

## Very High Speed Ruggedized ST Fiber-to-RS485/422/232 Interface Converter

The Model 4149 is a very high speed ruggedized ST Fiber to RS485/422/232 interface converter from Electro Standards Laboratories. Typical operating speeds are up to 1.5 Mbps for RS232 to fiber conversion and up to 5 Mbps for RS485/422 to fiber conversion. Designed to operate from -40°C to +85°C, it is a member of Electro Standards Laboratories' (ESL) rugged fiber-to-copper media converter family. The Model 4149 features protection circuitry on all receivers and transmitters for both RS232 and RS485/422 interfaces. The unit's power input is protected from transients and features 3kVDC isolation to prevent system ground loops. It can be powered from a wide input range of 10VDC-36VDC, with models also available for other voltage ranges such as 4.5VDC-9VDC and 19VDC-72VDC. Other features include user selectable fiber polarity, dual DB9 power connectors (board only) for convenience in bused power applications, TX, RX and Power indicator LEDs. The converter is available as a board only with front mounting threaded brackets for rack mounting in embedded applications. For applications that require an enclosure, it is also available in a desk top package with optional DIN rail mounting hardware.



### Specifications:

#### Fiber Interface:

Connectors: Fiber Optic ST  
TX Power: -12.5 dBm  
RX Sensitivity: -27.5 dBm  
Optical Budget: 15 dB  
Max. Link Distance with 62.5/125 μm fiber:  
5.35 km at up to 5 Mbps, 25°C  
3.75 km at up to 5 Mbps, -40°C to +85°C  
Wavelength: 820 nm/850 nm, multimode  
Fiber Size: 50/125 μm, 62.5/125 μm, 100/140 μm

#### Fiber Polarity:

Logical 1 = Light ON/OFF: User Selectable

#### Copper Interface:

Connectors: DB9, Female  
Type: RS485, RS422, RS232  
Terminations: RS485/422 120 Ohm insertable

#### Bit Rate (nom.):

RS232: 0 to 1.5 Mbps  
RS485/422 0 to 5 Mbps

#### Indicators:

LEDs: TXD, RXD, PWR

#### Power:

Input Power: 10VDC-36VDC std, 4.5VDC-9VDC, 19VDC-72VDC, Others at 1.5W.  
Isolation: 3 kVDC  
Connectors: Dual DB9F for Power Daisy Chaining (board only), DC Power Jack (desktop unit)

#### Operating Environment:

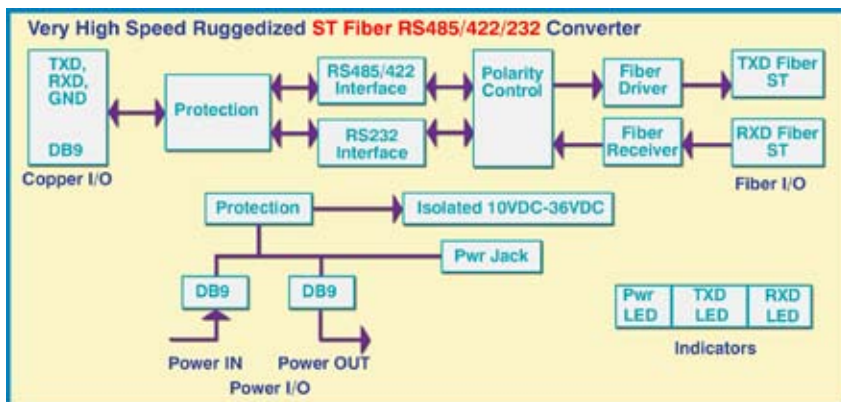
-40°C to +85°C

#### Model 4159 Mechanical (Board Only):

Model 4159, Cat No 304159  
Size: 3.9" x 3.9" x 0.63"  
Weight: 3.5 oz (99g)  
Mounting: Mounting Holes, Right Angle Brackets

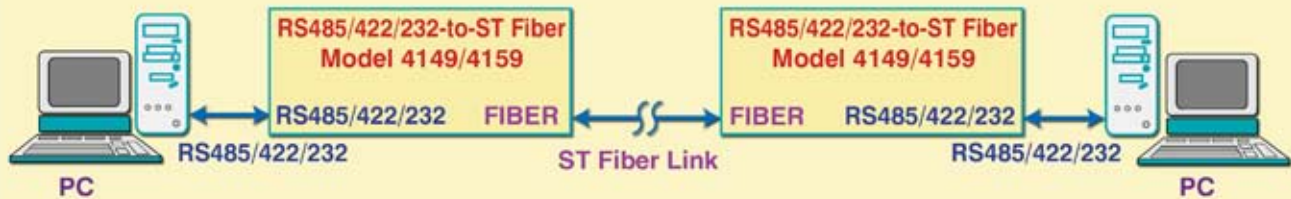
#### Model 4149 Mechanical (Desktop Unit):

Model 4149, Cat No 304149  
Size: 5" x 4.25" x 1.4"  
Weight: 10.1 oz (286g)  
Mounting: 4 Threaded Holes Standard, DIN rail



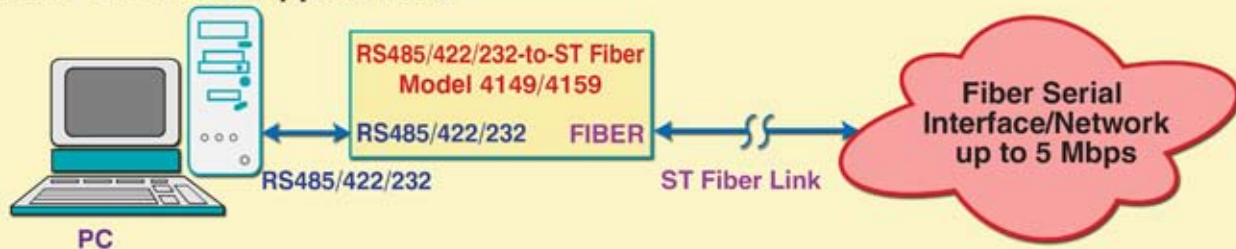
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### Model 4149/4159 Application:



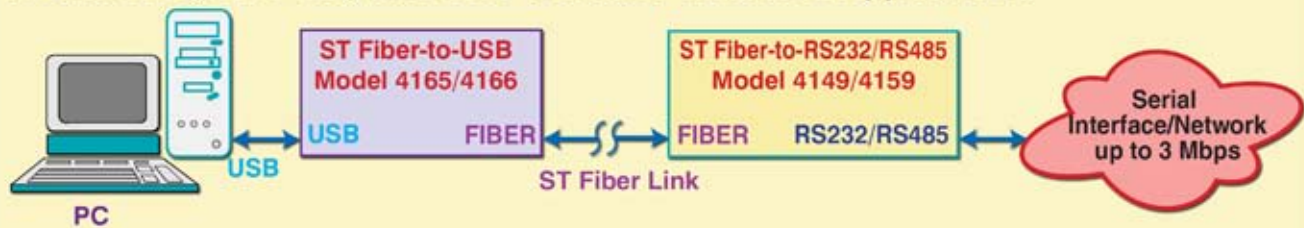
Point-to-Point Isolated PC RS485/422/232 Communications.

### Model 4149/4159 Application:



Isolated PC RS485/422/232 communications to fiber serial interface/network.

### Model 4165, 4165-DIN, and 4166 to Model 4149/4159 Application:



Isolated PC USB to RS232/RS485 communications serial interface/network.

**So many more interface converters at [www.ElectroStandards.com](http://www.ElectroStandards.com)**

HP Fiber-to-RS485 • HP Fiber-to-RS232 • High Speed Ruggedized Fiber-to-RS485/422/232 • Very High Speed Fiber-to-Multi-Point RS485/422/232 • Fiber-to-USB Converter/Extender • High Speed Ethernet-to-RS485/422/232 • High Speed Ruggedized Fiber-to-USB • High Speed USB-to-RS485/422/232 • Logic-to-Fiber • Custom Designs.