

**HYGRASGARD® KFF - 20 / KFTF - 20 (including mounting flange)**  
**HYGRASGARD® AFF - 20 / AFTF - 20**  
**HYGRASGARD® AFF - 25 / AFTF - 25**



S+S REGELTECHNIK

Duct respectively on-wall humidity and temperatures sensors, calibrateable, with active output

**APPLICATION:**

For advanced highly accurate applications, accuracy 2% r.H.

The calibrateable humidity/temperature sensor measures the relative humidity and temperature of air and other non-aggressive gases. It is used in meteorology, in medicine, in facility automation, in refrigeration, air conditioning, ventilation, and clean room technology, in greenhouses and in halls. It converts the measurands humidity and temperature into a standard signal of 0-10 V or 4...20 mA. Relative humidity (in % r.H.) 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 temperature and humidity. A capacitive sensor is used as measuring element for measuring humidity. Enclosures are suitable for wall mounting and duct installation.

**TECHNICAL DATA:**

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

Sensors: ..... digital humidity sensor with integrated temperature sensor, dew-proof, small hysteresis, high long-term stability

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

**HUMIDITY:**

Measuring range, humidity:..... 0...100% r.H.  
 (output corresponding to 0-10 V or 4...20 mA)

Operating range, humidity:..... 10...90% r.H.

Deviation, humidity:.....  $\pm 2\%$  r.H. (20...90%) at +20°C, otherwise  $\pm 3\%$  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:.... -20...+80°C (0...+50°C optional)  
 (output corresponding to 0-10 V or 4...20 mA or Ohm value)

Operating range, temperature:.... -20...+80°C

Deviation, temperature: .....  $\pm 0.3 K$  at 20°C

Output temperature: ..... 0-10 V or 4...20 mA

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<sup>2</sup> via terminal screws on circuit board

Enclosure:..... plastic, material polyamide, 30% glass-globe-reinforced,  
 with quick-locking screws,  
 colour pure white (similar RAL9010)

Dimensions:..... KFF-20/KFTF-20: 72x64x39.4 mm  
 AFF-20/AFTF-20: 108x70x73.5 mm  
 AFF-25/AFTF-25: 108x70x73.5 mm

Cable union:..... M16, including strain relief

Protective tube:..... metal,  
 KFF-20/KFTF-20: nominal length NL = 225 mm,  $\varnothing$  18 mm  
 AFF-20/AFTF-20: nominal length NL = 45 mm,  $\varnothing$  18 mm  
 AFF-25/AFTF-25: nominal length NL = 95 mm,  $\varnothing$  18 mm

Process connection: ..... KFF-20/KFTF-20: by mounting flange, plastic  
 (included in the scope of delivery)  
 (galvanised steel optional)  
 AFF-20/AFTF-20: by screws

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

Protection class: ..... III (according to EN 60730)

Protection type:..... IP 65 (according to EN 60529)

Standards:..... CE conformity, electromagnetic compatibility  
 according to EN 61326 + A1 + A2,  
 EMC directive 89/336/EWG

Optional:..... 8-digit display, cutout 36x14 mm (WxH),  
 for displaying actual temperature and actual humidity

ACCESSORIES: ..... see last chapter

KFF-20  
KFTF-20

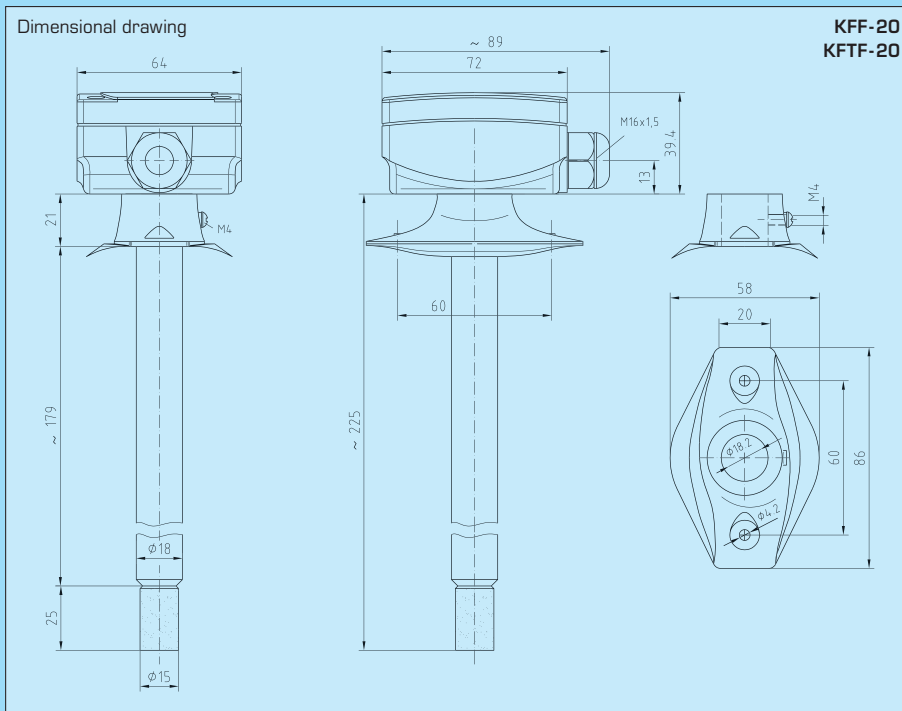


AFF-20  
AFTF-20

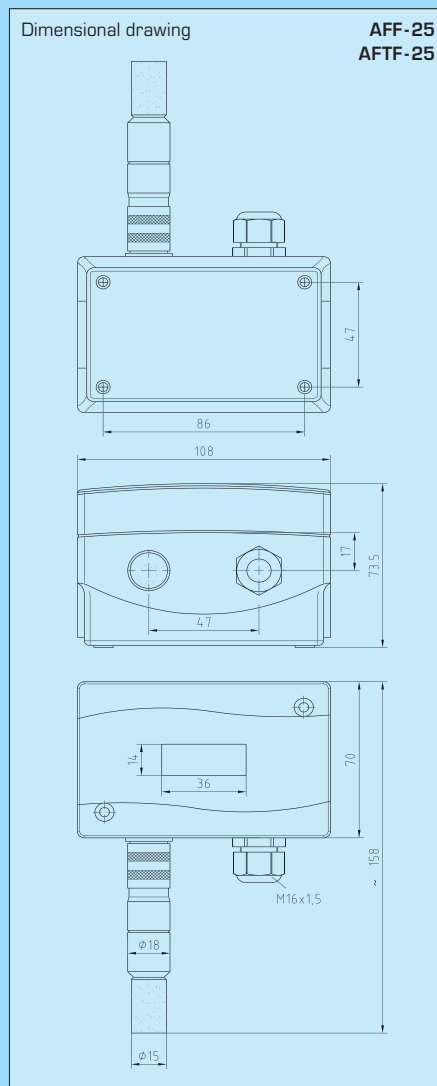
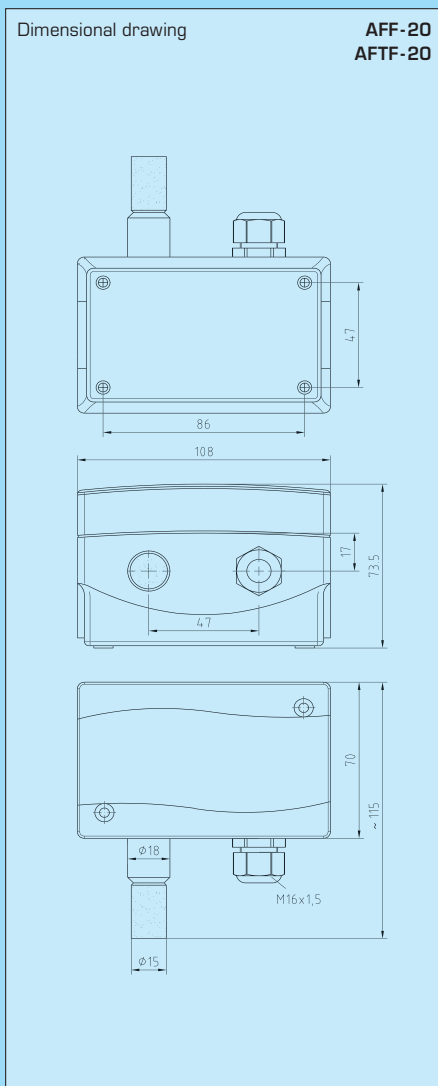


AFF-25  
AFTF-25  
(pluggable  
measuring head)





**KFF-20**  
**KFTF-20**  
with display



**AFF-20**  
**AFTF-20**  
with display



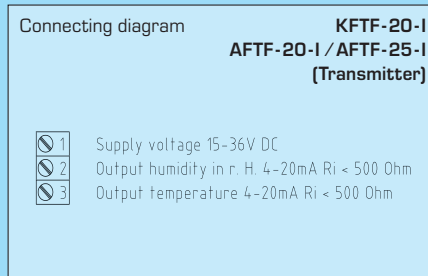
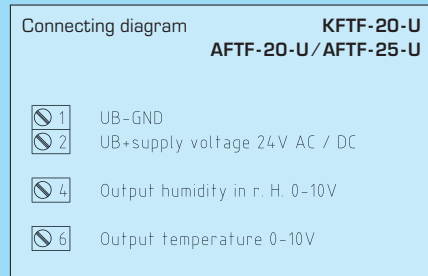
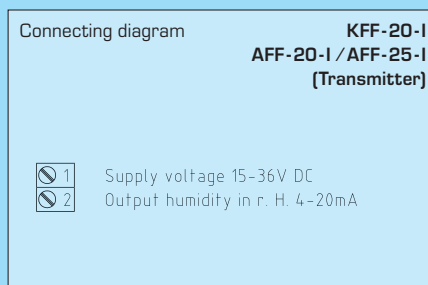
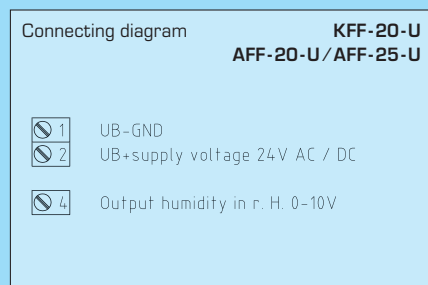
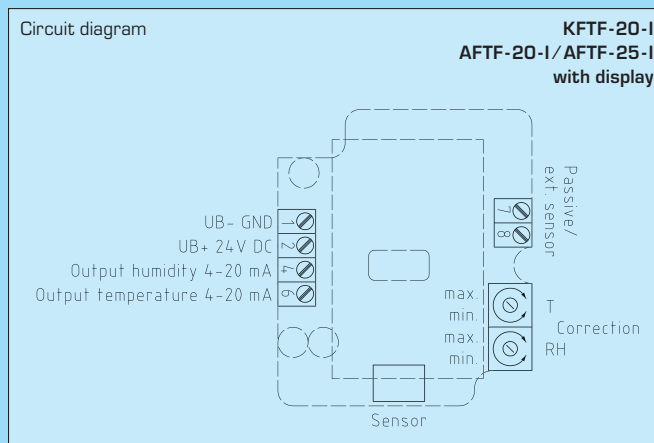
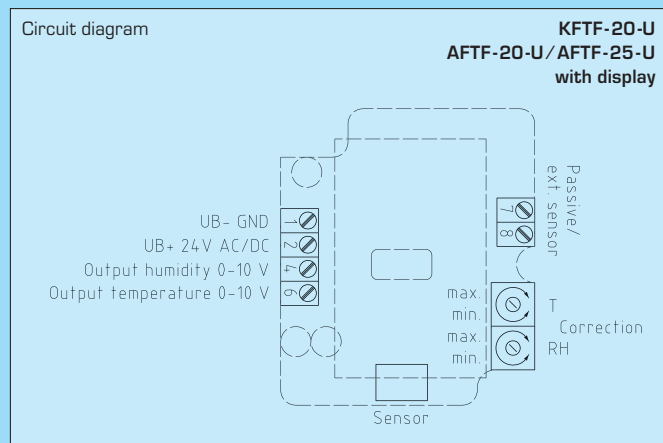
**AFF-25**  
**AFTF-25**  
with display  
(pluggable  
measuring head)

**HYGRASGARD® KFF-20 / KFTF-20 (including mounting flange)**  
**HYGRASGARD® AFF-20 / AFTF-20**  
**HYGRASGARD® AFF-25 / AFTF-25**



S+S REGELTECHNIK

Duct respectively on-wall humidity and temperatures sensors,  
 calibrateable, with active/passive output



**HYGRASGARD® KFF-20 and KFTF-20 including mounting flange:**

Type/WG1	Range humidity (relative)	Range temperature	Output humidity (relative)	Output temperature
KFF-20 I	0...100% r.H.	-	4...20mA	-
KFF-20 U	0...100% r.H.	-	0-10 V	-
KFTF-20 I	0...100% r.H.	-20...+80 °C	4...20mA	4...20mA
KFTF-20 U	0...100% r.H.	-20...+80 °C	0-10 V	0-10 V
<b>KFF-20 / KFTF-20-xx-Display</b>				



Temperature table Range: -20...+80 °C

°C	Output voltage in V	Output current in mA
-20	0	4.0
-15	0.5	4.8
-10	1.0	5.6
-5	1.5	6.4
0	2.0	7.2
5	2.5	8.0
10	3.0	8.8
15	3.5	9.6
20	4.0	10.4
25	4.5	11.2
30	5.0	12.0
35	5.5	12.8
40	6.0	13.6
45	6.5	14.4
50	7.0	15.2
55	7.5	16.0
60	8.0	16.8
65	8.5	17.6
70	9.0	18.4
75	9.5	19.2
80	10.0	20.0

Temperature table showing temperature values in °C in relation to the respective output signal. Figures given in volt (V) and in milliampere (mA)

Humidity table Range: 0...100% r.H.

% r.H.	Output voltage in V	Output current in 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
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

Humidity table showing relative humidity values in percent (% r.H.) in relation to the respective output signal. Figures given in volt (V) and in milliampere (mA).

**HYGRASGARD® AFF-20 and AFTF-20:**

Type/WG1	Range humidity (relative)	Range temperature	Output humidity (relative)	Output temperature
AFF-20 I	0...100% r.H.	-	4...20 mA	-
AFF-20 U	0...100% r.H.	-	0-10 V	-
AFTF-20 I	0...100% r.H.	-20...+80 °C	4...20 mA	4...20 mA
AFTF-20 U	0...100% r.H.	-20...+80 °C	0-10 V	0-10 V
<b>AFF-20 / AFTF-20-xx-Display</b>				
Accessories:	<b>WS-01</b> Sunshade and weather protection			

**HYGRASGARD® AFF-25 and AFTF-25, with exchangeable, pluggable measuring head (sensor):**

Type/WG1	Range humidity (relative)	Range temperature	Output humidity (relative)	Output temperature
AFF-25 I	0...100% r.H.	-	4...20 mA	-
AFF-25 U	0...100% r.H.	-	0-10 V	-
AFTF-25 I	0...100% r.H.	-20...+80 °C	4...20 mA	4...20 mA
AFTF-25 U	0...100% r.H.	-20...+80 °C	0-10 V	0-10 V
<b>AFF-25 / AFTF-25-xx-Display</b>				
Spare part:	<b>MSK-25</b> Measuring head (sensor), pluggable, as replacement element			
Accessories:	<b>WS-01</b> Sunshade and weather protection			