Outdoor Sensor Assembly (Telaire) Installation Instructions

Description

Novar's Outdoor Sensor Assembly (OSA) can be mounted on a building's roof to monitor outdoor temperatures, light levels, and/or humidity. The assembly comes with the following items:

- Outdoor temperature sensor (factory-mounted on a metal plate)
- Analog light sensor (factory-mounted on a metal plate)
- Humidity sensor (factory-mounted on a metal plate)
- Protective hood (not mounted)
- Hardware kit that includes the following items:
  - — Two "U" bolts with lock washers and nuts
  - — Two screws for attaching the hood

NOTE! Customers must supply their own 1-inch or 1¼-inch trade-size rigid conduit and weatherhead.

An optional Mounting Bracket Kit can be ordered separately. It includes the following items:

- Sufficient screws and lock washers to assemble the brackets
- Two "U" bolts with lock washers and nuts

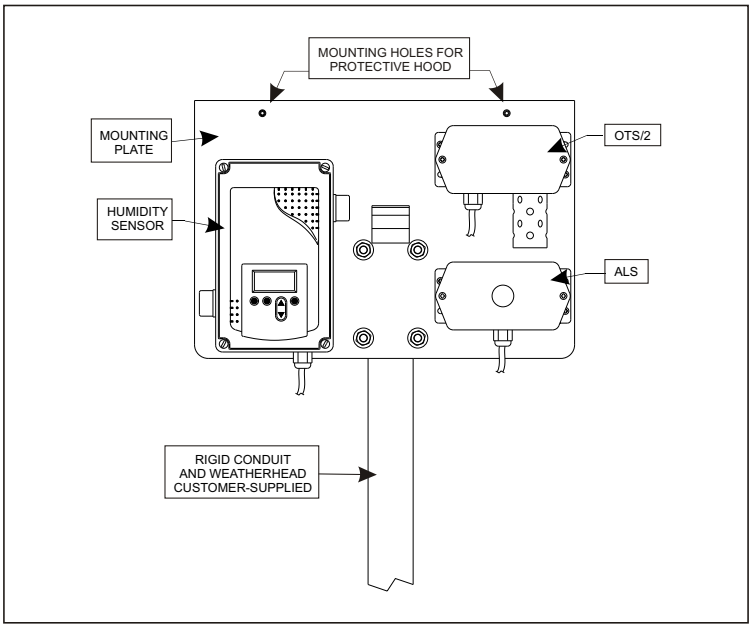

Figure 1. Outdoor Sensor Assembly with Telaire Humidity Sensor

Specifications

Outdoor Temperature Sensor

Temperature Range:	–40 to 120 F (Model OTS/2)
Output:	4 to 20 mA (Model OTS/2)
Accuracy of Reading:	1 F (0.556 C); Range: 0 to 90 F (–17.8 to 32.2 C) 1.5 F (0.83 C) above or below that range

Analog Light Sensors

Analog Output Point:	4–20 mA, two wire
Temperature:	–40 to 158 F (–40 to 70 C)
Operating Range:	ALS-300: Linear, 0–300 footcandles (19.25–4.25 mA) ALS-1.5K: Linear, 0–1500 footcandles (19.25–4.25 mA)
Accuracy of Reading:	ALS-300: 6.4 footcandles (0.320 mA) ALS-1.5K: 32 footcandles (0.320mA)

Mounting the OSA

NOTE! The assembly must be mounted facing north. The bottom edge of the assembly must be at least 3 feet above the building's roof or 1 foot above the top of the building's parapet.

The following procedure should be used to mount the assembly.

Step	Procedure
1	Remove the enclosure cover from the Telaire enclosure, make sure the sensor is securely seated on its backplate, and reattach the enclosure cover. **NOTE!** The sensor can become unseated during shipping. This step must be completed to ensure that the assembly operates properly once it has been installed. *continued*

Step	Procedure
2	Determine the length of the customer-supplied conduit required. ■ Measure the distance from the top of the roof or the top of the building's parapet to the point where the conduit is to enter the building. ■ Add ***one*** of the following measurements: — 3 feet (distance from roof top to bottom of assembly) — 1 foot (distance from top of parapet to bottom of assembly) ■ Add the thickness of the wall. ■ Add approximately 6 inches (to cover the length of conduit bolted directly to the assembly's mounting plate).
3	Bend the conduit at a 90° angle at the point where it should enter the building.
4	Attach the customer-supplied weatherhead to the conduit.
5	Attach the protective hood to the top edge of the assembly's mounting plate (Figure 2).
6	Feed the wires through the weatherhead and conduit.
7	Use the two U bolts supplied in the hardware kit to bolt the conduit to the assembly's mounting plate.
8	Drill a hole through the building's wall large enough to accommodate the conduit.
9	*(If the Novar Mounting Bracket Kit is used):* Assemble the mounting brackets. ■ They should resemble the letter "Y."
10	Use a U bolt to attach the narrower end of each bracket to the conduit, positioning the brackets on the conduit approximately 1 foot apart.
11	Insert the conduit through the hole drilled in the building's wall.
12	Position the conduit and assembly vertically against the building and mark the location of the bracket mounting holes.
13	Drill holes in the locations marked.
14	Position the brackets against the wall over the mounting holes and insert and tighten screws to secure the assembly against the wall.

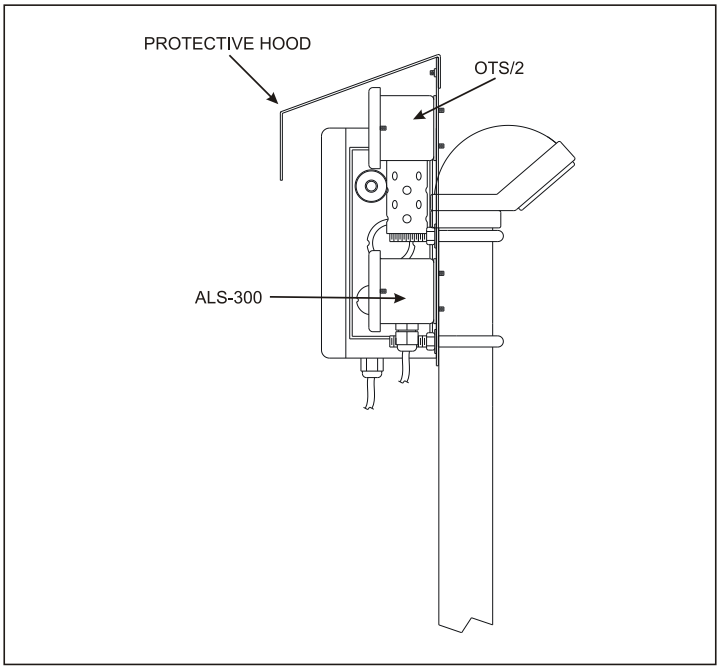

Figure 2. Side views of the OSA

Wiring the Sensors

Maximum recommended sensor wire length for connections is 1,000 feet, using 22-gauge wire.

Wiring instructions for each of the sensors that can be ordered with the assembly are provided below. Use the instructions that apply to the sensors ordered.

To facilitate the wiring process, the assembly cables have been color-coded.

CABLE COLOR	USE
Yellow cable	Light sensor
Gray cable	Humidity sensor
Blue cable	Temperature sensor

Outdoor Temperature Sensor (OTS/2)

Connect the cable to the terminals labeled Outdoor Temperature Sensor on each control module according to the following instructions.

The following procedure should be used to connect the OTS/2 to the EP/2. For the Savvy®, follow the instructions provided in the *Savvy Baseplate Installation Instructions.*

Step	Procedure
1	Connect the black wire from the blue cable to Terminal 3 (–).
2	Connect the white wire from the blue cable to Terminal 4 (+).

NOTE! Although the OTS/2 comes with a shielded cable, only the plus and minus terminals need to be connected on the Lingo® XE or Savvy terminal strip.

Analog Light Sensor (ALS-300)

Connect the wires from the light sensor's yellow cable as indicated in Table 1.

NOTE! Do not make any connections inside the Analog Light Sensor enclosure.

Table 1. Wiring the Analog Light Sensor

MODULE	CONNECTIONS
IOM/2, MINio, or Savvy IOM	Connect the sensor to one of the Class 2, 4- to 20-mA inputs. ■ Connect the cable's white wire to the positive (+) terminal (the Source connection on the MINio). ■ Connect the cable's black wire to the negative (–) terminal (the Input connection on the MINio).
Lingo XE	Connect the sensor to the terminals labeled Outdoor Light Sensor. ■ Connect the cable's white wire to the positive (+) terminal. ■ Connect the cable's shield drain wire to the Shield terminal. ■ Connect the cable's black wire to the negative (–) terminal.
Savvy Transition Board without UL Label	■ Connect the cable's white (+) wire to Terminal 62 (not Terminal 58). ■ Connect the cable's black (–) wire to Terminal 59 (+). ■ Connect the cable's shield wire to Terminal 61.
Savvy Transition Board with UL Label	■ Connect the cable's white (+) wire to Terminal 59 (+). ■ Connect the cable's black (–) wire to Terminal 58 (–). ■ Connect the cable's shield wire to Terminal 61.

Scaling

The sensor regulates a 4- to 20-mA current signal and is scaled in the Novar software. It is linear with the light level, and the current-to-light relationship is inverse.

- ALS-300 sensor range: 0–300 footcandles (19.25 to 4.25 mA)
- ALS-1.5K sensor range: 0–1500 footcandles (19.25 to 4.25 mA)

Humidity Sensor

The following procedure should be used to connect the sensor to an IOM/2, MINio, or Savvy.

NOTE! A dedicated 24-VAC, 40VA transformer is required to provide power to the Telaire Sensor. See Table 2.

Step	Procedure
1	Connect the white wire from the gray cable to the module's program-defined negative (–) input terminal.
2	Connect the black wire from the gray cable to one side of the 24-V secondary and the Ground Terminal of the IOM/2 (Terminal 48).
3	Connect the red wire from the gray cable to the other secondary transformer lead.

Model and Part Numbers

Table 2 provides the part numbers that should be used to order the Outdoor Sensor Assembly with a Telaire Humidity Sensor.

Table 2. Novar Part Numbers

PRODUCT	MODEL NO.	PART NO.
Outdoor Sensor Assembly, includes: ■ Telaire Humidity Sensor ■ Outdoor Temperature Sensor (OTS/2) ■ Analog Light Sensor (ALS-300) ■ Protective Hood ■ Hardware Kit	OSA	780049500
Mounting Bracket Kit (Optional), includes: ■ Sufficient screws and lock washers to assemble the brackets ■ Two "U" bolts with lock washers and nuts	—	780042000
24-VAC, 40 VA Transformer	24V-XFR	730090000
Two-conductor, shielded cable (Belden 8761 equivalent)	WIR-1010	709001000

Regulatory Compliance

Waste Electrical & Electronic Equipment (WEEE)

Customers are advised to dispose of this product at the end of its useful life according to applicable local laws, regulations, and procedures.

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