HYGRASREG® TW

Dew point control switches
including strap / with detached sensor head,
with active / switching outputs

S+S REGELTECHNIK

Patented quality product
(pro-dynamic cross convection patent no. DE 10 2012 015 726.6)

The dew point control switch **HYGR**ASREG® **TW** is installed on cooling / cold-water piping or on cooled surfaces. It reliably detects formation of dew by means of its humidity and temperature sensor (no conductivity measurement) and, thanks to its patented measuring method, **pro-dynamic cross convection**, yields an exact measurement result (with LED status display), **with / without display**.

Dew point temperature is that temperature at which air reaches the state of saturation and water vapour starts to condensate. Facilitated by the continuous measuring range from 0...100 % RH of the **TW-U** and the adjustable switchpoint for the **TW-W** of 75...100 % RH, it is possible to operate cooling ceilings, for example, so that the switching output of the dew point control switch, the DDC, is activated and then triggers a heater or other control elements, thereby preventing the formation of dew on pipes or cooling ceilings or on the property to be monitored.

TW
with quick-locking screws



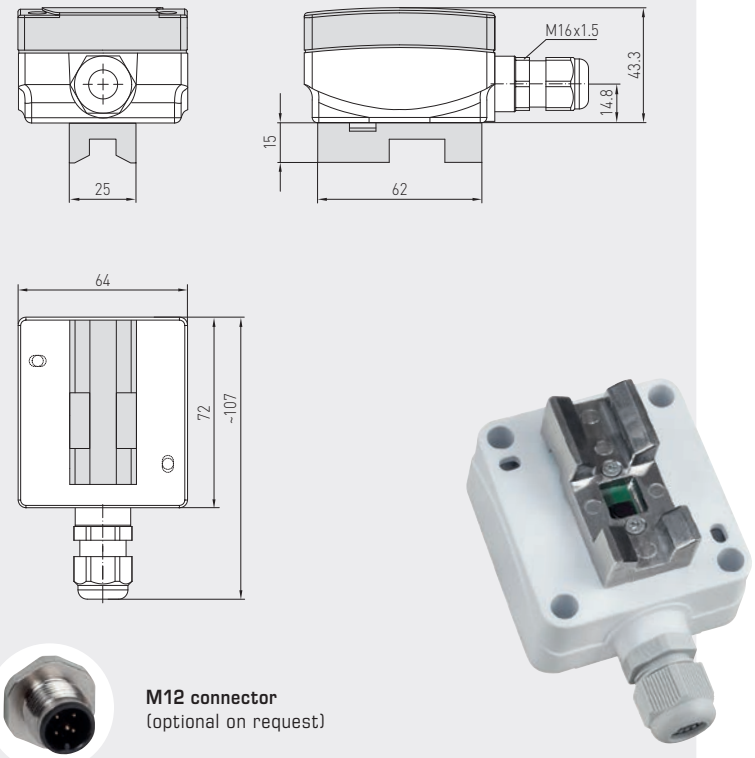
TECHNICAL DATA

Power supply:	24 V AC (± 20 %) and 15...36 V DC
Power consumption:	< 1.1 VA / 24 V DC; < 2.2 VA / 24 V AC
Measuring Range:	formation of dew is detected at 0...100 % RH on the **TW-U**, continuous 75...100 % RH on the **TW-W**, switching (switchpoint adjustable by potentiometer, factory setting 75 % RH)
Output:	0-10 V or potential-free changeover contact (24 V), 1 A ohmic load
Sensors:	**digital humidity sensor with integrated temperature sensor,** small hysteresis, high long-term stability
Sensor protection:	membrane filter
Medium:	clean air and non-aggressive, non-combustible gases
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 is transparent!
Housing dimensions:	72 x 64 x 43.3 mm (Tyr 1)
Cable connection:	**cable gland**, plastic (M 16 x 1.5; with strain relief, exchangeable, inner diameter 10.4 mm) **or** **M12 connector** according to DIN EN 61076-2-101 (optional on request)
Electrical connection:	0.14 - 1.5 mm², via terminal screws
Process connection:	**TW** endless strap with metal tightener, 300 mm, for pipes up to 3 " diameter (included in the scope of delivery) **TW-external** cable tie, 200 mm (included in the scope of delivery)
Mounting:	**TW** with strap for direct mounting on pipes or for direct mounting on flat surfaces (e.g. walls, ceilings) **TW-external** with detached sensor head (cable length KL = 2 m) for mounting on pipes
Protection class:	III (according to EN 60 730)
Protection type:	**IP 65** (according to EN 60 529) Housing tested, TÜV SÜD, Report No. 713139052 (Tyr 1)
Standards:	CE conformity, electromagnetic compatibility according to EN 61 326, EMC directive 2014 / 30 / EU
Optional:	two-line **display with illumination,** cutout approx. 36 x 15 mm (W x H), for displaying actual humidity and the switching status of the relay
FUNCTION	The relay output is triggered (contact 13-11 closed) if the **pre-set switchpoint** (factory setting 75 % RH) is not reached and opens (contact 12-11 closed) in the event of an error (power failure, condensation).
	**LED short pulses =** relay active → switchpoint not reached ACTUAL humidity **< pre-set switchpoint (no condensation)**
	**LED long pulses =** relay inactive → switchpoint exceeded ACTUAL humidity **> pre-set switchpoint (condensation)**

TW-extern
with quick-locking screws



Dimensional drawing **TW**

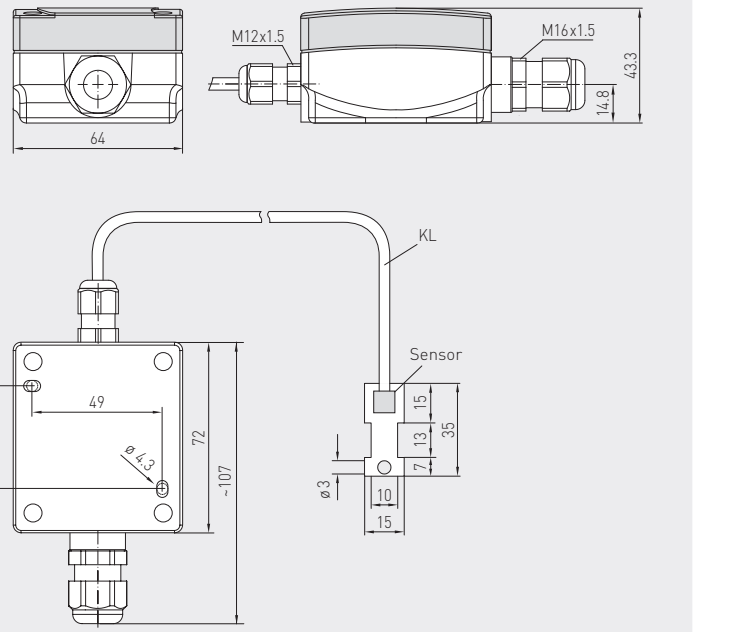


M12 connector
(optional on request)

TW
with display
and quick-locking screws



Dimensional drawing **TW-external**





M12 connector
(optional on request)

TW-extern
with display
and quick-locking screws



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Display **standard** — **TW-xx Display**



By default, the first line of the display shows the **relative humidity**.

The second line shows the information about the **switching status of the relay** (as a circuit) on the left, and the respective **switching value** in % RH on the right (switchpoint adjustable by potentiometer, factory setting 75 % RH).

- ○ **Circuit, empty** = relay in idle state
- ● **Circuit, full** = relay energised

TW
pro-dynamic
cross convection



PATENTED



Connecting diagram **TW-UW**
(no condensation)
RH < switchpoint

1 UB+ supply voltage 24V AC/DC
2 Output bedewing 0-10V (continuous)
3 GND

13 Normally open contact (no dew)
11 changeover (24 V)
12 Breaker (dew)

Connecting diagram **TW-W**
(no condensation)
RH < switchpoint

1 UB+ supply voltage 24V AC/DC
2 free
3 GND

13 Normally open contact (no dew)
11 changeover (24 V)
12 Breaker (dew)

Connecting diagram **TW-UW**
(condensation)
RH > switchpoint

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Connecting diagram **TW-W**
(condensation)
RH > switchpoint

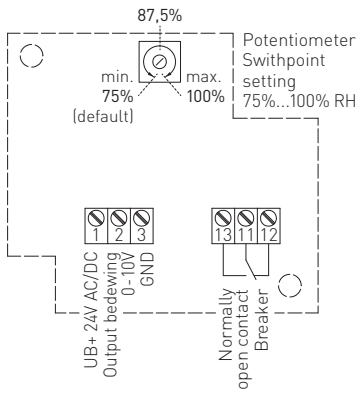
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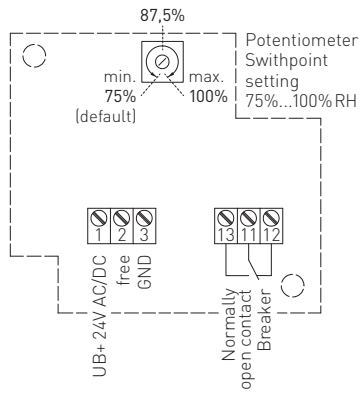
Connecting diagram **TW-U**

1 UB+ supply voltage 24V AC/DC
2 Output bedewing 0-10V (continuous)
3 GND

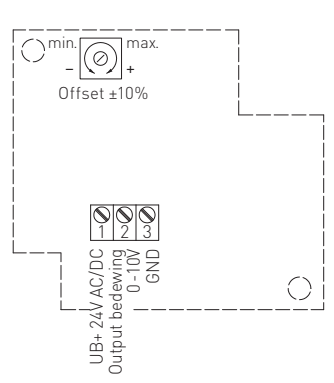
Schematic diagram **TW-UW**



Schematic diagram **TW-W**



Schematic diagram **TW-U**



TW
with display



TW-external
with display



HYGRASREG® **TW**	Dew point control switches including strap (±3%), *Deluxe*
HYGRASREG® **TW-external**	Dew point control switches with detached sensor head (±3%), *Deluxe*

Type / WG01	Measuring Range Humidity	Output Humidity	Mounting	Display	Item No.	Price
TW			**Sensor internal**		**IP 65**	
TW-W	75...100% RH	Changeover contact	for mounting directly on pipes		1202-1015-0001-000	**130,80 €**
TW-W **LCD**	75...100% RH	Changeover contact	for mounting directly on pipes	■	1202-1015-1201-020	**182,11 €**
TW-U	0...100% RH	0-10 V	for mounting directly on pipes		1201-1011-1001-020	**135,77 €**
TW-U/W	0...100% RH	0-10 V + Changeover contact	for mounting directly on pipes		1202-1012-1001-020	**155,69 €**
TW-U/W **LCD**	0...100% RH	0-10 V + Changeover contact	for mounting directly on pipes	■	1202-1012-1201-020	**207,03 €**
TW-external			**Sensor external**		**IP 65**	
TW-W-extern	75...100% RH	Changeover contact	for mounting on pipes		1202-1015-0021-030	**168,15 €**
TW-W-extern **LCD**	75...100% RH	Changeover contact	for mounting on pipes	■	1202-1015-0221-030	**219,46 €**
Optional:	Cable connection with **M12 connector** according to DIN EN 61076-2-101				on request	