 hours MTBF
- Firmware upgrades are FREE forever
- -40 to +85 °C operating range
- UL / CSA (CUL), CE, and Hazloc (zone 2) rated



### IDEAL FOR

- Real-time control
- Distributed systems
- Outdoor / marine use



**ETHERNET PERFORMANCE**

- 9 Ethernet ports total
- Ethernet switch type Intelligent store & forward
- Ethernet protocols supported all IEEE 802.3
- RJ45 ports (shielded) 10/100BaseTX
- RJ45 speed (10 or 100 Mbps) auto-negotiation
- RJ45 MDI/MDIX auto-crossover
- RJ45 TD and RD auto-polarity
- Fiber optic port speed 100BaseFX (100 Mbps)
- Fiber optic port wavelength 1300 nm center typical
- Fiber multimode (mm) 50- 62.5/125 um (SC or ST connector)
- Fiber singlemode (sm) 9-10 9/125 um (SC or ST connector)
- Fiber max. distance (full duplex) 4 km (mm), 20 or 40 km (sm) or more (contact Sixnet)
- Typical latency for 10 Mbps ports 16 us + frame time; typical latency for 100 Mbps ports 5 us + frame time; varies on load and settings
- Full or half duplex operation configurable
- MAC addresses supported 2048
- Memory bandwidth 3.2 Gbps
- Ethernet isolation 1500 VRMS 1 minute

**REAL-TIME-RING™ FEATURES**

- Maximum switches in ring: 50+
- Dual ring support
- Link loss recovery time: 30mS + 5mS/hop

**ETHERNET COMPLIANCE**

- IEEE 802.3z (Gigabit 1000 Mbps Ethernet connections)
- IEEE 802.3u (Fast Ethernet 100 Mbps for newer devices)
- IEEE 802.3 (10 Mbps Ethernet supports legacy devices)
- IEEE 802.3x (Full-Duplex with Flow Control)
- IEEE 802.1p (QoS / CoS – Quality & Class of Service)

**STATUS REPORTING**

- Modbus Ethernet over UDP
- “OK” contact output up to 0.5 Amp

**POWER INPUT**

- Power input redundant input terminals
- Input power (typical - all ports active at 100 Mbps)
  - o 6.0 W (model -1 without fiber)
  - o 7.0 W (model -2 & -3 w/ 1 fiber)
  - o 8.0 W (models -4 & -5 w/ 2 fiber)
- Power Input 10-50 VDC (derate 1.8°C / V above 30V)
- MIL-STD-1275 power protection standard
- Military surge protection 100 volts for 1 second
- Transient protection 15,000 watts peak
- Spike Protection 5,000 watts (10x for 10 uS) or 250 volts (50x for 100 uS)

**ENVIRONMENTAL**

- Operating temperature range -40 to +85 °C
- Storage temperature range -40 to +85 °C
- Humidity (non-condensing) 5 to 95% RH
- Vibration IEC60068-2-6

**STANDARDS COMPLIANCE**

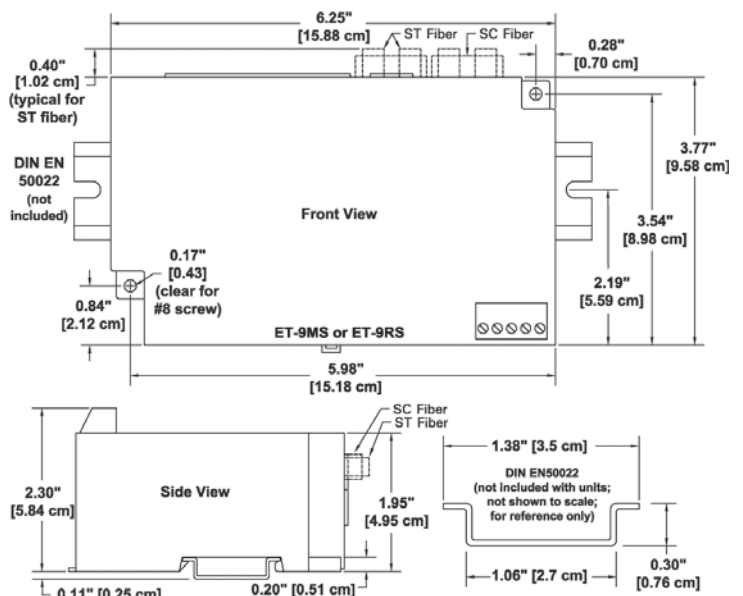
- Electrical safety - UL508/CSA C22.2/14; EN61010-1, CE
- EMI emissions - FCC part 15, ICES-003; EN61000-6-4, CE
- EMC - immunity EN61000-6-2, CE
- Hazardous locations: UL1604/CSA C22.2/213 (Class I, Div. 2); EN60079-15 (Zone 2, Category 3), CE (ATEX)
- Eye safety (fiber models) IEC60825-1, Class 1; FDA 21 CFR 1040.10 and 1040.11

**PHYSICAL**

- DIN rail or direct panel mounting
- Case (UL 94V-0 Lexan and rust-free aluminum case) with IP30 protection
- Dimensions see mechanical drawing

All specifications are subject to change. Consult factory for latest info.

**MECHANICAL DRAWING**



**ORDERING GUIDE**

	RJ45 Ports	FIBER Ports
ET-9RS-1-E1	9	
ET-9RS-2SC-E1	8	1 multimode SC 4 km
ET-9RS-2ST-E1	8	1 multimode ST 4 km
ET-9RS-3SC-E1	8	1 singlemode SC 20 km
ET-9RS-3ST-E1	8	1 singlemode ST 20 km
ET-9RS-3SCL-E1	8	1 singlemode SC 40 km
ET-9RS-3STL-E1	8	1 singlemode ST 40 km
ET-9RS-4SC-E1	7	2 multimode SC 4 km
ET-9RS-4ST-E1	7	2 multimode ST 4 km
ET-9RS-5SC-E1	7	2 singlemode SC 20 km
ET-9RS-5ST-E1	7	2 singlemode ST 20 km
ET-9RS-5SCL-E1	7	2 singlemode SC 40 km
ET-9RS-5STL-E1	7	2 singlemode ST 40 km

**Note:** Contact Sixnet for special or long haul fiber transceivers up to 120 km.

The suffix 1 means preconfigured for 1 ring. Contact Sixnet for other options.



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