

## INSTALLATION AND MAINTENANCE GUIDE

### Static Pressure Head SPH20



- Eliminates effectively wind disturbances from pressure measurements
- Adaptable to many barometers, directly to Vaisala PTB210
- Fits to severe outdoor applications



### INTRODUCTION

Vaisala model SPH20 Pressure Head provides an effective elimination of pressure variations in the barometer due to the wind. The heated plates offer an excellent outdoor performance in cold, icy and wet conditions. The SPH20 can be integrated directly with the Vaisala PTB210 barometer or any other barometer.

### ASSEMBLING

Screw the lower bar to the threaded sleeve of the lower plates (with 6 holes).

### MOUNTING

Select an open location, preferably a place higher than the surroundings, with no buildings or trees nearby. Attach the SPH20 to a horizontal pole using a mounting plate. A suitable pole is Vaisala sensor mast, type DKP12. However, any other horizontal pole with two screws (M6) in a distance of 41 mm can be used.

**NOTE** The recommended distance of the SPH20 from the vertical pole is at least 1 m.

1. Loosen the two fixing screws of the pole and fix the SPH20 into the pole as indicated in Figure 1.
2. Attach the SPH20 by tightening the screws. (The pressure Head is removed by loosening the two screws).

### CONNECTION TO THE VAISALA PTB210

Visualization in Figure 2.

1. Detach the threaded nipple and the gasket (see Figure 1).
2. Place the O-ring into the barometer groove.
3. Attach the PTB210 to the SPH20 with two fixing screws.

### CONNECTION TO OTHER BAROMETERS

Connect the barometer to the threaded nipple (Figure 1) by using a flexible, airtight tube with an inner diameter of 4 mm. To prevent condense water accumulation in the tube, make sure the entire length of the tube goes downwards from the barometer to SPH20.

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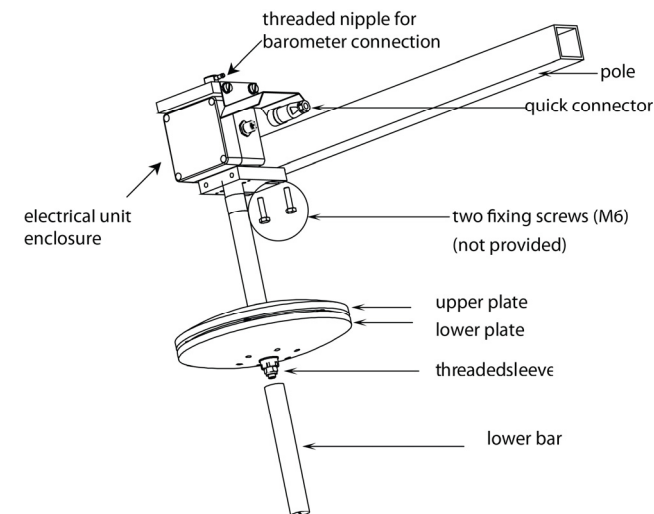


Figure 1 SPH20 Installation

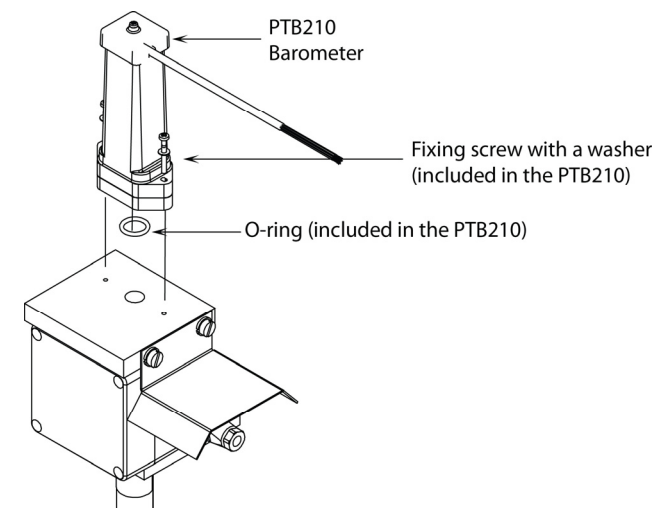
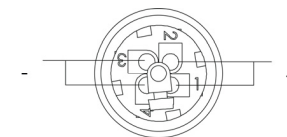


Figure 2 PTB210 Barometer Connection

### QUICK CONNECTOR WIRING



input (+): terminals 1 and 2  
input (-): terminals 3 and 4  
Always connect both inputs!

TECHNICAL DATA

Property	Description / Value
Materials	
Plates	Polycarbonate
Bars	Offshore Aluminium
Connection box	Polycarbonate (IP65)
Weight	1360 g
Mounting	2 bolts (M6 x min 20 mm)
Hose connection	barbed fitting for 4 mm I.D. hose or Rp1/4 thread
Electrical connections	M12 connector
Power supply	12 V (default) 24 V (with changed wiring)
Temperatures at which the heating turns ON/OFF	
ON	+4 °C (± 3 °C)
OFF	+13 °C (± 3 °C)
(possibility for own heating control as well)	
Power consumption during heating	about 70 W
Operating temperature	-60 °C...+80 °C

HEATING CONTROL

The thermostat controlled heating elements switch on when temperature decreases down to +4 °C (42 °F). The heating switches off when temperature increases up to +13 °C (55 °F).

If an own heating control is needed, the thermostat can be shunted as follows:

- 1. Open the electrical enclosure cover
- 2. Remove the connecting board (Figure 3) by unscrewing the 3 screws.
- 3. Detach the wires from the thermostat.
- 4. Join the detached wires.
- 5. Replace the connecting board and close the cover.

**CAUTION** Surface temperature of a heated plate can be 60 °C (140 °F)!

MAINTENANCE

To clean the plates, blow pressurized air to the opening between the plates.

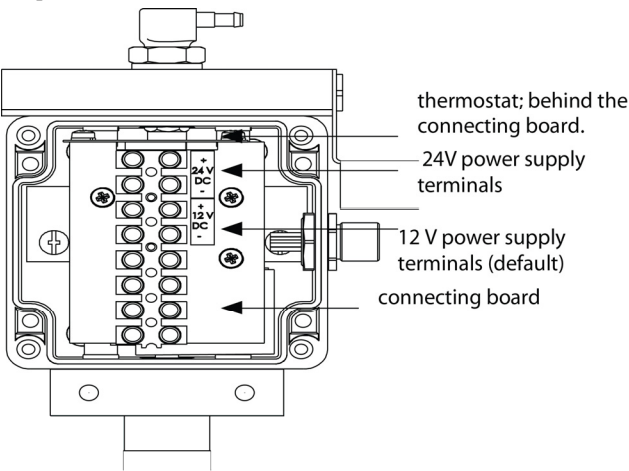


Figure 3 Connecting Board

CHANGING THE POWER SUPPLY WIRING

To change the power supply wiring from 12 V to 24 V:

- 1. Open the electrical unit enclosure.
- 2. Disconnect white and brown wires from the + terminal (12 V).
- 3. Disconnect blue and black wires from the - terminal (12 V).
- 4. Connect the white and brown wires to + terminal (24 V).
- 5. Connect the blue and black wires to - terminal (24 V).

DIMENSIONS

All dimensions in mm.

