

**Room hygrostats and
humidity and temperature sensors ($\pm 2.0\%$),
electronic, two-step,
with continuous / switching outputs**

Electronic room hygrostat and/or room thermostat **HYGRASREG® RHT-30** with one continuous and two switching outputs, adjustable switching thresholds, with / without optional display for indicating ACTUAL humidity and/or ACTUAL temperature (accuracy class $\pm 2.0\%$ r.H.).

The setpoints can be allocated to the relative humidity and/or to the temperature.

It is suitable for regulating and monitoring relative humidity (humidifying and dehumidifying) and/or the temperature (heating and cooling), e.g. in ventilation and air conditioning ducts, laboratories, production facilities, climatic test cabinets, indoor swimming pools, greenhouses, etc., to control humidifying and dehumidifying equipment or heating system control. The measuring transducers are designed for exact humidity/temperature measurement. The RHT-30 uses a digital, long-term stable sensor as a measuring element. It is used in dust-free, unpolluted, non-aggressive air.

TECHNICAL DATA

Power supply:	24 V AC ($\pm 20\%$), 15...36 V DC
Load resistance:	$R_L > 5 \text{ k}\Omega$
Power consumption:	$< 1.5 \text{ VA} / 24 \text{ V DC}$, $< 3.5 \text{ VA} / 24 \text{ V AC}$
Sensor:	digital humidity sensor with integrated temperature sensor , low hysteresis, high long-term stability
Setting range:	5...95 % r.H. (Humidity) +5...+45 °C (Temperature) (switch steps 1 and 2 are separately adjustable)
Operating difference:	Mode 1: both switch steps are freely adjustable (rel. humidity) Mode 2: 5 % between both switch steps (rel. humidity) Mode 3: both switch steps freely adjustable (temperature) Mode 4: switch step 1 (temperature), switch step 2 (rel. humidity) (adjustable via DiP switches)
Output:	potential-free changeover contacts (2x changeover contact 24 V, 1A ohmic load, separately adjustable, 1x 0 - 10 V)
Deviation, humidity:	typically $\pm 2.0\%$ (20...80 % r.H.) at +25 °C, otherwise $\pm 3.0\%$
Deviation, temperature:	$\pm 0.2 \text{ K}$ at +25 °C
Ambient temperature:	storage -35...+85 °C; operation -30...+70 °C, non-precipitating
Long-term stability:	$\pm 1\%$ per year
Enclosure:	plastic, material ABS, colour pure white (similar to RAL 9010)
Enclosure dimensions:	98 x 98 x 35 mm (Baldur 2)
Installation:	wall mounting or on in-wall flush box, $\varnothing 55 \text{ mm}$, base with 4-hole for mounting on vertically or horizontally installed in-wall flush boxes for cable entry from the back, with predetermined breaking point for on-wall cable entry from top / bottom in case of plain on-wall installation
Protection class:	III (according to EN 60730)
Protection type:	IP 30 (according to EN 60529)
Electrical connection:	0.14 - 1.5 mm ² , via terminal screws
Standards:	CE conformity, EMC directive 2014 / 30 / EU
Optional:	two-line display with illumination , cutout approx. 36x15 mm (W x H), for displaying ACTUAL humidity and/or ACTUAL temperature respectively for setpoint adjustment

FUNCTION

Humidifying/heating:	1st step: wire contacts 11 - 12. If actual humidity falls more than 3% r.H. / 1 K (hysteresis) below switching threshold S1, the changeover contact switches to 11 - 12. 2. step: wire contacts 21 - 22. If actual humidity falls more than 3% r.H. / 1 K (hysteresis) below switching threshold S2, the changeover contact switches to 21 - 22. Terminal 2: output relative humidity / temperature
Dehumidifying/cooling:	1st step: wire contacts 11 - 13. When actual humidity exceeds switching threshold S1, the changeover contact switches to 11 - 13. 2. step: wire contacts 21 - 23. When actual humidity exceeds switching threshold S2, the changeover contact switches to 21 - 23. Terminal 2: output relative humidity / temperature

The **1st line** of the display shows the **ACTUAL humidity** in % r.H. and the **ACTUAL temperature** in °C. The displays showing the ACTUAL values alternate in a 3-second rhythm. Resolution: 1/10 % r.H. or 1/10 °C.

The **2nd line** shows information about the **switching status of the relay** (as a circuit), and indicates the **switching value** in % r.H. or °C (adjustable via the corresponding set potentiometer). The readouts of the switching thresholds for the first and second relay are displayed alternately at an interval of twenty seconds.

For improved legibility, backlighting is provided.

Display readout **RHT-30**





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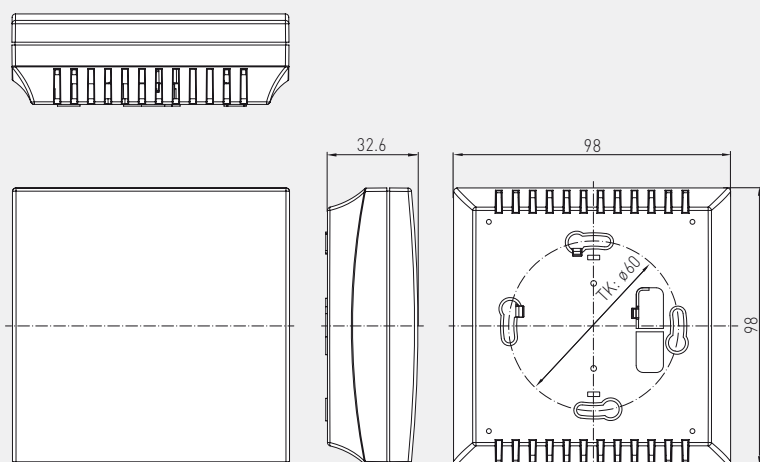
HYGRASREG® RHT - 30

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Dimensional drawing

RHT-30U

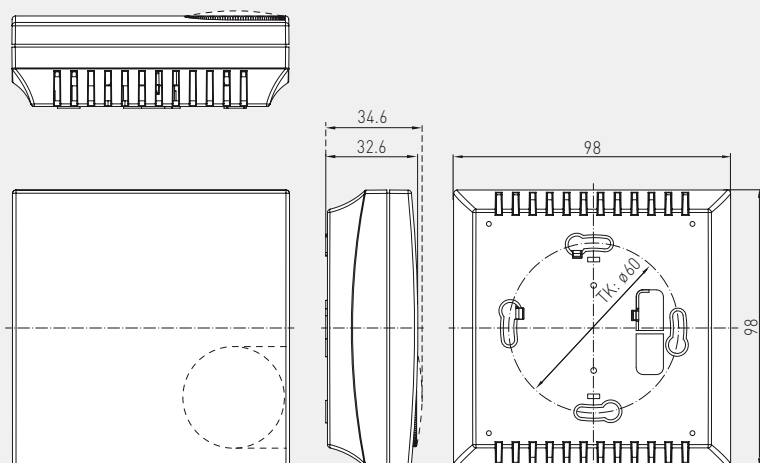


RHT-30U
with internal setting



Dimensional drawing

RHT-30



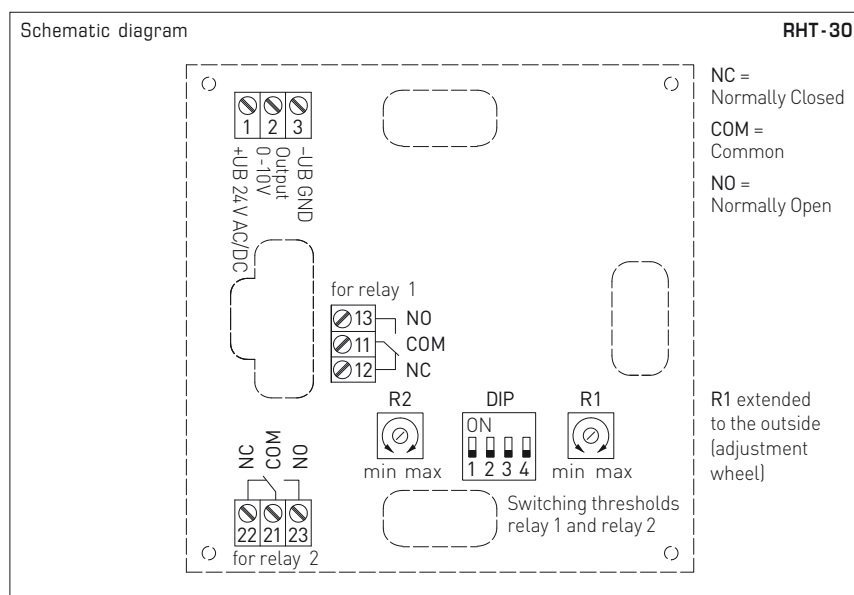
RHT-30



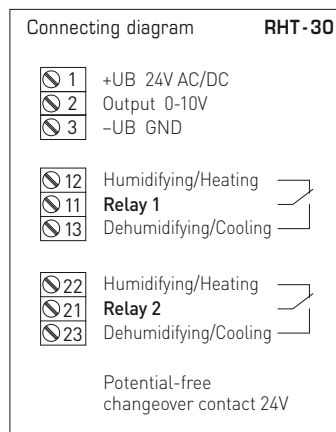
RHT-30
with display



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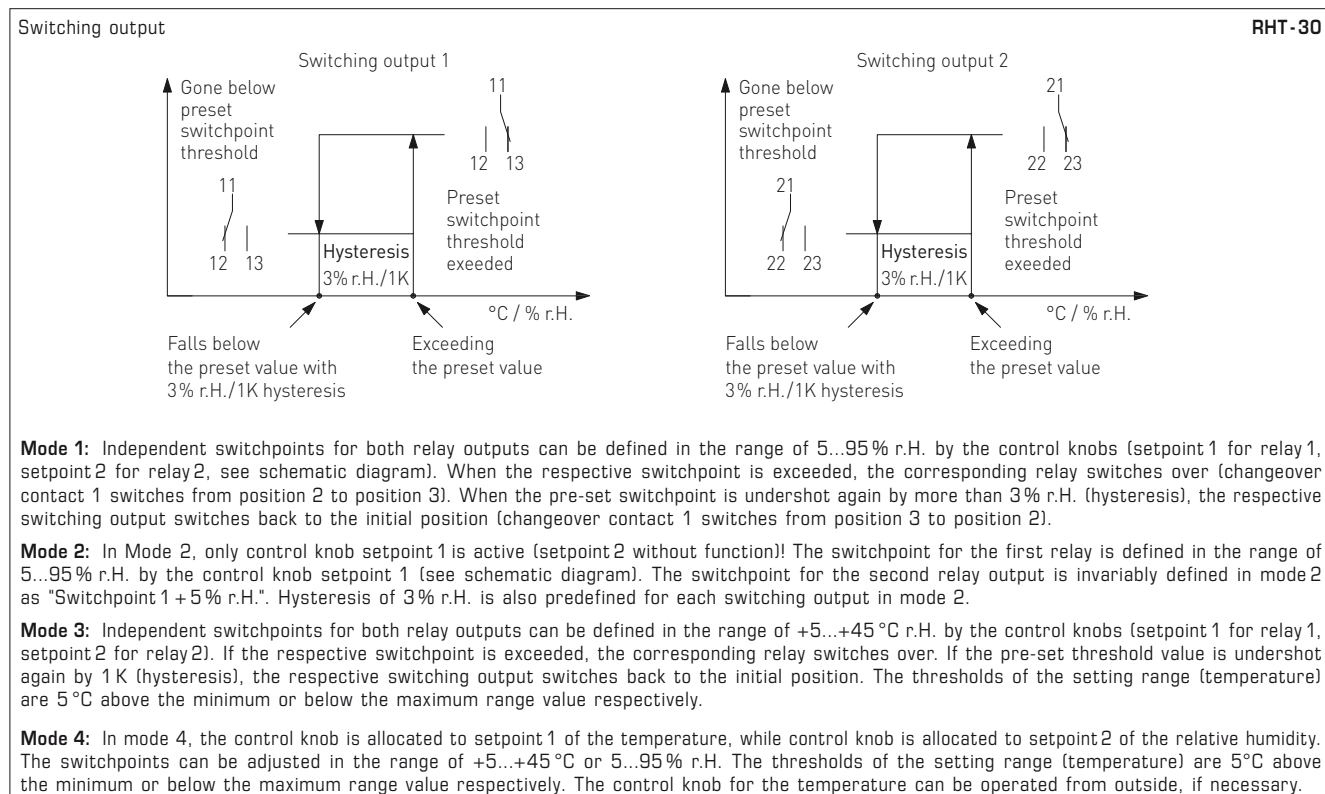
DIP switches RHT-30		
Function mode	DIP 1	DIP 2
Mode 1 (2x 5...95% r.H.)	OFF	OFF
Mode 2 (5...95% r.H. + 5% r.H.)	ON	OFF
Mode 3 (2x +5...+45 °C)	OFF	ON
Mode 4 (5...95% r.H. / +5...+45 °C)	ON	ON
Output		DIP 3
Temperature		ON
Relative humidity		OFF
Backlighting		DIP 4
activated		ON
deactivated		OFF



Supply	AC	DC
→ 1	24 V~	24 V DC
→ 3	0 V	GND

12 (A1) →	Relay 1 Breaker contact
11 (W1) →	Relay 1 Changeover contact
13 (B1) →	Relay 1 Normally open contact

22 (A2) →	Relay 2 Breaker contact
21 (W2) →	Relay 2 Changeover contact
23 (B2) →	Relay 2 Normally open contact





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Humidity table

MR: 0 ...100 % r.H.

% r.H.	U _A in V	% r.H.	U _A in V
0	0.0	50	5.0
5	0.5	55	5.5
10	1.0	60	6.0
15	1.5	65	6.5
20	2.0	70	7.0
25	2.5	75	7.5
30	3.0	80	8.0
35	3.5	85	8.5
40	4.0	90	9.0
45	4.5	95	9.5
Continued at the right...		100	10.0

Temperature table

MR: 0 ...+50 °C

°C	U _A in V
0	0.0
5	1.0
10	2.0
15	3.0
20	4.0
25	5.0
30	6.0
35	7.0
40	8.0
45	9.0
50	10.0

RHT-30
with display



HYGRASREG® RHT-30 – Room hygrostats and humidity and temperature sensors ($\pm 2.0\%$)

Type / WG02	Setting Range Humidity Temperature	Output	Steps	Display	Item No.	Price
RHT-30						External setting
RHT-30W	5...95 % r.H. +5...+45 °C	2 x Changeover contact, 1x 0-10 V	two-step		1202-4077-1011-200	155,80 €
RHT-30W DISPLAY	5...95 % r.H. +5...+45 °C	2 x Changeover contact, 1x 0-10 V	two-step	■	1202-4077-1211-200	167,00 €
RHT-30-U						Internal setting
RHT-30W U	5...95 % r.H. +5...+45 °C	2 x Changeover contact, 1x 0-10 V	two-step		1202-4077-1021-200	153,55 €