Industrial Fiber Optic Networking

For Factory Automation and Process Control

Use Fiber Optic Networking to protect your critical systems.

Fiber Optic Products

- PLC Modems
- Ethernet Connectivity
- Multiplexers
- Analog/Digital Links
- Training/Service

Weed Instrument

Fiber Optics

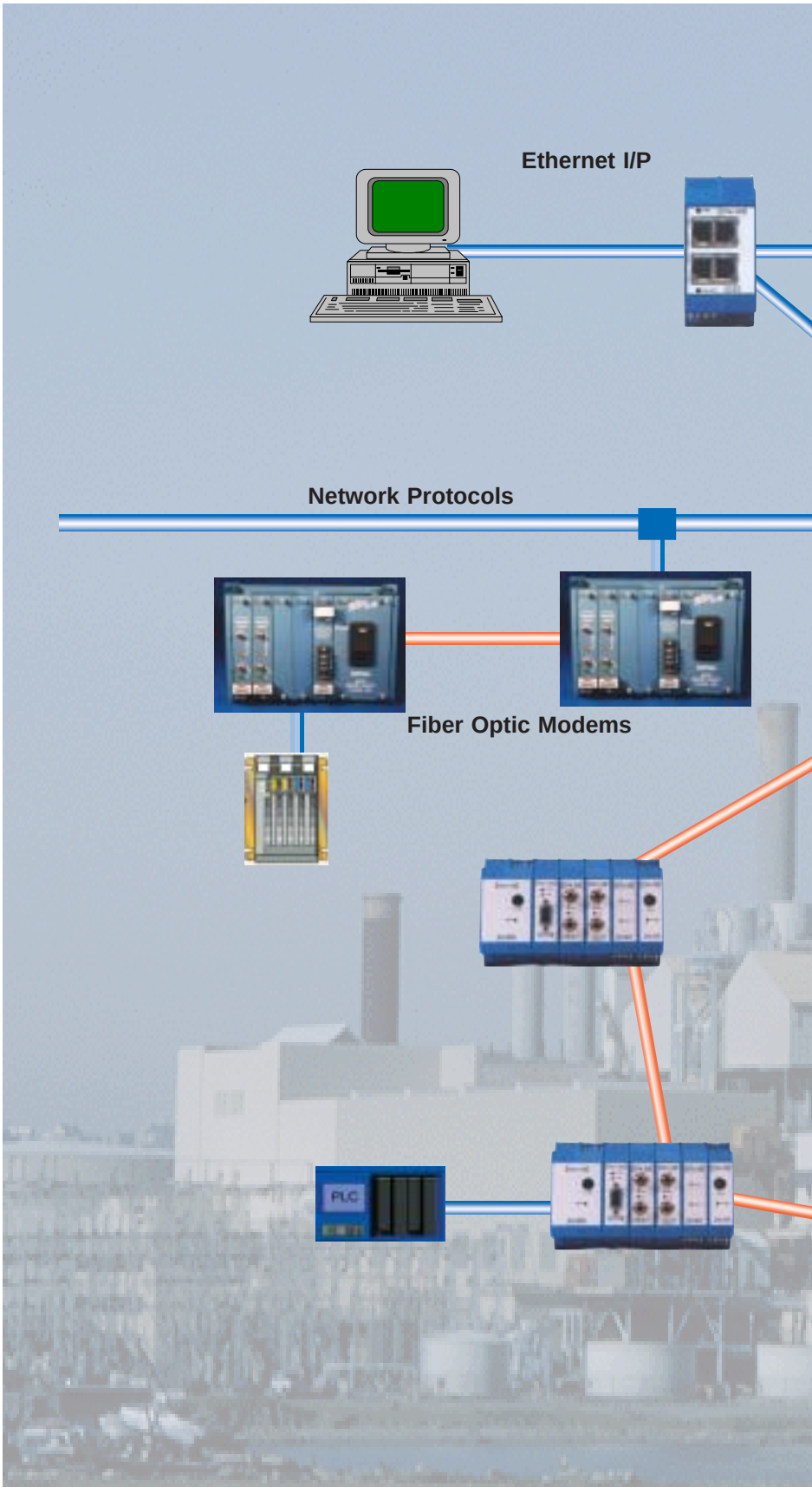
ISO 9001 Certified

EOTec

Overview of Networking System

Why Fiber Optics?

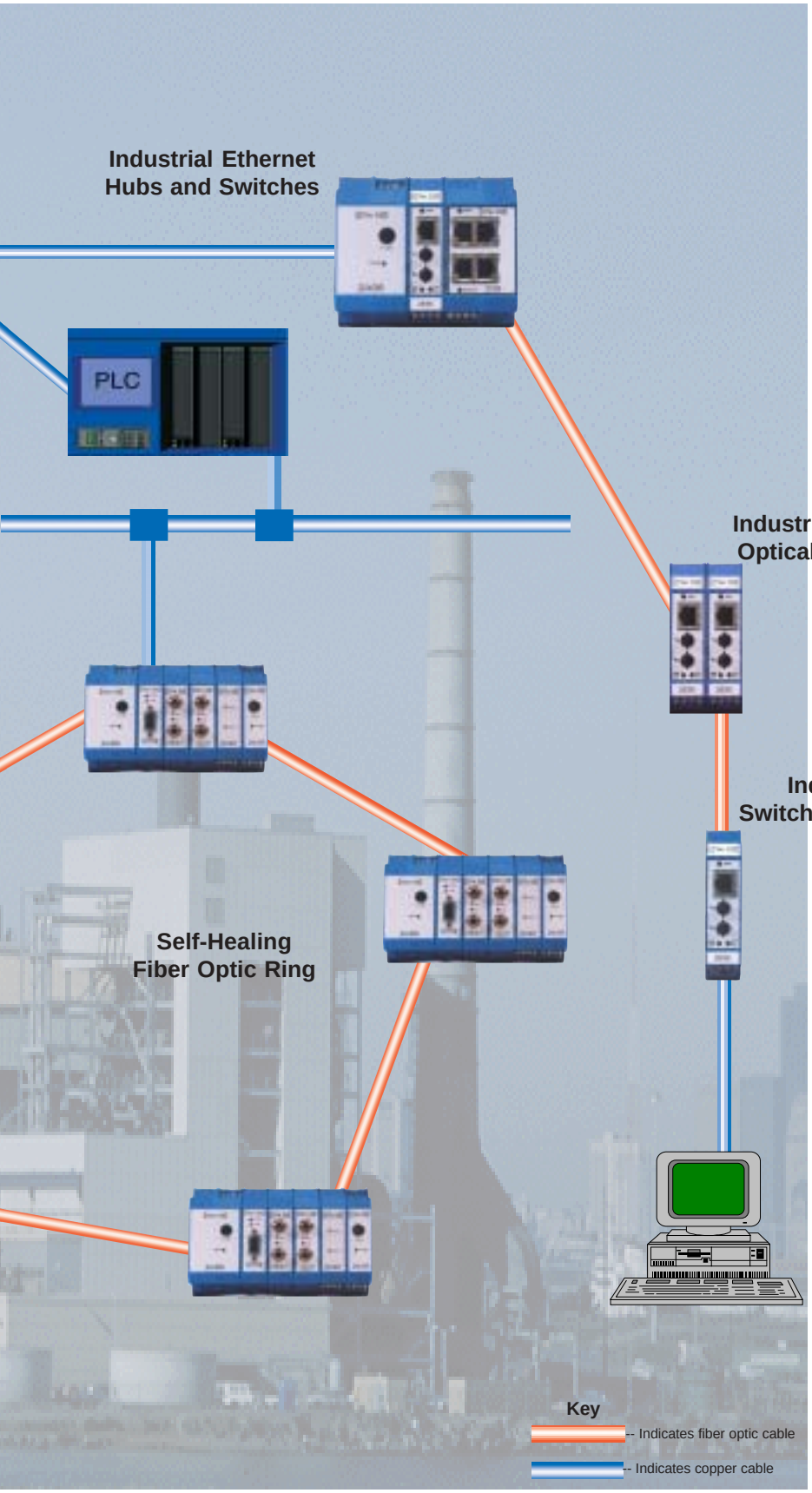
Fiber optics can be found in many applications, from network backbones that power the Internet to manufacturing facilities, to subsea communication networks on drilling rigs. The information carrying capacity of an optical fiber is far greater than it is for copper wire, coaxial cables, and microwave links. Optical fibers are very small, lightweight, do not corrode and are immune to electrical noise from lightning storms and electromagnetic interference (EMI/RFI). In addition, fiber optic cables do not carry electrical energy and are approved for hazardous locations. The cost of fiber optic cable and its associated connectors and hardware has decreased steadily over the years. Today, the benefits of fiber optics can far outweigh the costs making fiber optic communications the preferred choice for industrial factory automation and process control networks.



Commercial vs. Industrial Fiber Optic Products

Most process plants and factories have unique requirements for communications networks that differ from those of a commercial network. Industrial network components must withstand harsher environmental conditions such as extreme temperature ranges, lightning strikes, electromagnetic interference, and hazardous locations just to name a few.

Mounting and space requirements are also an issue since industrial networking components must be mounted in the same control panel with other control equipment. At Weed Instrument, our goal is to meet the demanding requirements of industrial communication networks. The modular EOTec brand of industrially hardened fiber optic communication products addresses these issues and provides optimal solutions for factory automation and process control.



Network Protocols

The PLC has been on the forefront of factory automation for several decades and there are many different network protocols in use today. Network protocols are either open or proprietary. Some prominent proprietary protocols supported by Weed Instrument are Rockwell Automation's DH+, Schneider Electric's Modbus Plus™ and GE Fanuc's Genius® Bus. Open protocols include Ethernet TCP/IP, Profibus, ControlNet™ and DeviceNet™. Weed Instrument supports the most common protocols in use today for industrial PLC networks and Ethernet Connectivity.

Ethernet Connectivity

Ethernet is being swiftly adopted by the industrial automation and control industry. Ethernet addresses many of the requirements of proprietary PLC buses, with the added advantages of widespread usage and lower costs due to high volumes. Weed Instrument is continually developing new fiber optic products to support Ethernet and other emerging industrial network protocols.

EOTec 2000 Modular System

Modular expandable fiber optic system for industrial networks

Power Supplies

Power supplies for AC or DC power sources.

Electrical Interface Modules

Electrical Interface modules compatible with all major communications standards

Hot-Swappable, bus compatible Redundant Power Supplies with diagnostic outputs to eliminate single point of failure, reducing the risk of significant costly system down-time

Pluggable Screw Terminals or industry standard connectors for all copper cable connections

Inter-module communications achieved via an integrated BUS-System, no external wiring

Patented Self-Healing Ring module provides a “NO DATA LOSS” media redundancy solution for highly reliable communications

35mm DIN-Rail mounting for compact efficient design with smaller space and less power

Lightweight interchangeable modules facilitate custom configurations, easy expansion and reconfiguration

Extended temperature range (-40 to 85°C) for harsh industrial applications
Class I, Division 2 hazardous locations (selected models)
CE and UL approvals

Optical Interface Modules

Cascade up to five optical engines on one power supply to achieve the popular STAR topology

Ethernet Connectivity

Ethernet to Fiber Media Conversions, Hubs, Switches

System diagnostic indicators for continuous monitoring during operation

Continuous 4-20mA optical diagnostic output

Status indicators for functional optic/wire links and link activity indication

Network Topology capabilities beyond the limitations of wire-cable including Point-to-Point, Daisy Chain, Star and Self-Healing Ring

Optical and Electrical compatibility with EOTec 6000 modems

CE

EOTec 2000 Fiber Optic Modems

Electrical Interface Modules

The Electrical Interface Module connects the EOTec 2000 system to factory networking communication devices. It provides electrical interface conditioning for data transmission over the fiber optic network.

The basic modem configuration consists of a Power Supply, an Electrical Interface, and an Optical Interface Module. However, additional modules may be added to configure Daisy Chain, Star and Self-Healing Ring topologies and provide redundancy.

Model Number	2C02	2C07	2C10
Protocol	GE Genius/Remote I/O	Reliance R-Net/ Remote I/O	RS-232 or RS-485 Multi-drop
Communications Data Rate	153.6K Baud Extended	800K Baud	RS-232: 9.6K-115K Baud RS-485: 9.6K-230K Baud Half Duplex
Copper Cable Connector	Pluggable ScrewTerminal 12 to 24 AWG (0.5-2.4mm) Cage-Clamp	BNC	Pluggable Screw Terminal 12 to 24 AWG (0.5-2.4mm) Cage-Clamp
Copper Cable End Termination	External (user supplied)	Internal - 75 ohms	External (user supplied)
Maximum Devices and Copper Cable Length Supported per Module	32 Units, 3500ft (1km)	1 Unit, 200ft (50m)	RS-232: 1 Unit, 50ft (15m) RS-485: 30 Units, 4000ft (1.2km)

Electrical Interface Modules - Common Features

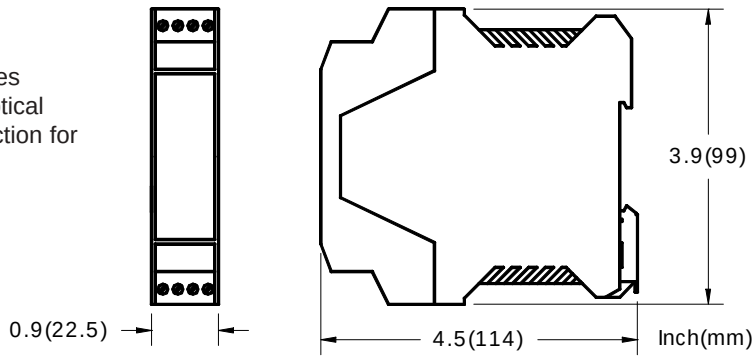
Ambient Conditions: -40 to 85°C Operational, 0 to 90% Rel. Humidity Non-Condensing
Power Requirement (Bus): 9VDC @ 200mA Max per module
Power Indicator: Green LED
Communications Activity Indicator: Amber LED
Certifications: FM Approved Class 1, Division 2, Groups A, B, C & D (selected models only)

Note: Weed Instrument is constantly developing new EOTec modules for different protocols. Please visit our website at www.weedinstrument.com for an updated list of the most current modules.

EOTec 2000 Fiber Optic Modems

				
2C12	**2C14**	**2C15**	**2C20**	**2C29**
A-B DH & DH+ & Remote I/O	Modicon Remote I/O	A-B DH-485	ControlNet	Modicon Modbus Plus
57.6K, 115.2K and 230.4K Baud Jumper selectable	1.54M Baud	19.2K Baud	5.0M Baud	1.0M Baud
Pluggable Screw Terminal 12 to 24 AWG (0.5-2.4mm) Cage-Clamp	F-Type	Pluggable Screw Terminal 12 to 24 AWG (0.5-2.4mm) Cage-Clamp	BNC	DB- 9 Pin
External (user supplied)	Internal, 75 Ohms	Internal, 120 ohms	External (user supplied)	External (user supplied)
60 Units, 10,000ft (3km)	20 dB of cable and tap loss	1 Unit, 200ft (50m)	Per ControlNet Specifications	Per Modbus Plus Specifications

Mechanical Specifications:
Single-width EOTec 2000 Modules (Includes most Electrical and Optical Modules). See Power Supply section for double-width dimensions.
Mounting: 35mm DIN Rail
Weight: <9oz (250g)



EOTec 2000 Fiber Optic Modems

Optical Interface Modules

Optical Interface Modules connect the EOTec 2000 modems to the fiber optic cable network, and transfer network data between nodes. Cascade different optical modules in a single modem assembly and optically link modems utilizing 850/1300nm optical wavelengths, Multi-mode or Single mode fiber, and SMA or ST* connectors. Two optical modules can be used in one modem to form an optical repeater or to configure an optical daisy chain. Up to five optical modules can be cascaded in one modem to establish an optical star network system. Two optical modules combined with a Self-Healing Ring module provide optical media redundancy in critical applications. A maximum combination of five optical or electrical modules may be connected together in one modem, inter-module communications and operating power is achieved through the integrated module backplane connections.

The basic modem configuration consists of a Power Supply Module, Electrical Interface Module, and an Optical Interface Module.

*ST is a trademark of AT&T

Model Number	2E06 / 2D06	2E07 / 2D07
Optical Wavelength	850nm	850nm
Optical Mode	Multi-mode	Multi-mode
Communications Data Rate	9.6K to 5M Baud	9.6K to 5M Baud
Optical Port Connection	SMA Compatible	ST Compatible
Optical Dynamic Range	21dB into 200/230µm	21dB into 200/230µm 12dB into 62.5/125µm

Optical Interface Modules - Common Features

Ambient Conditions: -40 to 85°C Operational, 0 to 90% Rel. Humidity Non-Condensing
Emitter Type: LED
Power Requirement (Bus): 9VDC @ 200mA Max per module
Optical Transmit Indicator: Green LED
Optical Receive Indicator: Amber LED
Certifications: FM Approved Class 1, Division 2, Groups A, B, C & D (selected models only)
Diagnostic Output (2DXX): 4-20mA
IEC 60825-1 Class 1 LED Products, FDA 21CFR1040.10 & 1040.11

EOTec 2000 Fiber Optic Modems

			
	2E09 /2D09	**2E36 / 2D36**	**2E46 / 2D46**
	1300nm	1300nm	1300nm
	Multi-mode	Single Mode	Single Mode
	9.6K to 5M Baud	9.6K to 5M Baud	9.6K to 5M Baud
	ST Compatible	ST Compatible	ST Compatible
	12dB into 62.5/125µm	10dB into 9/125µm	16dB into 9/125µm

2DXX Optical Modules with 4-20mA Diagnostic Output.

2DXX optical modules provide a full diagnostic output (4-20mA). The output is internally powered and is proportional to the received optical power. The output can be monitored and processed continuously in order to insure the integrity of the fiber optic link. This is beneficial for critical applications such as subsea networking where degradation of the optical signals can be detected before a complete loss of communication occurs. An output less than 4mA indicates loss of optical signal. A pluggable screw terminal connection on the bottom front of the module provides easy access to the output signal.

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EOTec 2000 Fiber Optic Modems

Power Supply Modules

The EOTec Power Supply Modules supply operating power to the EOTec 2000 modules. Several different universal modules are available to conform to a wide variety of power sources typically found in industrial control panel applications where wall mounted power supplies are unacceptable. Mix and match to provide the option of "Hot-Swappable" dual power supplies with diagnostic outputs, eliminating "Single Point of Failure" locations in the network.

The basic modem configuration consists of a Power Supply Module, Electrical Interface Module, and an Optical Interface Module.

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FM
Approved
Class 1, Division 2
Groups A, B, C & D

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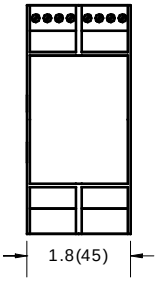
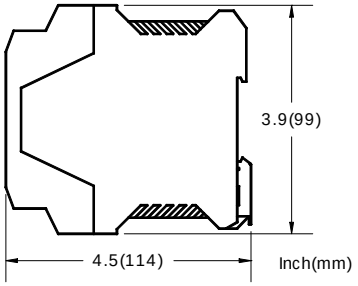
Model Number	2A06 / 2A16	2A08 / 2A18	2A50
Input Power Range	85 to 240VAC, 50/60Hz, 250mA 85 to 140VDC, 250mA	24VDC ±20%, 400mA	85 to 240VAC, 50/60Hz, 250mA 85 to 140VDC, 250mA
Operating Power Output	Regulated, 9VDC 1.1A max	Regulated, 9VDC 1.1A max	24 VDC, 425mA max
Input Fuse Type	400 mA slow-blow	400 mA slow-blow	400 mA slow-blow
Compatibility	All bus powered modules except list under 2A50	All bus powered modules except list under 2A50	Only 2E50, 2C50, 2F50, 2R50 Ethernet modules
Ambient Conditions	-40 to 85°C Operational 0-90% Rel. Humidity Non-Condensing	-40 to 85°C Operational 0-90% Rel. Humidity Non-Condensing	-40 to 85°C Operational 0-90% Rel. Humidity Non-Condensing

Power Supplies with Diagnostic Alarm Relay Contacts

The 2A16 and 2A18 are power supplies with diagnostic alarm relay contacts accessible via screw terminals on the bottom front of the module. Relay Contact Ratings: Form-C, 175VDC, 1A continuous.





Mechanical Specifications
Double-width EOTec 2000 Modules - 2A06/2A16, 2A50 Power Supplies, 2C50/51 Ethernet Hubs and 2C52/53 Ethernet Switches
Mounting: 35mm DIN Rail
Weight: <9oz (250g)

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EOTec 2000 Power Supply Selection Chart

Model#	Module Description	2A06/ 2A16	2A08/ 2A18	2A50	External 24VDC
2C02	GE Genius Remote I/O	X	X		
2C07	Reliance R-Net Remote I/O	X	X		
2C10	RS-232/485	X	X		
2C12	Allen Bradley DH, DH+ & Remote I/O	X	X		
2C14	Modicon Remote I/O	X	X		
2C15	Allen Bradley DH-485	X	X		
2C20	ControlNet	X	X		
2C29	Modicon Modbus Plus	X	X		
2C30	Self-Healing Ring	X	X		
2E06/2D06	Optical Module	X	X		
2E07/2D07	Optical Module	X	X		
2E09/2D09	Optical Module	X	X		
2E36/2D36	Optical Module	X	X		
2E46/2D46	Optical Module	X	X		
2E50	Media Converter 10 Base-T			X	
2E51	Media Converter 10 Base-T			X	X
2E54	Switched Media Converter 10/100 Base-T	X	X		
2E55	Switched Media Converter 10/100 Base-T	X	X		X
2E56	Switched Media Converter 10/100 Base-T	X	X		
2E57	Switched Media Converter 10/100 Base-T	X	X		X
2E58	Switched Media Converter 10/100 Base-T	X	X		
2E59	Switched Media Converter 10/100 Base-T	X	X		X
2C50	Ethernet Hub 10 Base-T			X	
2C51	Ethernet Hub 10 Base-T				X
2C52	Ethernet Switch 10/100 Mbps	X	X		
2C53	Ethernet Switch 10/100 Mbps	X	X		X
2R50	SHR - Hub 10 Base-T			X	X
2F50	SHR Media Converter 10 Base-T	Power Supply via 2R50			

EOTec 2000 Network Topologies

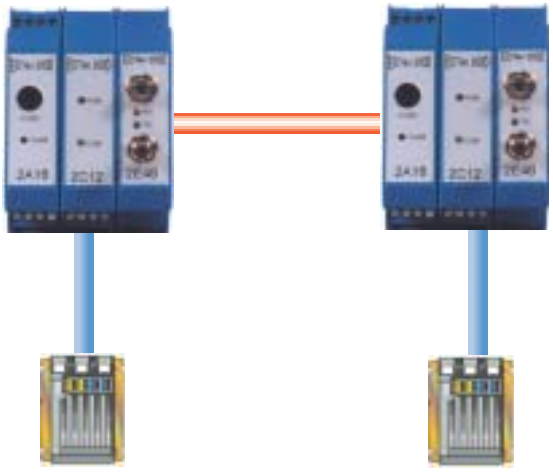
There are five basic network topologies possible with the EOTec 2000 system. Using these, many combinations can be created. Very similar topologies can be assembled with other Weed Instrument fiber optic modems, the EOTec 6000 and the ODYSSEY.

Optical Repeater

Used for strengthening an EOTec optical signal that has traveled the maximum distance throughout a fiber optic cable. It is used for communicating over very long distances. In addition, this configuration can also convert multi-mode fiber to single mode, and vice versa.

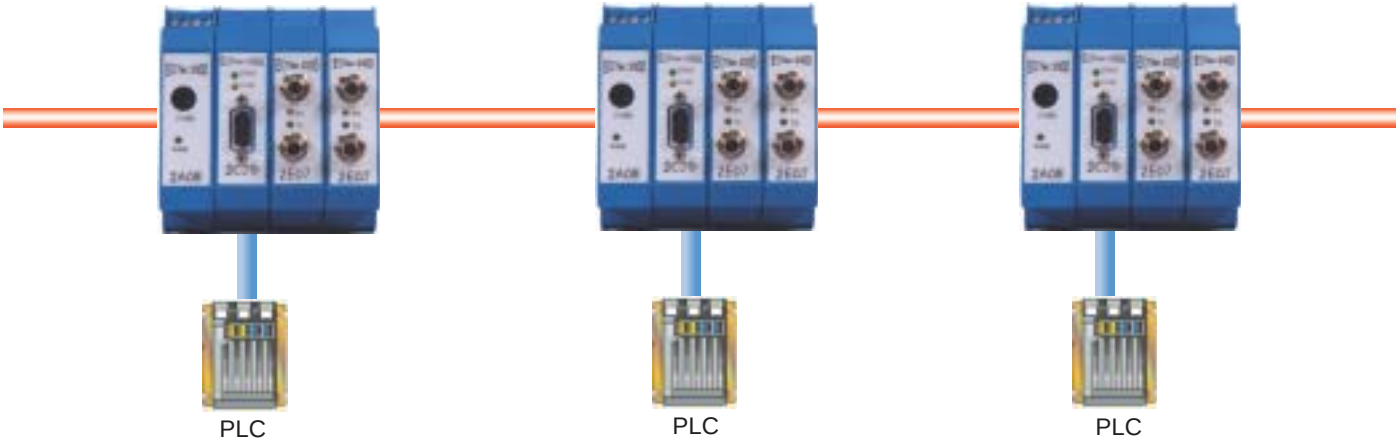
Point-to-Point

Used to make simple connections from a PLC to a PLC or an I/O block.



Daisy Chain

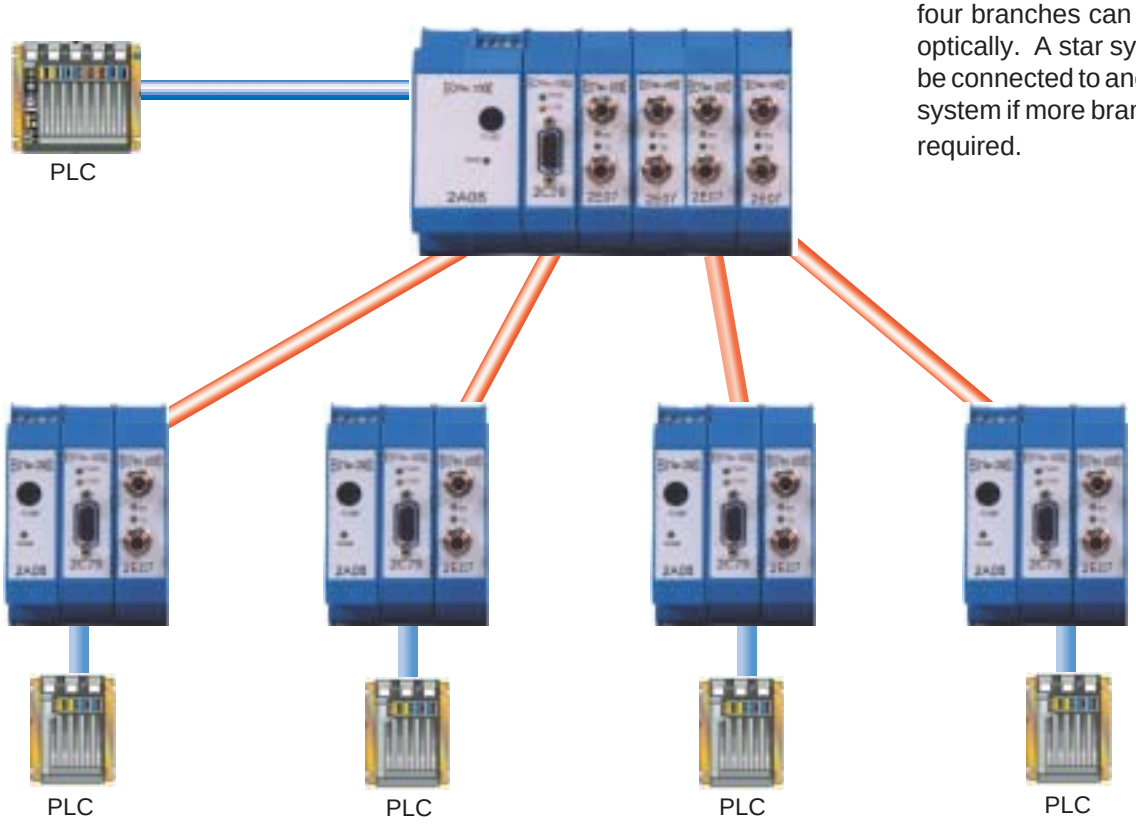
Used for multiple drops along a line.



EOTec 2000 Network Topologies

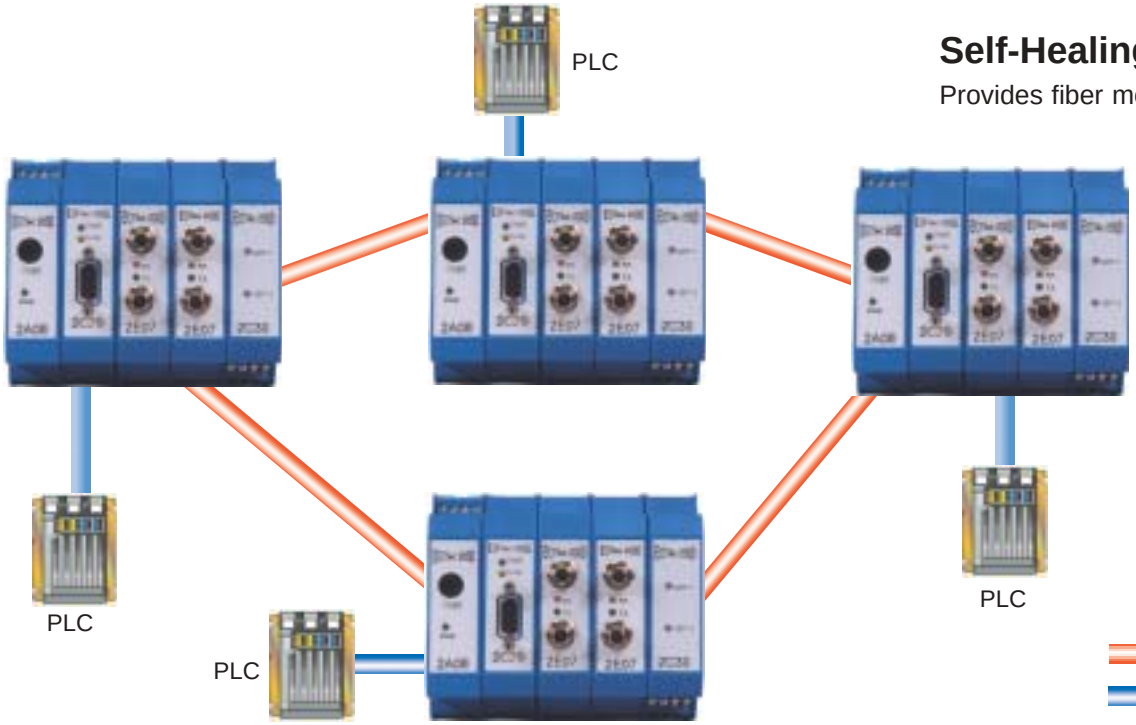
Star Configuration

Used for branching from one point outward. As many as four branches can be made optically. A star system can be connected to another star system if more branches are required.



Self-Healing Ring

Provides fiber media redundancy.



Key

-- Indicates fiber optic cable

-- Indicates copper cable

EOTec 2000 Fiber Optic Modems

Self-Healing Ring Module

The 2C30 Self-Healing Ring Module provides fiber media redundancy when utilized in each node or drop of a fiber optic ring-network. The 2C30 detects and redirects data to the secondary fiber path when a break in the fiber occurs between two adjacent nodes. The 2C30 automatically resets when the fiber path has been restored. Visible LED indicators in conjunction with relay contacts provide local and remote monitoring of the integrity of the fiber optic network.

The configuration of a Self-Healing Ring modem consists of a Power Supply, an Electrical Interface, a Self-Healing Ring and two Optical Interface Modules. Inter-module communications and operating power is achieved through the integrated module backplane connections.

Model Number	**2C30**
Communications Data Rate	9.6K to 2M Baud
Status Indicators (Bi-color LED)	Green: Functional Optic Link Red: Loss of Optical Link
Relay Contact Rating	175VDC, 0.25A Switching, 1A Continuous
Relay Connection	Pluggable Screw Terminal 12 to 24 AWG(0.5-2.4mm) Cage-Clamp
Ambient Conditions	-40 to 85°C Operational 0 to 90% Rel. Humidity Non-Condensing
Certifications	FM Approved Class 1, Division 2, Groups A, B, C & D
Compatible Electrical Modules	2C02, 2C07, 2C10, 2C12, 2C14, 2C15, 2C29

Features of the 2C30 module include:

- Independent of fiber optic cable size, communications protocol or baud rate
- Eliminates down time from fiber failure
- Fast network transparent fiber path switching
- System diagnostic indicators during operation
- Easy add-on upgrade to existing EOTec 2000 systems

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Industrial Ethernet Media Converters

The EOTec 2E50 and 2E51 Media Converters provide a high level of noise immunity and a long transmission range in industrial applications by converting the 10 BASE-T Ethernet interface to optical fibers. These devices can be operated individually as well as in modular hub stations. The supply voltage is 24VDC. In EOTec 2C50 hub stations, the supply voltage is supplied to all the connected devices via a BUS interconnection integrated in the base of the device. In stand-alone operation, the power supply is provided using plug-in screw clamp terminals. The converter has a link monitoring function, which separately indicates/monitors the operability of the cable connection and the connected devices for the RJ45 and optical fiber channels. It also automatically detects pairs of incorrectly connected receiving cables at the RJ45 connection and corrects them using the auto polarity correction function.

Model Number	2E50 / 2E51
Description	Media Converter 10Base-T
Power Requirement	2E50: Bus powered from 2A50 module 2E51: External 24VDC ±20%@ 70mA max
Optical Wavelength	850nm
Optical Mode	Multi-mode
Optical Connectors	ST Compatible
Optical Fiber Size	50/125µm or 62.5/125µm
Optical Dynamic Range	12dB into 62.5/125µm
Ethernet Compliance	10Base-T in accordance with IEEE 802.3
Data Rate	10Mbps
Data Indicator	LED green (link status) LED yellow (receiving data)
Ambient Conditions	0 to 55°C Operational 30 to 95% Rel. Humidity,Non-Condensing

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EOTec 2000 Ethernet Connectivity

Industrial Ethernet Switched Media Converters

The EOTec 2E54-2E61 Switched Media Converters provide fiber optic conversion to and from wire based Ethernet. The fiber ports operate at 100Mbps, Full Duplex. The RJ45 ports will auto-negotiate data rates between 10/100 Mbps and Full/Half Duplex operation. These modules will automatically learn the addresses of the devices connected to each port (up to 1024) and will buffer and route messages accordingly. There is an additional Ethernet port in the module's integrated BUS, which provides connection for one additional EOTec 2000 Ethernet Switch or Switched Media Converter Module, assisting in forming Star or Daisy Chain network configurations.

Model Number	2E54 / 2E55	2E56 / 2E57	2E58 / 2E59	2E60/2E61
Description	Switched Media Converter 10/100Mbps	Switched Media Converter 10/100Mbps	Switched Media Converter 10/100Mbps	Switched Media Converter 10/100Mbps
Power Requirement	2E54: Bus powered from 2A06 or 2A08 2E55: External, 10-30VDC@200mA	2E56: Bus powered from2A06 or 2A08 2E57: External, 10-30VDC@200mA	2E58: Bus powered from 2A06 or 2A08 2E59: External 1 0-30VDC@200mA	2E60: Bus powered from2A06 or 2A08 2E61: External 1 0-30VDC@200mA
Optical Data Rate	100Mbps, Full duplex	100Mbps, Full duplex	100Mbps, Full duplex	100Mbps, Full duplex
Optical Wavelength	1300nm	1300nm	1300nm	1300nm
Optical Mode	Multi-mode	Multi-mode	Single mode	Single mode
Optical Connectors	ST Compatible	SC Compatible	SC Compatible	SC Compatible
Optical Fiber Size	50 - 100µm core diameter	50 - 100µm core diameter	5 - 10µm core diameter	5-10µm core diameter
Optical Dynamic Range	9dB	9dB	16dB	36dB

Common Features: 2E54 - 2E59

Ethernet Compliance: IEEE 802.3 (U)(X) Compliant, All standard protocols
RJ45 Port Data Rate: 10 or 100Mbps (10/100Base-T(X)), Full or Half Duplex, Automatic wiring correction
Power Indicator: Green LED - On when proper power is connected
Data Indicator: Green LED - OFF when no connection is detected on port; ON when connection to port established; FLASHING to indicate activity on port
Port Speed Indicator: Amber LED - OFF when data rate is 10Mbps; ON when data rate is 100Mbps
Ambient Conditions: -40 to 85°C Operational, 5 to 95% Relative Humidity, Non-Condensing
Certifications: FM Approved for Class 1 Division 2, Groups A, B, C & D (selected models)

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EOTec 2000 Ethernet Connectivity

Industrial Ethernet Hubs and Switches

EOTec 2000 Ethernet Hubs and Switches are industrially hardened, DIN-rail mountable devices, which allow you to extend your industrial Ethernet network. The 2C50 and 2C51 10 BASE-T Ethernet hubs have four RJ45 twisted pair ports that can be made into a multi-port hub system. Up to two hubs can be cascaded together when powered via the backplane by using the EOTec 2A50 Ethernet Power Supply. A maximum of five hubs (twenty ports) can be cascaded together if powered via an external 24VDC power supply.

The 2C52 and 2C53 10/100 BASE-T Ethernet Switches have four RJ45 twisted pair ports and one BUS port. The integrated BUS port provides a connection for one additional EOTec 2000 Ethernet Switch or Switched Media Converter assisting in forming star network configurations. Ethernet switches are unmanaged and require no user configuration. The data rate is automatically negotiated and the ports will auto-sense full or half duplex operation. The switches will automatically learn the addresses of the devices connected to each port and will buffer and route messages accordingly.

FM Approved for Class 1 Division 2, Groups A, B, C & D (selected models)

Model Number	2C50 / 2C51	2C52 / 2C53
Description	Ethernet Hub 4 RJ45 ports	Ethernet Switch 4 RJ45 ports 1 bus port
Power Requirements	2C50: Bus powered from 2A50 2C51: External 19-30VDC @ 180mA	2C52: Bus powered from 2A06/16 or 2A08/18 2C53: External 10-30VDC @180mA
Communications Data	10 Base-T Half Duplex	10/100 Base-T Full or Half Duplex
Ethernet Compliance	IEEE 802.3 Compliant, All standard protocols	IEEE 802.3 (U)(X) Compliant, All standard protocols
Port Activity Indicators	Red: message collision Green: link activity Yellow: receiving message	Green LED: Off when no connection is detected on port, On when connection to port established, Flashing to indicate activity on port
Port Speed (RJ45) Indicator	None	Amber LED: Off when data rate is 10Mbps, On when data rate is 100Mbps
Ambient Conditions	0 to 55°C Operational 30 to 95% RH, Non-Condensing	-40 to 85°C Operational 5 to 95% RH, Non-Condensing

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EOTec 2000 Ethernet Connectivity

Industrial Ethernet Self-Healing Ring Assembly

By using two EOTec 2F50 Media Converters and one 2R50 Ethernet Hub configured in one modular assembly, a 10 Base-T Industrial Ethernet network can be configured in a ring providing optical redundancy and a high level of noise immunity for long distance transmissions over fiber optic cable. Connecting the optical fiber ports together to form a redundant self-healing ring allows for communications between any two nodes to be maintained even when a break in the fiber optic link occurs. Visible fault indicators, and potential-free diagnostic alarm relay outputs, are provided to locate fiber fault conditions.

External copper connections are required between modules, leaving two RJ45 ports available for connection to end devices. Power can be supplied through the backplane using the 2A50 power supply or externally through a terminal block on any one of the three modules.

Model Numbers	**2F50(2) and 2R50**
Description	Ethernet Self-Healing Ring Assembly
Power Requirement	Bus powered by 2A50 module, and/or external 24 VDC ± 20% @ 320mA
Optical Wavelength	850nm
Optical Mode	Multi-mode
Optical Connectors	ST Compatible
Optical Fiber Size	50/125µm or 62.5/125µm
Optical Dynamic Range	12dB into 62.5/125µm
Communications Data Rate	10 Base-T, Half Duplex
Ethernet Compliance	IEEE 802.3 Compliant, all standard protocols
Status Indicators	All standard Ethernet status indicators Bi-color LED for optical fiber status
Relay Contact Rating	175VDC, 0.25A Switching, 1A Continuous
Relay Connection	Pluggable screw terminal 12 - 24 AWG (0.5-2.4mm) Cage-Clamp
Ambient Conditions	0 to 55°C Operational 30 to 95% Rel. Humidity, Non-Condensing

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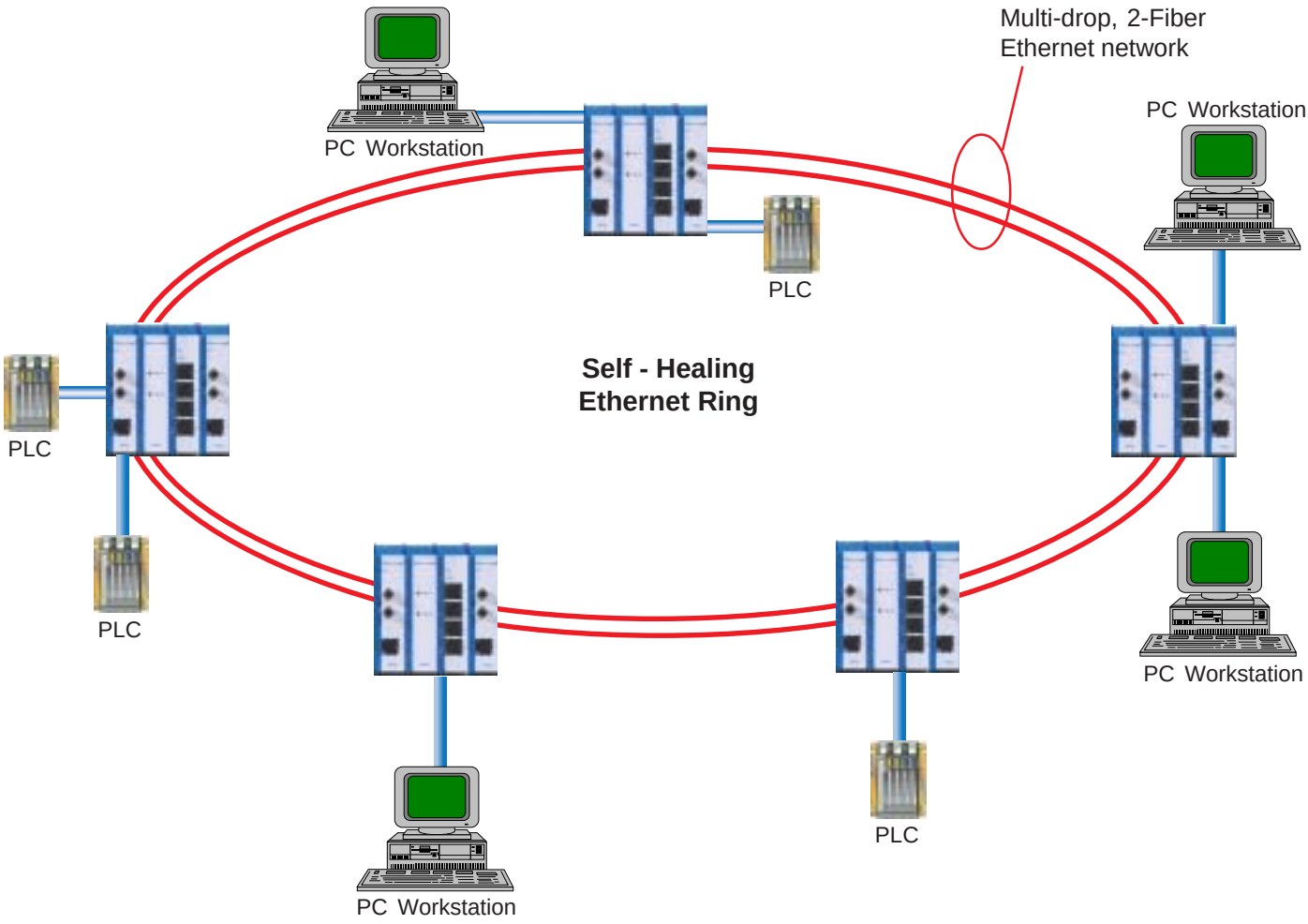
Ethernet Ring Topology for Media Redundancy



This diagram shows a typical Ethernet ring configuration using the fiber optic Media Converters/Hub assembly. This topology enables a self-healing network functionality.

EOTec 6000 Fiber Optic Modems

Overview

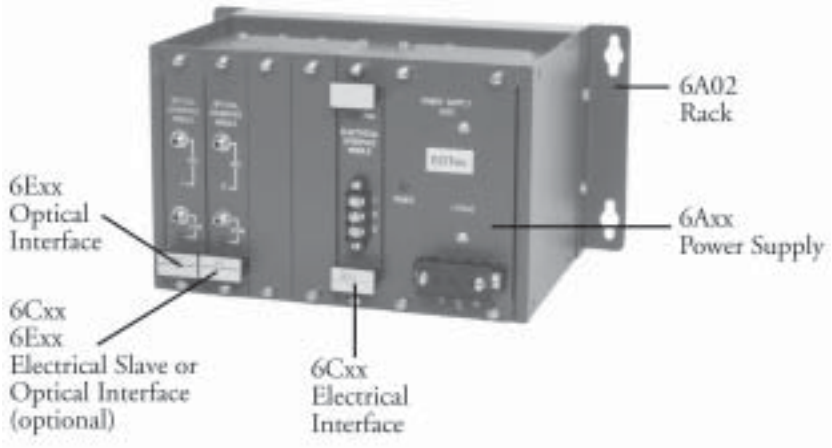
In 1993 Weed Instrument acquired from 3M Corporation the manufacturing/marketing rights to the EOTec line of industrial communications products. Since then, the EOTec 6000 line has been expanded and improved to provide communications with all major brands of PLCs. Applications include industrial process control systems requiring communications between components of the system that may span thousands of feet. Control of the processes may be extremely critical and require highly reliable communications links.

The EOTec 6000 Modular Fiber Optic Modem offers reliable data communication in plant automation systems. This modem has a modular format that offers easy configurability for specific plant networking requirements. Fiber optic modems provide total electrical isolation, eliminating problems with EMI/RFI, lightning, long distances, crosstalk and ground noise. The EOTec 6000 offers greater flexibility and overall cost savings due to its modular, rugged design and proven technology.

The modular modem consists of four basic components: the rack; electrical interface card; optical interface card; and power supply. The EOTec 6000's flexible modular design allows configuration of the electrical and optical modules for the most cost effective solutions to your industrial communication needs. Each of the basic modules are sold separately. See individual data sheets for more detailed specifications.

PLC Compatibility:

- **ALLEN-BRADLEY**
- **MODICON**
- **GE FANUC**
- **TI/SIEMENS**
- **SQUARE D**
- **WESTINGHOUSE**
- **RELIANCE**
- **RS 232/422/485**



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EOTec 6000 Fiber Optic Modems

Power Supplies/Racks

Module # - Description
6A01 - Power Supply (115 VAC input)
6A02 - Modular Rack
6A03 - Power Supply (220 VAC input)
6A04 - Blank panel for unpopulated rack slots
6A05 - Power Supply (90 to 165 VDC input)
6A06 - Power Supply (110/220 VAC input) UL Approved
6A08 - Power Supply (24 VDC)
6A09 - Heavy duty bracket
6A10 - Bracket for 19" Rack Mount
6A18 - Redundant Power Supply (24 VDC input)
6A28 - Dual 6A18 Housing

Power supply modules are available with various input capabilities, as well as a dual redundant power supply. The rack holds the electrical, optical and power supply modules. Each rack can hold one power supply, one electrical interface module and one to four optical or additional electrical interface modules.

The electrical interface module (EIM) connects the EOTec 6000 Modem to the industrial wire network. Configurations are available which allow multiple electrical drops from a single EOTec 6000 Modem.

Electrical Interfaces

Module # - Description
6C01 - Modicon Remote I/O Compatible, BNC connector
6C02 - GE Fanuc Genius™ I/O Compatible
6C03 - Square D SY/NET™ Compatible
6C04 - Westinghouse HPPC™ Compatible
6C05 - TI Tiway™ Compatible
6C06 - TI 560/565 I/O Compatible
6C07 - Reliance R-Net™ & I/O Compatible
6C09 - Modicon ModbusPlus™
6C10 - RS 232/422 Compatible
6C11 - Modicon Remote I/O Self-Healing Ring Module
6C12 - Allen Bradley DH+ and I/O Compatible
6C14 - Modicon Remote I/O Compatible, F connector
6C15 - Allen Bradley DH-485 Compatible
6C16 - RS-485, DB-9 Connector
6C17 - RS-485, F Connector
6C29 - Modicon Modbus Plus™ Compatible ModConnect® certified
6C30 - Self-Healing Ring Master Module
6C31 - Self-Healing Ring Slave Module

EOTec 6000 Fiber Optic Modems

Optical Interfaces

The optical interface module (OIM) connects the EOTec 6000 Modem with the fiber cable system allowing the optical signal to be transmitted to and received from another fiber optic modem. A second optical module can be added to the modem for daisy-chain functions. Up to four OIMs together with any EIM can be configured into a modem to function as an active 4-port star coupler.

The exclusive 6E21 Ping-Pong optical module provides bi-directional communications on a single fiber cable.

Module # and Power Specifications

Optical Module	Optical Connectivity	Wavelength	Optical Mode	Baud Rate	Optical Dynamic Range 200/230 µm	Optical Dynamic Range 62.5/125µm	Optical Dynamic Range 9/125µm
6E01	SMA	850nm	Multi-mode	9.6K-500K	17dB	N/A	N/A
6E02	SMA	850nm	Multi-mode	9.6K-500K	23dB	N/A	N/A
6E03	ST	850nm	Multi-mode	9.6K-500K	17dB	12dB	N/A
6E04	ST	850nm	Multi-mode	9.6K-500K	23dB	17dB	N/A
6E05	ST	1300nm	Multi-mode	9.6K-500K	N/A	12dB	N/A
6E06	SMA	850nm	Multi-mode	500K-2M	17dB	N/A	N/A
6E07	ST	850nm	Multi-mode	500K-2M	17dB	12dB	N/A
6E08	SMA	850nm	Multi-mode	500K-2M	23dB	N/A	N/A
6E09	ST	1300nm	Multi-mode	500K-2M	N/A	12dB	N/A
6E10	ST	850nm	Multi-mode	500K-2M	23dB	17dB	N/A
6E21	ST	850nm	Multi-mode	9.6K-2M	N/A	5dB	N/A
6E31	ST	1300nm	Single Mode	9.6K-500K	N/A	N/A	10dB
6E36	ST	1300nm	Single Mode	500K-2M	N/A	N/A	10dB
6E41	ST	1300nm	Single Mode	9.6K-500K	N/A	N/A	16dB
6E46	ST	1300nm	Single Mode	500K-2M	N/A	N/A	16dB

EOTec 6000 Optical Interface Selection Chart

		Multi-Mode											Single Mode			
		9.6K-500K Baud					500K-2M Baud						9.6K-500K		500K-2M	
Electrical Interface	Optical Interface	6E01	6E02	6E03	6E04	6E05	6E06	6E07	6E08	6E09	6E10	6E21	6E31	6E41	6E36	6E46
6C01	Modicon Remote I/O BNC Connector						X	X	X	X	X	X			X	X
6C02	GE Fanuc Genius I/O	X	X	X	X	X							X	X		
6C03	Square D SY/NET	X	X	X	X	X							X	X		
6C04	Westinghouse HPPC						X	X	X	X	X	X			X	X
6C05	TI Tiway	X	X	X	X	X							X	X		
6C06	TI 560/565 I/O						X	X	X	X	X	X			X	X
6C07	Reliance R-Net & I/O						X	X	X	X	X	X			X	X
6C09	Modicon Modbus Plus						X	X	X	X	X	X			X	X
6C10	RS 232/422	X	X	X	X	X							X	X		
6C12	Allen Bradley DH+ & Remote I/O	X	X	X	X	X							X	X		
6C14	Modicon Remote I/O F Connector						X	X	X	X	X	X			X	X
6C15	Allen Bradley SLC 500	X	X	X	X	X							X	X		
6C16	RS 485 DB-9 Connector	X	X	X	X	X							X	X		
6C17	RS 485 F-Connector						X	X	X	X	X	X			X	X
6C29	Modicon Modbus Plus						X	X	X	X	X	X			X	X

SMA Connector	X	X				X		X								
ST Connector			X	X	X		X		X	X	X	X	X	X	X	

Power Budget (dB) 200/230 Micron 850nm	17	23	17	23	N/A	17	17	23	N/A	23	N/A	N/A	N/A	N/A	N/A	
Power Budget (dB) 62.5/125 Micron 850nm	N/A	N/A	12	17	N/A	N/A	12	N/A	N/A	17	5	N/A	N/A	N/A	N/A	
Power Budget (dB) 62.5/125 Micron 1300nm	N/A	N/A	N/A	N/A	12	N/A	N/A	N/A	12	N/A	N/A	N/A	N/A	N/A	N/A	
Power Budget (dB) 9/125 Micron 1300nm	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	10	16	10	16	

ODYSSEY Fiber Optic Modem
for Allen-Bradley PLC, In-Rack Mount

Overview

Another type of fiber optic modem Weed Instrument offers is the ODYSSEY Series, which plug directly into the popular Allen-Bradley line of PLCs. This modular system incorporates much of the same functionality of the EOTec 2000 and EOTec 6000, and adds the convenience of direct plug-in to Allen-Bradley systems.

- **In-Rack Design for A-B PLC-5 (1771)**
- **Low Cost**
- **Converts DH+ and Remote I/O directly to fiber**
- **Powered from PLC-5 Backplane**
- **Compatible with EOTec 2000 & 6000 modems**
- **Self-Healing Ring**
- **Single Mode/Multi-mode Converter Versions**

The Weed Instrument ODYSSEY modems offer the most versatile fiber optic solution for any PLC-5 system using DH+ or Remote I/O. There are four basic configurations of the ODYSSEY available. They are: ODYSSEY-P, Point-to-Point module with one optical port; ODYSSEY-D, daisy chain module, and ODYSSEY-M and ODYSSEY-S versions with Self-Healing Ring capabilities.

The ODYSSEY modems are also 100% compatible with all Weed Instrument EOTec fiber optic modems, except for the 2C30 self-healing ring. This compatibility allows the ODYSSEY to integrate fully into existing networks, including those with star topologies.

The ODYSSEY modem has three different optical PCBs available. They are the 850nm multi-mode, the 1300nm multi-mode, and the 1300nm single mode PCBs. Any of the basic ODYSSEY modem configurations can be populated with any combination of optical PCBs. The type of optical PCB that is installed will be indicated on the front panel.

The features of the ODYSSEY include: the ability to switch each optical card from high power to low power, the ability to switch between 3 different data rates with a single switch, and the ability to insert or remove the wire cable termination resistor with a single switch.

ODYSSEY Fiber Optic Modem
for Allen-Bradley PLC, In-Rack Mount

Ordering Information

Model # O P EM 00

- O: ODYSSEY Modem
- P: Point-to-Point
  - D: Daisy Chain
  - M: SHR Master
  - S: SHR Slave
  - (SHR: Self-Healing Ring)
- EM: 850nm multi-mode
  - TM: 1300nm multi-mode
  - TS: 1300nm single mode
- 00: None(ODYSSEY-P only)
  - EM: 850nm multi-mode
  - TM: 1300nm multi-mode
  - TS: 1300nm single mode

Specifications

Size:	Occupies a single slot in the PLC-5 chassis (1771)
Operational Temperature Range:	0 to 70°C (32°F to 158°F)
Storage Temperature Range:	-40 to 80°C (-40°F to 176°F)
Optical Dynamic Range:	16dB into 62.5/125µm fiber
Indicator Lights:	
Power:	Green LED
RX:	Amber LED activity indicator - 1 per optical port
TX	Bi Color LED - 1 per optical port Red: Indicates High power setting Green: Indicates Low power setting
STAT:	Bi Color LED (only on ODYSSEY-M) Red: Fault condition in ring Green: Healthy ring status
S1, S2:	Red LED indicates communications failure on Optical 1 or Optical 2 respectively (Only on ODYSSEY-S or -M)
Inputs:	
Data Highway Plus input:	Provides Blue Hose connection point for DH+ and Remote I/O
Remote Reset:	Allows Reset function to be controlled by a remote contact closure or digital signal
Outputs:	
Alarm:	One set of contacts are provided to indicate fiber link status at each module (ODYSSEY-M and -S only)
Controls:	
Baud Rate Switch:	Changes communications setting between 57.6K Baud, 115.2K Baud, and 230.4K Baud
Optical Power Switch:	Changes optical power from High to Low
Termination Switch:	Connects/removes internal 120 ohm termination resistor to DH+ port.

Fiber Optic Data Links

Analog Data Links

The modular EOTec 2000 fiber optic analog data link provides reliable EMI/RFI and lightning immune transmissions of 4-20mA and 0-10VDC signals over a single fiber optic cable. It is an ideal solution for long run cable problems and has a system accuracy of 0.1%. Each transceiver has a single optical port for use with multi-mode or single mode fiber optic cable at 850 nm or 1300 nm using industrialized ST/SMA connectors. LED indicators are provided for Power, Over Range, Under Range and LOCK conditions. The fiber optic receiver (FOR) has additional outputs for signal LOCK and OVER RANGE conditions that can be used to light a remote warning , engage a relay or provide go/no-go information to computer control systems.

The FOT/FOR will accept power from an external 24VDC source connected directly to a de-pluggable screw terminal, or from a 120/240VAC power source when using the EOTec 2A56 Universal Power Supply (shown using both configurations in the photo). Optional external voltage (2M01) and current (2M02) meters are available for local monitoring of the input/output signals.

Applications for this device include long distance transmissions, lightning prone areas and transmissions through hazardous areas.

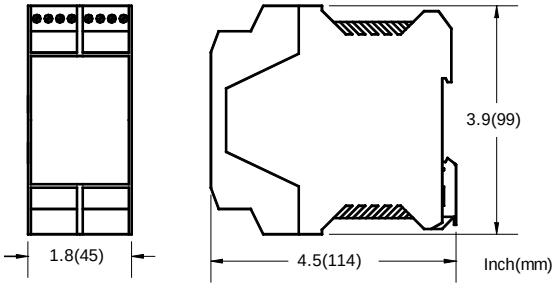
Model Number	Description*	Analog Signal	Wavelength	Optical Dynamic Range into 200/230 µm	Optical Dynamic Range into 62.5/125 µm	Optical Dynamic Range into 9/125 µm	Mating Receiver	Optical Mode	Connector
2T06	FOT	0-10VDC	850nm	37dB	N/A	N/A	2R06	MM	SMA
2T07	FOT	0-10VDC	850nm	37dB	25dB	N/A	2R07	MM	ST
2T09	FOT	0-10VDC	1300nm	37dB	25dB	N/A	2R09	MM	ST
2T10	FOT Hi-power	0-10VDC	850nm	43dB	31dB	N/A	2R07	MM	ST
2T12	FOT	4-20mA	850nm	37dB	N/A	N/A	2R12	MM	SMA
2T14	FOT	4-20mA	850nm	37dB	25dB	N/A	2R14	MM	ST
2T18	FOT	4-20mA	1300nm	37dB	25dB	N/A	2R18	MM	ST
2T20	FOT Hi-power	4-20mA	850nm	43dB	31dB	N/A	2R14	MM	ST
2T36	FOT	0-10VDC	1300nm	N/A	N/A	21dB	2R09	SM	ST
2T46	FOT Hi-power	0-10VDC	1300nm	N/A	N/A	29dB	2R09	SM	ST
2T72	FOT	4-20mA	1300nm	N/A	N/A	21dB	2R18	SM	ST
2T92	FOT Hi-power	4-20mA	1300nm	N/A	N/A	29dB	2R18	SM	ST
2R06	FOR	0-10VDC	850nm					MM	SMA
2R07	FOR	0-10VDC	850nm					MM	ST
2R09	FOR	0-10VDC	1300nm					MM/SM	ST
2R12	FOR	4-20mA	850nm					MM	SMA
2R14	FOR	4-20mA	850nm					MM	ST
2R18	FOR	4-20mA	1300nm					MM/SM	ST

* FOT: Fiber Optic Transmitter
FOR: Fiber Optic Receiver

Fiber Optic Data Links

Specifications – Analog Data Links	
Power Requirements:	24VDC ±10% at 200mA, or 120/240VAC from 2A56 Power Supply
Input/Output Signals:	4-20mA or 0-10VDC
Wire Cable Connections:	De-Pluggable, Cage-Clamp, Screw Terminal, accept 12 to 24 AWG
System Accuracy (FOT+FOR):	± 0.1% of span maximum
System Response Time (FOT+FOR):	< 1ms (10% to 90% input step change) transfer rates to 800Hz
Additional Outputs (FOR):	OVER RANGE, analog signal supplied to transmitter is above normal input range LOCK, turns on when FOR receives adequate light input from fiber 5-30VDC at 5mA, open collector
LED Indicators: Green	- LOCK, receiving adequate optical signal strength from transmitter (FOR) - PWR, power is applied to transmitter (FOT)
Amber	- OVR, analog input signal at the mated transmitter is above 10VDC/20mA - LOW, analog input signal is below 0VDC/4mA
Ambient Conditions:	-40°C to 85°C Operational 0 to 95% Relative Humidity, Non-Condensing
Mounting:	35mm DIN-Rail
Weight/Unit:	< 9oz (250g)
Housing Material:	Plastic (UL94V-0)

Dimensions

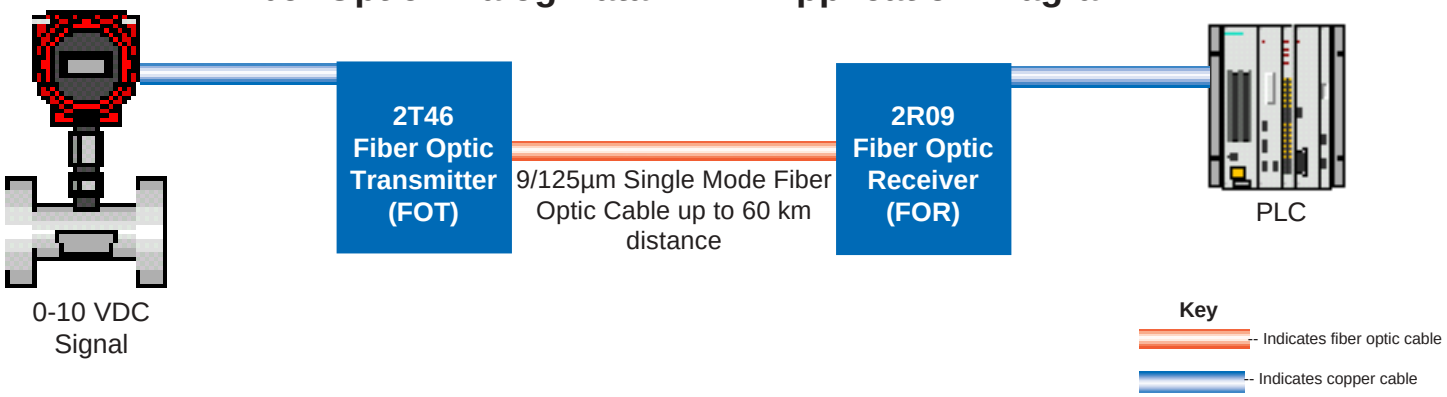


Accessories	
2M01	Digital Volt Meter, 3 ½ Digit
2M02	Digital Current Meter, 3 ½ Digit
2A56	Power Supply, 85-240VAC, 50/60Hz or 85-125VDC

Features:

- No calibration required.
- Transmission of 4-20mA or 0-10VDC analog signals over a single fiber optic cable
- Compatible with multi-mode or single mode optical fiber
- Alarm outputs provided for signal LOCK and OVR (over range) conditions
- Available with dual redundant, hot swappable power supplies

Fiber Optic Analog Data Link - Application Diagram



Fiber Optic Data Links

Multi-Channel Contact Closure

The EOTec 2SXX/2HXX fiber optic Multi-Channel Contact Closure transceiver modules are used to convert **up to 10** contact closure inputs (switches, relays, etc.) into fiber optic signals for transmission over a **single** fiber optic link. Upon activation of the inputs, the receiver module receives the transmitted signals and de-energizes a corresponding, on-board relay operating in a fail-safe mode for switching critical systems.

Each transceiver module includes two inputs and is capable of driving up to 10 inputs by cascading additional dual channel input modules. An integrated backplane allows for communications between modules with no external inter-modular connection. Power to all modules is derived from any standard EOTec 2000 power supply through the integrated BUS connector or from an external 24VDC source supplied directly to the transceiver module.

Model Number	Description	Optical Dynamic Range	Input/Output Type	Connector
2S06	2-Channel, 850 nm, Multi-mode, Main Transmitter	12 dB	Dry Contact Input	SMA
2S07	2-Channel, 850 nm, Multi-mode, Main Transmitter	12 dB	Dry Contac Input	ST
2S09	2-Channel, 1300 nm, Multi-mode, Main Transmitter	12 dB	Dry Contact Input	ST
2S36	2-Channel, 1300 nm, Single mode, Main Transmitter	10 dB	Dry Contact Input	ST
2S46	2-Channel, 1300 nm, Single mode, Main Transmitter	16 dB	Dry Contact Input	ST
2H07	2-Channel, 850 nm, Receiver		Form C Relay Output	ST
2H09	2-Channel, 1300 nm, Receiver		Form C Relay Output	ST
2P02	2-Channel Input Module		Dry Contact Input	Screw Terminal
2K02	2-Channel Output Module		Form C Relay Output	Screw Terminal

Specifications – Multi-Channel Contact Closure

Power Requirements: 7.5 VDC via the BUS interconnections (from any EOTec 2000 power supply module)or 24VDC @ 1.5A, via a pluggable, screw terminal block on the 2SXX/2HXX module

Relay Contact Output: SPDT Form C relay, Pluggable Screw Terminal, 12 to 24 AWG(0.5-2.4mm) Cage-Clamp
60W, 125VA, maximum switching power
220VDC, 250VAC, maximum switching voltage
2A switching, 3A carry, maximum current
100,000,000 cycles, minimum operational life

Contact Closure Input: External Dry contacts connected via pluggable, screw terminal blocks
Accepts 12 to 24 AWG, 5VDC @ 1.4mA min. contact rating, 1K ohm max. resistance

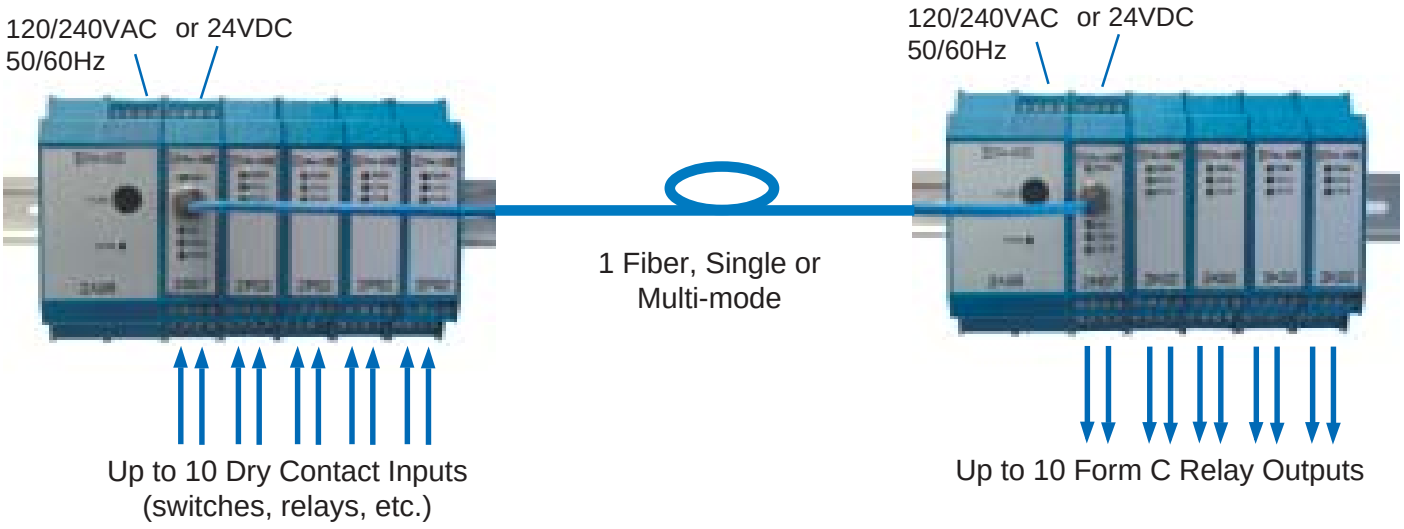
LED Status Indicators: Power On – Green, Ch. A Relay energized/input contact closed – Green, Ch. B Relay energized/contact input closed – Green, Fiber Transmit - Amber

Data Update Rate: 15mS regardless of the number of channels utilized

Ambient Conditions: -40°C to 85°C Operational

Fiber Optic Data Links

Multi-Channel Contact Closure - Application Diagram



Features/Benefits:

- Modular design for transmitting 2 to 10 contact closure signals
- Fail-safe operation
- Electrical isolation
- Reliable EMI, RFI free communications
- Cost-effective, low maintenance installation
- Available with dual redundant, hot swappable power supplies
- Suitable for mounting on standard 35 mm DIN rail

Applications:

- Safety shutdown systems
- Remote transmission over long distances (up to 16 miles)
- Transmission through hazardous areas
- Alarm event triggering

Digital Data Links - Contact Closure

The FOT-CC and FOR-CC Fiber Optic Transmitter/Receiver can be used to transmit contact closure data over long distances. DIN-Rail mount housings enable easy mounting on industry standard hardware. The FOT-CC Transmitter provides a closed contact signal to the FOR-CC Receiver, which activates a Single Pole Double Throw (SPDT) relay. These devices can be used with 50/125 to 200/230 µm fiber optic cable and provide ground loop isolation.

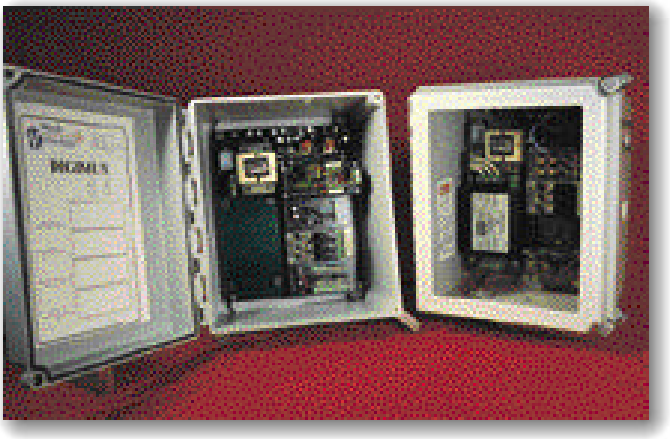
Model Number	Description	Input/Output	Optical Connector
FOT-CC	Transmitter	Dry Contact Input	ST
FOR-CC	Receiver	Form-C Relay Output	ST
PSM-CC	Power Supply	100-250VAC Input 24VDC @ 200mA Output	Screw Terminal

Specifications - Digital Links

Power: 24VDC @50 mA
Optical Dynamic Range: 30dB into 200/230µm, 18dB into 62.5/125µm
Optical Wavelength: 850nm multi-mode (standard), 1300nm multi-mode and single mode (optional)
Relay Contact Rating (FOR-CC): 5A @ 30VDC, 10A @ 125VAC, 6A @ 277VAC
Connections: Cage-Clamp screw terminals, 12 - 24 AWG (0.5-2.4mm)
Indicators: Green LED - Power, Closed Contacts
Input (FOT-CC): Dry contacts, 10 ohms max. contact resistance
Ambient Conditions: -40 to 85°C Operational, 0 - 90% Rel. Humidity, Non-condensing

Multiplexers

The Series 8000 Digimux is a versatile, industrially-hardened, bi-directional four channel fiber optic multiplexer. A selection of modules such as RS-232, 0-20 mA analog, or dry-contact closure are available for flexible system configurations. The rugged electronics and optional housings are suitable for outdoor installations. Up to 12 contact closure signals can be transmitted (3 per channel). No programming is needed. Applications include remote analog data acquisition, smoke stack instrumentation and extension of DCS or PLC systems.



Model Number	Description
8010	Digimux Base Board, 120VAC, accepts up to 4 modules
8020	Digimux Base Board, 24VDC, accepts up to 4 modules
8B01	RS-232 Bidirectional, with handshake module
8R02	Dual Output, Uni-Directional, Form C relay module
8T02	Dual Dry Contact Input, Uni-Directional module
8R03	Triple Output, Uni-Directional, Form C relay module
8T03	Triple Dry Contact Input, Uni-Directional module
8RAA	Single Output, 4-20mA, Uni-Directional module
8TAA	Single Input, 4-20mA, Uni-Directional module
8EFG	10" x 8" x 6", 254mm x 203mm x 158mm NEMA 4/4X/12/13, hinged fiberglass enclosure
8EPS	10" x 8" x 4", 254mm x 203mm x 102mm NEMA 12/13, hinged painted steel enclosure

Discontinued

Specifications - Multiplexers

Signal Transmission Type: Asynchronous full or half duplex
Power Requirements: 100mA @ 120VAC
Operating Temperature: 0 to 70°C
Interface Type: RS-232, 0-20mA analog, dry contacts
Compatible Fiber Sizes: 50/125µm, 62.5/125µm, 100/140µm, 200/230µm
Power Budget: 23 dB @ 850nm into 200/230µm; 14.5 dB @ 850nm into 62.5/125µm
Connector Types: ST (standard), SMA (optional)

Nuclear Qualified Fiber Optic Data Link

Weed Instrument Models N9287 and N9288 Series Analog Fiber Optic Data Links are a highly accurate fiber optic transmission system designed to convert 0 - 10 Volt DC signals into a fiber optic signal transmitted via fiber optic cable up to 10,000 feet (3km). The fiber optic signal is then converted by the fiber optic receiver unit into a directly proportional analog 0 - 10 Volt signal. There are no field adjustments required. The fiber optic cable provides total electrical isolation eliminating problems with noise spikes, ground potential differences, and lightning.The Model N9287 and N9288 Analog Fiber Optic Data Links have been qualified to meet the seismic requirements of IEEE 344-1987 and mild environment requirements of IEEE 323-1974/83 per Weed Test Report #04-7531-306-RPT.

Model Number	Description	Input/Output	Power
N9287	Transmitter	0 - 10 VDC	+15VDC. 70mA
N9288	Receiver	0 - 10 VDC	±15VDC, 50mA

Specifications - Nuclear Data Links

Optical Connector: SMA
Wire Connection: 0.375" screw terminal barrier strip, 12-22 AWG (0.5-2.4mm)
Accuracy (inclusive of offset, gain, linerarity: 0.05%
Response time/Sampling Time: 4ms
Wavelength: 850nm

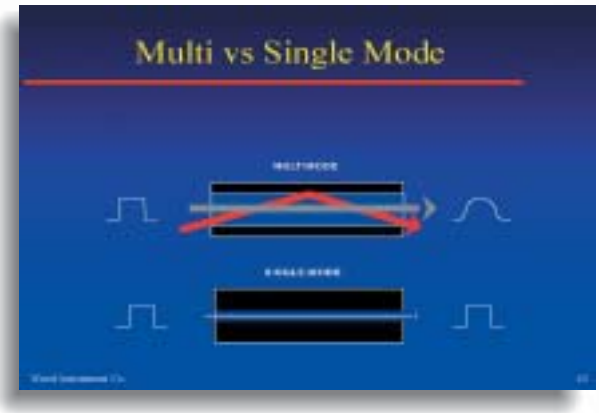
Accessories & Service

Termination Kits

Termination kits are available for 200/230µm fiber sizes for SMA and ST connectors. The kits are easy to use by plant personnel and do not require epoxy or polishing, thus providing cost-effective installation. Fiber optic jumpers and connectors can also be supplied. These assemblies are extremely rugged to survive harsh plant conditions.

Test Equipment

A comprehensive range of specialized fiber optic test equipment is available for either purchase or rental. This equipment includes Optical Time Domain Reflectometers (OTDR), battery-powered Optical Power Meters, light sources, and accessories. Training and on-site support services are available for learning how to use the equipment and for developing customized maintenance and troubleshooting programs.



Training Seminars

Weed Fiber Optics provides both on-site training programs as well as comprehensive public seminars on topics ranging from the basics of fiber optic theory and system design to hands-on fiber termination and cable installation training. Training sessions can run from two hours to three days and can be custom designed to meet your specific needs. Training is focused on Instrumentation and Control applications, and is taught by Weed's experienced staff.

Services

Custom Engineering

Weed Instrument design engineers are experts in the fields of fiber optics, multiplexing, signal conditioning, and industrial control system design. If equipment is needed beyond our standard product lines, custom designs or modifications can be provided. The staff also has immediate access to other Weed Instrument experts in temperature and pressure sensing equipment and applications.

Field Support

Highly experienced technicians and engineers are available to assist in the installation, start-up, maintenance, and troubleshooting of fiber optic systems. They have extensive experience in many types of industrial manufacturing plants and power facility applications and are available for emergency dispatch or scheduled system start-ups. Our staff is equipped with the latest equipment such as OTDRs and digital scopes.

Customer Service

Taking care of our customers is priority one for Weed Instrument. We respond to all of their questions and concerns with the greatest respect. We believe it is very important to follow up on every phone call, quote and purchase order for customer satisfaction.

We have the ‘can do’ attitude to make sure our customers are completely confident in choosing our products for their industrial application. If you should need technical questions answered or assistance with installing our products, please contact us, and we will gladly put you in touch with one of our highly experienced Applications Engineers to make sure your questions are answered promptly.

PLC Manufacturer Programs

Alliances

Weed Instrument works closely with the leading PLC manufacturers to ensure that our fiber optic modems interface properly with their products. We are members of Rockwell Automation's Encompass program, GE-Fanuc's Accompany program, and Schneider Electric's Alliances program.

Corporate Profile

Weed Instrument Company is a leading supplier of instrumentation and control equipment for industrial, process and power control applications. Through constant innovation, the company has rapidly expanded since 1968 to become a leading supplier of accurate and reliable sensing devices and data communications equipment for harsh industrial environments. Sensing products include temperature sensors, switches and transmitters. Weed Instrument specializes in a wide range of fiber optic and custom products, and provides field support for plant communications, instrumentation, and control applications.

The Fiber Optic division of Weed Instrument was established through acquisition of two pioneering companies in the application of fiber optic technology to the industrial market, EOTec (from 3M) and APEC. Both companies had over ten years of experience in providing fiber optic solutions specific to factory automation and process control. Weed Instrument is continuing this pioneering spirit through such achievements as being the first company to receive FM Approval for fiber optic based products in hazardous areas and developing new technologies such as bi-directional communications over a single fiber.

Our staff is comprised of individuals from the I&C industry, and has a good understanding of the needs and problems specific to industrial applications. We provide complete systems product support including conceptual design, design engineering, manufacturing, testing, field installation, maintenance and calibration. Currently, Weed Instrument Company has manufacturing, testing and engineering facilities located in Round Rock, Texas.

Fiber optic products are available immediately from stock.

www.weedinstrument.com

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