

Media Converter

Fast Ethernet 100Base-Tx / Fx

1 General

The RPO Fast Ethernet media converter is designed to convert 100BaseTx to 100BaseFx via low cost optical plastic fiber. This enables a safe data transmission in EMI loaded area.

The media converter supports full duplex communication.

The maximum cable distance is 70m (by using standard optical plastic fiber).



Pic 1

2 Application

- 100Base-Tx via low cost optical plastic fiber
- EMI immunity
- potential separation
- lightning protection

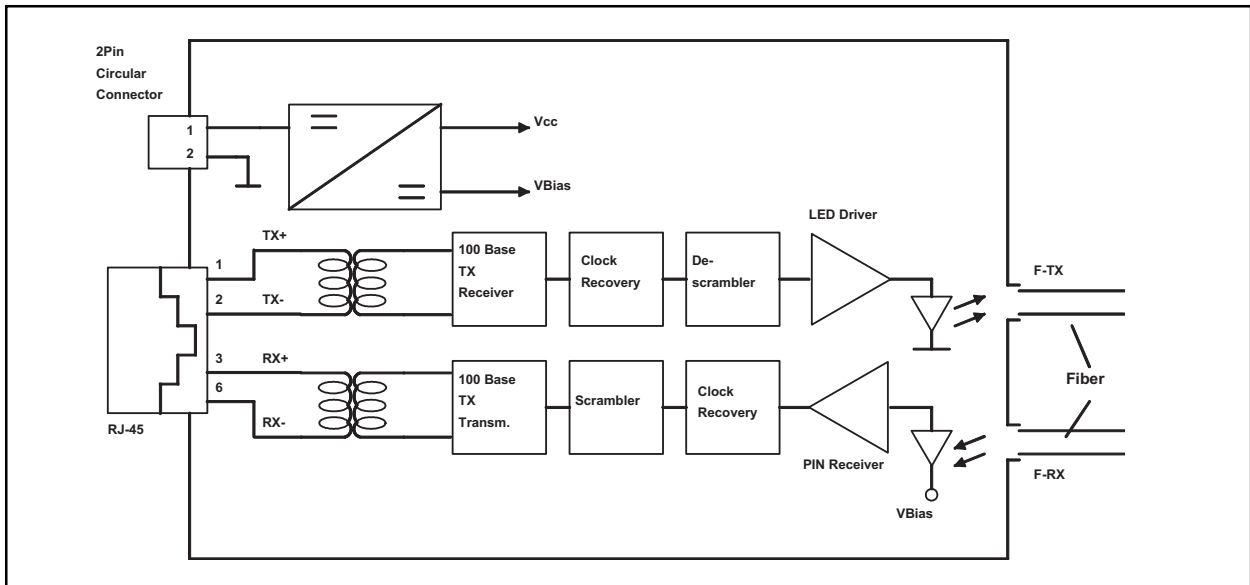
3 Ordering Information

Specification	Part Number
650 nm / RPOpto Clamp	901 F6 520 KR 001
suitable power supply	901 B1 M9

5 Features

- 1 channel Fast Ethernet FO transceiver
- Full duplex communication
- 100 MBit data rate
- „F-Link“ LED
- „T-Link“ LED
- „F-Rcv“ LED
- „T-Rcv“ LED
- 8 way RJ-45 TX port
- optical clamp system `RPOpto clamp`
- FO termination without connectors
- Aluminium case
- 9...30V DC Power Supply

4 Block Diagram



Pic 2

Fast Ethernet 100Base-Tx / Fx

6 Options

On request the media converter can be ordered with a latching element for rail mounting.

7 CE-Declaration of Conformity

The Fast Ethernet media converter meets the basic requirements according to Article 4 and Appendix III of Directive 89/336/EEG: Electromagnetic Interference (EMI). The Fast Ethernet media converter complies with the followings standards:

- EN 55022 or EN 50081-1
- EN 55024 or EN 50082-1
- EN 50082-2 (Industrial use)

8 Operation

The RPO media converter ist designed to translate 100Base-Tx to 100Base-Fx. The converter works at the physical layer and is complete protocol transparent.

The TX port supports MLT-3 data transmission with Cat5 cable up to 10 meters.

The FX port transmits the data in NRZ 4B5B coding at an optical wavelength of 650nm.

The media converter supports no Auto Negotiation information via the optical fiber.

Corresponding FLP (Auto-Neg. Field Link Pulse) are generated automatically by the media converter.

9 Function Monitoring

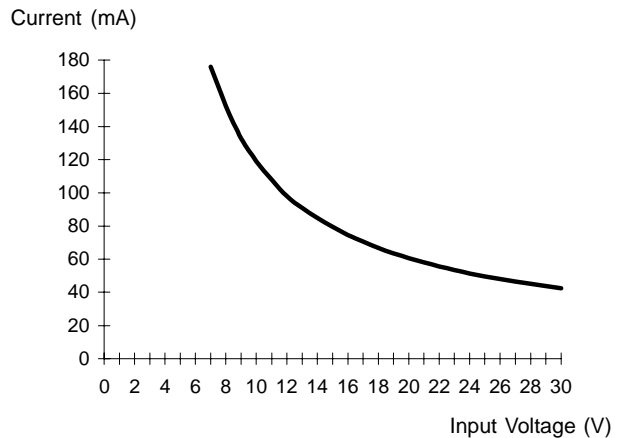
Provide LEDs for easy network monitoring

- T-Link : On when el. Port established a valid link.
- T-Rcv : Flashing when data packets received on TX Port.
- F-Link : On when opt. Port established a valid link
Flashing when opt. Port detects an invalid link.
- F-Rcv : Flashing when data packets received on FX Port.

10 Power Supply

The media converter can be powered by an unregulated DC power supply with min. 9V up to 30V output voltage.

A switching regulator generates +5V power for the media converter.



Pic. 3

Fast Ethernet 100Base-Tx / Fx

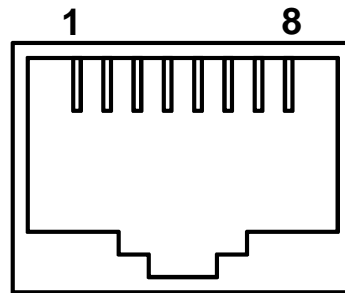
11 Installation

- Make sure that all equipment is off power to avoid electrical damage during installaion.
- Connect the media converter with a Cat5 patch cable (straight through or crossover cable, see RJ-45 Female Pin Assignment) to the network components.
- Connect the FO cable with the media converters (see Pic.4).
- switch power on at all equipment.



Pic. 4

13 RJ-45 Female pin assignment



Pic. 6

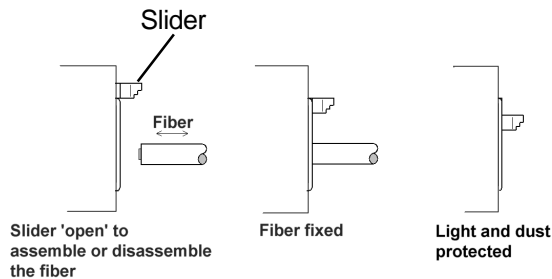
PIN No.	Name	Function
1	Tx+	Data IN +
2	Tx-	Data IN -
3	Rx+	Data OUT +
4	Com	Ground
5	Com	Ground
6	Rx-	Data OUT -
7	Com	Ground
8	Com	Ground

When connecting a computer directly to the media converter, use a straight through patch cable. When connecting a switch directly to the media converter, use a crossover patch cable.

12 FO Connection

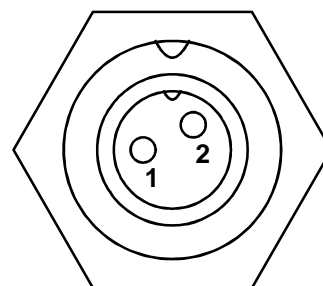
A special feature of the RPO media converter is the plugless fiber clamp system (RPopto clamp). It is easy to use.

1. Prepare the fiber with a suitable tool (e.g. RPsimple-Cut).
2. Open the RPopto clamp.
3. Bring in the fiber into the RPopto clamp.
4. Close the clamp to fix the fiber.



Pic. 5

14 Circular Connector



Pic. 7

PIN No.	Name	Function
1	V+	+9V ... 30V DC power supply
2	Gnd	System ground

Fast Ethernet 100Base-Tx / Fx

15 Maximum Ratings _____

Power supply +V _____ +35V DC
 Storage temperature _____ -55..+125°C
 Operation temperature _____ -10..+85°C

Stresses beyond those listed under 'Maximum Ratings' may cause permanent damage to the modem. Above listed values are stress limits only and functional operation of the media converter at these conditions is not recommended. Exposure to maximum rating conditions for extended periods may affect the modem reliability.

16 Technical Data _____

Data rate:	125MBit/s
min. opt. P_{IN}:	-21dBm (650nm)
typ. opt. P_{OUT}:	-3dBm (650nm)
Wavelength:	650nm
Spectral bandwidth:	±15nm
opt. Interface:	RPOpto clamp
el. Interface:	RJ45 female
Fiber type:	1mm POF
Cable type:	STP, Cat 5, 100W
Power supply:	+9 ... 30V DC
Current cons.:	max. 180mA (9V DC)
Dimension:	app. 96x55x24 mm (L x W x H)
Protection class:	IP40
Weight:	90g
Temperature range:	-0 .. +70°C

17 Technical Drawing _____

