



KM-1D SHORT HAUL MODEM

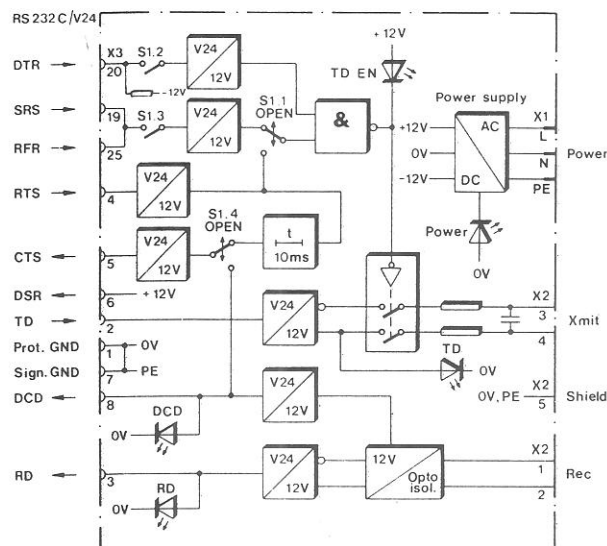


The KM-1D is a low cost, high-performance modem intended for use over distances up to 10 km (6 miles). It meets EIA RS-232 C and CCITT V.24 specifications. The unit has full duplex capability, and accepts any transmission rate up to 19200 bps.

The transmission is performed by a three-state balanced current loop. This technique assures error-free data transmission, withstanding electrical interference and static electricity problems. In addition, one status signal can be transferred in each direction. This enables the detection of e.g. if the buffer, of a printer at the other end of the line, is full or not, or if other conditions of the remote terminal are present.

The KM-1D is available as a table top/wall mount model (see Photo), or as a plug-in card (KM-1DR) for the WESTERMO 19" rack system type RV.

BLOCK DIAGRAM



Note: Pins 4 and 19/25 act as ON if not connected.

In addition to data, one status signal in each direction can be transferred from one KM-1D to another. Whenever Transmit Data is enabled (see table below), there will be current flowing in the transmit line. This current is detected by the KM-1D at the other end of the line, and its pin 8 (DCD), is forced into the ON condition. Whenever Transmit Data is not enabled, DCD is OFF. Pins 20, 19/25 and 4 (DTR, SRS/RFR and RTS) control this status signal. Use switch settings according to the following table:

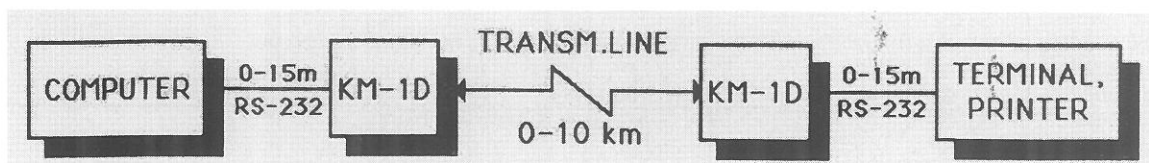
| S1.1 | S1.2 | S1.3 | Transmit Data enabled by |
|------|------|------|--------------------------|
| OFF | OFF | OFF | ALWAYS ENABLED* |
| OFF | OFF | ON | SRS/RFR |
| OFF | ON | ON | DTR and SRS/RFR |
| ON | OFF | X | RTS |
| ON | ON | X | RTS and DTR |

*Factory setting

The switch S1.4 is used to control the signal CTS (pin 5):

- S1.4 OFF* connects CTS to RTS through a 10 ms delay.
- S1.4 ON connects CTS to DCD.

TYPICAL SYSTEMS APPLICATION



FEATURES

- Asynchronous transmission
- Full duplex
- 0-19200 bps (any rate)
- EIA RS-232C/CCITT V.24, V.28
- 2- or 4-wire
- Opto-Coupler Isolation
- Local links up to 10 km
- Transfers status signal
- Five LED indicators
- Easy to use, easy to install
- Small size
- Low cost

SPECIFICATIONS

| | | | | | | | |
|------------------------|-------------------------------------------------------------------------------------------------------------|------|------|------|------|-----|-----------|
| Interface | According to EIA RS-232C/CCITT V.24, V.28 | | | | | | |
| Transmission | Asynchronous, full duplex | | | | | | |
| Speed | Any rate from 0 to 19200 bps, no strapping necessary | | | | | | |
| Line | Simplex: One twisted pair Full duplex: Two twisted pairs | | | | | | |
| Max distance | 19200 | 9600 | 4800 | 2400 | 1200 | 600 | bps km |
| | 0.5 | 0.9 | 1.5 | 3 | 5 | 10 | |
| Transmission technique | ± 10 mA three-state balanced current loop | | | | | | |
| Isolation | Opto-coupler | | | | | | |
| Isolation voltage | 1500 V | | | | | | |
| Power | 110/220 VAC ± 10 %, 40-60 Hz (factory option). Other supplies on request (KM-1D) + 20V and -20V (KM-1DR) | | | | | | |
| Dimensions | 80 × 150 × 50 mm | | | | | | |
| Weight | 0.5 kg (KM-1D), 100g (KM-1DR) | | | | | | |
| Temperature range | 5-50 °C | | | | | | |
| Humidity | 0-95 % RH, non-condensing | | | | | | |
| Mounting | Wall-mounted/table top (KM-1D) or plug-in card (KM-1DR) | | | | | | |

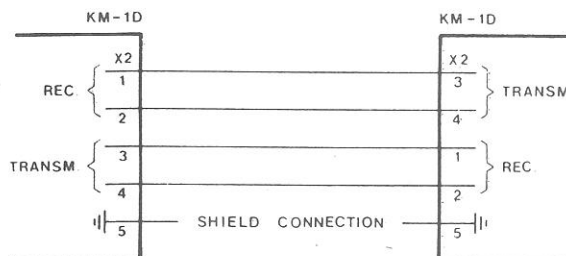
DTE CONNECTION

| Pin No | CCITT V.24 Designation | RS-232C Designation | Mnemonic/Signal Name |
|--------|------------------------|---------------------|---------------------------------|
| 1 | 101 | AA | PE /Protective Ground |
| 2 | 103 | BA | TD /Transmitted Data |
| 3 | 104 | BB | RD /Received Data |
| 4 | 105 | CA | RTS /Request To Send |
| 5 | 106 | CB | CTS /Clear To Send |
| 6 | 107 | CC | DSR /Data Set Ready |
| 7 | 102 | AB | SG /Signal Ground |
| 8 | 109 | CF | DCD /Carrier On |
| 19 | 120 | SCA | SRS /Secondary Request To Send* |
| 20 | 108/2 | CD | DTR /Data Terminal Ready |
| 25 | 133 | - | RFR /Ready For Receiving* |

*) Refer to the Block Diagram Description

TRANSMISSION LINE CONNECTION

(To KM-1D or RV-01 mother board Screw Terminals)



Note: If shielded cable is used, just connect the shield at one end of the transmission line.

INDICATORS

Power On
Carrier On (DCD)
Xmit Enable (TD EN)
Received Data (RD)
Transmitted Data (TD)

MOUNTING (KM-1D)

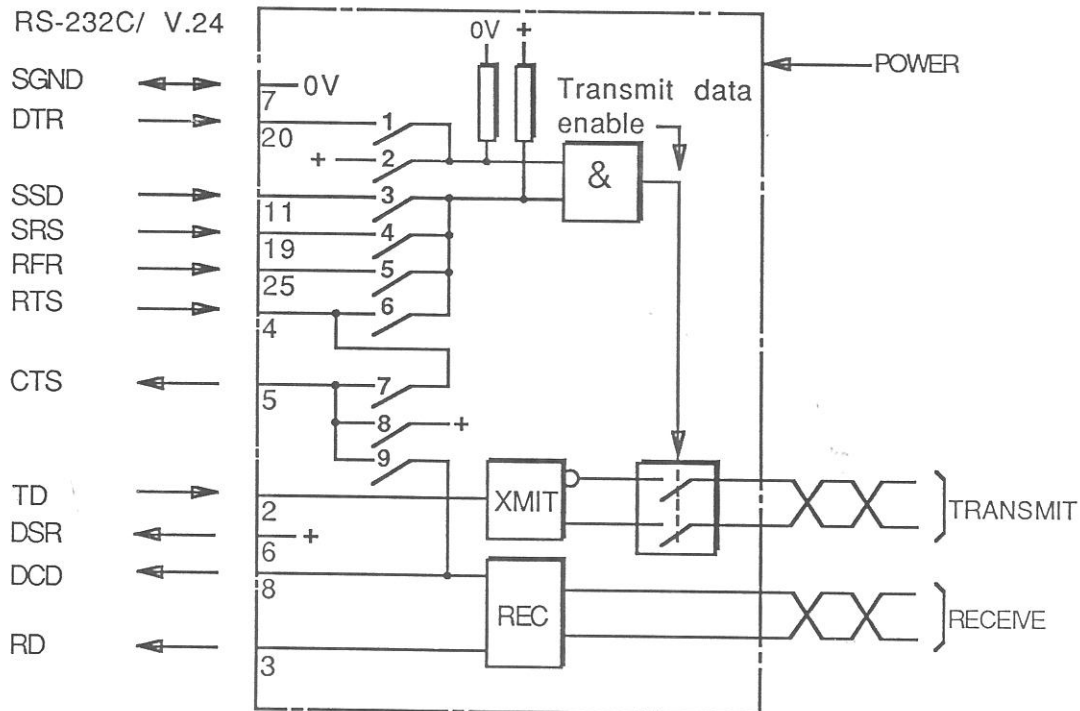
- Drive in two 4 mm dia.screws (e.g. wood-screws) to the wall, 127 mm center to center
- Remove the cover of the box.
- Hang the KM-1D on the wall and tighten the two screws
- Connect the line to the screw terminals as shown above. (Observe polarity).
- Reassemble the box.
- Apply power.
- The KM-1D is ready to operate.



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SWITCH SETTINGS ON KM-1D

From serial no 30.001 and on, the number of KM-1D switch selections are increased.



| DIP-SWITCH NUMBER | | | | | | TRANSMIT DATA enabled by: |
|-------------------|---|---|---|---|---|---------------------------|
| 1 | 2 | 3 | 4 | 5 | 6 | |
| | X | | | | | Always enabled |
| | X | X | | | | SSD (pin 11) |
| | X | X | X | | | SRS (pin 19) |
| | X | X | | X | | RFR (pin 25) |
| | X | X | | | X | RTS |
| X | X | X | | | | DTR and SSD |
| X | X | | X | | | DTR and SRS |
| X | X | | | X | | DTR and RFR |
| X | X | | | | X | DTR and RTS |

| DIP-SWITCH NUMBER | | | CTS (pin 5) controlled by: |
|-------------------|---|---|----------------------------|
| 7 | 8 | 9 | |
| | | | Always OFF |
| X | | | RTS |
| | X | | Always ON |
| | | X | DCD |

X = ON

Empty box = OFF

= factory setting