



SOLBEAT

Heat Metering Device



SOLBEAT is an advanced microprocessor based metering device for recording the amount of thermal energy fed to the consumer via heating or cooling systems such as solar thermal systems, heat exchangers, boilers, chilled water and general HVAC systems. The thermal energy measurement is based on the flow volume rates of the heat transfer fluid along with temperature differences between the inlet and outlet of the heating system.

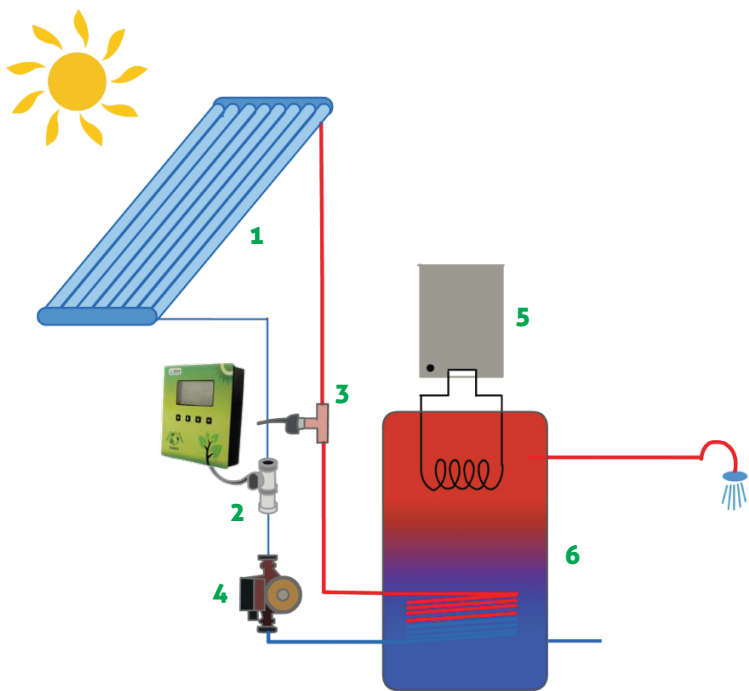
A large graphical display screen shows the instantaneous thermal energy in KW, flow and temperature values and the system status.

SOLBEAT also logs energy, total flow and temperature data which provide the operations manager with a complete performance analysis of the system.

In solar heating systems, SOLBEAT displays and logs the amount of CO2 emissions saved which can be used towards Carbon Credits.

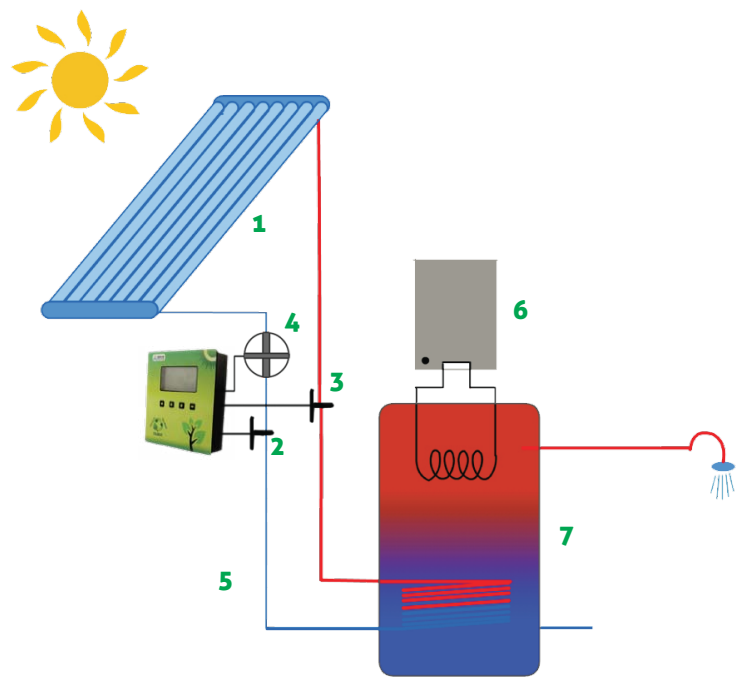


The below drawing illustrates how Solbeat can be used with Grundfos Flow Sensor.



1. Solar Thermal Collector
2. Grundfos Direct Sensor 1 (Cold Water Line)
3. Grundfos Direct Sensor 2 (Hot Water Line)
4. Circulating Pump
5. Optional Back up heater
6. Hot Water Supply Tank

The below drawing illustrates how Solbeat can be used with Pulse Output Flow Sensor.



1. Solar Thermal Collector
2. Temperature Sensor (Cold Water Line)
3. Temperature Sensor (Hot Water Line)
4. Flow Sensor
5. Circulating Pump
6. Optional Backup Heater
7. Hot Water Supply Tank



FEATURES

- Measures both cumulative heating and cooling heat quantities.
- Grundfos DirectSensor™ inputs (VFS & RPS) for Flow & Temperature measurement.
- Option to connect a Pulse Input type Flow sensor.
- Optional 2 or 3 wire RTD sensor inputs for better temperature measurement accuracy.
- Flow ,Temperature High and Low fault indications through a relay output.
- Input for detecting an external heating source.
- Data Logging in Excel Format on a MiniSD card.
- Inbuilt RTC with Battery Backup.
- System visualization through the large graphic display.
- Easy user Interface with a 4 Key Membrane Keypad.
- Solbeat can also be connected to a BMS system via MODBUS communication.
- All user settings accessed through a password protected menu.
- SMPS based power supply to accommodate a wide range in input voltage
- Wall or Panel Mountable Enclosure.

Energy Calculation Formula

Solbeat calculates energy using the following formula

$$E = F * Q * (T2 - T1)$$

- E is the energy in Kilo Watts
- F is the flow in Litres per Minute , measured from Grundfos Direct Sensor 1 (Cold Water Line)
- T2 is the temperature of the Hot water Line
- T1 is the temperature of the Cold water Line
- Q is the Thermal coefficient of Water

Grundfos Flow sensor specifications

Grundfos DirectSensor™ VFS sensors are available for the flow ranges of 1-12, 1.3-20, 2-40, 5-100, 10-200 and 20-400 l/min with accuracy of $\pm 1.5\%$ FS and various pipe diameters.

Other Flow sensors can also be supplied for higher flow rate requirement.

For further details about the product including pricing & ordering information, please contact
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www.denvik.in