

POWER WIND



Installation & Operating description (1-7)

Monterings & Bruksanvisning (8-14)

Installation & Bedienungsanweisung (15-21)

Installation et utilisation (22-28)

The wind instrument **POWER WIND** is a part of an unique instrument system and is offering a variety of possibilities. To enable you to get the most out of your instrument, we have produced this manual which we ask you to study carefully.

Contents:

1. General
2. How to use the POWER WIND instrument
 - 2.1. Choice of functions
 - 2.2.1. WIND ANGLE
 - 2.2.2. APP.WS (apparent windspeed)
 - 2.2.3. TRUE WS (true windspeed)
 - 2.2.4. VMG (velocity made good)
 - 2.2.5. Illumination
3. Calibration
 - 3.1. Calibration value for boatspeed, windspeed, wind angle and alignment of wind transducer (masthead unit)
4. Part specification
5. Installing the instruments
6. Connection diagram/contacts
7. Fault finding
8. Technical data
9. Options
10. Warranty

1. General

POWER WIND is an easy to use and compact wind instrument specially designed for sailing boats giving all basic functions. The POWER WIND together with the wind transducer can be used separately or be connected to other POWER instruments. In combination with SILVA standard log transducer, POWER WIND enables the functions true windspeed and VMG.

Note! The instrument must be calibrated for your boat. Read the instructions in chapter 3 and then calibrate.

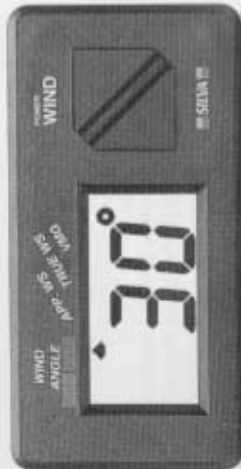
2. How to use the POWER WIND instrument.

2.1. Choice of functions.

POWER WIND offers the following functions:

- WIND ANGLE

- Apparent windspeed = APP.WS
- True windspeed = TRUE WS
- Velocity Made Good = VMG



The selected function is indicated by the arrow at the upper edge of the display. The arrow is moved either to the right or the left by pressing the buttons (to the right use the right button, to the left use the left button).

Secondary functions are obtained by pressing both buttons simultaneously when the arrow is in the selected position.

2.2. Functions

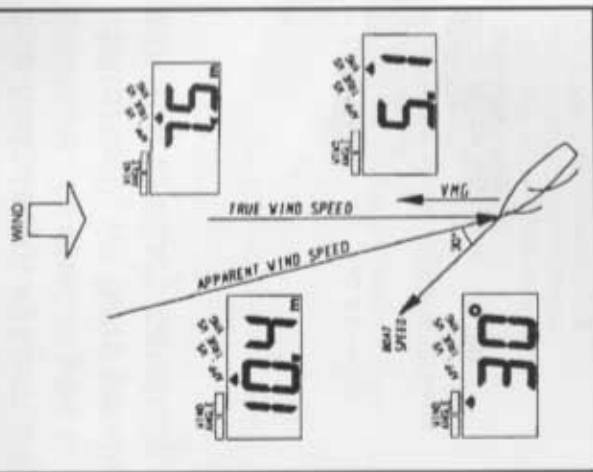
2.2.1 WIND ANGLE

The wind angle is indicated $\pm 180^\circ$ from starboard or port side with green or red marking, or is shown $000^\circ - 359^\circ$.



The current wind angle is shown on the display. The arrow indicates that the wind is coming in from starboard (see principle drawing).

Principle drawing



When the wind is coming in from the port side, the arrow jumps automatically over to the red marking. When the display indicates $000^\circ - 180^\circ$ both arrows are lit.

Windspeeds, under 0.4 m/s is shown by "... ." on the display.

To switch to wind angle $000^\circ - 359^\circ$, press both buttons simultaneously.



The display shows 180° flashing. Press the right or left button to switch to 360° . Then press both buttons simultaneously. Both arrows will be lit and the display shows wind angle $000^\circ - 359^\circ$.

2.2.2 APP.WS (apparent windspeed)

Apparent windspeed is indicated either in knots, m/s or beaufort.

The range is: $0.9 - 90.0$ knots (no unit indication on the display).

$0.5 - 50.0 \text{ m/s}$ (the symbol "m" is shown on the display).

$0.0 - 9.9$ beaufort then 10-13 beaufort (is shown at the left side of the display).

To set the desired range, place the arrow on APP.WS and press both buttons simultaneously.



Currently chosen unit is displayed. To change, press the right or left button until the desired unit is displayed. Then, press both buttons simultaneously. Selected unit is now stored in the memory even if the power is cut. Windspeeds under 0.4 m/s is shown by "... ." on the display.

2.2.3. TRUE WS (true windspeed)

True windspeed is indicated in knots, m/s or beaufort. This function takes the boatspeed into account (see principle drawing) and is received only in combination with Silva's standard log transducer. If the log transducer is not connected, the display shows APP.WS (apparent wind-speed).

2.2.4 VMG (velocity made good)

VMG shows the speed of the boat in knots towards or with the wind (see principle drawing).

This function requires connection with Silva's standard log transducer. To receive only the boatspeed, place the arrow on VMG and press both buttons simultaneously.

This function is only a control function and is used when you set the calibration value for boatspeed (see chapter 3.1.).

2.2.5. Illumination ("Lit")

Press the right or left button until "Lit" appears on the display.

Then press both buttons simultaneously to switch on/off.

3. Calibration ("CAL")

In order to have your instrument functioning correctly on your boat, it is important to run through the calibration procedures. Once done, the calibration values are stored in the memory of the instrument, even if the power is cut.

3.1. Calibration value for boatspeed, wind-speed, wind angle and alignment of wind transducer (masthead unit).

The calibration routine consists of 4 steps. All steps have to be taken in correct order, starting with no 1. You cannot move backwards in the calibration routine.

To go forward, press both buttons simultaneously.

START! Press the right or left button until "Lit" shows on the display. Press both buttons simultaneously until "CAL" is shown on the display.

When releasing the buttons, the function arrow will be placed on VMG.

1. Choice of calibration value for boatspeed.



The display shows the factory-set calibration value (log factor) for boatspeed. 1.25 is the factory-set calibration value which may have to be changed. This is done by pressing the right or left button.

The calibration range in % is 1.01 - 1.99. Programme the same calibration value as programmed in the main instrument, **POWER**, or compare the boatspeed under **VMG** with another log.

To control the boatspeed, place the arrow under **VMG**.

Press both buttons *simultaneously*.



The function arrow will flash and the display will show only the speed of the boat in knots. To disconnect the function, press the right or left button.

To find out your calibration value, run the boat at cruising speed and compare the speed with a calibrated log. Then enter the new calibration value. Use the following formula.

$$\frac{\text{True speed}}{\text{measured speed}} = \frac{\text{present calibration value} + \text{new calibration value}}{\text{value}}$$

Then, press both buttons *simultaneously*.

2. Calibration of windspeed



The display shows the calibration value for windspeed. This value is a factory-set calibration value which shall not be changed.

Press both buttons *simultaneously*.

3. Calibration of wind angle



The display shows the first table value.

Enter the values in the calibration certificate for the wind transducer.

Instrument shows:	Example calibration certificate:
000	003
045	043
090	095
135	140
180	176
225	228
270	267
315	318
	Increase 3
	decrease 2
	etc.

Programme the first value

Press the right button (increase) or the left button (decrease).

To move the next interval, press both buttons *simultaneously*.

Then repeat this every 45 degree until all values have been entered.

After programming the last value, press both buttons *simultaneously*.

4. Alignment of the wind transducer (masthead unit).

When the wind passes directly through the centreline of the boat, from the bow (fore and aft), the **WIND ANGLE** reading should be "000". If not then adjust as follows:

If the wind is shown as passing from the starboard side, enter the displayed value, using the left or right button. If the wind is shown as passing from the port side, enter the value 360° minus display value. Press both buttons *simultaneously*, and the unit is ready for use.

4. Part specification

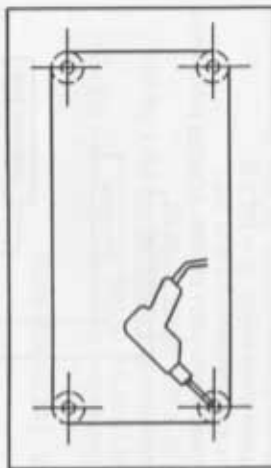
The Silva **POWER WIND** comes with all necessary fitting and attachments for most installations. Check each part prior to installation.

- 1# Operating Manual
- 1# Instrument
- 1# Gasket
- 1# Connection cable 0.5 m (1 2/3") to other **POWER** instrument or for power supply.
- 1# Wind transducer with attachment
- 1# Mast cable 22 m (72.2 ft)
- 1# Template
- 4# Nuts (M5)
- 1# Backplate
- 1# Cover plug
- 4# Nutcovers

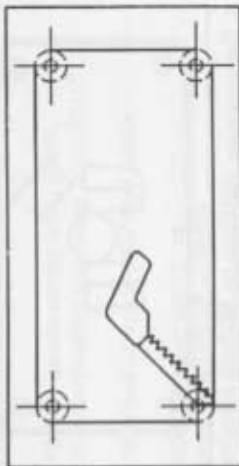
5. Installing the instrument

The instrument must be mounted on a smooth surface.

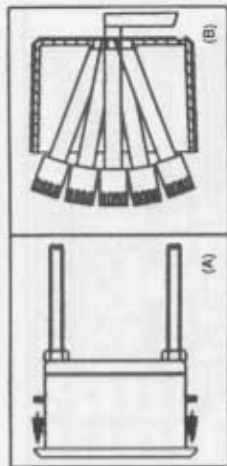
1. Use the template supplied with the operating manual. Attach it to the desired location, make the holes with a 4 mm (5/32") diameter drill and then a 10 mm (3/8") diameter drill.



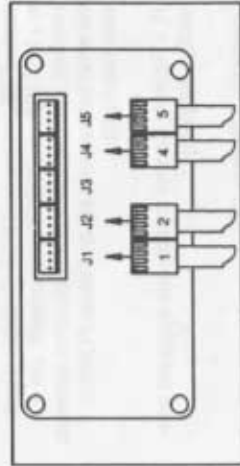
2. Saw along the dotted line. (Use blade for glass-fibre/porcelaine/ceramics of type AEG K 50 fine). Note: Do not saw outside the dotted line.



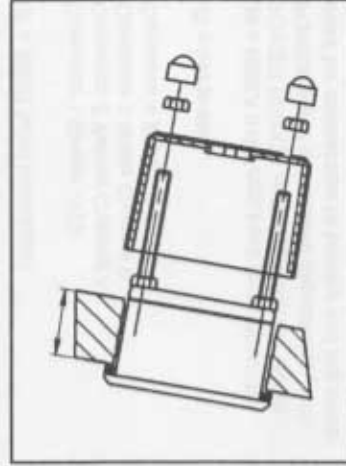
3. Mount the gasket over the instrument (A). Pass the cables through the backplate (B).



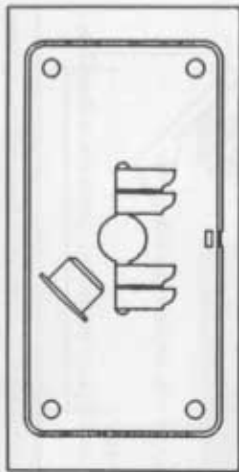
4. Connect the battery cable and transducer cables according to chapter 6.



5. Mount the instrument and fix the backplate with the nuts supplied (be sure that the slots in the backplate are downwards). Press on the nut caps.

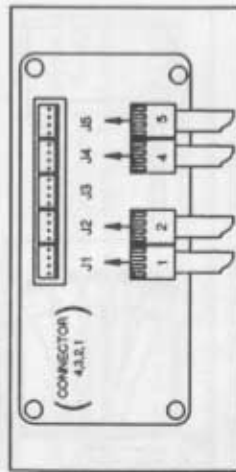


6. Move the cables aside and press on the red cover plug.



6. Connection diagram/contacts.

The instrument has 4 contacts marked J1, J2, J4, and J5. Each contact has 4 connectors.



When installing the instrument separately, cut the end of the connection cable with the contact marked J5 and connect the instrument direct to +12V. If other POWER instruments are installed, connect the connection cable between the wind instrument (J4) and other POWER instrument (J5).

J1 = Remote Control (option see separate connection diagram)

Connector 1 Green +12V

Connector 2 Yellow remote control, down/left

Connector 3 White remote control up/right

Connector 4 Brown 0 V

J2 = WIND (wind transducer)

Connector 1 Green +12V

Connector 2 Yellow Channel A

Connector 3 White Channel B

Connector 4 Brown 0 V

J3 = not in use

J4 = NMEA 0183 data input (from POWER, POWER BRIDGE or POWER PLUS). When POWER WIND is installed separately, J4 is used for connection to battery and log transducer.

NMEA data is not transmitted from POWER WIND.

Connector 1 Green +12V

Connector 2 Yellow log pulse

Connector 3 White NMEA data input (together with other POWER instruments)

Connector 4 Brown 0 V

J5 NMEA 0183 data output (from POWER to POWER PLUS, POWER BRIDGE or NAVIGATOR)

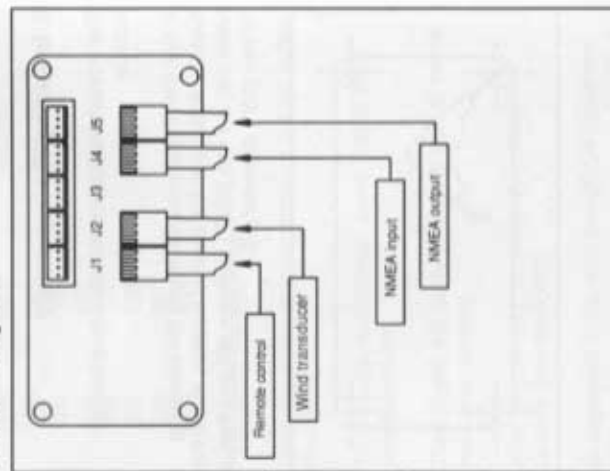
Connector 1 Green +12V

Connector 2 Yellow log pulse

Connector 3 White NMEA data output

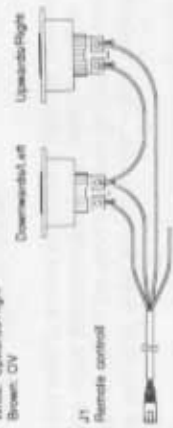
Connector 4 Brown 0 V

Connection diagram.



Connection diagram, remote control.

Green: +12V
Yellow: Downward/Left
White: Upward/Right
Brown: 0V



7. Fault finding

In most cases the reason for faults in an electronic instrument is a faulty connection, so first check the connections according to the diagram.

Also check:

- Sufficient battery voltage
- Cables for damage
- Faulty contact in connectors
- The fuse is not blown and is of the right type
- the transducers are correctly installed.

Automatic fault finding is indicated each time the instrument is switched on and is shown on the display. If the message E02 or E04 is shown on the display, the instrument shall be returned to the dealer for service.

If the message **ErA**, **ErB** or **Err** is shown, the reason for fault is in the transducer, transducer cable or the contacts.

E04 = Memory error Pd

E02 = Memory error

ErA = Channel A error

ErB = Channel B error

Err = Transducer error

Lo = Battery voltage 10 V or lower.

8. Technical data

Dimensions instrument: 62.5 mm x 125 mm
(2 15/32" x 4 15/16")

Dimensions transducer: 450 mm x 300 mm
(18" x 12"). Weight: 0.325 kg

Connection cable to other POWER instrument or to the battery: 0.5 m (1 2/3")

Transducer cable: 22 m (72.2 ft)

Power Supply: 12V DC (10-18V) The instrument is protected against misconnection of the battery connection.

Current consumption instrument: 8 mA (with illumination 25 mA)

Current consumption transducer: 20 mA

Temperature range: Operation -10°C - +70°C.

Storage: -30°C - +80°C.

Units: Knots, m/s, beaufort

Range: 0.9 - 90 knots, 0.5 - 50 m/s,

0.0 - 13 beaufort

Calibration: 100%

Accuracy: Wind angle ±2% within 0° heeling, -10% within 30° heeling

9. Options

The following items can be supplied as optional extras:

POWER remote control art.no 20266.

Silva standard log transducer art.no 20113.

Other instruments in the Power Series:

POWER art.no 20107

POWER PLUS art.no 20108

POWER BRIDGE art.no 20110

POWER NAVIGATE art.no 20111

10. Warranty

SILVA SWEDEN AB gives a two year warranty against manufacturing faults or faulty components. A purchasing receipt must be shown if a warranty claim is made. The warranty does not apply to damages caused by careless handling, faulty installation nor for damages caused by not fusing the instrument according to the instructions. The warranty does not apply to secondary damages caused by faults in instruments or transducers. The right to change the specification is reserved the manufacturer.