



RS485-Ethernet Module

The **Micha** series of Serial to Ethernet Interfaces provide a simple and reliable method of connecting an RS232 or RS485 port to a network.

These gateway modules convert serial protocol (RS-232 or RS485) into TCP/IP protocol and enable remote management and control of a serial device through a TCP/IP network. Based on the WIZnet W7100 chip, the TCP/IP core is a market-proven hardwired TCP/IP stack with integrated Ethernet MAC & PHY and supports TCP, UDP and IPv4.

Two supply voltage ranges are available – 10VDC to 30VDC, and 20VDC to 60VDC. The modules include isolating DC-DC converters, allowing a wide range of supply voltages with a typical power consumption of <40mA at 24VDC (<1W).

The interfaces are housed in a light grey UL94-V0 flame retardant polycarbonate enclosure, which clips onto standard 35mm DIN-rail, and measure just 53mm wide, 90mm high, and 58mm above the mounting plate. Detachable plug and socket terminal blocks are provided for wiring power and signal cables up to 2.5mm².

General Specification:

Part Numbers:	103 395 : DRM RS485 to Ethernet Interface - 10-30VDC 103 396 : DRM RS485 to Ethernet Interface - 20-60VDC 103 397 : DRM RS232 to Ethernet Interface - 10-30VDC 103 398 : DRM RS232 to Ethernet Interface - 20-60VDC
Module size:	53 x 90 x 58mm (excluding incoming Ethernet connection) DIN-rail clip on rear fits standard 35mm 'top hat' profile (TS35 DIN 46277) Enclosure material: Self-extinguishing Polycarbonate UL94-V0 Colour: RAL 7035
LED Indicators (on RJ45 connector):	Green: Network Connection Orange: Data
Data Speed:	10/100 Mbps Ethernet & Max 230Kbps Serial Interface
Power consumption:	~80mA at 12VDC ~40mA at 24VDC ~20mA at 48VDC (all nominal)
Temperature range:	-40°C ~85°C (Operation), -40°C ~85°C (Storage)
Humidity:	10 ~ 90%
Fuse Rating:	 <p><u>Fuse Protection:</u> A 20mm 1.5A A/S fuse is located in a carrier which can be accessed by removing the lower cover of the module.</p>
Module weight:	0.085kg

Configuring the Module.

To configure the Serial to Ethernet Interface, it is recommended that the WIZnet Configuration Tool is downloaded from:

http://www.wiznet.io/wp-content/uploads/wiznethome/S2E%20Module/WIZ107_108SR/Utility/WIZ107_108_config_tool.zip

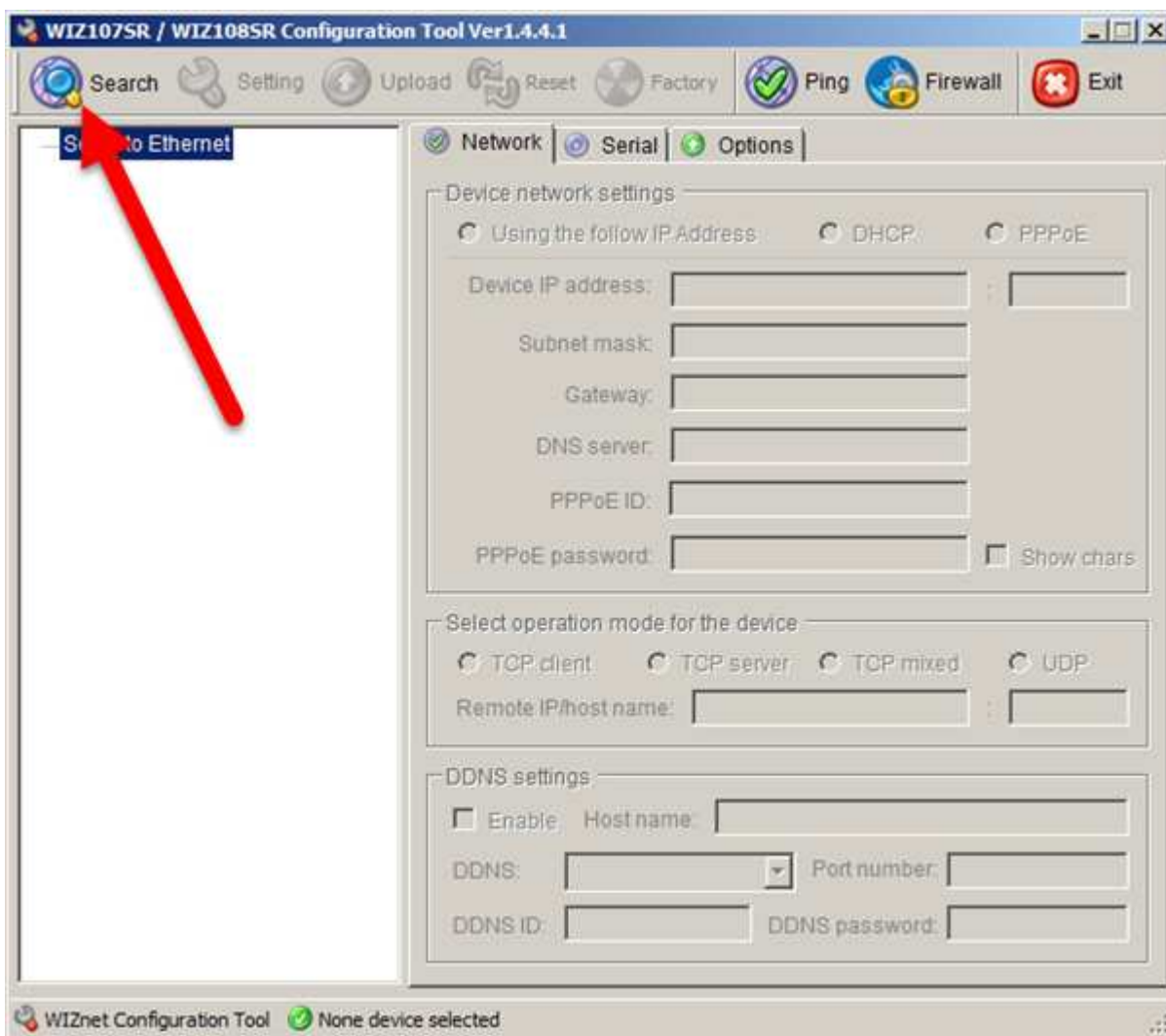
or

http://www.micha.co.uk/download/ConfigTool107_1.4.4.1_install.zip

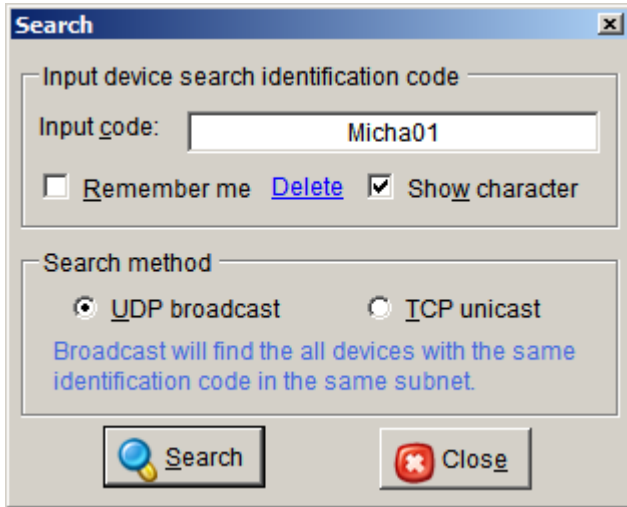
Unzip the downloaded file, and run the setup.exe file.

Configuration Tool:

When the Configuration Tool is started, it allows the user to search for any connected devices. Click on the **Search** icon:



In the Input code field, enter **Micha01** – ticking the ‘Show character’ box allows the text to be shown – and leave the default ‘UDP broadcast’ box selected:

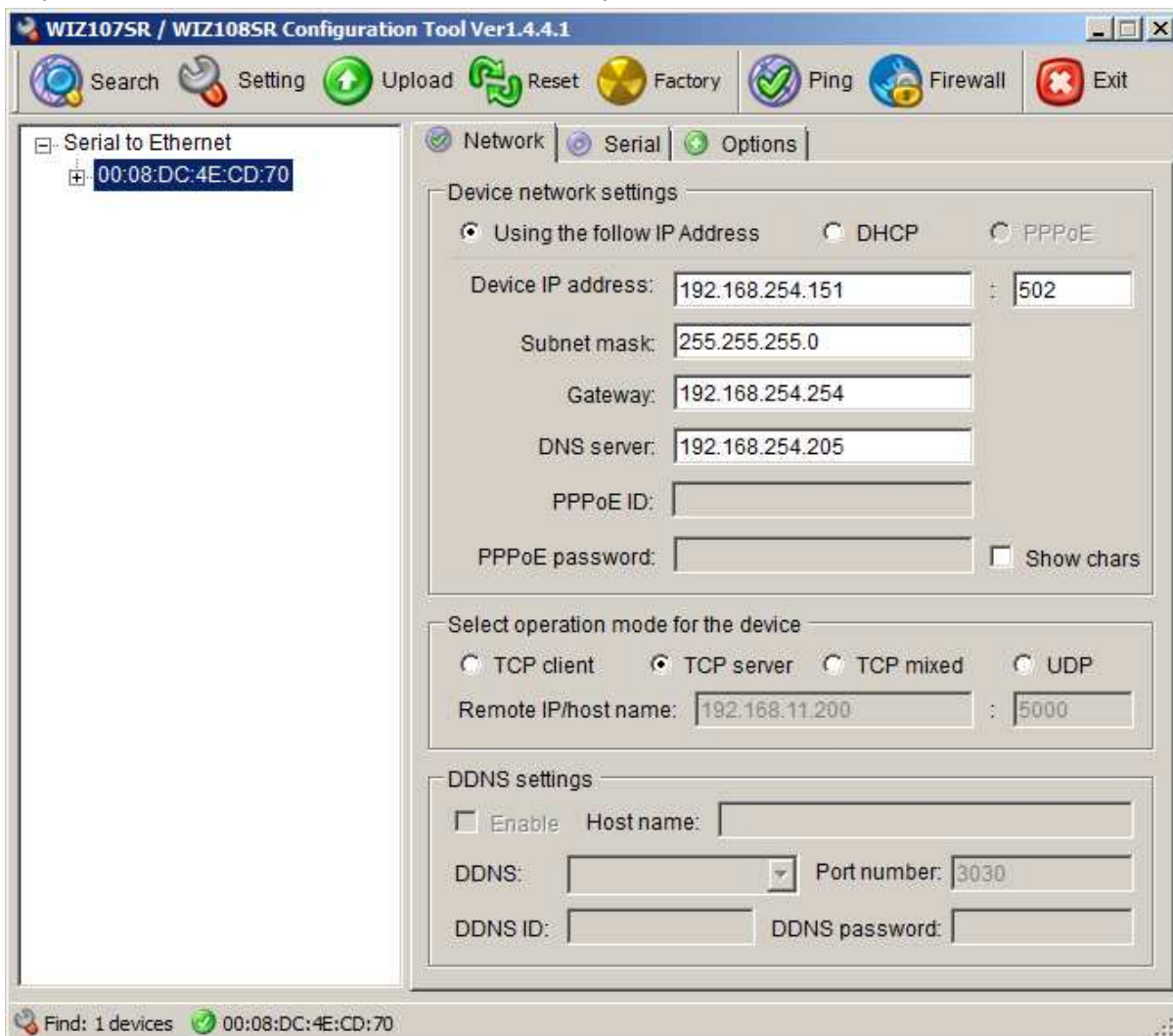


The screenshot shows a 'Search' dialog box with the following fields and options:

- Input device search identification code:** Input code:
- Remember me [Delete](#) Show character
- Search method:**
 - UDP broadcast TCP unicast
 - Broadcast will find the all devices with the same identification code in the same subnet.
- Buttons:

Note: All factory-configured units supplied by Micha will include this Input code. This allows searched to be narrowed to include only Micha modules.

Any detected module will be listed as the example below:



The screenshot shows the 'WIZ1075R / WIZ1085R Configuration Tool Ver1.4.4.1' interface. The 'Serial' tab is selected, and the 'Device network settings' section is expanded. The detected device is listed as '00:08:DC:4E:CD:70'.

Device network settings:

- Using the follow IP Address DHCP PPPoE
- Device IP address: :
- Subnet mask:
- Gateway:
- DNS server:
- PPPoE ID:
- PPPoE password: Show chars

Select operation mode for the device:

- TCP client TCP server TCP mixed UDP
- Remote IP/host name: :

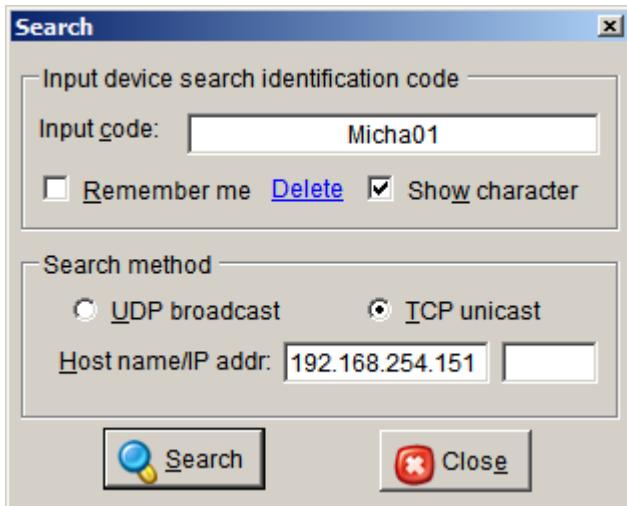
DDNS settings:

- Enable Host name:
- DDNS: Port number:
- DDNS ID: DDNS password:

At the bottom, it shows 'Find: 1 devices' and a green checkmark next to the device ID '00:08:DC:4E:CD:70'.

Note: This device has been pre-programmed with IP address 192.168.254.161

Alternatively, if you know the IP address the module has been programmed to, it can be accessed directly by ticking the 'TCP unicast' box and entering the address:

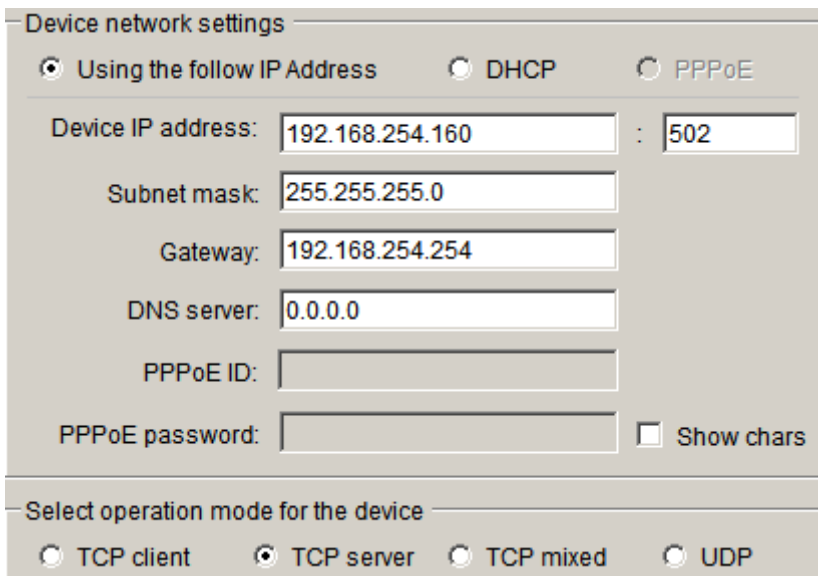


The 'Search' dialog box contains the following fields and controls:

- Section: Input device search identification code
- Input code:
- Remember me [Delete](#) Show character
- Section: Search method
- UDP broadcast TCP unicast
- Host name/IP addr:
- Buttons:

Setting the IP address:

On the Network tab, enter the required details:



The 'Device network settings' dialog box contains the following fields and controls:

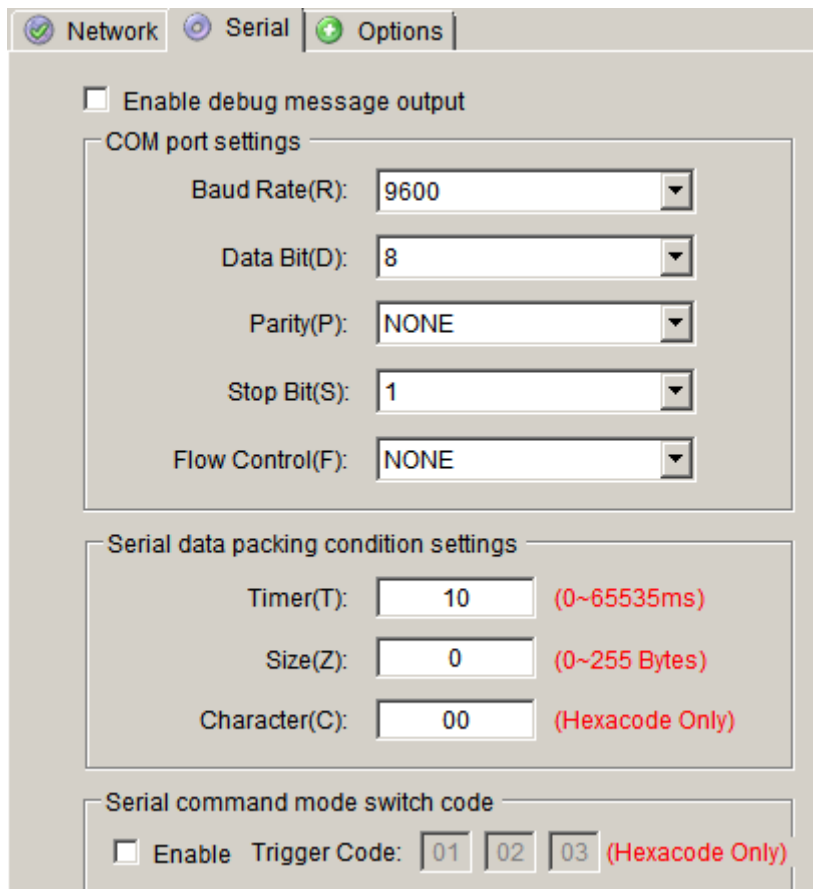
- Radio buttons: Using the follow IP Address DHCP PPPoE
- Device IP address: :
- Subnet mask:
- Gateway:
- DNS server:
- PPPoE ID:
- PPPoE password: Show chars
- Section: Select operation mode for the device
- Radio buttons: TCP client TCP server TCP mixed UDP

For use with Micha controllers, typical default addresses are 192.168.254.151 and 192.168.254.160, with the port set to the industry standard 502. The operation mode should be left as 'TCP server'.

Serial Settings:

It is essential that the correct serial settings are used to communicate with Micha controllers. These are:

Enable debug message: Not selected
 Baud Rate (R): 9600
 Data Bit (D): 8 (default)
 Parity (P): NONE (default)
 Stop Bit (S): 1 (default)
 Flow Control (F): NONE (default)
 Timer (T): 10
 Size (Z): 0 (default)
 Character (C): 00 (default)
 Enable Trigger Code Not selected (default)



Network | Serial | Options

Enable debug message output

COM port settings

Baud Rate(R): 9600

Data Bit(D): 8

Parity(P): NONE

Stop Bit(S): 1

Flow Control(F): NONE

Serial data packing condition settings

Timer(T): 10 (0~65535ms)

Size(Z): 0 (0~255 Bytes)

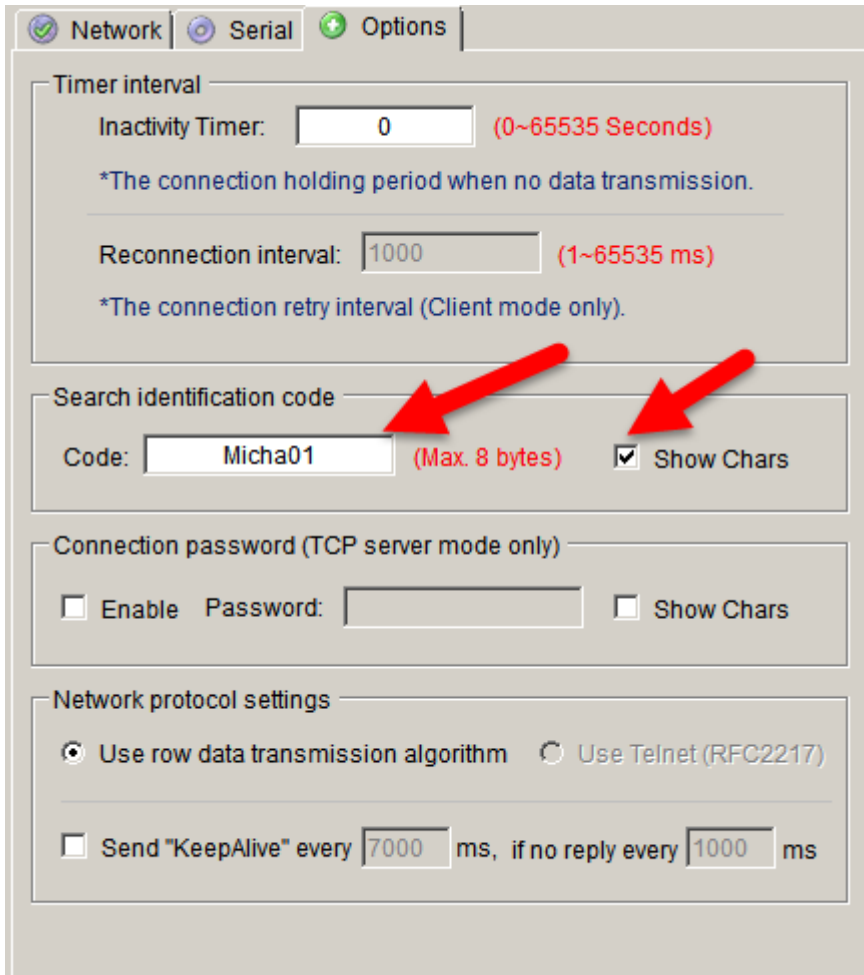
Character(C): 00 (Hexacode Only)

Serial command mode switch code

Enable Trigger Code: 01 02 03 (Hexacode Only)

Options tab:

No special settings are required. Entering an 'Input code' is optional, and only helps when searching for multiple devices on a network:



Saving settings:

Any changes to the module configuration must be saved to the module. This is achieved by clicking on the 'Setting' icon:



General Notes:

When searching for modules on the LAN, if no 'Input code' is entered, only modules without any input code will be found. Similarly, if an Input code of 'Micha01' is entered, only modules with that input code will be detected.

No more than one module with the same IP address can be present on the network. Once a module is programmed, it should be disconnected.

Communicating with Modbus Tools

We recommend Modbus Poll software, which is available from: <http://www.modbustools.com/>

Example setup with MSRx controller:

On the MSRx Charge Controller:

Ensure the MSRx Charge Controller is set to Modbus Protocol:

Navigate to the Settings Menu E => "Set Exp Module: Com Port/D-Log"

Press Select

Ensure Modbus has been selected on the Sub-Menu Screen:

"Comms Module: Select: Modbus"

Ensure the MSRx Charge Controller Modbus Address is set correctly:

Press Down to go to screen:

"Comms Module: Address: 102" (address is set to Slave ID 102)

(The customer equipment communicating with the Modbus must be set to this address)

Ensure these parameters are remembered:

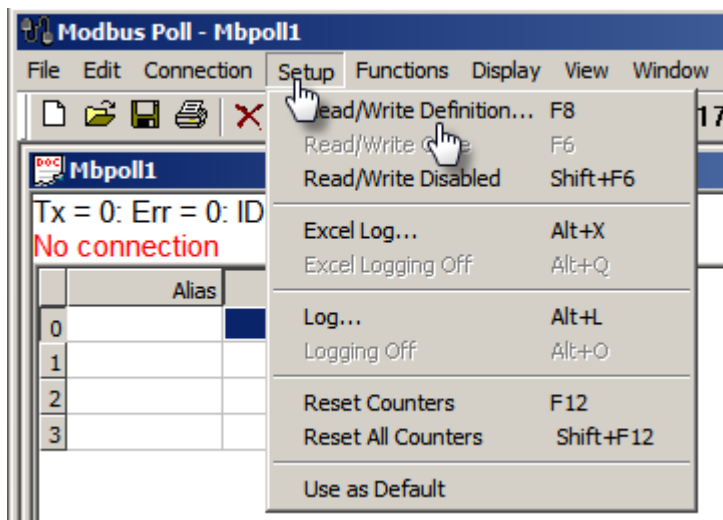
Press Menu to go back to "Set Exp Module: Com Port/D-Log"

Press Menu to go proceed to "Change Settings: Accept ? => Select"

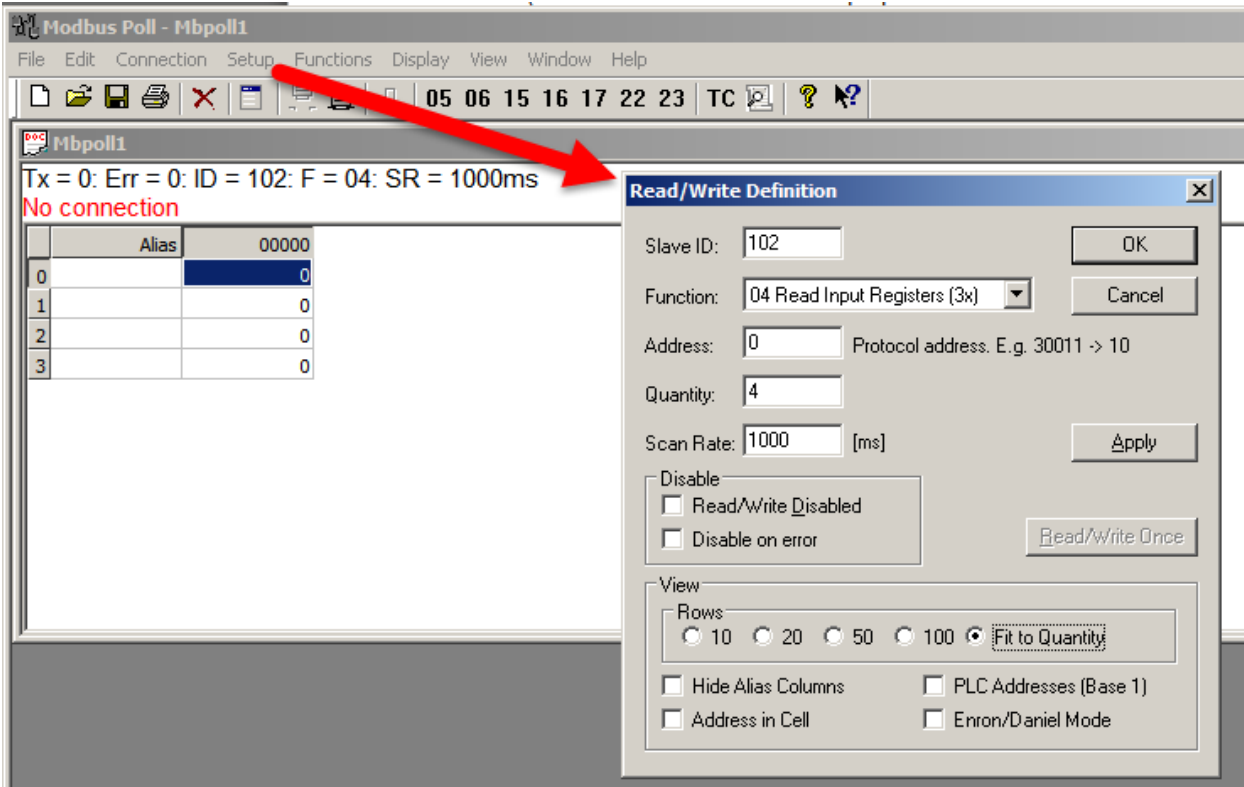
Press Select to remember the change of setting

On Modbus Poll:

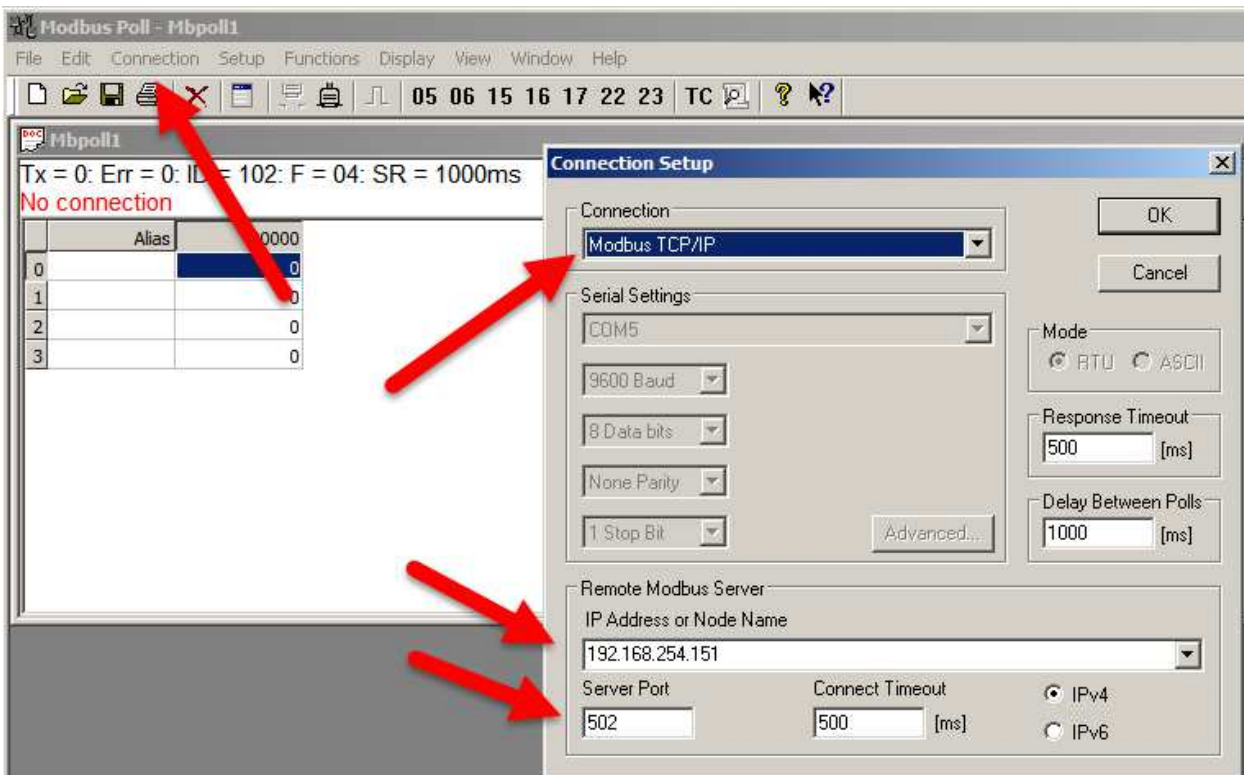
Click on Setup and then Read/Write Definition:



Ensure the Slave ID is set to the same number (102) and select the required function (e.g. '04 Read Input Registers):

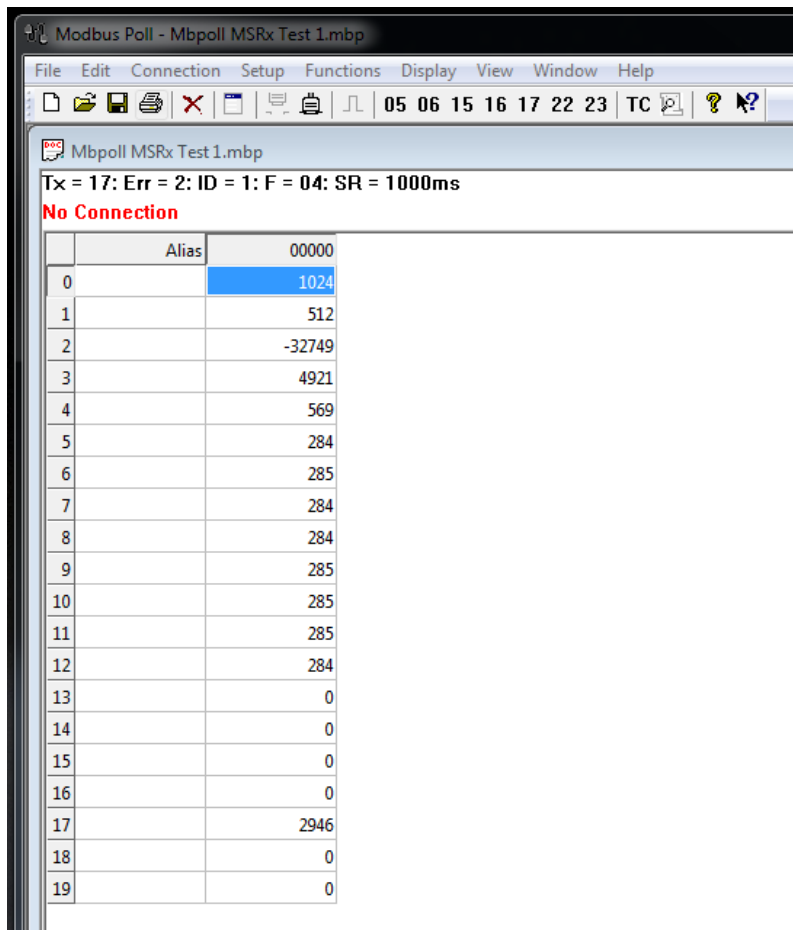


Click on Connection > Connect and select the appropriate protocol. Ensure the appropriate IP address and Server Port number to match the interface module are entered:



Click on OK.

The main window of Modbus Poll will display incoming data:



For further information on the Modbus registers, refer to the following documents:

801641 Issue 6:MSRx Modbus Memory Map Specification

801779 Issue 5:CPC Modbus Memory Map Specification

Document History:	Date:	Software:	Notes:
802578 Version 1	27-Jun-2018	Various	First issue.