

VOLAMP LTD



10/100 U-FX USER MANUAL

FEATURES

- IEE 802.3 COMPLIANT MODE
- LOW POWER
- AUTO MD1/MD1X CROSS OVER – no need for cross over cables
- AUTO NEGOTIATION ON COPPER PORT
- SELECTABLE MODES ON FIBRE PORT
- 1Mbit MEMORY FOR FRAME BUFFERING
- BACK PRESSURE BASED FLOW CONTROL ON HALF DUPLEX
- PAUSE FRAME BASED FLOW CONTROL ON FULL DUPLEX
- SUPPORTS UP TO 4096 MAC ADDRESS ENTRIES WITH AUTOMATIC LEARNING AND AGEING
- SMALL SIZE WITH MOUNTING OPTIONS
- OPTIONS AVAILABLE FOR CONNECTOR TYPE AND FIBRE MODE.

Technical Description

The 10/100 U-FX performs a single channel conversion from 10 Base T/100 Base Tx to 100 Base Fx. It has a high speed, non-blocking switch fabric, a high performance address lookup engine and a 1Mbit -frame buffer. The copper interface will automatically sense the Tx and Rx pairs and connect as appropriate, thereby eliminating special cable requirements. Auto negotiation is performed on the copper interface to determine the mode that the converter and its link partner can both achieve to give the highest data transfer rate. This is 100 full duplex (FD), 100 half duplex (HD), 10FD and finally 10HD.

100 Tx systems use a three level code, which is scrambled to reduce EMC. It transmits a code as an idle. 10 base T systems use a phase encoded system only transmitting on data, at other times a short pulse, the idle, is transmitted.

The fibre interface conforms to the 100 Fx specification. This is a non-scrambled form of the binary 100 Tx code. Auto negotiation is not specified for fibre and hence must be preset using internal switches. The standard wavelength is 1300nm, which is not in the visible spectrum. It has the advantage that cables have less attenuation at this wavelength. Single mode options are available which will allow transmission over very long distances.

100 Base systems are only capable of transmission to 400m in a normal collision system. Due to minimum packet time, length and transmission delay. This is fundamental to CSMA systems. To operate above this limit a non-collision full duplex system must be used.

Mechanically the unit is housed in a small metal enclosure to limit EMC. Two variants are available; a simple box unit and a unit with flanges for universal fixing.

Specification

Copper interface

Conforms to 10 base T or 100 Tx as determined by auto negotiating fully compliant with IEEE802.3, IEEE 802.3u and IEEE 802.3 x standards.

Fibre Interface

| | | |
|-------------|---------------------|--------------------|
| Multimode | Standard Wavelength | 1300 nm |
| | Sensitivity | -31 dBm worst case |
| | Output into 62.5um | -20 dBm min |
| Single Mode | Wavelength | 1300nm |
| | Sensitivity | -31 dBm worst case |
| | Output into 9um | -8 dBm min |

Temperature

| | |
|----------|--------------------|
| Standard | 0 - 50°C working |
| Extended | -20 - 50°C working |
| | -40 - 85°C storage |

Power Requirements

+ 5 to +12V at 4VA

Weight

110 grams

Controls

Switch

- 1 Flow Control** - Half Duplex (forced collisions flow control)
Full Duplex (IEEE 802.3x Pause based flow control)
On = enable
- 2 Unused**
- 3 FEFI** – Far end fault indication switch – Off to enable
- 4 Fx Duplex** – 100 Base Fx duplex mode Switch – Off full duplex, On half duplex.

Display

Copper

| | |
|------------------|--------------------------------------|
| Link/Activity | On = Link / Blink = Activity |
| Duplex/Collision | Blink = Collision / On = Full Duplex |
| Speed | On = 100Mbps / Off = 10Mbps |

Fibre

| | |
|------------------|--------------------------------------|
| Link/Activity | Blink = Activity / On = Link |
| Duplex/Collision | Blink = Collision / On = Full Duplex |

Power

On – when powered up

Ordering information

10/100U –FX –(C)-(F)-(M)-(T)

| | | | |
|-----|-------------------|------------------|----------------|
| (C) | Fibre connector | SC or ST | |
| (F) | Mechanical style | F = Flange | R= Rectangular |
| (M) | Mode | Single Mode = SM | Multimode = MM |
| (T) | Temperature range | Standard = S | Extended = E |

(Example :- Unit with SC multimode connector, rectangular case and standard temperature range = 10/100U-FX-SC-R-MM-S)

Power cube is supplied with unit. This is a switch mode type universal mains 3 pin British plug. Flying lead Euro and USA pin types can be supplied to order. Power input to unit is via coaxial socket inner positive.