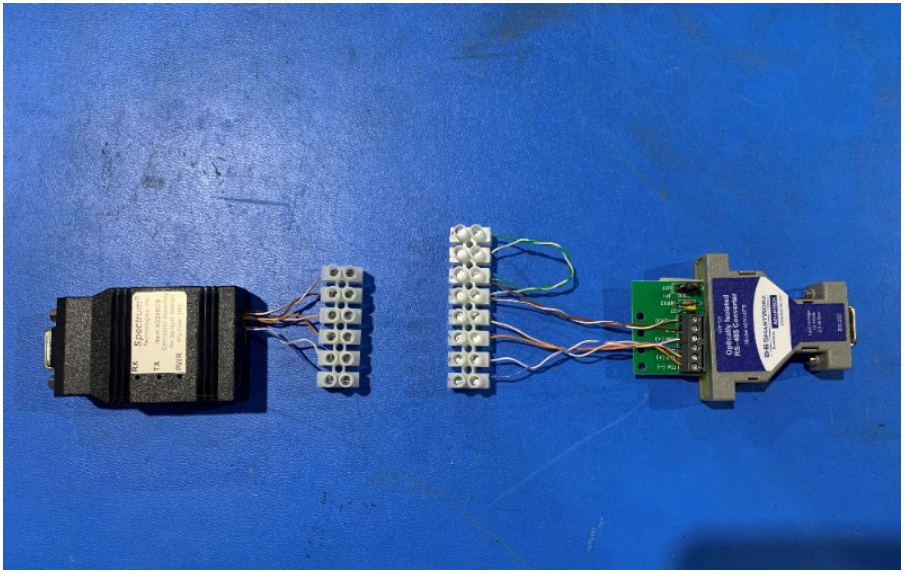
WatchDog®

Short-Range Modem Pair

PRODUCT MANUAL

Item #'s 3365WD2, 3365WD2X



Spectrum®
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This manual will familiarize you with the features and operation of your new Short-Range Modem Pair. Please read this manual thoroughly before using your instrument. For customer support, or to place an order, call Spectrum Technologies, Inc. at (800)248-8873 or (815) 436-4440 between 7:30 am and 5:30 p.m. CST, FAX at (815)436-4460, or E-Mail at info@specmeters.com.

Spectrum Technologies, Inc
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General Overview

The short-range modem pair will allow you to extend the range of your WatchDog Weather Station up to 4000 ft (1200m). Because the station is hardwired to your computer, it is not necessary to have a line of sight with the station.

Components

The components of the short-range modem pair are as follows:

1. Optically Isolated RS485-RS232 Converter with 8 -position terminal block
2. RS422-RS232 Connector Assembly (3349CB) with 6-position terminal block
3. Short-range modem adaptor and modular connector cable (IQ3365WD2)
4. A/C adapter with tinned wires
   3365WD2 - 12V, 700mA, USA plug
   3365WD2X - 12V, 500mA, Multiple international plug adapters

The 2 terminal blocks must be connected by a length of 6-wire cable (2 twisted pair, 1 ground, 1 voltage). The recommended wire type is number 24 AWG (6 core x 0.6 mm) twisted pair telephone cable. Four for data transmission and 2 for power (12 VDC), with a shunt capacitance of 16 pF/ft (48 pF/m) and a length no greater than 4000 ft (1,200 m).

In most cases, Cat5/5e/6 cable is a fully functional substitute for RS-485-specific cable. However, be aware of insulator UV/Weather resistance because the cable will not be in a protected environment.

Cable Connection

Each wire of the the twisted-pair cable (see specifications on page 3) should be connected to the same number on each of the terminal blocks. The black wire from the A/C adaptor is connected to the "-" and the black/white wire to the "+" on the 8-position terminal block. Prior to inserting the connectors into weather station or PC or applying power, it is recommended that wire connectivity be confirmed with a voltmeter continuity test.

Note: The twisted pair cable should be run through the **right-most** hole in the bottom of the weather station enclosure **be-fore** connecting to the RS422-RS232 connector assembly. The RS422-RS232 connector assembly will then rest inside the weather station enclosure (see photo on page 7)

If the existing wires between the converter and the terminal block become disconnected, the following guide can be used to reconnect them:

From the Optically Isolated RS485-RS232 Converter to the 8-position terminal block (PC side):
TDA to 3
TDB to 4
RDA to 1
RDB to 2
12VDC **and** Terminal Block "+" into 5
GND **and** Terminal Block "-" into 6

From the RS422-RS232 Connector Assembly (3349CB) to the 6-position terminal block (station side):
TDA to 1
TDB to 2
RDA to 3
RDB to 4 +12 to 5 GND to 6

For older units without the terminal blocks, use the following cabling guide:
TDA to RDA, TDB to RDB, RDA to TDA, RDB to TDB, 12V to 12V, GND to GND

IMPORTANT: The wire connected to a Transmit Data terminal [TDA or TDB] of one converter must be connected to the corresponding Receive Data terminal [RDA or RDB] of the other converter. The ground (GRD) and voltage (12V) terminals of one converter should be connected to the corresponding terminal of the other. The black wire from the A/C adaptor is connected to the GRD terminal of the RS485-RS232 converter. The black/white wire connects to the 12V terminal. Prior to inserting the connectors into weather station or PC or applying power it is recommended that wire connectivity be confirmed with a voltmeter continuity test

Connecting to the Computer

Before powering the short-range modem pair with the A/C adaptor, check that the jumper clip on the RS485-RS232 converter is in the **Echo-On** position as shown in figure 2.

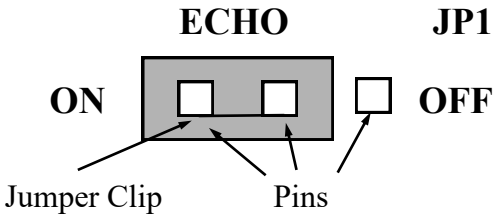

Figure 2: Top view of Echo On/Off switch

The 9-pin female connector of the RS485-RS232 converter connects to the computer data port (some users may need to use a USB to Serial adapter such as item 3661U9). This converter is optically isolated so voltage spikes in the twisted-pair cable should not damage your computer.

Hardware flow control must be disabled for the modem to work correctly.

Using WatchDog Configurator

Open the WatchDog Config program and click the **Preferences** button. From the Preferences screen, uncheck the **RTS (Default all)** button (see fig. 3).

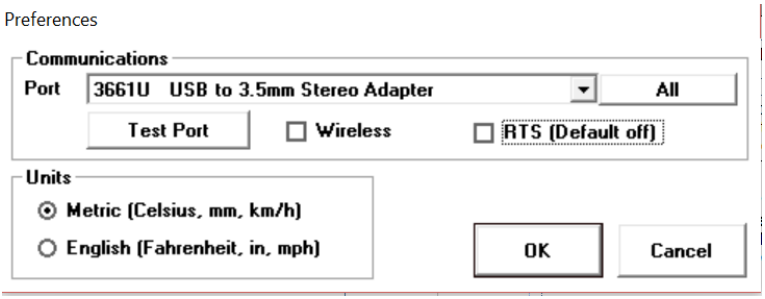

Fig. 3: Hardware Flow Control Option (WatchDog Config)

Using SpecWare Software

Open Specware software. Open the **File** menu and select the **Preferences** option. Click the **Communication** tab. Click the **Advanced Options** button. Uncheck the **Hardware Flow Control (RTS)** box (see fig. 4). This must be unchecked for the modem to work correctly.

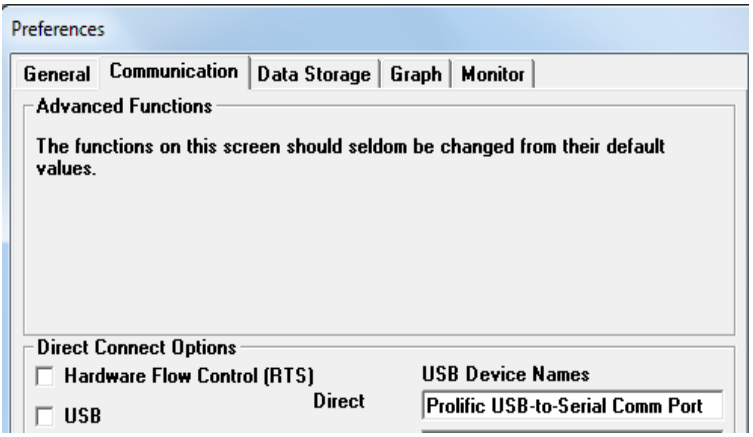

Fig. 4: Hardware Flow Control Option (Specware 9)

Connecting to Weather Station

The 9-pin male connector of the short-range modem adaptor is attached to the RS422-RS232 connector assembly. The modular connector snaps into the auxiliary port (Aux) of the weather station. Secure the twisted-pair cable into the notch in the rightmost hole and snap the cap over the hole. The flat edge of the cap should rest against the cable.

The converter and adapter fit snuggly behind the sensor wires as shown in the photo below. It is advisable to remove the Wind and T/RH sensor cables so the assembly can be pressed flush against the back wall of the housing. The cables can then be re-attached. This will make it easier to remove and replace external sensor wires.

Note: It is advisable to confirm the connection before installation of the cable.

Warranty

This product is warranted to be free from defects in material or workmanship for one year from the date of purchase. During the warranty period Spectrum will, at its option, either repair or replace products that prove to be defective. This warranty does not cover damage due to improper installation or use, lightning, negligence, accident, or unauthorized modifications, or to incidental or consequential damages beyond the Spectrum product. Before returning a failed unit, you must obtain a Returned Materials Authorization (RMA) from Spectrum. Spectrum is not responsible for any package that is returned without a valid RMA number or for the loss of the package by any shipping company.

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