Omnitron Systems

# FlexPoint® RS232

# User Manual

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This product is warranted to the original purchaser (Buyer) against defects in material and workmanship for a period of two (2) years from the date of shipment. A lifetime warranty may be obtained by the original purchaser by registering this product at www.omnitron-systems.com/support within ninety (90) days from the date of shipment. During the warranty period, Omnitron will, at its option, repair or replace a product which is proven to be defective with the same product or with a product with at least the same functionality.

For warranty service, the product must be sent to an Omnitron designated facility, at Buyer's expense. Omnitron will pay the shipping charge to return the product to Buyer's designated US address using Omnitron's standard shipping method.

**Limitation of Warranty**

The foregoing warranty shall not apply to product malfunctions resulting from improper or inadequate use and/or maintenance of the equipment by Buyer, Buyer-supplied equipment, Buyer-supplied interfacing, unauthorized modifications or tampering with equipment (including removal of equipment cover by personnel not specifically authorized and certified by Omnitron), or misuse, or operating outside the environmental specification of the product (including but not limited to voltage, ambient temperature, radiation, unusual dust, etc.), or improper site preparation or maintenance.

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### Environmental Notices

The equipment covered by this manual must be disposed of or recycled in accordance with the Waste Electrical and Electronic Equipment Directive (WEEE Directive) of the European Community directive 2012/19/EU on waste electrical and electronic equipment (WEEE) which, together with the RoHS Directive 2015/863/EU, for electrical and electronic equipment sold in the EU after July 2019. Such disposal must follow national legislation for IT and Telecommunication equipment in accordance with the WEEE directive: (a) Do not dispose waste equipment with unsorted municipal and household waste. (b) Collect equipment waste separately. (c) Return equipment using collection method agreed with Omnitron.

The equipment is marked with the WEEE symbol shown to indicate that it must be collected separately from other types of waste. In case of small items the symbol may be printed only on the packaging or in the user manual. If you have questions regarding the correct disposal of equipment go to www.omnitron-systems.com/support or e-mail to Omnitron at intlinfo@omnitron-systems.com.

### Safety Warnings and Cautions

ATTENTION: Observe precautions for handling electrostatic discharge sensitive devices.

WARNING: Potential damage to equipment and personal injury.

WARNING: Risk of electrical shock.

### Technical Support:


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Address: Omnitron Systems Technology
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## Description

The FlexPoint RS232 is a serial RS-232 to fiber converter that transmits serial protocol over fiber media. The FlexPoint RS232 operates in a back-to-back configuration, with one module at each end of the fiber link.

The asynchronous RS-232 interface supports speeds up to 115,200 baud and supports RTS, CTS, DCD, DTR, and DSR hardware flow control signals. It features a switch for convenient connection to DTE or DCE equipment.

See data sheet for supported models.

## Power Adapter Notice

When used in a stand-alone configuration, this product should always be used with its enclosed Power Adapter.

**WARNING**

***Before plugging the Power Adapter to any wall outlet or AC power source, verify that the power on the unit is appropriate for your AC line voltage source.***

## Switch Settings

### DCE/DTE

When connecting the RS-232 cable to terminal equipment such as a computer or controller, set the switch to “DB9 to DCE” (down, factory setting). When connecting to communication equipment such as a modem or printer, set the switch to “DB9 to DTE” (up).

### Fiber Loopback Switch

This switch will allow the entire fiber segment to be tested at either of the FlexPoint 232 converters without having to set switches on both units simultaneously.

When the switch is set to “Fiber Loopback”, the local unit’s fiber Tx port will transmit a remote loop-back signal. This remote loopback protocol will set the far end converter to a loopback mode and return a signal over the fiber cable to the sending unit. An LED on the local and remote FlexPoint 232 converters will blink fast to show a confirmation that the fiber segment is communicating properly between the converters. A slow blink will indicate an error condition over the fiber segment. By returning the switch to the “normal” position the converters will resume to normal operation.

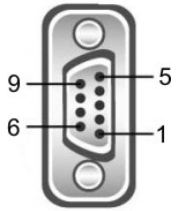
## Mounting

The FlexPoint 232 can be DIN-rail mounted using the DIN-rail mounting bracket (8250), wall-mounted using a wall mounting kit (4380), rack-mounted using a 5-Module shelf (4392) or inserted in a 14-Module FlexPoint Powered Chassis. See Chassis and Mounting Option product page.

To power the module using the AC power adapter, connect the barrel connector at the end of the wire on the power adapter to the barrel connector on the module. Connect the power adapter to the AC outlet. Confirm that the module has powered up properly by checking the Power LED.

Attach the fiber cables to the FlexPoint RS232 ST or SC connectors. The FlexPoint transmit (Tx) must attach to the receive side on the device at the far end of the fiber and the receive (Rx) must attach to the transmit side.

Attach the FlexPoint 232 port via a male DB9 terminated or unterminated straight through RS-232 serial cable to a DTE or DCE device.




| Pin Out Assignment | | | |
|---|---|---|---|
| **Pin #** | **Signal** | **DTE** | **DCE** |
| 1 | Data Carrier Detect (DCD) | IN | OUT |
| 2 | Receive Data (RD) | IN | OUT |
| 3 | Transmit Data (TD) | OUT | IN |
| 4 | Data Terminal Ready (DTR) | OUT | IN |
| 5 | Signal Ground (SGND) | - | - |
| 6 | Data Set Ready (DSR) | IN | OUT |
| 7 | Request to Send (RTS) | OUT | IN |
| 8 | Clear to Send (CTS) | IN | OUT |
| 9 | Ring Indicator (RI) | IN | OUT |

Note: Use RS-232 cables that are compliant with the specifications that are outlined below.

The FlexPoint modules replicate the state of the control lines between the FlexPoint modules. They are not used by the module only transparently sent end-to-end. Connect control lines (RTS, CTS, DCD, DTR, and DSR) as required.

| RS-232 Cable | |
|---|---|
| Gauge | 22 to 24 AWG |
| Mutual Capacitance | 12 to 50 pF/ft. |
| Maximum Distance | 15.2 m/50 ft. |



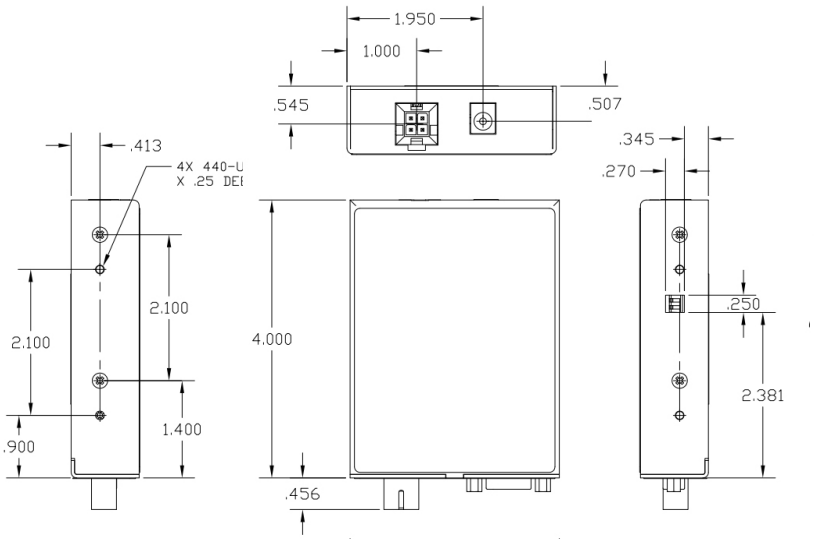
## LED Indicators

| LED | Color | Description |
|---|---|---|
| Power "Pwr" | Amber | OFF: No power<br>ON: Module has power |
| DTE/DCE | Green/ Amber | Green: DTE selected<br>Amber: DCE selected |
| Fiber Link "Fiber" | Green | OFF: No fiber link<br>ON: Fiber link<br>Blinking Fast: Loopback is good<br>Blinking Slow: Loopback error |
| DB9 Link "DB9" | Green | OFF: No serial link<br>ON: Serial link<br>Blinking: Data received |

## Specifications

| | | |
|---|---|---|
| **Standard** | EIA / TIA 232C/D/E | |
| **Regulatory Compliances** | Safety:<br>EMI:<br>ACT: | UL, cUL, CE, UKCA<br>FCC Class A<br>TAA, BAA, NDAA |
| **Environmental** | RoHS, REACH, WEEE | |
| **Data Rates** | Up to 115,200 baud | |
| **Port Types** | Copper:<br>Fiber: | RS-232 (DB-9 Female)<br>Proprietary (ST, SC, LC) |
| **Cable Types** | Copper:<br>Fiber: | RS232 cable (50 ft./15.2m)<br>Multimode: 62.5/125µm<br>Single-mode: 9/125µm |
| **AC Power Requirements** | AC Adapter: | 100 - 240VAC/50 - 60Hz<br>0.05A @ 120VAC (max) |
| **DC Power Requirements** | DC Input:<br>(AC Adapter) | +6.0 to +15VDC<br>0.5A @ 9VDC<br>2.5mm Barrel |
| | DC Input:<br>(Molex Connector) | +4.75 to +5.25VDC,<br>0.6A @ 5VDC |
| **Dimensions W x D X H** | 3.0" x 4.0" x 1.0"<br>(76.2 mm x 101.6 mm x 25.4 mm) | |
| **Weight** | 6 oz. (170.1 grams) | |
| **Temperature** | Commercial: | 0 to 50°C |
| **Humidity** | 5 to 95% (non-condensing) | |
| **Altitude** | -100m to 4,000m | |
| **MTBF (hrs)** | Module:<br>AC Adapter (-1):<br>AC Adapter (-2): | 850,000<br>250,000<br>100,000 |
| **Warranty** | Lifetime warranty with 24/7/365 free Technical Support | |

## Mechanical

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