

4.7. RS-232/422/485 to Fiber Optic Converter

I-2541

RS-232/422/485 to Multi-Mode Fiber optic converter

I-2542 series *Available soon*

RS-232/422/485 to Single-Mode Fiber optic converter



Features ▶▶▶▶

- Automatic RS-485 Direction Control
- Avoids lightning strikes and EMI/RFI interference
- Supports +10 V_{DC} ~ +30 V_{DC}
- DIN-Rail Mounting
- Optical fibers enable transmission of 2 km for I-2541 and 15 km for I-2542-A/I-2542-B
- ESD Protection for the RS-232/422/485 Data Line
- Supports operating temperatures from -25 °C ~ +75 °C

Introduction

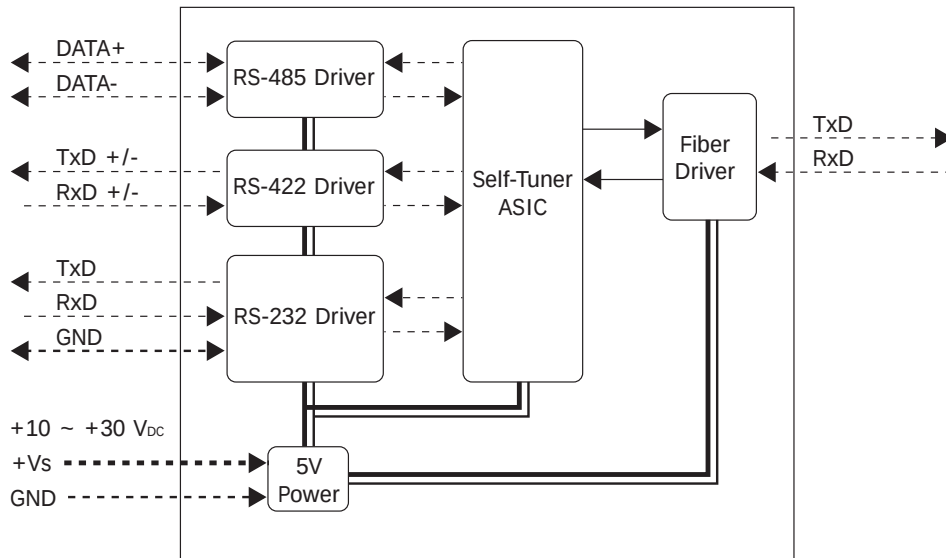
The I-2541 is an RS-232/422/485 to fiber optic converter that secures data transmission by using fiber optic transmission to provide immunity from EMI/RFI interference. The I-2541 is used for RS-232/422 point-to-point connections and RS-485 multi-drop applications for transmitting a signal up to 2 km and is the perfect solution for applications where transmission must be protected from electrical exposure, surges or chemical corrosion.

The I-2542 series of Single-Strand Fiber Converters supports Wavelength Division Multiplexing (WDM) technology that allows two independent data communication channels to transmit and receive over one standard, single mode, fiber optic line. This not only doubles your existing bandwidth, but also effectively reduces the cost of creating a new fiber optic infrastructure.

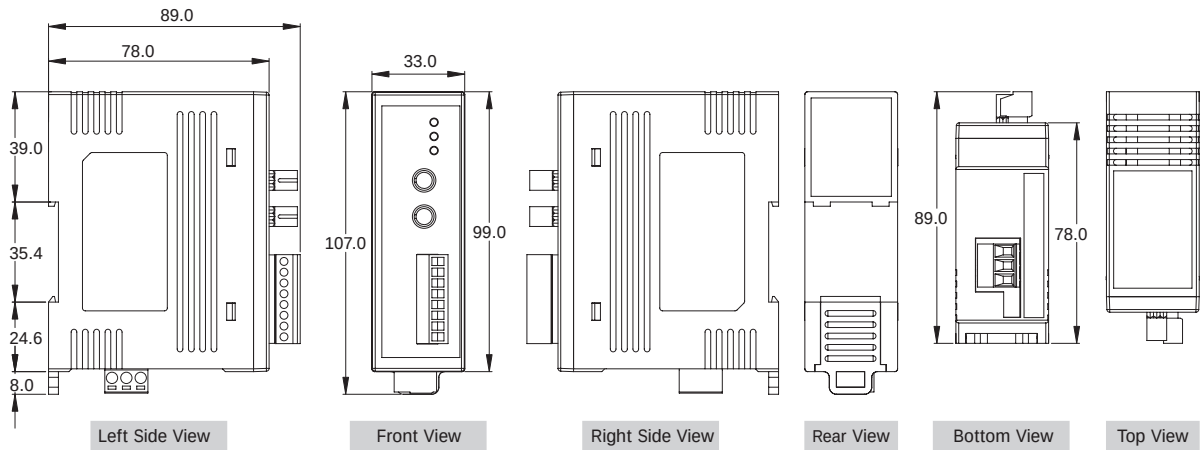
System Specifications

Models		I-2541	I-2542 series	
Interface				
Fiber Interface	Fiber Port		Multi Mode; ST connector	Single-Mode; SC connector
	Wavelength		850 nm	TX: 1310, RX: 1550 nm for I-2542-A TX: 1550, RX: 1310 nm for I-2542-B
	Fiber Cable		50/125, 62.5/125, 100/140 μm	8.3/125, 8.7/125, 9/125 or 10/125 μm
	Distance		2 km, (62.5/125 μm recommended)	15 km, (9/125 μm recommended)
Serial Interface	RS-232	The RS-232, RS-422 and RS-485 cannot be used simultaneously	TxD, RxD, GND	
	RS-422		TxD+, TxD-, RxD+, RxD-	
	RS-485		Data+, Data-	
RS-422/485 Transmission Distance			Max. 1,200 m at 9.6 kbps; Max. 400 m at 115.2 kbps (Belden 9841 2P twisted-pair cable, if different cables are used, the transmission distance may change)	
Self-Tuner Asic Inside			Yes	
Speed			300 ~ 115200 bps	4800 ~ 115200 bps
ESD Protection			Yes	
RS-232/422/485 Connector			Removable 8-Pin Terminal Block	
LED Indicators				
Power			Yes	
Power				
Input Voltage Range			+10 V _{DC} ~ +30 V _{DC} (Non-isolated)	
Power Consumption			1.5 W	2 W
Mechanical				
Casing			Plastic	
Flammability			Fire-Retardant Materials (UL94-V0 Level)	
Dimensions (W x L x H)			33 mm x 89 mm x 107 mm	
Installation			DIN-Rail Mounting	
Environment				
Operating Temperature			-25 °C ~ +75 °C	
Storage Temperature			-30 °C ~ +75 °C	
Humidity			10 ~ 90% RH, non-condensing	

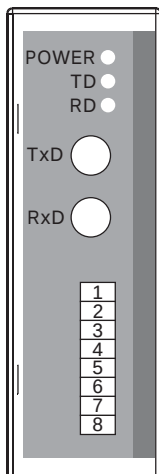
Internal I/O Structure



Dimensions (Unit: mm)



Pin Assignments



Terminal No.	Pin Assignment
TxD	Fiber TxD
RxD	Fiber RxD
01	TxD+ /DATA+
02	TxD- /DATA-
03	RxD+
04	RxD-
05	NC
06	GND
07	TxD
08	RxD

Ordering Information

I-2541 CR	RS-232/422/485 to Mult-Mode 2 Km, ST Fiber optic converter
I-2542-A CR	RS-232/422/485 to Single-Mode 15 Km, SC Fiber optic converter, TX 1310 nm, RX 1550 nm (RoHS)
I-2542-B CR	RS-232/422/485 to Single-Mode 15 Km, SC Fiber optic converter, TX 1550 nm, RX 1310 nm (RoHS)

Important Note:

You must purchase both **I-2542-A** and **I-2542-B** since these products work as a pair.

Accessories

GPSU06U-6	24 Vdc/0.25 A, 6 W Power Supply
DIN-KA52F	24 Vdc/1.04 A, 25 W Power Supply with DIN-Rail Mounting

Applications

An illustration of the I-2541/I-2542 for RS-485 Devices

Note 1:

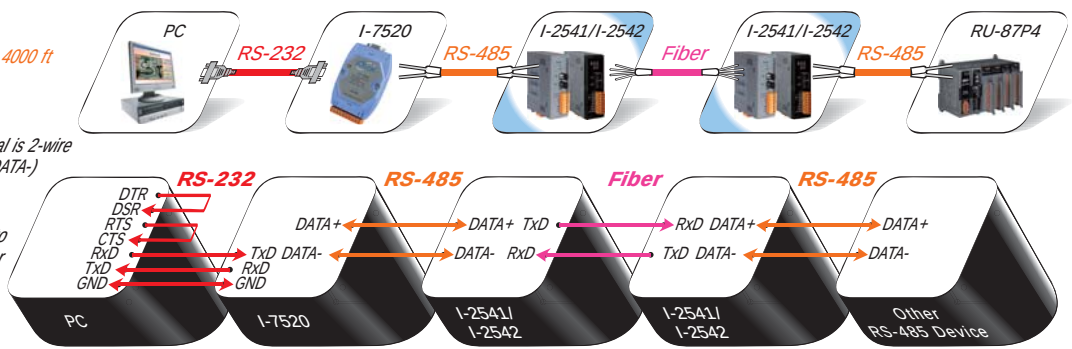
15 m
up to 4000 ft
2 km

Note 2:

The RS-485 signal is 2-wire mode (DATA+, DATA-)

Note 3:

I-7520: RS-232 to RS-485 Converter



An illustration of the I-2541/I-2542 for RS-422 Devices

Note 1:

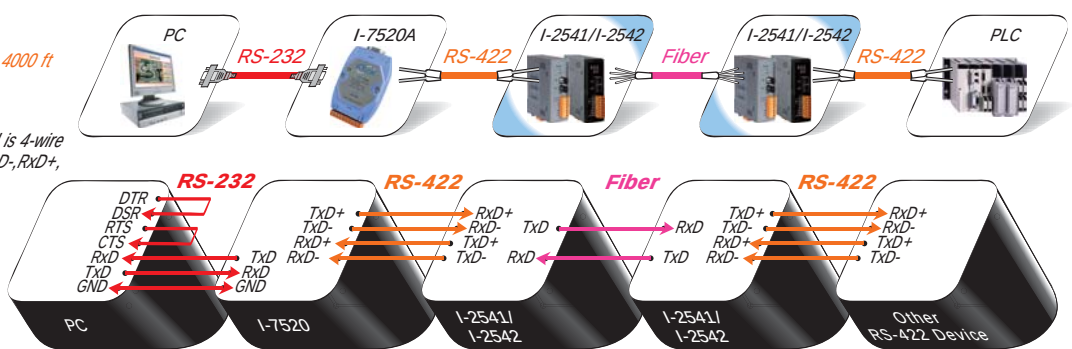
15 m
up to 4000 ft
2 km

Note 2:

The RS-422 signal is 4-wire mode (Tx D+, Tx D-, Rx D+, Rx D-)

Note 3:

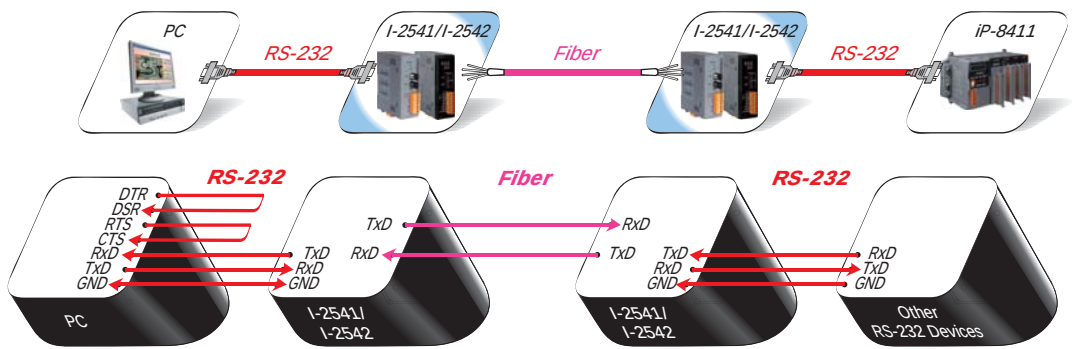
I-7520A: RS-232 to RS-485/422 Converter



An illustration of the I-2541/I-2542 for RS-232 Devices

Note 1:

15 m
2 km



An illustration of the I-2541/I-2542 for RS-232/422/485 Devices

Note 1:

15 m
up to 4000 ft
2 km

Note 2:

The RS-232/422/485 cannot be used simultaneously

