



GW485USB

User Manual



Document Version: 1.0.1

Updated: 20-Jan-2011

Specifications

General:-

USB Specification.....	2.0
USB Connection	USB-B
Dimensions.....	84 x 51 x 21 mm
Weight.....	136g
Operating Temperature.....	10 to 50 °C
Baud Range.....	110 to 5M bps
RS485 Transmission Distance.....	2 km (max)
RS485 Network Devices.....	256 (max)
Power Supply.....	5V via USB
Idle Current.....	30mA
Operating Current.....	<250mA
Compatible Operating System.....	Windows XP/Vista/7
Flow Control.....	Software only (Hardware handshake not supported)

General Purpose Input/Output:-

Outputs are open collector (negative switch), supply voltage may range from 3 to 24 Vdc.

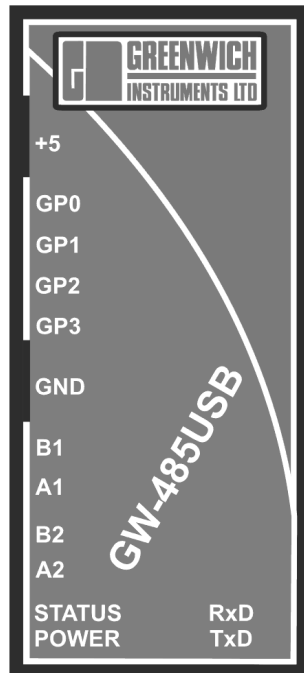
Digital Output.....	100 mA (max)
Analogue Output.....	100 mA (max)

Input voltage can range from 3 to 24 Vdc.

Digital Input.....	<1 mA (board loading)
Analogue Input.....	<1 mA (board loading)

Connections

5Vdc Current Limited Output
 5Vdc Current Limited Output
 General Purpose Input/Output #1
 General Purpose Input/Output #2
 General Purpose Input/Output #3
 General Purpose Input/Output #4
 Ground Connection
 Ground Connection
 Full Duplex Transmit -
 Full Duplex Transmit +
 Half Duplex + / Full Duplex Receive -
 Half Duplex - / Full Duplex Receive +



Installation

The drivers for Windows Operating System can be found on the CD that comes with this product or they can be downloaded from our website at <http://www.greenwichinst.com/products/GW485USB>

Connect the GW485USB to an available USB port on your computer. When prompted don't let Windows search for a driver, select the advanced option to install from a specific location. Locate the drivers (i.e. X:\GW485USB, "X" would be the drive letter for your CD (if using the CD)).

When installed, the GW485USB should have added a communications port to your computer. This is the standard interface for communications. Standard baud rates from 110 to 921,600 are selectable via the standard Windows interface. Higher baud rates may be selected using the Advanced Configuration (Next Page).

Advanced Use - Via The COM Port

The GW485USB can be configured via serial commands sent to the communications port in Windows. This can be tested by opening a terminal window on the relevant COM port and typing "GI" followed by enter. The GW485USB should respond "OK". (This feature can be disabled, see **DLL Control**)

Below is a list of the commands that can be used to setup and control the GW485USB via serial commands.

NOTE:- The command is also sent via the RS485 line.

All commands are terminated with a carriage return and/or line feed.

Command	Description	Example
GI	Query	GI OK
GI+S	Request Setup Configuration <i>GP0 = Digital Output</i> <i>GP1 = Digital Input</i> <i>GP2 = Analogue Output</i> <i>GP3 = Analogue Input</i> <i>9600 Baud, Full Duplex</i> <i>Unit Address = 0</i>	GI+S G0 DO G1 DI G2 AO G3 AI Baud: 9600 FD UA: 0 OK
*GI+C[n][state]	Configure GPIO As Input or Output ([n] = GP number, [state] = D or A followed by I or O)	GI+C0DI OK
GI+W[n][value]	Write a value to a GPIO. <i>Only works for outputs. Value 0 to 255 analogue; 0 or 1 digital.</i>	GI+W0128 OK
GI+R	Read Values of GPIO	GI+R 0:[value] 1:[value] 2:[value] 3:[value] OK

Command	Description	Example
*GI+B[value]	Set Baud Rate	GI+B4800 OK
*GI+A[value]	Set unit address for RS485	GI+A115 OK
*GI+M	Toggles Duplex Mode (Full/Half)	GI+M OK

* Command values are saved as power-on defaults.

Advanced Use - DLL Control

The GW485USB may be controlled directly via a dynamic link library (DLL). The DLL can be found on the CD that comes with the product or can be downloaded from our website <http://www.greenwichinst.com/products/GW485USB>.

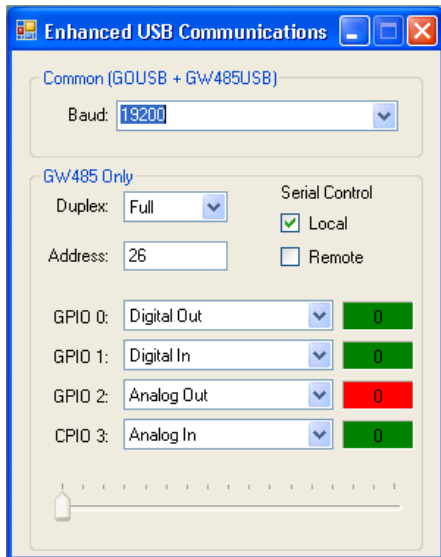
The DLL allows direct control of the GW485USB, you can turn on and off control via the COM Port and remote control via RS485 (not addressable). Communication via RS485 is done via the standard communications port interface in Windows.

Examples for using the DLL can also be found on the website and on the product CD. Please note that third-party development platforms may change and the DLL and examples are provided "as is" with limited/no support.

Information on the enhanced USB control program can be found on the following pages.

Advanced Use - Enhanced USB Communication Demo

An application for Windows can be found on the product CD or downloaded from our website. This small application allows control and configuration of the GW485USB to be done direct via the USB.



The USB control software can be used to configure the baud rate to any user defined speed, setup and control the general purpose input/outputs. The baud rate and GPIO directions are saved and set at power-up.

Select the baud by clicking the drop menu at the top or you can manually enter a user defined baud rate and press enter to save.

The software can setup the duplex mode and unit address of the RS485 interface and whether Local (via COM port) or Remote (via RS485) control of the device is enabled. (See previous section, **Advanced Use - Via The COM Port**)

Each GPIO has a box representing its current state:-

GPIO0 is set as digital output and is currently OFF. To change the value of a digital output, double-click on the value box (green).

GPIO1 is set as digital input, the value is currently "0" for low. When the value reaches the set trip point the value will read "1".

GPIO2 is analogue output and is currently OFF. To change the output value, double-click the value box (red) and move the slider across the bottom.

GPIO3 is analogue input, the 10-bit value of the input is displayed in the value box.

The source code for this simple configuration program can be found on the product CD or downloaded from our website. Please note that this is provided “as is” with no/limited support.



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