

Dew point control switches

including strap / with detached sensor head,
with active / switching outputs

Patented quality product

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

The dew point control switch **HYGRASREG® 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 % r.H. of the **TW-U** and the adjustable switchpoint for the **TW-W** of 75...100 % r.H., 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.

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 % r.H. on the TW-U , continuous 75...100 % r.H. on the TW-W , switching (switchpoint adjustable by potentiometer, factory setting 75 % r.H.)
Sensors:	digital humidity sensor with integrated temperature sensor , small hysteresis, high long-term stability
Sensor protection:	membrane filter
Output signal:	0-10 V or potential-free changeover contact (24 V), 1 A ohmic load
Process connection:	endless metal strap with metal tightener, 300 mm, for pipes up to 3" diameter (included in the scope of delivery)
Electrical connection:	0.14 - 1.5 mm², via terminal screws
Enclosure:	plastic, UV-stabilised, material polyamide, 30 % glass-globe reinforced, with quick-locking screws (slotted / Phillips head combination), colour traffic white (similar to RAL 9016), enclosure cover is transparent!
Enclosure dimensions:	72 x 64 x 43.3 mm (Tyr 1)
Cable gland:	M 16 x 1.5, including strain relief, exchangeable, max. inner diameter 10.4 mm
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 = 1.5 m) for mounting on pipes
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 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 % r.H.) 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
with strap



TW-external
with detached sensor head





S+S REGELTECHNIK

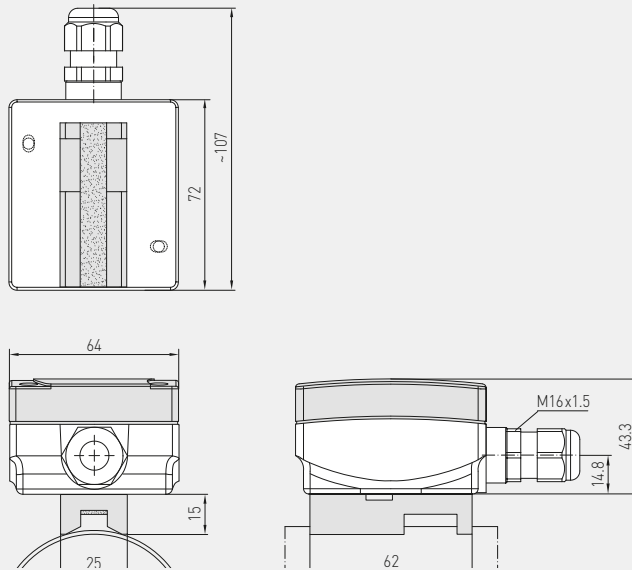
HYGRASREG® TW

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



Dimensional drawing

TW

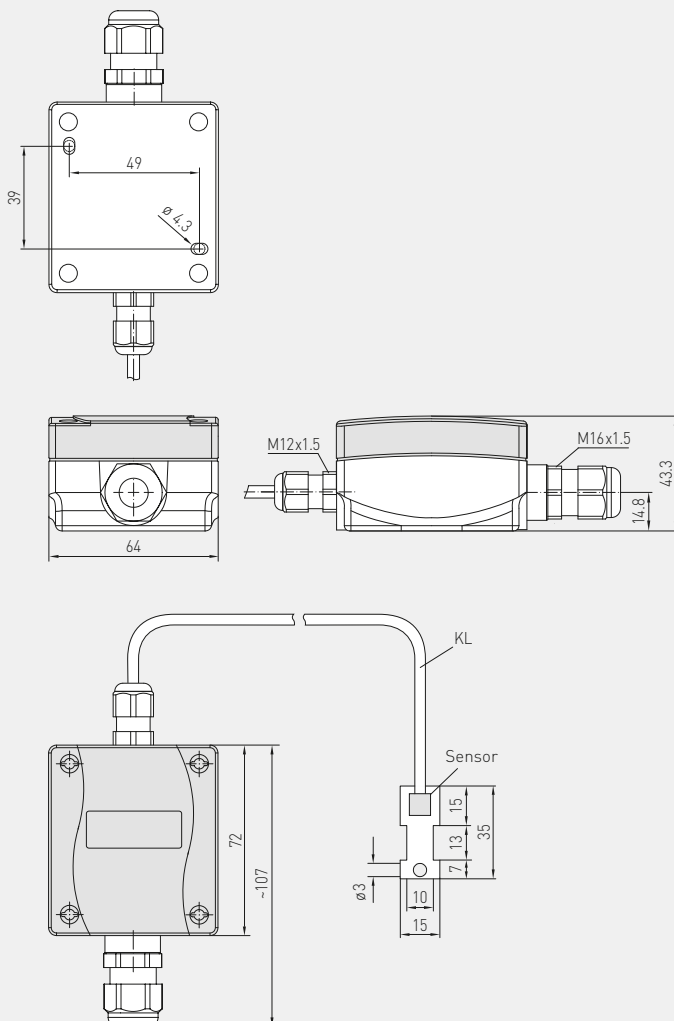


TW
with strap
and display



Dimensional drawing

TW-external



TW-external
with detached sensor head
and display



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

TW
pro-dynamic
cross convection

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 % r.H. on the right (switchpoint adjustable by potentiometer, factory setting 75% r.H.).

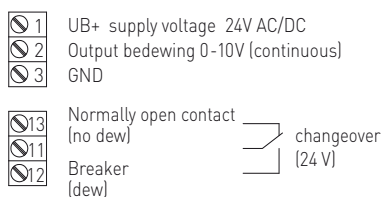
- Circuit, empty = relay in idle state
- Circuit, full = relay energised



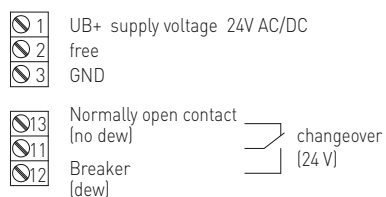
PATENTED



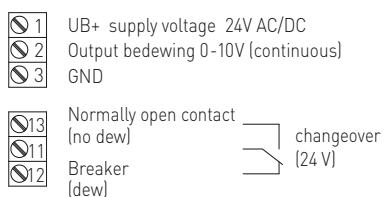
Connecting diagram
(no condensation)
r.H. < switchpoint TW-UW



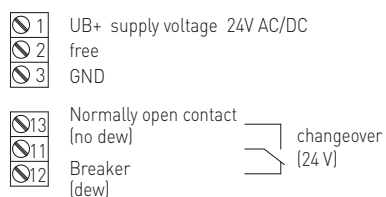
Connecting diagram
(no condensation)
r.H. < switchpoint TW-W



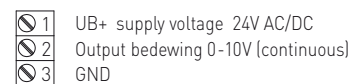
Connecting diagram
(condensation)
r.H. > switchpoint TW-UW



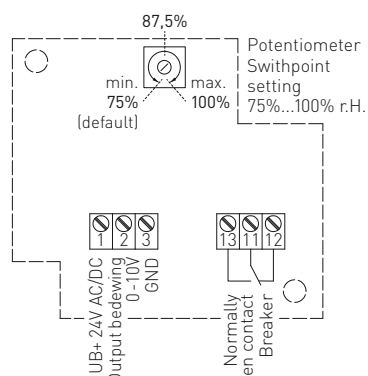
Connecting diagram
(condensation)
r.H. > switchpoint TW-W



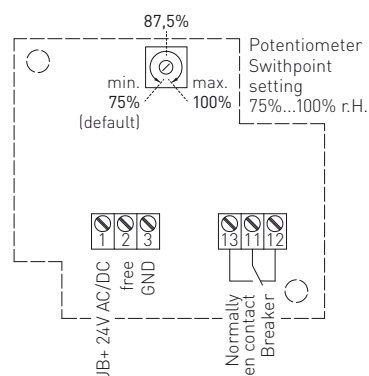
Connecting diagram TW-U



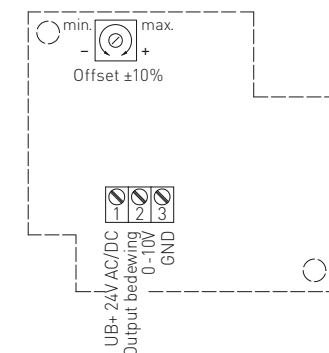
Schematic diagram TW-UW



Schematic diagram TW-W



Schematic diagram TW-U





S+S REGELTECHNIK

HYGRASREG® TW

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

TW
with display



TW-external
with display



HYGRASREG® TW – Dew point control switches including strap ($\pm 3\%$), *Deluxe*

HYGRASREG® TW-external – Dew point control switches with detached sensor head ($\pm 3\%$), *Deluxe*

Type / WG01	Measuring Range Humidity	Output Humidity	Mounting	Display	Item No.	Price
TW					Sensor internal	
TW-W	75...100 % r. H.	Changeover contact	for mounting directly on pipes		1202-1015-0001-000	107,10 €
TW-W DISPLAY	75...100 % r. H.	Changeover contact	for mounting directly on pipes	■	1202-1015-1201-020	149,13 €
TW-U	0...100 % r. H.	0-10 V	for mounting directly on pipes		1201-1011-1001-020	111,18 €
TW-U/W	0...100 % r. H.	0-10 V + Changeover contact	for mounting directly on pipes		1202-1012-1001-020	127,50 €
TW-U/W DISPLAY	0...100 % r. H.	0-10 V + Changeover contact	for mounting directly on pipes	■	1202-1012-1201-020	169,53 €
TW-external					Sensor external	
TW-W EXTERN	75...100 % r. H.	Changeover contact	for mounting on pipes		1202-1015-0021-030	137,70 €
TW-W EXTERN DISPLAY	75...100 % r. H.	Changeover contact	for mounting on pipes	■	1202-1015-0221-030	179,72 €