

INTERCONNECTING PRODUCTS AND CABLES

485HF25

485HM25

RS-232 TO RS-422/RS-485 CONVERTERS

- Convert single ended RS-232 signals to RS-485 (RS-422) differential signals. *Bidirectional data transfer.*
- New hi-speed version provides 1 Mbs data rates. *Works with the fastest data systems.*
- Extends RS-232 transmission distance to 1.2 Km. *Overcomes RS-232's 50 foot cable limit.*
- Increased common mode noise rejection provides greater noise immunity against EMI/RFI signal interference. *Reduces data errors.*
- Adds multi-drop capability to an RS-232 signal. *Drives multiple loads.*
- Removeable crew terminal strip for RS-485 signal and power connections. *Easy signal connections.*
- Manufactured to ISO 9000 and meets new European Electromagnetic compatibility requirements. *Improved quality product.*

Description

The Model 485H series Converters are compact plug-in units that convert RS-232 single-ended signals to RS-485 differential signals (RS-485 signals are RS-422 compatible). Signal conversion is completely bidirectional, outgoing RS-232 signals are converted to RS-485 levels and incoming RS-485 differential pairs are converted into single ended RS-232 signals. Once equipped with a Model 485H Converter, a RS-232 device can communicate with other RS-422 or RS-485 devices at rates up to 1 Mbaud.



Communicate with RS-485 Devices

Model 485H series Converters can be used in several applications. The most common one is to convert signals from a PC's RS-232 COM port to interface one or more RS-485 or RS-422 devices as shown in Figure 1. The small size of the Model 485H converter lets it plug directly onto the COM port on the rear of the PC computer or onto any device with a 25-pin RS-232 connector.

Extend RS-232 Signals

Figure 2 shows how two Model 485Hs can be used to extend the distance between RS-232 serial devices and at the same time increase their resistance to outside interference. The past approach to extending RS-232 links beyond 50 feet has been to reduce the baud rate to compensate for the increased cable length and noise pickup. This slowdown in data thrupt is unnecessary with the Model 485H Converters since their differential signals provide greatly increased common mode noise rejection and can transmit data at rates up to 1 Mbs over distances up to 4000 feet.

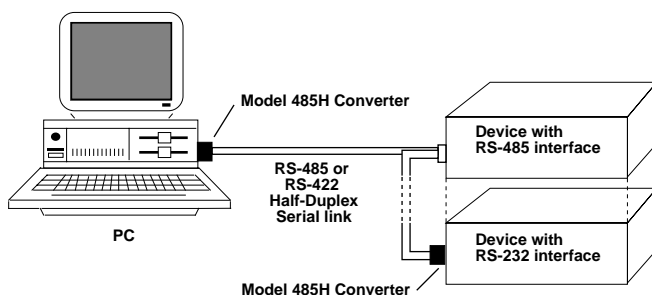


Figure 1 Model 485H Converters connects a PC to one or more RS-422 or RS-485 Devices.

Converter Versions

The Model 485H is available with male and female connectors. The male connector part (Model 485HM25) is supplied configured as a DCE device and the female connector part (Model 485HF25) is supplied configured as a DTE device. DCE devices have their signal-pin assignments configured for operation as a modem. DTE devices have their signal-pin arrangements configured for operation as a terminal. DCE type devices mate directly with DTE type devices. Reconfiguring the 485H's device type is an easy procedure that can be done by the user.

Signal Connections

The RS-485 or RS-422 signal pairs are connected to a removable screw terminal strip at the rear of the unit. For two wire, half duplex operation, jumper the TX and RX terminals together.

The transmitter is controlled by an external enable signal (TXEN) or by the RS-232 RTS signal. The factory setting is to use TXEN. TXEN is internally pulled low so no connection is required for normal four-wire full-duplex operation. For two-wire or half-duplex operation, use TXEN or RTS to enable the transmitter. If the RTS signal is not available, use one of our MAGIC 485F Converters.

CE Approved

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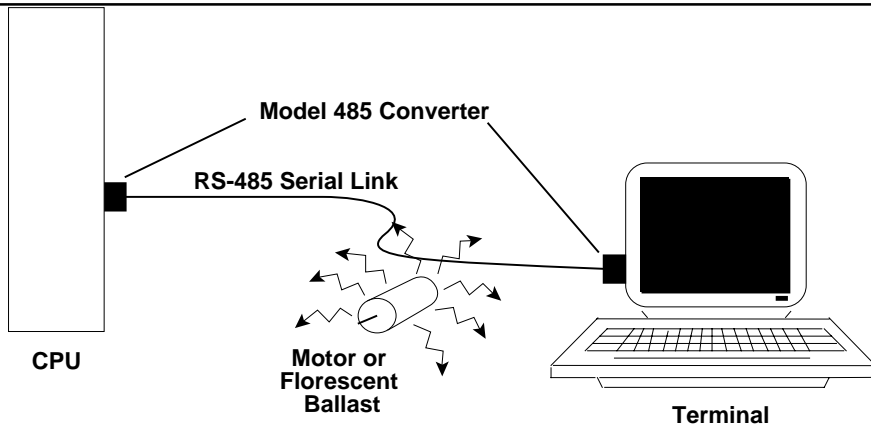


Figure 2 A Pair of 485H Converters extend Serial Transmission Distance up to 4000 feet and increases Noise Resistance over RS-232 Serial Links.

TABLE 1
SHIPPED CONFIGURATION

Setting	Default	Option
Transmit Enable	TXEN	RTS
Rcvr termination	In	Out
Xtmr termination	Out	In
Mode	Full	Half
	Duplex	Duplex
Power	Term Strip	RS-232 Device

Power Connections

Model 485H Converters use a small amount of DC power which can be supplied on two of the screw terminals or from the RS-232 device thru a spare pin on the 25 pin connector. A wall mounted, 9 Vdc power module is included with each Converter.

Compatibility with Earlier Units

The 485H series converters are an improved hi-speed versions of our earlier 485 series Converters and are func-

tionally interchangeable with the earlier units. They can be used in any application that used the earlier 485 series units.

Software Support

The 485H Converters operate with many commercially available communications packages and languages that support RS-422 or RS-485 communication. A COMBIOS software toolkit is available for DOS and Windows applications that do not have serial communication capabilities.

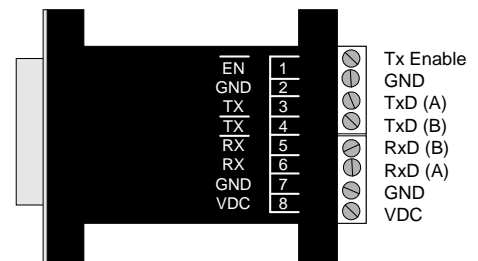


Figure 3 Model 485H Terminal Connections

SPECIFICATIONS

RS-232 Specifications

Connections	DB 25 pin male or female connector
Input Voltage	
Space or On	+2.4 to +30 V
Mark or Off	-30 to +0.8 V
Input Resistance	5 K ohm (typ.)
Output Voltage	+9 V or -9 V
Output resistance	300 ohm (typ)

RS-485 Specifications

Connections	8 screw terminals
Output Drive	1.5 V min. fully loaded
Output Load	27 ohms (32 receivers)
Rcvr Termination	120 ohms when 'In'
Data Rate	1 M baud over 1200 meters

Power Requirements

Voltage	+5.0 to +12 Vdc or +5 Vdc on RS-232 connector.
Current	50 ma minimum 100 ma max
Physical	
Size	67 mm L x 43 mm W x 20 mm L (2.63" L x 1.7" W x 0.8" H)
Temperature	
Operating	0 to +60 °C
Storage	-20 to +70 °C

ORDERING INFORMATION

	Part Number
RS-232 to RS-485 Converter with male connector. Includes 115 Vac Power Supply Adapter	485HM25
RS-232 to RS-485 Converter with female connector. Includes 115 Vac Power Supply Adapter	485HF25
For 230 Vac Adapter. Add suffix to specify plug style: -E (Europe), -B(UK), -A(Australia)	