

QUICK STARTUP GUIDE



Electrical and compressed Gas Hazards

Safety

The SENTINEL trace moisture Analyzer delivered to you has been tested for safety, calibrated and approved as shipped from the factory. Note the following precautions:

CAUTION

Do not modify the unit. Improper modification can damage the product or lead to malfunction.

CAUTION

The sensor probe body does not have user serviceable parts inside, and is not designed to be opened. Opening the sensor probe body will void the warranty.

ESD Protection

Electrostatic Discharge (ESD) can cause immediate or latent damage to electronic circuits. Edgetech Instruments products are adequately protected against ESD for their intended use. It is possible to damage the product, however, by delivering electrostatic discharges when touching, removing, or inserting any objects inside the equipment housing.

1. To make sure you are not delivering high static voltages yourself when handling the replaceable sensor tip PCB
2. Handle ESD sensitive components on a properly grounded and protected ESD workbench.
3. When an ESD workbench is not available, ground yourself to the equipment chassis with a wrist strap and a resistive connection cord.
4. If you are unable to take either of the above precautions, touch a conductive part of the equipment chassis with your other hand before touching ESD sensitive components.

Always hold component boards by the edges and avoid touching the component contacts.

SENTINEL

The Sentinel unit is a “Plug & Play” trace moisture measurement system. It uses a single multi sense probe that reads humidity, temperature and pressure from this it calculates trace moisture concentration in PPMv or grlb It is supplied completely assembled, pre-programmed and has been fully function tested and calibrated. The unit requires only the multi sense probe to be inserted into the process to be measured. The display module mounted and power connection made to a local outlet. The display can be set with a wide range of display values that can be selected at time of order or reset on site using the RS232 menu. Temperature in C or F, %RH, Dewpoint in C or F, Pressure in Bar, PSIA, mBar or inHg. Moisture content in PPMv or grlb

Mounting Sentinel

The Sentinel unit can be configured as a Diffusion mount, Flow through sample chamber or pipe flange insertion mount.

When the sensor is first introduced into the process it will need a period of time for the materials to dry down before the sensor reads PPMv moisture correctly.

During installation process the probe will have been exposed to ambient conditions. The tip PCB will have absorbed some moisture.

Once installed in the process any entrained moisture will be drawn off by the process gas and the unit will quickly reach equilibrium.

Allow the unit to stabilize after power up and to equilibrate at the sample conditions

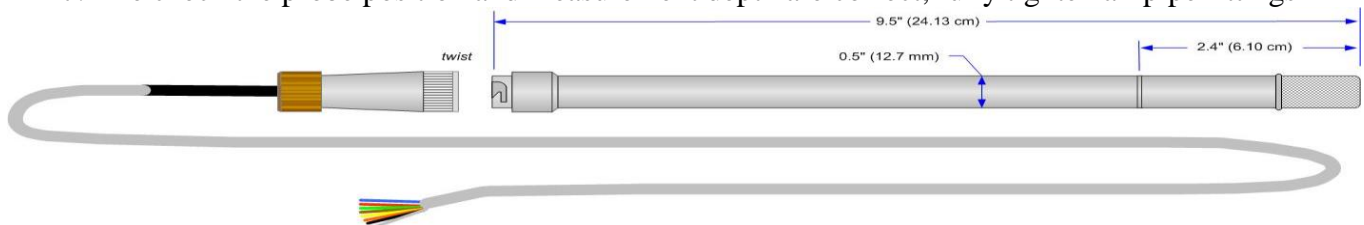
WHEN USING SENSOR with CABLE.



Before mounting the sensor probe body into any system ensure the system is safe to work on. Depressurised and verify that all power to connections are isolated in the Off position.

Installation should be carried out by trained technicians and following local safety protocols

1. Select sensor insertion position, ensure safe clearance around the probe to avoid damage
2. Ensure there is adequate cable length from the probe cable to make connection to customer system
3. Check all pipe fittings and pipe boss dry assembly for fit up
(Sensor is standard with 1/2" NPT fitting, option 3/4" NPT, others are available on request)
4. Insert pipe fittings using suitable sealing tape or sealing compound
Mount the sensor in position to measure the desired gas.
5. Ensure the sensor is inserted to an adequate depth to obtain a suitable flow of the sample gas around the tip sensor. Insertion depth; Max 6" (15cm) Min 2.4" (6cm) compression fitting should avoid the threaded tip cover joint area
6. Tighten the swage fitting till it grips the probe in place but at this stage do not apply force.
7. Re check the probe position and measurement depth are correct, fully tighten all pipe fittings



Do not apply Power until all wiring is completed and checked.

Using "Compression" type fitting (flow through or pipe flange mount)

1. Insure the compression fitting swage point are above the 2.4" minimum insertion or below the 6" maximum insertion points. If the sensor body is clamped above or below these points damage can occur to the internal screw threads.
2. How to install compression fittings. Insert the Sentinel sensor to your selected insertion depth, tighten by hand until the nut is finger tight. Further tighten the nut until the probe will not turn by hand and cannot be moved axially in the fitting.

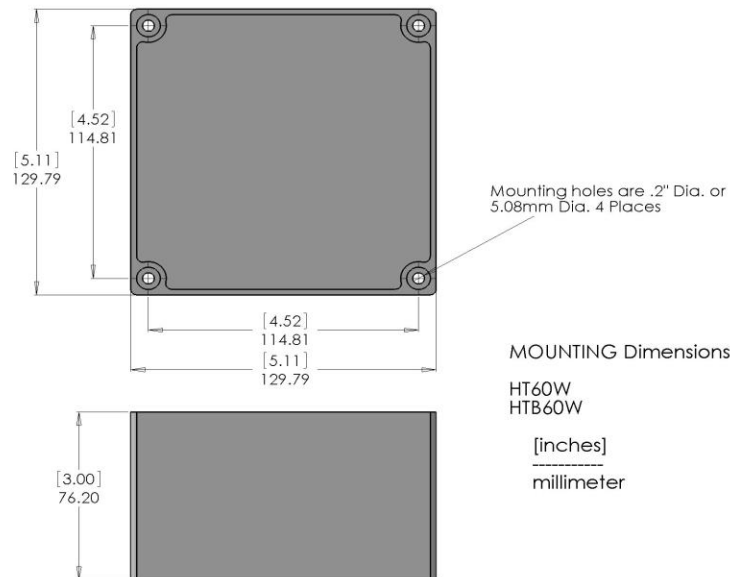
Mark the nut at the at the 6-0-clock position

While holding the fitting body steady, tighten the nut one and one quarter turns till the nut is in the 9-0-clock position.

Compression fittings may be disassembled and reassembled many times. See Sentinel Manual

CONTROL & DISPLAY MODULE

1. **Note the sensor connection cable is 6ft (1.52m) long so the display must be mounted within 6ft of the probe insertion point.**
2. **Remove the cover. The control box can be mounted with 4 screws installed through the same holes as the cover mounting screws**



1. Mount the Sensor as detailed in page 1, section 1 through 6.
2. Connect cable from Sensor to Electronics Unit
Unit is prewired from factory. However the sensor can be disconnected for ease of installation. The probe cable is 6ft (2m) in length so ensure there is sufficient length between the sensor insertion and the display module.
3. When powered up the Sentinel display will show on the top line PPMv values. On the second line of the display will scroll to display, Dew point, Temperature and Pressure.
Standard configuration is with Pressure in PSIA or mBar and Temperature in C.
The display can be set with a wide range of display values that can be selected at time of order or reset on site using the RS232 menu.
Temperature in C or F, %RH, Dewpoint in C or F, Pressure in Bar, PSIA, mBar or inHg.
Moisture content in PPMv or grlb
4. There are 2 analogue outputs connections available (0-10V, 0-5V & 4-20mA) 4-20mA is default
Output 1 PPMv scaled 4mA = 125PPMv and 20mA = 15,000PPMv
Output 2 DP °C scaled 4mA = -40 °C and 20mA = 60 °C

5. There are 2 remote Alarm connections available the factory pre-set values for PPMv values
 Alarm 1 Low PPMv range Alarms at 5000PPMv and resets at 4500PPMv
 Alarm 2 High PPMv range Alarms at 10,000PPMv and resets at 9,500PPMv
6. Customers connections can be made as detailed in table below
 Alarm values can be defined with order or
 Alarm relays can be programed on site via RS232 (see manual)

TERMINAL TB1	ITEM
1,2	ALARM 2
3,4	ALARM 1
5	CHASSIS GROUND
6	ANALOG + OUTPUT 2
7	ANALOG + OUTPUT 1
8	ANALOG OUTPUT RET.
9	<i>FOR FACTORY USE</i>
10	<i>FOR FACTORY USE</i>
11	RS232 RETURN
12	DC POWER IN (+)
13	DC POWER IN (-)
14	RS232 TX
15	RS232 RX

**DC power supply. Specifications are: 24VDC ± 10%, 1A maximum.
 Standard units are supplied with universal VAC power adaptor**

See Attached TB1 Pin Connector Guide. Note Pin Nine is used as terminal location guide

POWER

The Sentinel unit comes with as standard with a pre-wired universal power adaptor which requires a local 110/220V 50/60Hz outlet. The power adaptor is provided with a US style two power pin plug in connections. The power cable length is 5ft (1.52m)

Notes:

Connect only the Outputs desired. See the Sentinel Manual for details.

Double check that the 24VDC power supply is correctly connected terminals 12 & 13

Do not apply Power until all wiring is completed. Once the unit is powered up allow 40sec for the display to initialize.