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 ± 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 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	24/42 / 22/2 45 22/42			
Power supply:	24 V AC (±20%), 1536 V DC			
Load resistance:	$R_L > 5 \text{kOhm}$			
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 (2 x changeover contact 24 V, 1A ohmic load, separately adjustable, 1x O -10 V)			
Deviation, humidity:	typically ±2.0 % (2080 % RH) at +25 °C, otherwise ±3.0 %			
Deviation, 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, material ABS, colour pure white (similar to RAL 9010)			
Housing dimensions:	98 x 98 x 35 mm (Baldur 2)			
Installation:	wall mounting or on in-wall flush box, Ø55 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, 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 switch ing 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 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 % 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.

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

The 2nd line shows information about the

For improved legibility, backlighting is provided.

at an interval of twenty seconds.







Dimensional drawing

 $\label{eq:Room hygrostats} \begin{tabular}{ll} Room hygrostats and \\ humidity and temperature sensors ($\pm 2.0\,\%$), \\ electronic, two-step, \\ with continuous/switching outputs \end{tabular}$

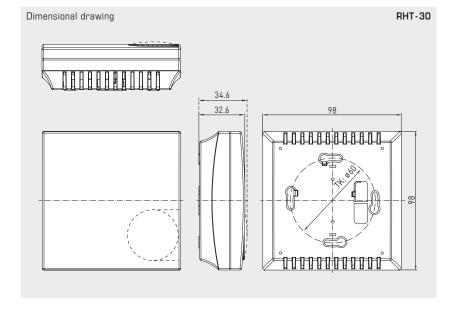
RHT-30U with internal setting



RHT-30U



RHT-30



32.6



RHT-30 with display



Rev. 2023-V22 GB

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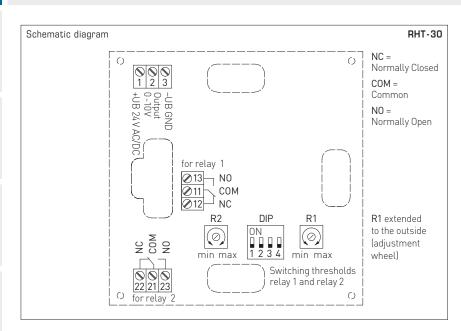






Room hygrostats and humidity and temperature sensors (± 2.0 %), electronic, two-step, with continuous/switching outputs

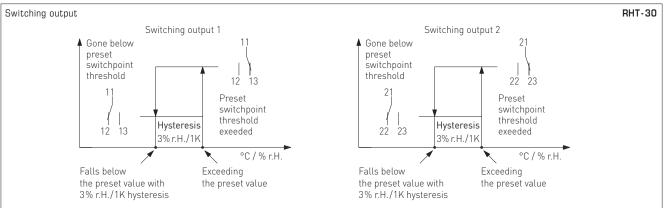




DIP switches	HT-30	
Function mode	DIP 1	DIP 2
Mode 1 (2x 595 %RH) (default)	OFF	OFF
Mode 2 (595%RH+5%RH)	ON	OFF
Mode 3 (2x +5+45°C)	OFF	ON
Mode 4 (595%RH/+5+45°C)	ON	ON
Output	DIP 3	
Temperature	ON	
Relative humidity (default)	OFF	
Backlighting	DIP 4	
activated	ON	
deactivated (default)	OFF	



Supply		AC		DC	
→ 1		24 V~		24 V DC	
	→ 3		,	GND	
12	(A1) →	Relay 1	Relay 1 Breaker contact		
11	(W1) →	Relay 1	Changeover contact		
13	(B1) →	Relay 1	Normally open contac		
	(10)				
22	(A2) →	Relay 2	Breaker contact		
21	(W2) →	Relay 2	Changeover contact		
23	23 (B2) →		Normally open contac		



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 to position 2).

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 RH 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 a	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	

Type/WG02	Setting Range Humidity	e Temperature	Output	Steps	Display	Item No.	Price
RHT-30						External setting	
RHT-30W	595% RH	+5+45°C	2x Changeover contact, 1x O-10 V	two-step		1202-4077-1011-200	184,72 €
RHT-30W LCD	595% RH	+5+45°C	2x Changeover contact, 1x O-10 V	two-step	-	1202-4077-1211-200	198,00 €
RHT-30-U						Internal setting	
RHT-30W U	595% RH	+5+45°C	2x Changeover contact, 1x O-10 V	two-step		1202-4077-1021-200	182,05 €