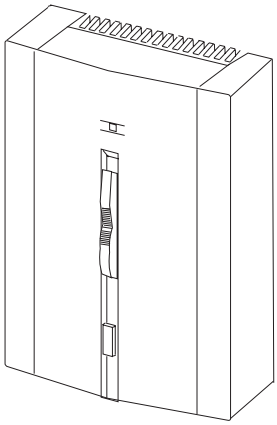
Infinity Sensor Series
Installation Guide

Installation
Installation consists of mounting the module to the wall then wiring power and data connections to a controller.

The sensor can be mounted directly on drywall, or on any electrical outlet box with no adapters required. This sensor is for indoor use only and is not suitable for use where condensation may occur.



INSTALLING THE SENSOR AND BASE

To remove the sensor
The sensor is fastened to the base using Allen screws.

1. Using a #6 Allen tool, turn the two Allen screws located in the bottom of the sensor cover clockwise (inward) until the sensor lifts off easily.

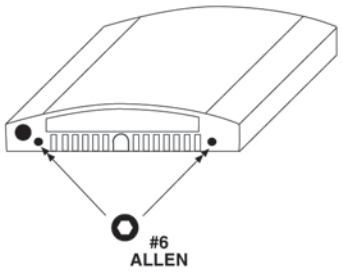


Figure 1. Turn two Allen screws clockwise.

2. Remove the sensor by lifting the front bottom outward.

To install the base
Note: If you are mounting the sensor to an existing electrical box, skip steps 1, 2 and 3. To prevent drafts from affecting the Sensor reading, cover the openings in the back of the base.

1. Place the base on the surface of the wall area where the sensor is to be mounted and mark the location of at least three mounting holes.

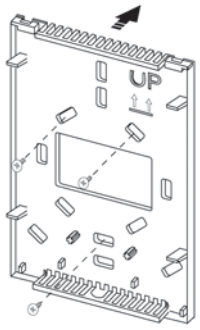


Figure 2. Placement of the base.

2. Drill the marked holes and insert wall anchors into the surface.
3. Mount the base using at least three screws.
4. Guide your facility wiring into the large opening of the base.
5. Connect your wires to the probe wires that are part of the cover assembly using wire nuts.
6. Collect any slack wire, fold and tuck into the base.
7. Place the cover on the mounted base.
8. Secure the cover by turning the Allen screws counterclockwise (outward) until the cover is locked in place. Refer to Figure 1.

Schneider Electric

SETPOINT ADJUSTMENT SLIDER

A variable resistor slider is provided to act as a manual setpoint adjustment. To read its value, configure an Analog input. Connect the slider orange wire to one of the controller's Analog IN terminals. The slider shares its return signal with that of the thermistor.

The following function can be used to read the value of the slider control on the Sensor for setpoint adjustment. The function uses the ElecValue of the slider (potentiometer) to return the setpoint. It works with 5, 10, or 8 volt input types. This function must be located in the controller to which the Sensor is wired. The Plain English code for the function is as shown below. In this example, the function object is named SP.

```
Arg 1 SensPlus      'the actual slider (pot) input name
Arg 2 Lower         'temperature setpoint
Arg 3 Upper         'temperature setpoint
Arg 4 RefVolt       'the input type (5, 10 or 8 volt)
Numeric Vref, Rref, Rsens, V, MaxOhms, SetPt
MaxOhms = 10.13     'K ohms - Resistance between slider terminals when it's all
                    the 'way to the top. Adjust this for field variations.
If RefVolt is 5 then
  Vref = 5.115
  Rref = 10
Else
  If RefVolt is 10 then
    Vref = 10
    Rref = 30.1
  Else
    Vref = 8.192
    Rref = 30.1
  Endif
Endif
If SensPlus ElecValue <= 0 then Return Upper
If SensPlus ElecValue >= Vref then Return Lower
V = (Vref/SensPlus ElecValue)
Rsens = (V * 0.2 - Rref - 0.2) / (1 - V)
SetPt = Lower + ((Rsens / MaxOhms) * (Upper - Lower))
SetPt = minimum(maximum(SetPt, Lower), Upper)
Return SetPt
```

For best accuracy, use a multimeter to measure the resistance between the orange and green wires on the Sensor Plus when the slider is pushed all the way to the top. Change the value of MaxOhms in the function to agree with your measured value.

Load the function into the controller and wire up the Sensor Plus. Create a voltage input for the slider - this example calls it Slider. Create a numeric setpoint such as SensPlusSP. Write a one line program which sets this numeric equal to the result of the function. In this example, the (looping) program line is: SensPlusSP = SP(Slider, 69, 75,10)

Refer to the function's Plain English code above for a description of the arguments.

INFINET CONNECTION

The (Infinet –) and (Infinet +) terminals provide access to the Infinet for the Laptop Service Tool connector on the bottom of the module. Connect the Infinet to the appropriate terminals as shown below,

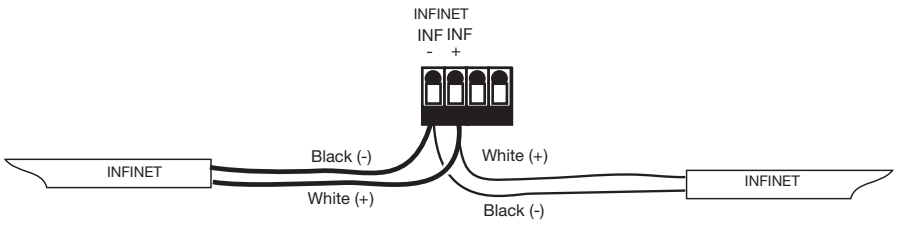


Figure 3. Infinet connetions.

© 2014 Schneider Electric. All rights reserved.

ELECTRICAL SCHEMATICS

The Infinity Sensor module consists of up to four separate electrical functions depending upon ordered configuration.

- Temperature sensor
- Override push button
- Setpoint adjustment slider
- Green LED indicator

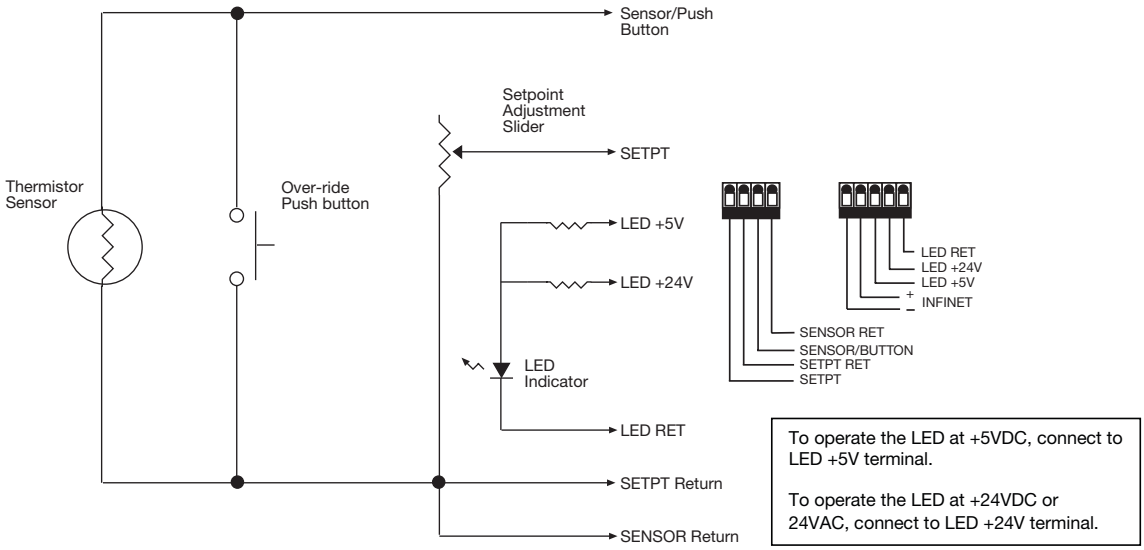


Figure 4. Infinity Sensor module schematic with all options.

LED INDICATOR

The green LED can be illuminated using either a digital contact and an external +5 Vdc, +24 Vdc or 24 Vac voltage source or by using an Analog Voltage output. Use the appropriate terminal connection. Connect the LED as shown below.

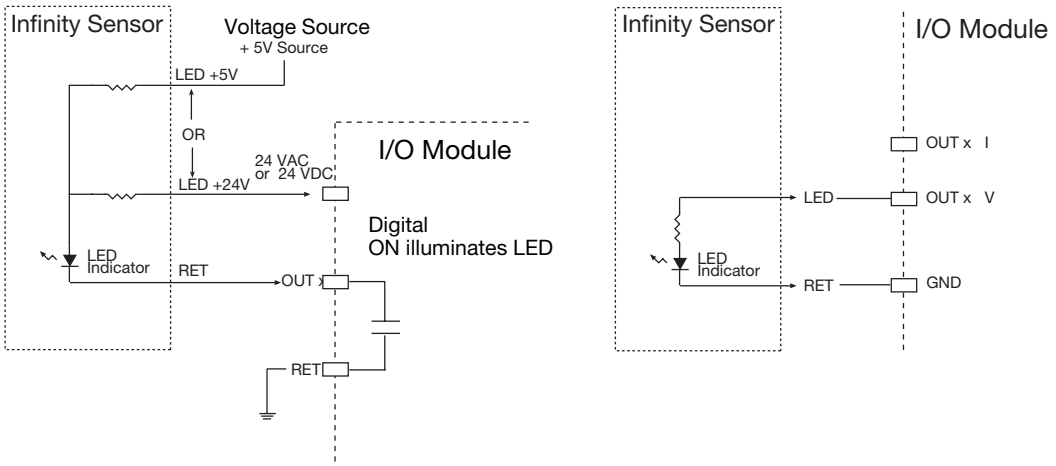


Figure 5. LED Indicator connections.

OVERRIDE PUSH BUTTON

The override push button is connected across the temperature sensor. To read the state of the button you must have configured the sensor input as a Temperature Input at the controller. Firmly pressing the button shorts the sensor which renders a temperature reading of above 150 °F (65.5 °C) at the input.

© 2014 Schneider Electric. All rights reserved.

TEMPERATURE INPUT TROUBLESHOOTING

1. Disconnect the wiring to the input and connect an ohm meter directly across the input wires at the controller. Verify the measurement against the resistance to temperature chart found below.
2. Measure the resistance directly at the probe. If there is a significant difference between the resistance measured at the probe and at the controller, then there is a resistance problem in the wiring, which will affect the reading.

Note: When the controller no longer considers an input reading to be valid, it sets the ElecValue to 999.9. Each controller has two additional internal inputs. One is hard-wired to the reference channel and the other is connected to ground. These two inputs are used for continuous software calibration of the input circuit. If at any time either of these two inputs reads out of a predefined range, then the input routine will set the ElecValue of all inputs to 999.9.

Also note that if the override button is pushed during the measurement or is somehow shorted, the resistance value read will be lower than the reading shown on the chart for the maximum temperature (150 °F (65.5 °C) degrees).

Table-1. Resistance versus Temperature for Infinity Sensor

R Ohms	°F (°C)	R Ohms	°F (°C)	R Ohms	°F (°C)	R Ohms	°F (°C)
29481.1	32 (0.0)	18331.5	51 (10.6)	11716.6	70 (21.1)	7680.64	89 (31.7)
28732.2	33 (0.6)	17892.8	52 (11.1)	11452.0	71 (21.7)	7516.78	90 (32.2)
28004.6	34 (1.1)	17465.9	53 (11.7)	11194.2	72 (22.2)	7356.9	91 (32.8)
27297.7	35 (1.7)	17050.4	54 (12.2)	10943.0	73 (22.8)	7200.88	92 (33.3)
26610.8	36 (2.2)	16646.1	55 (12.8)	10698.1	74 (23.3)	7048.62	93 (33.9)
25943.4	37 (2.8)	16252.6	56 (13.3)	10459.4	75 (23.9)	6900.01	94 (34.4)
25294.7	38 (3.3)	15869.6	57 (13.9)	10226.8	76 (24.4)	6754.96	95 (35.0)
24664.2	39 (3.9)	15496.8	58 (14.4)	10000.0	77 (25.0)	6613.38	96 (35.6)
24051.4	40 (4.4)	15133.8	59 (15.0)	9778.91	78 (25.6)	6475.18	97 (36.1)
23455.6	41 (5.0)	14780.4	60 (15.6)	9563.35	79 (26.1)	6340.25	98 (36.7)
22876.5	42 (5.6)	14436.4	61 (16.1)	9353.18	80 (26.7)	6208.53	99 (37.2)
22313.4	43 (6.1)	14101.3	62 (16.7)	9148.24	81 (27.2)	6079.91	100 (37.8)
21765.9	44 (6.7)	13775.1	63 (17.2)	8948.38	82 (27.8)	5954.33	101 (38.3)
21233.5	45 (7.2)	13457.3	64 (17.8)	8753.48	83 (28.3)	5831.7	102 (38.9)
20715.7	46 (7.8)	13147.9	65 (18.3)	8563.39	84 (28.9)	5711.95	103 (39.4)
20212.2	47 (8.3)	12846.4	66 (18.9)	8377.98	85 (29.4)	5594.99	104 (40.0)
19722.4	48 (8.9)	12552.8	67 (19.4)	8197.12	86 (30.0)	5480.76	105 (40.6)
19245.9	49 (9.4)	12266.8	68 (20.0)	8020.69	87 (30.6)	—	—
18782.4	50 (10.0)	11988.1	69 (20.6)	7848.56	88 (31.1)	—	—

LAPTOP SERVICE TOOL CONNECTION

The connector located on the bottom of the sensor provides access to the Infinet for the Laptop Service Tool. Connect the Laptop Service Tool cable as shown below.

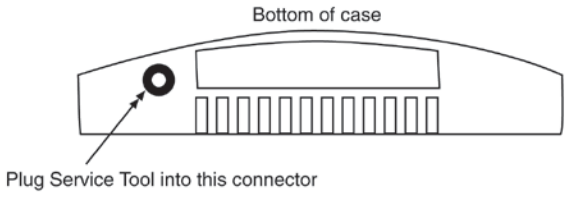


Figure 6. Service connector on the bottom of the sensor.

© 2014 Schneider Electric. All rights reserved.

All brand names and registered trademarks are the property of their respective owners. Information contained within this document is subject to change without notice. All rights reserved.