

Series HYGRASGARD® ESFF/ESFTF humidity sensors are used for measuring the relative humidity and temperature of air in pressure systems and convert these measured values into standard signals of 0-10 V or 4...20 mA. Process connection by G ½" straight external pipe thread, with terminal box enclosure made of impact-resistant plastic and enclosure cover with quick-locking screws. These screw-in humidity sensors are to be operated in pollutant-free non-precipitating air, mounted vertical with the sensor pointing down.

TECHNICAL DATA:

Power supply: 24 V AC / DC for U variant
15 ... 36 V DC for I variant, R_L depending on working resistance

Power consumption: < 1 VA / 24 V DC for U variant
< 2 VA / 24 V DC for I variant

Sensors: digital humidity sensor with integrated temperature sensor,
dew-proof, small hysteresis, high long-term stability $\pm 1\%$ per year

Sensor protection: **metal sinter filter**, exchangeable

HUMIDITY:

Measuring range, humidity: ... 0 ... 100% r. H.

Operating range, humidity: ... 10 ... 95% r. H.

Deviation, humidity: $\pm 3\%$ r. H. (40...60%) at +20 °C, otherwise $\pm 5\%$ r. H.

Output, humidity: 0-10 V at U variant
4...20 mA at I variant (transmitter $R_L < 500 \Omega$)

TEMPERATURE:

Measuring range, temperature: ... 0 ... +50 °C

Operating range, temperature: ... 0 ... +50 °C

Deviation, temperature: ± 0.5 K at +20 °C

Output, temperature: 4 ... 20 mA

Ambient temperature: storage -25 ... +60 °C, operation -5 ... +55 °C

Electrical connection: 2- or 3-wire connection (see connecting diagram),
0.14 - 1.5 mm², via terminal screws on circuit board

Enclosure: plastic, material polyamide, 30% glass-globe-reinforced,
with quick-locking screws (slotted / Phillips head combination),
colour pure white (similar RAL 9010)

Enclosure dimensions: 72 x 64 x 37.8 mm (Thor III)

Cable gland: M16 x 1.5, including strain relief, exchangeable,
max. inner diameter 10.4 mm

Protective tube: **metal**, brass, nickel-plated, \varnothing 20 mm

Process connection: G ½"

Nominal pressure: $p_{\text{enn}} < 20$ bar

Overload: max. 5 times nominal pressure

Bursting pressure: $p_{\text{max}} = 150$ bar

Protection class: III (according to EN 60 730)

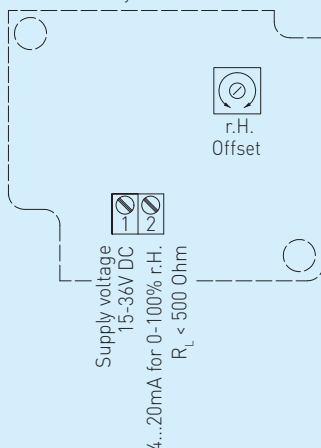
Protection type: IP65 (according to EN 60 529)

Standards: CE conformity, electromagnetic compatibility
according to EN 61 326 + A1 + A2,
EMC directive 2004 / 108 / EC

Schematic diagram

ESFF-I

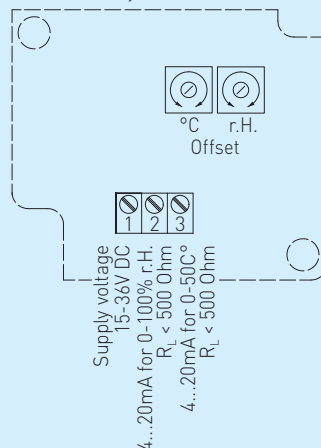
Offset humidity $\pm 5\%$ r.H.



Schematic diagram

ESFTF-I

Offset temperature ± 3 K
Offset humidity $\pm 5\%$ r.H.






Connecting diagram

ESFF-I

- | | |
|--|---|
|  | Supply voltage 15-36V DC |
|  | 4-20mA for 0-100% r.H. $R_L < 500 \Omega$ |

Connecting diagram

ESFTF-I

- | | |
|--|---|
|  | Supply voltage 15-36V DC |
|  | 4-20mA for 0-100% r.H. $R_L < 500 \Omega$ |
|  | 4-20mA for 0-50°C $R_L < 500 \Omega$ |

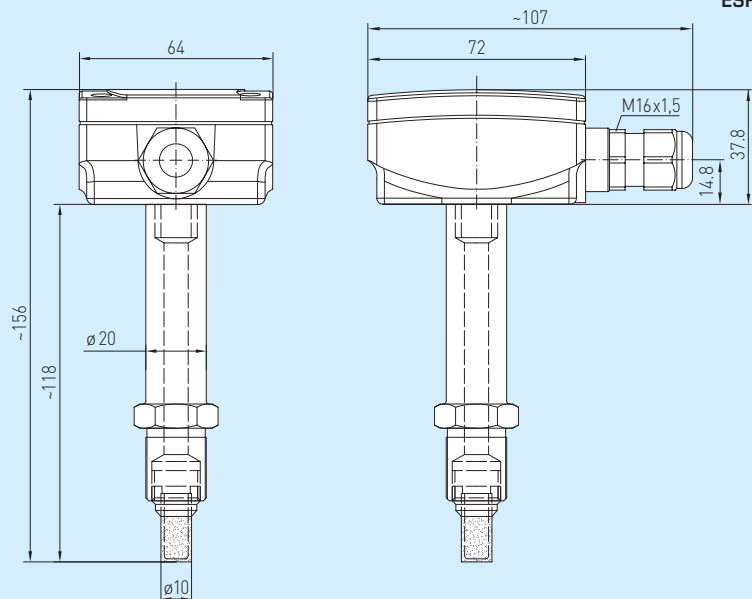


S+S REGELTECHNIK

HYGRASGARD® ESFF
HYGRASGARD® ESFTF

Screw-in humidity and temperature sensors
for pressure systems, calibrateable,
with active output

Dimensional drawing



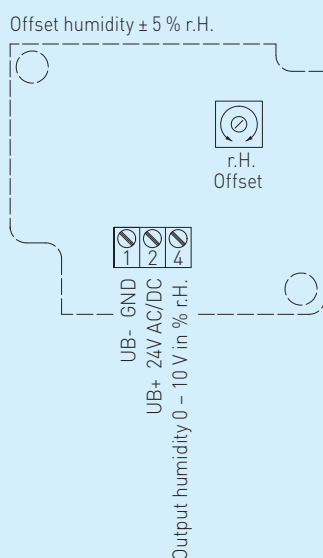
ESFF
ESFTF

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ESFTF



Schematic diagram

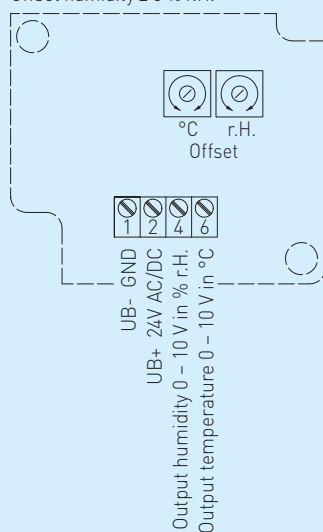
ESFF-U



Schematic diagram

ESFTF-U

Offset temperature ± 3 K
Offset humidity ± 5 % r.H.



Connecting diagram

ESFF-U

- 1 UB- GND
- 2 UB+ supply voltage 24V AC/DC
- 4 Output humidity in r.H. 0-10V

Connecting diagram

ESFTF-U

- 1 UB- GND
- 2 UB+ supply voltage 24V AC/DC
- 4 Output humidity in r.H. 0-10V
- 6 Output temperature in °C 0-10V

HYGRASGARD® ESFF
HYGRASGARD® ESFTF

Type / WG1 Designation	Measuring Range / Readout Humidity	Temperature	Output Humidity	Temperature	Item No.
ESFF-I					I-variant
ESFF-I	0 ...100 % r. H.	–	4 ... 20 mA	–	1201-2112-0000-000
ESFF-U					U-variant
ESFF-U	0 ...100 % r. H.	–	0-10 V	–	1201-2111-0000-000
ESFTF-I					I-variant
ESFTF-I	0 ...100 % r. H.	0...+50 °C	4 ... 20 mA	4 ... 20 mA	1201-2112-1000-000
ESFTF-U					U-variant
ESFTF-U	0 ...100 % r. H.	0...+50 °C	0-10 V	0-10 V	1201-2111-1000-000

