



## Room hygromat

## Hygroswitch Hygroswitch-i

### Type Survey

Type	Product No.	Type of contact
Hygroswitch	4204201K	changeover contact: max. 5A , with adjusting knob
Hygroswitch-i	4204201L	changeover contact: max. 5A, with internal scale
Hygroswitch	4204701K	changeover contact (gold plated): 1...100 mA
Hygroswitch-i	4204701L	changeover contact (gold plated): 1...100 mA, with internal scale

### Technical Data

measuring element ..... Polyga®-measuring element, water resistant  
 Scale range ..... 30...100%rh  
 measuring accuracy ..... > 40%rh ..... +/-3%rh  
 ..... < 40%rh ..... +/-5%rh  
 range of operation ..... 35...95%rh  
 switching difference (microswitch)  
 ref. to 50%rh ..... approx. 4%rh

breaking capacity  
 max. 250VAC and  
 0.1 ... 5A ohmic load for dehumidifying  
 0.1 ... 2A ohmic load for humidifying  
 0.1 ... 1A for inductive load with  $\cos \varphi = 0,7$   
 lifetime ..... 100.000 breaking cycles  
**Please observe the notes on voltage.**

### optional microswitch with gold contact

breaking capacity  
 max. 48 VAC and  
 1...100 mA  
 allowable operating temperature ..... 0...60°C  
 allowable storage temperature ..... -40...60°C  
 medium temperature coefficient  
 ref. to 20°C / 50%rh ..... -0.2%rh/K  
 half-life period at v=2m/sec ..... 1.2min  
 electromagnetic compatibility  
 directive ..... 2006/95/EG  
 applied standards  
 DIN EN 60730-1 ..... issue 12/05  
 DIN EN 60730-2-13 ..... issue 09/02  
 action ..... 2.C  
 rated impulse voltage ..... 4 kV  
 ball indentation test for temperature ..... 92°C  
 protective system ..... IP30D  
 degree of pollution ..... 2  
 dimensions ..... approx. 81x81x28 mm  
 independently mounted sensing control  
 installation ..... wall mounting  
 weight ..... approx. 58 g

### Description of the hygromat

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 3 µm each. The fibres are provided with hygroscopic characteristics by a special process. The measuring element adsorbs and desorbs moisture. The effect, swelling predominantly in longitudinal direction, is transmitted via a lever system to a microswitch with an extremely small switching distance. The measuring element responds rapidly and precisely to the change in air humidity. It is possible to adjust the lever system by setting the adjustment knob so that the microswitch is actuated when the set air humidity is reached.

The hard-shaped measuring element is accommodated 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.

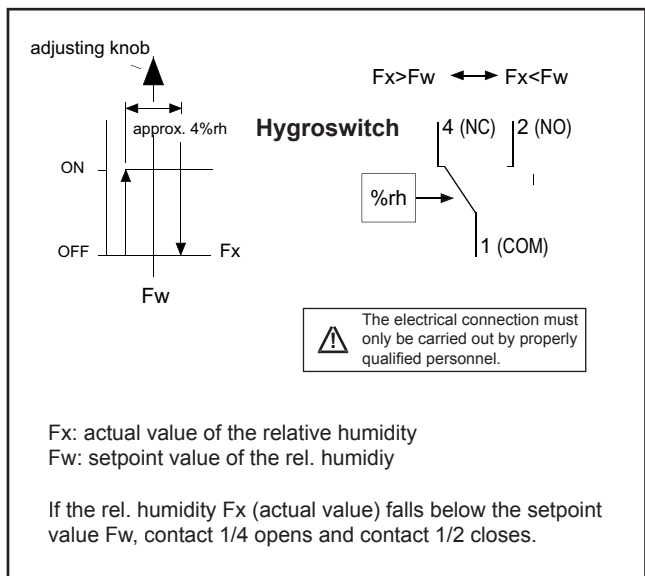
### Application

The room hygromat **Hygroswitch** is an on-off controller to control the relative air humidity. It is used to control air humidifying and dehumidifying 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  
 In the case of the room hygromat **Hygroswitch-i** the external adjustment knob is replaced with an adjustment wheel with a scale inside the housing. The adjustment wheel needs to be aligned to the red mark.

### 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.*

**Connection diagram**



**Physical influence of temperature on the relative air humidity**

at 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.

**Maintenance**

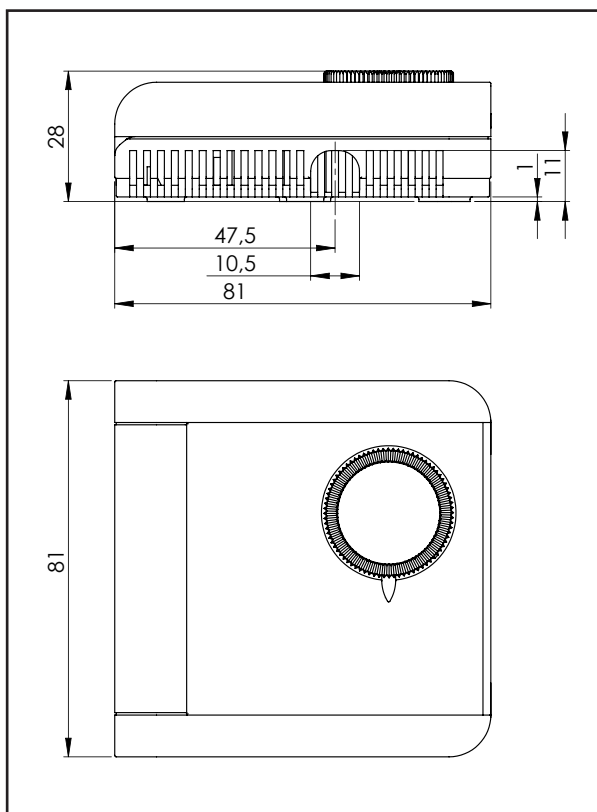
The measuring element is maintenance-free in pure ambient air. Aggressive media containing solvent can cause measuring errors depending on the type and concentration. As with almost all humidity measuring elements, deposits which eventually form a water-repellent film over the measuring element are harmful (such as resin aerosols, lacquer aerosols, smoke deposits etc.).

**Mounting**

has to be carried out by properly qualified personnel

- \* The hygrostat must not come into direct contact with water, e.g. splashed water when cleaning the climatic chamber etc.
- \* The mounting location should be chosen so that a representative measurement of the air humidity can be guaranteed, i.e. the humidity readings at the mounting location should correspond to those in the room as far as possible.
- \* The hygrostat should be exposed to the flow of air.
- \* When mounting the hygrostat on a patress, avoid external air getting onto the humidity measuring element of the hygrostat by sealing it appropriately.

**Dimensions diagram**



**Opening the housing**



Apply a flat-headed screwdriver at the top in the locking slot and press inwards until the housing springs open.