HYGRASGARD® VFTF‑Modbus‑T3

Showcase humidity and temperature sensor (± 2.0 %),
for mixture ratio, relative /absolute humidity, dew point, enthalpy
and temperature, calibratable, with Modbus connection

NEW

S+S REGELTECHNIK

Calibratable display cases humidity and temperature sensor HYGRASGARD® VFTF‑Modbus‑T3 with Modbus connection, in an impact-resistant plastic housing with quick-locking screws, optionally with / without display, cable sensor with a flat stainless steel probe (pluggable).

The sensor is used to detect various parameters in humidity measurement. It measures the relative humidity (0...100% r.H.) and the temperature (−35...+80 °C) of the ambient air. These measurands are used to internally calculate the following parameters that can be retrieved via Modbus: relative humidity [% r. H.], absolute humidity [g/m³], mixture ratio [g/kg], dew point temperature [°C], enthalpy [kJ/kg] (ignoring atmospheric air pressure) and ambient temperature [°C]. A long-term stable, digital sensor guarantees exact measurement results.

The display cases sensor is applied in a non-aggressive, dust-free environment and is specially suitable for installation in ceilings, walls, display cases or showcases. It is used in museums, galleries, cinemas, lecture halls or laboratories.

Innovative Modbus sensor with galvanically separated RS485-Modbus-interface, selectable bus termination resistance, DIP switch for setting the bus parameters and bus address in current-free state, LEDs for telegram status display, two separate push-in terminals and large three-line display (illuminated; with customised programming in the 7-segment and dot-matrix range). The sensor is factory-calibrated; an environmental precision adjustment by an expert is possible.

VFTF‑Modbus‑T3

Device version
with **M12 connector**
(optional on request)

TECHNICAL DATA

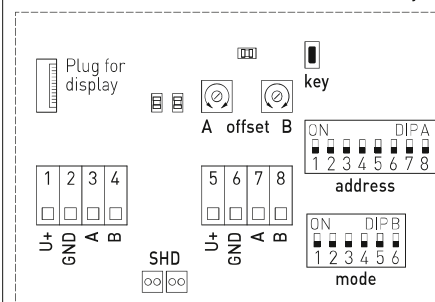|	
Voltage supply:	24 V AC (± 20 %) and 15...36 V DC
Power consumption:	< 1.2 W / 24 V DC; < 1.8 VA / 24 V AC
Data points:	Temperature [°C], relative humidity [% r.h.], dew point [°C], absolute humidity [g/m³], mixture ratio [g/kg], enthalpy [kJ/kg]
Sensor:	**digital humidity sensor with integrated temperature sensor,** low hysteresis, high long-term stability
Measuring Range:	0...100 % r.H. (humidity) −35...+80 °C (temperature)
Deviation in humidity:	typically **± 2.0** % (20...80 % r. H.) at +25 °C, otherwise ± 3.0 %
Deviation in temperature:	typically ± 0.2 K at +25 °C
Zero point offset:	± 10 % r.H. (humidity); ± 5 °C (temperature)
Ambient temperature:	−30...+70 °C
Medium:	clean air and non-aggressive, non-combustible gases
Bus protocol:	Modbus (RTU mode), address range 0...**247** selectable
Signal filtering:	4 s / 32 s
Housing:	plastic, UV-stabilised, 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:	108 x 78.5 x 43.3 mm (Tyr 3 without display) 108 x 78.5 x 45.8 mm (Tyr 3 with display)
Cable connection:	**cable gland**, plastic (2x M 20 x 1.5; with strain relief, exchangeable, inner diameter 8 - 13 mm) **or** **M12 connector** according to DIN EN 61076-2-101 (optional on request)
Connection cable:	PVC, LiYY, 4 x 0.14 mm², cable length (KL) = approx. 2 m (other lengths optional)
Sensor protection:	**probe** made of stainless steel, **V4A** (1.4571), **pluggable**; sensor head Ø = 17 mm, H = approx. 2.5 mm; protective sleeve Ø = 10 mm, NL = approx. 25 mm, M10 x 1.0; with plastic plug connector Ø = approx. 11 mm, NL = approx. 25 mm
Mounting (sensor):	cut-out Ø = 11 - 15 mm, inserted length (EL) = approx. 50 mm, lock nut for fixing is included in the scope of delivery.
Electrical connection:	0.2 - 1.5 mm², using push-in terminals
Permissible air humidity:	< 95 % r. H., non-precipitating air
Protection class:	III (according to EN 60 730)
Protection type:	**IP 65** (according to EN 60 529)
Standards:	CE conformity, electromagnetic compatibility according to EN 61326, according to EMC Directive 2014 / 30 / EU
Optional:	**Display with illumination**, three-line, programmable, cutout approx. 51 x 29 mm (W x H), for displaying the actual humidity and actual temperature (cyclic) or a selectable parameter (static) or an individually programmable display value
ACCESSORIES	see table

Schematic diagram — Modbus Tyr 3

DIP A: Bus address
DIP B: Bus parameters (Baud rate, parity...)

Telegram indicator Reception (LED green) Error (LED red)

LED (internal status)
Offset correction
Reset button
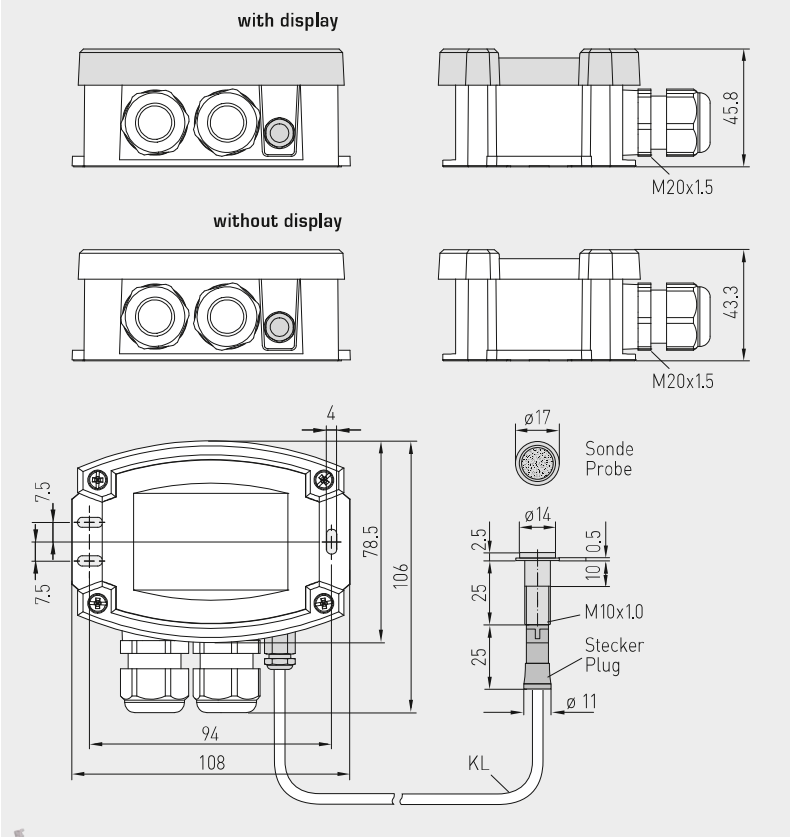Shielding

Programmable display screen — Modbus Tyr 3

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NEW

S+S REGELTECHNIK

Dimensional drawing   VFTF-Modbus-T3

with display

without display

M20x1.5

M20x1.5

45.8

43.3

4
7.5
7.5
78.5
106
94
108

ø17
Sonde
Probe

ø14
2.5
25
10 0.5
25
25
M10x1.0
Stecker
Plug

ø 11

KL

VFTF-Modbus-T3
with display

56.4 %RH

Probe
made of stainless steel,
pluggable

56.4 %RH

HYGRASGARD® **VFTF-Modbus-T3** Showcase humidity and temperature sensor (± 2.0 %), *Premium*

Type / WG01	Measuring Range / Readout Humidity (switchable)	Temperature	Output	Display	Item no.
VFTF-Modbus-T3					
VFTF-MODBUS-T3	0 …100 % r. H. (default) 0 … 80 g / kg (MV) 0 … 80 g / m³ (a.F.) 0 … 85 kJ / kg (ENT.) −20…+80 °C (TP)	−35…+80 °C	Modbus		1201-6256-1000-000
VFTF-MODBUS-T3	(5 x as above)	(1 x as above)	Modbus	■	1201-6256-1400-000
Extra charge:	**cable length** (KL = approx. 2 m), other lengths optional				on request
	Cable connection with **M12 connector** according to DIN EN 61076-2-101				on request

ACCESSORIES		
KA2-Modbus	**Communication adapter** (with USB and RS485 interface) for system connection (incl. quick-start software)	1906-1200-0000-100
LA-Modbus	**Line termination device** (with terminating resistor) as an active bus termination of RS485 networks	1906-1300-0000-100

BUS