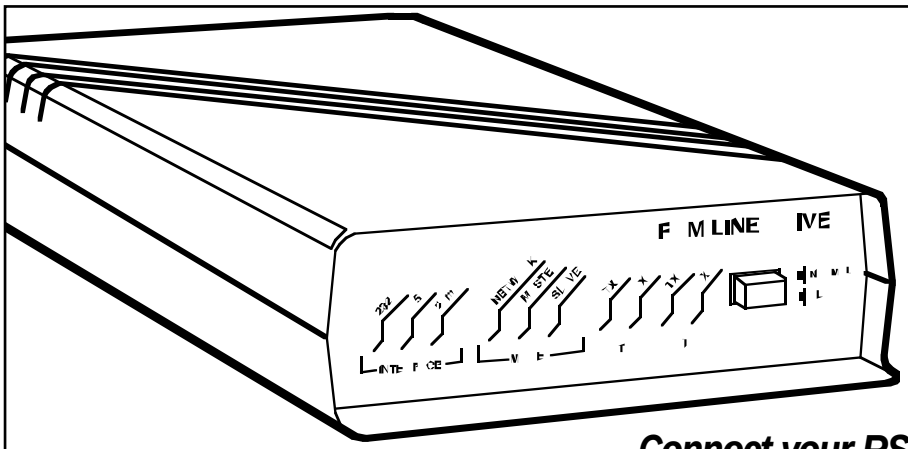
BLACK BOX®
NETWORK SERVICES

Black Box Network Services • 464 Basingstoke Road • Reading, Berkshire, RG2 0BG • Tech Support: 0118 965 6000 • **www.blackbox.co.uk** • **e-mail: techhelp@blackbox.co.uk**

FOM LINE DRIVER—ST AND —SM



Connect your RS-232, RS-485, or 20 mA current loop device to fibreoptic cable.

Key Features

- ***Configure the Line Driver in network or master/slave mode.***
- ***Choose from ST or SMA connectors.***
- ***Operates in half- or full-duplex mode.***
- ***Select from RS-232, RS-485, or 20-mA current loop.***
- ***Runs at 128 kbps at distances up to 6,000 feet.***

With the FOM Line Driver, you can use an RS-232, RS-485, or 20-mA current loop device in a multi-drop half-duplex environment with fibre optics as the transmission media.

The Line Driver has a single RS-232 DB9 female connector. TX and RX are parallel with a 20-mA current loop and RS-485 interface sharing a common terminal block with a switch to select the shared interface. This will let you connect an RS-232, RS-485, or current loop device to a fibreoptic link. Additionally, there are two each fibreoptic receivers and transmitters with ST® or SMA style connectors supporting standard fibre cable through 200 microns.

The Line Driver runs at 128 kbps at distances up to 6,000 feet.

You can configure the device in one of two operating modes: network mode or master/slave mode.

In network mode, data sent to the transmitter of the RS-232 DB9, 20-mA current loop, or RS-485 terminal block is passed out to both optical transmitters. Data received from either optical receiver is passed through to the opposite optical port's transmitter, to the receiver of the RS-232 DB9, the 20-mA current loop, or the RS-485 port.

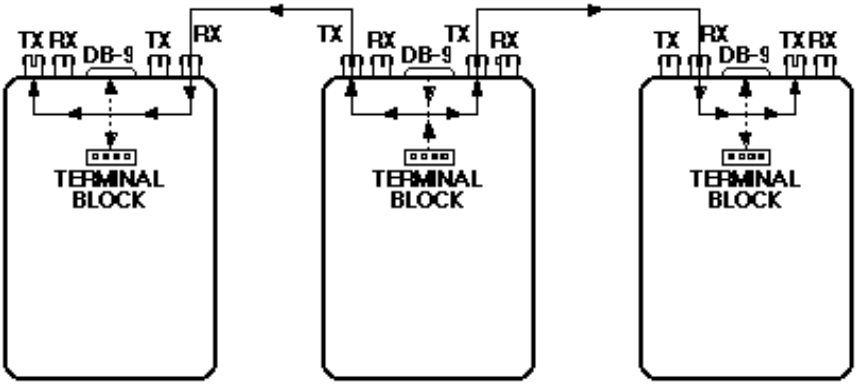
In master/slave mode, one unit is configured as a master, and all others as slaves. When the master sends data to the transmitter of the RS-232 DB9, the 20 mA current loop, or the RS-485 terminal block, it is passed through to the master B optical port. From there, it is daisychained to the next slave's A optical RX. As each slave receives the data, it is passed through to the DB9 RX and the receive terminal block. In addition, the data is retransmitted out that slave's B optical TX to the next slave.

The Line Driver can also run in full-duplex mode when both units are configured as masters.

Typical Application

Configure two units as masters to run them in a point-to-point configuration.

You can configure all units in network mode.



Specifications

Speed: Transparent through 20 kbps on 20-mA current-loop port, 64 kbps on RS-232 port, 128 kbps on RS-485 port

Operation: Network Mode or Master/Slave Mode, multipoint half-duplex; Point-to-point line driver operation, full duplex

Indicators: (10) LEDs: 232, 485, 20 mA, NETWORK, MASTER, SLAVE, PORT B TXD, PORT B RXD, PORT A TXD, PORT A RXD

Interface: RS-232 DCE/DTE, RS-485, 20-mA Current Loop–active or passive transmit and receive, Fibreoptic transmit and receive

Connectors: (1) DB9, (4) ST or SMA, (1) 4-screw terminal block

MTBF: 168,000 hours

Temperature:
Operating: 32 to 114 °F (0 to 45 °C);
Storage: -40 to 176 °F (-40 to 80 °C)

Protocol: Asynchronous

Drops Supported: 64

Maximum Distance: 5000 feet (1524 m)

User Controls: (1) Pushbutton: Pressed in enables DLB (Digital Loopback) mode, and fully extended enables NORMAL mode

Fibre Launch Power: -14 dB

Receiver Sensitivity: -25 dB

Cable Requirements:
Use multi-mode fibre cable; Use up to 200 micron fibreoptic cable; 62.5 micron fibre is recommended

Link Budget:
50-125 µ cable: 2.5 dB;
62.5-125 µ cable: 6 dB;
100-140 µ cable: 11.5 dB

Power: 115 VAC or 230 VAC, 60/50 Hz (external)

Size: 1.8"H x 5.5"W x 8.5"D (4.6 x 14 x 21.6 cm)

Weight: 2 lb. (0.9 kg)

Technically Speaking

The Line Driver is factory-configured as follows. You can change these settings to suit your application.

- XW2 can be set for RS-232, RS-485, or 20-mA current- loop operation. The factory default is RS-232.
- S1 positions 1 and 2 can be set to determine the MODE the unit will operate in. Choose from Network Mode or Master/Slave mode. Master is the default.
- S1 positions 3-6 can be set for failsafe/biased line.
- S1 positions 7-8 can be set for RS-485 termination or no termination.
- W2 sets the delay of CTS assertion with the raising of DTR or RTS.

Ordering Information

ITEM	CODE
With ST Connectors:	
FOM Line Driver–ST, 115 VAC	ME540A-ST
FOM Line Driver–ST, 230 VAC	ME540AE-ST
With SMA Connectors:	
FOM Line Driver–SM, 115 VAC	ME540A-SM
FOM Line Driver–SM, 230 VAC	ME540AE-SM