



## Product info sheet Hygro-Modul HM120

with one changeover contact, scale range 30...100%rh, IP00

### Application

The hygro module **HM120** is a humidity-dependent switch that can be fitted in equipment such as hygrometers, humidifiers, dehumidifiers, ventilating fans, driers and many more. The module represents an on-off controller with changeover contact. The switch connection is via a connecting terminal, but can also be supplied ready-made with cable connections. Several versions of different lengths are available as a shaft. Protection of the module is of the IP00 type.

### Description of the Hygro Modul

The humidity measuring element, produced by Galltec under the name Polyga®, consists of several synthetic fabric bands each with 90 individual fibres with a diameter of 3µm. A special process gives the fibre hygroscopic properties. The measuring element adsorbs and desorbs humidity. The swelling effect, which is predominantly in a lengthways direction, is carried via a suitable lever system to a microswitch with an extremely small switching path. The measuring element reacts quickly and precisely to the change in air humidity. By adjusting the setpoint value control knob, the lever system is engaged so that when the set air humidity is reached the microswitch is activated.

The fan shaped measuring element should be protected from dust, dirt and water. The hygro module is designed for pressureless systems.

### Technical Data

measuring element ..... Polyga®-measuring element,  
 water resistant  
 control range ..... 40...90%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 (power factor >0.8)  
 lifetime ..... > 6.000 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  
 air-speed ..... 0.2...8 m/s  
 installation altitude ..... ≤ 4.000m above sea level  
 influence of temperature  
 ref. to 23 °C ..... ≤ +/- 0.2 % r.h. / K  
 typ. response time  $t_{50}$  at v=2m/s ..... 1.2min  
 fixing ..... only with plastic screws M3  
 contacting ..... connecting terminals

#### applied directives / standards

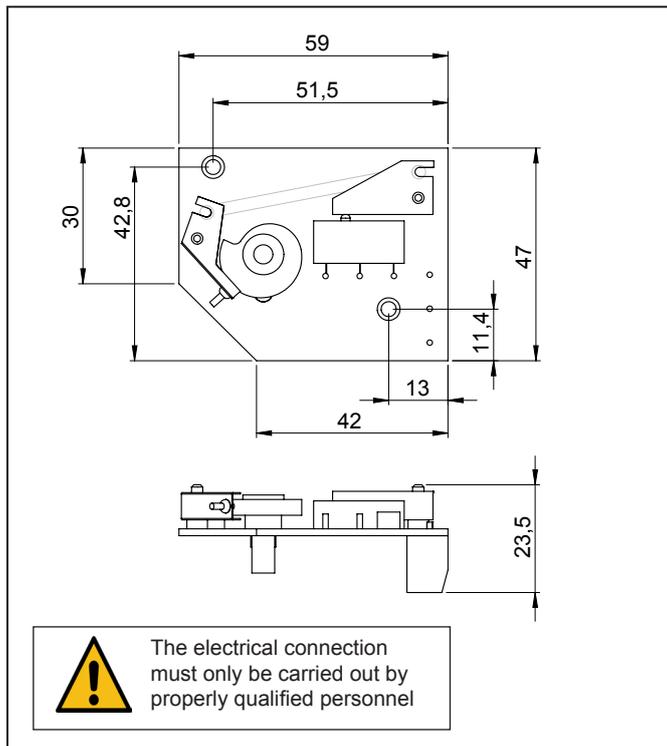
low-voltage directive 2014/35/EU  
 EMC directive 2014/30/EU  
 DIN EN 60730-1:2012-10  
 DIN EN 60730-2-13:2008-09

type of protection ..... IP00  
 Abmessungen ..... see technical drawing  
 ..... height depends on adjusting shaft, up to approx. 33 mm  
 weight ..... about 25 grams

### 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.*

**Technical drawing**



**Cleaning instruction**

**1. Disconnect the device from the power supply**

2. Remove the cover. Clean the cord shaped measuring element using a soft brush and clean water. Do not use a detergent as it cannot be dispersed.

*It is important that no water is allowed to get onto the other components, particularly microswitches, terminals or printed circuit boards.*

3. Air drying. Do not use warm or hot air (hair dryer).

**Maintenance**

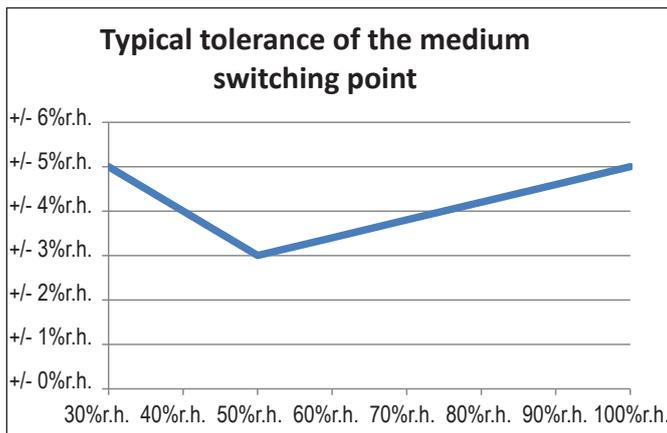
The measuring element is maintenance-free in pure ambient air. Aggressive media containing solvent can cause measuring errors and failure, depending on the type and concentration. Deposits which eventually form a water-repellent film over the measuring element are harmful (such as resin aerosols, lacquer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

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

at a temperature fluctuation of  $\pm 1K$  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.



1-point-adjustment at 48 % r.h. / 23 °C  
 Long-term drift:  $\leq \pm 1\%r.h.$  p.a.

**Typical switching differential with typical tolerance**

Setpoint value humidity	Switching differential	Tolerance
50 % r.h.	5 % r.h.	+/- 1,5 % r.h.
60 % r.h.	4 % r.h.	+/- 1,5 % r.h.
70 % r.h.	4 % r.h.	+/- 1,5 % r.h.
80 % r.h.	3 % r.h.	+/- 1 % r.h.
90 % r.h.	3 % r.h.	+/- 1 % r.h.

**Contact with the inner parts of the hygro modul HM120 nullifies the warranty.**