

On / Off Digital Wall & Duct Humidistat Installation Instructions

This document covers the operation and installation instructions for the following Nortec Duct Humidistat:

Part #:	Description:
2520273*	On/Off Digital Duct Humidistat Pkg.

Note: Part #2520273 is comprised of two parts:

2520265	Humidistat w/o sensor
1509857	Duct Sensor

2520273 – On/Off Digital Duct Humidistat Installation

Note: The duct sensor (Part # 2520265) must be wired to the humidistat w/o sensor (Part # 1509857).

Part # 2520265 – Duct Humidistat Package Installation

Location

1. The duct sensor should be installed directly on the duct in an area where the air is well mixed with uniform flow.
2. The supply air sensor should be mounted downstream of the steam distributor at a distance 1.5 times the absorption distance (typically 10-12 feet or 3-3.7m).
3. If a return air humidity sensor is used it should be mounted close to the air inlet but downstream from a return fan if one is present.

Installation

1. Open the housing by removing the 4 screws securing the housing together.
2. Push the probe through the center hole and tighten the 2 mounting screws.
3. Drill a 1/2" (13mm) hole in the duct and insert the probe into the air stream.
4. Secure the sensor to the duct using 2 sheet-metal screws.
5. Connect the signal wires to the sensor terminal strip. Table 1 outlines the terminal layout of the digital humidistat.
6. Connect the plug from the temperature probe to the PCB board into the plug marked 'PROBE'.
7. Close the cover and secure using the 4 Screws removed in step 1.

Table 1: Humidistat Terminal Layout

	Controller w/o Sensor - (Part # 2520265)
Ground	1
24 VAC	2
Digital Out (Common)	3
Digital Out	4
Outdoor Temperature Input	8
Duct Sensor Input	7

Part # 1509857 – Duct Sensor Installation

Location

1. The duct sensor should be installed directly on the duct in an area where the air is well mixed with uniform flow.
2. The supply air sensor should be mounted downstream of the steam distributor at a distance 1.5 times the absorption distance (typically 10-12 ft or 3-3.7 m).
3. If a return air humidity sensor is used it should be mounted close to the air inlet but downstream from a return fan if one is present.

Installation

1. Open the housing by removing the 4 screws securing the housing together.
2. Push the probe through the center hole and tighten the 2 mounting screws.
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4. Secure the sensor to the duct using 2 sheet-metal screws.
5. Connect the signal wires to the sensor terminal strip. Table 1 outlines the terminal layout of the digital humidistat.
6. Connect the plug from the temperature probe to the PCB board into the plug marked 'PROBE'.
7. Close the cover and secure using the 4 Screws removed in step 1.

Table 2: Sensor Terminal Connections

	Duct Sensor - (Part # 1509857)
24 VAC	1
GND	2
Humidity Output	3

Humidistat LCD Display

Legend for Figure 1.

1. Display of current humidity value.
2. Snowflake indicates outdoor temperature setback for winter compensation is in effect.
3. Setpoint display.
4. Graphical display of output value with increments of 10%.
5. Buttons for operating the humidistat:
 - ⓘ POWER button: No function.
 - △ ▽ UP/DOWN buttons: Adjusts calibration value.
 - ▶ OPTION button: Used for accessing the sensor calibration routine.

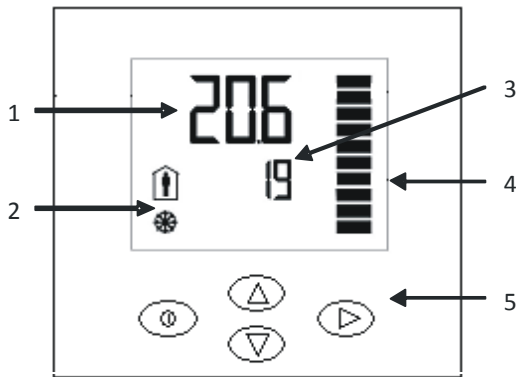


Figure 1: Wall Sensor LCD Display

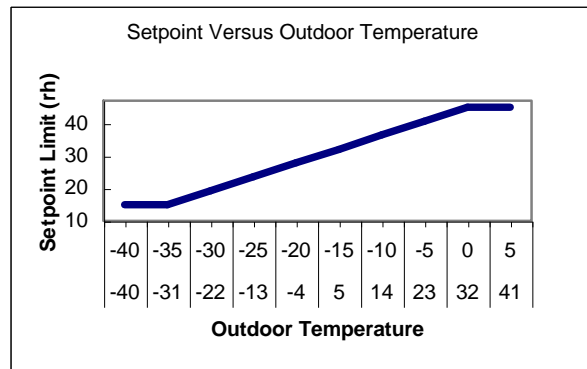


Figure 2: Outdoor Temperature Setback

Optional Outdoor Temperature Reset Function

1. Order Outdoor Temperature Sensor Separately, Part # 2520263
2. Each humidistat is equipped with an integrated reset function that will lower the setpoint during cold weather operation. This will prevent condensation on windows and building structures. The diagram below illustrates how the setpoint reset feature operates.
3. When the outdoor temperature setback feature is in effect, the humidistat will normally display the calculated setpoint limit based on the outdoor air temperature. A snowflake will also be displayed to indicate cold weather operation. When any key on the controller is pressed the LCD screen will display the customer specified setpoint for a short duration.
4. This feature is enabled by removing the jumper from terminals 8 and 1 on the humidistat, and wiring the outdoor temperature sensor to these terminals.

Sensor Calibration

1. The humidity sensor is factory calibrated, however, it can be field recalibrated. The calibration routine can be accessed by pressing and holding down the option button for five seconds. A new screen will appear with the calibration adjustments.
2. Press the up or down buttons until the text *calH* appears on the LCD screen. To adjust the calibration, press the Option button. The screen should load to display the current calibration trim. The calibration trim can be adjusted by pressing the up or down buttons to the desired level and then pressing the option button to confirm the settings. Press the Power button to return to the normal display.

Specifications

Table 2: Specifications

Power Supply	Operating Voltage	24 V AC \pm 10% 50/60 Hz
	Power Consumption	Max 3 VA
	Internal rectification	Half Wave Rectified
Signal Inputs	Analog Input Input Signal Resolution Accuracy	AI1 0-10 VDC 39 mV \pm 2%
	Temperature Input Range	External Thermistor -40...140 °C
	Humidity Input: Range Accuracy Repeatability	0...100 % rH \pm 3.0% at 25 °C \pm 0.5%
Signal Outputs	Digital Outputs Maximum Load	DO1 24 VAC 2A max.
Environment	Operation: Temperature Humidity	0...50 °C <95% r.h.
Housing	Materials: Cover, back Mounting Plate	Fire proof ABS plastic Galvanized Steel

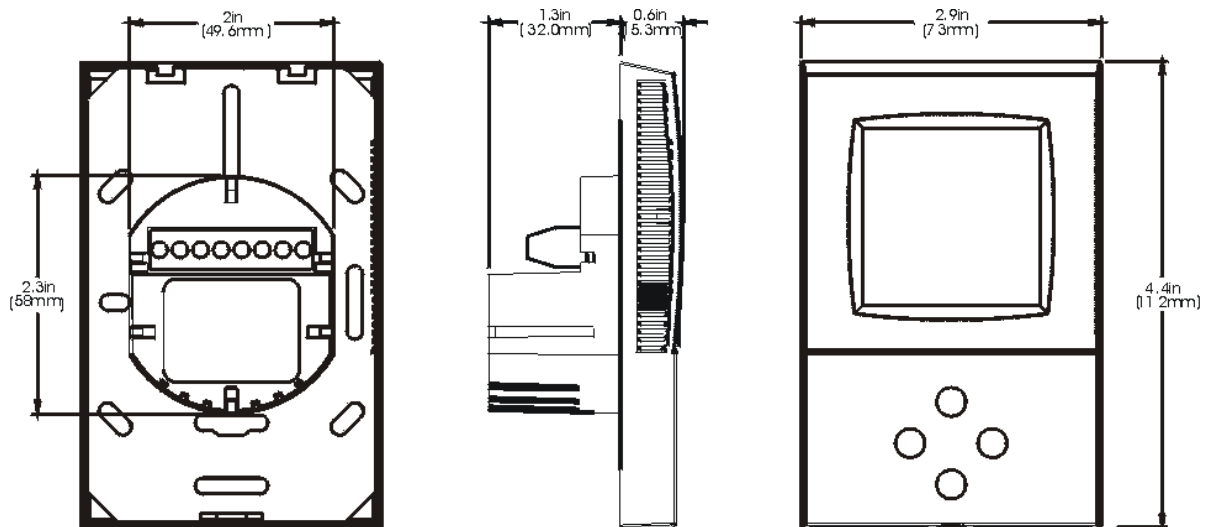


Figure 3: Humidistat Dimensions

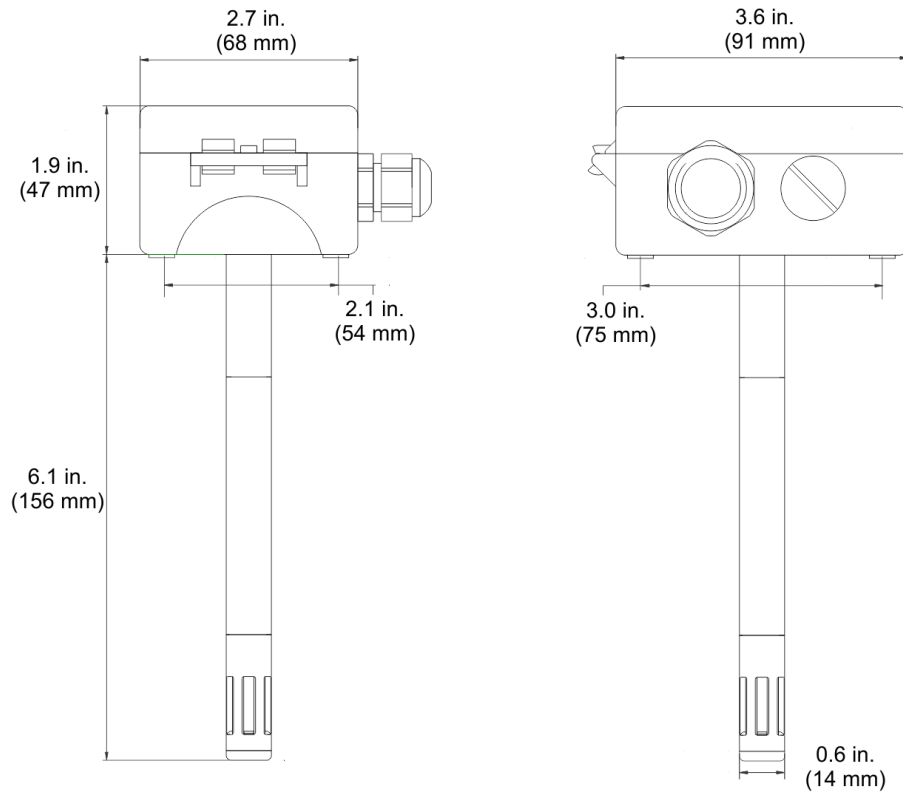


Figure 4: Duct Sensor Dimensions

Table 3: Troubleshooting

Display	Cause	Symptoms	Corrective Action
ALA3	The controller will initiate this alarm if the humidity sensor reports a relative humidity below 6%.	The LCD screen will report the message ALA3. The controller will negate output until a relative humidity above 6% is report to the controller from the sensor.	Normal operation resumes once the sensed humidity is above 6% RH. The message will remain on the LCD screen until removed by pressing the option button on the control panel. If this error persists verify that the wiring is correct. Also verify that the sensor is mounted in an area that accurately represents the controlled humidity level.
ALA4	The controller will initiate this alarm if the humidity sensor reports a relative humidity above 95%.	The LCD screen will report the message ALA4. The controller will negate output until a relative humidity below 95% is report to the controller from the sensor.	Normal operation resumes once the sensed humidity is below 95% RH. The message will remain on the LCD screen until removed by pressing the option button on the control panel. If this error persists verify that the wiring is correct. Also verify that the sensor is mounted in an area that accurately represents the controlled humidity level.

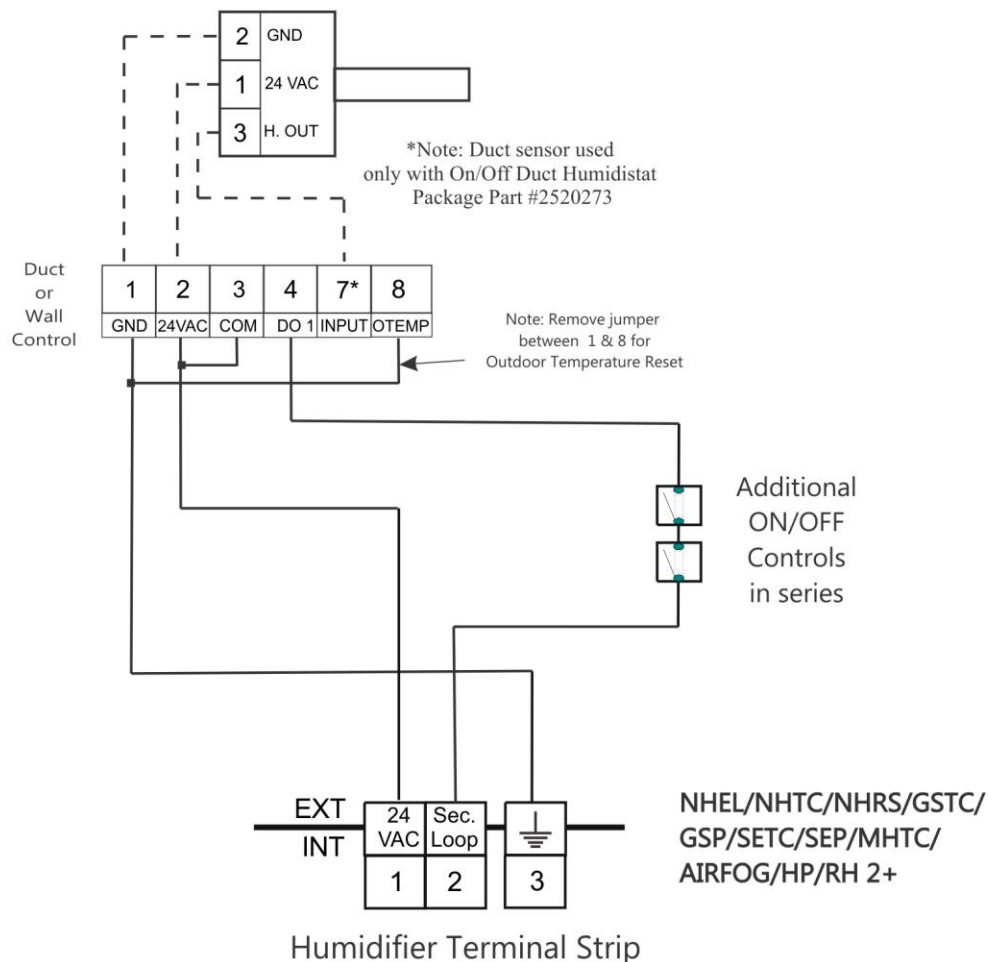
Note: If at any time this troubleshooting guide fails to provide the information needed Nortec's Technical Support Department can be reached at 1-866-NORTEC-1 to provide assistance.

NORTEC DIGITAL ON/OFF HUMIDISTAT WIRING DIAGRAM

Use on NH-EL, GSTC/GSP, SETC/SEP, MHTC, AIRFOG, HP and Rh series with the following accessories:

Part #	Description
2520273	Digital On/Off Duct Humidistat Package
2520265	Digital On/Off Humidistat w/o Sensor

Warning: Failure to wire the humidistat in accordance with the wiring diagram could permanently damage the electronics. Such errors will void the warranty. Cabling between controls and unit should be shielded 18 AWG



ON/OFF DIGITAL HUMIDISTAT Wiring Diagram for Livesteam

Part #	Description
2520273	On/Off Digital Duct Humidistat pkg.
2520265	On/Off Digital Humidistat w/o Sensor

Warning: Failure to wire the humidistat in accordance with the wiring diagram could permanently damage the electronics. Such errors will void the warranty.
Cabling between controls and unit should be shielded 18 AWG

HUMIDISTAT TO ACTUATOR CONNECTIONS

