

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

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

HUMIDITY

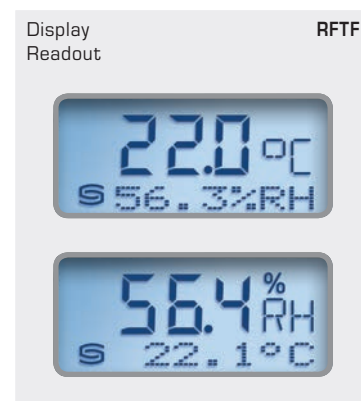
Measuring range, humidity:	0...100% RH (output corresponding to 0 -10 V or 4...20 mA)
Operating range, humidity:	0 ... 95% RH (non-precipitating air)
Accuracy, humidity:	typically $\pm 2.0\%$ (20...80% RH) at +25 °C, otherwise $\pm 3.0\%$
Output, humidity:	0-10 V for U variant 4...20 mA for I variant, working resistance < 800 Ω , 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
Accuracy, temperature:	typically $\pm 0.2K$ 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 ² via terminal screws
Housing:	plastic, flame retardant (UL 94 V-0), PC/ABS material, colour white (similar to RAL 9016)
Housing 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:	IP30 (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, 36x15 mm (W x H), for displaying ACTUAL temperature and/or ACTUAL humidity

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

Backlighting is installed for better instrument readability.



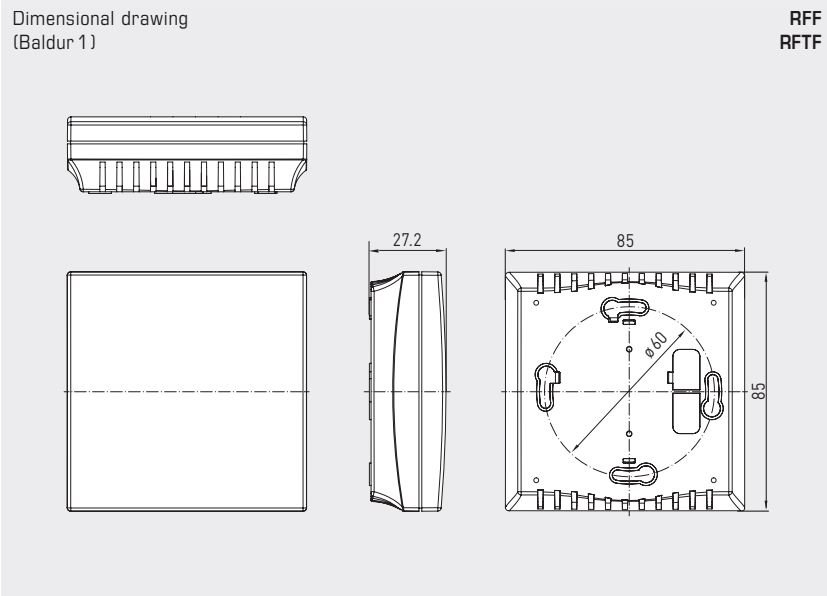


S+S REGELTECHNIK

HYGRASGARD® RFF
HYGRASGARD® RFTF



Room humidity and temperature sensors ($\pm 2.0\%$),
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RFF
RFTF
without display



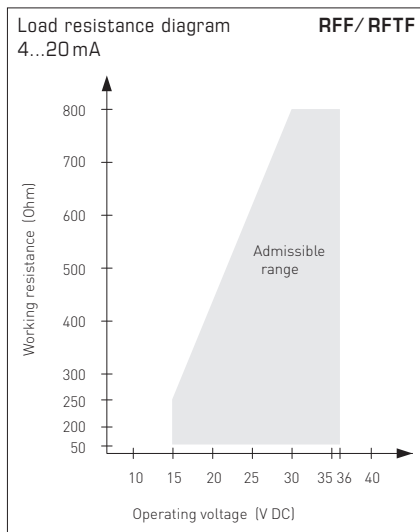
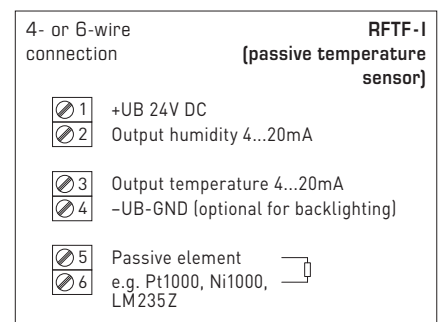
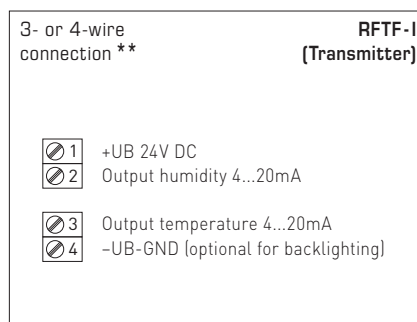
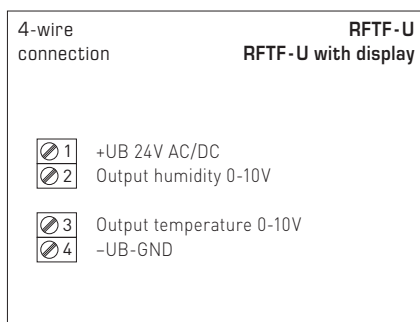
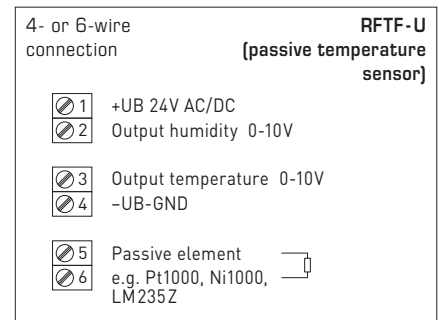
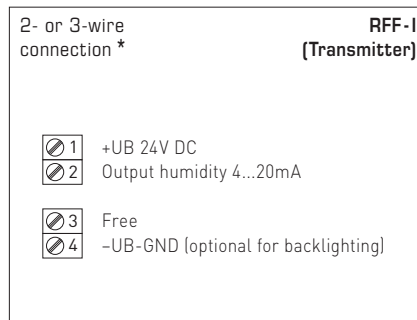
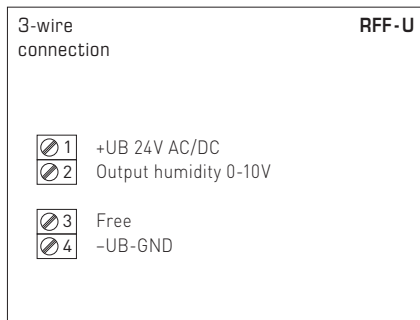
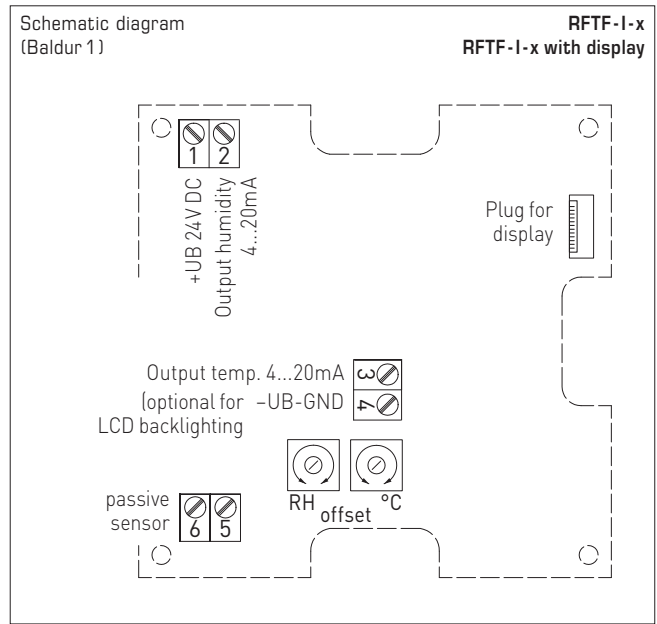
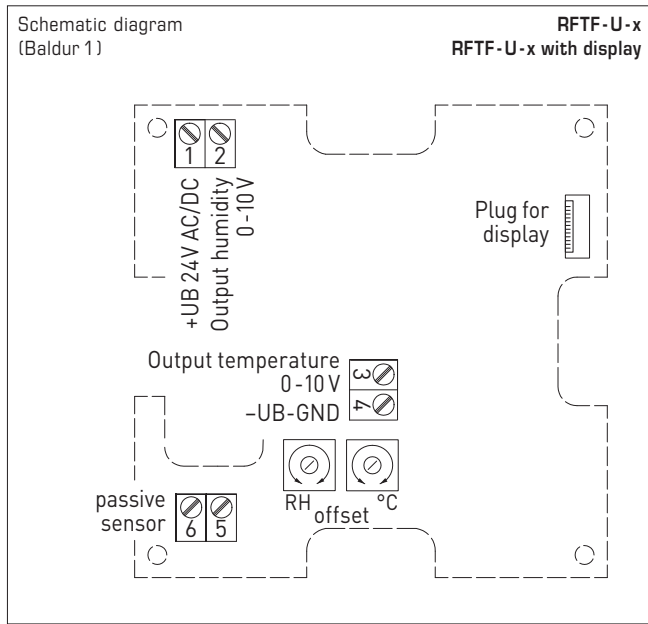
RFF
RFTF
with display



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% RH

% RH	U _A [V]	I _A [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...

% RH	U _A [V]	I _A [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 _A [V]	I _A [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.	Price
	Humidity	Temperature	Humidity	Temperature		(Baldur 1)	
RFF							(active)
RFF-I	0...100% RH	-	4...20 mA	-		1201-41A2-0000-000	131,20 €
RFF-I LCD	0...100% RH	-	4...20 mA	-	■	1201-41A2-0200-000	192,43 €
RFF-U	0...100% RH	-	0-10 V	-		1201-41A1-0000-000	131,20 €
RFF-U LCD	0...100% RH	-	0-10 V	-	■	1201-41A1-0200-000	192,43 €
RFTF							(active)
RFTF-I	0...100% RH	0...+50 °C	4...20 mA	4...20 mA		1201-41A2-1000-000	135,28 €
RFTF-I LCD	0...100% RH	0...+50 °C	4...20 mA	4...20 mA	■	1201-41A2-1200-000	196,64 €
RFTF-U	0...100% RH	0...+50 °C	0-10 V	0-10 V		1201-41A1-1000-000	135,28 €
RFTF-U LCD	0...100% RH	0...+50 °C	0-10 V	0-10 V	■	1201-41A1-1200-000	196,64 €

HYGRASGARD® RFTF-U xx		Room humidity and temperature sensors					
Type/WG01	Measuring Range / Readout		Output			Item No.	Price
	Humidity	Temperature	Humidity	Temperature		(Baldur 1)	
RFTF-U xx							(active/passive)
Pt, Ni, LM235Z							
RFTF-U Pt100	0...100% RH	0...+50 °C	0-10 V	0-10 V + Pt100		1201-41A1-2001-000	180,16 €
RFTF-U Pt1000	0...100% RH	0...+50 °C	0-10 V	0-10 V + Pt1000		1201-41A1-2005-000	183,88 €
RFTF-U Ni1000	0...100% RH	0...+50 °C	0-10 V	0-10 V + Ni1000		1201-41A1-2009-000	185,12 €
RFTF-U NiTK	0...100% RH	0...+50 °C	0-10 V	0-10 V + Ni1000TK5000		1201-41A1-2010-000	185,39 €
RFTF-U LM235Z	0...100% RH	0...+50 °C	0-10 V	0-10 V + LM235Z, 10mV/K		1201-41A1-2021-000	184,70 €
RFTF-U xx							(active/passive)
NTC							
RFTF-U NTC1,8K	0...100% RH	0...+50 °C	0-10 V	0-10 V + NTC 1,8kOhm		1201-41A1-2012-000	185,28 €
RFTF-U NTC10K	0...100% RH	0...+50 °C	0-10 V	0-10 V + NTC 10kOhm		1201-41A1-2015-000	181,25 €
RFTF-U NTC20K	0...100% RH	0...+50 °C	0-10 V	0-10 V + NTC 20kOhm		1201-41A1-2016-000	181,25 €
Extra charge:	Two-line display with illumination						54,97 €