BLACK BOX®
NETWORK SERVICES

JULY 2003

IC238A-F IC238A-M

Miniature Interface Converters

CUSTOMER SUPPORT INFORMATION

Order **toll-free** in the U.S.: Call **877-877-BBOX** (outside U.S. call **724-746-5500**)
FREE technical support 24 hours a day, 7 days a week: Call **724-746-5500** or fax **724-746-0746**
Mailing address: **Black Box Corporation**, 1000 Park Drive, Lawrence, PA 15055-1018
Web site: **www.blackbox.com** • E-mail: **info@blackbox.com**

IC238A-F, IC238A-M

1. Features

Miniature interface converters:

- Enables conversion between V.24/RS-232 and RS-530 interfaces
- Data rates up to 200 kbps
- Transparent to protocol
- No AC power required
- Complete with cable and connectors
- Easy to install
- Miniature, lightweight.

Versions

The following versions of the interface converters are available:

- IC238A-F – converter with female RS-530 connectors
- IC238A-M – converter with male RS-530 connectors.

Application

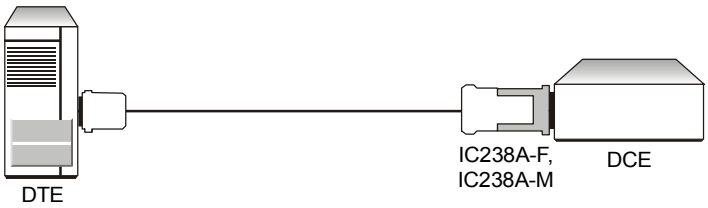

Figure 1. Typical Application

2. Description

IC238A-F and IC238A-M interface converters enable connection between the DTE and DCE with V.24/RS-232 and RS-530 interfaces. IC238A-F and IC238A-M operate in synchronous applications at data rates up to 200 kbps. IC238A-F and IC238A-M are used either for connecting a V.24 DTE to a RS-530 DCE, or for connecting a V.24 DCE to a RS-530 DTE. These options are switch-selectable. Schematic diagrams of signal flow for the RS-530 DTE/V.24 DCE and V.24 DTE/RS-530 DCE configurations are shown in *Figure 2* and *Figure 3*, respectively.

IC238A-F and IC238A-M perform both the physical and the electrical conversion between the two interfaces. The circuitry is designed to provide *short range* interface conversion, i.e., for connection of co-located devices.

IC238A-F and IC238A-M operate without AC power, deriving ultra-low power from the DTE and DCE data and control signals.

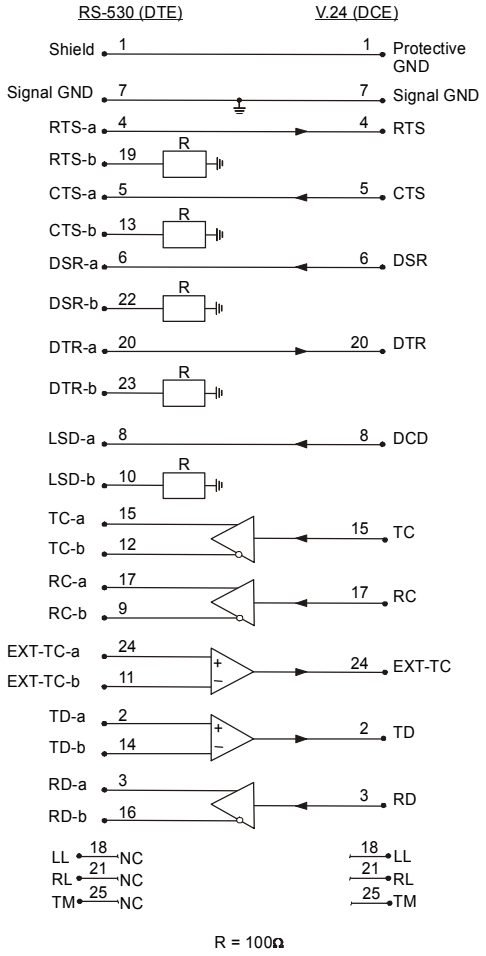

Figure 2. Schematic Diagram, RS-530 DTE/V.24 DCE

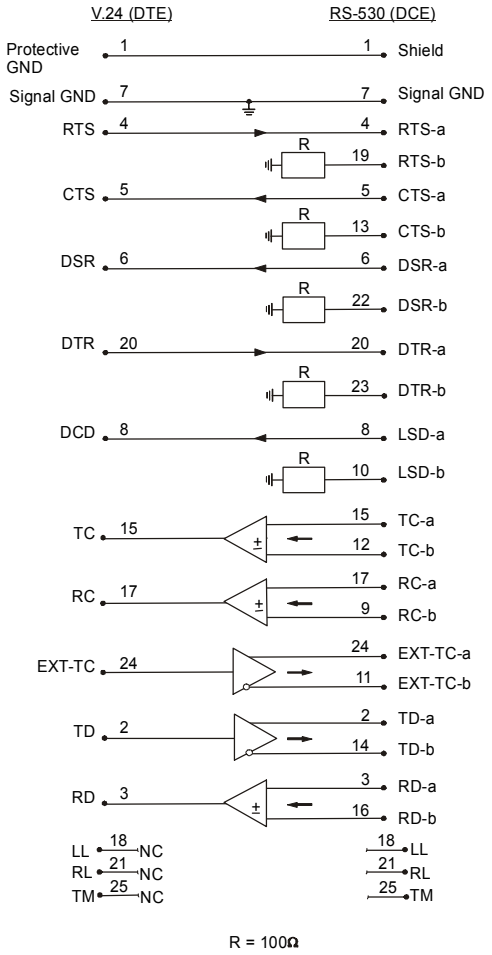

Figure 3. Schematic Diagram, V.24 DTE/RS-530 DCE

3. Technical Specifications

DTE/DCE	*Data Rate*	Up to 200 kbps
	Transmission Format	Synchronous, transparent to protocol
	Connectors	V.24: 25-pin D-type, female RS-530: 25-pin, D-type, male (IC238A-M) or female (IC238A-F)
	Cable Length	2m (6.6 ft)
Power		No AC power required; uses ultra-low power derived from the DTE and DCE data and control signals
Physical	*Height*	22 mm / 0.9 in
	Width	53 mm / 2.1 in
	Depth	110 mm / 4.3 in
	Weight (including cable and connector)	220g / 7.7 oz

Environment	*Temperature*	0–50°C (32–122°F)
	Humidity	Up to 90%, non-condensing

4. Installation

Caution This is a delicate instrument. Be careful when setting jumpers or performing any actions within the product so that you do not break or shake any components.

IC238A-F and IC238A-M come factory-set to V.24 DTE/RS-530 DCE (see *Figure 4*). To alter this configuration, follow these steps:

1. Separate the two parts of the plastic cover by firmly pressing the marked places on the sides – start at the line end.
2. Separate the two parts of the plastic cover by firmly pressing the marked places on the sides, starting at the cable end.
3. Remove the 40-pin DTE/DCE socket by gently grasping both sides and **slowly** moving it from side to side.
4. Invert the socket so that the DCE faces the V.24 connector and the DTE faces the RS-530 device (see *Figure 5*). Make sure that the pins are aligned with the socket.
5. Close the unit by pressing the two plastic covers together.
6. Plug IC238A-F or IC238A-M directly into the DCE and the cable connector into the DTE or vice versa, according to the strapping selected.

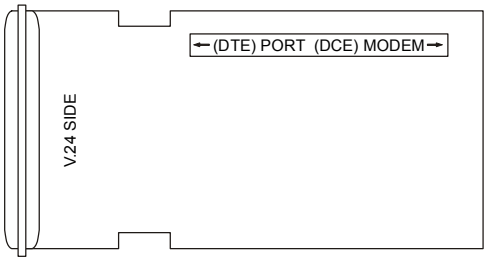

Figure 4. V.24 DTE/RS-530 DCE Configuration

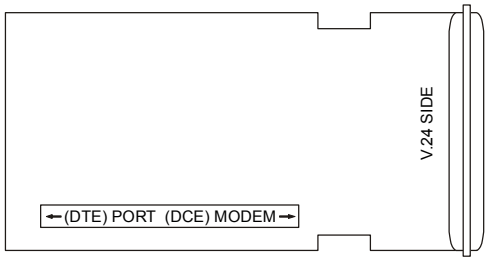

Figure 5. V.24 DCE/RS-530 DTE Configuration