ADAM-4541 / 4542

Fiber Optic to RS-232/ 422/485 Converter

Features

- Compact size economizes space
- Direct plug-and-play
- Easily mounted on a DIN-rail, panel or piggyback
- Transmission speeds of up to 115.2 Kbps
- Optical fibers enable transmission of 2.5 km for ADAM-4541 and 15 km for ADAM-4542
- Half/Full-duplex, bidirectional transmission mode
- Avoids lightning strikes and EMI/RFI interference
- Prevents damage from electrostatic discharge
- Stable and error-free data transmission
- Automatic internal RS-485 bus supervision
- No external flow control signals required for RS-485
- Transient suppression and over-current protection on RS-422/ 485 data lines
- Reserved space for termination resistors
- LED for power and data flow indication
- Power requirement: +10 to + 30 V_{DC}

Introduction

Fiber optic transmission offers the benefits of wide bandwidth, immunity to EMI/RFI interference, and secure data transmission. ADAM-4541/ ADAM-4542 can be used as an RS-232/422/485 point-to-point or point-to-mutipoint connection for transmitting and converting full/half-duplex signals and their equivalents within a fiber optic environment. Fiber optics is the perfect solution for applications where the transmission medium must be protected from electrical exposure, lightning, atmospheric conditions or chemical corrosion.

The ADAM-4541/4542 is specifically designed to link various machinery equipped with an RS-232/422/485 communication ports (such as computer systems or manufacturing machines). Using standard ST connectors, the module's fiber optic ports can accommodate a wide range of fiber optic cable sizes, including 62.5/125 (9/125) µm.

Advantages of Fiber Optics

All Dielectric

- Low signal radiation
- Secure transmission
- Lightning immunity
- High-voltage installation

Small Size

- Less duct space
- Fewer additional ducts installed

Low Attenuation

- Greater distance / fewer repeaters
- Less installation and maintenance

Optical Signals

- No ground loops
- No spark hazard
- Operation in flammable areas

High Bandwidth

- Future signal capacity expansion

Specifications

	ADAM-4541	ADAM-4542
Fiber Optics	multi-mode	single-mode
Wavelength	820 nm	1310 nm
Transmission Distance	2.5 km	15 km
Optical Power Budget (attenuation)	12.5 dB	9 dB
Power Consumption	1 W (typical); 1.5 W (max.)	1.6 W (typical); 2.1 W (max.)

- **Casing:** ABS with captive mounting hardware
- **Communication mode:** Asynchronous
- **Connector:** Plug-in screw terminal
- **Fiber port:** ST
- **Transmission mode:** Full/half-duplex, bidirectional
- **Transmission rate:** Up to 115. 2 Kbps
- **Operating temperature:** -10 ~ 70° C (14 ~ 158° F)
- **Operating humidity:** 5 ~ 95% (non-condensing)
- **Accessories (included):** Nylon DIN-rail mounting adapter, SECC panel mounting bracket

Ordering Information

- ❑ **ADAM-4541:** Mulit-Mode Fiber optic to RS-232/422/485 converter with mounting bracket
- ❑ **ADAM-4542:** Single-Mode Fiber optic to RS-232/422/485 converter with mounting bracket