BLACK BOX Catalogue Ltd
The Source for Connectivity

SHM-6:

MEA06F
MEA06M.

SHM-6
Async interfaced powered Short Haul Modem

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Introduction

The short-haul modem for leased lines, SHM6, allows you to link a computer to a terminal and operate in full-duplex over 4-wire links up to 19,200 bps.

What's new : The modem's power consumption is so low that it draws the energy needed for its circuitry directly from the wires of the V.24/V.28 interface (CT 103, CT 108, CT 105).

If you need to transmit in a very noisy environment requiring the use of a shielded link, the SHM6 provides you on the line link terminal block with a position for the connection of the shield to the modem's protective ground (EC) PIN 1.

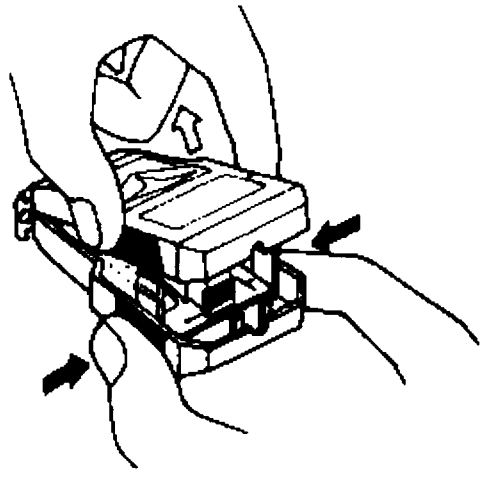
The principle used (differential transmission and galvanic transformer isolation) offers a high immunity to noise, and the low energy transmitted on the line guarantees a minimum of interference with the adjacent cables.

The key features of this product are:

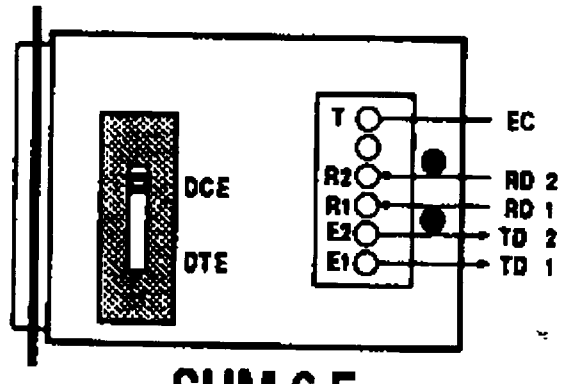
- Asynchronous speeds up to 19,200 bps
- Full-duplex over 4 wires
- Remote terminal presence management (CT 109)
- Configuration of the DCE or DTE interface (user-selectable)
- 1,500 volts galvanic transformer isolation
- Non-powered (no AC power supply required)
- Compact, lightweight, and reliable (size : H23 x W49 x D80 mm ; weight : 60g)
- CMS technology
- Modem integrated in the DB25-type connector interface
- Distances up to 4 km at 19,200 bps
- Simple installation

Installation

To open the case press on the side tabs of the bottom half's rear part and lift the top half by swivelling it around the DB25 connector (see below).



Select the interface type you wish to use: DCE (modem) or DTE (terminal; see overleaf)



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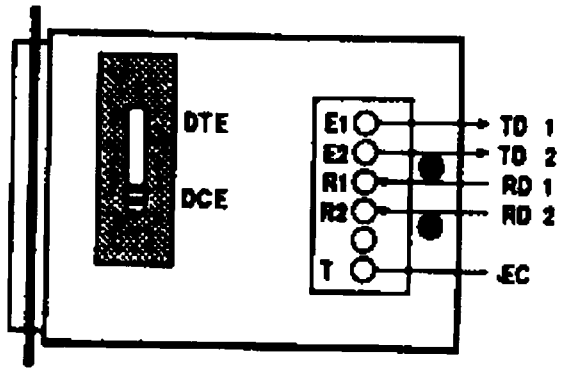
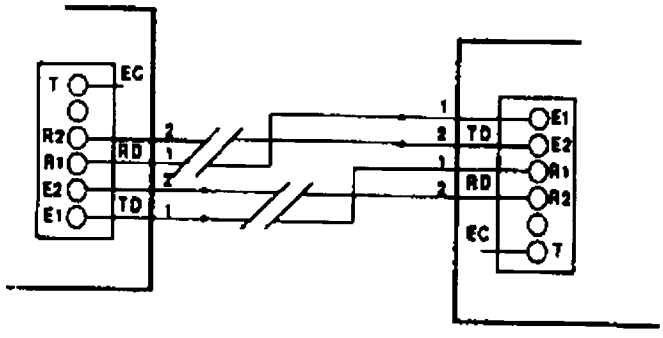
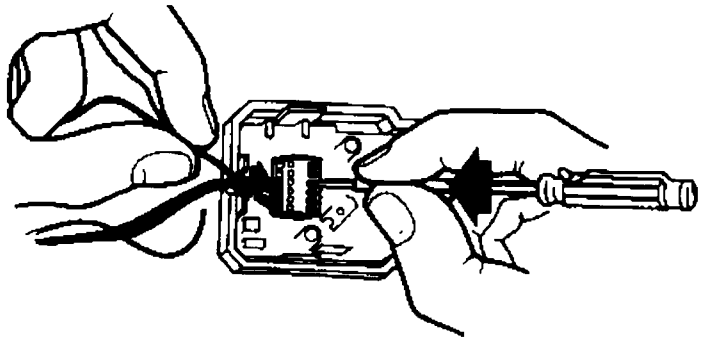


Connect both transmit wires (TD 1 and 2) to both receive wires (RD 1 and 2; see below:



press with a small screwdriver on the upper part of the line connector while inserting the wires in the hole underneath see below:



Remove the screwdriver: the connection is finished.

Make sure that the TD 1 and 2 terminals are correctly linked to the remote modem's RD 1 and 2 terminals (TD 1 to RD 1 and TD 2 to RD 2).

Close the cover.

Plug the modem into the DB25 connector of the terminal or computer and tighten the locking screws.

Specifications

Interface — DCE or DTE (user-selectable) : V.24/V.28

Power — No AC power supply or battery required. For some applications, external power can be applied to pins 9 (+V) and 10 (-V) of the interface connector. The +V and -V values range from 5 to 12 V with respect to the protective ground.

Operating temperature — from +5° to +45° C

Cicuitry — DCE-type interface (modem):

• DSR (CT 107): copy of DTR (CT 108)
• RLSD (CT109): copy of the simultaneous presence of the remote modems (configured as a DCE) DTR (CT 108) and RTS (CT 105) with a delay of approximately 10 ms
DTE-type interface (terminal):
• DTR (CT 108): forced high
• RTS (CT 105): copy of the simultaneous presence of the remote modems (configured as a DCE) DTR (CT 108) and RTS (CT 105) with a delay of approximately 10 ms

Distances — The lengths indicated below correspond to a minimum distance over a twisted pair and are given for your information only.

Speed (bps)	Distance in km over 0,5 mm (24 AWG) wires
2,400	4
4,800	4
9,600	4
19,200	4

Interface Cicuits

Interface circuits compatible with the V.24/V.28 recommendations:

Circuit	Signal Name	Pin	Description
102	GND	7	Signal ground (electrical ground)
103	TD	2	Transmit Data
104	RD	3	Receive Data
105	RTS	4	Request to send
106	CTS	5	Clear to send
107	DSR	6	Data set ready
108	DTR	20	Data terminal ready
109	RLSD	8	Received line signal detector
	GND	1	Protective ground
	+V	9	+ Voltage
	–V	10	– Voltage

DCE or DTE Configuration of the Interface

The SHM6 has a switch, which allows you to configure the interface as a DCE (modem) or as a DTE (terminal).

The factory default for the interface is DCE.

Thanks to this feature, you can connect the SHM6 directly to the hardware connectors with DTE or DCE (terminal or modem) interfaces.