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**SDC-H1T Duct humidity transmitter & temperature sensor**

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**Features**

- Humidity and temperature measurement for air ducts
- Sensor reconditioning function against contamination
- Anti-Creep function for high humidity environments
- Minimum and maximum value memory
- Replaceable sensor element
- 0...10 V, 0...20 mA or 2...10 V, 4...20 mA measuring signals selectable with jumpers
- Optional alternative signal ranges programmable
- Selectable averaging signal
- Optional LCD display (OPC-S) or external display (OPA-S)
- Status LED

**Applications**

- Humidity and temperature measurement for supply and return air ducts in heating, ventilation and air conditioning applications
- Recording of minimum and maximum values for critical environments
- Supervision of critical humidity and temperatures
- Measurements in high humidity environments

**Humidity transmitter**

A capacitive sensor element is used for measuring relative humidity. The applied measuring technology guarantees excellent reliability and long-term stability. The microprocessor samples the humidity once per second. It calculates an averaging signal over a preset number of seconds and generates the output signal. Standard output signal range and types may be selected by jumpers. Standard signal ranges are: 0...10 VDC, 2...10 VDC, 0...20 mA and 4...20 mA. Other ranges can be defined by using a programming tool (OPA-S or OPC-S). A version with display is possible by ordering the integrated display accessory OPC-S.

**Minimum and maximum values**

Using the programming tool, the user has the option to read out and reset minimum and maximum values. The minimum and maximum values may as well be used as output signals. The minimum and maximum values are saved into the EEPROM and are available after a power interruption.

**Temperature sensor**

The sensor measures the temperature by use of a NTC, PT, or NI-sensing element. The sensing element is either a glass packed thermistor with a negative temperature coefficient, a platinum film or a nickel thin layer-based probe. Its resistance changes according to the temperature. The change follows a specified curve. Contact our sales department for curves not yet listed below.

**Safety****DANGER! Safety advice**

This device is for use as a humidity transmitter and temperature sensor. It is not a safety device. Where a device failure could endanger human life and property, it is the responsibility of the client, installer and system designer to add additional safety devices to prevent such a device failure. Ignoring specifications and local regulations may cause equipment damage and endangers life and property. Tampering with the device and misapplication will void warranty.

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## Types and Ordering

Per default a sensor element with 3% RH accuracy, an NTC 10kΩ temperature sensor and a PG9 cable gland (item name AMC-1) for cables Ø 4 – 8 mm (AWG 6 – 1) is included. Contact your local sales contact to order sensing elements with different accuracies and temperature curves or if you prefer a sensor with conduit connectors or a built-in display module.

### Humidity transmitter with temperature sensor (default)

| Product Name       | Product No. | Description/Option                                                                                                          |
|--------------------|-------------|-----------------------------------------------------------------------------------------------------------------------------|
| SDC-H1Tn10-08-A3-1 | 40-300148   | Transmitter for duct mounting: probe length 8 cm (3.1"), incl. cable gland AMC-1 and humidity sensor element AES4-HTn10-A3  |
| SDC-H1Tn10-16-A3-1 | 40-300149   | Transmitter for duct mounting: probe length 16 cm (6.2"), incl. cable gland AMC-1 and humidity sensor element AES4-HTn10-A3 |

### Sensor element (for replacement only)

| Product Name    | Product No. | Description/Option                      |             |                                                                                                 |
|-----------------|-------------|-----------------------------------------|-------------|-------------------------------------------------------------------------------------------------|
| AES4-HTn18-Ax   | 40-500164-x | NTC 1.8kΩ at 25°C (77°F)                | B25/50 3470 | Accuracy option of humidity sensor element:<br><br>x = 2: 2% rH<br>x = 3: 3% rH<br>x = 5: 5% rH |
| AES4-HTn3-Ax    | 40-500160-x | NTC 3kΩ at 25°C (77°F)                  | B25/50 3935 |                                                                                                 |
| AES4-HTn10-Ax * | 40-500145-x | NTC 10kΩ at 25°C (77°F)                 | B25/50 3935 |                                                                                                 |
| AES4-HTn11-Ax   | 40-500161-x | NTC 10kΩ at 25°C (77°F)                 | B25/50 3630 |                                                                                                 |
| AES4-HTn12-Ax   | 40-500169-x | NTC 10kΩ at 25°C (77°F)                 | B25/50 3380 |                                                                                                 |
| AES4-HTn20-Ax   | 40-500162-x | NTC 20kΩ at 25°C (77°F)                 | B25/50 4200 |                                                                                                 |
| AES4-HTn100-Ax  | 40-500163-x | NTC 100kΩ at 25°C (77°F)                | B25/50 4200 |                                                                                                 |
| AES4-HTp1-Ax    | 40-500165-x | PT100, 100Ω at 0°C (32°F)               | EN60751     |                                                                                                 |
| AES4-HTp2-Ax    | 40-500166-x | PT1000, 1kΩ at 0°C (32°F)               | EN60751     |                                                                                                 |
| AES4-HTk5-Ax    | 40-500167-x | NI1000, 1kΩ at 0°C (32°F)<br>5000 ppm/K | DIN 43760   |                                                                                                 |
| AES4-HTk6-Ax    | 40-500168-x | NI1000, 1kΩ at 0°C (32°F)<br>6180 ppm/K | DIN 43760   |                                                                                                 |

\* Vector Controls standard sensor

### Accessories

| Product Name | Product No. | Description/Option                           |
|--------------|-------------|----------------------------------------------|
| OPC-S        | 40-500029   | Built in display and programming module      |
| OPA-S        | 40-500006   | External display module                      |
| AMS-1        | 20-100116   | Weather shield to protect the sensor element |
| AMC-2        | 40-500074   | Conduit connector NPT 1/2                    |

## Technical Specifications

|                       |                                                 |                                                                                                                               |
|-----------------------|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| <b>Power supply</b>   | Operating voltage                               | 24 VAC 50/60 Hz $\pm$ 10%, 24 VDC $\pm$ 10%                                                                                   |
|                       | Transformer                                     | SELV to HD 384, Class II, 48VA max                                                                                            |
|                       | Power consumption                               | Max 2 VA                                                                                                                      |
|                       | Terminal connectors                             | For wire 0.34...2.5 mm <sup>2</sup> (AWG 22...13)                                                                             |
| <b>Sensing probe</b>  | Humidity sensor                                 | Capacity sensor element                                                                                                       |
|                       | Range                                           | 0...100%RH                                                                                                                    |
|                       | Measuring accuracy                              | See figure 1                                                                                                                  |
|                       | Hysteresis                                      | $\pm$ 1%                                                                                                                      |
|                       | Repeatability                                   | $\pm$ 0.1%                                                                                                                    |
|                       | Stability                                       | < 0.5% / year                                                                                                                 |
|                       | Thermistor:                                     | NTC                                                                                                                           |
|                       | Accuracy                                        | -40...0 °C (-40...32 °F) 0.5 K<br>0...50 °C (32...122 °F) 0.2 K<br>50...70 °C (122...158 °F) 0.5 K                            |
|                       | Platinum-film                                   | PT according EN 60751                                                                                                         |
|                       | Range (probe only)                              | EN 60751, Class B                                                                                                             |
| <b>Signal outputs</b> | Accuracy                                        | +/- 0.3 at 0 °C (32 °F),<br>0.005 x t[K] for values away from 0 °C (32 °F)                                                    |
|                       | Nickel thin layer                               | 1000 $\Omega$ at 0 °C (32 °F), 5000 ppm/K                                                                                     |
|                       | Range (probe only)                              | DIN 43760                                                                                                                     |
|                       | Accuracy                                        | +/- 0.4 at 0 °C (32 °F),<br><0°C (32 °F) 0.028 x t[K], >0 °C (32 °F) 0.007 x t[K]                                             |
|                       | Analog outputs                                  | 0...10 VDC or 0...20 mA                                                                                                       |
| <b>Environment</b>    | Output signal                                   | 10 Bit, 9.7 mV, 0.019.5 mA                                                                                                    |
|                       | Resolution                                      | Voltage: $\geq$ 1 k $\Omega$ Current: $\leq$ 250 $\Omega$                                                                     |
|                       | Maximum load                                    |                                                                                                                               |
|                       | Operation                                       | To IEC 721-3-3                                                                                                                |
|                       | Climatic conditions                             | class 3K5                                                                                                                     |
|                       | Temperature (no display) / with display (OPC-S) | -40...70°C (-40...158°F) / 0-50°C (32-122°F)                                                                                  |
|                       | Humidity                                        | <95% RH non-condensing                                                                                                        |
|                       | Transport & storage                             | To IEC 721-3-2 and IEC 721-3-1                                                                                                |
|                       | Climatic conditions                             | class 3K3 and class 1K3                                                                                                       |
|                       | Temperature (no display) / with display (OPC-S) | -40...80°C (-40...176°F) / 0-50°C (32-122°F)                                                                                  |
| <b>Standards</b>      | Humidity                                        | <95% RH non-condensing                                                                                                        |
|                       | Mechanical conditions                           | class 2M2                                                                                                                     |
|                       | Degree of protection                            | IP60 to EN 60529                                                                                                              |
|                       | Mounted probe down with AMS-1                   | IP63                                                                                                                          |
|                       | Safety class                                    | III (EN 60730-1)                                                                                                              |
| <b>General</b>        | Housing Materials                               | Flame retardant PC+ABS plastic (UL94 class V-0)                                                                               |
|                       | Cover, back part                                | PTFE coated 1 $\mu$ m pores                                                                                                   |
|                       | Filter material                                 |                                                                                                                               |
|                       | Dimensions (H x W x D)                          | Transmitter case 68 x 91 x 47mm (2.7 x 3.7 x 1.9 in)<br>Probe $\varnothing$ 14 x 80/160 mm ( $\varnothing$ 0.55 x 3.1/6.2 in) |
|                       | Weight (incl. package)                          | SDC-H1Tn10-08-A3-1 229 g (8.1 oz)<br>SDC-H1Tn10-16-A3-1 264 g (9.3 oz)                                                        |

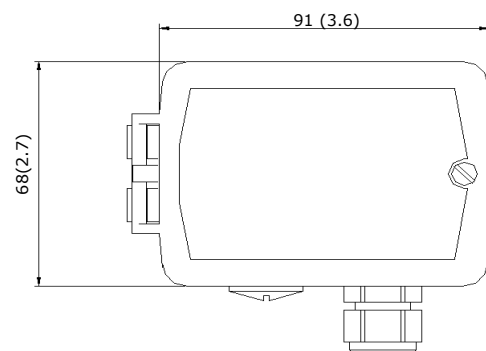
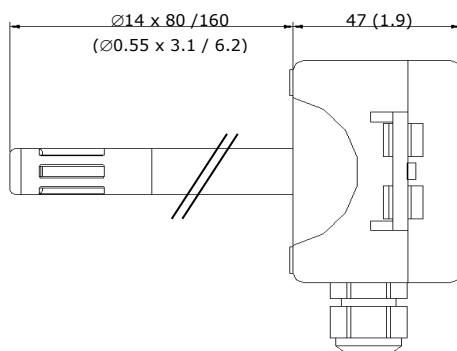
## Product testing and certification



Declaration of  
Conformity

Information on the conformity of our products can be found on our website  
[www.vectorcontrols.com](http://www.vectorcontrols.com) on the corresponding product page under "Downloads".

## Dimensions mm(inch)



## Mounting and Installation

### Mounting location

The transmitter should be installed on the duct in an area where the air stream is well mixed:

- Locate a supply air sensor two or three meters downstream from the nearest fan and coil.
- Mount the return air sensor close to the air inlet but downstream from a return fan if one is present.



#### Important

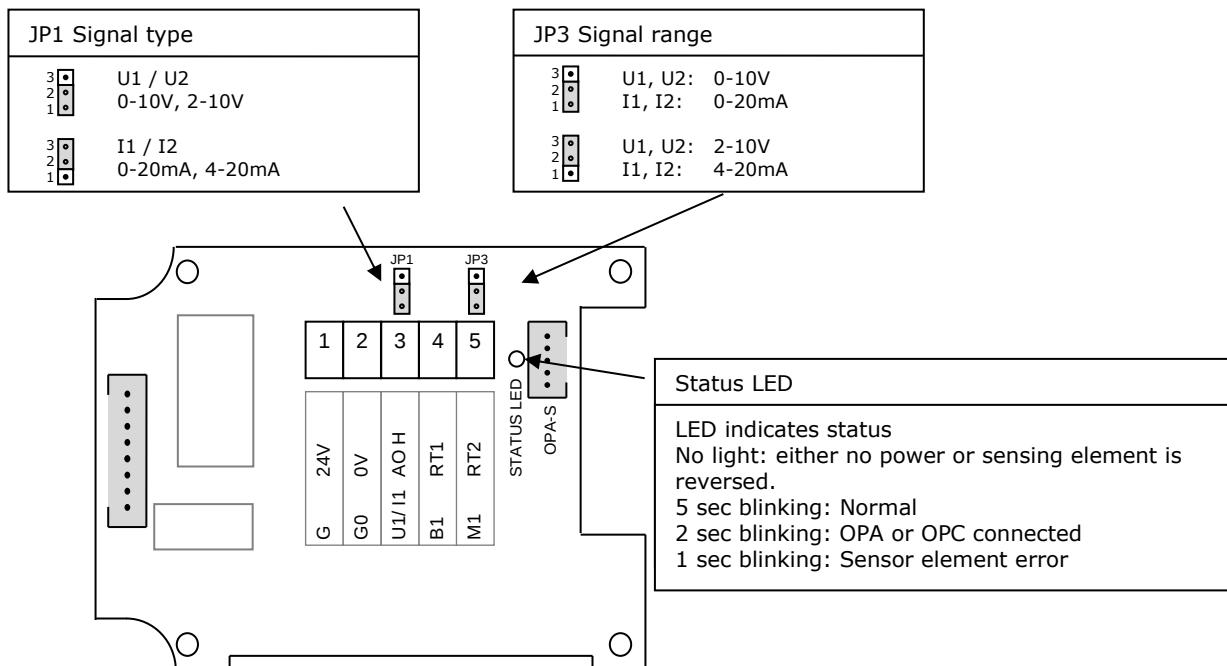
Observe local regulations!

### Mounting instruction / replacing the sensor element



See installation sheet no. 70-000525 ([www.vectorcontrols.com](http://www.vectorcontrols.com)).

### Jumper settings



### Recondition the sensing element



#### Important

If the sensor has been exposed to chemical contamination or prolonged exposure to very humid climates (> 80%), we recommend running the "Sensor Reconditioning Function" once prior to continuous use to remove contamination and creep effect. This will ensure that the sensor operates at its specified accuracy.



For details on how to activate the sensor reconditioning function see chapter "Sensor reconditioning function" on page 6.

### Information about storage, packaging and usage environment



#### NOTE:

The sensing part is a polymer, which measures the humidity in the ambient air. For proper sensor operation some mandatory precautions need to be taken during storage, packaging and usage. The transmitter and its sensing element should not be packaged, stored or used in out-gassing plastic materials, which could cause sensor contamination. In particular, it is recommended not to use any glue or adhesive tapes (Sellotape, Scotch-Tape, Tesa-Film, etc.) within the package or close proximity of the sensor. Foamed materials often cause contamination problems and should not be used to package the transmitter. Best packaging material is a simple cardboard box or a deep-drawn plastic case in a cardboard box.

## Operation of the –OP type transmitter

### Standard display

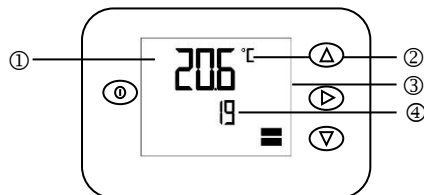
Single input transmitters: The current, minimum or maximum value is shown in the large digits. The small digits indicate the active input (IN 1). The vertical bar on the right side indicates the actual output voltage or current in 10% steps.

### Indication and reset of minimum and maximum values

Activate the desired transmitter for dual transmitter by pressing the RIGHT key. Press UP to display maximum values, press DOWN key to display minimum values.

Resetting minimum or maximum values: Pressing either UP or DOWN keys for longer than 3 seconds while the minimum or maximum values are displayed.

### Display



#### Legend:

- 1: 4-digit display of current value, minimum, maximum or control parameter
- 2: Unit of displayed value, °C, °F, % or none
- 3: Vertical display of output or input signal with a resolution of 10%
- 4: 4-digit display of current value or control parameter

### Operation keys

| Key | Function   | Description                                                                   |
|-----|------------|-------------------------------------------------------------------------------|
| ①   | LEFT key:  | Exit from parameter menu                                                      |
| △   | UP key:    | Display maximum values,<br>Press for more than 2 seconds resets maximum value |
| ▽   | DOWN key:  | Display minimum values,<br>Press for more than 2 seconds resets minimum value |
| ▷   | RIGHT key: | Select transmitter, for transmitters with more than one input.                |

## Sensor

### Accuracy of Temperature & Humidity sensor in -H, -T and -HT type AES4-HT-A3 standard sensor

Relative humidity absolute accuracy

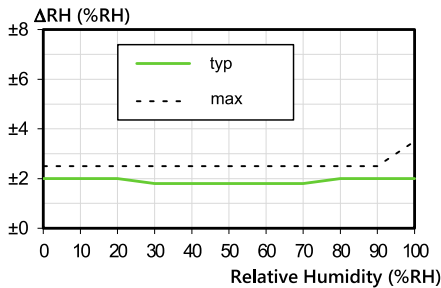


Figure 1: Typical and maximal RH accuracy at 25°C (77°F)

Temperature accuracy

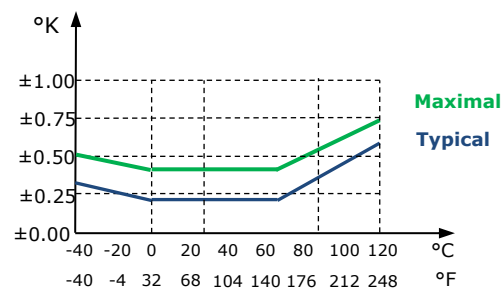


Figure 2: Typical and maximal temperature accuracy

### Anti-creep function for devices with AES4 sensors

#### Ensuring high accuracy of humidity measurement

When the AES4 sensor is exposed to very humid environments for extended periods of time, an anti-creep function is activated in the background to ensure that the sensing element remains accurate. While the anti-creep function is active, the RH value will appear to be frozen for short periods of time.

#### Sensor reconditioning function

Reconditioning the humidity sensing element eliminates chemical contamination and creep effects on the sensor and ensures that it operates at its specified accuracy.

Reconditioning can be configured to run once, periodically, or only at power-up.

Parameter **IP03** allows for sensor reconditioning of AES4 sensors.

Per default the value of this parameter is 0. If a number is entered the reconditioning procedure is started:

- The sensor is reconditioned for the number of minutes entered in **IP03**. During this time the status LED blinks in 1 second rhythm.
- If no interval is defined with **IP04**, the number in **IP03** is set to 0, once the recondition has started.
- If an interval is set with **IP04**, the value remains unchanged. When the internal counter reaches 0, reconditioning stops. The interval in hours defined in **IP04** determines the waiting time for the next reconditioning. The interval is stopped during a power failure and resumed when power is restored.

Parameter **IP05** allows reconditioning at each power-up. This reconditioning interval is independent of **IP03** or **IP04** settings. At each power up, the sensor will perform the reconditioning function according to the time in minutes defined with **IP05**.



#### Recommendation

We recommend to set the **IP03** value to **80** minutes recondition time if the sensor is out of its accuracy range.



#### Note

The display will freeze during reconditioning.



#### Important

Reconditioning will not continue if interrupted by a power cycle!

**Resistance table for thermistors (NTC)**

| °C                        | °F  | Tn18 [kΩ] | Tn3 [kΩ] | Tn5 [kΩ] | Tn10 [kΩ] | Tn11 [kΩ] | Tn12 [kΩ] | Tn20 [kΩ] | Tn100 [kΩ] |
|---------------------------|-----|-----------|----------|----------|-----------|-----------|-----------|-----------|------------|
| <b>B<sub>25/50</sub></b>  |     | 3470      | 3935     | 3470     | 3935      | 3630      | 3380      | 4200      | 4200       |
| <b>B<sub>25/85</sub></b>  |     | -         | 3974     | 3535     | 3974      | 3687      | 3435      | 4260      | 4260       |
| <b>B<sub>25/100</sub></b> |     | -         | 3988     | 3526     | 3988      | 3715      | 3455      | 4285      | 4285       |
| Signal type →             |     | NTC 1.8k  | NTC 3k   | NTC 5k   | NTC 10k-2 | NTC-10k-3 |           | NTC 20k   | NTC 100k   |
| -50                       | -58 | -         | 201,1    | 161,9    | 670,2     | 441,3     | 329,2     | 1711      | 8558       |
| -40                       | -40 | 40,58     | 100,9    | 89,49    | 336,4     | 239,7     | 188,4     | 814,0     | 4095       |
| -30                       | -22 | 22,938    | 53,09    | 54,07    | 177,0     | 135,3     | 111,3     | 415,6     | 2077       |
| -20                       | -4  | 13,462    | 29,12    | 33,21    | 97,08     | 78,91     | 67,74     | 220,6     | 1105       |
| -10                       | 14  | 8,177     | 16,60    | 21,07    | 55,33     | 47,54     | 42,45     | 122,4     | 612,4      |
| 0                         | 32  | 5,115     | 9,795    | 13,73    | 32,65     | 29,49     | 27,28     | 70,20     | 351,0      |
| 10                        | 50  | 3,301     | 5,969    | 9,041    | 19,90     | 18,79     | 17,96     | 41,56     | 207,8      |
| 20                        | 68  | 2,189     | 3,747    | 6,064    | 12,49     | 12,26     | 12,09     | 25,34     | 126,7      |
| 25                        | 77  | 1,8       | 3,000    | 5,000    | 10,00     | 10,00     | 10,00     | 20,00     | 100,00     |
| 30                        | 86  | 1,488     | 2,417    | 4,139    | 8,057     | 8,194     | 8,313     | 15,88     | 79,43      |
| 40                        | 104 | 1,033     | 1,598    | 2,875    | 5,327     | 5,592     | 5,828     | 10,21     | 51,06      |
| 50                        | 122 | 0,731     | 1,081    | 2,032    | 3,603     | 3,893     | 4,161     | 6,718     | 33,60      |
| 60                        | 140 | 0,528     | 0,746    | 1,463    | 2,488     | 2,760     | 3,021     | 4,518     | 22,59      |
| 70                        | 158 | 0,386     | 0,525    | 1,069    | 1,751     | 1,990     | 2,229     | 3,100     | 15,50      |
| 80                        | 176 | 0,286     | 0,376    | 0,792    | 1,255     | 1,458     | 1,669     | 2,168     | 10,84      |
| 90                        | 194 | 0,215     | 0,275    | 0,601    | 0,915     | 1,084     | 1,266     | 1,542     | 7,707      |
| 100                       | 212 | 0,163     | 0,203    | 0,464    | 0,678     | 0,817     | 0,973     | 1,114     | 5,571      |
| 110                       | 230 | -         | 0,536    | 0,354    | 0,512     | 0,624     | 0,752     | 0,818     | 4,092      |
| 120                       | 248 | -         | 0,123    | 0,272    | 0,410     | 0,481     | 0,605     | 0,609     | 3,046      |
| 130                       | 266 | -         | 0,097    | 0,212    | 0,322     | 0,380     | 0,487     | 0,460     | 2,298      |
| 140                       | 284 | -         | 0,077    | 0,169    | 0,257     | 0,300     | 0,395     | 0,351     | 1,755      |
| 150                       | 302 | -         | 0,063    | 0,137    | 0,210     | 0,240     | 0,325     | 0,271     | 1,356      |

**Resistance table for platinum film and NI1000 elements**

| °C  | °F  | Tp1 [Ω]            | Tp2 [Ω]             | Tk5 [Ω]           | Tk6 [Ω]          |
|-----|-----|--------------------|---------------------|-------------------|------------------|
|     |     | PT100<br>DIN 60751 | PT1000<br>DIN 60751 | NI1000,<br>K=5000 | NI1000<br>K=6180 |
| -50 | -58 | 80,28              | 803,0               | 790,88            | 742,55           |
| -40 | -40 | 84,27              | 843,0               | 830,84            | 791,31           |
| -30 | -22 | 88,22              | 882,0               | 871,69            | 841,46           |
| -20 | -4  | 92,16              | 922,0               | 913,48            | 892,96           |
| -10 | 14  | 96,09              | 961,0               | 956,24            | 945,82           |
| 0   | 32  | 100,00             | 1000,0              | 1000              | 1000             |
| 10  | 50  | 103,90             | 1039,0              | 1044,79           | 1055,52          |
| 20  | 68  | 107,79             | 1078,0              | 1090,65           | 1111,36          |
| 30  | 86  | 111,67             | 1117,0              | 1137,62           | 1170,56          |
| 40  | 104 | 115,54             | 1155,0              | 1185,71           | 1230,11          |
| 50  | 122 | 119,40             | 1194,0              | 1234,98           | 1291,05          |
| 60  | 140 | 123,24             | 1232,0              | 1285,45           | 1353,40          |
| 70  | 158 | 127,07             | 1270,5              | 1337,15           | 1417,21          |
| 80  | 176 | 130,89             | 1309,0              | 1390,12           | 1482,50          |
| 90  | 194 | 134,70             | 1347,0              | 1444,39           | 1549,34          |
| 100 | 212 | 138,50             | 1385,0              | 1500,00           | 1617,79          |
| 110 | 230 | 142,29             | 1423,0              | 1556,98           | 1687,89          |
| 120 | 248 | 146,06             | 1460,5              | 1615,37           | 1759,72          |
| 130 | 266 | 149,80             | 1498,0              | 1675,19           | 1833,35          |
| 140 | 284 | 153,60             | 1536,0              | 1736,48           | 1908,87          |
| 150 | 302 | 157,30             | 1573,0              | 1799,27           | 1986,35          |
| 160 | 320 | 161,05             | 1610,5              | 1863,60           | 2065,89          |
| 170 | 338 | 164,75             | 1647,5              | 1929,50           | 2147,58          |
| 180 | 356 | 168,45             | 1684,5              | 1997,00           | 2231,53          |
| 190 | 374 | 172,15             | 1721,5              | 2066,15           | 2317,83          |
| 200 | 392 | 175,85             | 1758,5              | 2136,96           | 2406,60          |

## Configuration

The transmitter can be adapted to fit perfectly into any application by adjusting the software parameters. The parameters are set with the operation terminals OPA-S or OPC-S. The OPA-S may also be used as remote indicator.

### Configuration parameters

The parameters are password protected. The parameters can be changed as follows:

1. Press UP and DOWN key simultaneously for three seconds. The display will indicate CODE.
2. Select a password using UP or DOWN keys. Dial **09** in order to get access to the configuration parameters. Press the RIGHT key after selecting the correct password.
3. Once logged in, choose IP for input configuration or OP for output configuration using UP or DOWN. Press the RIGHT key after selection.
4. The parameters are now displayed. The small digits show the parameter number, the large one its value.
5. Select the parameters with the UP/DOWN keys. Change a parameter by pressing the RIGHT key. The MIN and MAX symbols show up and indicate that the parameter may be modified now. Use UP and DOWN key to adjust the value.
6. After you are done, press RIGHT or LEFT key in order to return to the parameter selection level.
7. Press the LEFT key again so as to leave the menu. The unit will return to normal operation if no key is pressed for more than 5 minutes.
8. The parameters and its values depend on the transmitter. Please use the respective datasheet for the list of parameters.

### Input configuration

| Parameter | Description                                                                                                                                                                                   | Range       | Default        |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|----------------|
| IP 00     | H1: Show Percent                                                                                                                                                                              | ON, OFF     | ON             |
| IP 01     | H1: Samples taken for averaging control signal                                                                                                                                                | 1...255     | 10             |
| IP 02     | H1: Calibration                                                                                                                                                                               | -10...10%   | 0              |
| IP 03     | Duration of the AES4-HT sensor reconditioning.<br>This value will be cleared if periodic reconditioning is not active. It will remain if periodic reconditioning is enabled.<br>0: Not active | 0-240 min   | 0 (not active) |
| IP 04     | Interval period for AES4-HT sensor reconditioning<br>0: Periodic reconditioning disabled<br>1-240: Period reconditioning enabled (repeats every xxx hours)                                    | 0-240 hours | 0 (not active) |
| IP 05     | Power up reconditioning for AES4-HT sensor.<br>The sensor is reconditioned each time it is power up.<br>Periodic reconditioning settings have no effect.<br>0: Not active.                    | 0-240 min   | 0 (not active) |

### Output configuration

| Parameter | Description                                                                                                                                                  | Range      | Default |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|---------|
| OP 00     | AO1: Humidity: Configuration of output signal:<br>0 = Feedback humidity input,<br>1 = Feedback humidity minimum value<br>2 = Feedback humidity maximum value | 0 – 2      | 0       |
| OP 01     | AO1: Humidity: Minimum limitation of output signal                                                                                                           | 0 – Max %  | 0%      |
| OP 02     | AO1: Humidity: Maximum limitation of output signal                                                                                                           | Min – 100% | 100%    |

### Output signal configuration

The analog output signal type may be configured with a jumper for 0-10 VDC or 0-20 mA control signals. The jumpers are located next to the terminal connector of each analog output. See table below for jumper placement. The factory setting is to 0-10 VDC.

| Signal type | JP1   |
|-------------|-------|
| 0 – 10 V    | (1-2) |
| 0 – 20 mA   | (2-3) |

The signal range may be set with JP3 for both analog outputs. JP3 will only operate if the output range specified with OP01 and OP02 is left at the default position of 0...100%. With any other setting the position of JP3 has no influence and the range defined with the output parameters applies.

| Signal range        | JP3   |
|---------------------|-------|
| 0 – 10 V, 0 – 20 mA | (1-2) |
| 2 – 10 V, 4 – 20 mA | (2-3) |

### Jumper settings



For jumper settings see chapter "Jumper settings" on page 4.

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## **Smart Sensors and Controls Made Easy!**

## **Quality - Innovation – Partnership**

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