HYGRASGARD® RPFF-25
HYGRASGARD® RPFTF-25

Pendulum room humidity and temperature sensors (± 1.8 %), calibratable, with multi-range switching and active output

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The calibratable pendulum room humidity and temperature sensor **HYGR**ASGARD® **RPFF-25 / RPFTF-25** with pluggable metal sinter filter, housing made of impact-resistant plastic, with / without optional display.
It measures the relative humidity and/or the temperature of the air and converts the measurands into a standard signal of 0-10 V or 4...20 mA. It is equipped with four switchable temperature ranges. The sensor is applied in non-aggressive dust-free atmospheres in refrigeration, air conditioning, ventilation and clean room technology, hotels, technical rooms, meeting rooms and convention centres. These measuring transducers are designed for exact detection of temperature and humidity. A digital long-term stable sensor is used as measuring element for humidity and temperature measurement. The sensor is appropriate for ceiling and duct installation, or for integrating it into equipment. The sensor is factory-calibrated; an environmental precision adjustment by an expert is possible.

RPFF-25 / RPFTF-25 (± 1.8 %)
pluggable measuring head
with metal sinter filter



TECHNICAL DATA

Power supply:	24 V AC (± 20 %); 15...36 V DC for U variant 15...36 V DC for I variant, depending on working resistance, residual ripple stabilised ± 0.3 V
Working resistance:	R_a (ohm) = (U_b -14 V) / 0.02 A for I variant
Load resistance:	R_L > 5 kOhm 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, sensor head pluggable
Sensor protection:	**pluggable measuring head** (probe) with **metal** sinter filter, Ø 16 mm, L = 88.5 mm, exchangeable
HUMIDITY	
Measuring range, humidity:	0...100 % RH (output corresponding to 0-10 V or 4...20 mA)
Operating range, humidity:	0...95 % RH (without formation of dew)
Deviation, humidity:	typically **± 1.8** % (10...90 % RH) at +25 °C, otherwise ± 2.0 %
Output, humidity:	0-10 V for U variant 4...20 mA for I variant, see load resistance diagram
TEMPERATURE	
Measuring range, temperature:	**multi-range switching with 4 switchable measuring ranges** (see table) –35...+35 °C; –35...+75 °C; 0...+50 °C; 0...+80 °C (output corresponding to 0 -10 V or 4...20 mA)
Deviation, temperature:	typically ± 0.2 K at +25 °C
Output, temperature:	0-10 V or 4...20 mA or Ohm value
Ambient temperature:	storage –35...+85 °C operation –30...+70 °C
Long-term stability:	± 1 % per year
Electrical connection:	2-, 3-, or 4-wire connection (see connecting diagram), 0.14 - 1.5 mm² via terminal screws
Connection cable:	KL = 2 m
Housing:	plastic, UV-resistant, material polyamide, 30 % glass-globe reinforced, with quick-locking screws (slotted / Phillips head combination), colour traffic white (similar to RAL 9016), housing cover for display is transparent!
Housing dimensions:	126 x 90 x 50 mm (Tyr 2)
Cable connection:	**cable gland**, plastic (M 16 x 1.5; with strain relief, exchangeable, max. inner diameter 10.4 mm) **or** **M12 connector** according to DIN EN 61076-2-101 (on request)
Protective tube:	**stainless steel V2A** (1.4301), Ø = 18 mm (16 mm), L = 120 mm
Protection class:	III (according to EN 60 730)
Protection type:	**IP 65** (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:	three-line **display with illumination,** cutout approx. 70 x 40 mm (W x H), for displaying ACTUAL temperature and / or ACTUAL humidity
ACCESSORIES	see last chapter



M12 connector
(optional on request)

MF-16-K
Mounting flange,
plastic
(optional)

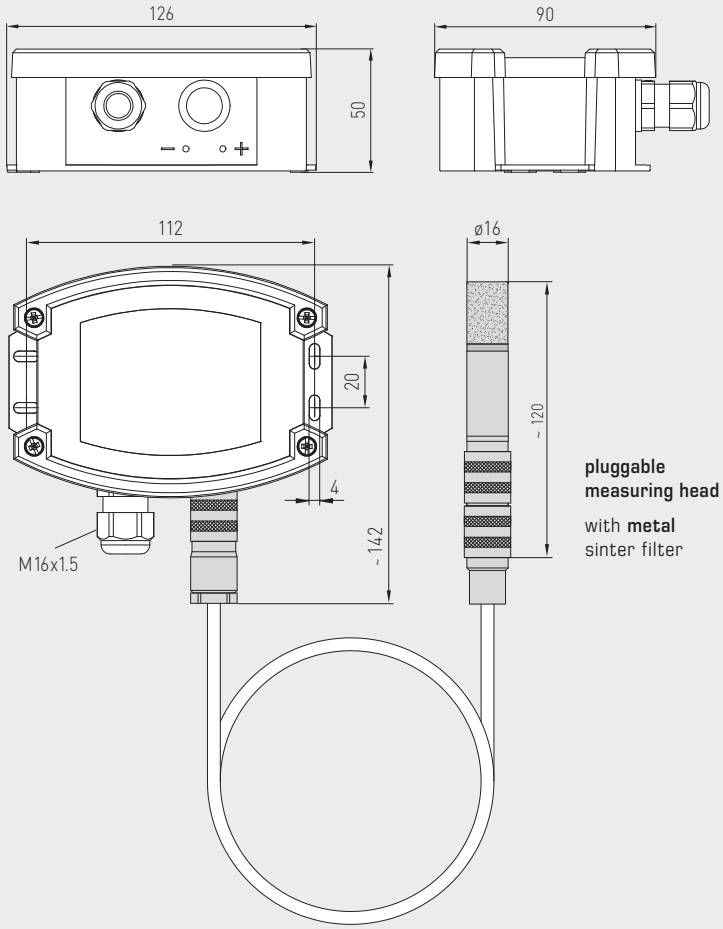


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Dimensional drawing — **RPFF-25 / RPFTF-25**



RPFF-25 / RPFTF-25 (± 1.8 %)
pluggable measuring head
with metal sinter filter
and display



Temperature table
MR: –35...+75 °C

°C	U_A [V]	I_A [mA]
-35	0.0	4.0
-30	0.5	4.7
-25	0.9	5.5
-20	1.4	6.2
-15	1.8	6.9
-10	2.3	7.6
-5	2.7	8.4
0	3.2	9.1
5	3.6	9.8
10	4.1	10.5
15	4.5	11.3
20	5.0	12.0
25	5.5	12.7
30	5.9	13.5
35	6.4	14.2
40	6.8	14.9
45	7.3	15.6
50	7.7	16.4
55	8.2	17.1
60	8.6	17.8
65	9.1	18.5
70	9.5	19.2
75	10.0	20.0

Temperature table
MR: –35...+35 °C

°C	U_A [V]	I_A [mA]
-35	0.0	4.0
-30	0.7	5.1
-25	1.4	6.3
-20	2.1	7.4
-15	2.9	8.6
-10	3.6	9.7
-5	4.3	10.9
0	5.0	12.0
5	5.7	13.1
10	6.4	14.3
15	7.1	15.4
20	7.9	16.6
25	8.6	17.7
30	9.3	18.9
35	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

Temperature table
MR: 0...+80 °C

°C	U_A [V]	I_A [mA]
0	0.0	4.0
5	0.6	5.0
10	1.3	6.0
15	1.9	7.0
20	2.5	8.0
25	3.1	9.0
30	3.8	10.0
35	4.4	11.0
40	5.0	12.0
45	5.6	13.0
50	6.3	14.0
55	6.9	15.0
60	7.5	16.0
65	8.1	17.0
70	8.8	18.0
75	9.4	19.0
80	10.0	20.0

Humidity table
MR: 0...100 % RH

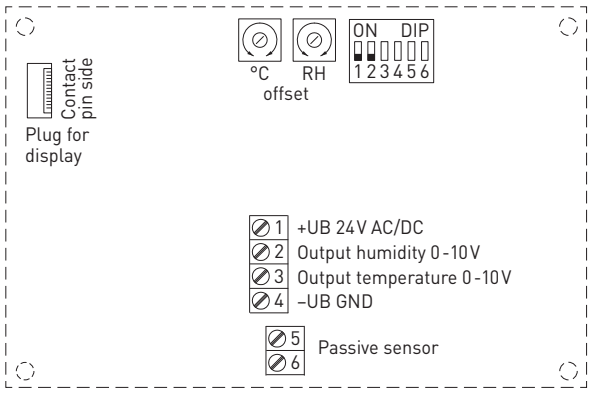
% RH	U_A [V]	I_A [mA]
0	0.0	4.0
5	0.5	4.8
10	1.0	5.6
15	1.5	6.4
20	2.0	7.2
25	2.5	8.0
30	3.0	8.8
35	3.5	9.6
40	4.0	10.4
45	4.5	11.2
50	5.0	12.0
55	5.5	12.8
60	6.0	13.6
65	6.5	14.4
70	7.0	15.2
75	7.5	16.0
80	8.0	16.8
85	8.5	17.6
90	9.0	18.4
95	9.5	19.2
100	10.0	20.0

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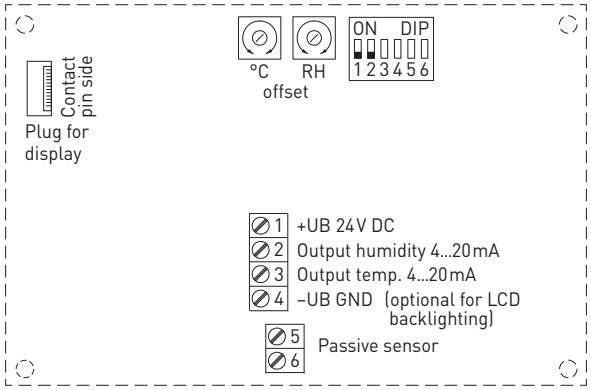
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Schematic diagram — **RPFTF-25-U** with display



DIP 3, 4, 5, 6 are not assigned!

Schematic diagram** — **RPFTF-25-I** with display



DIP 3, 4, 5, 6 are not assigned!

3-wire connection — **RPFF-25-U**

1 +UB 24V AC/DC
2 Output humidity 0-10V
3 Free
4 –UB-GND

2- or 3-wire connection* — **RPFF-25-I (Transmitter)**

1 +UB 24V DC
2 Output humidity 4...20mA
3 Free
4 –UB-GND (optional for backlighting)

4-wire connection — **RPFTF-25-U**

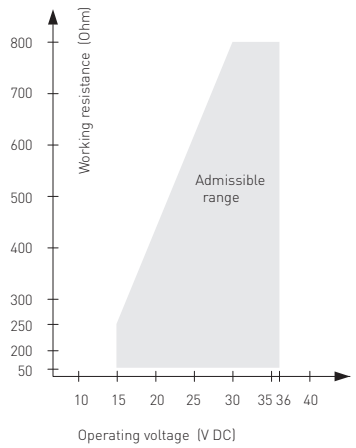
1 +UB 24V AC/DC
2 Output humidity 0-10V
3 Output temperature 0-10V
4 –UB-GND

3- or 4-wire connection** — **RPFTF-25-I (Transmitter)**

1 +UB 24V DC
2 Output humidity 4...20mA
3 Output temp. 4...20mA
4 –UB-GND (optional for backlighting)

Temperature measuring ranges (adjustable)	**DIP 1**	**DIP 2**
–35...+75 °C	**ON**	**ON**
–35...+35 °C	OFF	OFF
0...+50 °C (default)	OFF	**ON**
0...+80 °C	**ON**	OFF

Load resistance diagram 4..20 mA — **RPFF-25 RPFTF-25**



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

For the **I variant** the humidity path must be connected!

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RPFF-25 / RPFTF-25 (± 1.8 %)
with display



HYGRASGARD® RPFF-25	Pendulum room humidity sensors, pluggable (± 1.8 %), *Deluxe*
HYGRASGARD® RPFTF-25	Pendulum room humidity and temperature sensors, pluggable (± 1.8 %), *Deluxe*

Type / WG02	Measuring Range / Readout Humidity	Temperature	Output Humidity	Temperature	Display	Item No.	Price
RPFF-25-I						**I-variant**	
RPFF-25-I	0...100 % RH	–	4...20 mA	–		1201-7122-0000-100	**426,13 €**
RPFF-25-I **LCD**	0...100 % RH	–	4...20 mA	–	■	1201-7122-0400-100	**477,45 €**
RPFF-25-U						**U-variant**	
RPFF-25-U	0...100 % RH	–	0-10 V	–		1201-7121-0000-100	**426,13 €**
RPFF-25-U **LCD**	0...100 % RH	–	0-10 V	–	■	1201-7121-0400-100	**477,45 €**
RPFTF-25-I						**I-variant**	
RPFTF-25-I	0...100 % RH	–35...+75 °C –35...+35 °C 0...+50 °C 0...+80 °C	4...20 mA	4...20 mA		1201-7122-1000-100	**448,43 €**
RPFTF-25-I **LCD**	0...100 % RH	(4x as above)	4...20 mA	4...20 mA	■	1201-7122-1400-100	**499,75 €**
RPFTF-25-U						**U-variant**	
RPFTF-25-U	0...100 % RH	–35...+75 °C –35...+35 °C 0...+50 °C 0...+80 °C	0-10 V	0-10 V		1201-7121-1000-100	**448,43 €**
RPFTF-25-U **LCD**	0...100 % RH	(4x as above)	0-10 V	0-10 V	■	1201-7121-1400-100	**499,75 €**
Optional:	Cable connection with **M12 connector** according to DIN EN 61076-2-101					on request	

ACCESSORIES			
MSK-25	Pluggable **measuring head** (sensor), stainless steel **V2A** (1.4301), **metal** sinter filter, Ø 16 mm, L = 88.5 mm, exchangeable, as replacement element for **RPFF-25 / RPFTF-25**	7201-1131-0000-000	**221,60 €**
MF-16-K	**Mounting flange,** plastic	7100-0030-0000-000	**9,85 €**
	For further information see last chapter!		