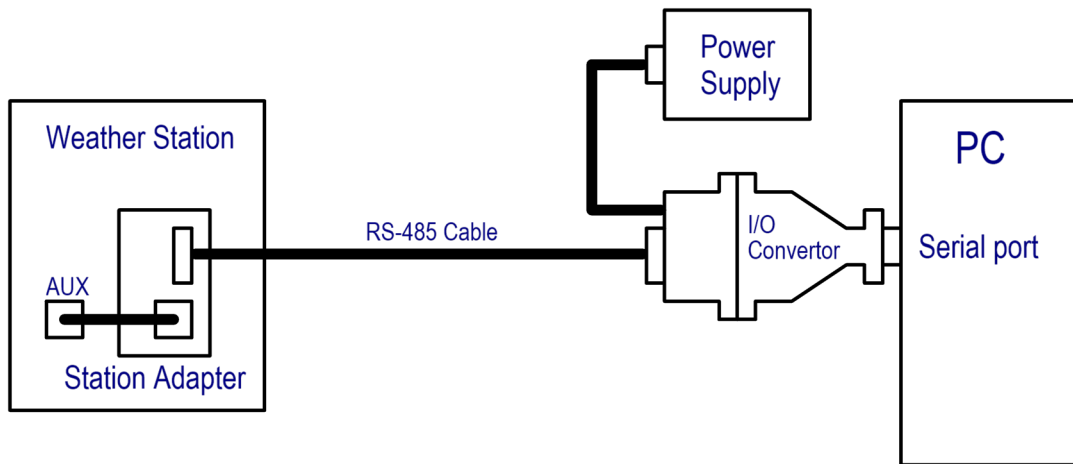


Short Range Modem Pair Product Manual

Item #3365WD3



INTRODUCTION

The short-range modem pair (Full Duplex RS-485) will allow you to extend the range of your 2000 or 3000 Series WatchDog Weather Station up to 4,000' (1200m). Since the station is hardwired to your computer, it is not necessary to have a line of sight with the station.

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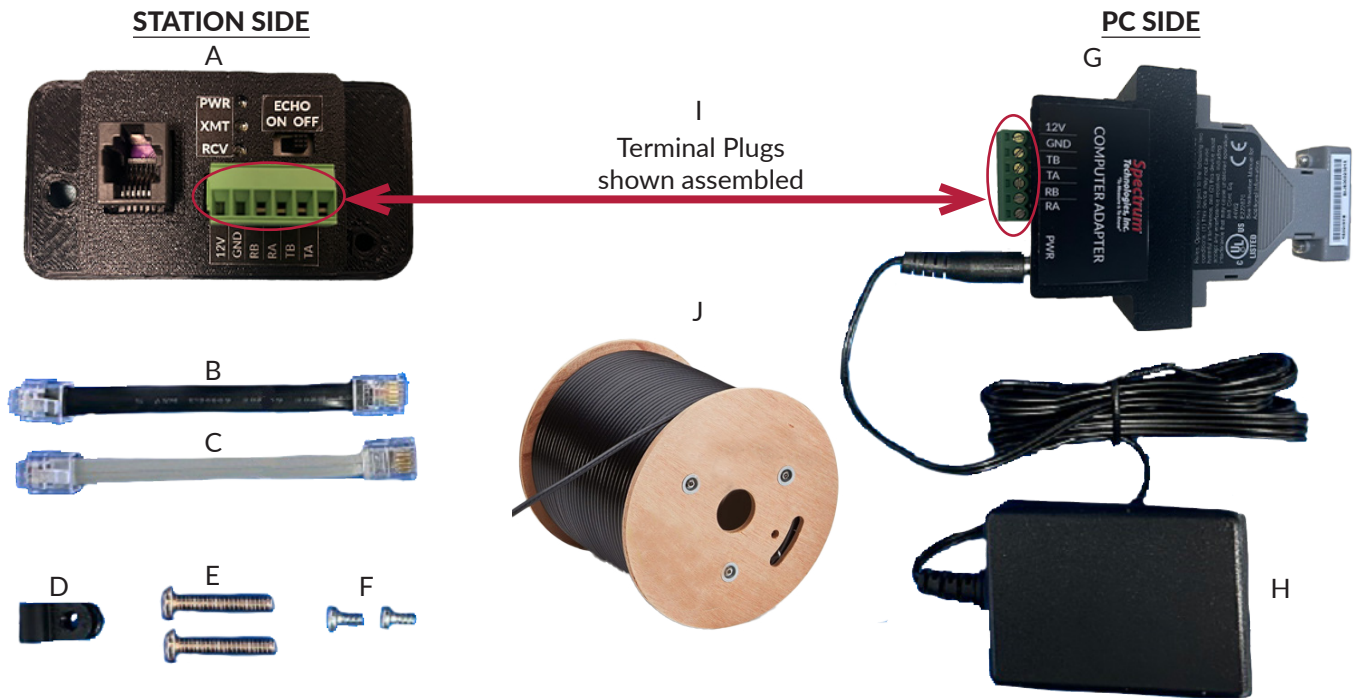
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This manual will familiarize you with the features and operation of your new Short Range Modem Pair. Please read this manual thoroughly before using your instrument.

For customer support or to place an order, call Spectrum Technologies, Inc. at 800-248-8873 or 815-436-4440, FAX at 815-436-4460, or e-mail at info@specmeters.com.

www.specmeters.com
Spectrum Technologies, Inc.
3600 Thayer Court
Aurora, IL 60504

COMPONENTS



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

- A. RS-485/RS-232 Station Adapter with 6-position terminal plugs
- B. Black RJ cable for AUX port
- C. Silver RJ cable for AUX port
- D. Cable P-Clamp D
- E. Two long #6 screws for mounting Station Adapter and P-Clamp to 2000 Weather Station
- F. Two short #6 screws for mounting Station Adapter and P-Clamp to 3000 Weather Station
- G. PC side: Optically Isolated RS-485/RS-232 Converter with 6-position terminal block
- H. A/C Adapter with 2.1x 5.5mm barrel plug (positive center), 3365WDC - 12V, 500mA, Multiple international outlet plug adapters
- I. Terminal plugs
- J. RS485 twisted pair signal cable to connect the station to the PC (**not included, purchase separately**)

CABLE INSTALLATION

Estimate the twisted pair signal cable length needed to run from the location of the station to the location of the computer and purchase the appropriate length cable to suit your needs. The cable's recommended wire type is a 24 AWG (6 core x 0.6mm) waterproof twisted pair telephone cable with a shunt capacitance of 16pF/ft (48pF/m) and a length no greater than 4,000' (1,200m). Before installing both the Station Adapter and Computer Converter, lay the signal cable from the station location to the computer location. The 2 supplied terminal blocks must be connected to each end of the 6-wire cable (2 twisted pair, 1 ground, 1 voltage).

In most cases, Cat5/5e/6 cable is a fully functional substitute for RS-485-specific cable. Ensure purchased cable is approved for outdoor use.

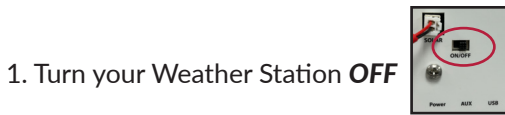


For 3000 model setup follow the WatchDog Wireless Weather Station Manual to install the 32xx or 35xx WatchDog Weather Station.



For 2000 model setup follow the WatchDog Wireless Weather Station Manual to install the WatchDog Weather Station.

WATCHDOG 3000 SERIES WEATHER STATION INSTRUCTIONS



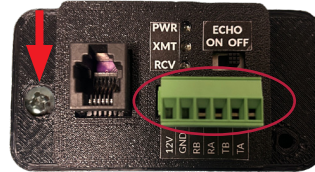
1. Turn your Weather Station **OFF**

2. Ensure the “ECHO” switch on the Station Adapter to the **OFF** position, as shown.
PLEASE NOTE: The ECHO switch should remain off. It does not power the short range modem pair. The ECHO feature is used strictly for diagnostic purposes if troubleshooting is needed with our Tech Support team.



3. Temporarily unplug all sensors from the station to ease installation of the short range modem pair.

4. Place the Station Adapter onto the left bottom mounting boss on the enclosure. Insert the short mounting screw (Component F) into the location marked by the red arrow, as shown.



Remove the green terminal plug (Component I).

5. Connect the Station Adapter to the Station’s auxiliary port (AUX).
 For ALL 3500 Model stations and 3200 Model stations shipped on/after 2/1/24, use the Silver RJ cable (Component C).

For earlier 3200 Model stations, use the Black RJ cable (Component B).



**All 3500 Models and
3200 Models shipped
2/1/24 or later**



**3200 Models shipped
prior to 2/1/24**

6. Connect the twisted pair cable (Component J) to the weather station adapter plug. Once wired, reinsert the green terminal plug. Record the colors in the chart to ensure Station and PC side are wired in the same order.

| Weather Station Adapter Terminal Plug <i>Station Side</i> | RS-232 to RS-485 Converter Terminal Plug <i>PC Side</i> | Wire Color |
|---|---|------------|
| TA | RA | |
| TB | RB | |
| RA | TA | |
| RB | TB | |
| GND | GND | |
| 12V | 12V | |

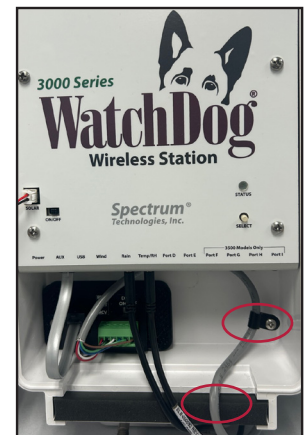


7. To relieve strain on the twisted pair cable inside, install Cable P-Clamp (Component D) on the Weather Station enclosure, as shown. Use the short mounting screw (Component F) to secure cable/clamp to right mounting boss.

Once the P-Clamp is installed, plug the sensors removed in Step 3 back into the station.

Ensure the twisted pair cable is not pinched when closing the station door.

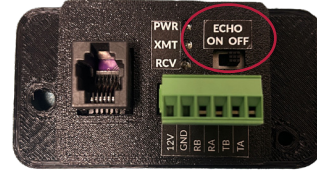
8. **DO NOT TURN THE WEATHER STATION BACK ON UNTIL AFTER PC CONNECTION IS COMPLETE!**



WATCHDOG 2000 SERIES WEATHER STATION INSTRUCTIONS

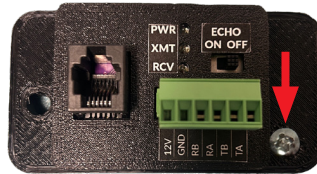
1. Turn the Weather Station **OFF** by removing the solar panel and/or AA batteries in the unit. Failure to do so can cause damage to the unit.

2. Set the “ECHO” switch on the Station Adapter to the **OFF** position, as shown.
PLEASE NOTE: The ECHO switch should remain off. It does not power the short range modem pair. The ECHO feature is used strictly for diagnostic purposes if troubleshooting is needed with our Tech Support team.



3. Note sensor port locations and temporarily unplug to ease installation of the short range modem pair.

4. Remove the lower right mounting screw from the enclosure and discard. Place the Station Adapter in the bottom right corner over the screw hole. Insert the long mounting screw (Component E) into the location marked by the red arrow, as shown.



Remove the green terminal plug (Component I).

5. Connect the Station Adapter to the Station’s auxiliary port (AUX), use the Silver RJ cable (Component C).



6. Run twisted pair cable (Component J) through an available gland, preferably the back center (circled).



7. Connect the twisted pair cable (Component J) to the weather station adapter plug. Once wired, reinsert the green terminal plug. Record the colors in the chart to ensure Station and PC side are wired in the same order.

| Weather Station Adapter Terminal Plug <i>Station Side</i> | RS-232 to RS-485 Converter Terminal Plug <i>PC Side</i> | Wire Color |
|---|---|------------|
| TA | RA | |
| TB | RB | |
| RA | TA | |
| RB | TB | |
| GND | GND | |
| 12V | 12V | |



8. To relieve strain on the twisted pair cable inside, install Cable P-Clamp (Component D) on the Weather Station enclosure, as shown. Remove the lower left mounting screw and discard. Use the long mounting screw (Component E) to secure cable/clamp.

Once P-Clamp is installed, plug the sensors removed in Step 3 back into the station.

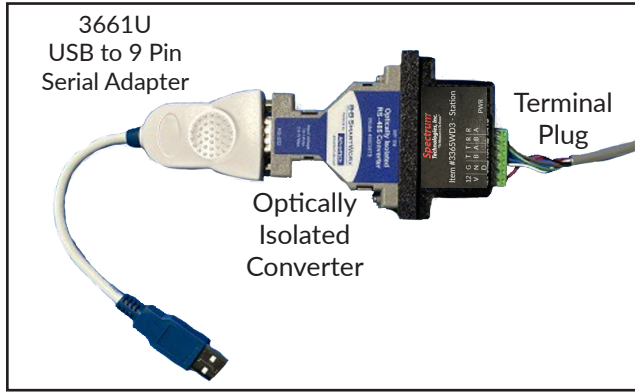
9. **DO NOT REINSTALL THE SOLAR PANEL AND/OR BATTERIES. THE UNIT WILL NOW BE POWERED BY THE SHORT RANGE MODEM PAIR.**



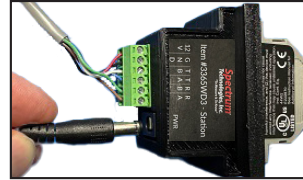
CONNECTING TO THE COMPUTER - ALL WEATHER STATION MODELS

Once the station adapter is wired, move to the computer adapter to complete the wiring. Follow the wiring diagram shown previously, paying attention to the colors you recorded.

Insert the 6-pin Terminal Plug into the Optically Isolated Converter. Attach the 9-pin female connector of the Optically Isolated Converter to the computer's DB-9 serial port (most users will need to use a USB to Serial adapter such as item 3661U9). This converter is optically isolated to minimize risk for computer damage from voltage spikes. Hardware flow control must be disabled for the modem to work correctly, see below.



Insert the A/C adapter plug into Optically Isolated Converter.



For 3000 Series, **power up the Weather Station** by turning the switch to the ON position.



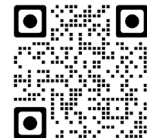
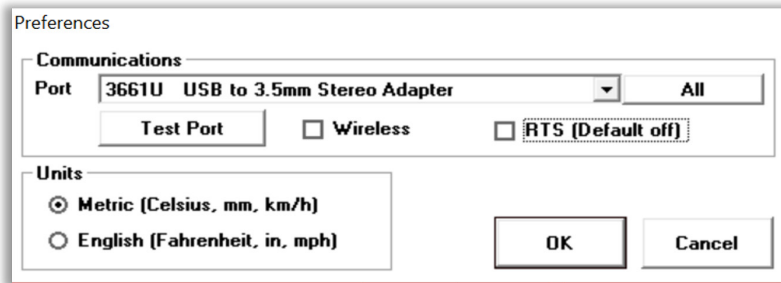
Check that the PWR LED is lit on the Station Adapter



For 2000 Series, the **Weather Station will power up once the Short Range Modem Pair A/C adapter is plugged in.**

USING THE WATCHDOG CONFIGURATOR

Open the WatchDog Configuration program and click the Preferences button. If the software has not been installed, scan the QR code to select the install files from the Spectrum website. From the Preferences screen, uncheck the RTS (Default all) button (see below).



USING SPECWARE SOFTWARE

If you have purchased and installed SpecWare Pro Software, open it.

PLEASE NOTE: WatchDog 2000 Series Weather Stations are compatible with SpecWare 9 and 10. If you have a WatchDog 3000 Series Weather Station and are running SpecWare 9, you must update to SpecWare 10 in order for the Short Range Modem Pair to operate.

SpecWare 9

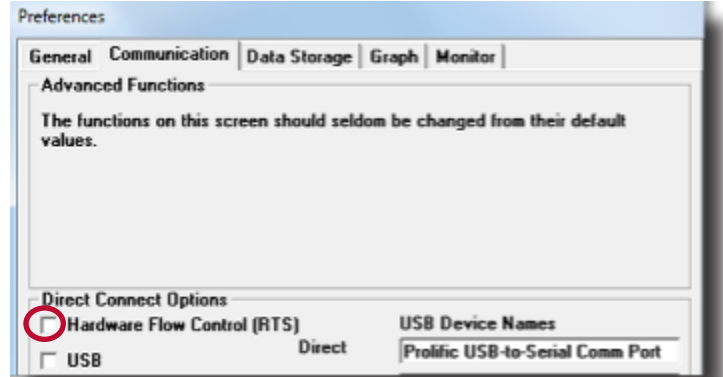
Open the File menu and select the **Preferences** option

Click the **Communication** tab

Click the **Advanced Options** button

Uncheck the **Hardware Flow Control (RTS)** box (see image)

This must be unchecked for the modem to work correctly



SpecWare 10

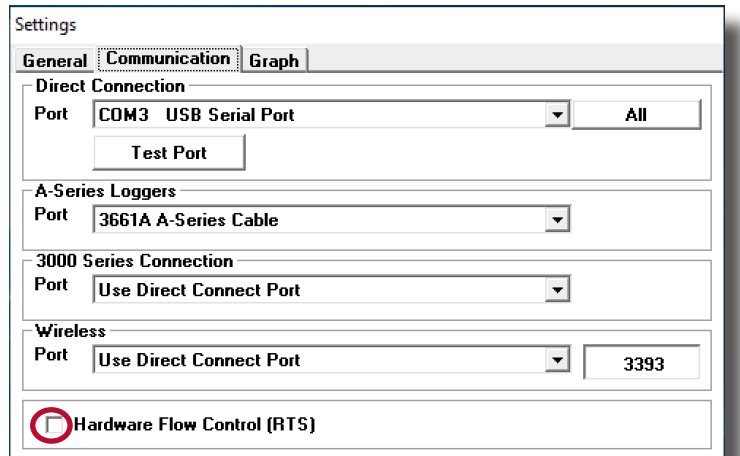
Select **Utilities & Settings** 

Select **Settings** 

Click the **Communications** tab

Uncheck the **Hardware Flow Control (RTS)** box

This must be unchecked for the modem to work correctly



Note: When the Weather Station is transmitting data the TXD LED on the Station Adapter will be lit during serial transmission. The RCV LED will be lit when receiving data from the Optically Isolated Converter.

