



Hygrostat

with Polyga®- humidity measuring element **D-RHS-15**

Application

The hygrostat type **D-RHS** is used as an on-off controller to control the relative air humidity in air ducts of air conditioning units and climatic cabinets, and to control air humidifying and dehumidifying. 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, film industry and hospitals.

The hygrostat **D-RHS** can be used almost anywhere that air humidity has to be regulated or monitored.

Description of the Hygrostat

The humidity measuring element, produced by **DDCtech** 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 absorbs 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.

In the case of the hygrostat type **D-RHS**, a second microswitch is positioned parallel to the first microswitch. After the housing cover has been removed, the second set value can be finely adjusted at the microswitch lever using a screwdriver. The switch point of the second microswitch is connected to the switch point of the first microswitch. The switch distance (neutral zone) can be set from 0% rel. humidity to +15% rel. humidity.

The fan shaped measuring element is protected by a perforated sensor tube and is exposed to the housing. The hygrostats are designed for pressureless systems. The mounting position should be chosen such that condensed water cannot get into the interior of the housing. The preferred mounting position is with the „sensor vertically downwards“ or „sensor horizontal“ (see diagram on the reverse). In the mounting positions described above, a blanking plate in the sensor tube with a 0.8mm diameter hole will prevent water getting in.

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 Data

scale range	30...100%rh
measuring accuracy	
for measuring range > 50%rh	±3.5%rh
for measuring range < 50%rh	±4%rh
range of operation	35...95%rh
measuring medium	air, pressureless, non-aggressive
switching difference (microswitch) ref. to 50%rh	approx. 4%rh
switching distance between the microswitches	
for	0...+15%rh
max. voltage	250 VAC

Please observe the notes on voltage.

breaking capacity of the changeover contact

ohmic load (cos φ=1)	15A AC 230V
inductive load (cos φ=0,7)	2A AC 230V
direct voltage	0.25A DC 230V
breaking capacity, minimum load	100mA, 125V AC
contact material	silver
allowable storage temperature	-30...+60°C
allowable operating temperature	0...60°C
medium temp. coefficient	-0.2%/K relative to 20°C and 50%rh
adjustment	at average air pressure 430 m NN
allowable air speed	8m/sec
with gauze protection (order no. 20.014)	15m/sec
with PTFE filter (order no. 23.063)	15 m/sec
time constant T_{63} at v=2m/sec	120 sec
sensor length, material	220mm, high-grade steel
fixing	slots in the housing base for duct mounting (ord. no. 20.009)
console for wall mounting	sensor vertically downwards or horizontally
connecting terminals	for conductor cross sections 1.5mm ²
cable connection	via twist nipple M20x1.5
electromagnetic compatibility	
directive	2006/95/EG
applied standards	
DIN EN 60730-1	issue 12/05
DIN EN 60730-2-13	issue 09/02
housing	ABS light grey
typ of protection (external rotary knob)	IP 54
type of protection	IP64
measuring element	
..... Polyga®-measuring element, water resistant, washable	
weight	approx. 0.7 kg

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 : July 2014