T/GUARD-LINK-REVB – QUICK GUIDE

This short form guide deals with the basic operation of your new T/Guard-Link-RevB (TGL-B) instrument. Here, you will find information about preparing the unit and doing initial measurements. The detailed reference instructions are given in the T/Guard User Guide, document # G1047Rxx (contact Neoptix for a copy).

To initially connect to your new TGL, you will need the following items:

- A 24VDC power supply (available as an option from Neoptix)
- An adapter to connect the serial RS-485 port to a PC. The best option is to use a USB to RS-485 converter such as the NXP-349 which is available from Neoptix.[1]
- A PC computer (Windows-Vista, -7, -8 or -10) with:
  - Software, either:
    - OptiLink-II
    - ModScan, or equivalent (for Modbus testing)[2]
    - Optional: HyperTerminal (or Tera Term).

Your new T/Guard comes calibrated and ready to use. Connect it to a suitable DC supply (20-28VDC). Although the unit does not have a power switch, it should come on after about 2 seconds. You can confirm that the unit is properly powered on by confirming that the power LED is on (yellow or green). By default, the communication protocol is Neoptix-ASCII mode. The setup should look like this:

To connect to OptiLink-II, you will need to make sure that your TGL is in Neoptix-ASCII mode; thus the power LED must be yellow. If it is green, you need to press the mode switch to toggle to ASCII mode. This ASCII mode is required to configure the unit, such as setting the Modbus node address (default is "1"). Now we can use either HyperTerminal or OptiLink-II. OptiLink-II is described on this page, and HyperTerminal is on the next page.

[1] Pin out information of 5-pin terminal block connector, on the TGL unit:

Serial port
Phoenix Plug #1847084

	RS485 2W	RS485 4W
1	GND	GND
2	TX/RX +	TX+
3	TX/RX -	TX-
4	TX/RX +	RX+
5	TX/RX -	RX-

[2] Neoptix has experience with ModScan. If you want to use a different Modbus master program, of course you are free to use it!

Configuration with OptiLink-II

Click on "Connect" to start OptiLink-II. You should get this window. If you cannot connect, check your wiring, your USB driver, etc.

Click on "Acquire temperatures", and the following window pane will appear (4 channels here):

To configure the Modbus parameters, click on "Serial protocols". The following window appears:

Here you can set up your Modbus parameters. Default baud rate should be 9600 and parity even. Click Refresh to confirm your selection. Now, it might be a good idea to confirm the setting of the analog outputs; to do this, click on "Channel settings", to display this window. Make the necessary changes, and click "Apply Changes". Make sure "wtune" is selected as well.

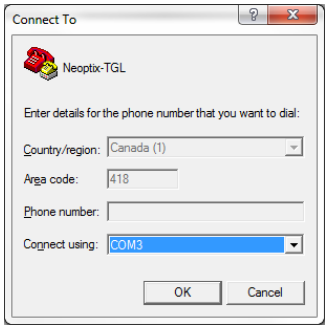
You are now ready to use the system, using your Modbus parameters. Press the Mode switch for at least 3 seconds, until the Mode LED becomes green. You are now in Modbus mode.

You can now test your Modbus connection using ModScan if you so desire.

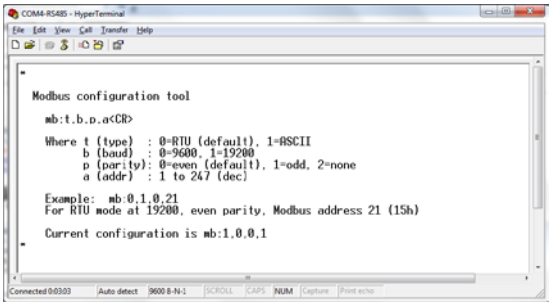
Configuration with HyperTerminal

HyperTerminal is a standard Windows program (XP and previous versions[3]) that can be easily used to exercise your TGL thermometer. To use HyperTerminal you first set its properties as follows:

1- In the "Connection Description" window, enter a name that suits you, such as "Neoptix-TGL". Click OK.
2- In the next window, "Connect To", select COM1 (or another COM port, if you are planning to use another port than COM1) in the box called "Connect using". Click OK.
3- Then the COM1 Properties window will come up. As indicated above and as shown in the figure at right, set the port parameters to 9600 Baud, 1 Stop-Bit and No-Parity; Flow control must be set to None. Click OK.



4- You are ready to go. Type "mb:? Q " to invoke help and test your setup. The following help menu should come up (typed characters are not echoed to you):



Issue a new "mb:" command with the parameters that complies with your configuration.

You are now ready to use your new system in Modbus mode: press the Mode button for at least 3 seconds.

Modbus register description

The following table gives the registers for the 8 temperatures (8 channels). Refer to the full T/Guard user guide (document G1047Rxx) for a complete list of registers. Document G1030Rxx also includes information about Modbus registers. These can be downloaded from the Neoptix website or you can ask a copy to Neoptix. These registers are 16-bit read only holding registers, function 0x03.

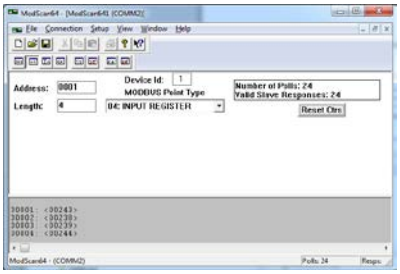
Address (ModScan)	Register (hex)	Name	Value
30001	0x00	Channel 1	Signed 16 bit integer (temperature 1 * 10)[4]
30002	0x01	Channel 2	Signed 16 bit integer (temperature 2 * 10)
30003	0x02	Channel 3	Signed 16 bit integer (temperature 3 * 10)
30004	0x03	Channel 4	Signed 16 bit integer (temperature 4 * 10)
30005	0x04	Channel 5	Signed 16 bit integer (temperature 5 * 10)
30006	0x05	Channel 6	Signed 16 bit integer (temperature 6 * 10)
30007	0x06	Channel 7	Signed 16 bit integer (temperature 7 * 10)
30008	0x07	Channel 8	Signed 16 bit integer (temperature 8 * 10)
30017	0x10	Internal tem	Signed 16 bit integer (T inside TGL * 10)

Using ModScan

ModScan[5] is a good and simple program that you can used to exercise Modbus links. Furthermore, it can also be used to perform some simple data logging.

Start ModScan; click Connection, make sure you have the correct COM port number, baud rate, parity, stop bits, and then OK:

Click OK. Enter Device Id = 1, Address = 0001, and select 04: Input Register mode. You following window should now be refreshed every second:



This terminates this short form guide; enjoy your new T/Guard-Link!

Printed in Canada.

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[3] Vista, Win-7, Win-8 and Win-10 users: HyperTerminal is not part of these operating systems. However, an equivalent program (HTPE) can be downloaded (not free) at the following website: http://www.hilgraeve.com/htpe/download.html. Tera Term is also an interesting option (free); see http://en.sourceforge.jp/projects/ttssh2/downloads/56100/teraterm-4.74.zip/.

[4] Real temperatures can be calculated by dividing the integer numbers by 10. If probe has no signal, the value of -9996 is returned (or –999.6°); if a channel is disabled, the value of -9995 is returned (or –999.5°).

[5] More information on ModScan can be found at http://www.win-tech.com/html/modscan32.htm.