

FOI-2890

FIBER OPTIC ISOLATOR

Description

The FOI-2890 provides complete electrical isolation for 4 channels of control signals and relay closures and 2 channels of asynchronous or synchronous RS-232 communications.

The unit 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. Privacy of communications is also enhanced because the fiber optic cable does not radiate any emissions. FiberPlex recommends "R" units for high security applications because the units have added filtering and shielding for RFI suppression.

In addition, fiber optic cable offers much longer transmission distances than copper wiring. Multimode optics on the unit can extend the distance to 2km, while singlemode optics can further extend the distance to 20km. A typical link consists of two FOI-2890, one at each end of the network, with a duplex fiber optic cable between them as shown under "TYPICAL APPLICATION".



Control / Alarm

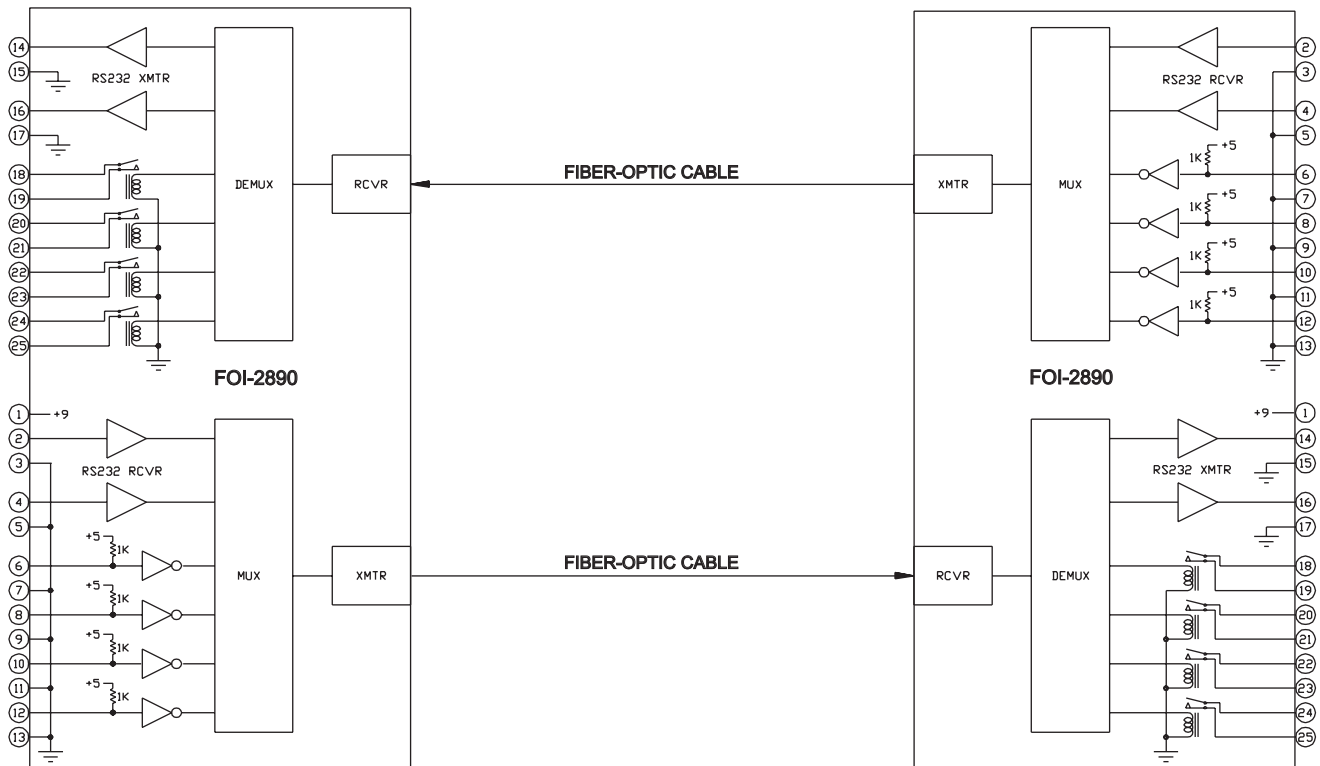
Four 0 to +5 VDC inputs
Four SPST Form A relay closures

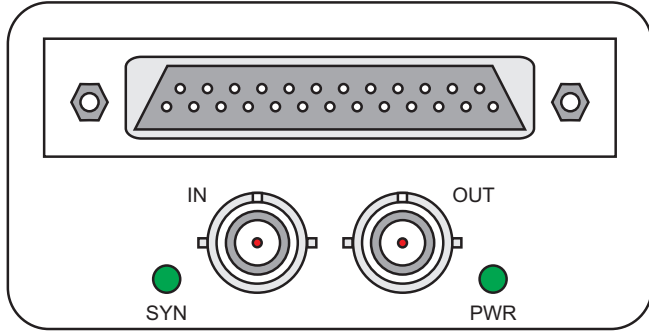
Two TIA/EIA-232 (RS-232) transmitters and receivers

Features:

- Data Rate: DC to 230 kbps
- During power failures or interruptions, the relays will hold the last commanded state until powered is restored and commanded differently.
- TIA/EIA-232 (RS-232) compatible with:
 - TIA/EIA-562 (RS-562)
 - MIL-STD-188C
- Typical applications include:
 - Alarm Indicators
 - Lock Actuators
 - HVAC Instrumentation and Control

Typical Application



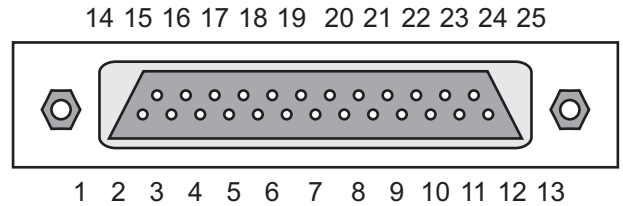


FOI-2890-ST Front View

LED indicators

Label	Color	Description
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.
SYN	Green	Optical signal in detected.
	Off	No optical signal in or optical level too low. Check that the opposite unit has power and that the optical cables are properly connected. The transmit OUT optic from one end of the network should go to the receive IN optic at the opposite end as shown under "TYPICAL APPLICATION".

TO DTE



FOI-2890 DB-25 Female pinout

	Pin	Direction	Description
	1	Out	+9VDC
Channel 1	2	In	TIA/EIA-232 Receiver
	3		Signal Ground
	14	Out	TIA/EIA-232 Transmitter
	15		Signal Ground
Channel 2	4	In	TIA/EIA-232 Receiver
	5		Signal Ground
	16	Out	TIA/EIA-232 Transmitter
	17		Signal Ground
Channel 3	6	In	Control Input
	7		Signal Ground
	18		Common
	19		Normally Open
Channel 4	8	In	Control Input
	9		Signal Ground
	20		Common
	21		Normally Open
Channel 5	10	In	Control Input
	11		Signal Ground
	22		Common
	23		Normally Open
Channel 6	12	In	Control Input
	13		Signal Ground
	24		Common
	25		Normally Open

The table above describes the de-energized states of the relays. Relays are de-energized when the control inputs are left unconnected or held high. During power failures or interruptions, the relays will hold the last commanded state until power is restored and commanded differently.

Specifications

		minimum	typical	maximum	unit
Power Requirement	Voltage Range	7	9	12	V
	Supply Current	-	150	-	mA
RS-232	Data Rate	DC	-	230	kbps
	Sampling Jitter	0	-	15	%
	Input Resistance	3	5	7	kΩ
	Input Voltage Range	-25	-	25	V
	Output Voltage Swing	±3.7	±5	±6	V
Control Signals for Relay Closure	Data Rate	DC	-	9.6	kbps
	Sampling Jitter	0	-	10	%
	Input Voltage Range	0	-	5	V
	Output Voltage Swing	0	-	5	V
Relay Contact Data	Nominal Switching Capacity	1A at 30VDC			
		0.5A at 125VAC			
Environmental	Storage Temperature	-40	-	85	°C
	Operating Temperature	0	-	50	°C
Interface Connector	DB-25 Female				
Case Dimensions	Size 2	length	width	height	weight
		4.5 in (114 mm)	1.312 in (33 mm)	2.562 in (65 mm)	2 lb (0.9 kg)

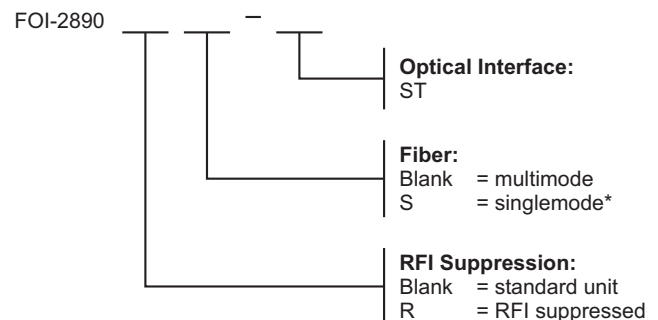
Optical Characteristics

Fiber	Size	Max Distance	Wavelength	Output Power	Receiver Sensitivity	Loss Budget
Multimode	62.5 / 125 μm	2 km	820 nm	-18 dBm	-30 dBm	12 dB
Singlemode	9 / 125 μm	20 km	1300 nm	-15 dBm	-32 dBm	17 dB

Accessories

Model	Description
CMA-2001	Chassis Mount Adapter for RMC-2101
CMA-3002	Chassis Mount Adapter for RMC-3101, RMC-3102
PSQ-2910	Power Supply for FOI-2xxx 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-2890-ST
FOI-2890R-ST

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