HYGRASREG® RHT-30

Room hygrostats and humidity and temperature sensors (± 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 $\pm 2.0 \, \% \, RH$). 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 $\ \, \text{dehumidifying equipment or heating system control. The measuring transducers are designed for exact}$ 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 (±20%), 1536 V DC
Load resistance:	$R_L > 5 kOhm$
Power consumption:	< 1,5 VA / 24 V DC, < 3,5 VA / 24 V AC
Sensor:	digital humidity sensor with integrated temperature sensor, low hysteresis, high long-term stability
Setting range:	595% RH (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 24V, 1A ohmic load, separately adjustable, 1x O - 10V)
Accuracy, humidity:	typically \pm 2.0% (2080% RH) at +25 °C, otherwise \pm 3.0%
Accuracy, temperature:	typically ±0.2K at +25 °C
Ambient temperature:	storage -35+85°C; operation -30+70°C, non-precipitating
Long-term stability:	±1% per year
Housing:	plastic, flame retardant (UL 94 V-0), PC/ABS material, colour white (similar to RAL 9016)
Housing dimensions:	98 x 98 x 35 mm (Baldur2)
Installation:	wall mounting or on in-wall flush box, Ø 55 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 60 730)
Protection type:	IP30 (according to EN 60529)
Electrical connection:	0.14 - 1.5 mm², via terminal screws
Standards:	CE conformity according to EMC directive 2014/30/EU
Optional:	two-line display with illumination, cutout approx. 36 x15 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% RH/1K (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% RH/1K (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 \$2, the changeover contact switches to 21-23. Terminal 2: output relative humidity /temperature

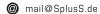
The 1st line of the display shows the ACTUAL humidity in % RH and the ACTUAL temperature in °C. The displays showing the ACTUAL values alternate in a 3-second rhythm. Resolution: 1/10 % RH or 1/10 °C.

The 2nd line shows information about the switching status of the relay (as a circuit), and indicates the switching value in % RH 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.

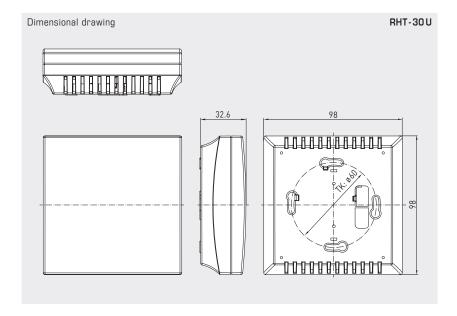


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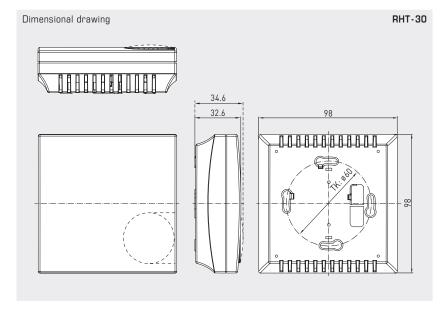
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RHT-30U with internal setting



RHT-30



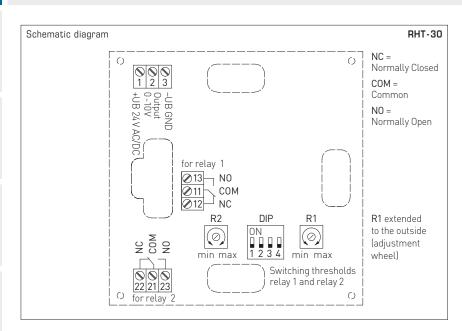


RHT-30 with display

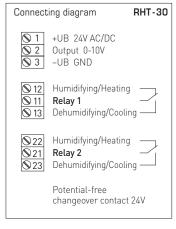


Room hygrostats and humidity and temperature sensors (\pm 2.0 %), electronic, two-step, with continuous/switching outputs

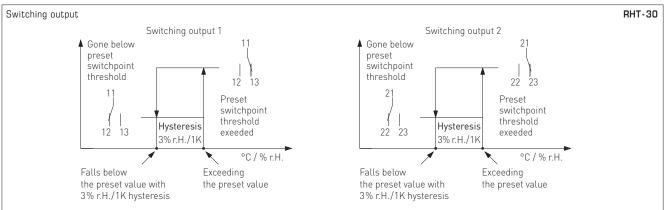




DIP switches	HT-30	
Function mode	DIP 1	DIP 2
Mode 1 (2x 595 % RH) (default)	OFF	OFF
Mode 2 (595%RH+5%RH)	ON	OFF
Mode 3 (2x +5+45°C)	OFF	ON
Mode 4 (595%RH/+5+45°C)	ON	ON
Output	DIP 3	
Temperature	ON	
Relative humidity (default)	OFF	
Backlighting	DIP 4	
activated	ON	
deactivated (default)	OFF	



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



Mode 1: Independent switchpoints for both relay outputs can be defined in the range of 5...95 % RH by the control knobs (setpoint 1 for relay 1, setpoint 2 for relay 2, see schematic diagram). When the respective switchpoint is exceeded, the corresponding relay switches over (changeover contact 1 switches from position 2 to position 3). When the pre-set switchpoint is undershot again by more than 3 % RH (hysteresis), the respective switching output switches back to the initial position (changeover contact 1 switches from position 3).

Mode 2: In Mode 2, only control knob setpoint 1 is active (setpoint 2 without function)! The switchpoint for the first relay is defined in the range of 5...95% RH by the control knob setpoint 1 (see schematic diagram). The switchpoint for the second relay output is invariably defined in mode 2 as "Switchpoint 1+5% RH". Hysteresis of 3% RH is also predefined for each switching output in mode 2.

Mode 3: Independent switchpoints for both relay outputs can be defined in the range of +5...+45°C by the control knobs (setpoint 1 for relay 1, setpoint 2 for relay 2). If the respective switchpoint is exceeded, the corresponding relay switches over. If the pre-set threshold value is undershot again by 1 K (hysteresis), the respective switching output switches back to the initial position. The thresholds of the setting range (temperature) are 5°C above the minimum or below the maximum range value respectively.

Mode 4: In mode 4, the control knob is allocated to setpoint 1 of the temperature, while control knob is allocated to setpoint 2 of the relative humidity. The switchpoints can be adjusted in the range of +5...+45°C or 5...95% RH The thresholds of the setting range (temperature) are 5°C above the minimum or below the maximum range value respectively. The control knob for the temperature can be operated from outside, if necessary.



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Humidity table
MR: 0...100% RH

% RH	U _A [V]
0	0.0
5	0.5
10	1.0
15	1.5
20	2.0
25	2.5
30	3.0
35	3.5
40	4.0
45	4.5
Continued at	t the right

% RH	U _A [V]
50	5.0
55	5.5
60	6.0
65	6.5
70	7.0
75	7.5
80	8.0
85	8.5
90	9.0
95	9.5
100	10.0

RHT-30 with display



Temperature table MR: 0...+50°C

MR: U+5U°C		
°C	U _A [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	

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Type/WG02	Setting Range Humidity Temperature	Output	Steps	Display	Item No.	Price
RHT-30					External setting	
RHT-30W	595% RH +5+45°C	2 x Changeover contact, 1x O-10 V	two-step		1202-4077-1011-200	197,87 €
RHT-30W LCD	595% RH +5+45°C	2 x Changeover contact, 1x O-10 V	two-step	-	1202-4077-1211-200	212,10 €
RHT-30-U					Internal setting	
RHT-30W U	595% RH +5+45°C	2 x Changeover contact, 1x O-10 V	two-step		1202-4077-1021-200	195,01 €