

On-wall humidity and temperature sensors ($\pm 1.8\%$ / $\pm 2.0\%$),
calibratable, with multi-range switching
and active/passive output

Calibratable outdoor humidity/temperature sensor **HYGRASGARD® AFF/AFTF** ($\pm 2.0\%$) and **AFF-20/AFTF-20** ($\pm 1.8\%$) with plastic sinter filter (optional metal sinter filter) or **AFF-25/AFTF-25** ($\pm 1.8\%$) with pluggable measuring head with metal sinter filter; housing made of impact-resistant plastic with quick-locking screws, optionally with /without display, with cable gland (optional M12 connector according to DIN EN 61076-2-101).

It measures the relative humidity and/or temperature of the air and converts the measurand into a standard signal of 0 - 10 V or 4...20 mA. They have four switchable temperature ranges and are applied in non-aggressive, dust-free atmospheres in refrigeration, air conditioning, ventilation and clean room technology. Relative humidity (in % RH) is the quotient of water vapour partial pressure divided by the saturation vapour pressure at the respective gas temperature. These measuring transducers are designed for exact detection of humidity. A digital long-term stable sensor is used as measuring element for humidity measurement. The sensor is factory-calibrated; an environmental precision adjustment by an expert is possible.

AFF / AFTF ($\pm 2.0\%$)
with plastic sinter filter
(standard)



AFF-20 / AFTF-20 ($\pm 1.8\%$)
with plastic sinter filter
(standard)



AFF-25 / AFTF-25 ($\pm 1.8\%$)
pluggable measuring head
with metal sinter filter



TECHNICAL DATA

Power supply: 24 V AC ($\pm 20\%$); 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_b (ohm) = $(U_b - 14 \text{ V}) / 0.02 \text{ A}$ for I variant, see load resistance diagram

Load resistance: $R_L > 5 \text{ k}\Omega$ for U variant

Power consumption: $< 1.1 \text{ VA} / 24 \text{ V DC}$; $< 2.2 \text{ VA} / 24 \text{ V AC}$

Sensors: **digital humidity sensor with integrated temperature sensor**,
low hysteresis, high long-term stability

HUMIDITY

Measuring range, humidity: 0...100% RH

Permitted humidity: $< 95\%$ RH, non-precipitating air

Deviation in humidity: **AFF / AFTF**:
typically $\pm 2.0\%$ (20...80% RH) at $+25^\circ\text{C}$, otherwise $\pm 3.0\%$
AFF-20 / AFTF-20, AFF-25 / AFTF-25:
typically $\pm 1.8\%$ (10...90% RH) at $+25^\circ\text{C}$, otherwise $\pm 2.0\%$

Output humidity: 0-10 V for U variant; 4...20 mA for I variant

TEMPERATURE

Measuring range, temperature: **multi-range switching** (see table)
 $-35...+35^\circ\text{C}$; $-35...+75^\circ\text{C}$; $0...+50^\circ\text{C}$; $0...+80^\circ\text{C}$

Ambient temperature: storage $-35...+85^\circ\text{C}$; operation $-30...+80^\circ\text{C}$, non-precipitating

Deviation, temperature: **AFF / AFTF**:
typically $\pm 0.4 \text{ K}$ at $+25^\circ\text{C}$
AFF-20 / AFTF-20, AFF-25 / AFTF-25:
typically $\pm 0.2 \text{ K}$ at $+25^\circ\text{C}$

Output, temperature: 0-10 V for U variant; 4...20 mA for I variant;
AFTF-Uxx (passive temperature sensor) see table

Electrical connection: 2-, 3-, or 4-wire connection (see connecting diagram),
0.14 - 1.5 mm², via terminal screws

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 (optional)

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)

Protective tube: **stainless steel V2A** (1.4301), \varnothing 16 mm
AFF / AFTF: NL = 55 mm
AFF-20 / AFTF-20: NL = 137 mm
AFF-25 / AFTF-25: NL = 88.5 mm

Sensor protection: **AFF / AFTF, AFF-20 / AFTF-20**:
plastic sinter filter, \varnothing 16 mm, L = 35 mm, exchangeable
(optional metal sinter filter, \varnothing 16 mm, L = 32 mm)

AFF-25 / AFTF-25:
pluggable measuring head (probe), stainless steel V2A (1.4301),
with metal sinter filter, \varnothing 16 mm, L = 88.5 mm, exchangeable

Process connection: by screws

Long-term stability: $\pm 1\%$ per year

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 70 x 40 mm (W x H),
for displaying ACTUAL temperature and / or ACTUAL humidity

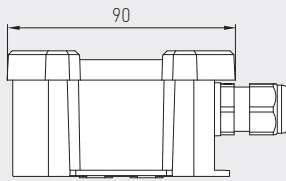
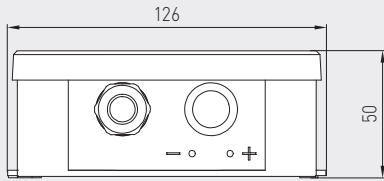
ACCESSORIES see last chapter



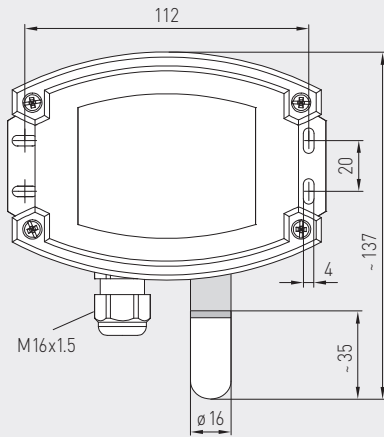
Dimensional drawing

AFF / AFTF
AFF-20 / AFTF-20

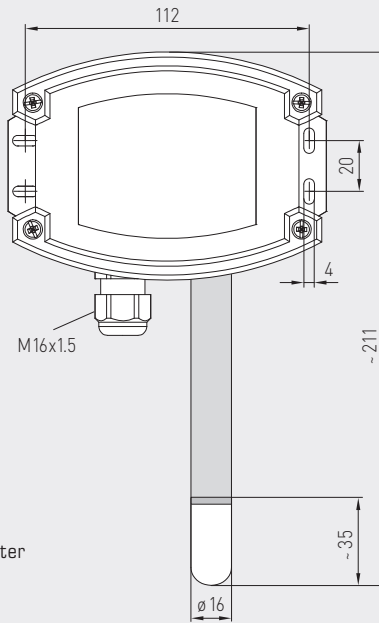
AFF / AFTF ($\pm 2.0\%$)
with display and
plastic sinter filter
(standard)



AFF / AFTF



AFF-20 / AFTF-20



AFF-20 / AFTF-20 ($\pm 1.8\%$)
with display and
plastic sinter filter
(standard)



SF-K
Plastic sinter filter
(standard)



SF-M
Metal sinter filter
(optional)

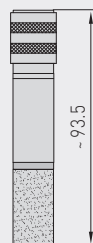
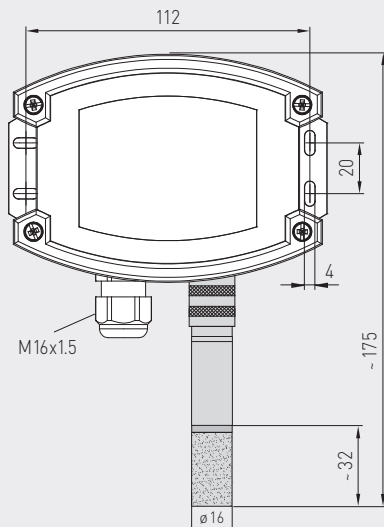


M12 connector
(optional)

Dimensional drawing

AFF-25 / AFTF-25

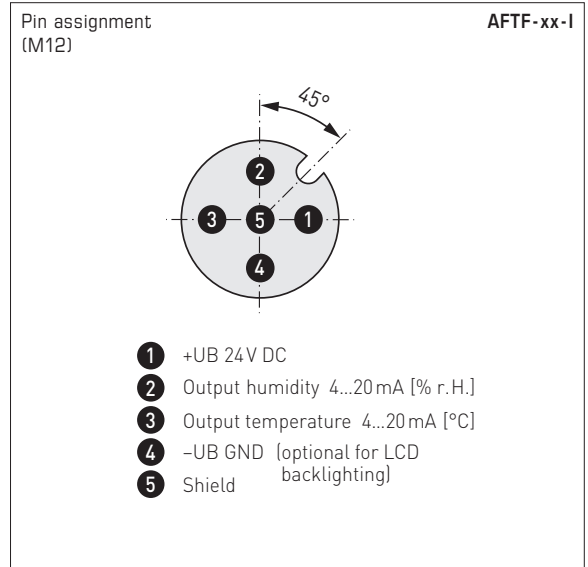
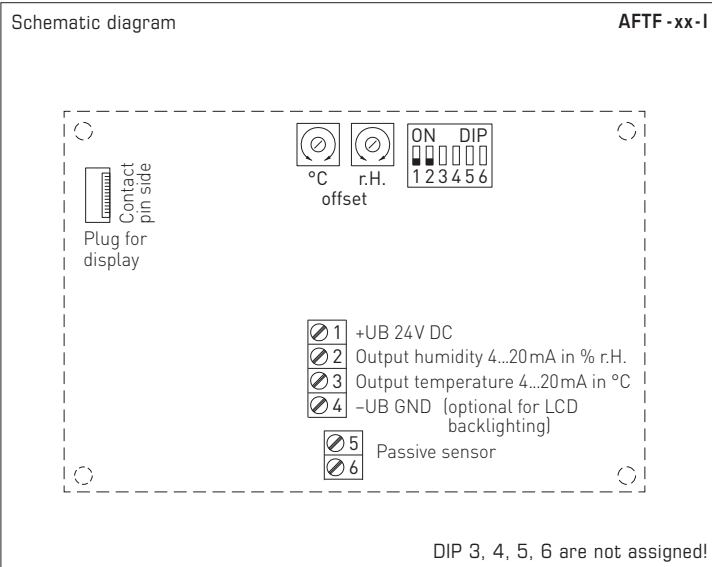
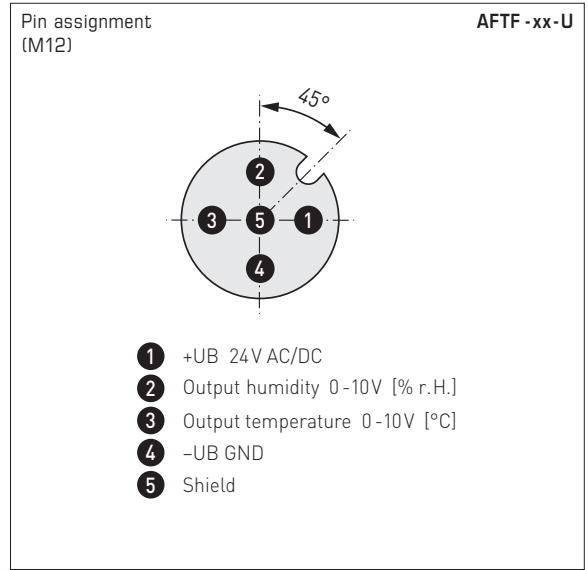
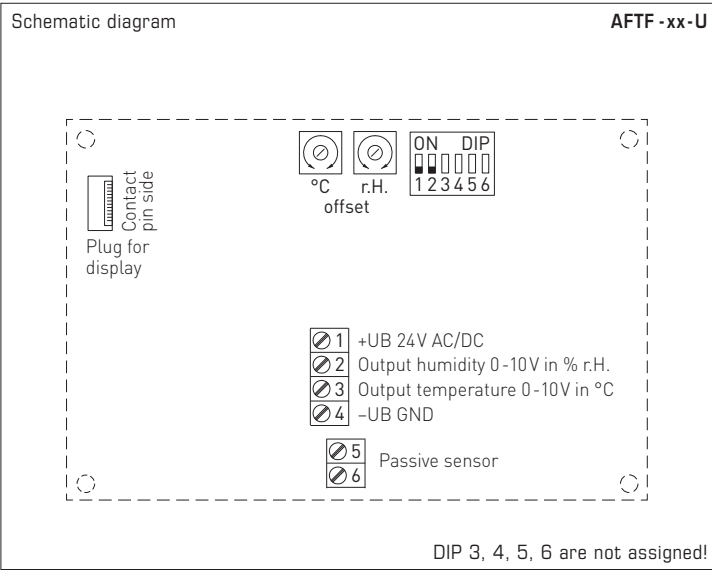
AFF-25 / AFTF-25 ($\pm 1.8\%$)
pluggable measuring head
with metal sinter filter
and display



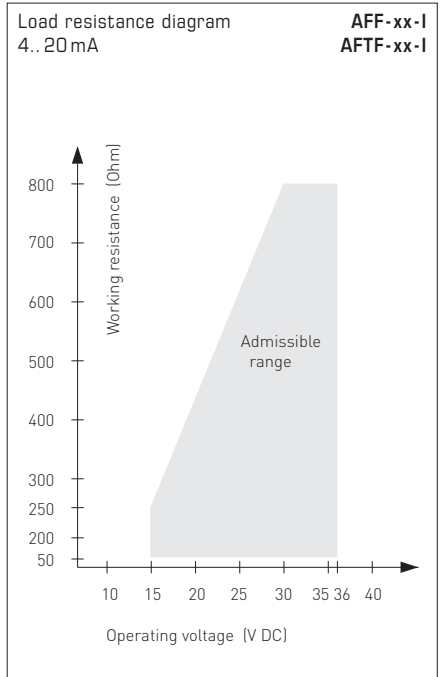
pluggable
measuring head
with metal
sinter filter



On-wall humidity and temperature sensors ($\pm 1.8\%$ / $\pm 2.0\%$),
 calibratable, with multi-range switching
 and active/passive output



AFF-xx / AFTF-xx
 with display,
 hinged





3-wire connection **AFF-xx-U**

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

2- or 3-wire connection * **AFF-xx-I (Transmitter)**

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

4- or 6-wire connection **AFTF-U (passive temperature sensor)**

- 1 +UB 24V AC/DC
- 2 Output humidity in % r.H. 0-10V
- 3 Output temperature in °C 0-10V
- 4 -UB-GND
- 5 Passive element
- 6 e.g. Pt1000, Ni1000, LMZ235Z

4-wire connection **AFTF-xx-U**

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

3- or 4-wire connection ** **AFTF-xx-I (Transmitter)**

- 1 +UB 24V DC
- 2 Output humidity in % r.H. 4...20mA
- 3 Output temperature in °C 4...20mA
- 4 -UB-GND (optional for backlighting)

4- or 6-wire connection **AFTF-I (passive temperature sensor)**

- 1 +UB 24V DC
- 2 Output humidity in % r.H. 4...20mA
- 3 Output temperature in °C 4...20mA
- 4 -UB-GND (optional for backlighting)
- 5 Passive element
- 6 e.g. Pt1000, Ni1000, LMZ235Z

| 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 |

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!

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 |

On-wall humidity and temperature sensors ($\pm 2.0\%$),
calibratable, with multi-range switching
and active/passive output

AFF / AFTF ($\pm 2.0\%$)
with cable gland



WS-03
Weather and sun
protection hood

HYGRASGARD® AFF On-wall humidity sensors ($\pm 2.0\%$), *Standard*
HYGRASGARD® AFTF On-wall humidity and temperature sensors ($\pm 2.0\%$), *Standard*

| Type / WG02 | Measuring Range / Readout | | Output | | Display | Item No. | Price |
|-------------------------|---|--|-----------|-------------|---------|--------------------|----------|
| | Humidity | Temperature | Humidity | Temperature | | | |
| AFF | | | | | | | |
| AFF-I | 0...100% RH | - | 4...20 mA | - | | 1201-7112-0000-000 | 190,32 € |
| AFF-I LCD | 0...100% RH | - | 4...20 mA | - | ■ | 1201-7112-0400-000 | 241,24 € |
| AFF-U | 0...100% RH | - | 0-10V | - | | 1201-7111-0000-000 | 190,32 € |
| AFF-U LCD | 0...100% RH | - | 0-10V | - | ■ | 1201-7111-0400-000 | 241,24 € |
| AFTF | | | | | | | |
| AFTF-I | 0...100% RH | -35...+75 °C -35...+35 °C 0...+50 °C 0...+80 °C | 4...20 mA | 4...20 mA | | 1201-7112-1000-000 | 208,78 € |
| AFTF-I LCD | 0...100% RH | (4x as above) | 4...20 mA | 4...20 mA | ■ | 1201-7112-1400-000 | 259,70 € |
| AFTF-U | 0...100% RH | -35...+75 °C -35...+35 °C 0...+50 °C 0...+80 °C | 0-10V | 0-10V | | 1201-7111-1000-000 | 208,78 € |
| AFTF-U LCD | 0...100% RH | (4x as above) | 0-10V | 0-10V | ■ | 1201-7111-1400-000 | 259,70 € |
| Housing variant: | Cable connection with cable gland (M12 connector on request) | | | | | | |

HYGRASGARD® AFTF-U xx On-wall humidity and temperature sensors ($\pm 2.0\%$), *Standard*
(passive temperature sensor)

| Type / WG02 | Measuring Range / Readout | | Output | | Item No. | Price |
|-------------------------|---|--|---------------------------|----------------------------------|--------------------|----------|
| | Humidity | Temperature | Humidity | Temperature | | |
| AFTF-U xx | Pt, Ni, LM235Z, NTC | | (active / passive) | | | |
| AFTF-U Pt100 | 0...100% RH | -35...+75 °C -35...+35 °C 0...+50 °C 0...+80 °C | 0-10V | 0-10V + Pt100 | 1201-7111-2001-000 | 210,05 € |
| AFTF-U Pt1000 | 0...100% RH | (4x as above) | 0-10V | 0-10V + Pt1000 | 1201-7111-2005-000 | 211,32 € |
| AFTF-U Ni1000 | 0...100% RH | (4x as above) | 0-10V | 0-10V + Ni1000 | 1201-7111-2009-000 | 211,96 € |
| AFTF-U NiTK | 0...100% RH | (4x as above) | 0-10V | 0-10V + Ni1000TK5000 | 1201-7111-2010-000 | 212,59 € |
| AFTF-U LM235Z | 0...100% RH | (4x as above) | 0-10V | 0-10V + LM235Z , 10mV / K | 1201-7111-2021-000 | 211,45 € |
| AFTF-U NTC1,8K | 0...100% RH | (4x as above) | 0-10V | 0-10V + NTC 1,8 kOhm | 1201-7111-2012-000 | 212,34 € |
| AFTF-U NTC10K | 0...100% RH | (4x as above) | 0-10V | 0-10V + NTC 10 kOhm | 1201-7111-2015-000 | 209,42 € |
| AFTF-U NTC20K | 0...100% RH | (4x as above) | 0-10V | 0-10V + NTC 20 kOhm | 1201-7111-2016-000 | 209,42 € |
| Housing variant: | Cable connection with cable gland (M12 connector on request) | | | | | |



S+S REGELTECHNIK

HYGRASGARD® AFF-25
HYGRASGARD® AFTF-25

On-wall humidity sensors and temperature sensors ($\pm 1.8\%$),
calibratable, with multi-range switching
and active output



AFF-25 / AFTF-25 ($\pm 1.8\%$)
with cable gland



| HYGRASGARD® AFF-25 | | On-wall humidity sensors, pluggable ($\pm 1.8\%$), <i>Deluxe</i> | | | | |
|-------------------------|---|---|------------|--------------------|--------------------------------------|--|
| HYGRASGARD® AFTF-25 | | On-wall humidity and temperature sensors, pluggable ($\pm 1.8\%$), <i>Deluxe</i> | | | | |
| Type / WG02 | Measuring Range / Readout | Output | Display | Item No. | Price | |
| | Humidity | Humidity | | | | |
| | Temperature | Temperature | | | | |
| AFF-25 | | | | | | |
| AFF-25-I | 0...100 % RH | – | | 1201-7132-0000-101 | 356,44 € | |
| AFF-25-I LCD | 0...100 % RH | – | ■ | 1201-7132-0400-101 | 406,26 € | |
| AFF-25-U | 0...100 % RH | – | | 1201-7131-0000-101 | 356,44 € | |
| AFF-25-U LCD | 0...100 % RH | – | ■ | 1201-7131-0400-101 | 406,26 € | |
| AFTF-25 | | | | | | |
| AFTF-25-I | 0...100 % RH | –35...+75 °C –35...+35 °C 0...+50 °C 0...+80 °C | 4... 20 mA | 4... 20 mA | 1201-7132-1000-101 378,08 € | |
| AFTF-25-I LCD | 0...100 % RH | (4x as above) | 4... 20 mA | 4... 20 mA | ■ 1201-7132-1400-101 427,91 € | |
| AFTF-25-U | 0...100 % RH | –35...+75 °C –35...+35 °C 0...+50 °C 0...+80 °C | 0-10 V | 0-10 V | 1201-7131-1000-101 378,08 € | |
| AFTF-25-U LCD | 0...100 % RH | (4x as above) | 0-10 V | 0-10 V | ■ 1201-7131-1400-101 427,91 € | |
| Housing variant: | Cable connection with cable gland (M12 connector on request) | | | | | |

| ACCESSORIES | | | | | |
|---------------|---|--|--|--------------------|-----------------|
| SF-M | Metal sinter filter, \varnothing 16 mm, L=32 mm, exchangeable stainless steel V4A (1.4404) | | | 7000-0050-2200-100 | 42,33 € |
| MSK-25 | Pluggable measuring head (probe) stainless steel V2A (1.4301), Metal sinter filter, \varnothing 16 mm, L=88.5 mm, exchangeable replacement element for AFF-25/AFTF-25 | | | 7201-1131-0000-000 | 215,15 € |
| WS-01 | Sun and ball-impact protection hood, 184 x 180 x 80 mm, stainless steel V2A (1.4301) | | | 7100-0040-2000-000 | 31,77 € |
| WS-03 | Weather and sun protection hood, 200 x 180 x 150 mm, stainless steel V2A (1.4301) | | | 7100-0040-6000-000 | 44,74 € |

For further information see last chapter!

On-wall humidity sensors and temperature sensors ($\pm 1.8\%$),
calibratable, with multi-range switching
and active output

AFTF-20-Q ($\pm 1.8\%$)
with M12 connector



HYGRASGARD® AFTF-20-Q On-wall humidity sensors and temperature sensors ($\pm 1.8\%$), *Premium*
(with M12 connector)

| Type / WG02 | Measuring Range / Readout | | Output | | Display | Item No. | Price |
|-----------------------------|---------------------------|---|-----------|-------------|---------|--------------------|----------|
| | Humidity | Temperature | Humidity | Temperature | ● = Q | | |
| AFTF-20-Q | | | | | | | |
| AFTF-20-I Q | 0...100% RH | -35...+75 °C -35...+35 °C 0...+50 °C 0...+80 °C | 4...20 mA | 4...20 mA | ● | 2003-6121-2100-001 | 306,76 € |
| AFTF-20-I Q LCD | 0...100% RH | (4x as above) | 4...20 mA | 4...20 mA | ● ■ | 2003-6122-2100-001 | 355,13 € |
| AFTF-20-U Q | 0...100% RH | -35...+75 °C -35...+35 °C 0...+50 °C 0...+80 °C | 0-10V | 0-10V | ● | 2003-6121-1100-001 | 306,76 € |
| AFTF-20-U Q LCD | 0...100% RH | (4x as above) | 0-10V | 0-10V | ● ■ | 2003-6122-1100-001 | 355,13 € |
| Housing variant "Q": | | Cable connection with M12 connector (male, 5-pin, A-code) | | | | | |

ACCESSORIES

| | | | |
|-------------|--|--------------------|---------|
| SF-M | Metal sinter filter, \varnothing 16 mm, L = 32 mm, exchangeable stainless steel V4A (1.4404) | 7000-0050-2200-100 | 42,33 € |
|-------------|--|--------------------|---------|

For further information see last chapter!



S+S REGELTECHNIK

HYGRASGARD® AFF-20
HYGRASGARD® AFTF-20

On-wall humidity sensors and temperature sensors ($\pm 1.8\%$),
calibratable, with multi-range switching
and active output



AFF-20 / AFTF-20 ($\pm 1.8\%$)
with cable gland



| HYGRASGARD® AFF-20 | | On-wall humidity sensors ($\pm 1.8\%$), <i>Premium</i> (with cable gland) | | | | | |
|-------------------------|---|--|--------------------|-------------|---------|--------------------|----------|
| Type / WG02 | Measuring Range / Readout Humidity | Readout Temperature | Output Humidity | Temperature | Display | Item No. | Price |
| AFF-20 | | | | | | | |
| AFF-20-I | 0...100% RH | – | 4...20 mA | – | | 1201-7112-0000-201 | 241,24 € |
| AFF-20-I LCD | 0...100% RH | – | 4...20 mA | – | ■ | 1201-7112-0400-201 | 292,16 € |
| AFF-20-U | 0...100% RH | – | 0-10 V | – | | 1201-7111-0000-201 | 241,24 € |
| AFF-20-U LCD | 0...100% RH | – | 0-10 V | – | ■ | 1201-7111-0400-201 | 292,16 € |
| Housing variant: | Cable connection with cable gland (M12 connector on request) | | | | | | |

| HYGRASGARD® AFTF-20 | | On-wall humidity and temperature sensors ($\pm 1.8\%$), <i>Premium</i> (with cable gland) | | | | | |
|-------------------------|--|--|--------------------|-------------|---------|--------------------|----------|
| Type / WG02 | Measuring Range / Readout Humidity | Readout Temperature | Output Humidity | Temperature | Display | Item No. | Price |
| AFTF-20 | | | | | | | |
| AFTF-20-I | 0...100% RH | –35...+75 °C –35...+35 °C 0...+50 °C 0...+80 °C | 4...20 mA | 4...20 mA | | 1201-7112-1000-201 | 264,83 € |
| AFTF-20-I LCD | 0...100% RH | (4x as above) | 4...20 mA | 4...20 mA | ■ | 1201-7112-1400-201 | 313,22 € |
| AFTF-20-U | 0...100% RH | –35...+75 °C –35...+35 °C 0...+50 °C 0...+80 °C | 0-10 V | 0-10 V | | 1201-7111-1000-201 | 264,83 € |
| AFTF-20-U LCD | 0...100% RH | (4x as above) | 0-10 V | 0-10 V | ■ | 1201-7111-1400-201 | 313,22 € |
| Housing variant: | Cable connection with cable gland (M12 connector see AFTF-20-Q) | | | | | | |

| ACCESSORIES | | | | | | | | |
|---|--|--|--|--|--|--|--------------------|---------|
| SF-M | Metal sinter filter, \varnothing 16 mm, L=32 mm, exchangeable stainless steel V4A (1.4404) | | | | | | 7000-0050-2200-100 | 42,33 € |
| For further information see last chapter! | | | | | | | | |

