



## Connecting a PB150 WeatherStation to a Furuno RD-30 Display and/or Combiner

This guide contains supplementary instructions for connecting an Airmar PB150 WeatherStation to a Furuno RD-30 display. Use these instructions along with the owner's guides that came with the WeatherStation and the RD-30.

There are three ways to connect a WeatherStation to an RD-30 display.

- Connect directly
- Connect through a Combiner
- Upgrade a direct connection with a Combiner

Connecting a Combiner enhances the RD-30 system making it a mini-display network. By adding a Smart™ Sensor, the system becomes a complete auxiliary navigation suite. With this advanced system, WeatherStation and Smart Sensor data can be displayed simultaneously at multiple stations. The user can communicate with the Weatherstation via the included WeatherCaster PC software. And the software can be customized to meet the user's need (see *NMEA 0183 Sentence Commands* on page 3).

### Connecting Directly to an RD-30 Display

**CAUTION:** When powering PB150 directly from RD-30, only use 12VDC for RD-30 Power! Do not operate the PB150 at voltages above 16VDC.

The WeatherStation can be connected directly to the AUX port of the RD-30 using the cables supplied (see Figure A).

The WeatherStation will receive power from the RD-30 through the RD-30's AUX port. Power the RD-30 using its supplied data/power cable.

**IMPORTANT:** Before the WeatherStation will work, the RD-30's output power on the AUX port must be enabled. The keystrokes are [MENU] - [I/O SETUP] - [POWER OUT] - [ENT] - Select [ON].

**Note:** Multiple RD-30 displays can be daisy-chained together, as described in the Furuno operator's manual. In this case, the WeatherStation must be connected to the last RD-30 in the chain.

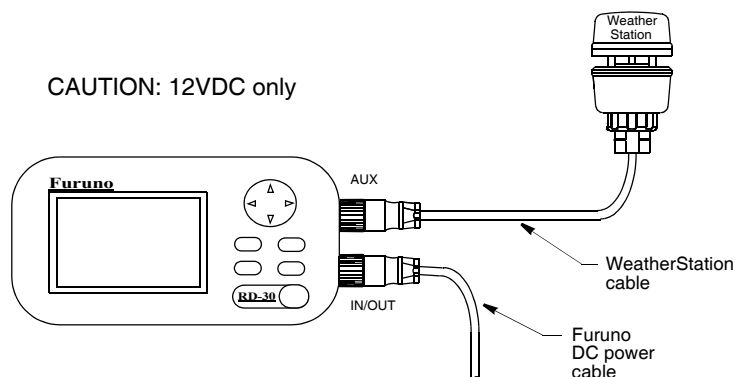


Figure A. Connecting to an RD-30

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## Connecting a WeatherStation to a Combiner

1. Purchase and install a PB150 WeatherStation and a Combiner (Part No. AIR-033-800) following the manufacturer's instructions.
2. Connect the adaptor cable that came with the Combiner between the WeatherStation and the Combiner (see Figure B).

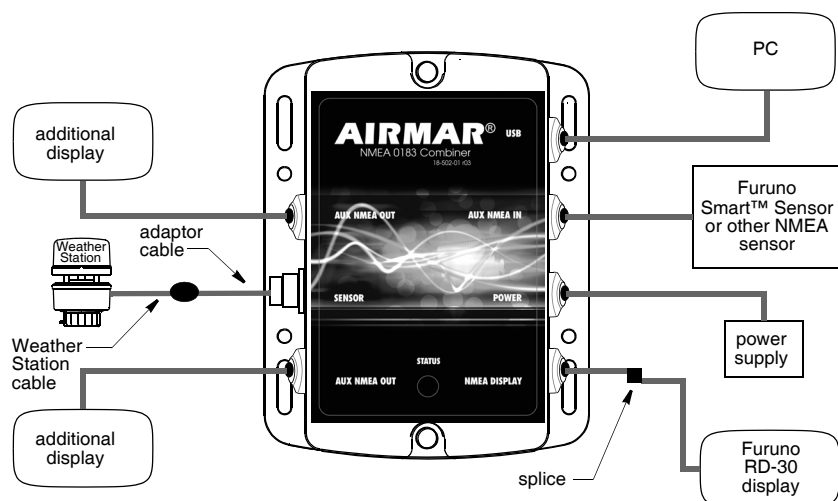


Figure B. Combiner installation  
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3. To connect the RD-30 to the Combiner, splice the open wire end of the RD-30 power/data cable to the Combiner's NMEA Display Port cable. Splice the wires together following the colors specified (see Table below). Make a marine grade splice using solder and heat shrink tubing.

| RD-30 Power Cable<br>(connect to IN/OUT port) |        |    | WeatherStation Combiner<br>(NMEA display port) |        |
|---|--------|----|--|--------|
| Power V +                                     | Red    | to | Power V +                                      | Red    |
| Power GND -                                   | Black  | to | Power GND -                                    | Black  |
| NMEA Out +                                    | White  | to | NMEA Int +                                     | White  |
| NMEA Out -                                    | Blue   | to | NMEA In -                                      | Blue   |
| NMEA In +                                     | Yellow | to | NMEA Out +                                     | Yellow |
| NMEA In -                                     | Green  | to | NMEA Out -                                     | Orange |

4. After making all the connections, plug the connector end of the Furuno power cable into the RD-30 IN/OUT port.

## Adding a Combiner to a Previously Installed RD-30/WeatherStation System

Disconnect the existing WeatherStation cable from the RD-30 (see Figure A). Connect the RD-30 to the Combiner as described in “Connecting a WeatherStation to a Combiner” on page 2.

## NMEA 0183 Default Sentences

| Sentence    | Description   | Enabled for Furuno |
|-------------|---|--------------------|
| \$GPGGA     | GPS Fix Data  | Yes                |
| \$GPGLL     | Geographic Position–Latitude/Longitude  | No                 |
| \$GPGSA     | GNSS DOP and Active Satellites  | No                 |
| \$GPGSV     | GNSS Satellites in View   | No                 |
| \$HCHDG     | Heading, Deviation and Variation (must be enabled via PC software)                      | No                 |
| \$WIMDA     | Barometric pressure, air temp, relative humidity, dew point, wind direction, wind speed | Yes                |
| \$WIMWD     | Wind Direction and Speed, with respect to north   | No                 |
| \$WIMWV(R)  | Apparent Wind Speed and Angle, in relation to the vessel's bow/centerline (relative)    | Yes                |
| \$WIMWV(T)  | True Wind Speed and Angle, in relation to the vessel's bow/centerline                   | No                 |
| \$GPRMC     | Recommended Minimum Specific GNSS Data  | No                 |
| \$GPVTG     | Course Over Ground and Ground Speed   | Yes                |
| \$WIVWR     | Relative Wind Speed and Angle   | No                 |
| \$WIVWT     | True Wind Speed and Angle   | No                 |
| \$WIXDR     | Transducer Measurements: wind chill   | No                 |
| \$WIXDR(A)  | Temperature/Pressure Transducer Measurements  | No                 |
| \$WIXDR(B)  | Attitude Transducer Measurement   | No                 |
| PFEC G,Patt | Attitude (Furuno Pitch and Roll) Heading Field Null                                     | Yes                |
| \$GPZDA     | Time and Date   | Yes                |

**True Wind Direction Note:** The default output from the PB150 will show True Wind Direction-Relative to North, on the RD-30 Display. If True Wind Direction-Relative to Ship's Bow is desired, please enable the NMEA 0183 sentence \$WIMWV(T) from the PB150 using the Airmar WeatherCaster™ software.

## Where to Buy Parts

|                               |                              |
|-------------------------------|------------------------------|
| Furuno USA                    | Tel: 360.834.9300            |
|                               | Fax: 360.833.5195            |
| Gemeco (USA)                  | Tel: 803.693.0777            |
|                               | Fax: 803.693.0477            |
|                               | email: sales@gemeco.com      |
| Airmar EMEA                   | Tel: +33.(0)2.23.52.06.48    |
| (Europe, Middle East, Africa) | Fax: +33.(0)2.23.52.06.49    |
|                               | email: sales@airmar-emea.com |



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