send commands through it to the Dingo. Some commands will result in the Dingo sending data back to the computer. The D232 also has a loopback command.

Default communication settings:
9600 baud, 8 data bits, Even parity, 1 stop bit. (Modbus defaults). All communication is Modbus RTU mode. Modbus ASCII mode is not supported. Default modbus slave address: 8 Allowed slave addresses: 1-247.

For further information about changing the settings read the information files on the memory stick supplied or visit **www.plasmatronics.com.au**

SPECIFICATIONS

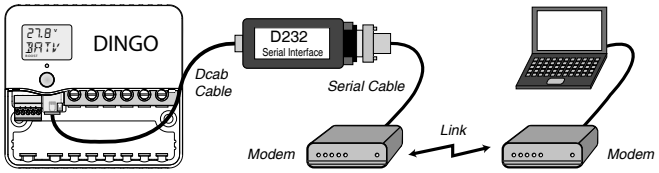
Line Speeds	1.2, 2.4, 4.8, 9.6,19.2 KBaud
RS232 input levels required	>+/- 5V
RS232 drive levels	>+/-5V
Min. Load Impedance	3K
Output impedance (TX)	1000 ohm
DC Isolation	500V
Temperature range	-20 to +70ºC
Supply current	5mA (from Dingo supply) 1.5mA from RS232 TX line

D232

Computer Interface for Dingo controllers

The D232 is a device to allow the Dingo to communicate with a modem or computer via an RS232 serial port.

Description
The D232 is primarily intended for data communication between a computer and a Dingo via a modem. It allows serial communication at speeds from 1200 to 19200 baud. The line speed (baud rate) is adjusted using a computer. It is stored in the D232 and is retained when the power is disconnected. The modem (or computer if no modem) baud rate must be the same as the baud rate set on the D232 for communication to occur. The RS232 port on the D232 is electrically isolated. This reduces the risk of ground conflicts. The Dingo

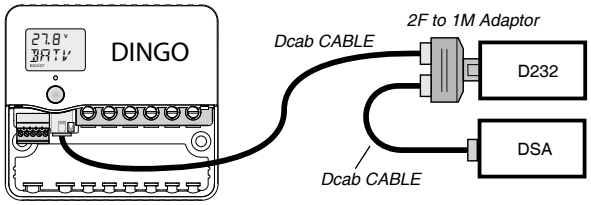


supplies the power to operate it's side of the D232. On the other side, a small amount of power will be drawn from the serial port of the connected device.

Connection

On the RS232 side, the D232 is configured as a DTE interface. This means that it can be connected to a modem directly without the use of a null modem cable. The D232 has a 9 pin male D connector (DB9M). If you want to connect to a computer directly you will need a null modem cable. To extend the length of an existing cable a minimum of three wires are needed : TX (pin 3), RX (pin 2) and Signal Ground (pin 5) [Note: pin numbers are for the *D232 end of the cable*]. Hand-shake lines are not used for flow control.

On the Dingo side, connection is made via 6 wire shielded cable and modular telephone style connectors. A 'Dcab' cable is supplied in the box. Longer cables can be supplied or the user can make their own if they have the correct tools. Orient the connectors so that pin 1 at one end goes to pin 1 at the other end. (When you hold both connectors so that they are facing you and the same way up, then the same color wire will



be on the same side -copy the cable supplied.)

To connect two or more accessories to a controller, use a US standard 6 position telephone double adaptor and a Dcab cable as shown above. Only one D232 or DUSB can be used in a system.

Software

Windows software is supplied on the USB memory stick in the box. This can also be downloaded from **www.plasmatronics.com.au**

Protocol

The D232 uses a subset of the Modbus RTU protocol and is implemented as a slave. It does not send data to the computer unless requested. The computer can