

## 12-slot Media Converter Rack

### Features

#### ► Flexible Design for Small, Growing Networks

Simplify your media converter installation with Transition Networks's Media Converter Rack. This rack-mountable unit supports up to 12 Transition Networks's stand-alone media converters. The unique enclosure design makes multiple connections and consolidates them into a single device; making network connections easier and more efficient.

#### ► Convenience

Allows you to mount one or more stand-alone units in a convenient enclosure with a single power supply.

#### ► Flexibility

Remove one or more converters as needed and use them as stand-alone media converters.

#### ► Cost

Easily rackmount Transition Networks media converters that you already own, or buy stand-alone today and rack mount in the future.

#### ► Space Saving Design

The device is powered by a single internal universal power supply; eliminating the need for multiple power connections. The unit saves space in the wiring closet and reduces the number of power cords required. The stand-alone media converters can also be removed and powered externally in different situations as your network needs change.

#### ► Reduce Network Downtime

Once installed, the media converter units are hot-swappable to avoid network downtime.

## E-MCR-04(x)



### Specifications

Dimensions	Width: 17.0" [432 mm] Depth: 15.0" [381 mm] Height: 5.0" [127 mm]
Power Supply	Universal, internal power supply; AC85 – 264V, 47 – 63 Hz.
Environment	0 – 50°C, 10% – 90% humidity (non-condensing), 0 – 10,000 feet
Shipping Weight	12 lbs. [5.2 kg]
Regulatory Compliance	UL Listed; C-UL Listed (Canada); CISPR/EN55022 Class A; FCC Class A; CE Mark
Warranty	Lifetime

### Ordering Info

**E-MCR-04**  
12-slot Media Converter Rack

**E-MCR-04(T)**  
12-slot Media Converter Rack (Tall)  
(for use with the CPSCMC0100-200  
Single-Slot chassis)

## Wall Mount Brackets

Wall Mount Brackets are small simple "L-shaped" tabs that allow a single Transition Networks media converter to be mounted anywhere needed. The brackets are sold in pairs and are available in several sizes and types to match the different sized media converters and space requirements.

### Specifications

Shipping Weight	1 lb. [0.45 kg]
Warranty	Lifetime

## WMBL; WMBP; WMBS



## WMBV; WMBD



### Ordering Info

**WMBL**  
5.0" [127 mm] DIN Rail Mount Bracket  
Fits all Stand-Alone Converters; Single or Dual Slot Point System™ Chassis

**WMBD-E**  
4.3" [109 mm] DIN Rail Mount Bracket (Extended)  
Fits all Stand-Alone Converters with piggyback power supply attached

**WMBD-F**  
3.3" [84 mm] DIN Rail Mount Bracket (flat)  
Fits all Stand-Alone Converters  
3.25" [82 mm] wide

**WMBD-FS**  
3.1" [79 mm] DIN Rail Mount Bracket (flat, small)  
Fits Stand-Alone Converters 3.0" [76 mm] wide

**WMBJ-V**  
2.75" [70 mm] Wall mount bracket kit for Analog Video products including:  
JVD-TX-01xx  
JVD-MRX-01xx  
SVIDF201x-100

**WMBL**  
4.0" [102 mm]  
Fits Stand-Alone Converters size 4.7" [119 mm]

**WMBP**  
5.0" [127 mm]  
Fits Single or Dual Slot Point System™ Chassis

**WMBS**  
3.2" [81 mm]  
Fits Stand-Alone Converters size 3.9" [99 mm]

**WMBV**  
5.0" [127 mm]  
Vertical Mount  
Fits all Stand-Alone Converters;  
Single or Dual Slot Point System™ Chassis

**WMBV-E**  
4.7" [119 mm]  
Extended Vertical Mount Fits all Stand-Alone Converters with piggyback power supply attached

## 4-slot Media Converter Shelf

▶ Rack mount up to 4 stand-alone media converters in one convenient un-powered shelf.

### Features

- ▶ **Space Saving** Save rack space in low density deployments: 19-inch rack mount, 1RU high.
- ▶ **Flexible** Mix and match up to 4 Transition Networks stand-alone media converters (excluding double-high models).
- ▶ **Non-power design** Don't pay for power supplies twice. This low cost design allows the use of the power supplies that ship with the media converter.
- ▶ **Power Cord Tie-Downs** Eliminates the accidental disconnection of power supplies from the media converters.
- ▶ **Converter Mounting Brackets** Securely mounts the converters to the shelf.

## RMS19-SA4-01

**NEW**



### Specifications

Dimensions	Width: 17.0" [432 mm] Depth: 6.0" [152 mm] Height: 1.75" [44 mm]
Shipping Weight	3 lbs. [1.35 kg]
Warranty	Lifetime

## mounting options

ethernet  
fast ethernet  
10/100 bridging  
10/100/1000  
gigabit ethernet  
atm/oc-x  
ds3-t3/e3  
high speed serial  
rs232  
rs422/485  
t1/e1  
pots 2-wire  
video  
industrial

### Ordering Info

**RMS19-SA4-01**  
4-slot Media Converter Shelf

# Wide Input External Power Supplies

## SPS-1872-xx



Piggy-Back Power Supply  
Attached to Converter



Piggy-Back Power Supply  
and Converter



Stand-Alone Power Supply

Transition Networks's wide input external power supplies allow you to provide a wide range of input voltages to power your stand-alone converters and chassis. Input voltages of 18 – 60VDC and 24 – 30VMRS allow for installation of any of Transition's stand-alone media converters in most industrial, telecom and commercial applications, as well as HVAC and building control environments.

**Multiple form factors** allow flexibility to meet your application. The stand-alone form factor can be used with all Transition stand-alone media converters as well as the single-slot and dual-slot Point System™ Chassis. The piggy back form factor allows the power supply to attach directly to the converter and eliminate the power cable commonly found between the power supply and the converter. Once the piggy back supply is attached to the converter, the combined assembly is much easier to wall mount or attach to DIN-rail environments than using a separate supply.

### Specifications

Input Voltage	18 – 60VDC; 24 – 30VMRS
Isolation Voltage	(Dielectric withstand) Meets IEC 950 for one minute 1500 VAC: Output/Input 1500 VAC: Input/Safety GND 1500 VAC: Output/CASE
Output Voltage	12.6 VDC
Output Current	1.0A
Load Regulation	±5% at 10% load to full rated load
Over Load Protection (OLP)	When the average power rating exceeds 125% – 150% of maximum power, output voltages reduced to a safe dissipation level; protects against short circuit of any output.
No Load Protection	No damage to power supply when operating at no load
Transient Protection	No voltage spike at power-on, power-off, or power failure
Power Distribution	+12.6VDC at 1.0A maximum
Power Consumption	6 watts max. @ 18VDC input, 12.6VDC output
Efficiency	70% (typical)
Noise and Ripple	±40mV peak-to-peak of output voltage (typical)
MTBF	Greater than 60,000 hours with typical load operating at 20°C temperature (calculated according to MIL-HDBK-217E)
Regulatory Compliance	UL Listed EN60950; CISPR/EN55022 Class A; FCC Class A; CE Mark; EN55024
Dimensions	<b>SPS-1872-SA:</b> Width: 3.9" [99 mm] Depth: 3.1" [79 mm] Height: 1.0" [25 mm]  <b>SPS-1872-CC:</b> Width: 4.6" [117 mm] Depth: 3.1" [79 mm] Height: 1.0" [25 mm]  <b>SPS-1872-PS:</b> Width: 4.6" [117 mm] Depth: 3.4" [86 mm] Height: 1.0" [25 mm]  <b>SPS-1872-DPS:</b> Width: 4.6" [117 mm] Depth: 3.4" [86 mm] Height: 1.8" [46 mm]
Shipping Weight	1 lb. [0.45 kg]
Environment	<b>Operating:</b> 0 – 50°C <b>Storage:</b> -20 – +85°C <b>Humidity:</b> 5 – 95% non-condensing <b>Altitude:</b> 0 – 10,000 ft.
Warranty	Lifetime

### Ordering Info

#### SPS-1872-CC

Piggy-Back  
For use with: Non-Point System™ stand-alone media converters 3.0" wide (E-TBT-FRL-05; E-100BTX-FX-05; etc.)

#### SPS-1872-DPS

Piggy-Back  
For use with: Double High Point System™ stand-alone media converters (SBFTF10xx-140 and SBFTF10xx-120)

#### SPS-1872-PS

Piggy-Back  
For use with: Point System™ stand-alone media converters 3.25" wide (SBFTF1011-100; SGETF1013-100, etc.)

#### SPS-1872-SA

Stand-Alone  
For use with: All stand-alone media converters; Single-Slot Point System™ Chassis; Dual-Slot Point System™ Chassis



The Just Convert-IT™ line of media converters is a low-cost, no-frills model, which offers the same quality and reliability as our full-featured product line.

Transition Networks's Just Convert-IT™ Line has several offerings:

### When to use Just Convert-IT™ media converters:

- Network management is NOT an issue
- Cost is a critical factor
- Mid to low density applications
- Minimal features are required

mounting options  
ethernet  
fast ethernet  
10/100 bridging  
10/100/1000  
gigabit ethernet  
atm/oc-x  
ds3-t3/e3  
high speed serial  
rs232  
rs422/485  
t1/e1  
pots 2-wire  
video  
industrial

### Ethernet: Convert 10BASE-T to 10BASE-FL



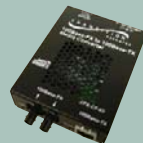
Simply upgrade twisted pair networks to fiber and end the problems of difficult installations associated with traditional converters. Use Transitions 10BASE-T to 10BASE-FL model to connect legacy networking equipment, such as a printer that does not support a fiber optic connection, to an Ethernet fiber optic backbone.

### Ethernet: Convert 10BASE-T to 10BASE2



Convert a coaxial segment into a twisted pair segment. Provides one BNC 10BASE2 compliant port and one RJ-45 twisted pair connector.

### Fast Ethernet: Convert 100BASE-TX to 100BASE-FX



Connect copper to fiber in a Fast Ethernet environment. Available for single mode and multimode fiber.

### 10/100 Bridging: Convert 10/100BASE-TX to 10/100BASE-FX



Connect a half-duplex device, such as a hub, to fiber. Available for single mode and multimode fiber.

### Gigabit: Convert 1000BASE-T to 1000BASE-SX/LX



Connect copper to fiber in a Gigabit Ethernet environment. Available for single mode and multimode fiber.

### RS232: Convert Copper to Fiber



Extend the distance between serial connections with the use of fiber optic cable.

### Analog CCTV Video: NTSC, PAL, SECAM



Connect uni-directional analog video devices over fiber.

### Power over Ethernet: Convert Copper to Fiber



Power over Cat5 to remotely located devices.

## Ordering Info

### Ethernet (pages 76 & 77)

#### J/E-CF-02

10BASE-T to 10BASE-FL MM (ST)  
[2 km/ 1.2 miles]

#### J/E-CF-02(SC)

10BASE-T to 10BASE-FL MM (SC)  
[2 km/ 1.2 miles]

#### J/E-CF-02(SM)

10BASE-T to 10BASE-FL SM (ST)  
[20 km/12.4 miles]

#### J/E-CX-TBT-02

10BASE-T to 10BASE2 (BNC)  
[185 m / 607 ft.]

### Fast Ethernet (page 83)

#### J/FE-CF-03

100BASE-TX to 100BASE-FX MM (ST)  
[2 km/ 1.2 miles]

#### J/FE-CF-03(SC)

100BASE-TX to 100BASE-FX MM (SC)  
[2 km/ 1.2 miles]

#### J/FE-CF-03(SM)

100BASE-TX to 100BASE-FX SM (SC)  
[20 km/12.4 miles]

#### J/FE-CF-03(LH)

100BASE-TX (RJ-45) [100 m/328 ft.]  
to 100BASE-FX 1310nm single mode (SC)  
[40 km/24.9 mi.] Link Budget: 26.0 dB

#### J/FE-CF-03(100)

100BASE-TX to 100BASE-FX 1310nm  
TX / 1550nm RX single fiber single  
mode (SC) [20 km/12.4 miles]

#### J/FE-CF-03(101)

100BASE-TX to 100BASE-FX 1550nm  
TX / 1310nm RX single fiber single  
mode (SC) [20 km/12.4 miles]

### 10/100 Bridging (page 96)

#### J/E-PSW-FX-02

10/100BASE-TX to 100BASE-FX MM  
(ST) [2 km/ 1.2 miles]

#### J/E-PSW-FX-02(SC)

10/100BASE-TX to 100BASE-FX MM  
(SC) [2 km/ 1.2 miles]

#### J/E-PSW-FX-02(SM)

10/100BASE-TX to 100BASE-FX SM  
(SC) [20 km/12.4 miles]

#### J/E-PSW-FX-02(100)

10/100BASE-TX (RJ-45) [100 m/328 ft.]  
to 100BASE-FX 1310nm TX / 1550nm RX  
single fiber single mode (SC)  
[20 km/12.4 mi.] LB: 19.0 dB

#### J/E-PSW-FX-02(101)

10/100BASE-TX (RJ-45) [100 m/328 ft.]  
to 100BASE-FX 1550nm TX / 1310nm RX  
single fiber single mode (SC)  
[20 km/12.4 mi.] LB: 19.0 dB

### Gigabit Ethernet (page 105)

#### J/GE-CF-01(SX)

1000BASE-T to 1000BASE-SX MM  
(SC) [62.5/125µm: 220 m / 722 ft.]  
[50/125µm: 550 m / 1804 ft.]

#### J/GE-CF-01(LX1)

1000BASE-T to 1000BASE-LX SM (SC)  
[10 km/6.2 miles]

### Gigabit Ethernet (continued)

#### J/GE-CF-01(LX2)

1000BASE-T to 1000BASE-LX SM (SC)  
[25 km/15.5 miles]

#### J/GE-CF-01(LX6)

1000BASE-T to 1000BASE-LX SM (SC)  
[65 km/40.4 miles]

#### J/GE-CF-01(LX101)

1000BASE-T to 1000BASE-LX 1550nm  
TX / 1310nm RX single fiber single  
mode (SC) [20 km/12.4 miles]

### RS232 (page 115)

#### J/RS232-CF-01

(DB-9) (female) [15 m/49 ft.]  
to MM (ST) [2 km/1.2 miles]

#### J/RS232-CF-01(SC)

(DB-9) (female) [15 m/49 ft.]  
to MM (SC) [2 km/1.2 miles]

#### J/RS232-TF-01

(DB-9) (male) [15 m/49 ft.]  
to MM (ST) [2 km/1.2 miles]

#### J/RS232-TF-01(SC)

(DB-9) (male) [15 m/49 ft.]  
to MM (SC) [2 km/1.2 miles]

### Power over Ethernet (page 98)

#### J/POE-CF-01

10/100BASE-TX to 100BASE-FX MM  
(ST) [2 km/1.2 miles]

#### J/POE-CF-01(SC)

10/100BASE-TX to 100BASE-FX MM  
(SC) [2 km/1.2 miles]

#### J/POE-CF-01(SM)

10/100BASE-TX to 100BASE-FX SM  
(SC) [20 km/12.4 miles]

### Analog Video (page 122)

#### J/VD-TX-01: Video Transmitter

BNC (75 ohm)  
to Multimode (ST) [1 km/ 0.6 miles]

#### J/VD-RX-01: Video Receiver

BNC (75 ohm)  
to Multimode (ST) [1 km/ 0.6 miles]

#### J/VD-MRX-01: Miniature Video Receiver

BNC (75 ohm)  
to Multimode (ST) [1 km/ 0.6 miles]

#### J/VD-TX-01(SC): Video Transmitter

BNC (75 ohm)  
to Multimode (SC) [1 km/ 0.6 miles]

#### J/VD-RX-01(SC): Video Receiver

BNC (75 ohm)  
to Multimode (SC) [1 km/ 0.6 miles]

#### J/VD-MRX-01(SC): Miniature Video Receiver

BNC (75 ohm)  
to Multimode (SC) [1 km/ 0.6 miles]

#### J/VD-TX-01(SM): Video Transmitter

BNC (75 ohm)  
to Single Mode (ST) [10 km/ 6.2 miles]

#### J/VD-RX-01(SM): Video Receiver

BNC (75 ohm)  
to Single Mode (ST) [10 km/ 6.2 miles]

#### J/VD-MRX-01(SM): Miniature Video Receiver

BNC (75 ohm)  
to Single Mode (ST) [10 km/ 6.2 miles]

## Ethernet Copper to Fiber Media Converter



▶ Integrate mixed cabling environments using either switched or shared Ethernet.

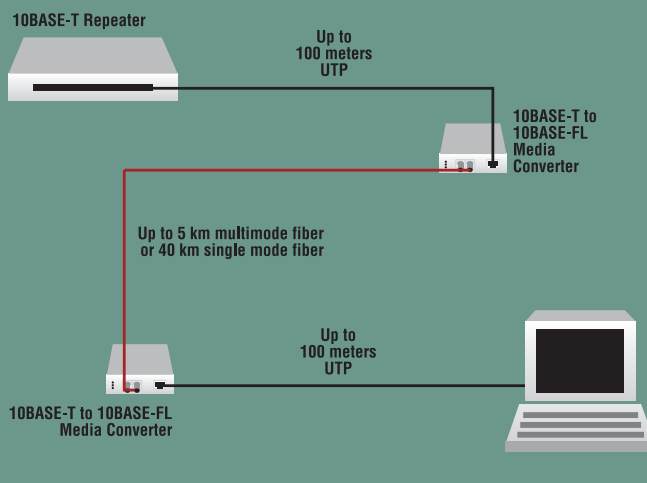
### ▶ Extend Network Distance

Two 10BASE-T to 10BASE-FL Media Converters used back-to-back extend the distance between two 10BASE-T devices up to 5 km (3.1 mi.) using multimode fiber or up to 40 km (24.9 mi.) using single mode fiber without a repeater.

### ▶ Connect Unlike Devices

Connect your workgroup to a distant server or a central switch; or extend distances between like and unlike devices in either full or half-duplex modes.

## Extend Network Distance & Connect Unlike Devices



## Features

- ▶ AutoCross™ (see page 14)
- ▶ Link Pass Through (see page 15)
- ▶ Automatic Link Restoration (see page 16)

## E-TBT-FRL-05(xx)



## Ordering Info

See pages 171-181 for complete fiber optic connector specs.

**E-TBT-FRL-05**  
10BASE-T (RJ-45) [100 m/328 ft.]  
10BASE-FL 850nm multimode (ST)  
[2 km/ 1.2 mi.] Link Budget: 13.5 dB

**E-TBT-FRL-05(SC)**  
10BASE-T (RJ-45) [100 m/328 ft.]  
10BASE-FL 850nm multimode (SC)  
[2 km/ 1.2 mi.] Link Budget: 13.5 dB

**E-TBT-FRL-05(MT)**  
10BASE-T (RJ-45) [100 m/328 ft.]  
10BASE-FL 1310nm MM (MT-RJ)  
[2 km/ 1.2 mi.] Link Budget: 13.5 dB

**E-TBT-FRL-05(L)**  
10BASE-T (RJ-45) [100 m/328 ft.]  
10BASE-FL 1310nm SM (ST)  
[5 km/ 3.1 mi.] Link Budget: 13.5 dB

**E-TBT-FRL-05(SM)**  
10BASE-T (RJ-45) [100 m/328 ft.]  
10BASE-FL 1310nm SM (ST)  
[20 km/12.4 mi.] Link Budget: 7.0 dB

**E-TBT-FRL-05(XC)**  
10BASE-T (RJ-45) [100 m/328 ft.]  
10BASE-FL 1310nm single mode (SC)  
[20 km/12.4 mi.] Link Budget: 7.0 dB

**E-TBT-FRL-05(LH)**  
10BASE-T (RJ-45) [100 m/328 ft.]  
10BASE-FL 1310nm single mode (ST)  
[40 k/24.9 mi.] Link Budget: 10.0 dB

## Optional Accessories

(sold separately)  
**Wide Input (18 – 72VDC) Power Supplies:**

**SPS-1872-CC** (see page 72)  
Piggy Back Power Supply

**SPS-1872-SA** (see page 72)  
Stand-Alone Power Supply

## Mounting Options:

**E-MCR-04** (see page 70)  
12-slot Media Converter Rack

**RMS19-SA4-01** (see page 71)  
4-slot Media Converter Shelf

**WMBD** (see page 70)  
DIN Rail Bracket 5.0" [127 mm]

**WMBD-FS** (see page 70)  
DIN Rail Bracket (flat, small) 3.1" [79 mm]

**WMBS** (see page 70)  
Wall Mount Bracket 3.2" [81 mm]

**WMBV** (see page 70)  
Vertical Wall Mount Bracket 5.0" [127 mm]

## Specifications

See pages 171–181 for complete fiber optic connector specs.

Standards	IEEE Std. 802.3™ 10BASE-T, 10BASE-FL
Switch	<b>S1:</b> Enables/disables Link Pass Through
Status LEDs	<b>PWR (Power):</b> ON = connection to external AC power <b>Link:</b> ON = unit is receiving link pulses from a compliant device <b>RX (Receive):</b> ON = packets are being received
Dimensions	<b>Width:</b> 3.0" [76 mm] <b>Depth:</b> 3.9" [99 mm] <b>Height:</b> 1.0" [25 mm]
Power	External AC/DC required; 12VDC, 0.5A, unregulated, standard
Environment	0 – 50°C; 5% – 95% humidity non-condensing; 0 – 10,000 ft. altitude
Shipping Weight	2 lbs. [0.90 kg]
Safety Compliance	<b>Wall Mount Power Supply:</b> UL Listed, C-UL Listed (Canada)
Regulatory Compliance	FCC Class A, CISPR22/EN55022 Class A, EN55024, EN61000, CE Mark
Warranty	Lifetime

## See Also:

- ▶ Ethernet 10BASE-T to 10BASE-FL Point System™ Slide-In-Module Media Converters

page 33

## Ethernet Copper to Fiber Media Converter



▶ **Extended Temperature Capable:** Designed to operate in environments where ambient temperatures can rise as high as 70°C (158°F).

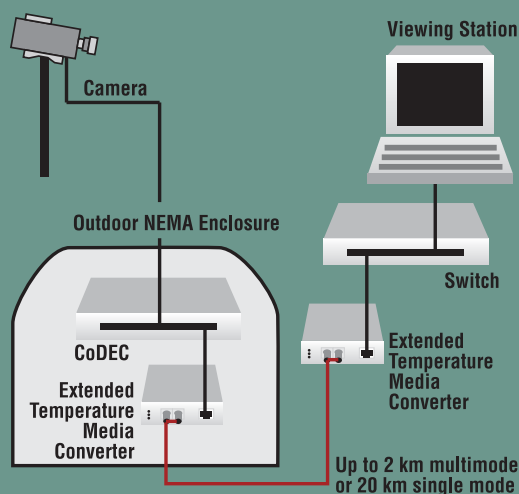
Connect remote devices such as IP based surveillance cameras or signaling equipment in a non-climate controlled enclosure. Deliver 10Mbps data access in residential or commercial environments inside a non-climate controlled pedestal enclosure.

This converter can also be deployed in industrial environments where excessive heat may be a concern. (Note that this device is rated to meet “temperature” requirements of industrial environments only.)

### Features

- ▶ **AutoCross™** (see page 14)
- ▶ **Link Pass Through** (see page 15)
- ▶ **Automatic Link Restoration** (see page 16)

### Extended Temperature Applications (to 70°C)



## E-TBT-FRL-05(xxHT)



mounting options

### ethernet

fast ethernet  
10/100 bridging  
10/100/1000  
gigabit ethernet  
atm/oc-x  
ds3-t3/e3  
high speed serial  
rs232  
rs422/485  
t1/e1  
pots 2-wire  
video  
industrial

### Ordering Info

See pages 171–181 for complete fiber optic connector specs.

**E-TBT-FRL-05(HT)**  
10BASE-T (RJ-45) [100 m/328 ft.]  
to 10BASE-FL 850nm multimode (ST)  
[2 km/ 1.2 mi.] Link Budget: 13.5 dB

**E-TBT-FRL-05(SCHT)**  
10BASE-T (RJ-45) [100 m/328 ft.]  
to 10BASE-FL 850nm multimode (SC)  
[2 km/ 1.2 mi.] Link Budget: 13.5 dB

**E-TBT-FRL-05(SMHT)**  
10BASE-T (RJ-45) [100 m/328 ft.]  
10BASE-FL 1310nm single mode (ST)  
[20 km/12.4 mi.] Link Budget: 23.0 dB

**E-TBT-FRL-05(XCHT)**  
10BASE-T (RJ-45) [100 m/328 ft.]  
10BASE-FL 1310nm single mode (SC)  
[20 km/12.4 mi.] Link Budget: 14.0 dB

**E-TBT-FRL-05(XLHT)**  
10BASE-T (RJ-45) [100 m/328 ft.]  
10BASE-FL 1310nm single mode (SC)  
[50 km/31.1 mi.] Link Budget: 33.0 dB

### Optional Accessories

- (sold separately)
- Wide Input (18 – 72VDC) Power Supplies:**
- SPS-1872-CC** (see page 72)  
Piggy Back Power Supply
  - SPS-1872-SA** (see page 72)  
Stand-Alone Power Supply
- Mounting Options:**
- E-MCR-04** (see page 70)  
12-slot Media Converter Rack
  - RMS19-SA4-01** (see page 71)  
4-slot Media Converter Shelf
  - WMBD** (see page 70)  
DIN Rail Bracket 5.0" [127 mm]
  - WMBD-FS** (see page 70)  
DIN Rail Bracket (flat, small) 3.1" [79 mm]
  - WMBS** (see page 70)  
Wall Mount Bracket 3.2" [81 mm]
  - WMBV** (see page 70)  
Vertical Wall Mount Bracket 5.0" [127 mm]

### Specifications

See pages 171–181 for complete fiber optic connector specs.

Standards	IEEE Std. 802.3™ 10BASE-T; 10BASE-FL
Switch	<b>S1:</b> Enables/disables Link Pass Through
Status LEDs	<b>Power:</b> On for normal operation; <b>Link:</b> Steady LED indicates unit is receiving link pulses from a compliant device; <b>Receive:</b> Flashing or lit LED indicates packets are being received
Dimensions	<b>Width:</b> 3.0" [76 mm] <b>Depth:</b> 3.9" [99 mm] <b>Height:</b> 1.0" [25 mm]
Power	External AC/DC required; 9V DC. 1.0A; unregulated; standard
Environment	-25° C to +70° C; 5% – 95% humidity non-condensing; 0 – 10,000 ft. altitude
Shipping Weight	2 lbs. [0.90 kg]
Safety Compliance	<b>Wall Mount Power Supply:</b> UL Listed and CSA certified
Regulatory Compliance	CISPR22/EN55022 Class A; FCC Class; CE Mark
Warranty	Lifetime

## Twisted Pair to Coax Media Converter

- ▶ Connect legacy coax devices to a 10BASE-T network.

### J/E-CX-TBT-02

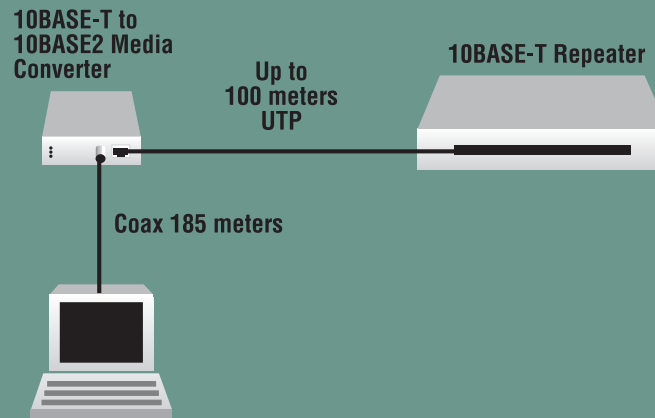


## Features

- ▶ Protects your equipment investment by allowing you to upgrade—not replace—your current network.
- ▶ Provides one RJ-45 twisted pair connector and one BNC 10BASE2 compliant port.
- ▶ Supports up to 24 devices daisy-chained on one coax segment per twisted pair segment.
- ▶ MDI/MDI-X selection switch allows converter to be connected to either a workstation/NIC or hub, switches and routers without changing the cable type.
- ▶ BNC T-connector included for daisy chain applications.

*Note: not rack-mountable*

## Connect Legacy Equipment



## Ordering Info

**J/E-CX-TBT-02**  
10BASE-T (RJ-45)  
[100 m / 328 ft.]  
to 10BASE2 (BNC)  
[185 m / 607 ft.]

## Specifications

Standards	IEEE Std. 802.3™ 10BASE-T, 10BASE2
Switches	<b>MDI/MDI-X:</b> Selects correct RJ-45 port setting
Status LEDs	<b>PWR (Power):</b> ON = Connected to external power <b>BNC/ACT (BNC Activity):</b> Flashing = 10BASE2 data traffic <b>TP/ACT (TP Activity):</b> ON = 10BASE-T link connection; Flashing = 10BASE-T data traffic <b>COL (Collision):</b> Flashing = Collision present
Dimensions	<b>Width:</b> 2.75" [71 mm] <b>Depth:</b> 3.7" [94 mm] <b>Height:</b> 1.0" [25 mm]
Power	External AC/DC: 5V DC, 1.0 A
Environment	0 – 50°C, 5% – 90% humidity non-condensing, 0 – 10,000 ft. altitude
Shipping Weight	2 lbs. [0.90 kg]
Safety Compliance	<b>Wall Mount Power Supply:</b> UL Listed and CSA certified
Regulatory Compliance	CISPR22/EN55022 Class A, FCC Class A, CE Mark
Warranty	Lifetime

## Ethernet Copper to Fiber Media Converter



▶ **Connect Legacy Equipment:**  
Connect an existing 10BASE-T segment or device to an Ethernet fiber optic backbone.

The “Just Convert-It™” 10BASE-T to 10BASE-FL Media Converter is an inexpensive, no frills way to extend the distance between Ethernet connections with the use of fiber optic cable, while maintaining the same quality and reliability found on Transition’s full-featured line of products.

### Features

- ▶ **Unit and Port LEDs** allow for quick status information
- ▶ **Cost-effective** way to extend distance
- ▶ **Automatic Link Restoration** (see page 16)
- ▶ **Can be rack-mounted** in the E-MCR-04

## J/E-CF-02(xx)

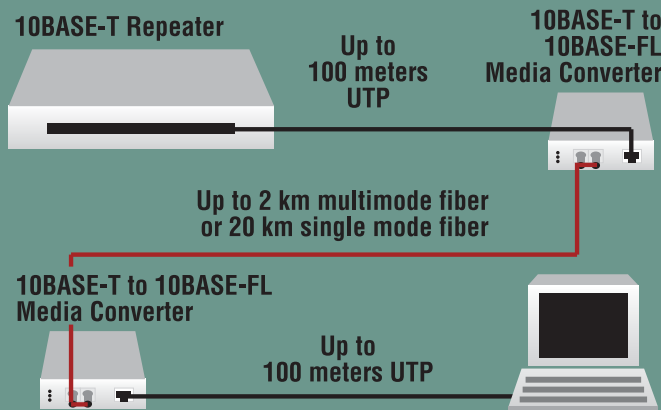


mounting options

## ethernet

- fast ethernet
- 10/100 bridging
- 10/100/1000
- gigabit ethernet
- atm/oc-x
- ds3-t3/e3
- high speed serial
- rs232
- rs422/485
- t1/e1
- pots 2-wire
- video
- industrial

### Connect Legacy Equipment



### Ordering Info

See pages 171–181 for complete fiber optic connector specs.

**J/E-CF-02**  
10BASE-T (RJ-45) [100 m/328 ft.]  
to 10BASE-FL 850nm MM (ST)  
[2 km/ 1.2 mi.] Link Budget: 13.5 dB

**J/E-CF-02(SC)**  
10BASE-T (RJ-45) [100 m/328 ft.]  
to 10BASE-FL 850nm MM (SC)  
[2 km/ 1.2 mi.] Link Budget: 16.5 dB

**J/E-CF-02(SM)**  
10BASE-T (RJ-45) [100 m/328 ft.]  
to 10BASE-FL 1310nm single mode (SC)  
[20 km/12.4 mi.] Link Budget: 7.0 dB

### Optional Accessories

- (sold separately)
- Wide Input (18 – 72VDC) Power Supplies:**
- SPS-1872-CC** (see page 72)  
Piggy Back Power Supply
- SPS-1872-SA** (see page 72)  
Stand-Alone Power Supply
- Mounting Options:**
- E-MCR-04** (see page 70)  
12-slot Media Converter Rack
- RMS19-SA4-01** (see page 71)  
4-slot Media Converter Shelf
- WMBD** (see page 70)  
DIN Rail Bracket 5.0" [127 mm]
- WMBD-FS** (see page 70)  
DIN Rail Bracket (flat, small) 3.1" [79 mm]
- WMBS** (see page 70)  
Wall Mount Bracket 3.2" [81 mm]
- WMBV** (see page 70)  
Vertical Wall Mount Bracket 5.0" [127 mm]

### Specifications

See pages 171–181 for complete fiber optic connector specs.

Standards	IEEE Std. 802.3™ 10BASE-T; 10BASE-FL
Status LEDs	<b>Power:</b> On for normal operation; <b>Copper:</b> Steady = Link; Flashing = Rx Data <b>Fiber:</b> Steady = Link; Flashing = Rx Data
Dimensions	<b>Width:</b> 3.0" [76 mm] <b>Depth:</b> 3.9" [99 mm] <b>Height:</b> 1.0" [25 mm]
Power	External AC/DC; 12VDC, 0.5 A min
Power Consumption	2.8 watts
Environment	0 – 50° C; 5% – 95% humidity non-condensing; 0 – 10,000 ft. altitude
Shipping Weight	2 lbs. [0.90 kg]
Safety Compliance	<b>Wall Mount Power Supply:</b> UL listed and CSA certified
Regulatory Compliance	CISPR22/EN55022; EN55024; EN60950 Class A; FCC Class A; CE Mark
Warranty	Lifetime

## Power over Ethernet Copper to Fiber PSE Media Converter



Enables enterprises to power network devices directly over the existing CAT5 data connection. The Power over Ethernet (POE) converter emulates IEEE 802.3af™ Power Sourcing Equipment (PSE), and is compatible with Powered Devices (PD) that comply with the IEEE 802.3af™ standard. The Power over Ethernet (POE) converter will detect the presence of a device that needs power and inject the applicable current into the data cable.

Attractive solution for delivering power over CAT5 to powered devices such as access points, Voice over IP (VoIP) products, access servers, outdoor routers, and internet kiosks.

Allows for use of fiber switches with POE solution on remote end.

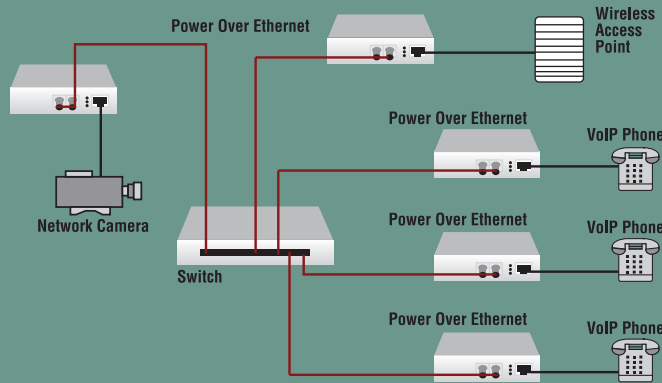
### Features

- ▶ 48VDC input power supply
- ▶ -48VDC output per port
- ▶ 12W max load
- ▶ Overload protection
- ▶ PD Auto-sensing
- ▶ Enable/Disable power MDI
- ▶ Auto-Negotiation (see page 14)
- ▶ Link Pass Through (see page 15)
- ▶ Automatic Link Restoration (see page 16)

## SEPOE101x-150



### Power over Cat5 to Remotely Located Devices



### Ordering Info

See pages 171–181 for complete fiber optic connector specs.

#### SEPOE1011-150

10BASE-T (RJ-45) [100 m/328 ft.]  
to 10BASE-FL 850nm multimode (ST)  
[2 km/ 1.2 mi.] Link Budget: 13.5 dB

#### SEPOE1013-150

10BASE-T (RJ-45) [100 m/328 ft.]  
to 10BASE-FL 850nm multimode (SC)  
[2 km/ 1.2 mi.] Link Budget: 13.5 dB

### Optional Accessories

(sold separately)

#### Mounting Options:

#### WMBL (see page 70)

Wall Mount Bracket 4.0" [102 mm]

#### WMBD-P

DIN Rail Mount Bracket POE

### Specifications

See pages 171–181 for complete fiber optic connector specs.

Standards	IEEE Std. 802.3™
Switches	<b>Switch 1:</b> MDI Power: UP = Enable; DOWN = Disable <b>Switch 2:</b> MDI Link Pass Through: UP = Enable; DOWN = Disable
Status LEDs	<b>Power:</b> Lit for normal operation <b>MDI Fault:</b> ON = over-current detected <b>MDI ON:</b> ON = MDI port supplying power <b>TP Link:</b> ON = Link on copper port <b>Fiber Link:</b> ON = Link on fiber port <b>TP ACT:</b> Flashing = data activity on copper link <b>Fiber Act:</b> Flashing = data activity on fiber link
Dimensions	<b>Width:</b> 7.3" [185 mm] <b>Depth:</b> 4.4" [112 mm] <b>Height:</b> 1.2" [30 mm]
Power Consumption	45 watts max.
Power Output	16.8 watts max.
Power	48 VDC +/- 5% @ 1 A maximum
Operating Temperature	0 – 50° C [32° – 122°F]
Storage Temperature	-25° – 85° C [-13° – 185°F]
Environment	5 – 95% humidity non-condensing; altitude 0 – 10,000 ft.
Shipping Weight	2 lbs. [0.90 kg]
Regulatory Compliance	UL Listed; CISPR22/EN55022 Class A; EN 55024 Class A; CE Mark
Warranty	Lifetime

## Single Mode to Multimode Media Converter

► Protocol Transparency:  
500Kbps – 30Mbps speed range in continuous duty cycle

### F-SM-MM-05



mounting options

## ethernet

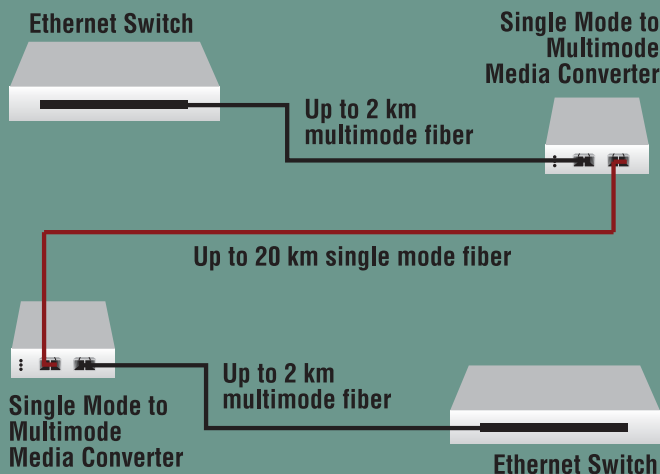
fast ethernet  
10/100 bridging  
10/100/1000  
gigabit ethernet  
atm/oc-x  
ds3-t3/e3  
high speed serial  
rs232  
rs422/485  
t1/e1  
pots 2-wire  
video  
industrial

### ► Extend Network Distance

Ethernet or Token Ring Networks:  
Connect distant networks or  
devices up to 20 km in an  
existing single mode network.

Save money by purchasing  
Ethernet devices with lower cost  
multimode fiber interfaces and  
use converters to introduce single  
mode fiber only where you  
need it.

### Extend Network Distance



### Ordering Info

See pages 171–181 for complete fiber  
optic connector specs.

**F-SM-MM-05**  
850nm multimode (ST)  
[2 km/ 1.2 mi.] Link Budget: 13.5 dB  
to 1310nm single mode (ST)  
[20 km/12.4 mi.] Link Budget: 7.0 dB

### Optional Accessories

(sold separately)

#### Wide Input (18 – 72VDC) Power Supplies:

**SPS-1872-CC** (see page 72)

Piggy Back Power Supply

**SPS-1872-SA** (see page 72)

Stand-Alone Power Supply

#### Mounting Options:

**E-MCR-04** (see page 70)

12-slot Media Converter Rack

**RMS19-SA4-01** (see page 71)

4-slot Media Converter Shelf

**WMBD** (see page 70)

DIN Rail Bracket 5.0" [127 mm]

**WMBD-FS** (see page 70)

DIN Rail Bracket (flat, small) 3.1" [79 mm]

**WMBL** (see page 70)

Wall Mount Bracket 4.0" [102 mm]

**WMBV** (see page 70)

Vertical Wall Mount Bracket 5.0" [127 mm]

### Specifications

See pages 171–181 for complete fiber optic connector specs.

Standards	IEEE Std. 802.5j
Status LEDs	<b>Power:</b> Lit for normal operation <b>Link:</b> (Left) Lit for MM link <b>Link:</b> (Right) Lit for SM link
Dimensions	<b>Width:</b> 3.0" [76 mm] <b>Depth:</b> 4.7" [119 mm] <b>Height:</b> 1.0" [25 mm]
Power	External AC/DC required; 12V DC. 0.5A; unregulated; standard
Power Consumption	3.1 watts
Environment	Operating temperature 0° – 50° C; 5% – 90% humidity non-condensing; 0 – 10,000 ft. altitude
Shipping Weight	2 lbs. [0.90 kg]
Safety Compliance	<b>Wall Mount Power Supply:</b> UL Listed and CSA certified
Regulatory Compliance	CISPR/EN55022 Class A; EN55024; EN61000; FCC Class A; CE Mark
Warranty	Lifetime

## Speed Selectable Media Converter

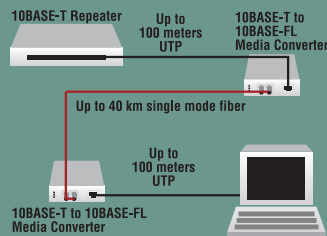


### ▶ Selectable speed setting:

The converter can be set to 10Mbps or 100Mbps. Both copper and fiber ports are automatically set to the same speed.

Transition Networks's speed selectable copper to fiber Media Converter allows you to extend the distance between copper based connections with the use of fiber optic cable. The ability to select the speed of converter allows for easy migration from a 10Mbps network today to a 100Mbps network in the future. This converter is a true layer 1 device as both the copper and fiber ports operate at the same speed setting (i.e. 100BASE-TX to 100BASE-FX). For 10Mbps applications, these devices must be used in pairs.

### Extend Network Distance

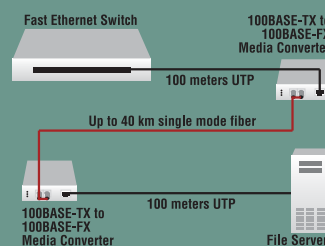


### Fast Ethernet

Use the 100BASE-TX to 100BASE-FX setting to extend the distance between any two 100BASE-TX devices up to 40 km (24.9 mi.) using single mode fiber. Or interface directly with a 100BASE-FX compliant port on any device to provide a 100BASE-TX port interface.

### Ethernet

Use the 10BASE-T to 10BASE-FL speed setting (back-to-back) to extend the distance between two 10BASE-T devices up to 40 km (24.9 mi.) using single mode fiber without a repeater.



## SSEFE10xx-10x



### Ordering Info

See pages 171-181 for complete fiber optic connector specs.

#### SSEFE1012-100

10BASE-T or 100BASE-TX (RJ-45)  
[100 m/328 ft.]  
to 10BASE-FL or 100BASE-FX 1310nm SM (ST)  
[20 km/12.4 mi.] Link Budget: 17.0 dB

#### SSEFE1014-100

10BASE-T or 100BASE-TX (RJ-45)  
[100 m/328 ft.]  
to 10BASE-FL or 100BASE 1310nm SM (SC)  
[20 km/12.4 mi.] Link Budget: 17.0 dB

#### SSEFE1015-100

10BASE-T or 100BASE-TX (RJ-45)  
[100 m/328 ft.]  
to 10BASE or 100BASE 1310nm SM (SC)  
[40 km/24.9 mi.] Link Budget: 26.0 dB

#### SSEFE1022-100

10BASE-T or 100BASE-TX (RJ-45)  
[100 m/328 ft.]  
to 10BASE or 100BASE 1310nm SM (ST)  
[40 km/24.9 mi.] Link Budget: 26.0 dB

### Single Fiber Products

Recommended use in pairs (see page 17)

#### SSEFE1029-100

10BASE-T or 100BASE-TX (RJ-45)  
[100 m/328 ft.]  
to 10BASE-FL or 100BASE-FX 1310nm TX / 1550nm RX single fiber SM (SC)  
[20 km/12.4 mi.] Link Budget: 19.0 dB

#### SSEFE1029-101

10BASE-T or 100BASE-TX (RJ-45)  
[100 m/328 ft.]  
to 10BASE-FL or 100BASE-FX 1550nm TX / 1310nm RX single fiber SM (SC)  
[20 km/12.4 mi.] Link Budget: 19.0 dB

### Optional Accessories

(sold separately)

#### Wide Input (18 – 72VDC) Power Supplies:

**SPS-1872-PS** (see page 72)

Piggy Back Power Supply

**SPS-1872-SA** (see page 72)

Stand-Alone Power Supply

#### Mounting Options:

**E-MCR-04** (see page 70)

12-slot Media Converter Rack

**RMS19-SA4-01** (see page 71)

4-slot Media Converter Shelf

**WMBD** (see page 70)

DIN Rail Bracket 5.0" [127 mm]

**WMBD-E** (see page 70)

DIN Rail Bracket (Extended) 4.3" [109 mm]

**WMBD-F** (see page 70)

DIN Rail Bracket (flat) 3.3" [84 mm]

**WMBL** (see page 70)

Wall Mount Bracket 4.0" [102 mm]

**WMBV** (see page 70)

Vertical Wall Mount Bracket 5.0" [127 mm]

**WMBV-E** (see page 70)

Extended Vertical Mount 4.7" [119 mm]

## Features

▶ **AutoCross™** (see page 14)

▶ **Link Pass Through** (see page 15)

▶ **Automatic Link Restoration** (see page 16)

## Specifications

See pages 171–181 for complete fiber optic connector specs.

Standards	IEEE Std. 802.3™
Switches	<b>Switch 1:</b> Link Pass Through on/off <b>Switch 2:</b> 10Mb or 100Mb operation
Status LEDs	<b>PWR (Power):</b> Lit for normal operation <b>F-ACT (Fiber Activity):</b> Blinking = data reception on the fiber link <b>F-100 (Fiber Speed):</b> ON = link at 100Mb <b>F-10 (Fiber Speed):</b> ON = link at 10Mb <b>C-ACT (Copper Activity):</b> Blinking = data reception on the copper link <b>C-100 (Copper Speed):</b> ON = link at 100Mb <b>C-10 (Copper Speed):</b> ON = link at 10Mb
Dimensions	<b>Width:</b> 3.25" [82 mm] <b>Depth:</b> 4.8" [122 mm] <b>Height:</b> 1.0" [25 mm]
Power Consumption	3.6 watts
Power	External AC/DC required; 12VDC, 0.5A; unregulated; standard (provided)
Environment	0 – 50°C operating; 5% – 95% humidity non-condensing; 0 – 10,000 ft. altitude
Shipping Weight	2 lbs. [0.90 kg]
Safety Compliance	<b>Wall Mount Power Supply:</b> UL Listed; C-UL Listed (Canada)
Regulatory Compliance	CISPR/EN55022 Class A; EN55024; EN60950 Class A; FCC Class A; CE Mark
Warranty	Lifetime

## See Also:

▶ Ethernet or Fast Ethernet Speed Selectable Point System™ Slide-In-Module Media Converters

page 34

## Fast Ethernet Media Converter



▶ **Extend Network Distance**  
Used in pairs, this media converter can extend distances between two twisted pair switches or a switch and a server up to 2 km over multimode fiber or up to 120 km over single mode fiber.

▶ **Connect Remote Devices**  
Using one media converter, a switch with a copper port can be connected to a switch with an existing fiber interface.

### Features

- ▶ Operates under heavy traffic loads without excess heat, so there is no need for a failure-prone internal fan.
- ▶ Round trip delay of only 40 bit times —far below the Class II rating of 92 bit times
- ▶ Auto-Negotiation (see page 14)
- ▶ AutoCross™ (see page 14)
- ▶ Link Pass Through (see page 15)
- ▶ Far End Fault (FEF) (see page 14)
- ▶ Automatic Link Restoration (see page 16)
- ▶ Pause (see page 15)

The converters will automatically re-establish link when connected to two 10/100 auto-negotiating switches if link is lost. With other manufacturers' converters the user must intervene to re-establish link.

### Specifications

See pages 171–181 for complete fiber optic connector specs.

Standards	IEEE Std. 802.3™ 100BASE-FX, 100BASE-TX
Switches	<b>SW1:</b> Auto-Negotiation On/Off <b>SW2:</b> Pause TX On/Off <b>SW3:</b> Link Pass Through On/Off <b>SW4:</b> Far End Fault On/Off
Jumpers	<b>Jumper Block 1:</b> AutoCross™ enable
Status LEDs	Power SDF or LKF (Link Fiber) SDC or LKC (Link Copper) RXF (Receive Fiber) RXC (Receive Copper)
Dimensions	<b>Width:</b> 3.0" [76 mm] <b>Depth:</b> 4.7" [119 mm] <b>Height:</b> 1.0" [25 mm]
Power	External AC/DC required: 12 VDC, 0.5 A, unregulated, standard
Environment	0 – 50°C, 5% – 95% humidity non-condensing, 0 – 10,000 feet altitude
Shipping Weight	2 lbs. [0.90 kg]
Safety Compliance	<b>Wall Mount Power Supply:</b> UL Listed and CSA certified
Regulatory Compliance	FCC Class A, EN55024, EN55022 Class A, EN61000, CE Mark
Warranty	Lifetime

### See Also:

- ▶ Fast Ethernet 100BASE-TX to 100BASE-FX Point System™ Slide-In-Module Media Converters

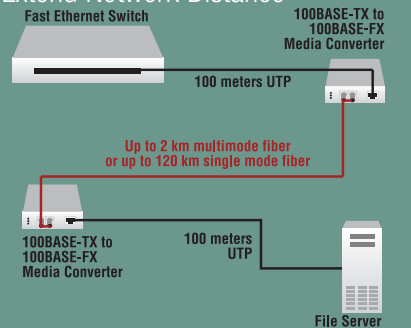
page 35 & 36

## E-100BTX-FX-05(XXXX)



single fiber model

### Extend Network Distance



### Ordering Info

See pages 171–181 for complete fiber optic connector specs.

- |   |   |
|---|---|
| <p><b>E-100BTX-FX-05</b><br/>100BASE-TX (RJ-45) [100 m/328 ft.] to 100BASE-FX 1300nm MM (ST) [2 km/ 1.2 mi.] Link Budget: 11.0 dB</p> <p><b>E-100BTX-FX-05(SC)</b><br/>100BASE-TX (RJ-45) [100 m/328 ft.] to 100BASE-FX 1300nm multimode (SC) [2 km/ 1.2 mi.] Link Budget: 11.0 dB</p> <p><b>E-100BTX-FX-05(LC)</b><br/>100BASE-TX (RJ-45) [100 m/328 ft.] to 100BASE-FX 1300nm multimode (LC) [2 km/ 1.2 mi.] Link Budget: 11.0 dB</p> <p><b>E-100BTX-FX-05(MT)</b><br/>100BASE-TX (RJ-45) [100 m/328 ft.] to 100BASE-FX 1300nm MM (MT-RJ) [2 km/ 1.2 mi.] Link Budget: 14.5 dB</p> <p><b>E-100BTX-FX-05(SM)</b><br/>100BASE-TX (RJ-45) [100 m/328 ft.] to 100BASE-FX 1310nm SM (SC) [20 km/12.4 mi.] Link Budget: 16.0 dB</p> <p><b>E-100BTX-FX-05(SMLC)</b><br/>100BASE-TX (RJ-45) [100 m/328 ft.] to 100BASE-FX 1310nm SM (LC) [20 km/12.4 mi.] Link Budget: 17.3 dB</p> <p><b>E-100BTX-FX-05(LH)</b><br/>100BASE-TX (RJ-45) [100 m/328 ft.] to 100BASE-FX 1310nm SM (SC) [40 km/24.9 mi.] Link Budget: 26.0 dB</p> <p><b>E-100BTX-FX-05(XL)</b><br/>100BASE-TX (RJ-45) [100 m/328 ft.] to 100BASE-FX 1310nm SM (SC) [60 km/37.3 mi.] Link Budget: 29.0 dB</p> <p><b>E-100BTX-FX-05(LW)</b><br/>100BASE-TX (RJ-45) [100 m/328 ft.] to 100BASE-FX 1550nm SM (SC) [80 km/49.7 mi.] Link Budget: 29.0 dB</p> <p><b>E-100BTX-FX-05(XLW)</b><br/>100BASE-TX (RJ-45) [100 m/328 ft.] to 100BASE-FX 1550nm SM (SC) [120 km/74.6 mi.] Link Budget: 36.0 dB</p> <p><b>Single Fiber Products</b><br/>Recommended use in pairs (see page 17)</p> <p><b>E-100BTX-FX-05(100)</b><br/>100BASE-TX (RJ-45) [100 m/328 ft.] to 100BASE-FX 1310nm TX / 1550nm RX single fiber single mode (SC) [20 km/12.4 mi.] Link Budget: 19.0 dB</p> <p><b>E-100BTX-FX-05(101)</b><br/>100BASE-TX (RJ-45) [100 m/328 ft.] to 100BASE-FX 1550nm TX / 1310nm RX single fiber single mode (SC) [20 km/12.4 mi.] Link Budget: 19.0 dB</p> | <p><b>E-100BTX-FX-05(102)</b><br/>100BASE-TX (RJ-45) [100 m/328 ft.] to 100BASE-FX 1310nm TX / 1550nm RX single fiber single mode (SC) [40 km/ 24.9 mi.] Link Budget: 25.0 dB</p> <p><b>E-100BTX-FX-05(103)</b><br/>100BASE-TX (RJ-45) [100 m/328 ft.] to 100BASE-FX 1550nm TX / 1310nm RX single fiber single mode (SC) [40 km/ 24.9 mi.] Link Budget: 25.0 dB</p> <p><b>E-100BTX-FX-05(104)</b><br/>100BASE-TX (RJ-45) [100 m/328 ft.] to 100BASE-FX 1310nm TX / 1550nm RX single fiber single mode (SC) [60 km/37.3 mi.] Link Budget: 16.0 dB</p> <p><b>E-100BTX-FX-05(105)</b><br/>100BASE-TX (RJ-45) [100 m/328 ft.] to 100BASE-FX 1550nm TX / 1310nm RX single fiber single mode (SC) [60 km/37.3 mi.] Link Budget: 26.0 dB</p> <p><b>E-100BTX-FX-05(106)</b><br/>100BASE-TX (RJ-45) [100 m/328 ft.] to 100BASE-FX 1310nm TX / 1550nm RX single fiber single mode (SC) [80 km/49.7 mi.] Link Budget: 33.0 dB</p> <p><b>E-100BTX-FX-05(107)</b><br/>100BASE-TX (RJ-45) [100 m/328 ft.] to 100BASE-FX 1550nm TX / 1310nm RX single fiber single mode (SC) [80 km/49.7 mi.] Link Budget: 32.0 dB</p> |
|---|---|

- Optional Accessories**  
(sold separately)
- Wide Input (18 – 72VDC) Power Supplies:**
- SPS-1872-CC (see page 72)**  
Piggy Back Power Supply
  - SPS-1872-SA (see page 72)**  
Stand-Alone Power Supply
- Mounting Options:**
- E-MCR-04 (see page 70)**  
12-slot Media Converter Rack
  - RMS19-SA4-01 (see page 71)**  
4-slot Media Converter Shelf
  - WMBD (see page 70)**  
DIN Rail Bracket 5.0" [127 mm]
  - WMBD-FS (see page 70)**  
DIN Rail Bracket (flat, small) 3.1" [79 mm]
  - WMBL (see page 70)**  
Wall Mount Bracket 4.0" [102 mm]
  - WMBV (see page 70)**  
Vertical Wall Mount Bracket 5.0" [127 mm]

mounting options

ethernet  
fast ethernet

- 10/100 bridging
- 10/100/1000
- gigabit ethernet
- atm/oc-x
- ds3-t3/e3
- high speed serial
- rs232
- rs422/485
- t1/e1
- pots 2-wire
- video
- industrial

**Fast Ethernet Media Converter**▶ **Extended Temperature Capable:**

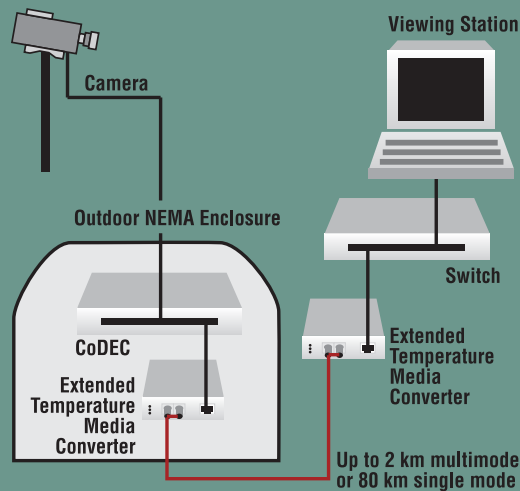
Designed to operate in environments where ambient temperatures can rise as high as 65°C (149°F).

Connect remote devices such as IP based surveillance cameras or signaling equipment in a non-climate controlled enclosure. Deliver 100Mbps data access in residential or commercial environments inside a non-climate controlled pedestal enclosure.

This converter can also be deployed in industrial environments where excessive heat may be a concern. (Note that this device is rated to meet "temperature" requirements of industrial environments only.)

**Features**

- ▶ **Auto-Negotiation** (see page 14)
- ▶ **AutoCross™** (see page 14)
- ▶ **Link Pass Through** (see page 15)
- ▶ **Far End Fault Detection** (see page 14)
- ▶ **Automatic Link Restoration** (see page 16)
- ▶ **Pause** (see page 15)

**E-100BTX-FX-05(xxHT)****Extended Temperature Applications (to 65°C)****Specifications**

See pages 171-181 for complete fiber optic connector specs.

Standards	IEEE Std. 802.3™ 100BASE-FX; 100BASE-TX
Jumpers	Jumper Block 1: AutoCross™ enable
Switches	SW1: Auto-Negotiation On/Off SW2: Pause TX On/Off SW3: LPT On/Off SW4: FEF On/Off
Status LEDs	<b>Power:</b> Lit for normal operation <b>SDF (Signal Detect Fiber):</b> Lit for fiber link <b>SDC (Signal Detect Copper):</b> Lit for copper link <b>RXF (Receive Fiber):</b> Flashing = RX data <b>RXC (Receive Copper):</b> Flashing = RX data
Dimensions	<b>Width:</b> 3.0" [76 mm] <b>Depth:</b> 4.7" [119 mm] <b>Height:</b> 1.0" [25 mm]
Power	External AC/DC required; 9V DC. 1.0A; unregulated; standard
Environment	-25° C to +65° C; 5% – 95% humidity non-condensing; 0 – 10,000 feet altitude
Shipping Weight	2 lbs. [0.90 kg]
Safety Compliance	<b>Wall Mount Power Supply:</b> UL Listed and CSA certified
Regulatory Compliance	FCC Class A; EN55024; EN55022 Class A; EN61000; CE Mark
Warranty	Lifetime

**Ordering Info**

See pages 171-181 for complete fiber optic connector specs.

- E-100BTX-FX-05(HT)**  
100BASE-TX (RJ-45) [100 m/328 ft.]  
to 100BASE-FX 1300nm multimode (ST)  
[2 km/ 1.2 mi.] Link Budget: 11.0 dB
- E-100BTX-FX-05(SCHT)**  
100BASE-TX (RJ-45) [100 m/328 ft.]  
to 100BASE-FX 1300nm multimode (SC)  
[2 km/ 1.2 mi.] Link Budget: 11.0 dB
- E-100BTX-FX-05(SMHT)**  
100BASE-TX (RJ-45) [100 m/328 ft.]  
to 100BASE-FX 1310nm SM (SC)  
[20 km/12.4 mi.] Link Budget: 16.0 dB
- E-100BTX-FX-05(LHHT)**  
100BASE-TX (RJ-45) [100 m/328 ft.]  
to 100BASE-FX 1310nm SM (SC)  
[40 km/24.9 mi.] Link Budget: 26.0 dB
- E-100BTX-FX-05(XLHT)**  
100BASE-TX (RJ-45) [100 m/328 ft.]  
to 100BASE-FX 1310nm SM (SC)  
[60 km/37.3 mi.] Link Budget: 33.0 dB
- E-100BTX-FX-05(LWHT)**  
100BASE-TX (RJ-45) [100 m/328 ft.]  
to 100BASE-FX 1550nm SM (SC)  
[80 km/49.7 mi.] Link Budget: 29.0 dB

**Optional Accessories**

(sold separately)

**Wide Input (18 – 72VDC) Power Supplies:**

**SPS-1872-CC** (see page 72)  
Piggy Back Power Supply

**SPS-1872-SA** (see page 72)  
Stand-Alone Power Supply

**Mounting Options:**

**E-MCR-04** (see page 70)  
12-slot Media Converter Rack

**RMS19-SA4-01** (see page 71)  
4-slot Media Converter Shelf

**WMBD** (see page 70)  
DIN Rail Bracket 5.0" [127 mm]

**WMBD-FS** (see page 70)  
DIN Rail Bracket (flat, small) 3.1" [79 mm]

**WMBL** (see page 70)  
Wall Mount Bracket 4.0" [102 mm]

**WMBV** (see page 70)  
Vertical Wall Mount Bracket 5.0" [127 mm]

## Fast Ethernet Media Converter



## J/FE-CF-03(xx)



mounting options  
ethernet

## fast ethernet

10/100 bridging  
10/100/1000  
gigabit ethernet  
atm/oc-x  
ds3-t3/e3  
high speed serial  
rs232  
rs422/485  
t1/e1  
pots 2-wire  
video  
industrial

### ▶ Extend Network Distance

in Full-Duplex Networks: Used in pairs, this media converter can extend distances between two twisted pair switches or a switch and a server up to 2 km over multimode fiber or up to 20 km over single mode fiber.

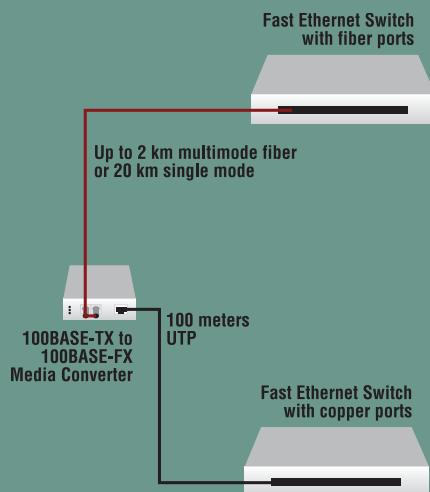
### ▶ Connect Remote Devices

Using a single 100BASE-TX to FX media converter, a switch with a copper port can be connected to a switch or any other 100BASE compliant device with an existing fiber interface.

## Features

- ▶ Auto-Negotiation (see page 14)
- ▶ AutoCross™ (see page 14)
- ▶ Automatic Link Restoration (see page 16)
- ▶ Interoperable with other 100BASE-TX/FX NICs, hubs or switches
- ▶ Provides LEDs for easy network monitoring
- ▶ Rack-mountable in the E-MCR-04

## Extend Network Distance



## Specifications

Standards	IEEE Std. 802.3u™ 100BASE-TX and 100BASE-FX
Switches	<b>SW1:</b> Auto-Negotiation On/Off <b>SW2:</b> Full/Half Duplex
Status LEDs	<b>Power</b> <b>Copper:</b> Link & Receive <b>Fiber:</b> Link & Receive
Dimensions	<b>Width:</b> 3.0" [76 mm] <b>Depth:</b> 3.93" [100 mm] <b>Height:</b> 0.98" [25 mm]
Power	External AC/DC required; +12VDC, 0.5A
Environment	0 – 60° C; 5% – 95% humidity non-condensing; 0 – 10,000 feet altitude
Shipping Weight	2 lbs. [0.90 kg]
Safety Compliance	<b>Wall Mount Power Supply:</b> UL Listed and CSA certified
Regulatory Compliance	CISPR/EN55022 Class A + EN55204; FCC Class A; CE Mark
Warranty	Lifetime

## Ordering Info

**J/FE-CF-03**  
100BASE-TX (RJ-45) [100 m/328 ft.]  
to 100BASE-FX 1300nm multimode (ST)  
[2 km/ 1.2 mi.] Link Budget: 11.0 dB

**J/FE-CF-03(SC)**  
100BASE-TX (RJ-45) [100 m/328 ft.]  
to 100BASE-FX 1310nm multimode (SC)  
[2 km/ 1.2 mi.] Link Budget: 11.0 dB

**J/FE-CF-03(SM)**  
100BASE-TX (RJ-45) [100 m/328 ft.]  
100BASE-FX 1310nm single mode (SC)  
[20 km/12.4 mi.] Link Budget: 16.0 dB

**J/FE-CF-03(LH)**  
100BASE-TX (RJ-45) [100 m/328 ft.]  
to 100BASE-FX 1310nm single mode (SC)  
[40 km/24.9 mi.] Link Budget: 26.0 dB

**Single Fiber Products**  
Recommended use in pairs (see page 17)

**J/FE-CF-03(100)**  
100BASE-TX (RJ-45) [100 m/328 ft.]  
100BASE-FX 1310nm TX / 1550nm RX  
single fiber single mode (SC)  
[20 km/12.4 mi.] Link Budget: 19.0 dB

**J/FE-CF-03(101)**  
100BASE-TX (RJ-45) [100 m/328 ft.]  
100BASE-FX 1550nm TX / 1310nm RX  
single fiber single mode (SC)  
[20 km/12.4 mi.] Link Budget: 19.0 dB

## Optional Accessories

(sold separately)  
**Wide Input (18 – 72VDC) Power Supplies:**  
**SPS-1872-CC** (see page 72)  
Piggy Back Power Supply

**SPS-1872-SA** (see page 72)  
Stand-Alone Power Supply

## Mounting Options:

**E-MCR-04** (see page 70)  
12-slot Media Converter Rack

**RMS19-SA4-01** (see page 71)  
4-slot Media Converter Shelf

**WMBD** (see page 70)  
DIN Rail Bracket 5.0" [127 mm]

**WMBD-FS** (see page 70)  
DIN Rail Bracket (flat, small) 3.1" [79 mm]

**WMBS** (see page 70)  
Wall Mount Bracket 3.2" [81 mm]

**Remotely Managed Fast Ethernet Media Converter**

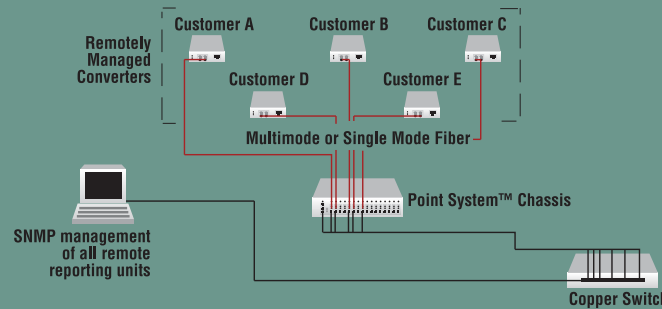
- ▶ **In-band management of stand alone** Fast Ethernet media converters
- ▶ **Remote Loopback** assists in diagnosing network problems
- ▶ Upstream and downstream **bandwidth control** allows service providers to offer an array of services

**SRMFE10xx-20x**

With the Remotely Managed Fast Ethernet Media Converter, service providers can now monitor and manage the entire optical link from the Central Office (CO) to the Customer Premise Equipment (CPE).

When used in conjunction with a managed Point System™ Chassis card, (CRMFE10xx-200), this stand-alone unit can be managed remotely. This Fast Ethernet media converter provides a fully-managed conversion between 100BASE-TX and 100BASE-FX signals at Customer Premises.

Converters should be used in pairs. Typical installation will include a chassis card installed in the Point System™ locally and a stand-alone converter (SRMFE) installed at the remote location.

**Remotely Managed Fast Ethernet****Features**

- ▶ **Auto-Negotiation** (see page 14)
- ▶ **AutoCross™** (see page 14)
- ▶ **Link Pass Through** (see page 15)
- ▶ **Far End Fault (FEF)** (see page 14)
- ▶ **Automatic Link Restoration** (see page 16)
- ▶ **Pause** (see page 15)
- ▶ **Loopback** (see page 16)
- ▶ **Remote Management**

**See Also:**

- ▶ Fast Ethernet Remotely Managed Point System™ Slide-In-Module Media Converters

page 37

**Specifications**

See pages 171–181 for complete fiber optic connector specs.

Standards	IEEE Std. 802.3™
3-position Jumper	<b>Jumper J2:</b> Enable/disable AutoCross™ <b>Jumper J6:</b> <b>Hardware:</b> Converter mode determined by 4-position switch settings <b>Software:</b> Converter mode determined by most recently saved on-board microprocessor settings.
4 position Switch	
<b>Pos 1</b>	Enable/disable twisted pair auto-negotiation
<b>Pos 2</b>	Enable/disable twisted pair pause
<b>Pos 3</b> (UP)	Enables Link Pass Through.
(DOWN)	Disables Link Pass Through
<b>Pos 4</b> (UP)	Enables Far End Fault
(DOWN)	Disables Far End Fault.
Status LEDs	<b>Power</b> <b>LKF (Fiber Link)</b> <b>RXF (Fiber Receive)</b> <b>RXC (Copper Receive)</b> <b>LKC (Copper Link)</b>
Dimensions	<b>Width:</b> 3.25" [83 mm] <b>Depth:</b> 4.8" [122 mm] <b>Height:</b> 1.0" [25 mm]
Power Consumption	4 watts
Power	External AC/DC required; 12V DC 0.5A; unregulated; standard
Environment	0 – 50° C; 5% – 95% humidity non-condensing; 0 – 10,000 feet altitude
Shipping Weight	2 lbs. [0.90 kg]
Safety Compliance	<b>Wall Mount Power Supply:</b> UL Listed and CSA certified
Regulatory Compliance	CISPR/EN55022 Class A & B + EN55024; FCC Class A & B; CE Mark
Warranty	Lifetime

**Ordering Info**

See pages 171–181 for complete fiber optic connector specs.

**SRMFE1011-200**

100BASE-TX (RJ-45) [100 m/328 ft.] to 100BASE-FX 1300nm multimode (ST) [2 km/ 1.2 mi.] Link Budget: 11.0 dB

**SRMFE1013-200**

100BASE-TX (RJ-45) [100 m/328 ft.] to 100BASE-FX 1300nm multimode (SC) [2 km/ 1.2 mi.] Link Budget: 11.0 dB

**SRMFE1018-200**

100BASE-TX (RJ-45) [100 m/328 ft.] to 100BASE-FX 1300nm MM (MT-RJ) [2 km/ 1.2 mi.] Link Budget: 14.5 dB

**SRMFE1014-200**

100BASE-TX (RJ-45) [100 m/328 ft.] to 100BASE-FX 1310nm SM (SC) [20 km/12.4 mi.] Link Budget: 16.0 dB

**SRMFE1015-200**

100BASE-TX (RJ-45) [100 m/328 ft.] to 100BASE-FX 1310nm SM (SC) [40 km/24.9 mi.] Link Budget: 26.0 dB

**SRMFE1016-200**

100BASE-TX (RJ-45) [100 m/328 ft.] to 100BASE-FX 1310nm SM (SC) [60 km/37.3 mi.] Link Budget: 29.0 dB

**SRMFE1017-200**

100BASE-TX (RJ-45) [100 m/328 ft.] to 100BASE-FX 1550nm SM (SC) [80 km/49.7 mi.] Link Budget: 29.0 dB

**Single Fiber Products**

Recommended use in pairs (see page 17)

**SRMFE1029-200**

100BASE-TX (RJ-45) [100 m/328 ft.] to 100BASE-FX 1310nm TX / 1550nm RX single fiber single mode (SC) [20 km/12.4 mi.] Link Budget: 19.0 dB

**SRMFE1029-201**

100BASE-TX (RJ-45) [100 m/328 ft.] to 100BASE-FX 1550nm TX / 1310nm RX single fiber single mode (SC) [20 km/12.4 mi.] Link Budget: 19.0 dB

**SRMFE1029-202**

100BASE-TX (RJ-45) [100 m/328 ft.] to 100BASE-FX 1310nm TX / 1550nm RX single fiber single mode (SC) [40 km/24.9 mi.] Link Budget: 25.0 dB

**SRMFE1029-203**

100BASE-TX (RJ-45) [100 m/328 ft.] to 100BASE-FX 1550nm TX / 1310nm RX single fiber single mode (SC) [40 km/24.9 mi.] Link Budget: 25.0 dB

**Optional Accessories**

(sold separately)

**Wide Input (18 – 72VDC) Power Supplies:**

SPS-1872-PS or SPS-1872-SA (see page 72)

**Mounting Options:****E-MCR-04** (see page 70)

12-slot Media Converter Rack

**WMBD or WMBL** (see page 70)

Wall Mount Brackets

**RMS19-SA4-01** (see page 71)

4-slot Media Converter Shelf

## Single Mode to Multimode Media Converter



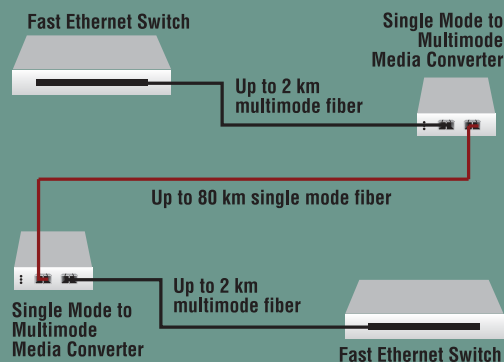
- ▶ Link Pass Through (see page 15)
- ▶ Automatic Link Restoration (see page 16)

### ▶ Extend Network Distance

Extend distances up to 80 km with these network protocols that use 1300nm wavelength for fiber optic transmission. In fact, distances can be extended in any networking protocol between 100Mbps and 155Mbps.

Save money by purchasing Fast Ethernet devices with lower cost multimode fiber interfaces and use converters to introduce single mode fiber only where you need it.

### Extend Network Distance



## Specifications

See pages 171–181 for complete fiber optic connector specs.

Standards	IEEE Std. 802.3
Status LEDs	<b>PWR:</b> Steady green LED indicates connection to external AC power <b>LKM or Link (Left):</b> Lit for MM Link <b>LKS or Link (Right):</b> Lit for SM Link
Dimensions	<b>Width:</b> 3.0" [76 mm] <b>Depth:</b> 4.7" [119 mm] <b>Height:</b> 1.0" [25 mm]
Power	External AC/DC required; 12V DC. 0.5A; unregulated; standard
Environment	0 – 50° C; 5% – 90% humidity non-condensing; 0 – 10,000 feet altitude
Shipping Weight	2 lbs. [0.90 kg]
Safety Compliance	<b>Wall Mount Power Supply:</b> UL Listed and CSA certified
Regulatory Compliance	CISPR/EN55022 Class A; EN55024; EN61000; FCC Class A; CE Mark
Warranty	Lifetime

### See Also:

- ▶ Fast Ethernet or ATM/OC-3/SDH/SONET Point System™ Slide-In-Module Media Converters

page 38

## F-SM-MM-02 & SFMFF1xxx-20x



## Ordering Info

See pages 171–181 for complete fiber optic connector specs.

- SFMFF1313-200**  
1300nm multimode (SC)  
[2 km/1.2 mi.] Link Budget: 11.0 dB  
to 1300nm multimode (SC)  
[2 km/1.2 mi.] Link Budget: 11.0 dB
- F-SM-MM-02**  
1300nm multimode (SC)  
[2 km/1.2 mi.] Link Budget: 11.0 dB  
to 1310nm single mode (SC)  
[20 km/12.4 mi.] Link Budget: 16.0 dB
- SFMFF1415-200**  
1310nm single mode (SC)  
[20 km/12.4 mi.] Link Budget: 16.0 dB  
to 1310nm single mode (SC)  
[40 km/24.9 mi.] Link Budget: 26.0 dB
- F-SM-MM-02(LH)**  
1300nm multimode (SC)  
[2 km/1.2 mi.] Link Budget: 11.0 dB  
to 1310nm single mode (SC)  
[40 km/24.9 mi.] Link Budget: 26.0 dB
- F-SM-MM-02(XL)**  
1300nm multimode (SC)  
[2 km/1.2 mi.] Link Budget: 11.0 dB  
to 1310nm single mode (SC)  
[60 km/37.3 mi.] Link Budget: 29.0 dB
- SFMFF1417-200**  
1310nm single mode (SC)  
[20 km/12.4 mi.] Link Budget: 16.0 dB  
to 1550nm single mode (SC)  
[80 km/49.7 mi.] Link Budget: 29.0 dB
- F-SM-MM-02(LW)**  
1300nm multimode (SC)  
[2 km/1.2 mi.] Link Budget: 11.0 dB  
to 1550nm single mode (SC)  
[80 km/49.7 mi.] Link Budget: 29.0 dB
- Single Fiber Products**  
*Recommended use in pairs (see page 17)*
- SFMFF1329-200**  
1300nm multimode (SC)  
[2 km/1.2 mi.] Link Budget: 11.0 dB  
to 1310nm TX/1550nm RX single fiber single mode (SC)  
[20 km/12.4 mi.] Link Budget: 19.0 dB
- SFMFF1329-201**  
1300nm multimode (SC)  
[2 km/1.2 mi.] Link Budget: 11.0 dB  
1550nm TX / 1310nm RX single fiber single mode (SC)  
[20 km/12.4 mi.] Link Budget: 19.0 dB
- SFMFF1329-202**  
1300nm multimode (SC)  
[2 km/1.2 mi.] Link Budget: 11.0 dB  
1550nm TX / 1310nm RX single fiber single mode (SC)  
[40 km/24.9 mi.] Link Budget: 25.0 dB
- SFMFF1329-203**  
1300nm multimode (SC)  
[2 km/1.2 mi.] Link Budget: 11.0 dB  
1550nm TX / 1310nm RX single fiber single mode (SC)  
[40 km/24.9 mi.] Link Budget: 25.0 dB
- SFMFF1329-204**  
1300nm multimode (SC)  
[2 km/1.2 mi.] Link Budget: 11.0 dB  
1310nm TX / 1550nm RX single fiber single mode (SC)  
[60 km/37.3 mi.] Link Budget: 28.0 dB
- SFMFF1329-205**  
1300nm multimode (SC)  
[2 km/1.2 mi.] Link Budget: 11.0 dB  
1550nm TX / 1310nm RX single fiber single mode (SC)  
[60 km/37.3 mi.] Link Budget: 27.0 dB
- SFMFF1429-200**  
1310nm single mode (SC)  
[20 km/12.4 mi.] Link Budget: 16.0 dB  
1310nm TX / 1550nm RX single fiber single mode (SC)  
[20 km/12.4 mi.] Link Budget: 19.0 dB
- SFMFF1429-201**  
1310nm single mode (SC)  
[20 km/12.4 mi.] Link Budget: 16.0 dB  
to 1550nm TX / 1310nm RX single fiber single mode (SC)  
[20 km/12.4 mi.] Link Budget: 19.0 dB
- SFMFF1429-202**  
1310nm single mode (SC)  
[20 km/12.4 mi.] Link Budget: 16.0 dB  
to 1310nm TX / 1550nm RX single fiber single mode (SC)  
[40 km/24.9 mi.] Link Budget: 25.0 dB
- SFMFF1429-203**  
1310nm single mode (SC)  
[20 km/12.4 mi.] Link Budget: 16.0 dB  
to 1550nm TX / 1310nm RX single fiber single mode (SC)  
[40 km/24.9 mi.] Link Budget: 25.0 dB

## fast ethernet

- 10/100 bridging
- 10/100/1000
- gigabit ethernet
- atm/oc-x
- ds3-t3/e3
- high speed serial
- rs232
- rs422/485
- t1/e1
- pots 2-wire
- video
- industrial

## Optional Accessories

- (sold separately)
- F-SM-MM-02:**
- SPS-1872-CC (see page 72)**  
Wide Input (18 – 72VDC) Piggy Back Power Supply
- WBMD-FS (see page 70)**  
DIN Rail Bracket (flat, small) 3.1" [79 mm]
- SFMFF1x29-20x:**
- SPS-1872-PS (see page 72)**  
Wide Input (18 – 72VDC) Piggy Back Power Supply
- WBMD-F (see page 70)**  
DIN Rail Bracket (flat) 3.3" [84 mm]
- F-SM-MM-02 or SFMFF1x29-20x:**
- SPS-1872-SA (see page 72)**  
Wide Input (18 – 72VDC) Stand-Alone Power Supply
- E-MCR-04 (see page 70)**  
12-slot Media Converter Rack
- RMS19-SA4-01 (see page 71)**  
4-slot Media Converter Shelf
- WBMD (see page 70)**  
DIN Rail Bracket 5.0" [127 mm]
- WMBL (see page 70)**  
Wall Mount Bracket 4.0" [102 mm]
- WMBV (see page 70)**  
Vertical Wall Mount Bracket 5.0" [127 mm]

## Power over Ethernet PSE Media Converter



► Enables enterprises to provide power to network devices over the existing CAT5 data connection.

► Combine data received over a fiber optic link with -48VDC power; providing power to Data Terminal Equipment (DTE) Power Devices (PD) over unshielded twisted pair cable

Transition's AC or DC powered PoE media converters are Power Sourcing Equipment (PSE) and are fully compatible with Powered Devices (PD) that comply with the IEEE802.3af™: 2003 standard. The converters also include a PD signature sensing and power monitoring features per the IEEE 802.3af standard.

SFEPE10xx-1xx products can operate in two modes: IEEE 802.3af mode as well as "legacy mode". In the IEEE 802.3af mode the POE is fully compatible with devices that comply with the IEEE802.3af standard. The POE converter is also capable of inserting power on either the spare pairs or data pairs of the MDI.

In the "legacy mode" POE can be configured for reverse polarity, 12 VDC, 24 VDC, or 48 VDC power insertion; as well as for other non-IEEE802.3af compatible PDs.

Different voltages & modes are switch selectable.

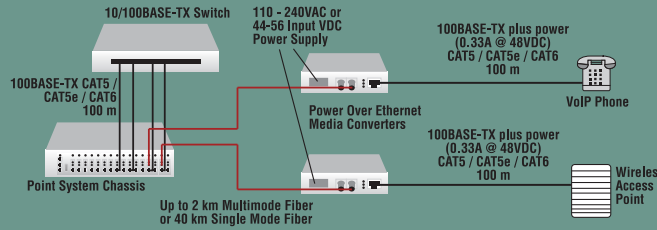
### Features

- Internal AC or DC power supply
- IEEE802.3af Power Over Ethernet Compatible Mode
- Legacy Mode (Non IEEE802.3af)
- 12, 24, or 48 VDC PSE Output Voltage with Reverse Polarity Selection
- Signal Pair and Spare Pair Power Insertion
- Over-Current Protection
- Under-Current Detection
- Minimum Load Sensing
- Fault Protection Input
- Exceeds IEEE802.3af ripple requirements on PSE MDI power leads
- Max 16.8 Watts Power output capacity at legacy 48 VDC
- PSE MDI Power Enable/Disable
- Auto-Negotiation (see page 14)
- AutoCross™ (see page 14)
- Link Pass Through (see page 15)
- Far End Fault (FEF) (see page 14)
- Automatic Link Restoration (see page 16)
- Pause (see page 15)

## SFEPE101x-1x0



### Power over Cat5 to Remotely Located Devices



### Specifications

See pages 171–181 for complete fiber optic connector specs.

Standards	IEEE Std. 802.3™; IEEE Std. 802.3af
Switches	<b>1&amp;2:</b> Set voltage output on twisted pair <b>3:</b> IEEE 802.3af mode / Legacy mode <b>4:</b> Voltage polarity <b>5:</b> MDI power on signal pairs / spare pairs <b>6:</b> Enable / disable Auto-negotiation <b>7:</b> Enable / disable Pause <b>8:</b> Enable / disable Link Pass Through <b>9:</b> Enable / disable Far End Fault <b>10:</b> Enable / disable AutoCross™
Status LEDs	<b>PWR (power):</b> Lit for normal operation <b>MDI Fault:</b> ON = over-current detected <b>MDI ON:</b> ON = MDI port supplying power <b>TX Link:</b> ON = Link on copper port <b>TX Act:</b> Flashing = data activity on copper link <b>FX Link:</b> ON = Link on fiber port <b>FX Act:</b> Flashing = data activity on fiber link
Dimensions	<b>Width:</b> 7.3" [185 mm] <b>Depth:</b> 4.4" [112 mm] <b>Height:</b> 1.2" [30 mm]
Power	<b>Models SFEPE10xx-100:</b> 90 – 250VAC Internal (Power Cord Supplied)  <b>Models SFEPE10xx-110:</b> 18 – 60VDC; 24 – 48VAC Internal (Power Cord Supplied)
Power Consumption	45W Max
Operating Temperature	0 – 50° C [32° – 122°F]
Storage Temperature	-25° – 85° C [-13° – 185°F]
Environment	5 – 95% humidity non-condensing; altitude 0 – 10,000 ft.
Shipping Weight	2 lbs. [0.90 kg]
Regulatory Compliance	EN55022:1994+A1:1996+A2:1997 Class A; FCC Part 15 Subpart B; UL 1950
Warranty	Lifetime

### Ordering Info

See pages 171–181 for complete fiber optic connector specs.

**SFEPE1011-100: AC Powered PSE**  
**SFEPE1011-110: DC Powered PSE**  
 100BASE-TX (RJ-45) [100 m/328 ft.]  
 to 100BASE-FX 1300nm multimode (ST)  
 [2 km/1.2 mi.] Link Budget: 11.0 dB

**SFEPE1013-100: AC Powered PSE**  
**SFEPE1013-110: DC Powered PSE**  
 100BASE-TX (RJ-45) [100 m/328 ft.]  
 to 100BASE-FX 1300nm multimode (SC)  
 [2 km/1.2 mi.] Link Budget: 11.0 dB

**SFEPE1014-100: AC Powered PSE**  
**SFEPE1014-110: DC Powered PSE**  
 100BASE-TX (RJ-45) [100 m/328 ft.]  
 to 100BASE-FX 1310nm SM (SC)  
 [20 km/12.4 mi.] Link Budget: 16.0 dB

### Optional Accessories

(sold separately)

#### Mounting Options:

**WMBD-P**  
 DIN Rail Mount Bracket POE

**WMBL (see page 70)**  
 Wall Mount Bracket 4.0" [102 mm]

## 10/100BASE-SX Media Converter



▶ Lowest possible cost solution for fiber installation up to 60 meters (100BASE-SX)

▶ Ideal for building backbone and horizontal cabling applications where cost and 10/100 auto-negotiation are critical.

## SSETF101x-205



mounting options  
ethernet

## fast ethernet 10/100 bridging

10/100/1000  
gigabit ethernet  
atm/oc-x  
ds3-t3/e3  
high speed serial  
rs232  
rs422/485  
t1/e1  
pots 2-wire  
video  
industrial

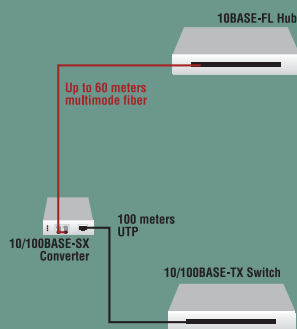
### ▶ Extend Network Distance

Used in pairs, this media converter can extend distances between two twisted pair switches or a switch and a server up to 60 meters over multimode fiber (100BASE-SX).

### ▶ Connect Remote Devices

Using a single 10/100BASE-SX media converter, a switch with a copper port can be connected to a switch or any other 10/100BASE-SX compliant device with an existing fiber interface.

## Extend Network Distance



## Features

▶ Auto-Negotiation (see page 14)

▶ AutoCross™ (see page 14)

▶ Link Pass Through (see page 15)

▶ Efficient and Reliable

The 10/100 SX Media Converter operates easily under heavy traffic loads without generating excess heat; meaning a failure-prone internal fan is unnecessary.

▶ Automatic Link Restoration (see page 16)

## Specifications

Operation	Operates as TIA SP4360A Type I, II device
Standards	IEEE Std. 802.3™; 100BASE-TX, 10BASE-FL, Draft TIA 100BASE-SX-SP-4360A
Recommended Optic Cable	62.5/125 μm multimode fiber; 50/125 μm multimode fiber
Optional Optic Cable	100/140 μm multimode fiber; 85/125 μm multimode fiber
Status LEDs	<b>PWR (Power):</b> ON = Connection to the external AC or DC power <b>SX-ACT (Fiber Activity):</b> Flashing = Data reception on the fiber link <b>SX-100 (Fiber Speed):</b> ON = Fiber link at 100 Mb/s <b>SX-10 (Fiber Speed):</b> ON = Fiber link at 10 Mb/s <b>TX-ACT (Copper Activity):</b> Flashing = Data reception on the copper link <b>TX-100 (Copper Speed):</b> ON = Copper link at 100 Mb/s <b>TX-10 (Copper Speed):</b> ON = Copper link at 10 Mb/s
Dimensions	<b>Width:</b> 3.25" [82 mm] <b>Depth:</b> 4.8" [122 mm] <b>Height:</b> 1.0" [25 mm]
Power	External AC/DC required; 12V DC. 0.5A; unregulated; standard
Environment	0 – 50° C; 5% – 90% humidity non-condensing; 0 – 10,000 feet altitude
Shipping Weight	2 lbs. [0.90 kg]
Safety Compliance	<b>Wall Mount Power Supply:</b> UL listed and CSA certified
Regulatory Compliance	FCC Class A, CISPR/EN55022 Class A, CE Mark
Warranty	Lifetime

## See Also:

▶ 10/100SX Point System™ Slide-In-Module Media Converters

page 39

## Ordering Info

### SSETF1011-205

10/100BASE-TX (RJ-45) [100 m/328 ft.]  
10/100BASE-SX 850nm multimode (ST)  
[60 m/197 ft.]

### SSETF1013-205

10/100BASE-TX (RJ-45) [100 m/328 ft.]  
10/100BASE-SX 850nm multimode (SC)  
[60 m/197 ft.]

## Optional Accessories

(sold separately)

### Wide Input (18 – 72VDC) Power Supplies:

**SPS-1872-PS** (see page 72)

Piggy Back Power Supply

**SPS-1872-SA** (see page 72)

Stand-Alone Power Supply

### Mounting Options:

**E-MCR-04** (see page 70)

12-slot Media Converter Rack

**RMS19-SA4-01** (see page 71)

4-slot Media Converter Shelf

**WMBD** (see page 70)

DIN Rail Bracket 5.0" [127 mm]

**WMBD-E** (see page 70)

DIN Rail Bracket (extended) 4.3" [109 mm]

**WMBD-F** (see page 70)

DIN Rail Bracket (flat) 3.3" [84 mm]

**WMBL** (see page 70)

Wall Mount Bracket 4.0" [102 mm]

**WMBV** (see page 70)

Vertical Wall Mount Bracket 5.0" [127 mm]

**WMBV-E** (see page 70)

Vertical Wall Mount Bracket (extended)  
4.7" [119 mm]

## OAM/IP-Based Remotely Managed Media Converter



- ▶ Applications:
- Ethernet in the First Mile (EFM)
  - Fiber to the Premise (FTTP), E-Line and E-LAN
  - Enterprise markets

## SFBRM10xx-1xx



## Features

- ▶ MEF 9 & MEF 14 Carrier Ethernet Certification
- ▶ Two selectable remote management modes:
  - IP-Based remote management
  - In-Band OAM 802.3ah (remote device managed by local peer)
- ▶ SNMP v1, v2\*
- ▶ AutoCross™ (see page 14)
- ▶ Auto-Negotiation (see page 14)
- ▶ Pause (see page 15)
- ▶ Transparent Link Pass Through (see page 15)
- ▶ Far-End-Fault (see page 14)
- ▶ Remote Loopback (see page 16)
- ▶ Non-Intrusive Echo
- ▶ IEEE 802.1p™ QOS packet classification with 4 egress queues
- ▶ Ipv4 IP TOS and DiffServ QOS classification, IPv6 Traffic class
- ▶ IEEE 802.1q™ VLAN, 4096 entries
- ▶ Static MAC, 64 entries
- ▶ Double VLAN tagging (QinQ)
- ▶ IEEE 802.1x™ Port based security
- ▶ RADIUS client
- ▶ RMON counters for each port
- ▶ Bandwidth allocation per port (see page 16)
- ▶ DMI Optical Management
- ▶ USB port for basic setup
- ▶ Cable diagnostic function for TP ports
- ▶ 8K MAC addresses
- ▶ Remote Firmware Upgrade (see page 16)

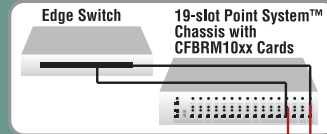
\*Future firmware upgrade; Please contact Transition Networks for upgrade availability.

## See Also:

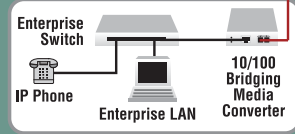
- ▶ 10/100 OAM / IP-Based Point System™ Slide-In-Module Media Converters  
pages 40-41

## Remotely Manage 10/100 Converters

### Central Office



### IP-Based Management



### OAM Remote Management



### Customer Premise Equipment (CPE)

## Specifications

See pages 171-181 for complete fiber optic connector specs.

Standards	IEEE Std. 802.3™, IEEE Std. 802.3ah, IEEE Std. 802.1P, IEEE Std. 802.1Q, IEEE Std. 802.1X
Data Rate	<b>Copper:</b> 10/100 <b>Fiber:</b> 100 Mbps
Filtering Addresses	8K MAC Addresses
RAM Buffers	256K (2 Mbps)
Max Frame Size	<b>802.3ac tagged:</b> 1628 bytes <b>untagged:</b> 1632 bytes
Dimensions	<b>Width:</b> 3.25" [82 mm] <b>Depth:</b> 4.8" [122 mm] <b>Height:</b> 1.0" [25 mm]
Environment	0 – 50°C; 5% – 95% humidity non-condensing; 0 – 10,000 ft. altitude
Power	Input: 100-240 VAC, 1A Output: 12VDC, 1.25A
Shipping Weight	2 lbs. [0.90 kg]
Regulatory Compliance	CISPR/EN55022 Class B, EN55024, EN61000, FCC Class B, CE Mark
Warranty	Lifetime

## Ordering Info

See pages 171-181 for complete fiber optic connector specs.

**SFBRM1011-100**  
**SFBRM1011-110 (DMI model)**  
10/100BASE-TX (RJ-45) [100 m]  
to 100BASE-FX 1300nm MM (ST)  
[2 km/1.2 mi.] Link Budget: 11.0 dB

**SFBRM1013-100**  
**SFBRM1013-110 (DMI model)**  
10/100BASE-TX (RJ-45) [100 m]  
to 100BASE-FX 1300nm MM (SC)  
[2 km/1.2 mi.] Link Budget: 11.0 dB

**SFBRM1014-100**  
**SFBRM1014-110 (DMI model)**  
10/100BASE-TX (RJ-45) [100 m]  
to 100BASE-LX10 1310nm SM (SC)  
[20 km/6.2 mi.] Link Budget: 16.0 dB

**SFBRM1015-100**  
10/100BASE-TX (RJ-45) [100 m]  
to 100BASE-FX 1310nm SM (SC)  
[40 km/24.9 mi.] Link Budget: 26.0 dB

**SFBRM1016-100**  
10/100BASE-TX (RJ-45) [100 m]  
to 100BASE-FX 1310nm SM (SC)  
[60 km/37.3 mi.] Link Budget: 29.0 dB

**SFBRM1017-100**  
10/100BASE-TX (RJ-45) [100 m]  
to 100BASE-FX 1550nm SM (SC)  
[80 km/49.7 mi.] Link Budget: 29.0 dB

**SFBRM1035-100**  
10/100BASE-TX (RJ-45) [100 m]  
to 100BASE-FX 1550nm SM (SC)  
[120 km/74.6 mi.] Link Budget: 36.0 dB

**SFBRM1040-100**  
10/100BASE-TX (RJ-45) [100 m]  
to SFP slot (empty)

**Single Fiber Products**  
Recommended use in pairs (see page 17)

**SFBRM1029-100**  
**SFBRM1029-110 (DMI model)**  
10/100BASE-TX (RJ-45) [100 m]  
to 100BASE-BX-U 1310nm TX/1550nm RX Bi-Di single mode (SC)  
[20 km/12.4 mi.] Link Budget: 19.0 dB

**SFBRM1029-101**  
**SFBRM1029-111 (DMI model)**  
10/100BASE-TX (RJ-45) [100 m]  
to 100BASE-BX-D 1550nm TX/1310nm RX Bi-Di SM (SC)  
[20 km/12.4 mi.] Link Budget: 19.0 dB

Note: all units feature USB port for local management application.

## OAM/IP-Based Remotely Managed Media Converter For Indoor and Protected Outdoor Applications



- ▶ Indoor/Protected Outdoor Applications (-40°C – 65°C)
  - Ethernet in the First Mile (EFM)
  - Fiber to the Premise (FTTP), E-Line and E-LAN
  - Enterprise markets

### Features

- ▶ MEF 9 & MEF 14 Carrier Ethernet Certification
- ▶ Two selectable remote management modes:
  - IP-Based remote management
  - In-Band OAM 802.3ah (remote device managed by local peer)
- ▶ SNMP v1, v2\*
- ▶ AutoCross™ (see page 14)
- ▶ Auto-Negotiation (see page 14)
- ▶ Pause (see page 15)
- ▶ Transparent Link Pass Through (see page 15)
- ▶ Far-End-Fault (see page 14)
- ▶ Remote Loopback (see page 16)
- ▶ IEEE 802.1p™ QOS packet classification with 4 egress queues
- ▶ Ipv4 IP TOS and DiffServ QOS classification, IPv6 Traffic class
- ▶ IEEE 802.1q™ VLAN, 4096 entries
- ▶ Static MAC, 64 entries
- ▶ Double VLAN tagging (QinQ)
- ▶ IEEE 802.1x™ Port based security
- ▶ RADIUS client
- ▶ RMON counters for each port
- ▶ Bandwidth allocation per port (see page 16)
- ▶ DMI Optical Management
- ▶ USB port for basic setup
- ▶ Cable diagnostic function for TP ports
- ▶ 8K MAC addresses
- ▶ Remote Firmware Upgrade (see page 16)

\*Future firmware upgrade; Please contact Transition Networks for upgrade availability.

### See Also:

- ▶ 10/100 OAM / IP-Based Point System™ Slide-In-Module Media Converters  
pages 40 - 41

## SFBRM10xx-18x

NEW

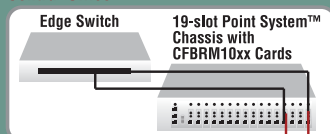


mounting options  
ethernet  
fast ethernet  
10/100/1000  
gigabit ethernet  
atm/oc-x  
ds3-t3/e3  
high speed serial  
rs232  
rs422/485  
t1/e1  
pots 2-wire  
video  
industrial

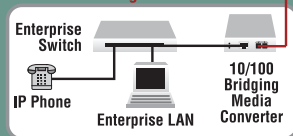
## 10/100 bridging

### Remotely Manage 10/100 Converters

#### Central Office



#### IP-Based Management



#### OAM Remote Management



#### Customer Premise Equipment (CPE)

### Specifications

See pages 171-181 for complete fiber optic connector specs.

Standards	IEEE Std. 802.3™, IEEE Std. 802.3ah, IEEE Std. 802.1P, IEEE Std. 802.1Q, IEEE Std. 802.1X
Data Rate	<b>Copper:</b> 10/100 <b>Fiber:</b> 100 Mbps
Filtering Addresses	8K MAC Addresses
RAM Buffers	256K (2 Mb)
Max Frame Size	<b>802.3ac tagged:</b> 1628 bytes <b>untagged:</b> 1632 bytes
Dimensions	<b>Width:</b> 3.25" [82 mm] <b>Depth:</b> 4.8" [122 mm] <b>Height:</b> 1.0" [25 mm]
Environment	-40 – 65°C; 5% – 95% humidity non-condensing; 0 – 10,000 ft. altitude
Power	Input: 100-240 VAC, 1A Output: 12VDC, 1.25A
Shipping Weight	2 lbs. [0.90 kg]
Regulatory Compliance	CISPR/EN55022 Class B, EN55024, EN61000, FCC Class B, CE Mark
Warranty	Lifetime

### Ordering Info

See pages 171-181 for complete fiber optic connector specs.

**SFBRM1011-180**  
**SFBRM1011-190 (DMI model)**  
10/100BASE-TX (RJ-45) [100 m]  
to 100BASE-FX 1300nm MM (ST)  
[2 km/1.2 mi.] Link Budget: 11.0 dB

**SFBRM1013-180**  
**SFBRM1013-190 (DMI model)**  
10/100BASE-TX (RJ-45) [100 m]  
to 100BASE-FX 1300nm MM (SC)  
[2 km/1.2 mi.] Link Budget: 11.0 dB

**SFBRM1014-180**  
**SFBRM1014-190 (DMI model)**  
10/100BASE-TX (RJ-45) [100 m]  
to 100BASE-LX10 1310nm SM (SC)  
[20 km/6.2 mi.] Link Budget: 16.0 dB

**SFBRM1015-180**  
10/100BASE-TX (RJ-45) [100 m]  
to 100BASE-FX 1310nm SM (SC)  
[40 km/24.9 mi.] Link Budget: 26.0 dB

**SFBRM1016-180**  
10/100BASE-TX (RJ-45) [100 m]  
to 100BASE-FX 1310nm SM (SC)  
[60 km/37.3 mi.] Link Budget: 29.0 dB

**SFBRM1017-180**  
10/100BASE-TX (RJ-45) [100 m]  
to 100BASE-FX 1550nm SM (SC)  
[80 km/49.7 mi.] Link Budget: 29.0 dB

**SFBRM1035-180**  
10/100BASE-TX (RJ-45) [100 m]  
to 100BASE-FX 1550nm SM (SC)  
[120 km/74.6 mi.] Link Budget: 36.0 dB

**SFBRM1040-180**  
10/100BASE-TX (RJ-45) [100 m]  
to SFP slot (empty)

**Single Fiber Products**  
Recommended use in pairs (see page 17)

**SFBRM1029-180**  
**SFBRM1029-190 (DMI model)**  
10/100BASE-TX (RJ-45) [100 m]  
to 100BASE-BX-U 1310nm TX/1550nm RX Bi-Di single mode (SC)  
[20 km/12.4 mi.] Link Budget: 19.0 dB

**SFBRM1029-181**  
**SFBRM1029-191 (DMI model)**  
10/100BASE-TX (RJ-45) [100 m]  
to 100BASE-BX-D 1550nm TX/1310nm RX Bi-Di SM (SC)  
[20 km/12.4 mi.] Link Budget: 19.0 dB

**SFBRM1029-182**  
10/100BASE-TX (RJ-45) [100 m]  
to 100BASE-FX 1310nm TX/1550nm RX Bi-Di SM (SC)  
[40 km/24.8 mi.] Link Budget: 25.0 dB

**SFBRM1029-183**  
10/100BASE-TX (RJ-45) [100 m]  
to 100BASE-FX 1550nm TX/1310nm RX Bi-Di SM (SC)  
[40 km/24.8 mi.] Link Budget: 25.0 dB

Note: all units feature USB port for local management application.

## OAM/IP-Based Remotely Managed Media Converter



### Applications:

- Ethernet in the First Mile (EFM)
- Fiber to the Premise (FTTP), E-Line and E-LAN
- Enterprise markets

## Features

▶ MEF 9 & MEF 14 Carrier Ethernet Certification

▶ Two selectable remote management modes:

- IP-Based remote management
- In-Band OAM 802.3ah (remote device managed by local peer)

▶ SNMP v1, v2\*

▶ AutoCross™ (see page 14)

▶ Auto-Negotiation (see page 14)

▶ Pause (see page 15)

▶ Transparent Link Pass Through (see page 15)

▶ Far-End-Fault (see page 14)

▶ Remote Loopback (see page 16)

▶ IEEE 802.1p™ QOS packet classification with four egress queues

▶ Ipv4 IP TOS and DiffServ QOS classification, IPv6 Traffic class

▶ IEEE 802.1q™ VLAN, 4096 entries

▶ Static MAC, 64 entries

▶ Double VLAN tagging (QinQ)

▶ IEEE 802.1x™ Port based security

▶ RADIUS client

▶ RMON counters for each port

▶ Bandwidth allocation per port (see page 16)

▶ DMI Optical Management

▶ USB port for basic setup

▶ Cable diagnostic function for TP ports

▶ 8K MAC addresses

▶ Remote Firmware Upgrade (see page 16)

\*Future firmware upgrade; Please contact Transition Networks for upgrade availability.

## Specifications

See pages 171-181 for complete fiber optic connector specs.

Standards	IEEE Std. 802.3™, IEEE Std. 802.3ah, IEEE Std. 802.1P, IEEE Std. 802.1Q, IEEE Std. 802.1X
Data Rate	<b>Fiber:</b> 100BASE-FX <b>Fiber 2:</b> 1000BASE-X
Filtering Addresses	8K MAC Addresses
RAM Buffers	256K (2 Mb)
Max Frame Size	802.3ac tagged: 1628 bytes untagged: 1632 bytes
Dimensions	<b>Width:</b> 3.25" [82 mm] <b>Depth:</b> 4.8" [122 mm] <b>Height:</b> 1.0" [25 mm]
Environment	0 – 50°C; 5% – 95% humidity non-condensing; 0 – 10,000 ft. altitude
Power	Input: 100-240 VAC, 1A Output: 12VDC, 1.25A
Shipping Weight	2 lbs. [0.90 kg]
Regulatory Compliance	CISPR/EN55022 Class B, EN55024, EN61000, FCC Class B, CE Mark
Warranty	Lifetime

### See Also:

▶ 10/100 OAM / IP-Based Point System™ Slide-In-Module Media Converters

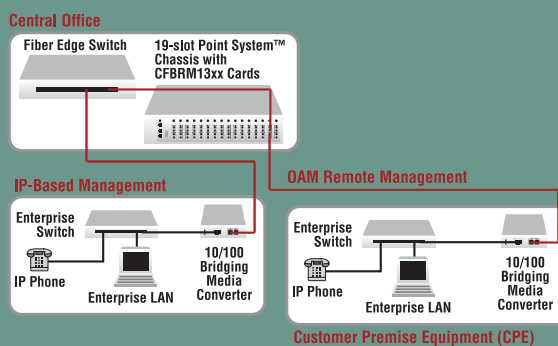
pages 40-41

## SFBRM13xx-1xx

NEW



## Remotely Manage 1000BASE Converters



## Ordering Info

See pages 171-181 for complete fiber optic connector specs.

### SFBRM1313-100

#### SFBRM1313-110 (DMI Options)

100BASE-FX 1300nm MM (SC)  
[2 km / 1.2 mi.] Link Budget: 11.0 dB  
to 1000BASE-SX 850nm Ext. MM (SC)  
[62.5/125µm fiber: 300 m/984 ft.] or  
[50/125µm fiber: 550 m/1804 ft.]  
Link Budget: 7.0 dB

### SFBRM1314-100

#### SFBRM1314-110 (DMI Options)

100BASE-FX 1300nm MM (SC)  
[2 km / 1.2 mi.] Link Budget: 11.0 dB  
to 1000BASE-LX10 1310nm SM (SC)  
[20 km/6.2 mi.] Link Budget: 12.0 dB

### SFBRM1315-100

#### SFBRM1315-110 (DMI Options)

100BASE-FX 1300nm MM (SC)  
[2 km / 1.2 mi.] Link Budget: 11.0 dB  
to 1000BASE-LX 1310nm SM (SC)  
[25 km/15.5 mi.] Link Budget: 19.0 dB

### SFBRM1317-100

100BASE-FX 1300nm MM (SC)  
[2 km / 1.2 mi.] Link Budget: 11.0 dB  
to 1000BASE-LX 1550nm SM (SC)  
[65 km/40.4 mi.] Link Budget: 22.0 dB

### SFBRM1335-100

100BASE-FX 1300nm MM (SC)  
[2 km / 1.2 mi.] Link Budget: 11.0 dB  
to 1000BASE-LX 1550nm SM (SC)  
[125 km/77.7 mi.]  
Link Budget: 27.0 dB

### Single Fiber Products

Recommended use in pairs (see page 17)

### SFBRM1329-100

#### SFBRM1329-110 (DMI Options)

100BASE-FX 1300nm MM (SC)  
[2 km / 1.2 mi.] Link Budget: 11.0 dB  
to 1000BASE-BX-U 1310nm TX /  
1490nm RX single fiber SM (SC)  
[20 km/12.4 mi.] Link Budget: 14.0 dB

### SFBRM1329-101

#### SFBRM1329-111 (DMI Options)

100BASE-FX 1300nm MM (SC)  
[2 km / 1.2 mi.] Link Budget: 11.0 dB  
to 1000BASE-BX-D 1490nm TX /  
1310nm RX single fiber SM (SC)  
[20 km/12.4 mi.] Link Budget: 14.0 dB

### SFBRM1329-102

100BASE-FX 1300nm MM (SC)  
[2 km / 1.2 mi.] Link Budget: 11.0 dB  
to 1000BASE-BX-U 1310nm TX /  
1490nm RX SM (SC)  
[40 km/24.9 mi.] Link Budget: 20.0 dB

### SFBRM1329-103

100BASE-FX 1300nm MM (SC)  
[2 km / 1.2 mi.] Link Budget: 11.0 dB  
to 1000BASE-BX-D 1490nm TX /  
1310nm RX SM (SC)  
[40 km/24.9 mi.] Link Budget: 20.0 dB



