Outdoor Sensor Assembly (Veris) 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)
- Mounting bracket kit that includes the following items:
  - — Sufficient screws and lock washers to assemble the brackets
  - — Two "U" bolts with lock washers and nuts
- 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.

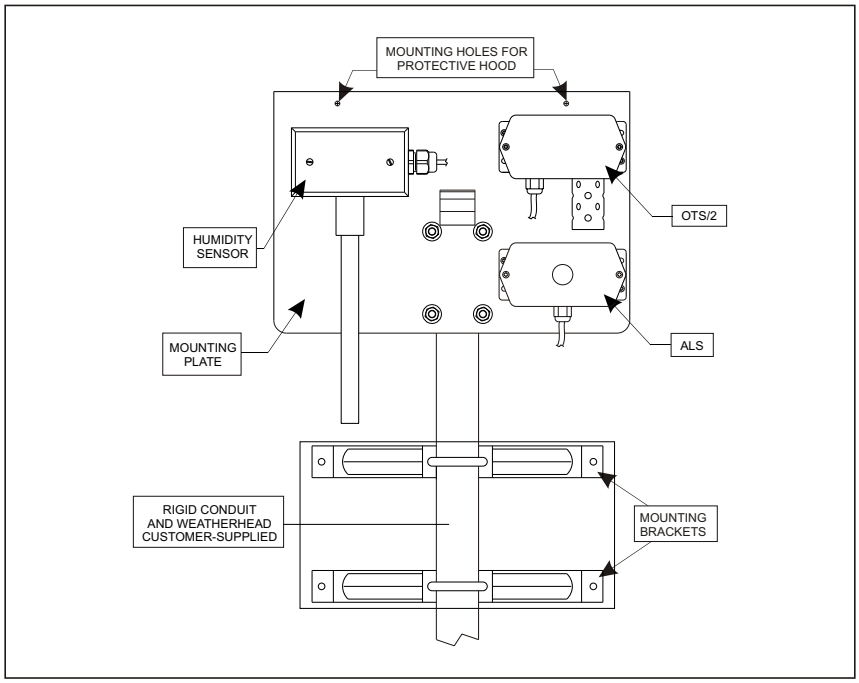

Figure 1. Outdoor Sensor Assembly with Veris Humidity Sensor

Specifications

Outdoor Temperature Sensor

Temperature Range: – 40 to 120 F
Output: 4 to 20 mA

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 Sensor (Two Choices)

Analog Output Point: 4– 20 mA, two-wire
Operating Temperature: –40° to 158°F (–40° to 70°C)

Operating Range: ALS-300: Linear, 0–1500 footcandles (19.25–4.25 mA)
ALS-1.5K: Linear, 0–300 footcandles (19.25–4.25 mA)

Accuracy of Reading: ALS-300: 6.4 footcandles (0.320 mA)
ALS-1.5K: 32 footcandles (0.320 mA)

Mounting the OSA

NOTE! The assembly must be mounted facing north. The bottom edge of the assembly must be at least 4 feet away from the building's roof or 2 foot away from the top of the building's parapet.

The following procedure should be used to mount the assembly.

Step	Procedure
1	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: — 4 feet (distance from roof top to bottom of assembly) — 2 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).
2	Bend the conduit at a 90° angle at the point where it should enter the building.
3	Attach the customer-supplied weatherhead to the conduit.
4	Attach the protective hood to the top edge of the assembly's mounting plate (Figure 2).

continued

5	Feed the wires through the weatherhead and conduit.
6	Use the two U bolts supplied in the hardware kit to bolt the conduit to the assembly's mounting plate.
7	Drill a hole through the building's wall large enough to accommodate the conduit.
8	Assemble the mounting brackets. ■ They should resemble the letter "Y."
9	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.
10	Insert the conduit through the hole drilled in the building's wall.
11	Position the conduit and assembly vertically against the building and mark the location of the bracket mounting holes.
12	Drill holes in the locations marked.
13	Position the brackets against the wall over the mounting holes and insert and tighten screws to secure the assembly against the wall.

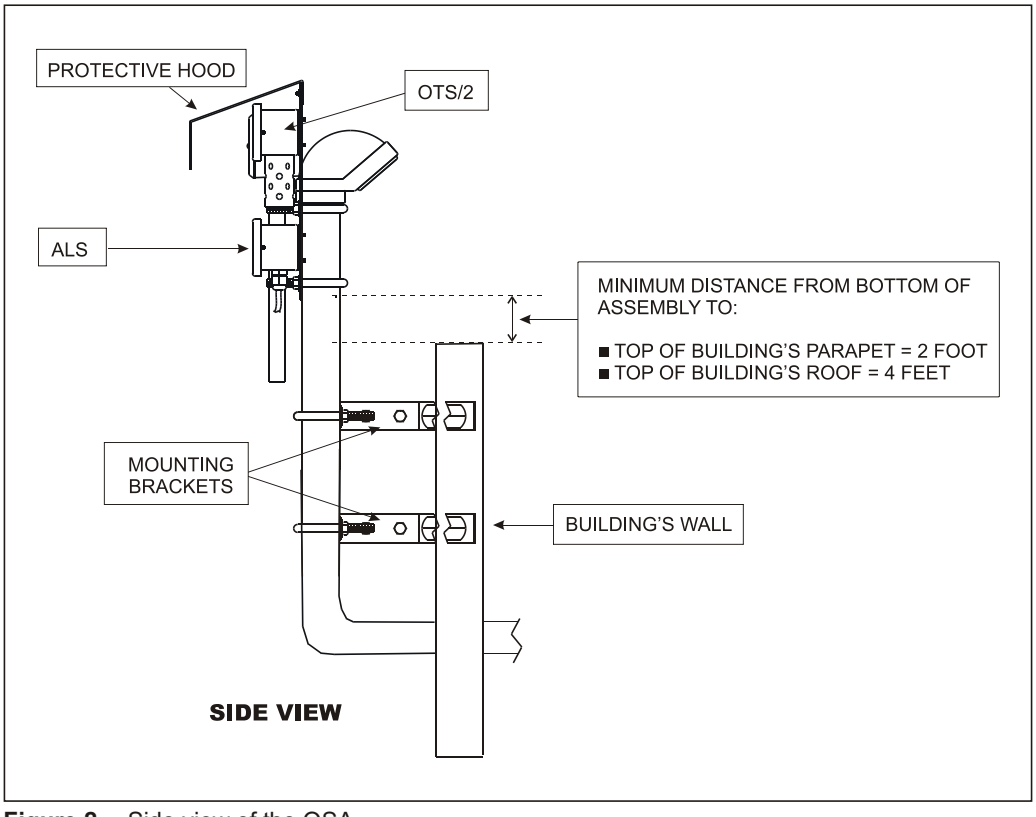

Figure 2. Side view of the OSA

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.

If the sensor cables are not long enough to reach the controller, two-conductor, shielded cable (Novar WIR-1010, Belden 8761, or equivalent) must be used to extend the sensor cables. 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

The following procedure should be used to connect the OTS/2 to the terminals labeled Outdoor Temperature Sensor on the EP/2. For the Savvy®, follow the instructions provided in the *Savvy Baseplate Installation Instructions* (available in the Documents folder on the Novar Software Package CD).

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

Connect the wires from the 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. Depending on which light sensor is used, the sensor range is either 0–1500 or 0–300 footcandles (19.25 to 4.25 mA).

Humidity Sensor

The following procedures should be used to wire the Veris Humidity Sensor.

NOTE! The Veris Humidity Sensor is not polarity sensitive.

IOM/2, MINio, or Savvy IOM Connections

Step	Procedure
1	Connect one of the wires from the blue cable from the sensor to the module's program-defined positive (+) input terminal or the Source connection on the MINio.
2	Connect the other wires from the blue cable from the sensor to the module's program-defined negative (–) input terminal or the Input connection on the MINio.

8-IME or LEN-I1 Connections

Step	Procedure
1	Connect one of wires from the blue cable from the sensor to the module's program-defined positive (+) input terminal.
2	Connect the other wire from the blue cable from the sensor to the module's program-defined negative (–) input terminal.

Model and Part Numbers

Part numbers provided in Table 2 should be used to order Novar parts.

Table 2. Novar Part Numbers

PRODUCT	MODEL NO.	PART NO.
Outdoor Sensor Assembly, includes: ■ Veris Humidity Sensor (HO Series) ■ Outdoor Temperature Sensor (OTS/2) ■ Analog Light Sensor (ALS-1.5K) ■ Protective Hood ■ Mounting Bracket Kit ■ Hardware Kit	OSA	780651500
Outdoor Sensor Assembly, includes: ■ Veris Humidity Sensor (HO Series) ■ Outdoor Temperature Sensor (OTS/2) ■ Analog Light Sensor (ALS-300) ■ Protective Hood ■ Mounting Bracket Kit ■ Hardware Kit	—	780652000
Humidity Element **NOTE!** The Veris Humidity Sensor comes with a humidity element. This is a replacement that can be ordered if the original element fails.	Veris HS Series	812000300

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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