



## User's Guide

### J/RS232-xx-01

#### Stand-Alone Media Converter

- **Just Convert-It**
- **RS-232 to Fiber**

Transition Networks J/RS232-xx-01 series media converter connects RS-232 cable to fiber-optic cable at data rates up to 120 kB/s asynchronous.

Part Number	Port One - RS-232	Port Two - Fiber-Optic
J/RS232-CF-01	RS-232 (female, DCE) 15 m (50 ft)*	ST, 1300 nm multimode 2 km (1.2 miles)*
J/RS232-CF-01(SC)	RS-232 (female, DCE) 15 m (50 ft)*	SC, 1300 nm multimode 2 km (1.2 miles)*
J/RS232-TF-01	RS-232 (male, DTE) 15 m (50 ft)*	ST, 1300 nm multimode 2 km (1.2 miles)*
J/RS232-TF-01(SC)	RS-232 (male, DTE) 15 m (50 ft)*	SC, 1300 nm multimode 2 km (1.2 miles)*

\* Typical maximum cable distance. Actual distance is dependent upon the physical characteristics of the network installation.

#### Optional Accessories: (sold separately)

Part Number	Description
SPS-1872-SA	Optional External Power Supply; 18-72VDC Stand-Alone Output: 12.6VDC, 1.0 A
SPS-1872-CC	Optional External Power Supply; 18-72VDC Piggy-back; Output: 12.6VDC, 1.0 A
E-MCR-04	12-Slot Media Converter Rack (includes universal internal power supply) 17 x 15 x 5 in. (432 x 381 x 127 mm)
WMBS	Optional Wall Mount Brackets Length: 3.2 in. (81 mm), Fits converter length: 3.9 in. (99 mm)
WMBV	Optional Vertical Mount Bracket; 5.0 in. (127 mm)
WMBD	Optional DIN Rail Mount Bracket; 5.0 in. (127 mm)
WMBD-FS	Optional DIN Rail Mount Bracket (flat, small); 3.1 in. (79 mm)

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# Installation

## DTE and DCE

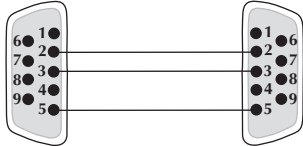
Each J/RS232-xx-01 model is configured as a:

- **DTE** (Data Terminal Equipment) with a **male** RS-232 port, or a
- **DCE** (Data Communication Equipment) with a **female** RS-232 port.

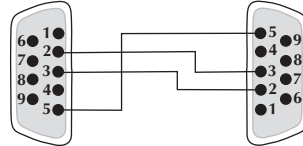
So, the type of media converter and the application in which it is used determines which type of RS-232 cable is needed:

- **Straight-through** configuration cable, or
- **Null-modem** configuration cable.

*Straight-through configuration cable with handshaking signals*



*Null-modem configuration cable with handshaking signaling*



**NOTE:** The J/RS232-xx-01 only uses pins 2, 3 and 5.

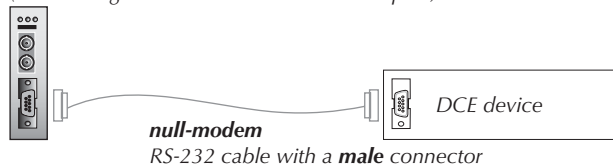
## Install the RS-232 Cable

Sections 1-4 (below and on page 3) illustrate which type of RS-232 cable should be used for the various applications:

### 1. J/RS232-**CF**-01 Media Converter / **DCE** Device

Use a **null-modem RS-232 cable with a male connector** when connecting a J/RS232-CF-01 or J/RS232-CF-01(SC) media converter to a DCE device.

*J-RS232-CF-01 or J-RS232-CF-01(SC)  
(DCE configuration with a female RS-232 port)*

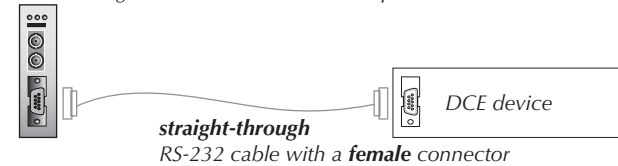


# Installation -- Continued

### 2. J/RS232-**TF**-01 Media Converter / **DCE** Device

Use a **straight-through RS-232 cable with a female connector** when connecting a J/RS232-TF-01 or J/RS232-TF-01(SC) media converter to a DCE device.

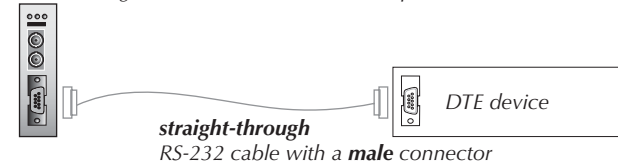
*J-RS232-TF-01 or J-RS232-TF-01(SC)  
(DTE configuration with a male RS-232 port)*



### 3. J/RS232-**CF**-01 Media Converter / **DTE** Device

Use a **straight-through RS-232 cable with a male connector** when connecting a J/RS232-CF-01 or J/RS232-CF-01(SC) media converter to a DTE device.

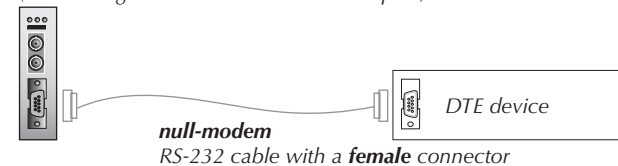
*J-RS232-CF-01 or J-RS232-CF-01(SC)  
(DCE configuration with a female RS-232 port)*



### 4. J/RS232-**TF**-01 Media Converter / **DTE** Device

Use a **null-modem RS-232 cable with a female connector** when connecting a J/RS232-TF-01 or J/RS232-TF-01(SC) media converter to a DTE device.

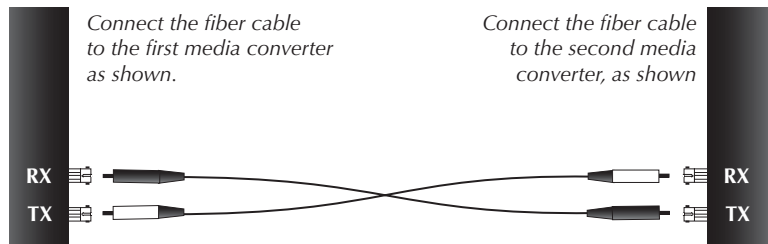
*J-RS232-TF-01 or J-RS232-TF-01(SC)  
(DTE configuration with a male RS-232 port)*



## Installation -- Continued

### Install the Fiber Cable

1. Locate or build fiber cable with male, two-stranded TX to RX connectors installed at both ends.
2. Connect the fiber cables to the first J/RS232-xx-01 media converter as described:
  - Connect the male **TX** cable connector to the female **TX** port.
  - Connect the male **RX** cable connector to the female **RX** port.
3. Connect the fiber cables to the other J/RS232-xx-01 media converter as described:
  - Connect the male **TX** cable connector to the female **RX** port.
  - Connect the male **RX** cable connector to the female **TX** port.



### Power the Media Converter

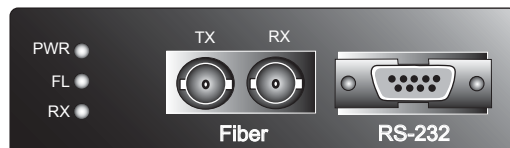
**NOTE:** The external power supply provided with this product is UL listed by the power supply's manufacturer.

- Connect the barrel connector on the power adapter to the media converter's power port (located on the back of the media converter).
- Connect the power adapter plug to AC power. Verify that the media converter is powered by observing the illuminated LED power indicator light. (For DC power see the SPS1872-xx DC external power supply.)

## Operation

Use the status LEDs to monitor the media converter operation in the network.

- RX** On = A link has been established with the RS-232 connector.  
 Flashing = The RS-232 connector is receiving data.
- FL** On = A link has been established with the fiber connector.
- PWR** On = The media converter is connected to external power.



## Cable Specifications

The physical characteristics must meet or exceed IEEE 802.3™ specifications.

### Fiber Cable

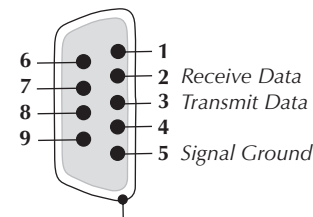
Bit Error Rate:	<10 <sup>-9</sup>
Multimode fiber (recommended):	62.5/125 μm
Multimode fiber (optional):	100/140, 85/140, 50/125 μm
<b>J/RS232-CF-01</b>	1300 nm multimode
Fiber Optic Transmitter Power:	min: -19.0 dBm max: -14.0 dBm
Fiber Optic Receiver Sensitivity:	min: -30.0 dBm max: -14.0 dBm
Link Budget:	11.0 dB
<b>J/RS232-CF-01(SC)</b>	1300 nm multimode
Fiber Optic Transmitter Power:	min: -19.0 dBm max: -14.0 dBm
Fiber Optic Receiver Sensitivity:	min: -30.0 dBm max: -14.0 dBm
Link Budget:	11.0 dB
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Fiber Optic Transmitter Power:	min: -19.0 dBm max: -14.0 dBm
Fiber Optic Receiver Sensitivity:	min: -30.0 dBm max: -14.0 dBm
Link Budget:	11.0 dB
<b>J/RS232-TF-01(SC)</b>	1300 nm multimode
Fiber Optic Transmitter Power:	min: -19.0 dBm max: -14.0 dBm
Fiber Optic Receiver Sensitivity:	min: -30.0 dBm max: -14.0 dBm
Link Budget:	11.0 dB

**The fiber optic transmitters on this device meets Class I Laser safety requirements per IEC-825/CDRH standards and complies with 21 CFR1040.10 and 21CFR1040.11.**

### RS-232 Cable

Gauge:	24 to 22 AWG
Maximum data rate:	120 Kb/s, asynchronous
Maximum Cable Distance:	15 m (50 ft)

#### RS-232 Signals:



**NOTE:** The J/RS232-xx-01 only uses pins 2, 3 and 5.

## Technical Specifications

For use with Transition Networks Model J/RS232-xx-01 or equivalent

<b>Data Rate</b>	120 Kb/s, asynchronous
<b>Dimensions</b>	3.0" x 3.9" x 1.0" (76 mm x 99 mm x 25 mm)
<b>Shipping Weight</b>	6 oz. (181 g) (approximately)
<b>Power Consumption</b>	3 Watts
<b>Power Supply</b>	12 VDC, 0.5 A (North America) 12 VDC, 0.41 A (Europe, Japan, Latin America) 12 VDC, 1.25 A (N. Z., Australia, U.K., South Africa) (The external power supply provided with this product is UL listed by the power supply's manufacturer.)
<b>MTBF (approximate)</b>	49,000 hours (MIL217F2 V5.0) (MIL-HDBK-217F) 129,000 hours (Bellcore7 V5.0)
<b>Environment</b>	Tmra*: 0 to 50°C (32° to 122°F) Storage Temp: -40° to +85°C (-40° to +185°F) Humidity: 5 to 95%, non condensing Altitude: 0 to 10,000 feet
<b>Warranty</b>	Lifetime

\*Manufacturer's rated ambient temperature.

The information in this user's guide is subject to change. For the most up-to-date information on the J/RS232-xx-01 media converter, view the user's guide on-line at: [www.transition.com](http://www.transition.com).

Product is certified by the manufacturer to comply with DHHS Rule 21/CFR, Subchapter J applicable at the date of manufacture.

**CAUTION:** Visible and invisible laser radiation when open. Do not stare into the beam or view directly with optical instruments.

**CAUTION:** Use of controls, adjustments or the performance of procedures other than those specified herein may result in hazardous radiation exposure.

## Troubleshooting

If the media converter fails, isolate and correct the failure by determining the answers to the following questions and then taking the indicated action:

- Is the PWR (power) LED on the media converter illuminated?**

**NO**

  - Is the power adapter the proper type of voltage and cycle frequency for the AC outlet? (See "Technical Specifications" on page 6.)
  - Is the power adapter properly installed in the media converter and in the AC outlet?
  - Does the grounded AC outlet provide power?
  - Contact Tech Support: 1-800-260-1312, Int'l: 00-1-952-941-7600.

**YES**

  - Proceed to step 2.
- Is the RX (RS-232) LED illuminated?**

**NO**

  - Check the RS-232 cable for proper connection.
  - Contact Tech Support: 1-800-260-1312, Int'l: 00-1-952-941-7600.

**YES**

  - Proceed to step 3.
- Is the FL (fiber) LED illuminated?**

**NO**

  - Check the fiber cables for proper connection.
  - Verify that the TX and RX cables on the media converter are connected to the RX and TX ports, respectively, on the remote media converter.
  - Contact Tech Support: 1-800-260-1312, Int'l: 00-1-952-941-7600.

**YES**

  - Contact Tech Support: 1-800-260-1312, Int'l: 00-1-952-941-7600.

## Contact Us

Technical support is available 24 hours a day.

US and Canada: **1-800-260-1312**

International: **00-1-952-941-7600**

Chat live via the Web with Transition Networks Technical Support. Log onto [www.transition.com](http://www.transition.com) and click the **Transition Now** link.

Transition Networks provides seminars via live web-based training. Log onto [www.transition.com](http://www.transition.com) and click the **Learning Center** link.

Ask a question anytime by sending an e-mail to our technical support staff. [techsupport@transition.com](mailto:techsupport@transition.com)

Transition Networks; 6475 City West Parkway; Minneapolis, MN 55344, USA  
telephone: 952-941-7600; toll free: 800-526-9267; fax: 952-941-2322

# Compliance Information

## CISPR22/EN55022 Class A + EN55024; CE Mark

### FCC Regulations

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at the user's own expense.

### Canadian Regulations



This digital apparatus does not exceed the Class A limits for radio noise for digital apparatus set out on the radio interference regulations of the Canadian Department of Communications. Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la Class A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

### European Regulations

**Warning** This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

**Achtung!** Dieses ist ein Gerät der Funkstörgrenzwertklasse A. In Wohnbereichen können bei Betrieb dieses Gerätes Rundfunkstörungen auftreten. In diesem Fall ist der Benutzer für Gegenmaßnahmen verantwortlich.

**Attention!** Ceci est un produit de Classe A. Dans un environnement domestique, ce produit risque de créer des interférences radioélectriques, il appartiendra alors à l'utilisateur de prendre les mesures spécifiques appropriées.

	
<b>Declaration of Conformity</b>	
Name of Mfg:	<b>Transition Networks</b> 6475 City West Parkway, Minneapolis MN 55344 USA
Model:	<b>J/RS232-xx-01 Series Media Converter</b>
Part Number:	<b>J/RS232-CF-01, J/RS232-CF-01(SC), J/RS232-TF-01, J/RS232-TF-01(SC)</b>
Regulation:	<b>EMC Directive 89/336/EEC</b>
Purpose: To declare that the <b>J/RS232-xx-01</b> to which this declaration refers is in conformity with the following standards. CISPR 22:1998; EN 55022:1998 Class A; EN 55024:1998; FCC Part 15 Subpart B; 21 CFR Subpart J	
<i>I, the undersigned, hereby declare that the equipment specified above conforms to the above Directive(s) and Standard(s).</i>	
 Stephen Anderson, Vice-President of Engineering	<u>August 4, 2003</u> Date

### Trademark Notice

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