ET485U USB-to-RS485 Cable
Technical Specification

The ET485U cable provides an easy to use RS485 interface by means of a Virtual COM Port on the users system. The USB interface is transparent to the system, whatever is sent to the Virtual COM Port is automatically converted to RS485 and vice versa. The module is completely self powered by the USB bus.

Download the Drivers

The ET485U cable uses the FTDI FT232R USB chipset. The documentation provided by FTDI is very complete, and is not duplicated here. Before using the ET485U, you will need to install FTDI's Virtual COM Port (VCP) Drivers. These drivers appear to the system as an extra COM Port (in addition to any existing hardware COM Ports). Application software accesses the USB device in the same way as it would access a standard Windows COM Port. Drivers are available for Windows, Apple, Linux and Open BSD systems directly from the FTDI website (http://www.ftdichip.com/).

The drivers page is located here:
http://www.ftdichip.com/Drivers/VCP.htm

The exact driver (v2.06 as of March 22nd, 2010), is available here:
http://www.ftdichip.com/Drivers/CDM/CDM 2.06.00 WHQL Certified.zip

Finding the COM Port

After installing the drivers, and plugging in the USB-RS485 module to a spare USB port, it is necessary to determine the newly assigned COM port number. This will vary from system to system depending on how many COM ports you currently have installed.

Windows XP:

1. Click Start > Settings > Control Panel > System
2. Click on the Hardware Tab > Device Manager

Windows Vista / Windows 7:

1. Click on Start
2. RIGHT Click on Computer > Properties
3. Click "Device Manager" in the upper left

Scroll down and open the "Ports (COM & LPT)" tab. "USB serial port" should be listed. The assigned port number will be noted in brackets. You may confirm that this is in fact the cable device (if there are other COM ports listed), but unplugging the cable, waiting a few seconds, and watching which device disappears. Upon plugging in the cable again, the device should reappear.

NOTE: because of the way the USB architecture works, a different COM number may potentially be assigned to the cable if it is plugged into a different USB port.

The COM port number may be changed by right clicking on the device, selecting *Properties*, and then *Advanced.*
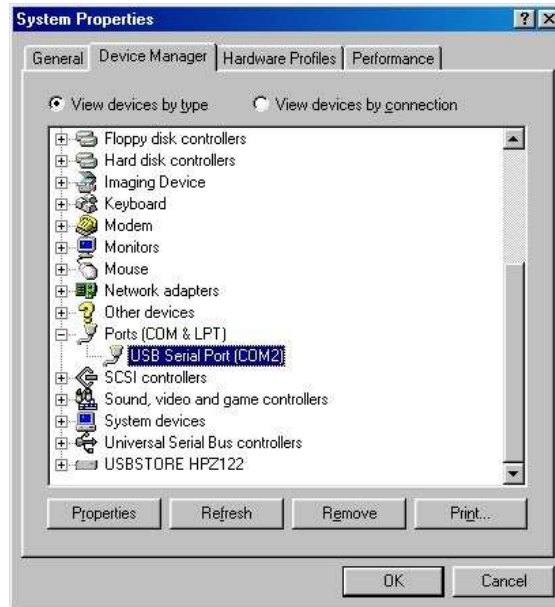
Connections
The table below describes the RS485 connections.

Cable	RS485	WattsOn
Yellow	A (-)	RS-485 (-)
Orange	B (+)	RS-485 (+)
Black	Common	G

Automatic Bus Turnaround
The RS485 bus features automatic direction turnaround. Under idle conditions, where no data is being transmitted or received, the bus will be in the high impedance listening mode. Any data that arrives on the RS485 bus will be transmitted via the USB port to the PC. When the PC transmits data the bus direction immediately turns around to transmit the data out on the RS485 bus. When the PC stops transmitting data, there is a 3uS delay to ensure that the final data high gets a firm drive before setting the bus to idle (listening mode) again.

RS485 Termination
For most short runs, or direct connection runs, only the Yellow, Orange and Black connections are necessary. For longer runs, or if more devices are connected together, it is recommended to install a 120ohm resistor across the RS-485 +,- data lines for proper signal termination.