

SENTRY™

OPERATORS MANUAL



Rev. D April 2016

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QUICK STARTUP GUIDE



Electrical and compressed Gas Hazards

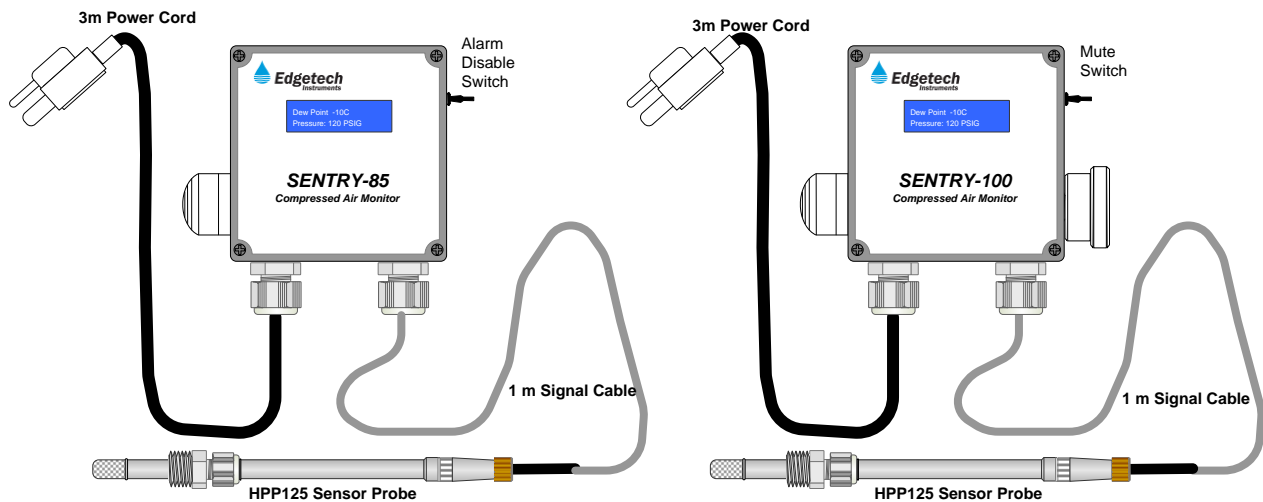
The SENTRY is designed to detect low pressure or high dew point conditions within compressed air or inert gas systems. It consists of a display control module and a *SMART, Multi-Sense Probe*. Using the supplied ½ inch Male NPT pipe fitting, the probe is inserted directly within the compressed air system header, accumulator tank, or at the point of use. The SENTRY system continuously monitors both pressure and dew point and provides a warning system to alert an operator should there be a pressure loss or dryer failure.

The Sentry system comes fully prewired and requires only installation of the display control module box and the probe. A power connection needs to be available within 3m (10ft).

There are two models available:

SENTRY-85: Combined strobe light and 85dB Audible Alarm.

SENTRY-100: Separate strobe light and 100dB Audible Alarm.



Sentry 85 utilizes an Alarm disable switch which will deactivate both the Audible and visual alarms.

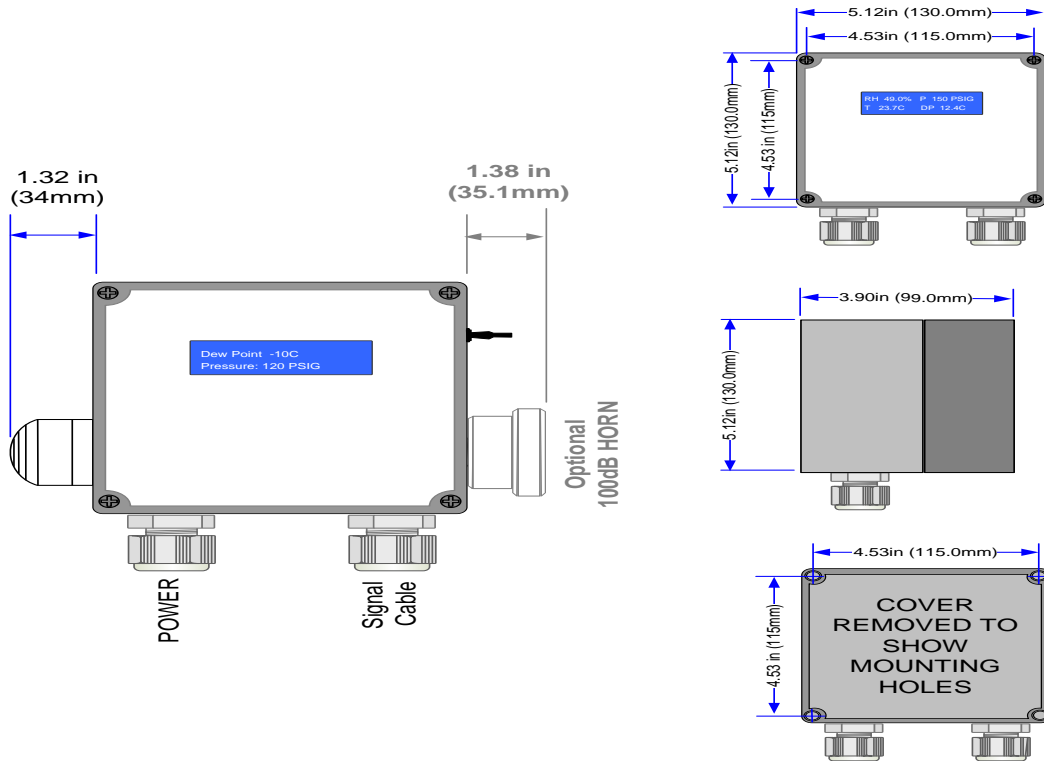
Caution if the switch is left in the deactivate position there will be no alarm function.

Sentry 100 utilizes an Alarm mute switch that will silence the Audible alarm.

Caution if the switch is left in the mute position only the visual alarm will be active.

Mounting the Display and control box.

Both the Sentry 85 and Sentry 100 have the same mounting process.



1. Note the probe connection cable is 3ft long so the display must be mounted within 3ft 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.



Electrical and compressed Gas Safety Hazards

The Sentry system 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 transmitter body does not have user serviceable parts inside, and is not designed to be opened. Opening the transmitter 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.
- 5 **Always hold component boards by the edges and avoid touching the component contacts.**

Using “Swagelok” fitting

1. How to install Swagelok fittings. Insert the HP125 probe to your selected insertion depth. *Avoid the area adjacent to and below the threaded tip cover joint area*
2. 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.
 - a. Mark the nut at the at the 6-0-clock position
 - b. While holding the fitting body steady, tighten the nut one and one quarter turns till the nut is in the 9-0-clock position.
 - c. Swagelok fittings may be disassembled and reassembled many times. See Sentry Manual

Mounting the PROBE with CABLE.



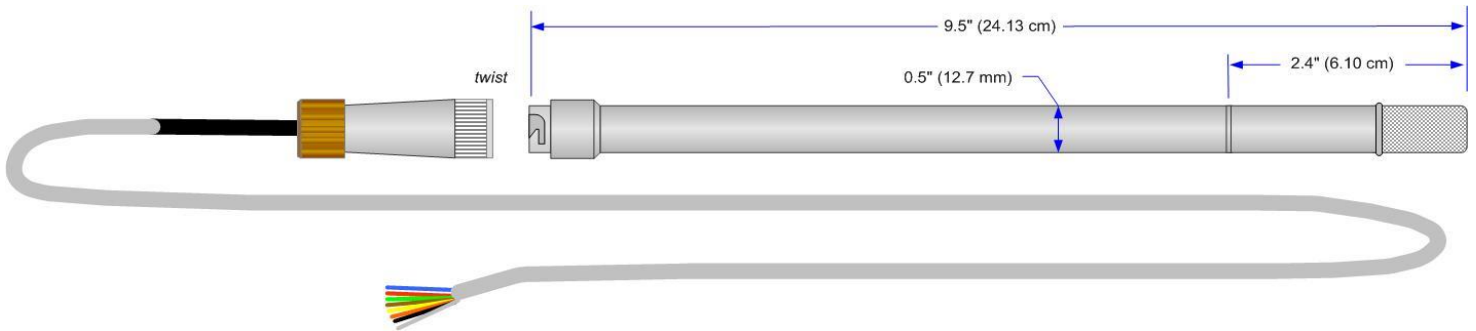
Before mounting the probe into any system ensure the system is safe to work on. Depressurize and verify that all the power connections are isolated in the OFF position.

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

1. Ensure there is adequate cable length from the probe cable to make connection to the control box.
2. Select Probe insertion position, ensure safe clearance around the probe to avoid damage.
3. Check all pipe fittings and pipe boss dry assembly for fit up. Probe is standard with ½” NPT fitting, optional ¾” NPT.
4. Insert pipe fittings using suitable sealing tape or sealing compound. Mount the Probe in position to measure the desired gas.

5. Ensure the Probe is inserted to an adequate depth to obtain a good flow of the sample gas around the tip sensor. Insertion depth: Max 6" (15cm) Min 2.4" (6cm). *The 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
8. Slowly pressurize the system checking for any leaks. Do not quickly apply pressure. If the probe is incorrectly fitted it will be projected out of the fitting and can cause injury or damage.

Do not apply Power until all wiring is completed and checked



The Sentry unit is a standalone system and can now be powered up. If working correctly 3 values will be displayed on the read out.

Additional customer connections

1. Two 4-20mA Analog Outputs: Pressure and Dew Point.
2. RS-232 Serial Interface.
3. One user accessible relay for remote low pressure/ high dew point alarm.

TERMINAL TB1	ITEM
1, 2	ALARM Relay
6	4-20mA OUTPUT Pressure
7	4-20mA OUTPUT Dew Point
8	4-20mA COM.
11	RS232 RETURN
14	RS232 TX
15	RS232 RX

Notes:

Connect only the outputs desired.

Do not apply Power until all wiring is completed.

When the unit is powered up the display will show the Alarm set point (Pressure and Dew point).

Default factory set Alarm points are Pressure 90PSIG and DewPoint -20F.

When the unit is powered up the display will show the 4-20mA range settings for optional remote connections.

Default factory range is Pressure 0 to 400PSIG and Dew point -40 to 140F.

The Dew Point value is displayed as Dew Point at atmospheric pressure. The system has imbedded intelligence that automatically corrects the DewPoint display so it always corrected to the system pressure.

The pressure is displayed as PSIG.

The default display units are pressure in PSIG and DewPoint and temperature in degree F.



**Always turn the power off before disconnecting
or reconnecting the probe**

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2.0 EDGETECH INSTRUMENTS INC.'S COMMITMENT TO QUALITY

Thank you for purchasing one of our products. At Edgetech Instruments, it is our policy to provide cost-effective products and support services that meet or exceed your requirements, to deliver them on time, and to continuously look for ways to improve both. We all take great pride in the products which we manufacture 100% in the USA.

We want you to be entirely satisfied with your instrument. The information contained in this manual will get you started. It tells you what you need to get your equipment up and running, and introduces its many features.

We always enjoy hearing from the people who use our products. Your experience with our products is an invaluable source of information that we can use to continuously improve what we manufacture. We encourage you to contact or visit us to discuss any issues whatsoever that relate to our products or your application.

The Employees of Edgetech Instruments Inc.

3.0 INTRODUCTION

3.1 GENERAL DESCRIPTION

The Model Sentry Compressed air alarm system is, designed to continuously measure the status of your compressed air system. The instrument is powered universal power supply. It uses a RH polymer and pressure sensors to determine the water vapor concentration in gas mixtures together with system pressure and temperature measurements. Outputs include 4 to 20 mA (Factory default settings unless specified otherwise when ordering), Two sets of analog outputs are supplied. Additional outputs include an RS-232C serial port, as well as electrically isolated relay contacts. The system is equipped with both visual and audible alarms to ensure that operators are quickly notified if there is a problem with the compressed air system.

3.2 STANDARD FACTORY CONFIGURATIONS

The Sentry is designed with a Standard configuration, as shown here.

In addition, you can consult the Factory for special configurations if needed.

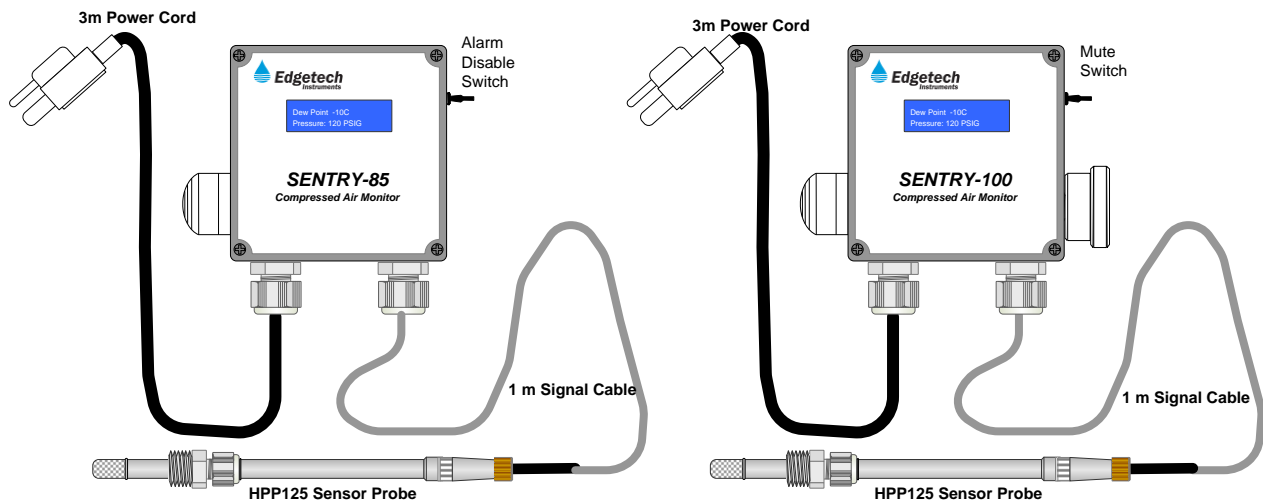
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There are two models available:

SENTRY-85: Combined strobe light and 85dB Audible Alarm.

SENTRY-100: Separate strobe light and 100dB Audible Alarm.



3.2.1 FACTORY DEFAULT OUTPUT RANGES

These standard output measurement ranges apply to all instruments unless specified otherwise when ordering. They correspond to 4 to 20 mA. There are 2 analogue outputs the factory defaults at selected. Analogue output 1 Dew Point. Analogue output 2 is set for Pressure or %RH depending on probe tip selection. Default factory set Alarm points are Pressure 90PSIG and DewPoint -20F. When the unit is powered up the display will show the 4-20mA range settings for optional remote connections.

Default factory range is Pressure 0 to 400PSIG and Dew point -40 to 140F. The Dew Point value is displayed as Dew Point at atmospheric pressure. The system has imbedded intelligence that automatically corrects the DewPoint display so it always corrected to the system pressure.

The pressure is displayed as PSIG.

The default display units are pressure in PSIG and DewPoint and temperature in degree F.

Range	Dew Point:	-40°C to 90°C (-40°F to 194°F)
	Pressure	0 to 400PSIG
	% RH	0 to 99.9%
	Air Temp:	-40°C to 125°C

3.3 OPTIONS AND ACCESSORIES

The Sentry is designed to accept a small number of options and accessories to expand its capabilities.

LDP - Low Dew Point Tip sensor to -60C DP.

CAM - Compressed Air Module to allow easy and safe access to the probe without the need to turn off or depressurize the system to access the probe.

3/4NPT- Large pipe fitting adaptor ½ to ¾ NPT to replace probes that used a 3/4NPT penetration.

4.0 INSTALLATION

4.1 PLACEMENT OF INSTRUMENT

If possible, locate the Sentry in a clean area where the air to be measured is allowed to freely move around the enclosure. Optimal performance of the instrument is experienced when air is gently moving over sensor, providing a representative sample for measurement. Choose a location where the display may be conveniently observed. Depending on the location selected, it may be convenient to wire the instrument prior to mounting.

4.2 MOUNTING

4.2.1 WALL MOUNT

Instruments with the plastic wall mount housing are mounted to a flat surface as follows:

1. Remove the front cover. Using a flat screwdriver, carefully unscrew the four slotted plastic screws.
2. Mounting screws (not provided) are inserted in the same holes as the cover screws. They must have a head diameter that is small enough to fit inside the clearance holes, but large enough to press against the collar located at the bottom of the holes. No. 8 pan head or round head screws are recommended.
3. Reinstall the front cover. Do not over-tighten the cover mounting screws.

4.2.3 Mounting the PROBE with CABLE.



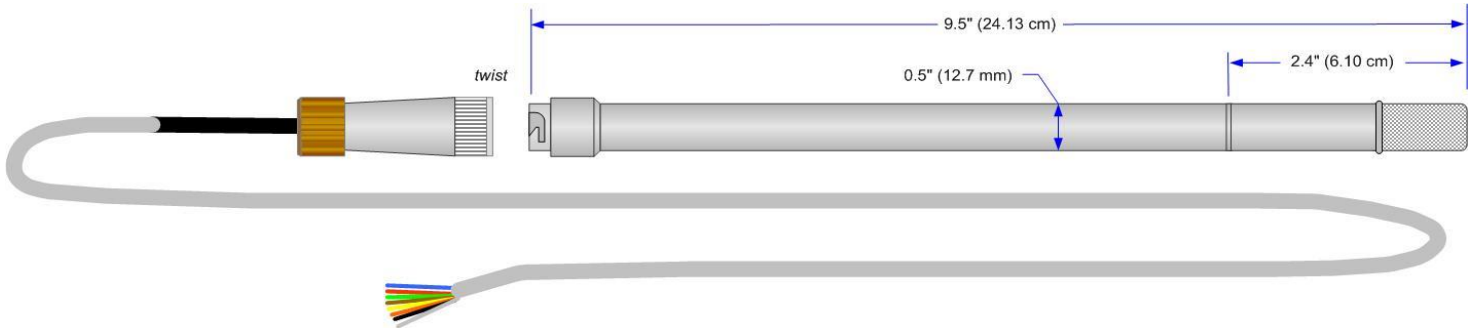
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Do not apply Power until all wiring is completed and checked



The Sentry unit is a standalone system and can now be powered up. If working correctly 3 values will be displayed on the read out.

4.3 ELECTRICAL WIRING

4.3.1 POWER SUPPLY

The Sentry systems is delivered from the factory pre wired for both the HP125 Probe and power. Simply install the probe to the pin connector and close the locking twist collar.

The power supply is a universal power supply. All that is required is to have an outlet within 10ft (3M) of the unit as this is the length of the standard power cord.

DO NOT APPLY POWER TO THE UNIT UNTIL THE INSTALLATION HAS BEEN COMPLETED.

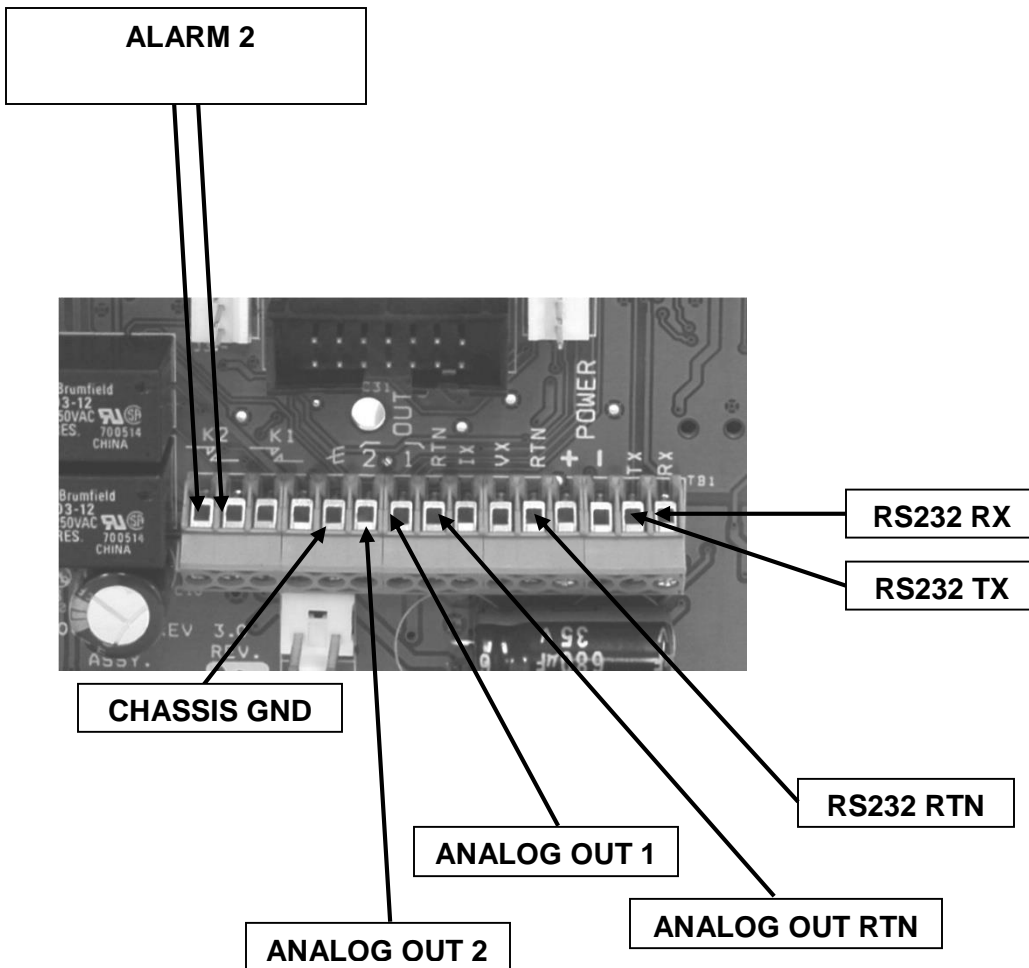
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Additional customer connections

1. Two 4-20mA Analog Outputs: Pressure and Dew Point.
2. RS-232 Serial Interface.
3. One user accessible relay for remote low pressure/ high dew point alarm.
- 4.

TERMINAL TB1	ITEM
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8	4-20mA COM.
11	RS232 RETURN
14	RS232 TX
15	RS232 RX

Figure 4-2 Terminal Strip Wiring



4.3.2 INPUT/OUTPUT WIRING

Wire the Analog Outputs as required. See 4.1 above for information on output selection.

Connect the RS-232 Serial Output if desired. Only 2 wires are required if the output is needed for transmitting information only. A third wire is added for bi-directional communications with the serial port.

Connect the relays as needed. Used as upper or lower set point Alarm Relays. See Section 5.4.3 for further information.

5.0 OPERATION

5.1 USING THE RS-232C SERIAL PORT TO REPROGRAM YOUR SETTINGS

Note: If the Factory Default settings are satisfactory, there is no reason to perform any programming.

The Sentry series air header system alarm is very versatile. Through the Serial Port, the user may view current settings, change factory set parameters, or receive an automatic update of system measurements and alarm status. Factory Set parameters include:

- Serial number of the Smart Sensor Tip
- Version Software
- Pressure set points: alarm engaged, disengaged
- Dew Point set points: alarm engaged, disengaged
- Units for Dew Point: degrees F or C
- 4-20mA output Pressure: Range Setting
- 4-20mA output Dew Point: Range Setting

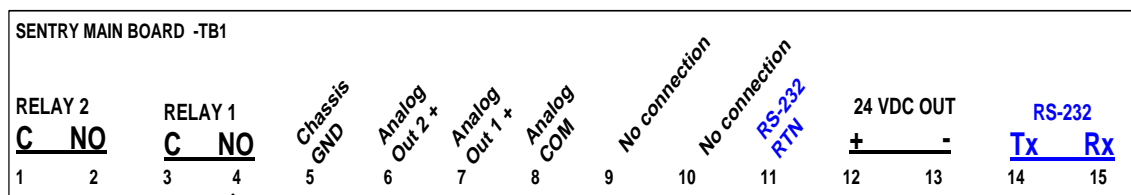
5.2 SERIAL PORT SETUP

You will need a serial cable with a female DB-9 connector on one end, which will mate to the serial port connector on your PC. ETI offers an RS-232 cable in our accessories. If you do not have a serial port on your PC, jump to the next page “**PC with USB port only**”. The open end of your RS-232 Serial cable will need the three associated wires for Transmit / Receive / Return identified and exposed. These wires are to be connected to Terminal Strip TB1 on the Sentry circuit board as shown below:

Table 5-1 Serial Cable Wiring

Female DB-9 SERIAL CONNECTOR	TB1 TERMINAL STRIP
Pin 2	TX – Term. 14
Pin 3	RX – Term 15
Pin 5	RTN – Term. 11

Sentry terminal block:



5.3 PC with USB Port only:

If your PC does not have an available serial port, you can use the ETI accessory: **RSCBL (RS232 cable)** plus the USB (**USB to SERIAL Converter**). The ETI kit provides the 3 stripped RS232 wires, labeled and the wire ends properly tinned- to be connected to the Sentry plus a USB converter jack to plug into your PC USB port.

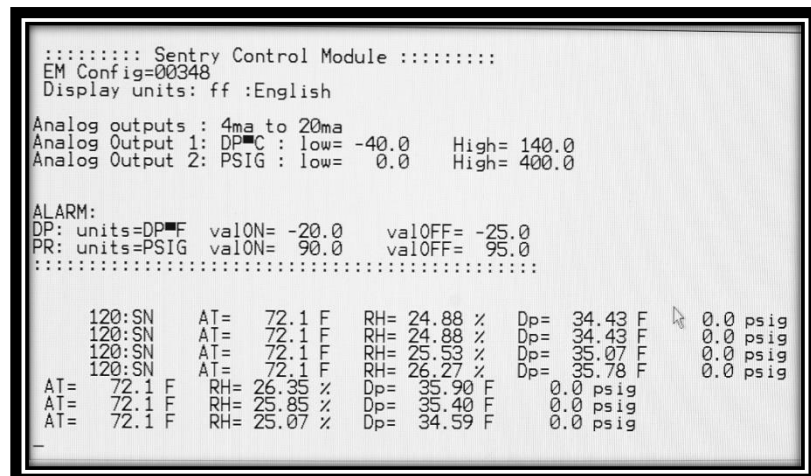
Using a terminal emulation program, such as HyperTerminal or TERA TERM, set your PC Com Port to:

```
BAUD:          19200
BITS           8
STOP BITS      1
PARITY         NONE
FLOW CONTROL   NONE
```

After connecting the serial cable, apply power to the Sentry. A window appears showing warm-up and self-test data. Also included is Identification information including probe serial number and version of software. If the sensor probe or the smart sensor tip is not installed, a warning message will display. In this case, power down the unit, install the tip/ probe, and re-power the Sentry.

After the self-checking and start-up period, the window will display information similar to the photo shown on next page. This is the default condition. It indicates the current settings:

- Degrees F for Dew Point
- Imperial Display
- 4-20mA output for Dew Point
- 4-20mA output for Pressure
- DewPoint Alarm Settings: F or C, set point on dewpoint rise and setpoint on dew point restore
- Pressure Alarm Settings: PSIG, setpoint on pressure loss and setpoint on dew restore



```
:::::::::: Sentry Control Module ::::::::::::
EM Config=00348
Display units: ff :English

Analog outputs : 4ma to 20ma
Analog Output 1: DP=C : low= -40.0   High= 140.0
Analog Output 2: PSIG : low=  0.0    High= 400.0

ALARM:
DP: units=DP=F  valON= -20.0   valOFF= -25.0
PR: units=PSIG valON=  90.0    valOFF=  95.0
::::::::::

120:SN  AT= 72.1 F  RH= 24.88 %  Dp= 34.43 F  0.0 psig
120:SN  AT= 72.1 F  RH= 24.88 %  Dp= 34.43 F  0.0 psig
120:SN  AT= 72.1 F  RH= 25.53 %  Dp= 35.07 F  0.0 psig
120:SN  AT= 72.1 F  RH= 26.27 %  Dp= 35.78 F  0.0 psig
AT= 72.1 F  RH= 26.35 %  Dp= 35.90 F  0.0 psig
AT= 72.1 F  RH= 25.85 %  Dp= 35.40 F  0.0 psig
AT= 72.1 F  RH= 25.07 %  Dp= 34.59 F  0.0 psig
```

And then it begins to display the Sensor Serial Number followed by current measured values in a text string, tab delimited.

5.4 PROGRAMMING THE SENTRY

If you do not see a window similar to the one shown above, you will not be able to program this instrument.

Check your terminal emulation program, the power supply, and check the interconnecting cable wiring as shown in Table 5 -1 above.

NOTE: WHEN PROGRAMMING ALPHABETIC CHARACTERS, USE UPPER CASE ONLY.

To begin reprogramming, press the ESCape key on your computer keyboard. The window will change to that shown below. To select the desired parameter, simply select the first letter as shown.

You will find it quite intuitive once you try it. Several programming examples will be shown here.

5.4.1 Changing Between Metric and Imperial values

Units of Measurement:

To change the units of measurement from ENGLISH (Imperial) which is standard (**DegF, PSI**) to metric (**DegC, Bar**)- enter "L".

Enter "2" for English (imperial) or "1" for Metric as prompted. The entry will be recognized and then prompt to Enter or "X" to exit.

```
L)cdUnits  S)etAnalog  sentryAlar(M)  E(X)IT :L
Display units : >>> Metric <<<
1) METRIC display units (DegC, Bar, mbar )
2) ENGLISH display units (DegF, psi, mbar )
Enter 1) or 2) e(X)it: 2
Display units : >>> English <<<
1) METRIC display units (DegC, Bar, mbar )
2) ENGLISH display units (DegF, psi, mbar )
Enter 1) or 2) e(X)it: _
```

5.4.2 Changing 4-20mA outputs

4-20mA Outputs: There are (2) 4-20mA outputs. These are factory set to represent Pressure and DewPoint. To set the 4-20mA output ranges enter "S". Enter "1" for change output 1. Or enter "2" to change output 2.

To set Output 1, enter "1". You will be prompted to enter which parameter to represent output 1. In the example above, output 1 is set to represent DewPoint in degrees F by entering "5". Next you are prompted to enter the low value. In the example above, "-40" was entered to represent 4 mA.

Then you are prompted to enter the high value. In the example above, "140" was entered to represent 20mA. The entry will be recognized and then prompt to enter "S" to save new settings or "X" to exit.

```
L)cdUnits  S)etAnalog  sentryAlar(M)  E(X)IT :S
Outputs are 4-20mA
Set analog output 1
Set analog output 2
1 or 2 ? 1
  1. AT C
  2. AT F
  3. %RH
  4. DP C
  5. DP F
  6. Bar
  7. PSIG
4-20mA  OUT1 sel? 5
DP F Limits: MIN= -76.0      MAX= 203.0
Enter low value: -40
Enter high value: 140
(SP) (Ss)ave e(x)it :
```

To set Output 2, Enter "2"

```
Set analog output 1
Set analog output 2
1 or 2 ? 2

1. AT=C
2. AT=F
3. ZRH
4. DP=C
5. DP=F
6. Bar
7. PSIG
4-20mA OUT2 sel? 7
PSIG Limits: MIN= 0.0 MAX= 441.0
Enter low value: 0
Enter high value: 400
(SP) (Ss)ave e(xX)it :s

Out1: DP=F: -40.0 140.0
Out2: PSIG: 0.0 400.0

L)cdUnits S)etAnalog sentryAlar(M) E(X)IT :
```

In the example, Output 2 is set to represent pressure by entering "7" when prompted. Pressure is represented in the Sentry as PSIG units. You will be prompted to enter a psig value for the low setting. In the example, 4 mA is set to "0" psig and 20mA is set to "400" psig.

```
Set analog output 1
Set analog output 2
1 or 2 ? 2

1. AT=C
2. AT=F
3. ZRH
4. DP=C
5. DP=F
6. Bar
7. PSIG
4-20mA OUT2 sel? 7
PSIG Limits: MIN= 0.0 MAX= 441.0
Enter low value: 0
Enter high value: 400
(SP) (Ss)ave e(xX)it :s

Out1: DP=F: -40.0 140.0
Out2: PSIG: 0.0 400.0

L)cdUnits S)etAnalog sentryAlar(M) E(X)IT :
```

5.4.3 RELAY OUTPUTS

Two relays, R1 and R2, are built into the Sentry

There are (2) **ALARM LOGIC PARAMETERS**. There are (2) Alarm Relays. One relay is reserved for factory use, the second is a duplicate logic, but is available to the customer. The Relay Alarms are factory set to represent Pressure Loss and High DewPoint. The logic that turns the alarm on, is either pressure loss or high dew point. Both relays follow the same logic. For each logic point (pressure and dew point) a **trip point** and a **reset to normal operation point** is set.

For loss of pressure, the setpoint determines the pressure point when the alarm is activated (Default is 95PSIG). Normal operation of the Sentry is not restored (alarm off) until the return to normal operation point is achieved for both logic points (pressure and dew point). The return to normal point is set to a higher pressure point than the trigger point. The factory default is 5 psig higher than the trigger point (Default100PSIG).

For high dew point, the setpoint determines the dew point when the alarm is activated. Normal operation is not restored (alarm off) until the return to normal operation point is achieved. This second dew point is set to a lower dew point than

the trigger point. The factory default is 5 degrees below the trigger point. Both conditions must be at return to normal operation before the alarm turns off.

To set the Alarm setpoints enter "M". The current settings will be displayed. Then follow the prompts to enter the setpoints. After you have made the alarm setting, enter S to save or X to exit.

```
L)cdUnits S)etAnalog sentryAlar(M) E(X)IT :M
High Alarm DewPoint settings:
DP F Range( -76.0 to 203.0) AlarmON= -20.0 AlarmOFF= -25.0
LOW Alarm Pressure settings:
PSIG Range( 0.0 to 441.0) AlarmON= 90.0 AlarmOFF= 95.0

DP F Range( -76.0 to 203.0)
HIGH DewPt Alarm ON= -20
Low DewPt AlarmOFF= -25

PSIG Range( 0.0 to 441.0)
Low Pressure AlarmON= 90
HIGH Pressure AlarmOFF= 95

----- Alarm Settings -----
DewPt: DP F range( -76.0 to 203.0) ON: -20.0 OFF: -25.0
Pressure: PSIG range( 0.0 to 441.0) ON: 90.0 OFF: 95.0
-----

(Space) (Ss)ave e(xX)it :_
```

6.0 MAINTENANCE

6.1 ROUTINE MAINTENANCE

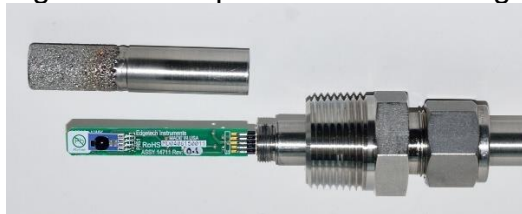
The only maintenance required by the Sentry is periodic check to ensure the unit is functioning. The rate of contamination of the tip filter, varies from user to user. It depends upon flow rate of the gas being measured, the quantity of contaminants in the gas.

The HP125 probe intelligent tip sensor does require yearly calibration. The Sentry system can also have a replacement calibrated tip supplied to allow a fast onsite change over for a new fully calibrated tip board with no down time.

SENSOR CIRCUIT BOARD

Inside the barrel of the Sensor probe, mounted directly at the tip, is the plug-in sensor circuit board. This board has been calibrated at the Factory for a standard output level. Since all boards have been calibrated for the same normalized level, they may be replaced in the field without the requirement for recalibration, while maintaining the full published system accuracy specification.

Figure 6-1 Exploded view showing the Sensor Circuit Board



 **Always turn the power off before disconnecting or reconnecting the probe**

6.1.1 REMOVING THE SENSOR CIRCUIT BOARD

Figure 7-1 shows the Sensor Circuit Board. It may be accessed by first unscrewing the mesh filter. Then holding the sides of the sensor tip gently pull out in a straight pulling motion. Do not move the tip from side to side as this can damage the connectors.

For replacement Intelligent tip the Sentry uses the code HPP configuration

7.0 SPECIFICATIONS

Measurement Range:

Dew Point: -40°C to 95°C (-40°F to 140°F)
LDP Option -60°C to 95°C (-75°F to 140°F)
Ambient Temperature: -40°C to 125°C (-40°F to 140°F)

Equivalent %RH: 1% to 99.9%

Operating Temperature:

Sensor: -60°C to 125°C (-40°F to 149°F)
Control Unit: 0°C to 50°C (32°F to 122°F)

Pressure: 400 psig maximum (30bar)

Analog Outputs: 4 to 20 mA
Load: 4 to 20 mA : 400 ohms or lower
0 to 5/10VDC: 1K ohm or higher

Serial Outputs: RS-232C, bidirectional

Relay Outputs:

K1: Alarm 1
Contact Rating: Normally Open (Form A)
3A at 250VAC, or 30VDC

Remote Cables: 3 ft. standard

Power Supply: 110/220V 60/50Hz

8.0 APPENDIX

- 8.1 Warranty Statement**
- 8.2 NIST Traceability**
- 8.3 Mounting Dimensions**

8.1 WARRANTY STATEMENT

All equipment manufactured by Edgetech Instruments Inc. is warranted against defective components and workmanship for repair at their plant in Massachusetts, free of charge, for a period of twelve months. Malfunction due to improper use is not covered in this warranty and Edgetech Instruments Inc. disclaims any liability for consequential damage resulting from defects in the performance of the equipment. No product is warranted as being fit for a particular purpose and there is no warranty of merchantability. This warranty applies only if (i) the items are used solely under the operating conditions and in the manner recommended in the instruction manual, specifications, or other literature; (ii) the items have not been misused or abused in any manner or repairs attempted thereon; (iii) written notice of the failure within the warranty period is forwarded to Edgetech Instruments Inc. and the directions received for properly identifying items returned under warranty are followed; and (iv) the return notice authorizes Edgetech Instruments Inc. to examine and disassemble returned products to the extent Edgetech Instruments Inc. deems necessary to ascertain the cause for failure. The warranties expressed herein are exclusive. There are no other warranties, either expressed or implied, beyond those set forth herein, and Edgetech Instruments Inc. does not assume any other obligation or liability in connection with the sale or use of said products.

Equipment not manufactured by Edgetech Instruments Inc. is supported only to the extent of the original manufacturer's warranties

8.2 N.I.S.T. TRACEABILITY – WHAT DOES IT MEAN?

This precision measuring instrument is certified by Edgetech Instruments Inc. to be traceable to N.I.S.T., the National Institute of Standards and Technology (formerly known as the National Bureau of Standards, or NBS), in Gaithersburg, Maryland, U.S.A. You have received a Certificate of Calibration with this instrument. What does N.I.S.T. Traceability mean in terms of this instrument?

The instrument measures Dew Point using the Optical Chilled Mirror (OCM) technique, which provides a primary rather than a secondary measurement of Dew Point temperature. In addition, Dew Point is a fundamental measurement of humidity. It is not affected by temperature.

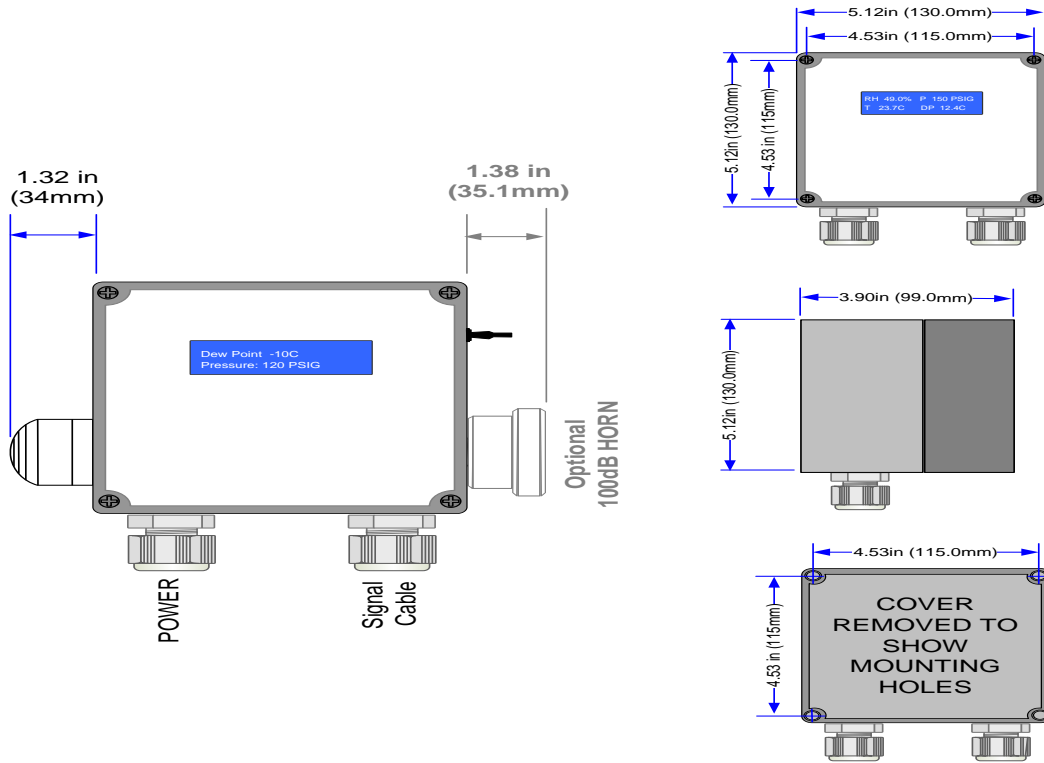
The Dew Point temperature is measured using a Platinum Resistance Thermometer (PRT). This device is a coil of nearly pure platinum, where the rate of change of resistance with temperature is precisely known. Resistance is accurately measured and is automatically converted to temperature information within the instrument.

TRACEABILITY:

- 1. The precise platinum resistance thermometer is N.I.S.T. traceable by the traceable resistance standards maintained by the PRT manufacturer.
- 2. A multi-point Dew Point calibration is performed on every chilled mirror sensor, using Edgetech Instruments Inc.'s traceable secondary dew point standard. This instrument, a precise chilled mirror hygrometer, is periodically sent directly to N.I.S.T. for certification against the USA's Dew Point transfer standard, a Two-Pressure Generator.

8.3 OVERALL AND MOUNTING DIMENSIONS

8.3.1 WALL MOUNT DIMENSIONS



Notes