

FOI-3901 and FOI-3902

FIBER OPTIC ISOLATOR



Description

The FOI-3901 and FOI-3902 both provide complete electrical isolation for Nortel's Meridian M2000 and M3000 series digital telephones. The FOI-3901 connects to the digital line card and automatically senses and corrects any improper polarity reversals on the RJ-11. The bidirectional signaling between the digital line card and telephone is then carried across a duplex fiber optic cable. The FOI-3902 reproduces the digital signaling at the isolated end of the fiber optic link and provides power sufficient to operate M2000 and M3000 series digital telephones.

The FOI-3902 is compatible with Nortel's A0367335 plug-in transformer, which provides power to support the additional features on the M2016S digital telephone. A closet power supply can also be used to provide auxiliary power but the power must be inserted between the FOI-3902 and the digital telephone.

In addition, fiber optic cable offers much longer transmission distance than traditional telephone line cord wiring. Nortel's Meridian digital telephones are limited to a maximum distance of 1750 feet (458m) from the PBX to the telephone on 24 gauge wire, but multimode and singlemode optics on the units can extend the distance to 2km. A typical link consists of an FOI-3901 at the PBX and an FOI-3902 at the telephone with a duplex fiber optic cable between them as shown under "TYPICAL APPLICATION".



Telephone

**Northern Telecom (Nortel)
Meridian Telephone System**

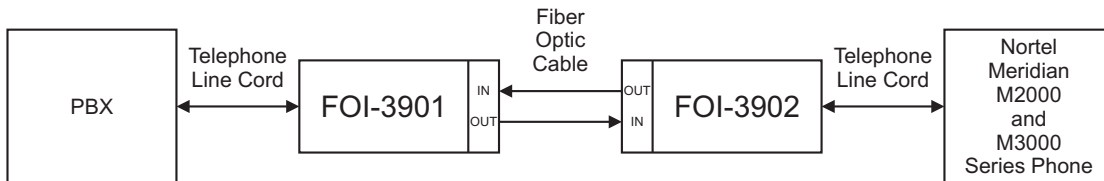
FOI-3901: To PBX

FOI-3902: To Phone

Features:

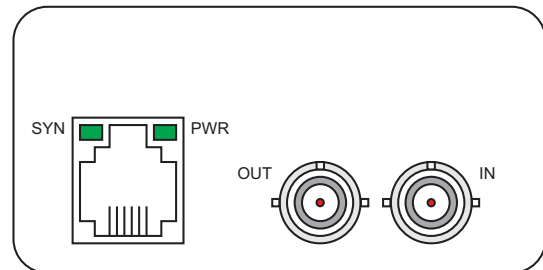
- Supports all system features on M2000 and M3000 series digital telephones.
- Supports balanced 2-wire signaling between PBX and digital telephone.
- FOI-3901 provides automatic polarity correction. If the wiring to pins 3 and 4 are reversed, the unit will automatically swap the pair internally.
- FOI-3902 supplies $\pm 15VDC @ 50mA$ to power digital telephones.
- FOI-3902 is compatible with Nortel's A0367335 plug-in transformer.

Typical Application



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 Solid	Card is in sync.
	Green Flash	Optical signal in detected.
	Off	No optical signal in or optical level too low. Check that the opposite card has power and that the fiber optic 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".



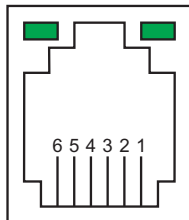
FOI-3901-ST and FOI-3902-ST Front View

Specifications

		minimum	typical	maximum	unit
Power Requirement	Voltage Range	7	9	14	V
	FOI-3901 Supply Current	-	350	-	mA
	FOI-3902 Supply Current	-	500	-	mA
Environmental	Storage Temperature	-40	-	85	°C
	Operating Temperature	0	-	50	°C
Data Rate	512 kbps				
Line Encoding	Balanced Differential AMI (Alternate Mark Inversion)				
Receiver Sensitivity	400 mVpk-pk (-15 dB loss)				
Interface Connector	RJ-11				
Case Dimensions	Size 3	length	width	height	weight
		5.75 in (146 mm)	1.453 in (37 mm)	3.188 in (81 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	1300 nm	-19 dBm	-30 dBm	11 dB
Singlemode	9 / 125 μm	2 km	1300 nm	-15 dBm	-28 dBm	13 dB



FOI-3901 RJ-11 Pinout

Pin	Wire Color	Description
1	White	
2	Black	
3	Red	Ring (-) -15VDC or +15VDC ²
4	Green	Tip (+) +15VDC or -15VDC ²
5	Yellow	
6	Blue	

2 The FOI-3901 has an automatic polarity correction that will internally swap pins 3 and 4 if the pair is reversed.

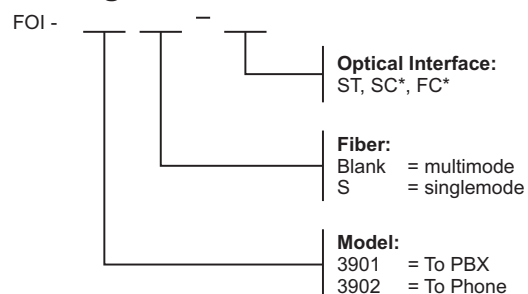
FOI-3902 RJ-11 Pinout

Pin	Wire Color	Description
1	White	GND
2	Black	
3	Red	-15VDC (50mA max)
4	Green	+15VDC (50mA max)
5	Yellow	
6	Blue	+42VDC (200mA max)

Accessories

Model	Description
CMA-3002	Chassis Mount Adapter for RMC-3101, RMC-3102
PSQ-3910	Power Supply for FOI-3xxx series
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



Standard Options:

FOI-3901-ST
FOI-3901S-ST
FOI-3902-ST
FOI-3902S-ST

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