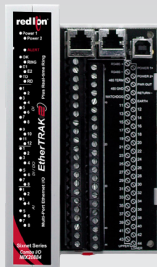


EtherTRAK®-2 Ethernet I/O Modules

Sixnet Automation Series



▶▶▶ Ethernet I/O Modules



PRODUCT HIGHLIGHTS

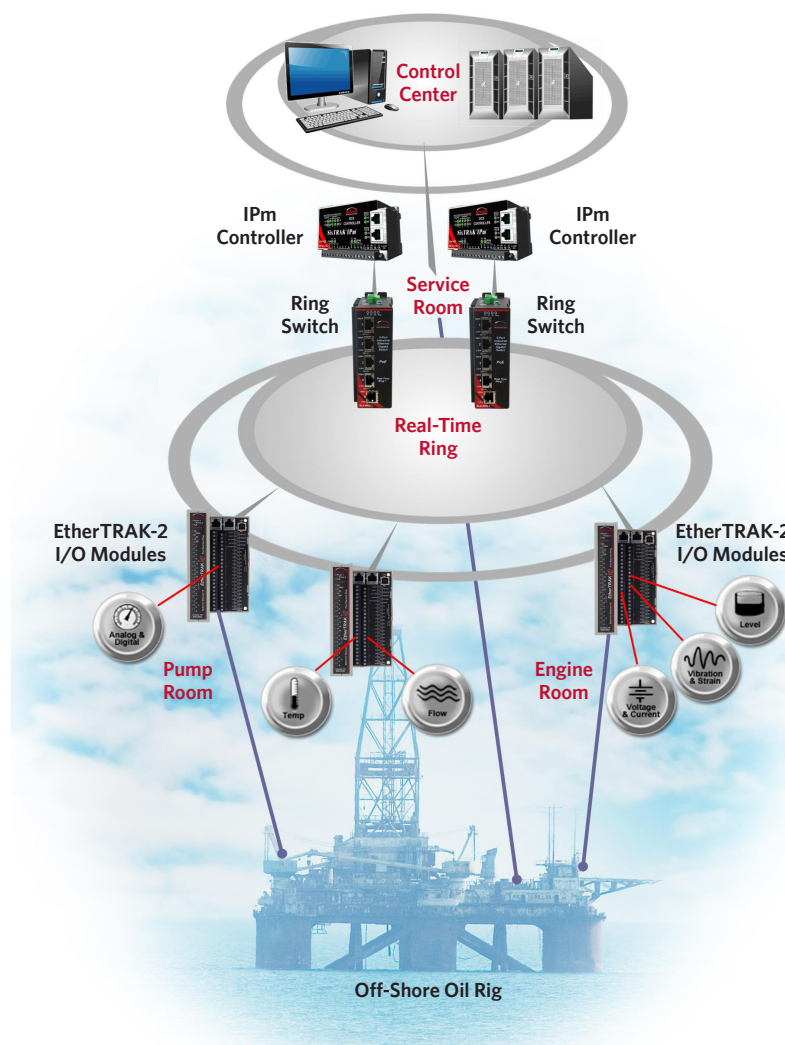
- Flexible mix of I/O channels support all instrumentation needs
- Real-Time Ring™ for fast redundancy
- Dual independent Ethernet ports enable flexible networking
- Built-in security proactively blocks unwanted access
- Extensive health diagnostics and reporting reduce downtime
- Standard Modbus protocols provide universal compatibility
- Rugged design supports extreme temperatures and hazardous locations

APPLICATIONS

- Oil & Gas
- Power & Energy
 - Transmission
 - Distribution
- Transportation
- Mining
- Maritime
- Water/Wastewater

Sixnet's EtherTRAK®-2 Ethernet I/O modules provide a simple and secure way to reliably monitor remote sites located in harsh environments. Offering the lowest cost per I/O point and rugged environmental ratings, EtherTRAK-2 modules are ideal for both control rooms and extreme locations across industries that include oil & gas, power & energy, transportation, mining, maritime and water/wastewater.

Our compact DIN-rail modules support open-standard protocols to provide flexible communication options for existing or newly installed Ethernet networks. By seamlessly replacing external devices such as switches, data concentrators and protocol converters, EtherTRAK-2 modules transcend simple I/O capabilities to cost-effectively streamline systems and improve reliability.



▶▶▶ EtherTRAK[®]-2 Ethernet I/O Module Specifications

INDUSTRIAL AUTOMATION

Sixnet's rugged RTUs and I/O provide a simple yet powerful means to reliably monitor and control remote sites around the clock in the harshest environments. Our compact automation systems can start small and grow as needs increase without requiring hardware replacement. Virtually unlimited scalability means organizations have fewer restrictions on the number of remote sites or devices that are supported. "Best of both worlds" programming combines Windows ease of use with the future-proof security of an embedded Linux OS.

FEATURES & BENEFITS

High-Performance, Flexible I/O

- **Provides high-speed functionality**
- **Lowers overall cost per I/O point**
 - Flexible mix of up to 34 I/O supports DI, DO, AI, AO, temperature (RTD and thermocouples)
 - High resolution 16-bit analog or high-speed 10-bit analog
 - Fast I/O polling of up to 1mS
 - Advanced counter functions with 32-bit reporting
 - Time proportioned outputs simplify high-speed pulse rate functions

Built-In Security

- **Prevents unwanted intrusion**
- **Guards against unauthorized users**
 - User-assigned permissions
 - Firewall protection

Flexible, Redundant Networking

- **Simplifies connectivity by replacing Ethernet switches**
- **Ensures reliability without additional cost**
 - Real-Time Ring switch mode for fast redundancy
 - Switch elimination mode enables daisy-chaining
 - Dual independent Ethernet ports
 - Ethernet, RS-485 and USB connections
 - Optional Power over Ethernet (PoE)
 - Embedded data concentrator

Configuration Maintenance & Monitoring

- **Delivers cross-platform configuration**
- **Offers easy-to-use software tools**
 - Configuration and monitoring via standard web browser
 - On-board storage for project documentation
 - Project-based software tools
 - User-based history tracks changes
 - Per-channel calibration
 - Configuration archiving
 - Module hot-swap capabilities

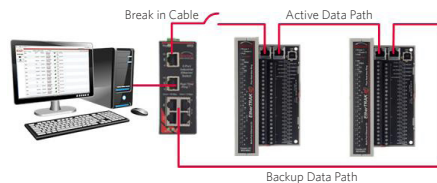
Rugged, Compact Design

- **Supports harsh environments**
- **Delivers proven reliability**
 - Industrial -40 to 75°C operating range
 - UL/CSA (CUL), FCC and CE rated
 - Hazardous locations rated for Class I, Div 2 (Zone 2) areas
 - Vibration resistant IEC60068-2-6
 - Self-resetting fuses protect I/O

Watchdog Monitoring & Reporting

- **Provides health reports of various module functions**
- **Reduces maintenance downtime**
 - CPU health
 - Dual-power status
 - Communication activity
 - PoE status
 - Port link status

NETWORKING OPTIONS

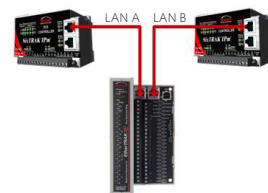
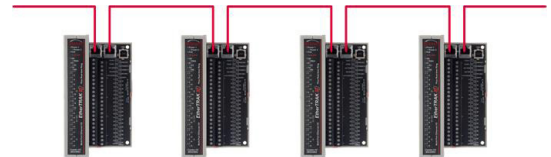


Real-Time Ring Switch Mode

Create redundant Ethernet reliability without additional cost

Switch Elimination Mode

Daisy-chain modules without external switches to save money and simplify connectivity



Two Networks Mode

Each Ethernet port has a unique MAC and IP address for connection to two independent physical networks

▶▶▶ EtherTRAK[®]-2 Ethernet I/O Module Specifications

SPECIFICATIONS

General I/O Performance

- Power supply voltage: 10-30 VDC
- Input current requirement: 100 mA @ 24 VDC typical with no loads
- PoE power (EB modules only): 10 watts at 60°C for user loads
- De-rate: up to 5 watts at 75°C
- I/O: 512 discrete inputs and outputs plus 256 analog input and output registers
- Unique station addresses: 16,000+ (Sixnet or 247 Modbus)

Ethernet Performance

- Ethernet ports: 10/100BaseTx (auto-detecting)
- Connection: RJ45 (auto-crossover)
- Isolation: 1500 volts RMS 1 minute (60 Hz.)
- Message response time: <1 mS per message
- Diagnostic LEDs: solid indicates link, blinking indicates activity
- Protocol support: TCP/IP, ARP, UDP, ICMP, DHCP, HTTP, Modbus UDP/TCP slave mode, Modbus UDP master mode, Sixnet UDR UDP/TCP slave mode, Sixnet UDR UDP master mode
- Real-Time Ring: 5ms per hop recovery time
- Independent networks: 1 or 2 with unique MAC and IP address

Serial Ports

- RS-485 port: screw terminals (485+, 485-, GND; 2-wire half-duplex, not isolated)
- RS-485 networking: up to 32 (full load) stations
- RS-485 distance: up to 0.5 miles (baud-rate dependent)
- Baud rates: from 300 to 57,600 baud
- Protocols: master and slave; Sixnet and Modbus RTU/ASCII
- Diagnostic LEDs: transmit (TD) and receive (RD)

Analog Output Channels

- Analog output range: 4-20 mA
- D/A resolution: 16 bits (less than 1 uA)
- Full scale accuracy: +/-0.02% (at 20°C)
- Span and offset temperature: +/- 50 ppm per °C
- Load resistance (@ 24 V): 0-750 Ohms
- Current limiting short circuit protection
- Refer to user manual for additional specifications

Analog Input Channels

- Input range: 4-20mA, 0-10VDC, RTD, thermocouple and 250mV
- A/D resolution: 16 bits (0.003%); 10 bits (1mS fast option)
- Input impedance (resistance): 100 ohms or 200 Kohms
- Fuses: self-resetting short circuit protection (4-20 mA inputs)
- DMRR (differential mode): 66 db at 50/60 Hz
- Update time: from 880 mS to 1 mS (depending configuration)
- Temperature accuracy: typical uncalibrated +/-0.5°C
- RTD type: 100 Ohm platinum
- RTD alpha: 0.00385 or 0.00392
- RTD connections: 2 or 3-wire
- RTD input range: -200 to 850°C
- Refer to user manual for additional specifications

Discrete Input Channels

- Voltage range: 10-30 VDC or 60-140 VAC
- Input isolation: 150 volts (16 channel modules only)
- Input resistance: 10 Kohms
- Slow response (software configurable): 25 mS (20 Hz. maximum counting rate)
- Fastest response (software configurable): 1 mS (400 Hz. maximum counting rate)
- Special fast counting rate: up to 50 KHz on channels 1 and 2
- Count up: pulse timing and pulse rate 16 or 32-bit reporting
- Refer to user manual for additional specifications

Discrete Output Channels

- Output voltage range: 10-30 VDC or 10-30VDC/AC
- Maximum output power: up to 1A per channel
- Short circuit protection: self-reset fuses (trip above 1.5 Amp)
- Input isolation: 150 volts (16 channel modules only)
- All channels scan rate: 1 mS
- Refer to user manual for additional specifications

Web Interface

- Secure web access with password protection for multiple users
- 1 simultaneous user
- 750K memory for user pages (more with special order)

Environmental

- Operating temperature: -40 to 75°C (-40 to 85°C storage)
- Humidity: 5 to 95% RH (non-condensing; optional conformal coating)
- Flammability: UL 94V-0 materials
- Vibration: IEC60068-2-6
- Shock: IEC60068-2-27

Standards Compliance

- Electrical safety : UL 508, CSA C22.2/142; EN61010-1; CE
- EMI emissions: FCC part 15, ICES-003, Class A; EN55022; IEC6100-6-4; CE
- EMC immunity : IEC61000-6-2 (EN61000-4-2,3,4, 5, 6, 8); CE
- Hazardous locations: Class 1, Div 2, Groups A, B, C, D; ISA12.12.01; CSA C22.2/213; ATEX (Zone 2) IEC60079-0,-15
- Marine and offshore: tested and/or verified to meet various standards such as ABS, DNV No. 2.4, and Lloyds

Physical

- Mounting: DIN rail (EN50022), direct to panel or flat panel
- Packaging: impact resistant Lexan[®] polycarbonate
- Dimensions (module and base): 5.5"L x 3.5"W x 5.1"H (14cm x 8.9cm x 13cm)

Warranty

- 2 years on design and manufacturing defects

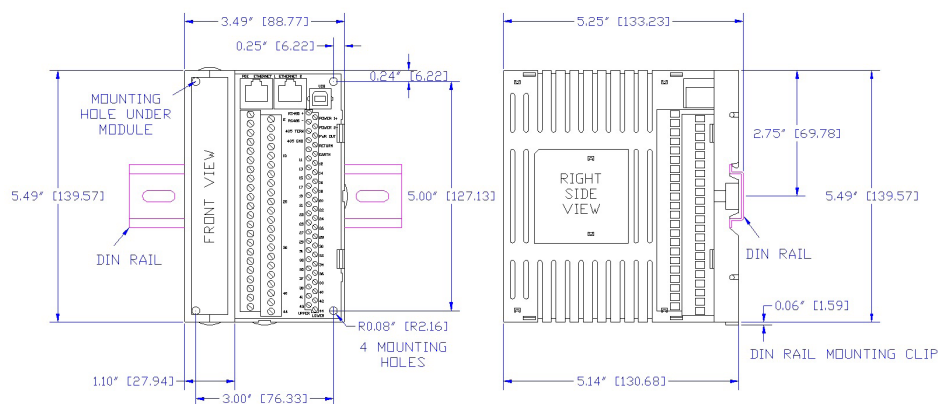
All specifications are subject to change. Contact Sixnet to learn more.

▶▶▶ EtherTRAK[®]-2 Ethernet I/O Module Specifications

ORDER GUIDE

| PART NUMBER | DI | DO | AI | AO | DESCRIPTION |
|---------------------|----|----|-------|----|--|
| E2 or EB-MIX24880-D | 24 | 8 | 8 | | 32 channel combination I/O with 1 isolated input counter |
| E2 or EB-MIX24882-D | 24 | 8 | 8 | 2 | 34 channel combination I/O with 2 analog outputs |
| E2-MIX20884-D | 20 | 8 | 8 | 4 | 32 channel combination I/O with 4 analog outputs and 4 isolated input counters |
| E2 or EB-32DI24-D | 32 | | | | 32 discrete inputs (10-30 VDC) including 16 multifunction counters |
| E2 or EB-16DI24-D | 16 | | | | 16 individually isolated discrete inputs (10-30 VDC) with counters |
| E2-16DIAC-D | 16 | | | | 16 individually isolated discrete inputs (120 VAC nominal; 10-30 VDC) with counters |
| E2 or EB-32DO24-D | | 32 | | | 32 discrete outputs (10-30 VDC) 0.5 Amp each, 8 Amps total |
| E2 or EB-16DO24-D | | 16 | | | 16 individually isolated discrete outputs (10-30VDC) 1 Amp outputs, 16 Amps total |
| E2-16DORLY | | 16 | | | 16 individually isolated discrete outputs (10-30VDC/VAC relay) 1 Amp outputs, 16 Amps total |
| E2 or EB-32AI20M-D | | | 32 | | 32 analog inputs (4-20 mA) with 16-bit accuracy |
| E2 or EB-32AI10V-D | | | 32 | | 32 analog inputs (0-10VDC) |
| E2 or EB-16AI20M-D | | | 16 | | 16 analog inputs (4-20 mA) |
| E2 or EB-8AO20M-D | | | | 8 | 8 analog outputs (4-20 mA) |
| E2 or EB-16AI-8AO-D | | | 16 | 8 | 24 channel combination, 16 analog inputs (4-20 mA) and 8 analog outputs (4-20 mA) |
| E2 or EB-16ISOTC-D | | | 16TC | | 16 individually isolated analog inputs (thermocouple and +/- 250 mV) with J, K, E, R, T, C, N, S |
| E2 or EB-16ISO20M-D | | | 16 | | 16 individually isolated analog inputs (4-20 mA) |
| E2 or EB-10RTD-D | | | 10RTD | | 10 analog inputs (100 Ohm platinum RTD), range is -200 to 850°C |

MECHANICAL DRAWING



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As the global experts in communication, monitoring and control for industrial automation and networking, Red Lion has been delivering innovative solutions for over forty years. Our award-winning technology enables companies worldwide to gain real-time data visibility that drives productivity. Product brands include Red Lion, N-Tron and Sixnet. With headquarters in York, Pennsylvania, the company has offices across the Americas, Asia-Pacific and Europe. For more information, please visit www.redlion.net. Red Lion is a Spectris company.

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