Using the Serial Port

Serial Port

All M221 Logic Controllers are fitted with at least one serial port to allow serial communication to other devices. Those without an Ethernet port will have two serial ports fitted. The serial port uses a RJ45 connector so a special cable is required.

The serial port can be configured for RS232 or RS485 operation using either Modbus or ASCII protocols.

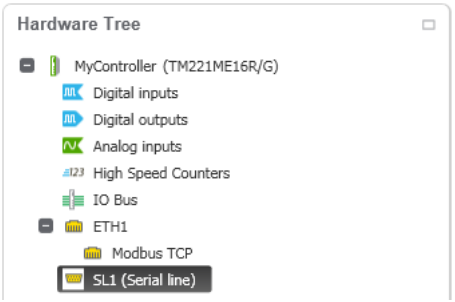
Setting the Parameters

There are several settings that can be configured on the serial port. These are divided into two categories, physical settings and protocol settings.

The physical settings allow the baud rate, parity and number of data and stop bits to be configured. RS232 or RS485 can also be selected here.

The protocol settings allow Modbus ASCII, Modbus RTU or plain ASCII to be selected and protocol specific settings configured for each.

To access the configuration settings, select **SL1 (Serial line)** from the **Hardware Tree** on the **Configuration** tab.



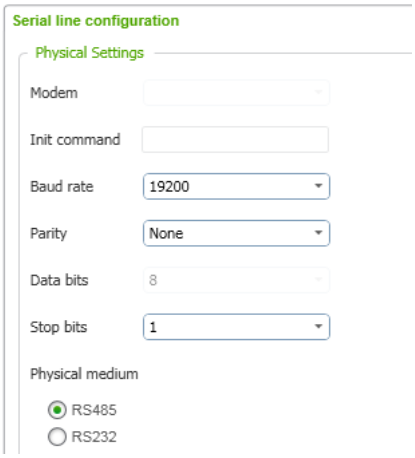
Note:

Where fitted, selecting **SL2 (Serial line)** will configure parameters for the second serial port.

Using the Serial Port (cont.)

Physical Settings

The physical settings allow the physical characteristics of the serial port to be configured. These are the Baud rate, Parity, Data bits and Stop bits. It also allows either RS232 or RS485 to be selected,

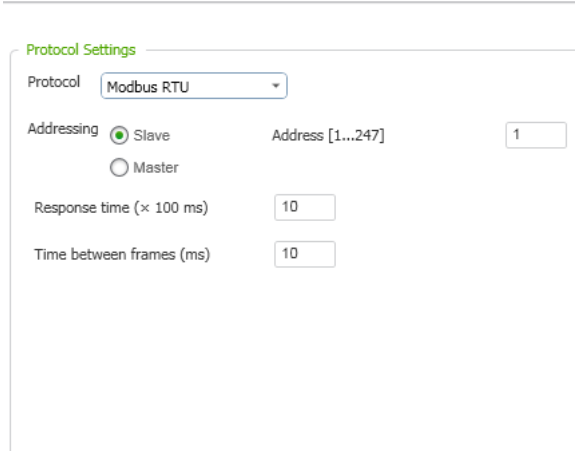


If the protocol is set to one of the Modbus options then the Data bits selection will be greyed as this must always be 7 data bits.

Choosing the correct settings will depend on the application. A lower Baud rate for example, will improve communications in a noisy environment but at the cost of slower communication speed. Whatever settings are selected they must match the settings of the device to which the M221 is communicating.

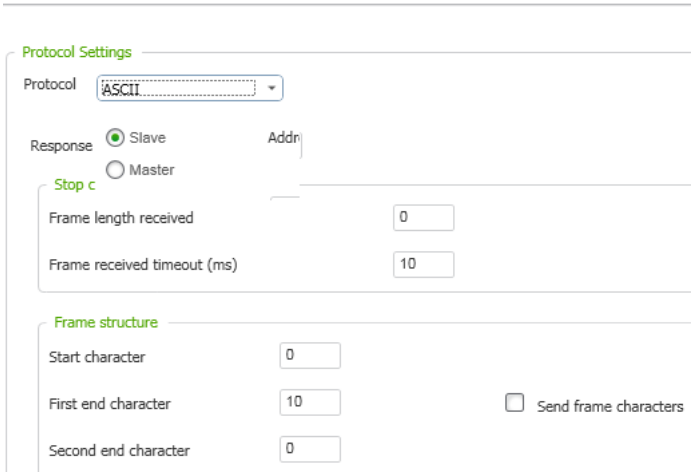
Protocol Settings

The options for protocol settings will also depend on whether Modbus or ASCII is selected. If either Modbus ASCII or Modbus RTU is selected then the following options will appear:



The response time and time between frames are used for fine-tuning the communications. The main setting is whether the M221 Logic Controller is the master on the network or a slave. If it is a slave then the address is also configurable.

If the ASCII protocol is selected the following protocol options are available:



These settings are for fine-tuning the network and mainly used where interference is causing message loss or corrupted messages.

Using the Serial Port (cont.)

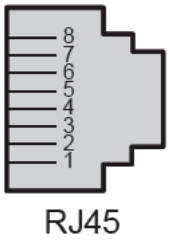
Wiring

The serial port uses a RJ45 connector so a special cable is required.

If communicating with a XBT display then the VW3A8306Rxx cable with a RJ45 connector on both ends is required.

If communicating with a computer or printer then the TCSMCN3M4M3S2 cable is required. This has a RJ45 connector on one end and a 9 pin socket on the other.

If a special cable is required then the connections are given in the table below:



RJ45

Pin	RS232	RS485
1	RXD	Not Connected
2	TXD	Not Connected
3	RTS	Not Connected
4	Not Connected	D1 (A+)
5	Not Connected	D0 (B-)
6	CTS	Not Connected
7	Not Connected	Not Connected
8	0V Common	0V Common

Note:

If making up a serial cable, all rules concerning RS232/RS485 distance and shielding must be followed to avoid errors or loss of communication. If in doubt, refer to a RS232 or RS485 wiring guide.