On/Off Digital Wall Humidistat Installation Instructions

This document covers the operation and installation instructions for the following digital humidistat:

**Part #:** 2548731  
**Description:** ON/OFF Wall Humidistat

![Wall Humidistat Installation Locations](image1)

1 - Wall Humidity Control Installation

**Location:**
1. Do not install humidistat on an outside wall, near a heat source and/or in direct sunlight.  
2. Install the humidistat on a surface that is flat and clean.  
3. Install a vapor barrier to prevent sensor from interacting with inner wall draft.  
4. Use a sealed, single gang electrical mounting box (recessed in the wall) to mount the humidity sensor.

**Installation:**
1. Pull cables 6” (15 cm) out of the wall.  
2. Remove front face with digital display by loosening plastic retaining screw at the bottom. The front face will un hinge from the top of the retaining clips.  
3. Connect the control wires to the terminals according to wiring diagram 2548733 in this document. Figure 2 outlines the terminal layout.  
4. Secure the metal bracket to the mounting electrical box using 2 screws (#6 x 3/4” Phillips). Make sure the heads do not stand out more than 1/5” (5 mm) from mounting surface.  
5. Remount front face on metal bracket. Ensure clips engage the grooves on top of the bracket. Gently tighten bottom plastic retaining screw.

**Configuration:**
1. Using keypad, set specified humidity. For general health and comfort, a humidity setting of 50% is recommended.  
2. See Table 3 for outdoor temperature setback configuration, if optional outdoor temperature sensor is supplied (P/N 2520263 or 2553858).

![Terminal Strip](image2)

![Dimensions](image3)
**Legend:**
1. Display of current humidity value.
2. Display of setpoint.
3. Snowflake displayed if outdoor temperature setback active.
4. Adjusts setpoint and calibration (up).
5. Power ON/OFF.
6. Toggles between RH setpoint and temperature (if temperature sensor present).
7. Adjusts setpoint and calibration (down).

**Sensor Calibration**
The humidity sensor is factory calibrated, however, it can be field recalibrated. The calibration routine can be accessed by pressing the option key for > 3 seconds. Option key = the right key on the wall mount and middle key on the right side of the duct mount. Once the display changes select CAL H, press OPTION key again - the offset value is now shown.

Press up down keys to change. Press option key again to save changed value and return to previous level.

**Login Procedure**
Most applications can use default values.

**User Parameters (Password 0009)**

1. Press UP and DOWN button simultaneously for three seconds. The display shows the software version in the large digits and the product code in the small digits.
2. Pressing the OPTION button will indicate CODE on the small digits and 0000 on the large digits.
3. The code for accessing the control parameters is 0009
4. Select this using UP or DOWN buttons.
5. Press OPTION button after selecting the correct code.
6. Once logged in, the parameter is displayed immediately.
7. Select the parameters with the UP/DOWN buttons. Change a parameter by pressing the OPTION button. Three triangles will show up on the lower right and indicate that the parameter may be modified now. Use UP or DOWN buttons to adjust the value.
8. After you are done, press OPTION or POWER in order to return to the parameter selection level.

**Table 1: User Parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Range</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>UP 00</td>
<td>Enable change of operation modes</td>
<td>ON, OFF</td>
<td>ON (Enabled)</td>
</tr>
<tr>
<td>UP 01</td>
<td>Enable change of setpoints</td>
<td>ON, OFF</td>
<td>ON (Enabled)</td>
</tr>
<tr>
<td>UP 02</td>
<td>State after power failure: 0 = Switched OFF, 1 = Switched ON, 2 = state before power failure</td>
<td>0, 1, 2</td>
<td></td>
</tr>
<tr>
<td>UP 03</td>
<td>Celsius or Fahrenheit, Select ON for Fahrenheit, OFF for Celsius</td>
<td>ON, OFF</td>
<td>OFF (Celsius)</td>
</tr>
<tr>
<td>UP 04</td>
<td>Select contents of small digits in standard mode: 00 = OFF, 01 = Setpoint, 02 = Humidity Sensor, 03 = External Temperature Sensor</td>
<td>0...3</td>
<td>01 Standard: show setpoint</td>
</tr>
</tbody>
</table>

**Control Parameters (Password 0241)**

NOTE: Only experts should change these settings! See user parameters for login procedure.

**Table 2: Output Configuration**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Range</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP 00</td>
<td>Minimum setpoint limit in humidification mode</td>
<td>0...100%</td>
<td>10%</td>
</tr>
<tr>
<td>CP 01</td>
<td>Maximum setpoint limit in humidification mode</td>
<td>0...100%</td>
<td>90%</td>
</tr>
<tr>
<td>CP 02</td>
<td>Start delay for fan (Time the fan runs before control output starts)</td>
<td>0...255 s</td>
<td>10 s</td>
</tr>
<tr>
<td>CP 03</td>
<td>Stop delay for fan (Time the fan keeps running after control output stops)</td>
<td>0...255 s</td>
<td>90 s</td>
</tr>
</tbody>
</table>

**Table 3: Temperature Setback Configuration - *For humidity control only.***

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Range</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP 04</td>
<td>Enable temperature setback OFF = Temperature setback is disabled ON = Temperature setback is enabled</td>
<td>ON, OFF</td>
<td>OFF</td>
</tr>
<tr>
<td>CP 05</td>
<td>Setpoint limit at full setback</td>
<td>0...100%</td>
<td>20%</td>
</tr>
<tr>
<td>CP 06</td>
<td>Lower temperature limit: Outside temperature with maximum setback The setpoint will be equal to the minimum setpoint limit</td>
<td>-40...60°C -40...160°F</td>
<td>-30°C (-22°F)</td>
</tr>
<tr>
<td>CP 07</td>
<td>Upper temperature limit: Outside temperature at begin of setback.</td>
<td>-40...60°C 40...160°F</td>
<td>0°C (32°F)</td>
</tr>
<tr>
<td>CP 08</td>
<td>Number of seconds taken into account to calculate the averaging input signal. Low value = fast response High value = slow response</td>
<td>0...100</td>
<td>30</td>
</tr>
</tbody>
</table>
### Table 4: Technical Specification

<table>
<thead>
<tr>
<th>Power Supply</th>
<th>Operating Voltage</th>
<th>24 V AC/DC ± 10 %, 50…60 Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Consumption</td>
<td>Max. 1.5 VA</td>
<td></td>
</tr>
<tr>
<td>Electrical Connection</td>
<td>Terminal Connectors, wire: AWG 24…12</td>
<td></td>
</tr>
<tr>
<td>Internal rectification: Signal ground = power ground</td>
<td>Half wave rectified, Isolation transformer required</td>
<td></td>
</tr>
</tbody>
</table>

**Signal Inputs**

- **Humidity Input:**
  - **Range:** Element: Polymer-Based Capacity Sensor
  - **Accuracy:** 0…100% r.H.: ± 5.0% 10%…90% r.H.: ± 7.0% 0…10% and 90…100% ± 1% r.H.
  - **Hysteresis:** ±1% r.H.

- **Temperature Input**
  - **Range:** External NTC (P/N: 2520263)
  - **Accuracy:** -40…70 °C (-40…158 °F):
    - -40…0 °C (-40…32 °F): 0.5 C
    - 0…50 °C (32…122 °F): 0.2 C
    - 50…70 °C (122…158 °F): 0.5 C

**Signal Outputs**

- **Digital Switching Outputs**
  - **Switching type:** DO1…DO2 Relays
  - **AC Switching power:** 2 x 1.0 A, 24 Vac max.

**Environment**

- **Operation**
  - **Climatic Conditions:** To IEC 721-3-3 class 3 K5
  - **Temperature:** 0…50 °C (32…122 °F)
  - **Humidity:** <95 % r.H. non-condensing
- **Transport & Storage**
  - **Climatic Conditions:** To IEC 721-3-2 and IEC 721-3-1 class 3 K3 and class 1 K3
  - **Temperature:** -25…70 °C (-13…158 °F)
  - **Humidity:** <95 % r.H. non-condensing, class 2M2

**Standards**

- **Product standards**
  - EN 60 730 – 1
  - EN 60 730 – 2 – 9
- **Degree of Protection**
  - IP30 to EN 60 529
- **Safety Class**
  - III (IEC 60536)

**Housing**

- **Cover, back part**
  - Polycarbonate PC (UL94 class V-0)
- **Mounting Plate**
  - PTFE coated 1μm pores

**General**

- **Dimensions (H x W x D):**
  - Front part: 112 x 73 x 15 mm (4.4” x 2.9” x 0.6”)
  - Power case: ø 58 x 32 mm (ø 2.3” x 1.3”)
- **Weight (including package):** 220g

**Power Failure**

Upon power-interruption, all parameters and setpoints are memorized in non-volatile memory and therefore do not have to be re-entered again.

### Table 5: Error messages and Troubleshooting Guide

<table>
<thead>
<tr>
<th>Display</th>
<th>Cause</th>
<th>Symptoms</th>
<th>Corrective Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Err1</td>
<td>Humidity sensor faulty. The humidity sensor is damaged.</td>
<td>The LCD screen will report the message Err1.</td>
<td>Check that the humidity sensing element is not loose</td>
</tr>
<tr>
<td>Err2</td>
<td>External input for temperature setback missing or damaged.</td>
<td>The LCD screen will report the message Err2.</td>
<td>Check that the temperature sensor is connected to the humidistat. If the sensor is connected and the error message persists a replacement sensor should be ordered.</td>
</tr>
</tbody>
</table>

**NOTE:** If at any time this troubleshooting guide fails to provide the information needed, the Technical Support Department can be reached at 1-866-667-832-1 to provide assistance.
Wall and Duct ON/OFF HUMIDISTAT
WIRING DIAGRAM

Use for NH-EL, RH Series, NHRS, GSTC/GSP, SETC/SEP, MHTC, AIRFOG, and HP with:

<table>
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<tr>
<th>Part #</th>
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<tbody>
<tr>
<td>2548731</td>
<td>Digital ON/OFF Wall Humidistat</td>
</tr>
<tr>
<td>2548732</td>
<td>Digital ON/OFF Duct Humidistat</td>
</tr>
<tr>
<td>2520263</td>
<td>Outdoor Temperature Sensor</td>
</tr>
<tr>
<td>2553858</td>
<td>Outdoor Mount Temperature Sensor</td>
</tr>
</tbody>
</table>

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