

Room humidity and temperature sensors ( $\pm 2.0\%$ ),  
on-wall, calibratable,  
with active/passive output

The calibratable room humidity and temperature sensor **HYGRASGARD® RFF/RFT** measures the relative humidity and/or temperature of air. It converts the measurands humidity and temperature into standard signals of 0-10V or 4...20mA and is available with or without an optional display (for displaying actual humidity and actual temperature) in an elegant enclosure made of plastic, with snap-on lid, base with 4-hole attachment for installation on vertically or horizontally installed in-wall flush boxes, with predetermined breaking point for on-wall cable entry. The relative humidity (in % r.H.) is the quotient of water vapour partial pressure divided by the saturation vapour pressure at the respective gas temperature.

It is used in non-aggressive dust-free atmospheres in refrigeration, air conditioning, ventilation and clean room technology, in interior rooms such as residential rooms, offices, hotels, technical rooms, meeting rooms and convention centres. These measuring transducers are designed for exact detection of air temperature and humidity. A digital long-term stable sensor is used as a measuring element for humidity and temperature measurement. Fine adjustment by the user is possible.

#### TECHNICAL DATA

Power supply:	24 V AC ( $\pm 20\%$ ) and 15...36 V DC for U variant 15...36 V DC for I variant, depending on working resistance, residual ripple stabilised $\pm 0.3$ V
Working resistance:	$R_a$ (ohm) = $(U_b - 14 V) / 0.02 A$ for I variant
Load resistance:	$R_L > 5 k\Omega$ for U variant
Power consumption:	< 1.1 VA / 24 V DC; < 2.2 VA / 24 V AC
Sensors:	<b>digital humidity sensor with integrated temperature sensor,</b> small hysteresis, high long-term stability

#### HUMIDITY

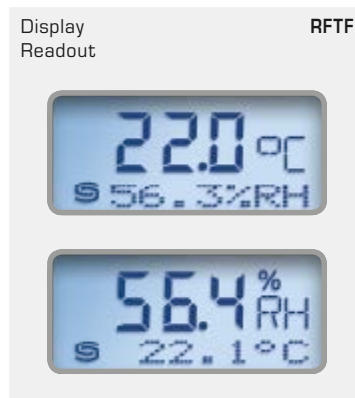
Measuring range, humidity:	0...100% r.H. (output corresponding to 0 -10 V or 4... 20 mA)
Operating range, humidity:	0... 95% r.H. (non-precipitating air)
Deviation, humidity:	typically $\pm 2.0\%$ (20...80% r.H.) at +25 °C, otherwise $\pm 3.0\%$
Output, humidity:	0-10 V for U variant 4...20 mA for I variant, working resistance < 800 $\Omega$ , see load resistance diagram

#### TEMPERATURE

Measuring range, temperature:	0...+50 °C (output corresponding to 0 -10V or 4... 20 mA or Ohm value) others upon request!
Operating range, temperature:	0...+50 °C
Deviation, temperature:	$\pm 0.2 K$ at +25 °C
Output, temperature:	0 -10V or 4... 20 mA or Ohm value
Ambient temperature:	storage -25...+50 °C, operation -5...+55 °C
Electrical connection:	2-, 3- or 4-wire connection (see connecting diagram) 0.14 -1.5 mm <sup>2</sup> via terminal screws on circuit board
Enclosure:	plastic, material ABS, colour pure white (similar to RAL 9010)
Enclosure dimensions:	85 x 85 x 27 mm (Baldur 1)
Installation:	wall mounting or on in-wall flush box, $\varnothing 55$ 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
Long-term stability:	$\pm 1\%$ per year
Protection class:	III (according to EN 60 730)
Protection type:	IP 30 (according to EN 60 529)
Standards:	CE conformity, according to EMC directive 2014 / 30 / EU, according to EN 61326-1, according to EN 61326-2-3
Optional:	two-line display with illumination, 36 x 15 mm (W x H), for displaying ACTUAL temperature and / or ACTUAL humidity

The two-line display readout switches between the ACTUAL humidity reading in % r.H. and the ACTUAL temperature reading in °C.

Backlighting is installed for better instrument readability.





S+S REGELTECHNIK

HYGRASGARD® RFF  
HYGRASGARD® RFTF

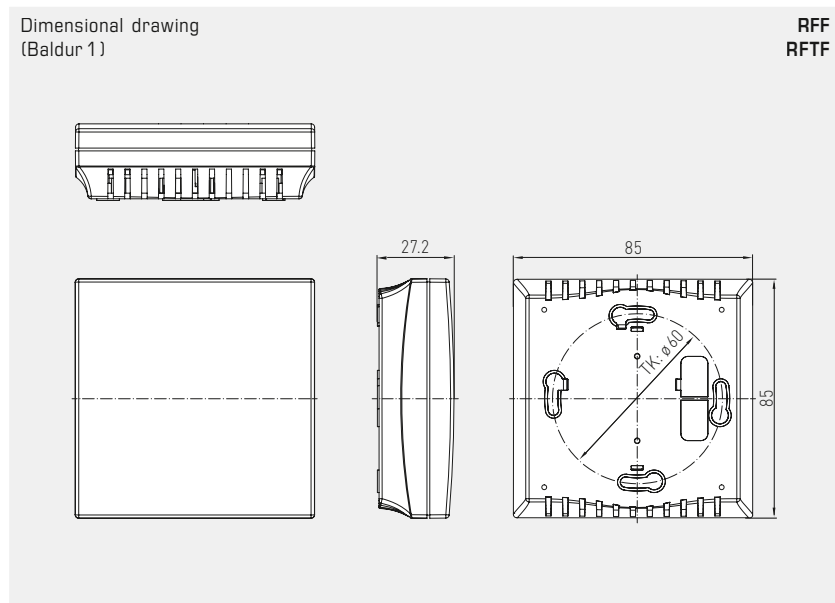
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RFF  
RFTF



RFF  
RFTF  
with display



RFF  
RFTF

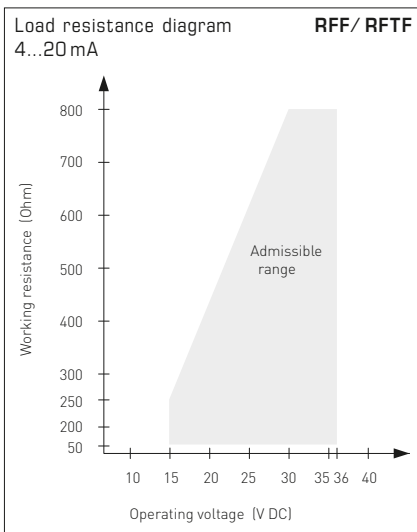
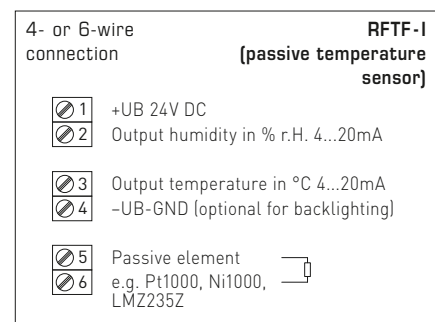
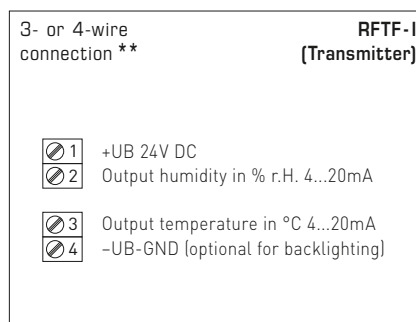
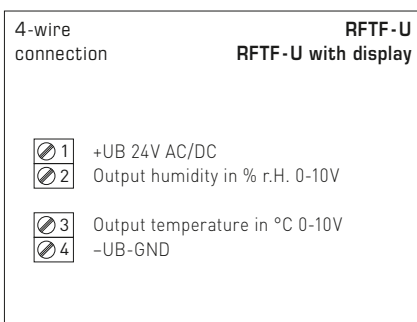
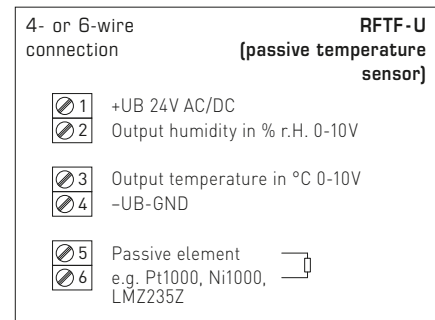
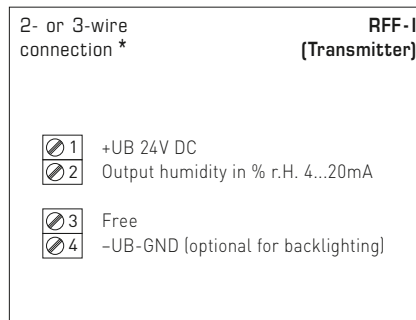
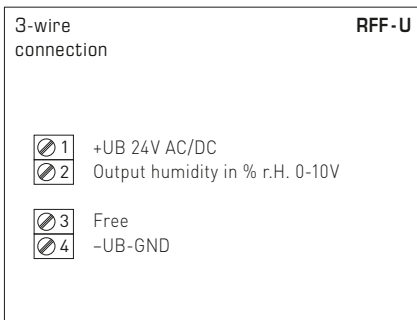
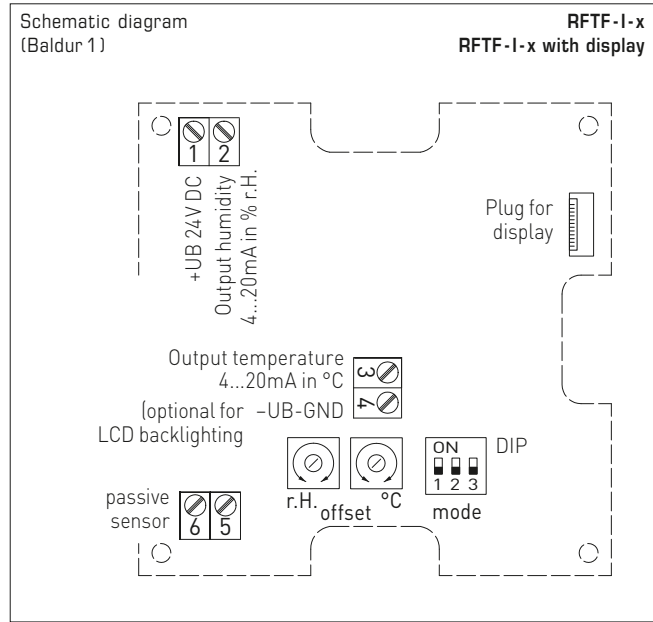
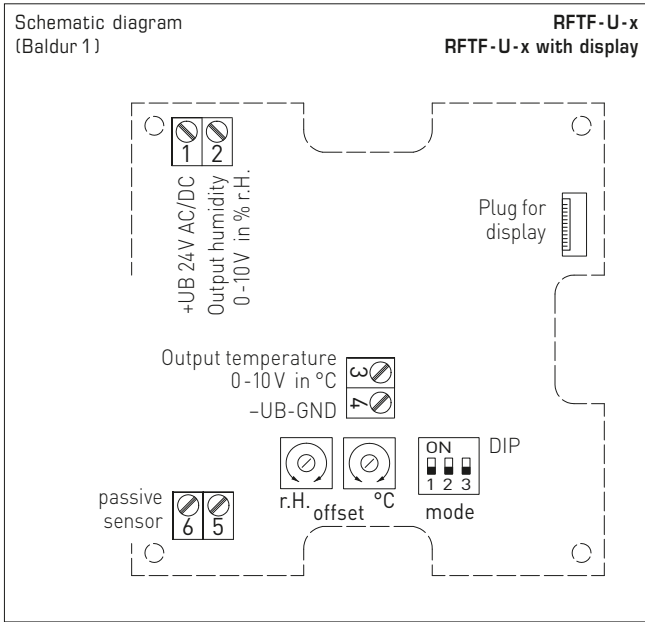
RFF  
RFTF  
without display



RFF  
RFTF  
with display



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**Connection\*:**  
 2-wire connection for devices with / without display (not illuminated)  
 3-wire connection for devices with illuminated display

**Connection\*\*:**  
 3-wire connection for devices with / without display (not illuminated)  
 4-wire connection for devices with illuminated display

At the I variant the humidity path must be connected!



**Humidity table**

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

% r.H.	U <sub>A</sub> in V	I <sub>A</sub> in mA
0	0	4.0
5	0.5	4.8
10	1.0	5.6
15	1.5	6.4
20	2.0	7.2
25	2.5	8.0
30	3.0	8.8
35	3.5	9.6
40	4.0	10.4
45	4.5	11.2
Continued at the right...		

% r.H.	U <sub>A</sub> in V	I <sub>A</sub> in mA
50	5.0	12.0
55	5.5	12.8
60	6.0	13.6
65	6.5	14.4
70	7.0	15.2
75	7.5	16.0
80	8.0	16.8
85	8.5	17.6
90	9.0	18.4
95	9.5	19.2
100	10.0	20.0

**Temperature table**

MR: 0 ...+50 °C

°C	U <sub>A</sub> in V	I <sub>A</sub> in mA
0	0.0	4.0
5	1.0	5.6
10	2.0	7.2
15	3.0	8.8
20	4.0	10.4
25	5.0	12.0
30	6.0	13.6
35	7.0	15.2
40	8.0	16.8
45	9.0	18.4
50	10.0	20.0

**HYGRASGARD® RFF – Room humidity sensors**  
**HYGRASGARD® RFTF – Room humidity and temperature sensors**

Type /WG01	Measuring Range / Readout		Output		Display	Item No. (Baldur 1)	Price
	Humidity	Temperature	Humidity	Temperature			
<b>RFF</b>							<b>(active)</b>
RFF-I	0...100% r.H.	–	4...20 mA	–		1201-41A2-0000-000	114,89 €
RFF-I DISPLAY	0...100% r.H.	–	4...20 mA	–	■	1201-41A2-0200-000	147,10 €
RFF-U	0...100% r.H.	–	0-10 V	–		1201-41A1-0000-000	114,89 €
RFF-U DISPLAY	0...100% r.H.	–	0-10 V	–	■	1201-41A1-0200-000	147,10 €
<b>RFTF</b>							<b>(active)</b>
RFTF-I	0...100% r.H.	0...+50 °C	4...20 mA	4...20 mA		1201-41A2-1000-000	118,11 €
RFTF-I DISPLAY	0...100% r.H.	0...+50 °C	4...20 mA	4...20 mA	■	1201-41A2-1200-000	150,32 €
RFTF-U	0...100% r.H.	0...+50 °C	0-10 V	0-10 V		1201-41A1-1000-000	118,11 €
RFTF-U DISPLAY	0...100% r.H.	0...+50 °C	0-10 V	0-10 V	■	1201-41A1-1200-000	150,32 €

**HYGRASGARD® RFTF-U xx – Room humidity and temperature sensors**

Type /WG01	Measuring Range / Readout		Output		Item No. (Baldur 1)	Price	
	Humidity	Temperature	Humidity	Temperature			
<b>RFTF-U xx</b>							<b>(active / passive)</b>
<b>Pt, Ni, LM235Z</b>							
RFTF-U PT100	0...100% r.H.	0...+50 °C	0-10 V	0-10 V + Pt100		1201-41A1-2001-000	137,72 €
RFTF-U PT1000	0...100% r.H.	0...+50 °C	0-10 V	0-10 V + Pt1000		1201-41A1-2005-000	140,56 €
RFTF-U NI1000	0...100% r.H.	0...+50 °C	0-10 V	0-10 V + Ni1000		1201-41A1-2009-000	141,52 €
RFTF-U NITK	0...100% r.H.	0...+50 °C	0-10 V	0-10 V + Ni1000TK5000		1201-41A1-2010-000	141,73 €
RFTF-U LM235Z	0...100% r.H.	0...+50 °C	0-10 V	0-10 V + LM235Z, 10mV / K		1201-41A1-2021-000	141,20 €
<b>RFTF-U xx</b>							<b>(active / passive)</b>
<b>NTC</b>							
RFTF-U NTC1,8K	0...100% r.H.	0...+50 °C	0-10 V	0-10 V + NTC 1,8 kOhm		1201-41A1-2012-000	141,63 €
RFTF-U NTC10K	0...100% r.H.	0...+50 °C	0-10 V	0-10 V + NTC 10 kOhm		1201-41A1-2015-000	138,56 €
RFTF-U NTC20K	0...100% r.H.	0...+50 °C	0-10 V	0-10 V + NTC 20 kOhm		1201-41A1-2016-000	138,56 €
Extra charge:	Two-line display with illumination						42,02 €