HG Mini

Room Hygrostat **type HG Mini**
type HG Mini-i

measuring range 30..100%rh

Application

The hygrostat type **HG Mini** is an on-off controller to control the relative air humidity. It is used to control air humidifiers and dehumidifiers in offices and computer rooms. Other areas of use are storage of foodstuffs and luxury foods, cooling rooms for fruit and vegetables, greenhouses for gardening use, the textile industry, the paper and printing industry, the film industry and hospitals The hygrostat HG Mini is suitable for many applications where air humidity has to be controlled or monitored.

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

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

Type	Item No.	switching
HG Mini	42042017	1 selector switch for humidification or dehumidification
HG Mini-i	42042018	1 selector switch for humidification or dehumidification knop inside the housing

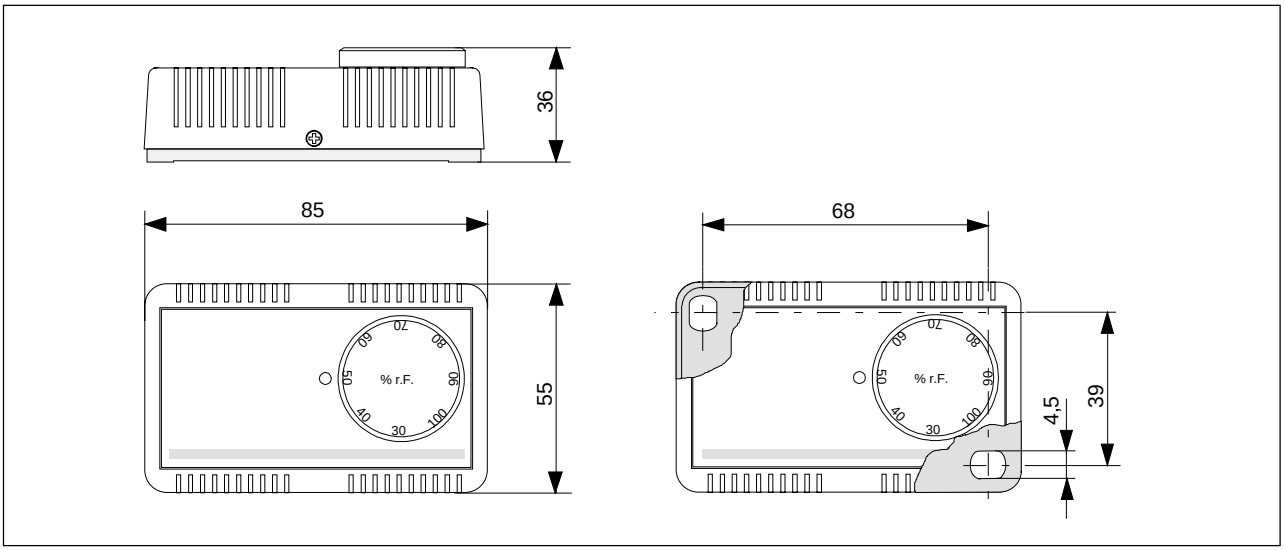
Technical Data

scale range ..... 30...100%rh
measuring accuracy ..... ±3.0%rh
range of operation ..... 35...95%rh
switching difference (microswitch) ref. to 50%rh ... approx. 4%rh

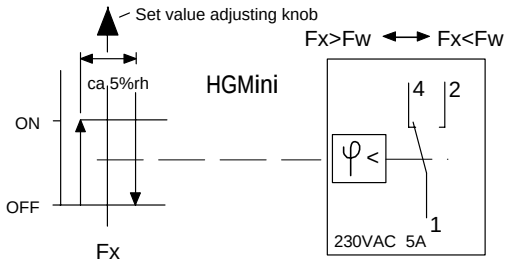
Microswitch:
breaking capacity, *maximum load*
ohmic load "humidify" ..... 2A, 230V AC
"dehumidify" ..... 5A, 230V AC
inductive load* cos φ = 0.7 ..... 1.0A, 230V AC
breaking capacity, *min* ..... 100mA, 20V DC / AC
lifetime ..... 100.000 cycles
recommended voltage ..... 24V AC
max. voltage ..... 250V AC 50 Hz
Please observe the notes on voltage.

optional: microswitch with gold contact:
breaking capacity, *max* ..... 100mA, 48V AC
breaking capacity, *min* 1mA, 5V

allowable ambient temperature ..... 0...60°C
medium temp. coefficient ..... -0.2%/K rel. to 20°C and 50%rh
allowable air speed 15m/sec
t_{50} at v=2m/sec 1.2min
fixing ..... slots in housing base
mounting position ..... preferably ventilation slots at right-angles to wind direction
contacting ..... connecting terminal in the case
electromagnetic compatibility EMC
immunity ..... ref. EN 50 082-2
emission ..... ref. EN 50 081-2
case ..... solid plastic, light grey
dimensions ..... 85 x 55 x 36mm
protective system IP20
measuring element ..... Polyga®-measuring element, water resistent
weight ..... ca 0.06 kg
"subject to technical modifications"
**check for suitability!*



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.

Notes on voltage

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.

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 ±1°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.