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HGMini

Description of the hygrostat

The humidity measuring element which is manufactured by Galltec under the name "Polyga", consists of several plastic fabric bands each with 90 individual fibres with a diameter of 0.003 mm each. The fibres are provided with hygroscopic characteristics by a special process. The measuring element absorbs and desorbs moisture. The effect, swelling predominantly in longitudinal direction, is supplied to a microswitch with an extremely low switching travel via a suitable lever system. The measuring element reponds rapidly and precisley to the change in air humidity. It is possible to adjust the lever system by setting the setpoint knob so that the microswitch is actuated when the set air humidity is reached.

The hard-shaped measuring element is accomodated inside the housing and must be protected against coarse dust, dirt and water. The sensors are designed for pressureless systems. The installation location must be selected so that condensed water cannot enter the inside of the housing. Any installation position is possible, preferably with ventilation slots at right-angles to wind direction.

Type Survey

| Туре | Item No. | switching | |
|--------------------|----------|--|--|
| HG Mini | 42042017 | 1 selector switch for humidification or dehumidification | |
| HG Mini-i | 42042018 | selector switch for humidification or dehumidification knop inside the housing | |
| HG Mini Schnapp | 42042019 | selector switch for humidification or dehumidification with snap-on installation | |

RoomHygrostat

type HGMini typeHGMini-i type HGMini-Schnapp

measuring range 30..100%rh

Application

The hygrostat type HG Mini is used as a two-position controller for controlling the relative air humidity in air ducts in airconditioning systems and climatic cabinets, for controlling air humidifiers and dehumidifiers and for dehumidification control in swimming baths. Further applications are in stores for foodstuffs, semi-luxury foods and tobacco, refrigerated rooms for fruit and vegetables, greenhouses for horticultural businesses, the textile industry, paper and printing industries, film industry and hospitals. The hygrostat HG Mini is suitable for many applications where air humidity has to be controlled or monitored.

The room hydrostat **HG Mini-i** is designed so that the control knob is inside the housing. This makes unauthorized by third parties more difficult.

The room hygrostat HG Mini Schnapp is additionally equipped with an adapter plate which permits snap-on installation on a 35 mm top-hat rail in accordance with DIN 43604.

Technical Data

| measuring range | 30100%rh |
|--|--------------|
| measuring accuracy | ±3,0%rh |
| working range | 35100%rh |
| switching difference (microswitch) ref. to 50%rh | 4%rh approx. |
| max voltage | 250 V AC |

!!Attention: 250 V only if it is ensured that no condensate can form in the sensor head, because voltage flashover must otherwise be expected.

breaking capacity, maximum load

| areaming capacity, maximum read | | | | | | |
|---|--|--|--|--|--|--|
| ohmic load5A 230V AC (lifetime 10,000 cycles) | | | | | | |
| max load "humidify"2A | | | | | | |
| "dehumidify"5A | | | | | | |
| inductive load cos φ = 0.8 | | | | | | |
| inductive load* L/R=3ms1A to 50V DC | | | | | | |
| 0.5to 75V DC | | | | | | |
| electric bulb load | | | | | | |
| breaking capacity, minimum load100mA, 20VDC / AC | | | | | | |
| allowable ambient temperature | | | | | | |
| medium temp. coefficient0,2%/K relative to 20°C and 50%rh | | | | | | |
| allowable air speed | | | | | | |
| t ₀₅ atv=2m/sec1.2min | | | | | | |
| fixingslots in housing base | | | | | | |
| mounting position preferably ventilation slots at | | | | | | |
| . right-angles to wind direction | | | | | | |
| contacting connecting terminal in the case | | | | | | |
| electromagnetic compatibility EMC | | | | | | |
| immunityref. EN 50 082-2 | | | | | | |
| emission ref. EN 50 062-2 | | | | | | |
| case solid plastic, light grey | | | | | | |
| case Solid plastic, light | | | | | | |

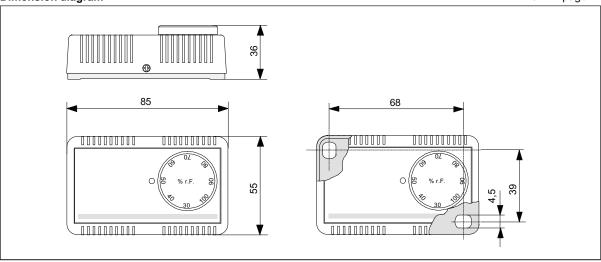
dimension85 x 55 x 36mm protective systemIP20

This information is based on current knowledge and is intended to provide details of our products and their possible applications. It does not, therefore, act as a guarantee of specific properties of the products described or of their suitability for a particular application. It is our experience that the equipment may be used across a broad spectrum of applications under the most varied conditions and loads. We cannot appraise every individual case. Purchasers and/or users are responsible for checking the equipment for suitability for any particular application. Any existing industrial rights of protection must be observed. The perfect quality of our products is guaranteed under our General Conditions of Sale. Issue: Dec. 2001 HGMINI E. This issue supersedes all previous technical leaflets.

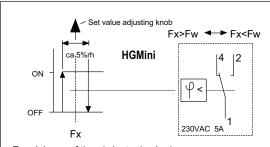
weight ca 0,06 kg "reserve of technical modifications"

^{*}check for suitability!

Dimension diagram HGMini page 2



Circuit diagram



Fx rel. hum. of the air (actual value)
Fw humidity adjusted on the knob (set value).

If the rel.hum. Fx falls below the setpoint value Fw, the contact 1/4 opens and the contact 1/2 closes.

Mounting

- The hygrostat must not be exposed to any direct water contact, e.g. splash water when cleaning the air-conditioned room etc.
- The place of installation must be selected so that a representative air humidity measurement is guaranteed, i.e. the measured humidity values at the place of installation should correspond to those of the room as far as possible.
- > If possible, the hygrostat should be located in the air flow.

The measurement location of the humidity controller should be selected such that there is no build-up of condensate on or in the device. This applies particularly for operation with a voltage higher than 48V. If the voltage is higher, there is a risk of voltage arcing in the event of water condensation on the microswitch or connecting terminals which might destroy the controller. In the case of voltage below 48V, the humidity controller can be used up to 100%RH.

The humidity controller should not be used in aggressive media.

Maintenance

In case of clean air the measuring element is maintenance-free. But aggressive and solvent containing agents as per their type and concentration may cause faulty measurements. Water repellent protective film forming deposits on the sensor, like resin aerosols, lacquer aerosols, fumigant substances etc. are harmful to almost all types of humidity sensors.

ATTENTION: No warranty will be guaranteed when inner parts of the device have been handled.

Influence of the relative air humidity

for a temperature fluctuation of $\pm 1^{\circ}\text{C}$ referred to various room temperatures.

| | 10°C | 20°C | 30°C | 50°C |
|-------|---------|---------|---------|---------|
| 10%rh | ±0,7%rh | ±0,6%rh | ±0,6%rh | ±0,5%rh |
| 50%rh | ±3,5%rh | ±3,2%rh | ±3,0%rh | ±2,6%rh |
| 90%rh | ±6,3%rh | ±5,7%rh | ±5,4%rh | ±4,6%rh |

It is thus of extreme importance that the temperature is constant for measurements of the relative air humidity. The air must be homogenous, e.g. possess constant humidity and temperature for the whole duration of the measurement.