10/100BASE-TX TO 100BASE-FX MEDIA CONVERTERS

KC-300 Ver.B

Installation Guide

P/N 750-0165-000
DOC.020730-KC300B-K

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TRADEMARKS

Ethernet is a registered trademark of Xerox Corp.

FCC NOTICE

This device complies with Class B Part 15 the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received including the interference that may cause.

CE NOTICE

Marking by the symbol CE indicates compliance of this equipment to the EMC directive of the European Community. Such marking is indicative that this equipment meets or exceeds the following technical standards:

EMC Class B

EN 50081-1/1992 : EN55022, EN61000-3-2, EN61000-3-3

EN 50082-1/1998 : EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11

1. Introduction

The 10/100BASE-TX to 100BASE-FX media converter series provides a media conversion allowing high-speed integration of fiber optic and twisted-pair segments. With 10BASE-T and 100BASE-TX support, the converters provide seamless translation between Ethernet and Fast Ethernet networks. A complete set of LEDs allows for quick status verification.

The converters also provide the following key features:

- Store-and-forward switching to improve overall network performance by buffering packets during times of heavy congestion and to prevent dropping packets and forwarding of corrupted packets
- High-performance switching engine that performs forwarding and filtering at full wire speed.
- Built-in flow control mechanism to prevent heavy data congestion and degrading system performance
- The ability to learn up to 4,000 MAC addresses
- Auto-negotiation function built in twisted-pair port that allows to auto sense the speed and duplex configuration when connecting to an auto-negotiation capable device.
- Auto speed sensing that allows to sense the connection speed of either 10Mbps or 100Mbps when connecting to an auto-negotiation incapable devices

Converter 300 series support the following configuration needs:

300/TFMT	10/100BASE-TX to 100BASE-FX MM 2Km ST
300/TFMC	10/100BASE-TX to 100BASE-FX MM 2Km SC
300/TFJM	10/100BASE-TX to 100BASE-FX MM 2Km MT-RJ
300/TFVM	10/100BASE-TX to 100BASE-FX MM 2Km VF-45
300/TFS20	10/100BASE-TX to 100BASE-FX SM 20Km SC
300/TFS40	10/100BASE-TX to 100BASE-FX SM 40Km SC
300/TFS60	10/100BASE-TX to 100BASE-FX SM 60Km SC
300/WDM320	10/100BASE-TX to 100BASE-FX SM 20Km 1 SC
300/WDM520	10/100BASE-TX to 100BASE-FX SM 20Km 1 SC

1.1 Specifications

Twisted-Pair Interface

Connector	Shielded RJ-45
Pin Assignments	Auto MDI/MDI-X detection
Compliance	IEEE 802.3 10BASE-T, 802.3u 100BASE-TX
Data Speed	10Mbps or 100Mbps
Duplex Mode	Half-duplex or Full-duplex
Cable Type	10Mbps - Category 3, 4, or 5 UTP 100Mbps - Category 5 UTP
Supported Link Length	100 meters

Fiber Optic Interface

Compliance	IEEE 802.3u 100BASE-FX
Connector	Duplex SC or Single SC
Data Speed	100Mbps
Duplex Mode	Full-duplex
Cable Types	Multimode (MM) - 50/125, 62.5/125 mm Single mode (SM) - 8.7/125, 9/125, 10/125 mm

General Information

Forwarding & Filtering	10Mbps - 14,880 pps (full wire speed) 100Mbps - 148,800pps (full wire speed)
Frame Types Supported	IEEE 802.3 Std. 64Bytes ~ 1518Bytes frames & VLAN tagged frames (4 bytes tag)
DC power input voltage	+5V
DC Input voltage range	+5V +/-5%
DC Power consumption	Min. 0.72A, max. 0.81A @+5V
DC Input Jack	fD 4.4mm –  + fD 1.65mm
Dimension	H 24mm x W 74.7m x D 109.5mm
Housing	Enclosed metal with no fan
Weight	260g
Operating Temperature	-10°C ~ 50°C
Storage Temperature	-20°C ~ 90°C
Relative Humidity	5% ~ 90%
AC Power Adapter	Output DC +5V 1A (min.)

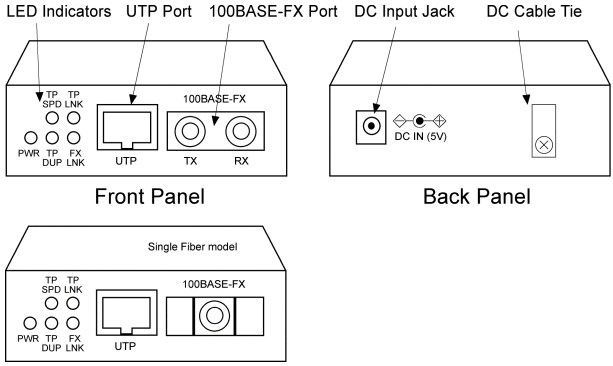
2. Installation

2.1 Unpacking

Check that the following components have been included:

- Installation guide
- 10/100 Media Converter
- One AC power adapter for the converter

2.2 10/100 Media Converters



Functions of UTP Port (Twisted-Pair Interface)

- Auto-negotiation support for connecting to auto-negotiation devices
- Auto-speed sensing for either 10Mbps or 100Mbps connection when connecting to non-auto-negotiation devices
- Supports both of half duplex and full duplex operations
- Back pressure flow control for half-duplex operation
- IEEE 802.3x compliant (pause-frame-base) flow control for full-duplex operation

Functions of 100BASE-FX Port (Fiber Optic Interface)

- Full data rate of 100Mbps for remote fiber connection
- Fixed full-duplex operation
- IEEE 802.3x compliant (pause-frame-base) flow control for full-duplex operation

Model	Fiber	Wavelength
300/TFMT	Duplex MM 2 ST	1310nm
300/TFMC	Duplex MM 2 SC	1310nm
300/TFJM	Duplex MM 2 MT-RJ	1310nm
300/TFVM	Duplex MM 2 VF-45	1310nm
300/TFS20	Duplex SM 2 SC	1310nm
300/TFS40	Duplex SM 2 SC	1310nm
300/TFS60	Duplex SM 2 SC	1310nm
300/WDM320	Single SM 1 SC	Tx 1310nm / Rx 1550nm
300/WDM520	Single SM 1 SC	Tx 1550nm / Rx 1310nm

Model	Tx Optical Power	Rx Sensitivity	Support Distance
300/TFMT	-19dBm	-31dBm	2Km
300/TFMC	-19dBm	-32.5dBm	2Km
300/TFJM	-19dBm	-31dBm	2Km
300/TFVM	-20.5dBm	-32.5dBm	2Km
300/TFS20	-15dBm	-31dBm	20Km
300/TFS40	-5dBm	-34dBm	40Km
300/TFS60	-3dBm	-36dBm	60Km
300/WDM320	-14dBm	-33dBm	20Km
300/WDM520	-14dBm	-33dBm	20Km

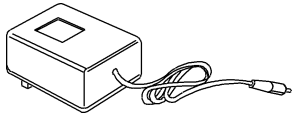
2.3 LED Indicators

Name	Status	State	Interpretation
PWR	Power status	On	Power on
		Off	Power off
TP SPD	UTP port speed	On	100Mbps
		Off	10Mbps
TP DUP	UTP port duplex status	On	Full-duplex mode
		Off	Half-duplex mode
TP LNK	UTP link & activity status	On	Link up
		Blink	Tx/Rx activities
		Off	Link down
FX LNK	Fiber port link status	On	Link up
		Blink	Tx/Rx activities
		Off	Link down

2.4 Applying Power

Before you begin the installation, check the AC voltage of your area. The AC power adapter which is used to supply the DC power for the unit should have the AC voltage matching the commercial power voltage in your area.

The AC Power Adapter Specifications



AC input power:	AC power voltage of your area
DC output power:	+5VDC 1A minimum
DC plug type:	– —◉— +

DC Input Specification

DC power input voltage	+5V
DC Input voltage range	+5V +/-5%
DC Power consumption	Min. 0.72A, max. 0.81A @+5V
DC Input Jack	⌀D 4.4mm – —◉— + ⌀D 1.65mm

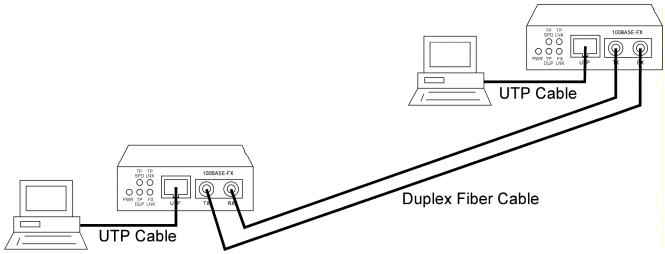
Steps to apply the power to the converters are:

1. Connect power adapter DC plug to the DC input jack located on the back of the converter before connecting to the AC outlet.
2. To ensure against accidental disconnection, tie the DC cable with the cable tie located the back of the converter.
3. Connect the power adapter to the AC outlet.
4. Check Power LED indication.

3. Making Fiber Connection

3.1 Making Duplex Fiber Connection

The following figure illustrates how to make connection between two media converters with duplex fiber cables.



3.2 Making Single Fiber Connection

Since the single fiber media converters use different wavelengths for transmission and receiving respectively, the link partner device located on the remote end of the single fiber should match the wavelength used on the single fiber converter. The following two figures illustrate two connection examples: