INDUSTRIAL NETWORKING
A SUPPLEMENT TO PUTMAN MEDIA PUBLICATIONS

# Fiberoptic Switch Improves Reliability

UNMANAGED INDUSTRIAL ETHERNET SWITCHES EQUIPPED with fiberoptic capabilities are readily available for less than $500. The problem is that unmanaged switches often can't supply the reliability many industrial applications demand.

Managed switches certainly are an alternative, but often are considerably more complex than needed and more expensive—with costs starting at $1,000.

Weed Instrument's new EOTec 2104 line of industrial Ethernet, fiberoptic, ring switches is designed to fill the gap between the two. Weed plans to introduce the new switches on Oct. 17, which is the first day of ISA Expo 2006 in Houston.

"Each of our new switches combines the ease-of-use of a typical unmanaged switch with advanced capabilities until now found only in a managed switch," says Rick Pennavaria, Weed's fiberoptic products sales manager. "Prices for the new switches start at about $800, placing them squarely between competing unmanaged and managed industrial Ethernet switches."

Installed in a ring topology, the switch increases network reliability by providing an alternative path for message flow in the event of a network-segment failure. When the switch detects a communications break, it quickly notifies the other switches in the ring, and messages are rerouted automatically in milliseconds through the alternative ring path. "Many competitive switches might take several seconds or even minutes to recover from a failure," Pennavaria asserts.

Other advanced capabilities include priority queuing for prioritizing traffic, message rate filtering for broadcast storm protection, and port mirroring for diagnostics.

"We found many industrial customers weren't using key features of their managed industrial Ethernet switches due to the complexity of switch setup and configuration," observes Pennavaria. "So, our new lines of switches are all pre-configured at the factory for redundant, self-healing ring operation with no IP address or complex setup required. No configuration software is necessary, although a simple configuration software program is provided, so the switches can be reconfigured to fit almost any application."


Weed's new line of industrial Ethernet Ring switches includes five switches, six expansion modules, and two power supplies. Each component is designed for DIN-rail cabinet mounting, rated for operation at -40 to 85 °C, and designed for use in Class I, Div. 2 hazardous areas. Specifications for parameters such as vibration, EMI emissions, and EMC immunity reflect the rugged nature of these industrial components, says Pennavaria.

Each switch has four ports, two 100BaseFX fiberoptic ports and two 10/100BaseTX RJ45 copper-wire ports. A typical installation would use the fiberoptic ports as the two ring connections in a high-speed Ethernet backbone. The two RJ45 ports would be used for connecting to various Ethernet-based devices such as controllers, I/O, instruments, and motor drives.

Fiberoptic port options allow single or multi-mode operation with SC or ST fiberoptic connections. Fiberoptic connection distances range from 2 km for the lowest cost switch to 60 km for the most expensive switch.

"For enhanced diagnostics, each switch has relay outputs that can be used to signal error conditions to a PLC, PC, or other supervisory devices," says Pennavaria. "These alarms include one global alarm relay for ring status, and two local alarm relays that will open when their respective ring ports lose a link."

Optionally, ring status can be monitored through Modbus UDP. The switch can be configured as a Modbus slave station with predefined Modbus registers for status reporting.

The six expansion modules and the two universal power supplies are connected to a switch through the backplane. Each switch can accept one expansion module, and the expansion modules range from two to four ports.

The switches accept DC power from 15-30 VDC. The universal power supplies are only needed if input power is outside of this range. These power supplies can accept input power from 85-240 VAC at 50/60 Hz, or from 85-125 VDC. ●

**For more information, call 800/880-9333, e-mail fibersales@weedinstrument.com, or go to www.weed2104.com.**



Weed Instrument Fiber Optics

Weed Instrument Company, Inc.
707 Jeffrey Way, P.O. Box 300 • Round Rock, TX 78680-0300
Toll Free: 800-880-9333 • Phone: 512-434-2850 • Fax: 512-434-2851
fiberop@weedinstrument.com • www.weed2104.com