DTE

CS MINI DRIVER

DCE

BLACK BOX

DCE ▐▐▐ DTE

ME731A-M/F or with(Surge Protection)

DESCRIPTION:

The CS Mini Driver-A let's you put 17 miles (27.4 km) between your RS-232 UNIX systems. The Driver uses unconditioned twisted-pair cabling, supports speeds of up to 19.2 Kbps, and requires no AC power or batteries.

A carrier sense feature automatically detects the presence of a carrier on the line, making the Driver ideal for UNIX environments where the host must see a carrier before it sends a log-on screen to a terminal. The carrier sense feature also plays an important role in troubleshooting, where the presence or absence of a carrier indicates positive or negative line integrity.

Small and sturdy, the Driver comes housed in an ABS plastic case. It includes a male or female DB25 connector and terminal block with strain relief. The "SP" models incorporate Silicon Avalanche Diodes which give you 600 watts per wire of protection against harmful transient surges.

CONFIGURATION:

Easy to use, the Driver has no internal jumpers or configuration switches to set. The only thing you must do is set the external DCE/DTE switch.
The figure to the left, show the location of the DCE/DTE switch on the PC board, as well as the location of the terminal block.
SETTING THE DTE/DCE SWITCH:
The Driver includes an external DCE/DTE switch. If a modem or multiplexor is connected to the Driver (or if the connected device is wired like a modem or mux), set the switch to DTE. On this setting, the Driver will act like a DTE and transmit data on Pin2.
If a PC, terminal, or host computer is connected to the Driver (or if the connected device is wired like a PC, terminal, or host computer), se the switch to DCE. On this setting, the Driver will act like a DCE and transmit data on Pin 3.

INSTALLATION:

Once you configure the DTE/DCE switch, you're ready to connect the Driver to your network. The Driver supports data-only communication between two RS-232 devices at distances up to 17 miles (27.4 km) and speeds up to 19.2 Kbps. There are two essential requirements for installation:
1. These units work in pairs. You must have one Driver at each end of a two-twisted-pair interface.
2. To function properly, the Driver needs two twisted-pairs of metallic wire, between 19 and 26 AWG (higher-number gauges may limit distance; see the distance table for specific distance and AWG recommendations). Do not use standard dial-up telephone circuits or leased circuits that run through signal-equalization equipment.

TWISTED-PAIR CONNECTION USING TERMINAL BLOCKS:
If your RS-232 application requires you to connect two pairs of wires to the Driver, you will need to open the case to access the terminal blocks. The following instructions tell you how to open the case, connect the wires to the terminal block, and fasten the strain relief in place, so that the wires won't pull loose.
1. Gently open the unit by inserting a screwdriver between the DB25 connector and the lip of the plastic case. You don't have to worry about breaking the plastic, but be careful not to bend the D-sub connector.
   When the unit is open, you'll be able to see the terminal block located at the rear of the PC board.
2. Strip the outer insulation from the twisted-pair wires about one inch (2.5 cm) from the end.
3. Strip the insulation from each of the twisted-pair wires about 1/4 inch (.6 cm).
4. Connect one pair of wires to XMT+ and XMT- (transmit positive and negative) on the terminal block. Be sure to note which color is positive and which color is negative.
5. Connect the other pair of wires to RCV+ and RCV- (receive positive and negative) on the terminal block. Again, be sure to note which color is positive and which color is negative.
6. If there is a shield around the telephone cable, it may be connected to "G" on the terminal block. We recommend connecting the shield at the computer end only to avoid ground loops. A ground wire is not necessary for proper operation.
7. Place the two halves of the strain-relief assembly on either side of the telephone wire and press together lightly. Slide the assembly so that it is about two inches (5 cm) from the terminal posts and press together firmly.
8. Insert the strain-relief assembly, with the wire going through it, into the slot in the bottom half of the modem case and set it into the recess in the case.
9. Bend the top half of the case as necessary to place it over the strain relief assembly. Do not snap the case together.
10. Insert one captive screw through a saddle washer and then insert the captive screw with the washer on it, through the hole in the DB25 end of the case. Snap that side of the case closed. Repeat the process for the other side.

SPECIFICATIONS:

Protocol: Asynchronous

Speed: Up to 19,200 bps (no strapping)

Distance: See table below.

Surge Protection (SP models only): 600W power dissipation at 1 ms and response time of 1.0 picoseconds.

Control Signals: **DCE Mode;** CTS (pin 5) turns ON immediately after terminal raises RTS (pin 4); DSR (pin 6) turns on when powered-up; DCD (pin 8) turns ON after detecting the receive signal from the line.
DTE Mode; RTS (pin 4) turns ON immediately after modem raises CTS (pin 5); DTR (pin 20) turns ON after recognizing the receive signal from the line.
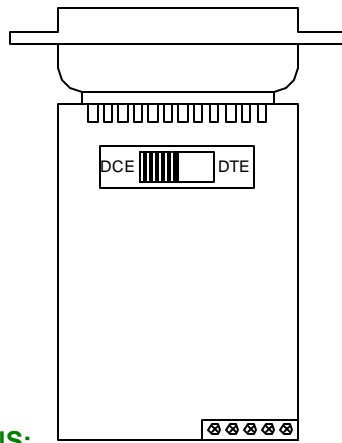
Operation: 4-wire unconditioned line (2 twisted-pair wires), full-duplex.

Transmit Level: 0 dBm

Connectors: (1) DB25 male or female (depending on model chosen).

Line Connection: (1) 5-screw terminal block and strain relief insert.

Power: No power required; uses ultra-low power (+5VDC) from EIA data and control signals ---- Pins 3,5,6,8, and 9 in DCE mode; Pins 2,4,9 and 20 in DTE mode.

Distance Table in miles (km)

Speed (bps)	Wire Gauge		
	19 AWG	24 AWG	26 AWG
19,200	6.2 (10 km)	3.7 (6 km)	1.2 (1.9 km)
9600	7.5 (12.1 km)	4.9 (7.9 km)	2.5 (4 km)
4800	8.7 (14 km)	5.6 (9 km)	3.7 (6 km)
2400	11.8 (19 km)	8 (12.9 km)	4.9 (7.9 km)
1200	17 (27.4 km)	11.8 (19 km)	8 (12.9 km)