

Pendulum room humidity sensors ($\pm 2.0\%$), calibratable, with active output

The calibratable pendulum room humidity sensor **HYGRASGARD® RPFF-SD** with plastic sinter filter measures the relative humidity of air. It converts the measurand humidity into a standard signal of 4...20 mA. Relative humidity (in % RH) is the quotient of water vapour partial pressure divided by the saturation vapour pressure at the respective gas temperature.

The sensor 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 precise detection of humidity. A digital long-term stable sensor is used as a measuring element for humidity measurement. This sensor is suitable for duct installation, as a pendulum sensor, or for integration in equipment.

TECHNICAL DATA

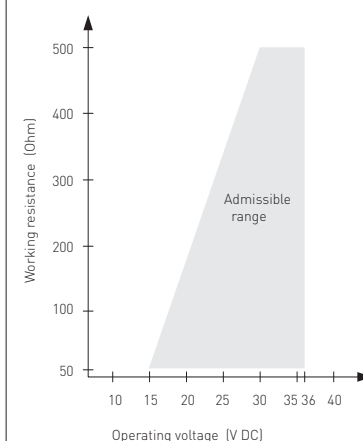
Power supply:	15...36 V DC depending on working resistance, residual ripple stabilised ± 0.3 V
Working resistance:	$R_a \text{ (Ohm)} = (U_b - 14 \text{ V}) / 0.03 \text{ A}$ $R_a < 500 \text{ Ohm}$
Power consumption:	$< 1.1 \text{ VA} / 24 \text{ V DC}$
Sensors:	digital humidity sensor small hysteresis, high long-term stability
Sensor protection:	plastic sinter filter, $\varnothing 16 \text{ mm}$, $L = 35 \text{ mm}$, exchangeable (optional metal sinter filter, $\varnothing 16 \text{ mm}$, $L = 32 \text{ mm}$)
Measuring range, humidity:	0...100 % RH (output corresponding to 4...20 mA)
Operating range, humidity:	0...95 % RH (without formation of dew)
Accuracy, humidity:	typically $\pm 2.0\%$ (20...80 % RH) at $+25^\circ\text{C}$, otherwise $\pm 3.0\%$
Output, humidity:	4...20 mA, see load resistance diagram
Ambient temperature:	storage $-25...+50^\circ\text{C}$ operation $-5...+55^\circ\text{C}$
Long-term stability:	$\pm 1\%$ per year
Electrical connection:	2-wire connection (see connecting diagram), 0.14 - 1.5 mm ²
Connection cable:	PVC, LiYY, 2 x 0.25 mm ² , KL = approx. 1.5 m (other lengths optional)
Protective tube:	stainless steel V2A (1.4301), $\varnothing = 16 \text{ mm}$, NL = 142 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
ACCESSORIES	see last chapter

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

Load resistance diagram **RPFF-SD**
4...20 mA



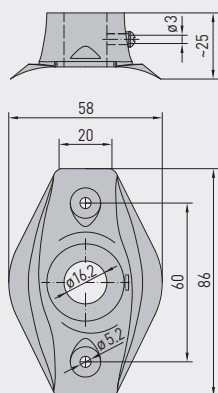
Circuit board

RPFF-SD

2-wire
connection**RPFF-SD-I**
(Transmitter)

+UB 24V DC
Output humidity
4-20mA

Dimensional drawing MF-16-K



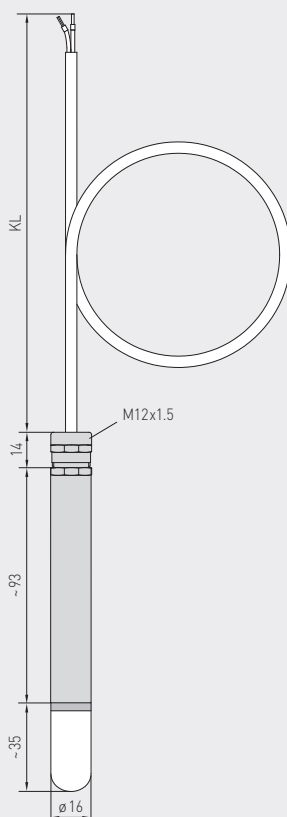
MF-16-K

Mounting flange,
plastic
(optional)



Dimensional drawing

RPFF-SD



RPFF-SD

with plastic sinter filter
(standard)



SF-M

Metal sinter filter
(optional)



HYGRASGARD® RPFF-SD Pendulum room humidity sensors ($\pm 2.0\%$), *Standard*

Type / WG01	Measuring Range Humidity (relative)	Output Humidity (relative)	Item No.	Price
RPFF-SD-I			I-variant	
RPFF-SD-I	0...100% RH	4...20 mA	1201-1172-0000-150	167,23 €
Extra charge:	Cable length (KL) 1.5 m, other lengths optional			on request
For special orders please specify:	Type, cable length e.g. RPFF-SD-I, 3 m; RPFF-SD-I, 4 m			

ACCESSORIES

SF-M	Metal sinter filter , Ø 16 mm, L = 32 mm, exchangeable stainless steel V4A (1.4404)	7000-0050-2200-100	45,34 €
MF-16-K	Mounting flange, plastic	7100-0030-0000-000	10,24 €
For further information see last chapter!			