

Description

The FOI-4110 fiber optic isolator uses 820nm optics as a low cost solution for 10BASE-T to 10BASE-FL and 100BASE-TX to 100BASE-SX Ethernet communications. The 820nm optics also provide backward compatibility with legacy devices that have a 10BASE-FL interface. For applications that require a 100BASE-FX interface or applications that require a fiber optic cable run greater than 300m, the FOI-4110W is available with 1300nm optics.

The units will have an automatic MDI/MDIX switch over capability that allow users to use either a straight or crossover cable for all LAN configurations. This eases the installation process for simple plug and play. A typical link consists of two FOI-4110, one at each end of the network, with a duplex fiber optic cable between them as shown under "TYPICAL APPLICATION".

The units can be used in areas of high electrical noise or in and out of RF shielded enclosures. The fiber optic cable is not susceptible to interference caused by impulse noise, crosstalk, or EMI. FiberPlex recommends "R" units for high security applications because they have added filtering and shielding for RFI suppression.



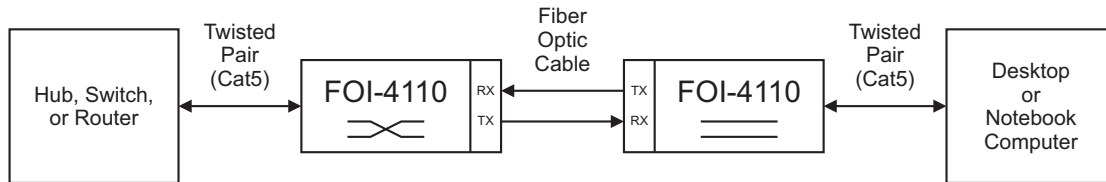
Ethernet

- 10BASE-T to 10BASE-FL**
- 100BASE-TX to 100BASE-SX**
- 100BASE-TX to 100BASE-FX**

Features:

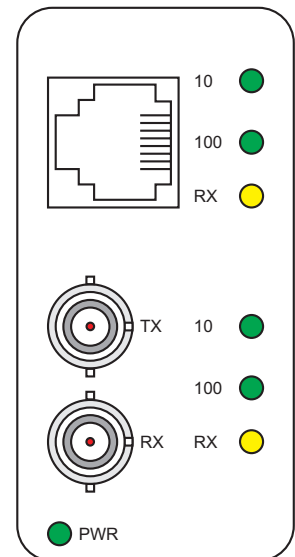
- Data Rates: 10 Mbps and 100 Mbps
- Compliant with: IEEE 802.3, TIA/ EIA-785
- Automatic MDI/MDIX switch over capability. If the Cat5 transmit and receive pairs are reversed, the unit will automatically swap both pairs internally. Therefore, either a crossover or straight cable can be used.

Typical Application



LED Indicators

	Label	Color	Description
Power	PWR	Green	Power supply in FOI unit is operating properly.
		Off	No power from the PSQ power supply or open fuse inside the FOI unit. Check that the PSQ power supply is operating properly. If the PSQ power supply is good, separate the FOI unit from the PSQ power supply for 30 seconds and then reattach so that the fuse inside the FOI unit has time to reset. If the PWR led is still off or not constant, replace the FOI unit.
Twisted Pair	10	Green	10BASE-T twisted pair link has been established.
	100	Green	100BASE-TX twisted pair link has been established.
	10 or 100	Off	No twisted pair link pulses detected. The unit will detect the link partner's transmit and receive pairs, and determine the correct alignment. If it is not correct, it automatically swaps the transmit and receive pairs internally. Therefore, either a crossover or straight cable can be used. For more information, please see the RJ-45 pinout tables.
	RX	Amber	Twisted pair receive data is being detected.
Optic	10	Green	10BASE-FL optical link has been established.
	100	Green	100BASE-SX or 100BASE-FX optical link has been established.
	10 or 100	Off	No optical link pulses detected or optical level too low. Check that the opposite unit has power and that the fiber optic cables are properly connected. The TX optic from one end of the network connects to the RX optic at the opposite end and vice versa as shown under "TYPICAL APPLICATION".
	RX	Amber	Optical receive data is being detected.



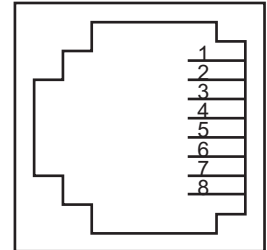
FOI-4110-ST Front View

RJ-45 Crossover Pinout

Pin	Direction	Description
1	Out	Transmit +
2	Out	Transmit -
3	In	Receive +
4		
5		
6	In	Receive -
7		
8		

RJ-45 Straight Pinout

Pin	Direction	Description
1	In	Receive +
2	In	Receive -
3	Out	Transmit +
4		
5		
6	Out	Transmit -
7		
8		



FOI-4110 Optical Characteristics

Standard	Fiber	Size	Max Distance	Wavelength	Output Power	Receiver Sensitivity	Loss Budget
10BASE-FL	multimode	62.5/125 μm	2 km	820 nm	-18 dBm	-30 dBm	12 dB
100BASE-SX	multimode	62.5/125 μm	300 m	820 nm	-18 dBm	-24 dBm	6 dB

FOI-4110W Optical Characteristics

Standard	Fiber	Size	Max Distance	Wavelength	Output Power	Receiver Sensitivity	Loss Budget
10BASE	singlemode	9/125 μm	20 km	1300 nm	-15 dBm	-30 dBm	15 dB
100BASE-FX	multimode	62.5/125 μm	2 km	1300 nm	-18 dBm	-30 dBm	12 dB
	singlemode	9/125 μm	20 km	1300 nm	-15 dBm	-30 dBm	15 dB

The main difference between the FOI-4110 and the FOI-4110W is the wavelength. The FOI-4110 multimode optics are rated at 820nm for 100BASE-SX applications, while the FOI-4110W multimode optics are rated at 1300nm for 100BASE-FX applications. Although the FOI-4110 is limited to a maximum distance of 300m for 100BASE-SX applications, the cost of 820nm multimode optics are much cheaper than that of the 1300nm multimode optics used in the FOI-4110W. It is assumed that some multimode fiber installations have a distance of 300m or less, making the FOI-4110 the lower cost solution.

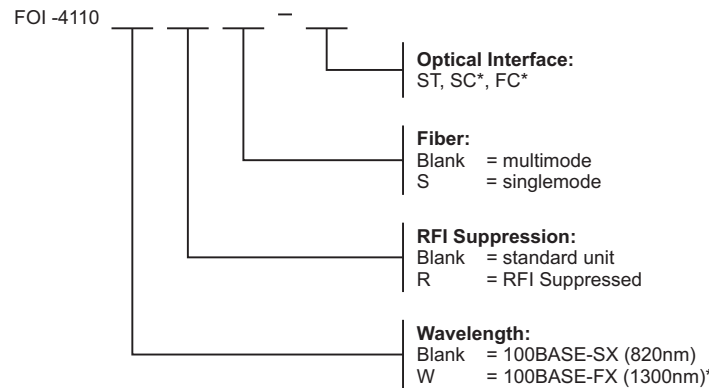
Specifications

		minimum	typical	maximum	unit
Power Requirement	Voltage Range	7	9	12	V
	Supply Current	-	400	-	mA
Environmental	Storage Temperature	-40	-	85	°C
	Operating Temperature	0	-	50	°C
Data Rate	10BASE-T	10 Mbps			
	100BASE-TX	100 Mbps			
Line Encoding	10BASE-T	Manchester			
	100BASE-TX	MLT3 (Multi Level Transition 3)			
Interface Connector	RJ-45				
Case Dimensions	Size 4	length	width	height	weight
		4.5 in (114 mm)	1.453 in (37 mm)	2.562 in (65 mm)	2 lb (0.9 kg)

Accessories

Model	Description
CMA-2001	Chassis Mounting Adapter for RMC-2101
CMA-3002	Chassis Mounting Adapter for RMC-3101, RMC-3102
PSQ-4910	Power Supply for FOI-4xxx series
RMC-2101	Rack Mount Chassis 3-1/2" H x 19" W, rear access
RMC-3101	Rack Mount Chassis 5-1/4" H x 19" W, front access
RMC-3102	Rack Mount Chassis 5-1/4" H x 19" W, front access with optical patch panel
WMA-2001	Wall Mount Adapter with optical patch
WMA-3002	Wall Mount Adapter

Ordering Information



* Indicates Custom Catalog Item

Standard Options:

- FOI-4110-ST
- FOI-4110S-ST
- FOI-4110R-ST
- FOI-4110RS-ST

For special applications that require custom units, please call FiberPlex for more information.