

Outdoor Sensor Assembly (Novar) 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. Each assembly is built according to specific customer specifications to ensure that the assembly meets the customer’s needs.

Customers choose from various combinations of outdoor temperature sensors, analog light sensors, and a humidity sensor. The sensors are factory-mounted on a metal plate (Figure 1) and shipped with a protective hood that must be installed to provide protection from the outdoor elements.

The assembly can be mounted to the building with Novar’s mounting bracket kit. Customers must supply their own 1-inch or 1¼-inch trade size rigid conduit and weatherhead.

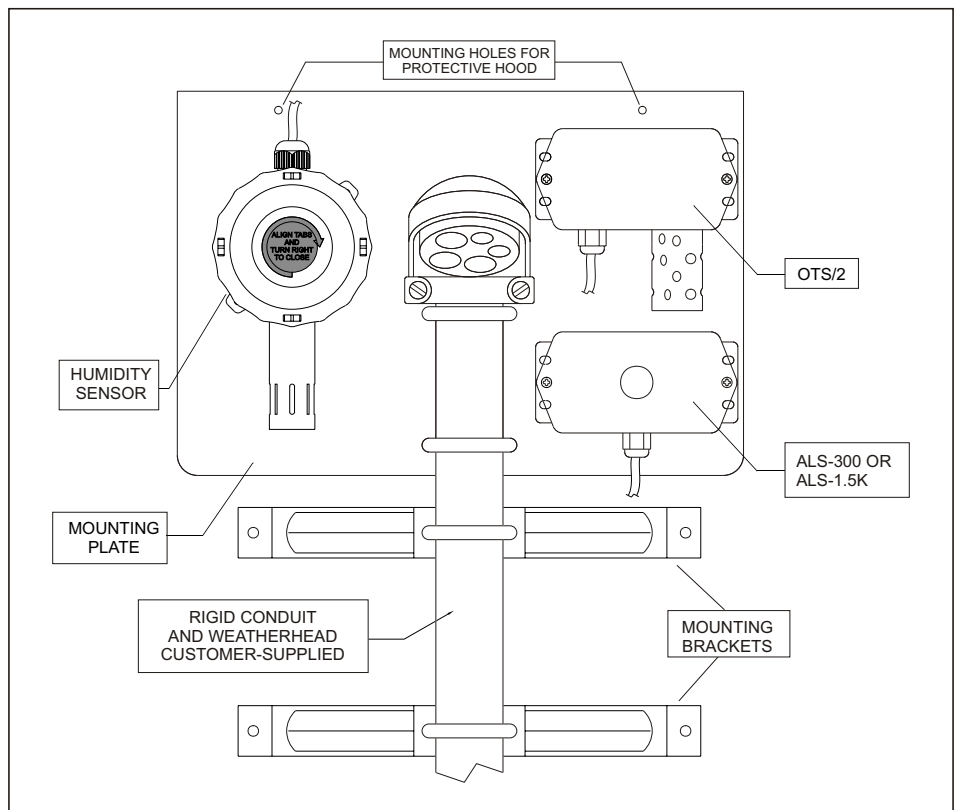


Figure 1. Outdoor Sensor Assembly



Outdoor Sensor Assembly (Novar) Installation Instructions

Specifications

Outdoor Temperature Sensor

Temperature Range:	-40 to 120 F (Model OTS/2)
Output:	4 to 20 mA (Model OTS/2)
Accuracy 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 Reading:	ALS-300: 6.4 fc (±0.320 mA) ALS-1.5K: ±32 fc (±0.320 mA)

Humidity Sensor

Operating Temperature:	-10 to 160 F (-23.3 to 71 C)
Operating RH:	0% to 100% RH
Output:	2-wire, 4 to 20 mA
Accuracy at 77 F:	±1% over 20% span (between 20% to 95%) ±2%, 3%, or 5% from 20% to 95%
Long-term Stability:	Less than 2% RH drift/5 years
Response Time:	30 seconds for 63% Step
Saturation Response:	10 minutes for 63% Step
Sensitivity:	0.1% RH
Interchangeability:	<±3% RH nominal
Repeatability:	0.5% RH
Hysteresis:	Less than 0.4% RH

Mounting the OSA

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

The assemblies are shipped with a hardware kit that includes:

- 2 U bolts with lock washers and nuts
- 2 screws (for attaching the hood)

Novar's bracket kit is also shipped with a hardware kit that includes:

- Sufficient screws and lock washers to assemble the brackets.
- 2 U bolts with lock washers and nuts.

Outdoor Sensor Assembly (Novar) Installation Instructions

The following procedure should be used to mount the assembly.

Step	Procedure
1	<p>Determine the length of the customer-supplied conduit required.</p> <ul style="list-style-type: none"> ■ 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 <i>one</i> of the following measurements: <ul style="list-style-type: none"> — 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).
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

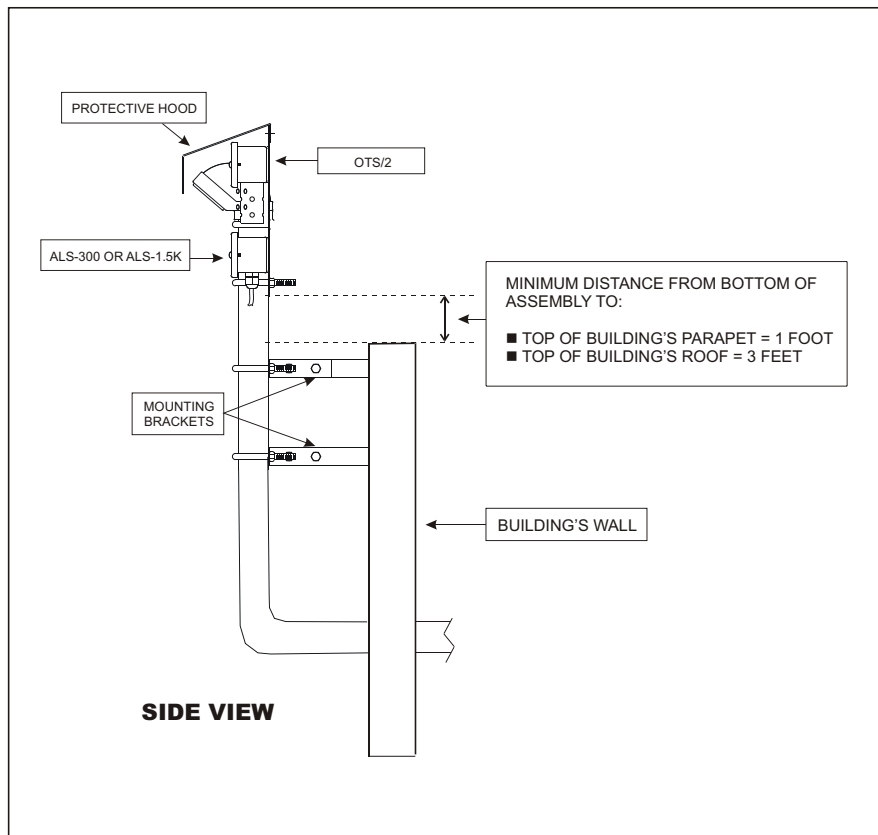


Figure 2. Side views of the OSA

Outdoor Sensor Assembly (Novar) Installation Instructions

Step	Procedure
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. <ul style="list-style-type: none"> ■ 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.

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

Use the following procedure 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 to Terminal 3 (-).
2	Connect the white wire to Terminal 4 (+).

Outdoor Sensor Assembly (Novar) Installation Instructions

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 Sensors

Connect the sensor 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	<p>Connect the sensor to one of the Class 2, 4- to 20-mA inputs.</p> <ul style="list-style-type: none">■ 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	<p>Connect the sensor to the terminals labeled Outdoor Light Sensor.</p> <ul style="list-style-type: none">■ Connect the cable's white wire to the positive (+) terminal.■ Connect the cable's black wire to the negative (-) terminal.
Savvy Transition Board without UL Label	<ul style="list-style-type: none">■ 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	<ul style="list-style-type: none">■ 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 Novar's 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

Connect the humidity sensor as indicated in the following procedures.

Outdoor Sensor Assembly (Novar) Installation Instructions

IOM/2, MINio, or Savvy IOM Connections

Step	Procedure
1	Connect the wire from the sensor's positive (+) terminal to the module's program-defined positive (+) input terminal or Source connection on the MINio.
2	Connect the wire from the sensor's negative (-) terminal to the module's program-defined negative (-) input terminal or Input connection on the MINio.

8-IME or LEN-I1 Connections

Step	Procedure
1	Connect the wire from the sensor's negative (-) terminal to the specific program-defined positive (+) input on the Sensor Inputs terminal strip.
2	Connect the wire from the sensor's positive (+) terminal as specified in the installation instructions.

Part Numbers

Table 2 provides the OSA part numbers and indicates the sensor combinations available for each assembly. The OSA part number indicated should be used to order the appropriate combination.

Table 2. Outdoor Sensor Assembly Part Numbers and Sensor Combinations					
OSA PART NO.	OTS/2	ALS-300	ALS-1.5K	HUMIDITY	MOUNTING BRACKET KIT
780044000	✓	✓		✓	✓
780049000	✓	✓		✓	
780050000	✓	✓			✓
780650000	✓		✓		✓

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.

Savvy® is a registered trademark of Novar.

The material in this document is for information purposes only. The contents and the product it describes are subject to change without notice. Novar makes no representations or warranties with respect to this document. In no event shall Novar be liable for technical or editorial omissions or mistakes in this document, nor shall it be liable for any damages, direct or incidental, arising out of or related to the use of this document. No part of this document may be reproduced in any form or by any means without prior written permission from Novar.

Printed in Mexico.

Copyright © 2007 by Honeywell International, Inc.. All Rights Reserved.

Novar; 6060 Rockside Woods Blvd., Cleveland, OH 44131
Tel.: 800.348.1235 www.novar.com

Notes

Notes