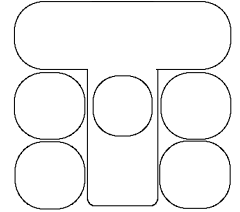


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## PB100/200 Sonic Wind Wind, GPS, Compass

### Display Config:

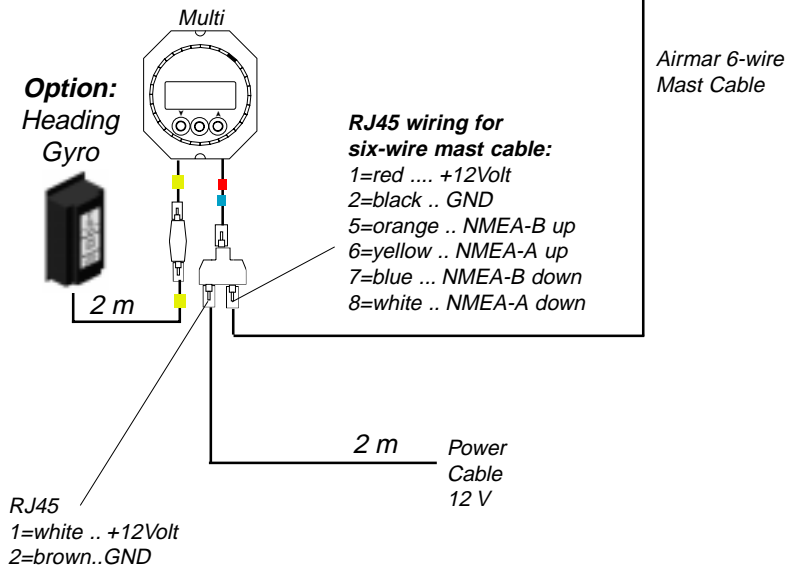
SE=12  
 di=00  
 dF=20,91,30,34,(61)  
 35,36,81  
 Gr=01  
 n0=00  
 n1=07  
 n2=07\*\*)   
 n3=00

\*\*)   
 set n2=08 briefly, to save   
 settings inside the PB100/  
 200. This is necessary   
 before altering the output   
 settings according page 2   
 or 3.

**Display Functions with the  
 PB100/200 connected:**

- Apparent Wind
- True Wind (GND)
- Magnetic Wind (GND)
  
- VMG (GND)
  
- GND Speed
- GND Course
- Heading (Gyro option is recommended)

**Airmar PB-100/200:**  
 Wind, GPS,  
 Compass



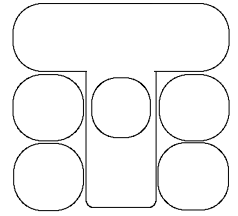
Recommended initial configuration settings for the PB200 when using the WeatherCaster Software  
 (check "advanced setup" > "enable/disable additional functionality" > "stand alone unit")

1,0 GLL  
 0,5 HDG  
 0,5 MWV  
 0,5 ROT  
 1,0 VTG  
 1,0 XDR(B)

These settings will be slightly modified and saved in the PB200 by the Display Unit, for better results, when selecting the "heading offset" function first, and then setting n0=00, n1=07 and (briefly) n2=08, in the Display setup menu.

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# PB100/200

## Sonic Wind

### Wind, GPS, Compass

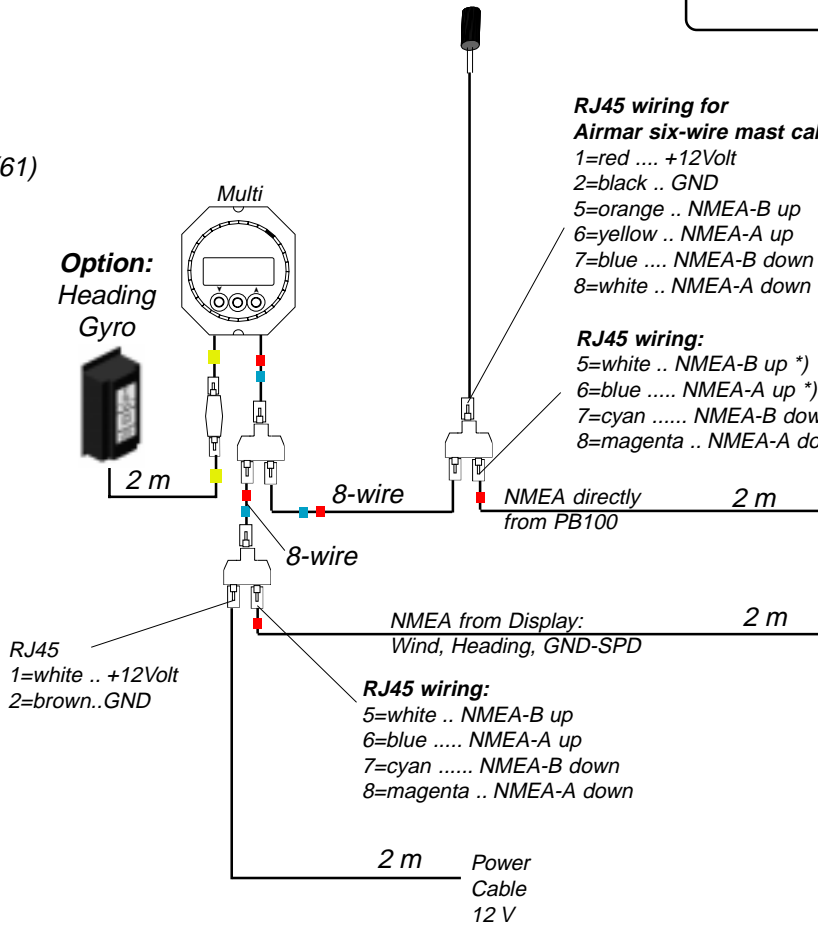
**Display Functions with the PB100/200 connected:**

- Apparent Wind
- True Wind (GND)
- Magnetic Wind (GND)
  
- VMG (GND)
  
- GND Speed
- GND Course
- Heading (Gyro option is recommended)

**Airmar PB-100/200:**  
 Wind, GPS,  
 Compass

**Display Config:**  
 SE=12  
 di=00  
 dF=20,91,30,34,(61)  
 35,36,81  
 Gr=01  
 n0=00  
 n1=03  
 n2=01  
 n3=00

**Option:**  
 Heading  
 Gyro



**RJ45 wiring for Airmar six-wire mast cable:**  
 1=red .... +12Volt  
 2=black .. GND  
 5=orange .. NMEA-B up  
 6=yellow .. NMEA-A up  
 7=blue .... NMEA-B down  
 8=white .. NMEA-A down

**RJ45 wiring:**  
 5=white .. NMEA-B up \*)  
 6=blue ..... NMEA-A up \*)  
 7=cyan ..... NMEA-B down  
 8=magenta .. NMEA-A down

\*) set n0,n1,n2,n3=00 whenever connecting the white and blue uplink wires (no data will be sent out from the Display in this case). Otherwise leave white and blue unconnected.

**Configuring the PB100 and saving its settings:**

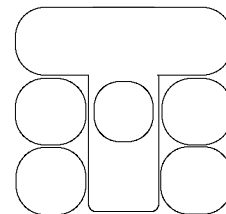
SE=12  
 di=00  
 dF=20,91,30,34,(61)  
 35,36,81  
 Gr=01  
 n0=00  
 n1=07  
 n2=07\*\*)  
 n3=00

\*\*) set n2=08 briefly, to save settings inside the PB100. This is necessary before altering the output settings as shown above (n1=03, n2=01)

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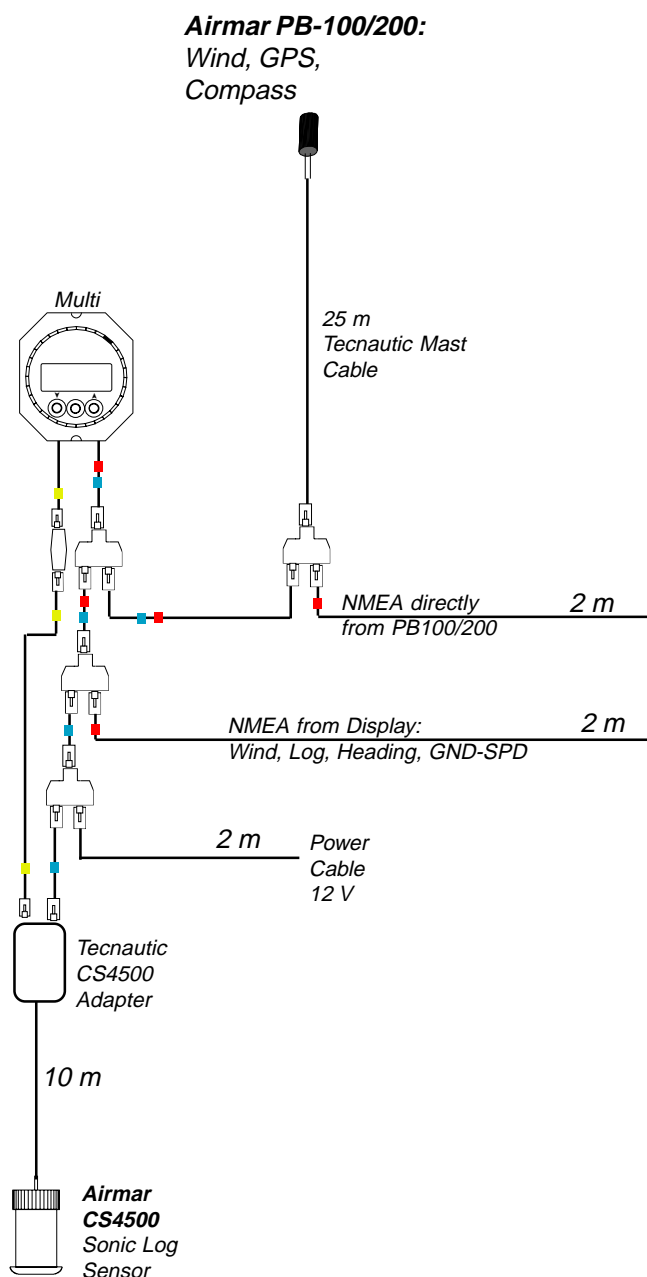
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## PB100/200 + CS4500 Sonic Wind and Sonic Log Wind, Log, GPS, Compass

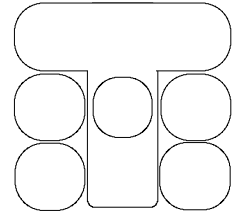
### Display Functions with the PB100/200 and CS4500:

- Apparent Wind
- True Wind (water)
- Magnetic Wind (water)
  
- Log-Speed
- Trip Log
- Total Log
- Water Temperature
- VMG (water)
  
- GND Speed
- GND Course

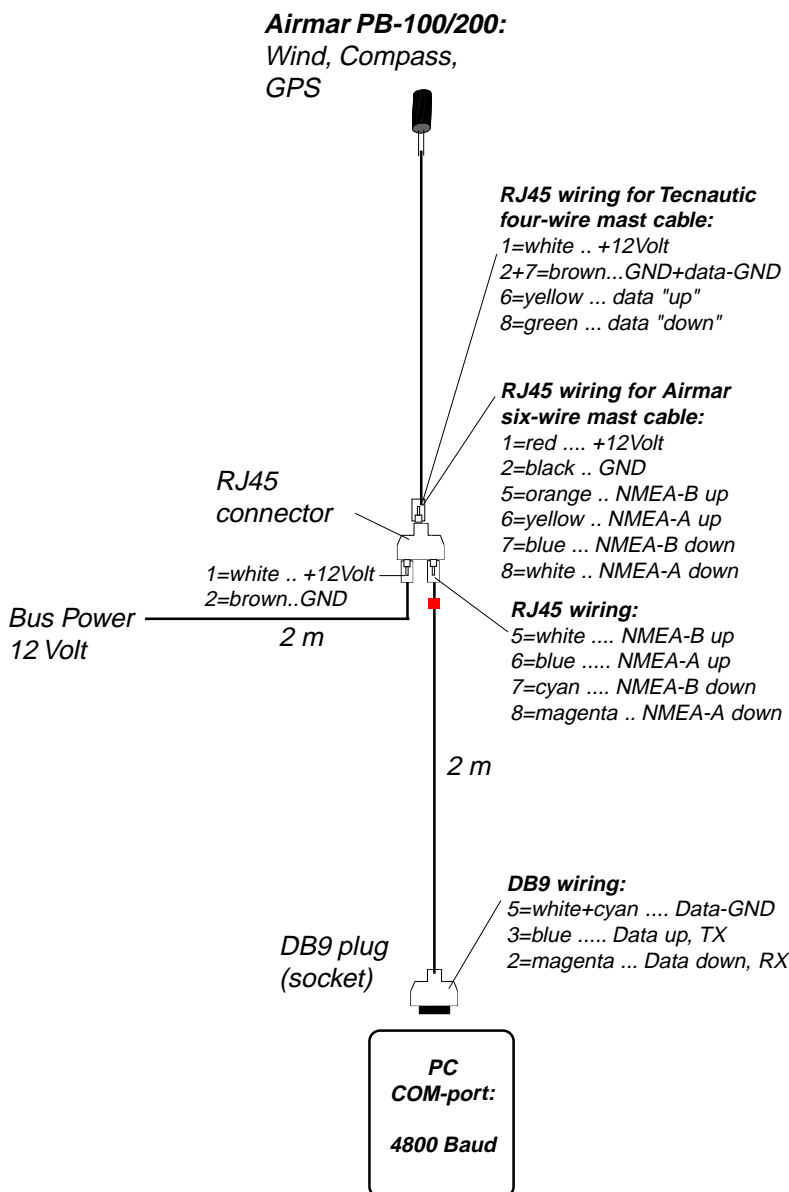


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**PB100/200**  
**suggested wiring diagram**  
**for PC and other NMEA**  
**(Tecnautic Wiring Standard)**

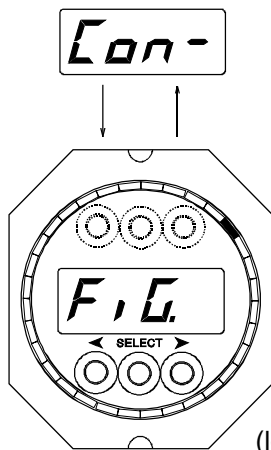


# Display Configuration

## applicable for displays with three or with six push buttons

**Note:** you might not find all of the following possibilities on a display or you might even find additional functions on some displays.

**Attention:** During configuration, the display will not send data from a connected sensor to the autopilot.



### ConFig menu:

1. Press and hold both outer (lower) buttons.
2. Without releasing the outer buttons, apply the middle (lower) button four times briefly.
3. Then release the outer buttons. The "Con-Config" mode will appear on the LCD.
4. Use the middle (lower) button to scroll through the ConFig menu:



Display Test



Sensor Type Selection



Display Type Selection



Display Function Selection



Display Group Selection



Autopilot Configuration (or Trim Flaps if di=03). It is not available if di=00.



NMEA in- and output

## Sensor type Selection:

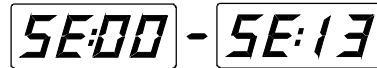


Every display has an "analogue" sensor input (yellow/ green marking). Use left and right (lower) button for setting


the type of the connected sensor according table below.

For "Digital" Sensors, which are connected to the NMEA in- and output (red marking), like a **Flux Gate Compass, a Depth Sounder or a GPS, the NMEA in- and output has to be configured** (see p.28).

Any sensor may be connected to any display. E.g. a wind sensor may be connected to a display with "COMPASS" imprinting, if SE:06 has been selected.



- 00 No Sensor connected
- 01 One single Log Sensor
- 02 left Log Sensor (with Mixer)
- 03 right Log Sensor (with Mixer)
- 04 left alternating Log Sensor
- 05 right alternating Log Sensor
- 06 Standard Wind Sensor
- 07 Wind Sensor for rotating mast
- 08 Mast Angle Sensor for rotating mast
- 09 Heading Gyro: align by GPS track only
- 10 Heading Gyro: align a) GPS or b) Fluxg.
- 11 Heading Gyro: align by Fluxgate only
- 12 Heading Gyro: align a) Fluxg. or b) GPS
- 13 Roll Gyro
- 14 Load Sensor
- 17 AP+depth Alarm and Display Dimmer
- 18 Depth Alarm and Display Dimmer
- 19 external rudder sensor for AP1
- 20 external rudder sensor for AP2
- 21 Servo Wheel: autom. selection; only di=1
- 22 Servo Wheel: manual select.; only di=1
- 23 Servo Wheel: manual select.; only di=1

**Note: If no Sensor** has been connected, **SE must be set to zero.** 

If **SE:xx** comes on automatically or the function cannot be exited even by switching power off and on, we have a **Sensor Conflict Warning**. Every display on the bus could be the reason and has to be checked for the correct "SE"-number. Only one SE=06 is allowed!

## Display Type Selection:



Use the left and right (lower) buttons to set the desired sensor type:

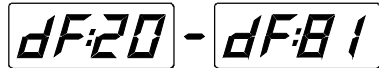
- di:00** Multi Function Display. All display functions can be activated on a display with di=00 (Log, Wind, Compass etc.)
- di:01** Autopilot Display (with six push buttons)
- di:02** Compass Display with Autopilot Function (three buttons)
- di:03** Trim Flap Display (with six push buttons)

## Display Function:

This selection defines, which function will be available on a Multi Function Display (i.e. any display with di=00, independent of the printing on the display bezel).

The right (lower) button is used to scroll from one "Function Number" to the next.

The left (lower) button is used to "activate" or "deactivate" the function. A function has been activated (can be displayed), if the function number is steady. A function has been deactivated (cannot be displayed), if the function number is blinking:



### Primary Functions:

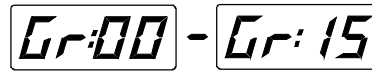
- F0** Autopilot Fail Codes (page 50)
- 11** Gyro signal monitor (for testing only)
- 20** Log Speed
- 24** Log Speed 15 sec average (no LED)
- 23** Trip Distance (resettable)
- 91** NAV (GPS GND speed and GND track)
- 30** Apparent Wind (+/- 180 degrees)
- 31** Apparent Wind (magnified LED)
- 32** Apparent Wind (0..359 degrees)
- 34** True Wind
- 28** Load Sensor
- 61** Heading Hold
- 62** Magnetic Heading
- 75** Depth

### Secondary Functions:

- 33** Mast Angle
- 35** Magnetic Wind (dir. and true speed)
- 36** VMG
- 64** Rate of Turn (deg / sec)
- 82** Water Temperature
- 83** Timer
- 21** Average Trip Speed
- 22** Total Log Distance (cannot be reset)
- 90** NAV (Course, XTE, Dist., Time to WP)
- 92** D.R. Bearing and Distance from Origin
- 77** Depth Unit Selection (meters or feet)
- 81** Voltmeter

**Note:** for ease of use, only necessary functions should be activated.

## Display Group:



Use the left or right push button to set the group number of every single display unit:

**Gr:00** Group Zero = "Master"; When the illumination level (brightness) is set on a display with group number zero, all displays will follow in brightness, independent of their own group number.

**Gr:01 .. Gr:15** When changing the brightness on a display with group numbers 1 to 15, only the other displays with the same group number will follow.

## Autopilot Configuration



This function is only available on an Autopilot Display (di=01 or di=02).

When you see this display, apply briefly the left or right (lower) button, to switch to the first Autopilot Parameter "A0". Be careful not to modify A0 inadvertently!

Thereafter the middle (lower) button is used to scroll to the remaining parameters "A1" to "A-". The left or right button is used to alter the respective parameter.

Only A0 and A6 should be modified by the customer during installation. Other parameters should only be altered after consultation with the manufacturer.

The customer should receive a diagram with the recommended parameters for his vessel.

See page 22/23 for significance of the parameters.

## NMEA input and output

Every display has a NMEA in- and output (red cable marking). From the NMEA configuration window use the left or right lower button to display the first parameter "n0:00". Thereafter use the middle button to scroll to the next parameter in sequence (n1, n2, n3).

The left and right buttons are used to alter n0, n1, n2, n3 according to the table below:

**IMPORTANT:** The NMEA configuration must be entered on **every** display unit, where the NMEA in- or output is used.

### NMEA-0183 input: n0=00 or 06

n0:00 - n0:06

From the following received NMEA sentences, specific data fields are read, when **n0=00 or 06**.

These data are used for the displays or the autopilot. They can supplement or substitute log, wind or compass data from own sensors.  
**n0=00** Standard NMEA-0183 **input:** the sentences APB, BOD, BWC, DBS, DPT, GLL, HDM, HDG, MTW, MWV, RMB, RMC, VHW, VTG, VWR, WDC, WDR, XTE are read. For the PB100/200 sensor set also **n1=07** to set up the HDG output and **n2=07** to set up GPS position data output.

#### Sentence: Data read from sentence:

APB: a) Cross Track Error  
 b) Mag and True bearing between waypoints  
 BOD: Mag bearing between waypoints  
 BWC,BWR: Mag.Brg+Dist of pres.pos. to WP  
 DBS, DBT, DPT: Depth (meters)  
 GLL: Lat / Long; Remark: set n3=01 to also accept NMEA-1.5 format  
 HDM, HDG: Magnetic Heading  
 MTW: Water temperature (deg. Celsius)  
 MWV: Apparent Wind Angle and Speed  
 RMB: Cross Track Error, Bearing+Distance to WP  
 RMC: Ground Track and Speed  
 VHW: a) Magnetic Heading  
 b) Water Speed (knots)  
 VTG: Ground Track (mag) and Speed  
 VWR: Apparent Wind Angle and Speed  
 WDC: Distance to Waypoint  
 WDR: Distance to Waypoint  
 XTE: Cross Track Error (NM)

**n0=01** Compass Sensor ( #1) connected  
**n0=02** Compass Sensor ( #2) connected  
**n0=03** reserved  
**n0=04** Echo Box-1 connected  
**n0=05** Echo Box-2 connected

### Complete NMEA-0183 output:

For an output of several available sentences, set **n0=06**. This will transmit the sentences DPT, VHW, MWV, VWR, MTW, RSA, ROT and VTG at a repetition rate of 2Hz.

The GLL sentence output can be added by setting n3=01. However, the pace of all sentences will be slowed down to the input rate of the GLL sentence, which often comes from the GPS only once every two seconds.

Note that the GLL sentence cannot be output from the same display unit, where it has been received.

### Selected sentences output:

First set n0=00. Then set n1, n2 and n3 to activate one or more sentence outputs as shown below:

n1:00 - n1:04 **NMEA-0183-output**

**n1=00** OFF, no HDM, VHW or VTG-output

**n1=01** HDM + ROT out (heading and turn rate) repetition at 2Hz.

**n1=02** HDM + VHW (heading out at 16Hz).

It disables any other sentence output.

**n1=03** VHW (heading and log speed) at 2Hz.

**n1=04** VHW + VTG out (heading, log speed + ground-track and gnd-speed) at 2Hz.

**n1=07** configures PB100/200 heading output

n2:00 - n2:01 **NMEA-0183-output**

**n2=00** OFF, no VWR-output

**n2=01** VWR out@2Hz (rel. wind angle+speed)

**n2=07** configures PB100/200 for GLL-output

**n2=08** saves output configuration to PB100/200

n3:00 - n3:01 **NMEA-0183-output**

**n3=00** OFF, no GLL-output

**n3=01** GLL out (Lat./ Long.) Note: this output slows down other sentence outputs to the repetition rate of the GLL input from the GPS.

### Output sentence data content:

GLL Lat / Long  
 DPT Depth (corrected by offset)  
 VHW: a) Gyro Heading is first choice (2nd choice from magnetic sensor)  
 b) Water Speed (knots)  
 MWV True Wind Angle and Windspeed  
 VWR a) Apparent Wind Angle  
 b) Apparent Wind Speed (knots)  
 MTW Water Temperature (degrees C.)  
 RSA Rudder Sensor Angle  
 ROT Rate of Turn (degrees/minute)  
 VTG Ground Speed and magnetic Ground Track