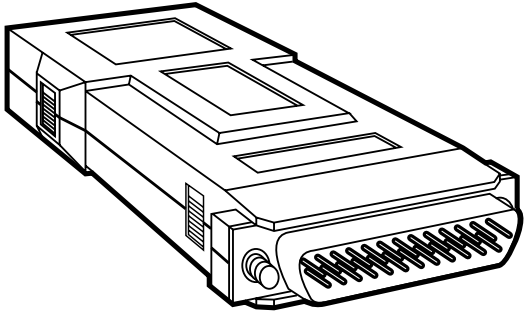
© Copyright 1998. Black Box Corporation. All rights reserved.

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

BLACK BOX
NETWORK SERVICES

DECEMBER 1998
ME749A-F
ME749A-M

Mini Driver 4W-S



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**

TRADEMARKS USED IN THIS MANUAL

Any trademarks mentioned in this manual are acknowledged to be the property of the trademark owners.

1. Specifications

Transmission Mode — Synchronous, full-duplex

Transmission Line — Unconditioned/unloaded 4-wire (2 twisted pairs), 19 to 26 AWG

Transmission Level — -6 dBm

Transmission Range (miles) —

Speed (bps)	Wire Gauge		
	19	24	26
19,200	3.5	2.5	2
9600	5.5	3.5	2.5
4800	7.5	5	3
2400	8.5	5.5	3.5
1200	11	7.5	5.5

NOTE: Multiply by 1.6 to derive ranges in km.

Baud Rates — 900, 1200, 1800, 2400, 3000, 4800, 7200, 9600, 14,400, and 19,200 bps

Transmit Timing — Internal

Connectors —	ME749-F: (1) DB25 female and (1) 5-screw terminal block; ME749-M: (1) DB25 male and (1) 5- screw terminal block
Operating Temperature —	32 to 122°F (0 to 50°C)
Humidity Tolerance —	Up to 95%, noncondensing
Power Supply —	Supplied from the RS-232 interface
Size —	0.9"H x 2.1"W x 4.3"L (2.2 x 5.3 x 11.0 cm)
Weight —	3.3 oz.(90 g)

2. Description

The Mini Driver 4W-S is a synchronous full-duplex, 4-wire short-haul modem with a range of up to eleven miles. It is small in size, packaged inside a connector cover. It can handle data rates of 900 to 19,200 bps. The modems are to be used in pairs, one at each end of the line.

The Mini Driver 4W-S requires no AC power supply, batteries, or EIA test voltages. Very low power is derived from the RS-232 data and control lines. It generates positive and negative signals in compliance with the RS-232 standard, even when Transmit Data is constantly a MARK.

The Mini Driver 4W-S is isolated from the line by balanced transformers. These transformers, together with the electronic circuitry, protect the modem against voltage transients.

The Mini Driver 4W-S's low transmit level minimizes crosstalk onto adjacent lines in the same cable. The use of differential diphase modulation provides immunity to background noise, eliminates line distortion, and permits efficient transmission and reception of data.

Data is transmitted and received at a balanced impedance which ensures excellent immunity to circuit noise. The Mini Driver 4W-S is transformer-isolated from the telephone line to protect against voltage spikes.

A typical installation is shown in **Figure 1**.

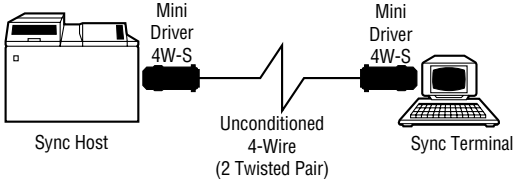


Figure 1. Typical Installation.

3. Installation

1. Open the unit by pressing in the tabs on the side of the cover with a small screwdriver.

2. Separate the top half of the case from the bottom half.

3. Set the baud rate switch to the desired setting as shown in **Table 1**. The factory default is 9600 bps. See **Figure 2** for the location of the switch. The switch settings for the available baud rates are printed on the underside of the circuit board. Remove the circuit board from the case to access this information.

Table 1. Baud Rate Settings

Baud Rate (bps)	Switch Setting
900	9
1200	8
1800	7
2400	6
3600	5
4800	4
7200	3
9600	2 (Factory setting)
14,400	1
19,200	0

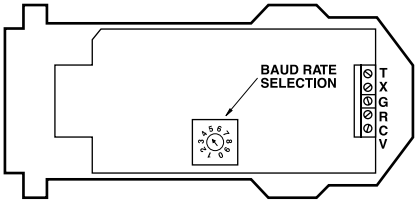


Figure 2. Baud Rate Setting Switch.

4. Connect the twisted-pair cable to the transmit and receive screw-terminals. See Figure 3.

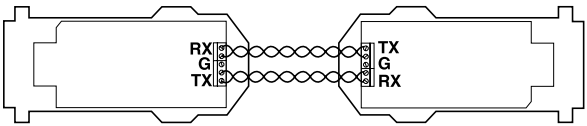


Figure 3. Installation Diagram.

5. Be sure that the screw locks for the RS-232 connector are in their mounting holes. Align the top cover with the bottom cover and snap them together.

6. Repeat steps 1 to 4 for the remote Mini Driver 4W-S. Make sure the local transmit terminals are connected to the remote receive terminals and that the local receive terminals are connected to the remote transmit terminals (see **Figure 3**).

7. Plug each Mini Driver 4W-S into the computing device and tighten the screwlocks to prevent the Mini Driver 4W-S from being disconnected from the computer.

8. Each Mini Driver 4W-S is now ready for operation.