

Zone Measurements – Fan Coils, 2-pipe or 4-pipe

Fan coil units are often used for institutional and educational heating and cooling applications. They often consist of hot water and chilled water coils and an air circulation fan. If they are overheating or overcooling a space, are running when there is no load, i.e., during unoccupied hours, or operating incorrectly, they will use excessive energy. Measuring the fan status the zone temperature, and inlet and outlet air temperatures will provide a lot of information that can be used to determine if they're working properly.

QUESTIONS:

1. Is this a 2-pipe or 4-pipe fan coil? If 4-pipe, use two sensors for points 2 and 3, otherwise use only one sensor for each.
2. Is outside air utilized, either fixed or via an economizer? If yes, use point 5.
3. Does the unit have an enthalpy economizer? If yes, use point 6.
4. How large is the mixed air section? If a larger size, it may be beneficial to use more than one temperature sensor for point 7.

Item Description	Qty	Part Number(s)
1. Ambient temperature and humidity	1	See the Ambient Temperature and Humidity equipment listing.
2. Pipe in temperature	1 or 2	S-TMB-Mxxx
3. Pipe out temperature	1 or 2	S-TMB-Mxxx
4. Fan coil current	1	CTS-xxxx-yyy and S-FS-TRMSA module
5. Return air temperature	1	S-TMB-Mxxx (or combine with sensor used for point 6)
6. Return air RH	1	S-THB-Mxxx
7. Mixed Air temperature	1 to 4	S-TMB-Mxxx

Zone Measurement Notes:

- S-TMB-Mxxx refers to Temperature Smart Sensor where “xxx” indicates sensor cable length.
- CTS-xxxx-yyy refers to Current Transformers where “xxxx” indicates opening size (0750 = 0.75”, 1250 = 1.25”, and 2000 = 2.0”) and “yyy” indicates rated amperage.
- S-THB-Mxxx refers to the Temperature and Relative Humidity Smart Sensor where “xxx” indicates sensor cable length.
- Additional steps may need to be taken to ensure that your data logger is not exposed to humidity, temperature, or condensation conditions outside of its operating parameters.

Basic Logger Equipment

The list below consists of the basic equipment that you'll need to do any data logging:

- Energy Logger Pro,
- Serial cable to program the logger and download data, and
- AC power adapters to keep the logger plugged in to an AC outlet, and
- HOBOWare software.

Item Description	Qty	Part Number(s)
Energy Logger Pro	1	H22-001
Serial interface cable	1	CABLE-PC-3.5
AC Power Adapter	1	PAC-1 or ONS-AC-POWER-USA
HOBOWare Pro version 2.2 or Higher	1	BHW-PC or BHW-MAC

NOTE: Reference materials for all equipment used in monitoring applications should be reviewed to ensure proper use and safety precautions are observed.