4A FORA 100Base-TX / 100Base-FX

Media Converters FMC-10X MINI Series

## IMAGE



## DESCRIPTION

4A FORA FMC-10X MINI Series Fast Ethernet CAT 5 to optical Media Converters accepts standard 100 Mbps Fast Ethernet traffic from 100 Base-TX source over CAT 5 connected via a standard RJ45 jack. Ethernet traffic is fed to a 100 Base-FX compatible PHY IC to Fast Ethernet fiber optic transceiver (Tx + Rx) with SC/UPC optical connector.

Auto-MDIX, a standard feature on the PHY IC used in this media converter, automatically corrects for cable cross-over. The PHY provides the optimum data handling conditions for streaming video with excellent quality of service (QoS). This link is particularly suitable for applications such as IPTV delivered over a SMF physical layer.

The media converter may be used wherever it is required to convert Fast Ethernet traffic from copper cables to an optical cable. A pair of media converters may be used to form an optical "bridge" between two copper based networks. A single media converter may be used to link a unit already equipped for Single Mode Fiber into a copper cable based network.

## FEATURES

- Converts Ethernet over copper to Ethernet over SMF
- 100 Mbps data (125 MBd) throughput sends
- high speed Fast Ethernet up to 100 meters over SMF
- high speed 1310nm/1550nm or 1550nm/1310nm FP/PIN transmitter/receiver
- Compatible with IEEE 802.3u Fast Ethernet data communications standard
- Auto MDIX simplifies cable selection
- Enables low cost and rugged optical data networks
- RoHS compliant

## APPLICATIONS

- Point to Point Fast Ethernet Links
- Set top box to gateway box in home network
- Networking of robots in industrial environment
- Connection of medical devices
- IPTV over SMF
- Secure/tamperproof network
- High EMI immunity

**FORA**

■ SPECIFICATIONS

| Temperature / Humidity Specifications | | | | |
|---|---|---|---|---|
| Parameter | Symbol | Minimum | Maximum | Unit |
| Storage temperature | $T_{ST}$ | -20 | +80 | °C |
| Operating temperature | $T_{OP}$ | +5 | +65 | °C |
| Storage humidity | $H_{ST}$ | 5 | 95 | % |
| Operating humidity | $H_{OP}$ | 10 | 80 | % |

| Media Converter Specifications | | | | | |
|---|---|---|---|---|---|
| Parameter | Symbol | Min | Typ | Max | Unit |
| DC supply voltage | $V_{CC}$ | 4.5 | 5 | 5.5 | V |
| Current consumption | $I_{CC}$ | - | - | 1000 | mA |
| Transmission speed | BD | - | 100 | - | MBps |
| Working TX wavelength (depends on model) | $\lambda_{TX}$ | 1270 | 1310 | 1350 | nm |
| | | 1530 | 1550 | 1570 | |
| Working RX wavelength (depends on model) | $\lambda_{RX}$ | 1530 | 1550 | 1570 | nm |
| | | 1270 | 1310 | 1350 | |
| Spectral Bandwidth (FWHM) | Δλ | - | 30 | 40 | nm |
| Optical Rise Time (20% - 80%) | $T_R$ | - | 1.5 | 2 | ns |
| Optical Fall Time (80% - 20%) | $T_F$ | - | 2 | 3 | ns |
| Average Output Power | Pout | -15 | - | -8 | dBm |
| Minimum Receivable Power | $Pin_{MIN}$ | -30 | - | - | dBm |
| Maximum Receivable Power | $Pin_{MAX}$ | - | - | 0 | dBm |
| Transmission range (SMF) | FL | - | - | 20 | km |

| Other parameters | |
|---|---|
| Parameter | Description |
| Access mode | 100Mbps |
| Optical fiber type | SMF (G.652.C, G.652.D, G.657.A, G.657.A1, G.657.A2) |
| Optical connector | SC/UPC |
| Wavelength | 1310nm/1550nm |
| Copper cable type | STP/UTP CAT 5 twisted pair |
| Copper cable connector | RJ45 |
| Conversion mode | Store and Forward |
| Flow control | Full duplex |
| Bit error rate: | $<10^{-9}$ |
| MTBF | 10 thousand hours. |
| POWER | Power adapter: input: AC 90~264V / output:DC5V 1A |
| Power consumption | <2W |

## LED INDICATOR DESCRIPTION
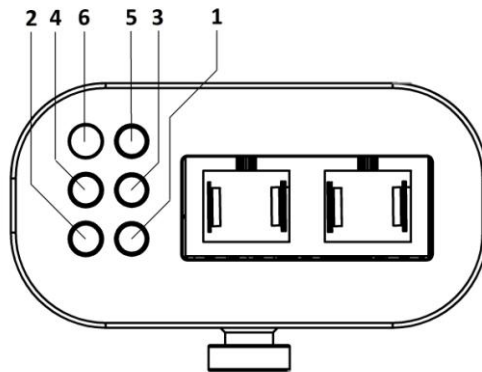


| # | LED Name | LED state | Description |
|---|----------|-----------|-------------|
| 1 | **PWR** (Power) | ON | Device powered normally |
| | | OFF | Device not powered |
| 2 | **TDX** (TX full duplex) | ON | TX port working in full duplex mode |
| | | OFF | TX port working in half duplex mode |
| 3 | **TX LINK/ACT** (twisted pair connected/action) | ON | TX link is in up state |
| | | BLINK | Data transmission via TX port |
| | | OFF | TX link is in down state |
| 4 | **FX LINK/ACT** (optical fiber connected/action) | ON | FX link is in up state |
| | | BLINK | Data transmission via FX port |
| | | OFF | FX link is in down state |
| 5 | **TX100** (twisted pair 100M transmission rate) | ON | Link speed on TX port is 100M |
| | | BLINK | A collision on TX port was detected |
| | | OFF | Link speed on TX port is more or less than 100M |
| 6 | **FX100** (optical fiber 100M transmission rate) | ON | Link speed on FX port is 100M |
| | | BLINK | Link speed on FX port is more or less than 100M |
| | | OFF | A collision on FX port was detected |

## PHYSICAL DIMENSIONS
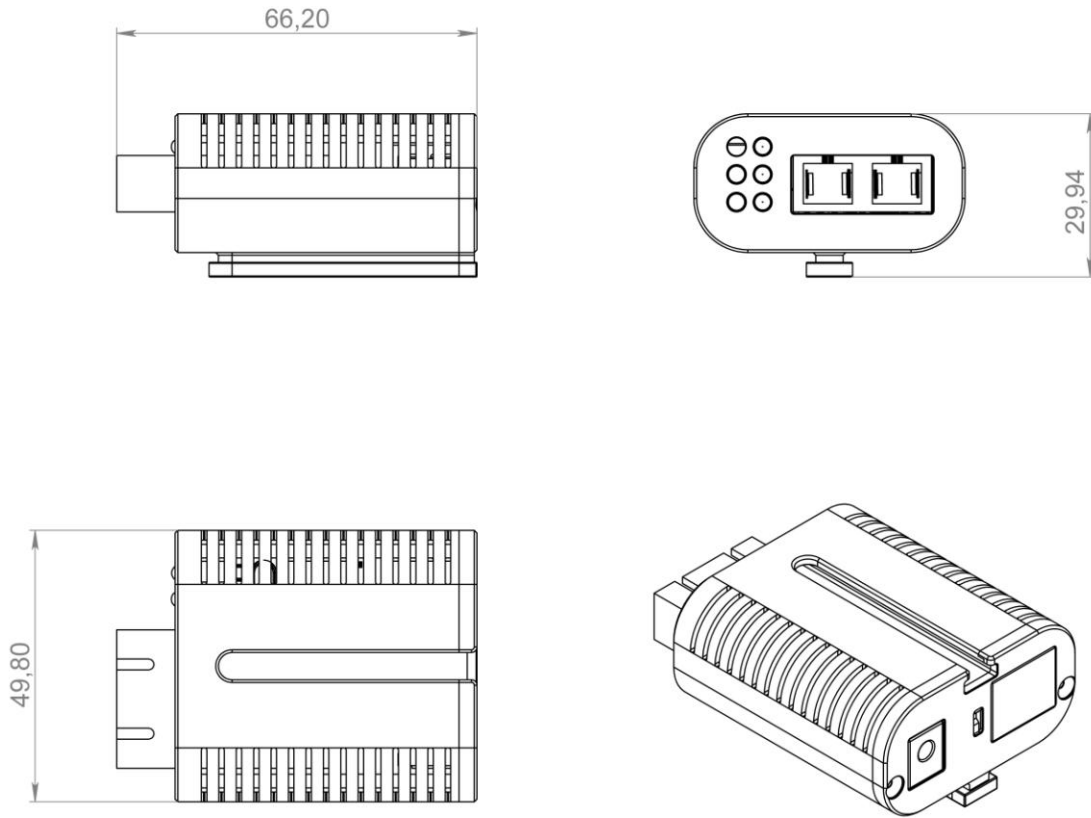


## ORDERING INFORMATION

| Brand | Part Number | Description |
|-------|-------------|-------------|
| 4A FORA | FMC-101W Mini | 100M FX / 100M TX Media Converter; Plastic housing; TX1310nm / RX1550nm; SC/UPC; 5V DC; PS included. |
| 4A FORA | FMC-102W Mini | 100M FX / 100M TX Media Converter; Plastic housing; TX1550nm / RX1310nm; SC/UPC; 5V DC; PS included. |