

Installation and Maintenance

SPH20 Static Pressure Head



- 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.

ASSEMBLAGE

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

MOUNTING

Select a location where no nearby objects will effect the pressure field. A suitable location would be an open place with no buildings or trees in immediate surroundings. Attach the SPH20 to a horizontal pole using a support flange. 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! For achieving the best operation conditions, it is recommended to have distance of 1.0 m or more between the SPH20 and the vertical pole.

- Attach the SPH20 to the pole by using two fixing screws (M6) as indicated in Figure 1.

The SPH20 can be removed by loosening the two screws.

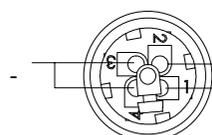
ELECTRICAL CONNECTIONS

As shipped from factory, the power supply default is 12 V.

NOTE If the 24 V power supply is used, open the cover of the electrical unit enclosure and change the power supply wirings, see *Changing the power supply wirings*.

Power supply wiring of the SPH20 is done via the quick connector packed separately. Wire and connect the supply voltage **according to the installation instructions included in the quick connector package**. Connection is presented below. After wiring, plug in the quick connector (see Figure 1).

QUICK CONNECTOR WIRING



input (+): terminals 1 and 2
input (-): terminals 3 and 4
Connect always both inputs !

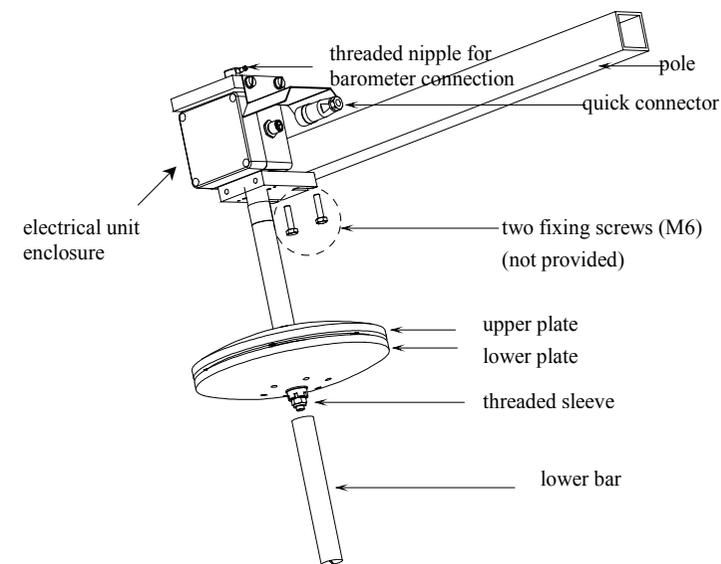


Figure 1. Installation of SPH20.

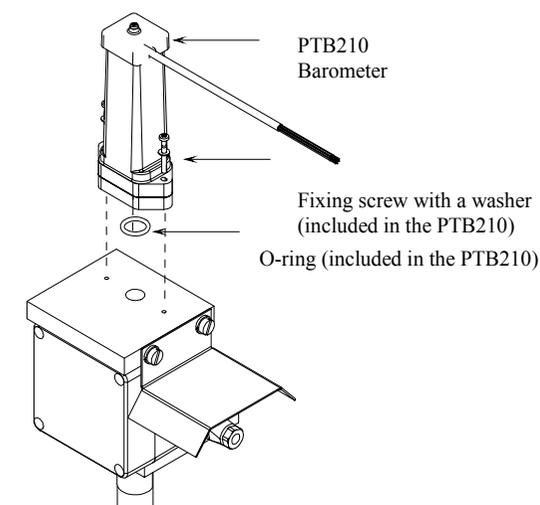


Figure 2. Connection of the PTB210.

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) !

CONNECTION TO THE VAISALA PTB 210 BAROMETER (Figure 2)

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

CONNECTION TO THE OTHER BAROMETERS

Connect the barometer to the threaded nipple (Figure 1) by using a plastic tube with an inner diameter of 4 mm.

MAINTENANCE

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

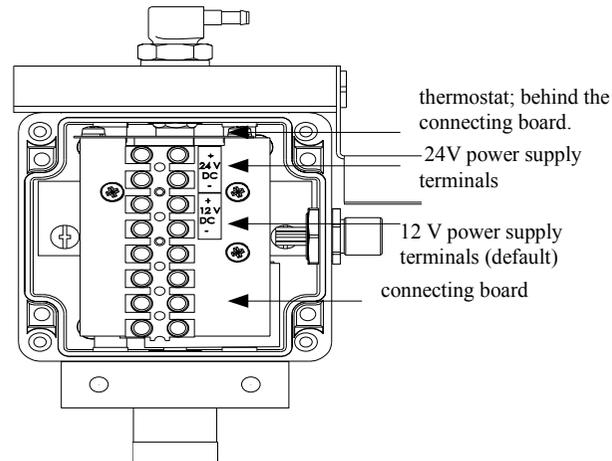


Figure 3. Connecting board.

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 (in mm)

