



eStat20 DUO Electronic Hygro-Thermostat with remote sensor head

- Easy to install
- up to 25 m cable length for remote sensor head
- 2 potential-free switching outputs configurable as openers or closers
- Setpoint and switching hystereses for temperature and relative humidity independently configurable
- Display of current relay switching states
- 2 continuous 0...10 V signal outputs for relative humidity and temperature
- calibrated measuring probe in exchangeable plug-in design
- Alternating display of relative humidity and temperature

Technical data

Humidity

Measuring range	0...100 %rh
Control range of relative humidity	5...95 %rh
Setting range of the setpoints	0.5...9 %rh
Measuring uncertainty	
10...90 %rh at 25°C max	≤ ±2 %rh
0...10 %rh and 90...100 %rh at 25°C	Additional ≤ ±0.2 %rh / %rh
Long term stability	≤ 0.5 %rh/a
Hysteresis	≤ ±1 %rh
Typ. temperature influence at 25°C	±0.05%rh/K

Electrical data

Switching outputs:	2 relay contacts potential-free, normally open
Setting as opener / closer	Via DIP switch
Switching voltage	≤ 48V DC / AC ≥ 100 μV
Breaking capacity	≤ 60 W / 62.5 VA
Power factor	≥ 0,9
Switching cycles (at Pmax)	> 10 ⁵
Switching current	≤ 2A
Continuous output rel. humidity	0...10 V DC
Continuous output temperature	0...10 V DC
Supply voltage	15...30 V DC 13...26 V AC
Consumption	≤ 30 mA
Standards applied	EN 61326-1

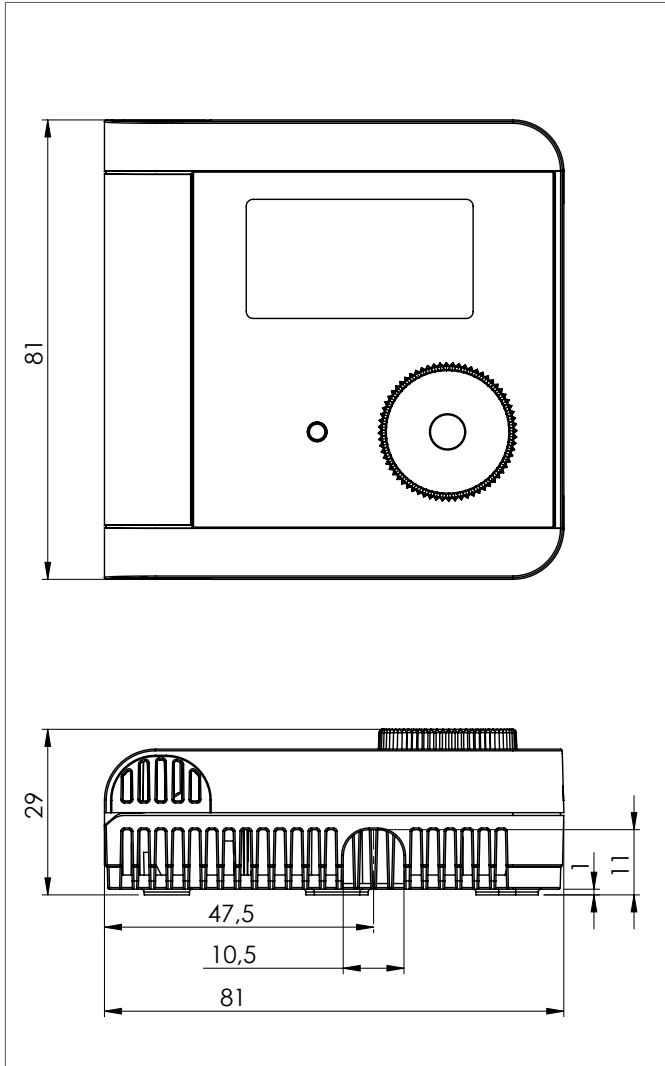
Temperature

Control range of temperature	-35...+80 °C
Setting range of the setpoints	0.1...10 K
Output ranges, analogue	0...+50 °C -30...+70 °C 0...+100 °C further ranges on request
Measuring uncertainty at 5°C - 60°C	typ. ±0.2 K additional
-40...5°C and 60°C...80°C	typ. ±7 mK/K

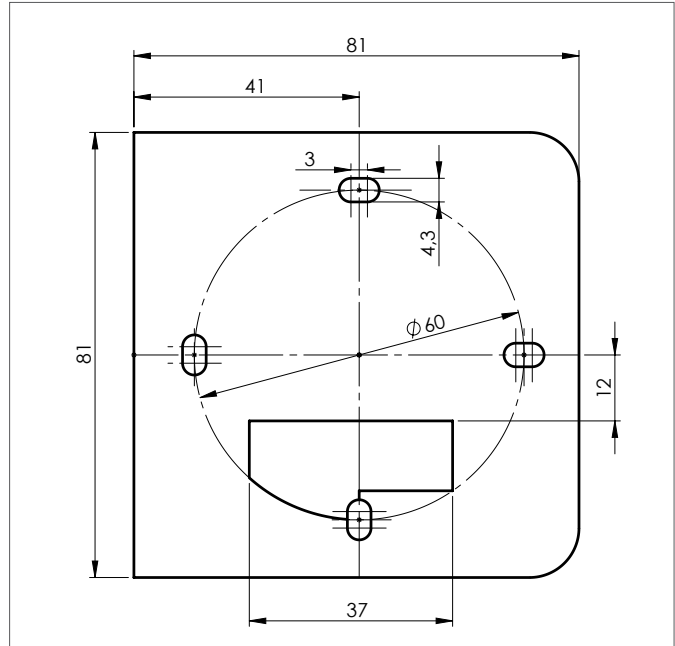
General data

Measuring medium	Air, non-pressurised, non-condensing, non-aggressive
Operating temperature housing	-30...+60 °C
cable sensor	-40...+85 °C
Storage temperature	-40...+85 °C
Electrical connections at mains terminals	
Wire cross-section at each connection	max. 1.5 mm ²
Cable diameter	
→ Surface-mounted cable	max. 1 x Ø 6.5 mm or 2 x Ø 4.5 mm
→ Concealed cable	
see: user instructions on page 5	
degree of protection cable sensor	
with membrane filter ZE08 (basic equipment)	IP30
with PTFE sintered filter ZE05 (optional)	IP65
Housing IP rating	IP 30D
Safety category	III
Housing materials	ABS
Housing colour	Similar to RAL 9003 signal white
Digital display	2 lines

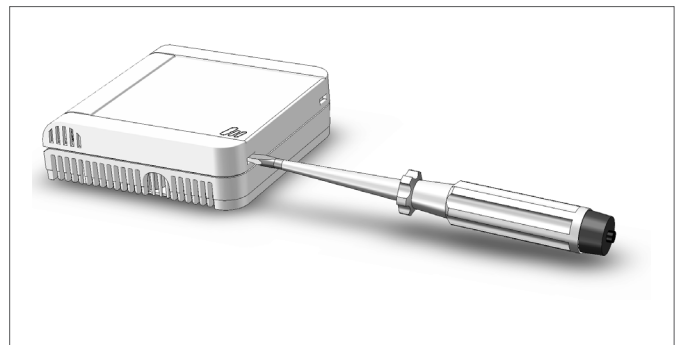
Dimensional drawing



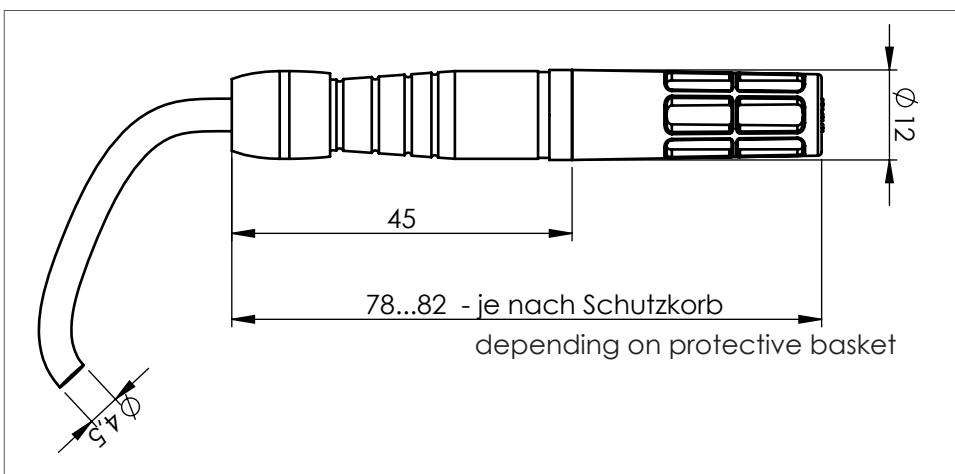
Drilling pattern



Opening the housing

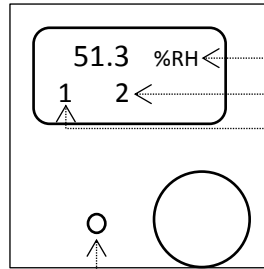


Dimensional drawing of the cable sensor



Configuration guide

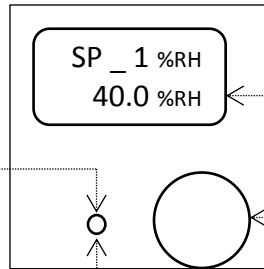
Operation mode



Alternately displays current relative humidity/temperature
 „2“ displayed if relay 2 (Temp) = contacts 7-8 closed
 „1“ displayed if relay 1 (rel. humidity) = contacts 5-6 closed

Press black button *briefly*: switch to

Configuration mode

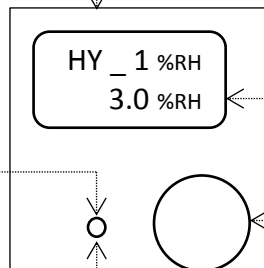


Press black button and *hold* (>3s): store value (display: „Store“)

Setpoint for relay 1 (rel. humidity); adjustable with rotary controller

Press black button *briefly*:

Switch to next parameter *or* (after turning rotary controller) display shows "_ESC" and return to operation mode

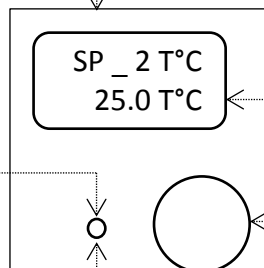


Press black button and *hold* (>3s): store value (display: „Store“)

Switching hysteresis for setpoint 1; adjustable with rotary controller

Press black button *briefly*:

Switch to next parameter *or* (after turning rotary controller) display shows "_ESC" and return to operation mode

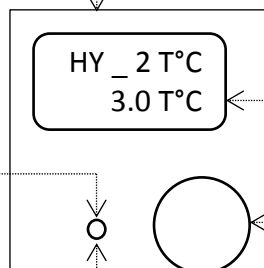


Press black button and *hold* (>3s): store value (display: „Store“)

Setpoint for relay 2 (Temp.); adjustable with rotary controller

Press black button *briefly*:

Switch to next parameter *or* (after turning rotary controller) display shows "_ESC" and return to operation mode



Press black button and *hold* (>3s): store value (display: „Store“)

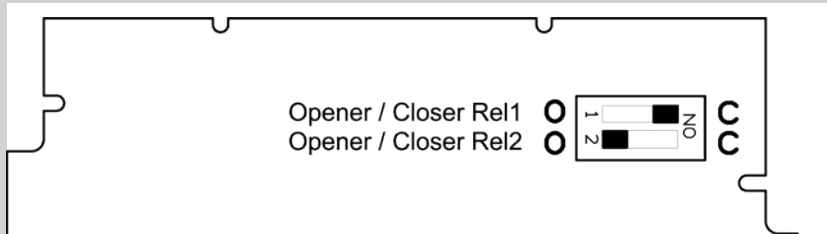
Switching hysteresis for setpoint 2; adjustable with rotary controller

Press black button *briefly*:

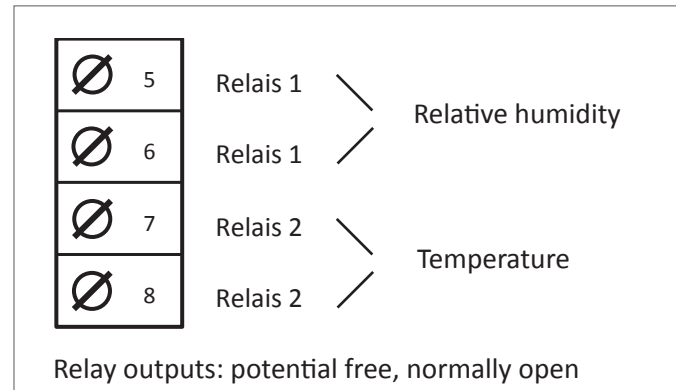
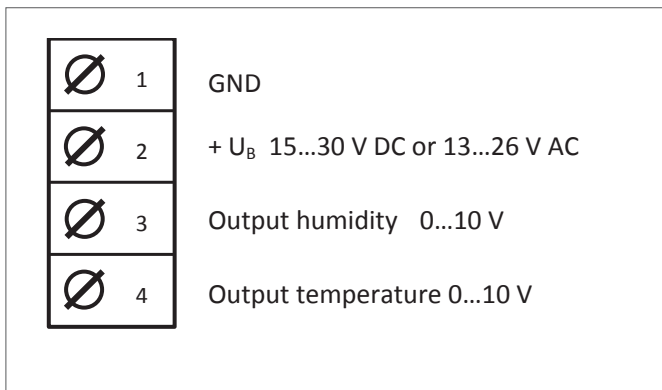
Return to operation mode *or* (after turning rotary controller) display shows "_ESC" and return to operation mode

Setting relay 1 and 2 as opener or closer

DIP-Switch	Current	reading
set to	$\text{< setpoint} - \frac{\text{switching hysteresis}}{2}$	$\text{< setpoint} + \frac{\text{switching hysteresis}}{2}$
C (Closer)	Relay = open	Relay = closed
O (Opener)	Relay = closed	Relay = open



Connection diagrams



ESD protection advice

The devices contain components, which can be damaged by the effects of electrical fields or by charge equalisation when touched.

The following protective measures must be taken when the housing of the device is to be opened for connection:

- Before opening the housing, ensure electrical potential equalisation between you and your environment.
- Pay particular attention to ensure that this potential equalisation is maintained while you are working with the opened housing.

Installation instructions

Position	The installation site of the remote sensor head should be chosen such that a representative measurement of air humidity can be guaranteed. Avoid areas in the vicinity of radiators, doors and exterior walls, as well as direct sunlight.
Connection to surface-mounted and concealed cables	When connecting to a concealed cable, the knock-out part of the housing floor should be broken out to allow the cable to pass through. When connecting to a surface-mounted cable, the separators at the hollowed-out points in the side of the housing can be broken out.
Connection	The electrical connection must be carried out by properly qualified personnel only. The housing contains sensitive electrical components. When opening the housing, make sure you comply with the electrostatic discharge precautions. Lines to and from the sensor and the sensor cable must not be installed parallel to strong electromagnetic fields. The installation site should be chosen such that a representative measurement of air humidity can be guaranteed

User instructions

Damaging influences	Depending on their type and concentration, aggressive media containing solvents can cause incorrect readings or cause the sensor to fail. Substances deposited on the sensor element (e. g. resin aerosols, paint aerosols, smoke deposits etc.) are harmful as they eventually form a water-repellent film.
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This information is based on current knowledge and is intended to provide details of our products and their possible applications. It does not, therefore, act as a guarantee of specific properties of the products described or of their suitability for a particular application. It is our experience that the equipment may be used across a broad spectrum of applications under the most varied conditions and loads. We cannot appraise every individual case. Purchasers and/or users are responsible for checking the equipment for suitability for any particular application. Any existing industrial rights of protection must be observed. The quality of our products is guaranteed under our General Conditions of Sale. Data sheet eStat20-DUO. Issue April 2015. Subject to modifications.