



S+S REGELTECHNIK

HYGRASREG® TW

Bedienungs- und Montageanleitung

Taupunktwächter,
incl. Spannband / mit abgesetztem Fühlerkopf,
mit aktivem / schaltendem Ausgang

Operating Instructions, Mounting & Installation

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

Notice d'instruction

Contrôleur de point de rosée,
y compris collier de serrage ou avec sonde déportée,
avec sortie active / en tout ou rien

Руководство по монтажу и обслуживанию

Реле контроля точки росы,
вкл. хомут / с вынесенной чувствительной головкой,
с активным / релейным выходом

TW



TW - extern
 TW - external
 TW - externe
 TW - наружный



S+S REGELTECHNIK

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Herzlichen Glückwunsch!

Sie haben ein deutsches Qualitätsprodukt erworben.

Congratulations!

You have bought a German quality product.

Félicitations!

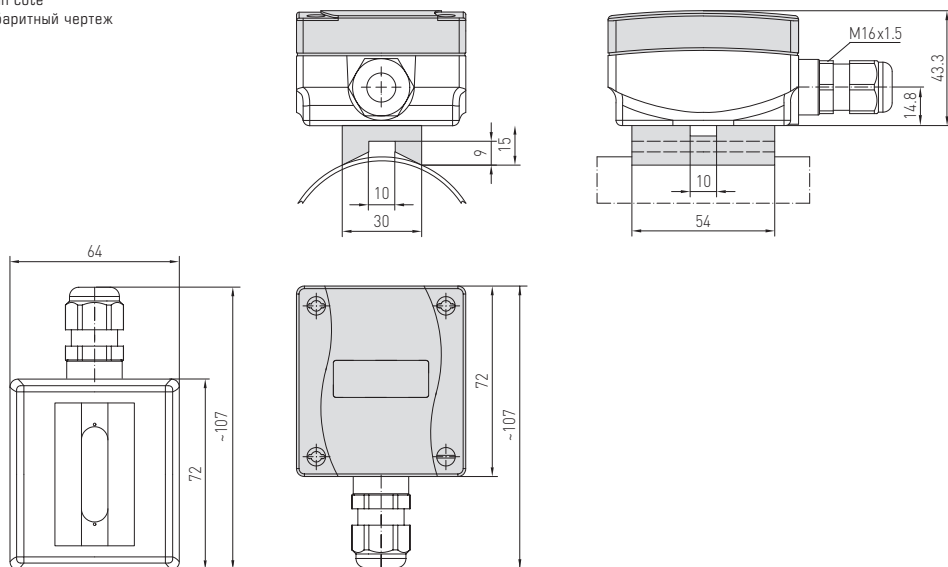
Vous avez fait l'acquisition d'un produit allemand de qualité.

Примите наши поздравления!

Вы приобрели качественный продукт, изготовленный в Германии.

Maßzeichnung
Dimensional drawing
Plan coté
Габаритный чертёж

TW



TW

mit Spannband zur direkten Rohrmontage
including strap for installation directly on pipes
y compris collier de serrage pour montage direct sur tube
с хомутом непосредственный монтаж на трубах

TW

pro-dynamische Querkonvektion
pro-dynamic cross convection
convection transversale prodynamique
Высокоэффективная поперечная конвекция



PATENTED



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, 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 60730)
Protection type:	IP 65 (according to EN 60529)
Standards:	CE conformity, electromagnetic compatibility according to EN 61326, 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)**

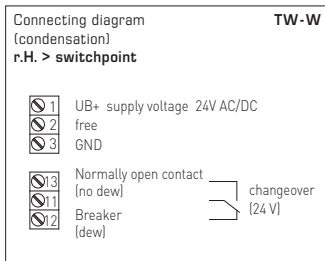
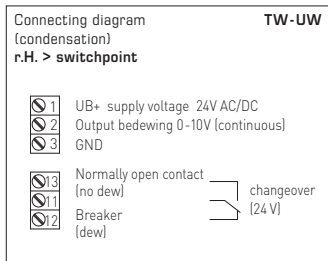
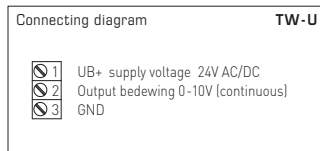
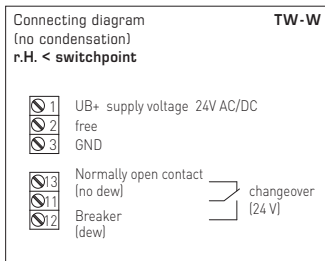
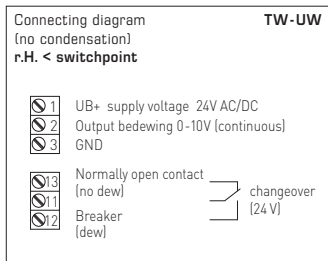
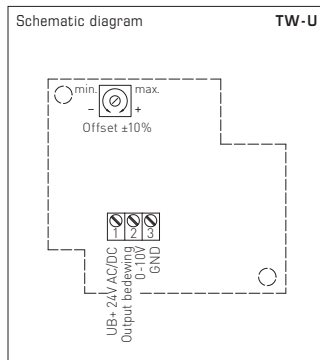
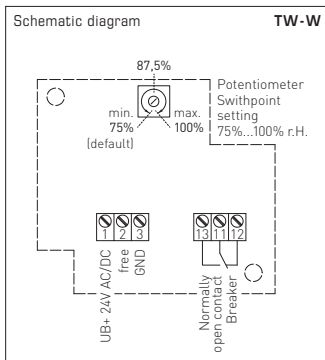
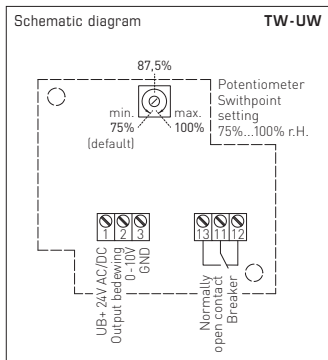


LED long pulses =
relay inactive → switchpoint exceeded
ACTUAL humidity > **pre-set switchpoint (condensation)**

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.
TW					Sensor internal
TW-W	75...100% r.H.	Changeover contact	for mounting directly on pipes		1202-1015-0001-000
TW-W DISPLAY	75...100% r.H.	Changeover contact	for mounting directly on pipes	■	1202-1015-1201-020
TW-U	0...100% r.H.	0-10 V	for mounting directly on pipes		1201-1011-1001-020
TW-U/W	0...100% r.H.	0-10 V + Changeover contact	for mounting directly on pipes		1202-1012-1001-020
TW-U/W DISPLAY	0...100% r.H.	0-10 V + Changeover contact	for mounting directly on pipes	■	1202-1012-1201-020
TW-external					Sensor external
TW-W EXTERN	75...100% r.H.	Changeover contact	for mounting on pipes		1202-1015-0021-030
Extra charge:	Two-line display with illumination				

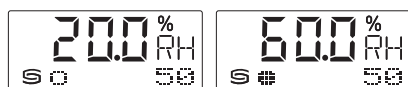


READOUT IN THE DISPLAY

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



GB General notes

- This device must only be used in non-precipitating air without above-atmospheric or below-atmospheric pressure at the sensor element.
- On outdoor and duct sensors, the sinter filter of the sensor element protects the humidity sensor against potential dust exposure.
- In case of pollution/contamination, this filter should be cleaned on a regular basis.
- Dust and pollution falsify measurement results and are to be avoided. Slight pollution and dust sediments can be removed by using compressed air.
- Touching the humidity element is under any circumstances to be avoided, as that would result in considerable mismeasurements.
- In case of pollution, we recommend cleaning and recalibration in the factory.
- In any case, the sensor must not get in contact with chemicals or other cleaning agents.
- The relative humidity of 0...100% is indicated by an output signal of 0-10V or 4...20mA.
- The device operating range covers 10.0...99.9% r.H. Beyond that range, mismeasurements or increased deviations may occur.
- When several sensors (0-10V) are connected to one voltage supply of 24V AC, correct polarity must be regarded as otherwise the alternating voltage source may be short-circuited.
- The voltage outputs are short-circuit proof. Applying overvoltage or voltage supply to the voltage output will destroy the device.
- If this device is operated beyond the specified range, all warranty claims are forfeited.

Our "General Terms and Conditions for Business" together with the "General Conditions for the Supply of Products and Services of the Electrical and Electronics Industry" (ZVEI conditions) including supplementary clause "Extended Retention of Title" apply as the exclusive terms and conditions.

In addition, the following points are to be observed:

- These instructions must be read before installation and putting in operation and all notes provided therein are to be regarded!
- Devices must only be connected to safety extra-low voltage and under dead-voltage condition. To avoid damages and errors the device (e.g. by voltage induction) shielded cables are to be used, laying parallel with current-carrying lines is to be avoided, and EMC directives are to be observed.
- This device shall only be used for its intended purpose. Respective safety regulations issued by the VDE, the states, their control authorities, the TÜV and the local energy supply company must be observed. The purchaser has to adhere to the building and safety regulations and has to prevent perils of any kind.
- No warranties or liabilities will be assumed for defects and damages arising from improper use of this device.
- Consequential damages caused by a fault in this device are excluded from warranty or liability.
- These devices must be installed by authorised specialists only.
- The technical data and connecting conditions of the mounting and operating instructions delivered together with the device are exclusively valid. Deviations from the catalogue representation are not explicitly mentioned and are possible in terms of technical progress and continuous improvement of our products.
- In case of any modifications made by the user, all warranty claims are forfeited.
- This device must not be installed close to heat sources (e.g. radiators) or be exposed to their heat flow.
- Direct sun irradiation or heat irradiation by similar sources (powerful lamps, halogen spotlights) must absolutely be avoided.
- Operating this device close to other devices that do not comply with EMC directives may influence functionality.
- This device must not be used for monitoring applications, which serve the purpose of protecting persons against hazards or injury, or as an EMERGENCY STOP switch for systems or machinery, or for any other similar safety-relevant purposes.
- Dimensions of enclosures or enclosure accessories may show slight tolerances on the specifications provided in these instructions.
- Modifications of these records are not permitted.
- In case of a complaint, only complete devices returned in original packing will be accepted.

These instructions must be read before installation and putting in operation and all notes provided therein are to be regarded!

SUPPLY VOLTAGE:

For operating voltage reverse polarity protection, a one-way rectifier or reverse polarity protection diode is integrated in this device variant. This internal one-way rectifier also allows operating 0-10V devices on AC supply voltage.

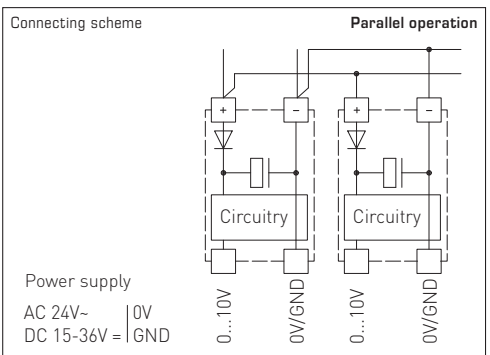
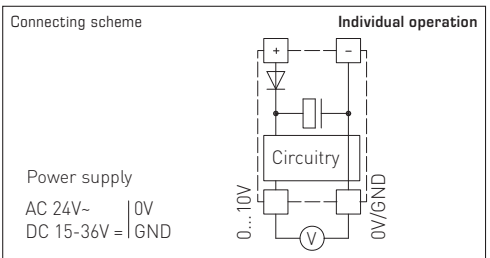
The output signal is to be tapped by a measuring instrument. Output voltage is measured against zero potential (0V) of the input voltage!

When this device is operated on **DC supply voltage**, the operating voltage input UB+ is to be used for 15...36V DC supply and UB- or GND for ground wire!

When several devices are supplied by one 24V **AC voltage supply**, it is to be ensured that all "positive" operating voltage input terminals (+) of the field devices are connected with each other and all "negative" operating voltage input terminals (-) (= reference potential) are connected together (in-phase connection of field devices). All outputs of field devices must be referenced to the same potential!

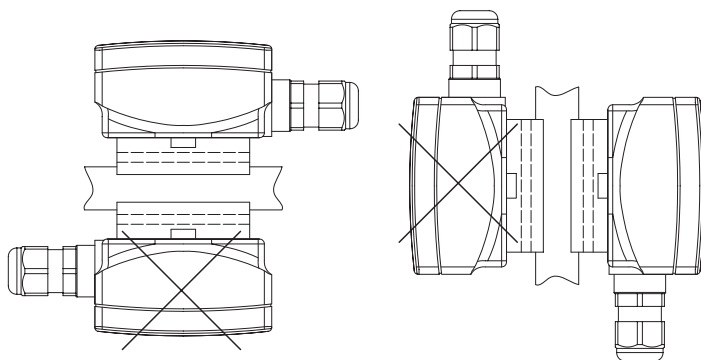
In case of reversed polarity at one field device, a supply voltage short-circuit would be caused by that device. The consequential short-circuit current flowing through this field device may cause damage to it.

Therefore, pay attention to correct wiring!



Montageschema
Mounting diagram
Schéma de montage
Схема монтажа

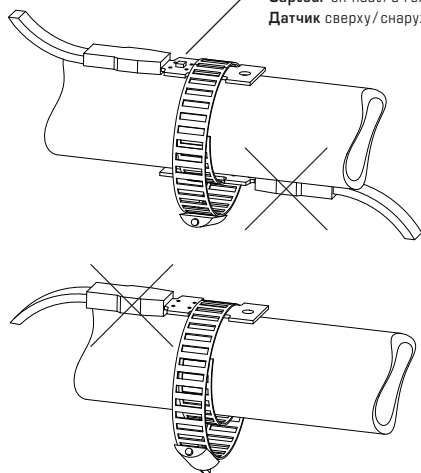
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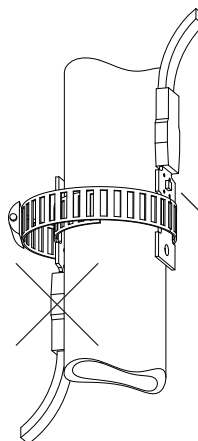
Montageschema
Mounting diagram
Schéma de montage
Схема монтажа

**TW-extern
TW-external
TW-externe
TW-наружный**

**Sensor oben/außen
Sensor on top/outside
Capteur en haut/à l'extérieur
Датчик сверху/снаружи**



**Sensor außen/seitlich
Sensor outside/at the side
Capteur à l'extérieur/sur le côté
Датчик снаружи/сбоку**



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Irrtümer und technische Änderungen vorbehalten.

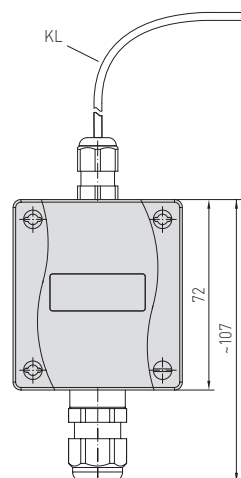
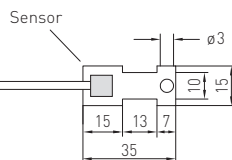
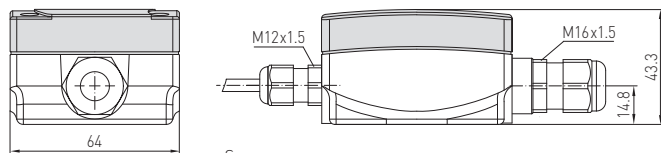
Errors and technical changes excepted.

Sous réserve d'erreurs et de modifications techniques.

Возможны ошибки и технические изменения.

Maßzeichnung
Dimensional drawing
Plan coté
Габаритный чертеж

TW-extern
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TW-extern
mit abgesetzten Fühlerkopf
zur Rohrmontage

TW-external
with detached sensor head
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с вынесенной чувствительной
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