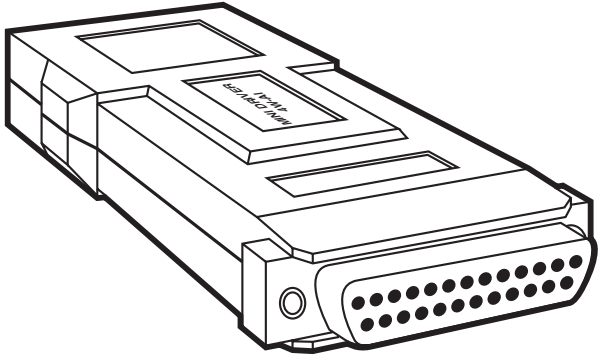
BLACK BOX
NETWORK SERVICES

MARCH 1998
ME762A-M/F
ME763A-M/F

Mini Driver 4W-AI
Mini Driver 4W-AI1



CUSTOMER SUPPORT INFORMATION

Order **toll-free** in the U.S. 24 hours, 7 A.M. Monday to midnight Friday: **877-877-BBOX**
FREE technical support, 24 hours a day, 7 days a week: Call **724-746-5500** or fax **724-746-0746**
Mail order: **Black Box Corporation**, 1000 Park Drive, Lawrence, PA 15055-1018
Web site: **www.blackbox.com** • E-mail: **info@blackbox.com**

1. SPECIFICATIONS

Protocol — Asynchronous

Speed — Up to 19.2 Kbps

Operation — Unconditioned 4-wire line (two twisted pairs), full- or half-duplex, point-to-point

Interface — RS-232/CCITT V.24

Connectors — (1) DB25 male or female, (1) 5-screw terminal block (4-wire and ground, with cable strain relief inside plastic cover)

Transmission Controls — DSR (Circuit 107) and DCD (Circuit 109) turn on immediately after the terminal raises DTR (Circuit 108.2); CTS (Circuit 106) turns on immediately after the terminal raises RTS (Circuit 105)

Transmission Level — -6 dBm

Power — From RS-232 interface (+6 VDC on pins 2,4, or 20)

Size — 0.9"H x 2.1"W x 4.3"D (2.3 x 5.3 x 10.9 cm)

Weight — 0.2 lb. (0.1 kg)

Distance — Refer to the chart below.

	Wire Gauge		
Speed	**19-AWG**	**24-AWG**	**26-AWG**
1200 bps	6.5 mi (10.5 km)	5.0 mi. (8.0 km)	3.5 mi. (5.6 km)
2400 bps	6.5 mi. (10.5 km)	5.0 mi. (8.0 km)	3.5 mi. (5.6 km)
4800 bps	6.5 mi. (10.5 km)	5.0 mi. (8.0 km)	3.5 mi. (5.6 km)
9600 bps	5.0 mi. (8.0 km)	4.0 mi. (6.4 km)	2.5 mi. (4.0 km)
19200 bps	2.0 mi. (3.2 km)	1.5 mi. (2.5 km)	1.0 mi. (1.6 km)

2. INTRODUCTION

The Mini Driver 4W-AI and Mini Driver 4W-AI1 are nonpowered devices that let you connect asynchronous terminals to computers in local applications beyond the 50-foot RS-232 specification. The line drivers accommodate applications up to 6.5 miles (10.5 km), depending on your operating speed and wire gauge.

This manual covers two Mini Driver models:

- **Mini Driver 4W-AI (ME762A) —** designed for use on premises (within a building, between buildings, etc.). Figure 1 shows the Mini Driver 4W-AI in a typical application.

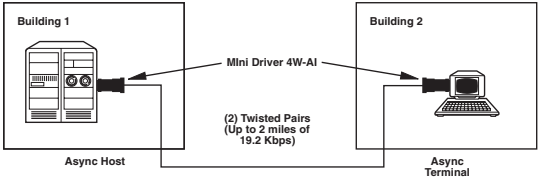


Figure 1. Typical Application for Mini Driver 4W-AI

- **Mini Driver 4W-AI1 (ME763A) —** designed for use with a telco LAD (Local Area Data) circuit to connect to a device off premises. This model complies with Bell specification 43401. See Figure 2 for a typical application of the Mini Driver 4W-AI1.

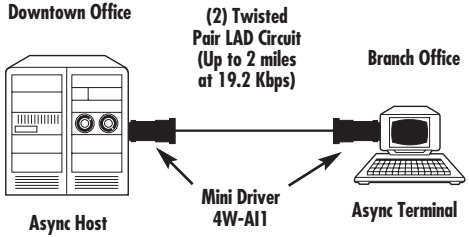


Figure 2. Typical Application for Mini Driver 4W-AI1

Both models are coupled to the phone line through isolation transformers which, in conjunction with electronic circuitry, protect against AC or DC overvoltages. The transformers are rated at over 1,500 V RMS, making them suitable for connection to local circuits provided by most national telephone administrations (P.T.T.s).

The Mini Drivers have an internal switch to select DTE or DCE operation. This allows the line driver to operate as a DTE when connected to another DCE such as a multiplexor port, or as a DCE when connected to a DTE such as a terminal. In either mode, you'll be able to make your connections using straight-through cable rather than special cross-pinned cable.

The Mini Drivers operate without connection to the main supply by drawing ultra low power from the standard EIA RS-232C/CCITT V.24 data and control signal voltages. The drivers will even operate if Transmit Data is the only lead connected (without the terminal sending Request to Send or Data Terminal Ready signals). Both positive and negative signals ar generated in compliance with EIA RS-232C/CCITT V.24 standards, regardless of the status of the Transmit Data signal (constantly high or constantly low).

The low transmit level minimizes cross-talk onto adjacent circuits within the same cable. Data is transmitted and received at a balanced impedance, ensuring excellent immunity to circuit noise.

3. INSTALLATION

Follow these simple steps to install your Mini Driver 4W-AI or 4W-AI1:

1. Separate the two halves of the plastic cover by pressing the marked places on the sides of the unit.

2. Connect the 4-wire telephone line to the unit's 5-screw terminal block:

   a. Connect the transmit pair to "XMT" and the receive pair to "RCV". To maintain polarity, make sure that the +XMT pair on the local driver is connected to the +RCV pair on the remote driver. The -XMT pair on the local driver must be connected to the -RCV pair on the remote driver.

   b. A ground is provided to connect the cable shield.

3. Set the DCE/DTE switch to the required position:

   - Select the DCE position if you're connecting the Mini Driver to a DTE (terminal, host).

- Select the DTE position if your Mini Driver is being connected to a DCE such as a multiplexor.

In either configuration, you'll be able to use straight-pinned DB25 cable. The table below lists the pinning for the Mini Driver in the DCE and DTE positions.

DTE Position			DCE Position		
TD	2	→	TD	2	←
RD	3	←	RD	3	→
RTS	4	┐	RTS	4	(+V)
CTS	5	┘	CTS	5	
DSR	6	(+V)	DSR	6	
DCD	8	(+V)	DCD	8	
DTR	20		DTR	20	(+V)

4. To close the unit, simply press the two halves of the cover together.

5. Connect the line driver directly to the 25-pin connector of your terminal or computer port. To secure the connection, fasten the screw locks on each side of the line driver's DB25 connector.

© Copyright 1998. Black Box Corporation. All rights reserved.

1000 Park Drive • Lawrence, PA 15055-1018 • 724-746-5500 • Fax 724-746-0746