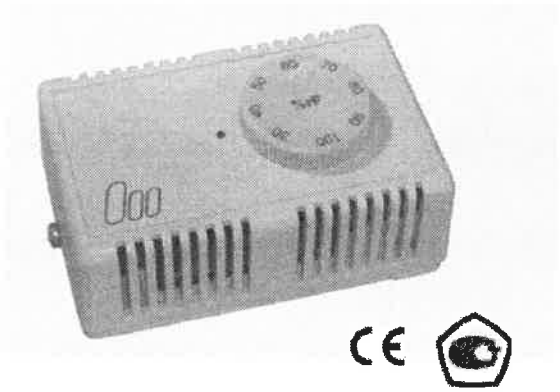
LTD

Part No. 30351577
Model No. HGMini - 42047017
Humidity Controller – Internal Sensor
User's Manual



Room humidistat

with Polyga® measuring element **HGMini**
with adjusting knob inside the housing **HGMini-i**

Type Survey

Type	Order no.	Type of contact
HGMini	42042017	changeover contact: 1 x max. 5 A
HGMini-i	42042018	changeover contact: 1 x max. 5 A with internal scale
HGMini	42047017	changeover contact (gold plated): 1 x max. 100 mA
HGMini-i	42047018	changeover contact (gold plated): 1 x max. 100 mA with internal scale
HGMini	42047017 00000110	changeover contact (gold plated, IP67): 1 x max. 100 mA
HGMini 10A	42043017	changeover contact: 1 x max. 10 A

Technical Data

scale range ..... 30...100%rh
measuring accuracy ..... ±3%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 φ = 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

optional microswitch up to 10 A
max. 250VAC and
0.1 ... 10A ohmic load for dehumidifying
0.1 ... 3A ohmic load for humidifying
0.1 ... 1.5A for inductive load with cos φ = 0,7

allowable ambient temperature ..... 0...60°C
medium temp. coefficient .... -0.2%/K rel.to 20°C and 50%rh
adjustment ..... at average air pressure 430 m NN
allowable air speed 15m/sec
half-life period at v=2m/sec 1.2min
fixing ..... slots in housing base
mounting position ..... optional, preferably ventilation slots at right-angles to wind direction
contacting ..... connecting terminal in the case
electromagnetic compatibility
directive 2006/95/EG
applied standards
DIN EN 60730-1 ..... issue 12/05
DIN EN 60730-2-13 ..... issue 09/02
housing ..... solid plastic, light grey
protective system IP20
measuring element .....
.....Polyga®-measuring element, water resistent
dimensions 85x55x36mm
weight ..... approx. 0.06 kg

Description of the humidistat

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.

Application

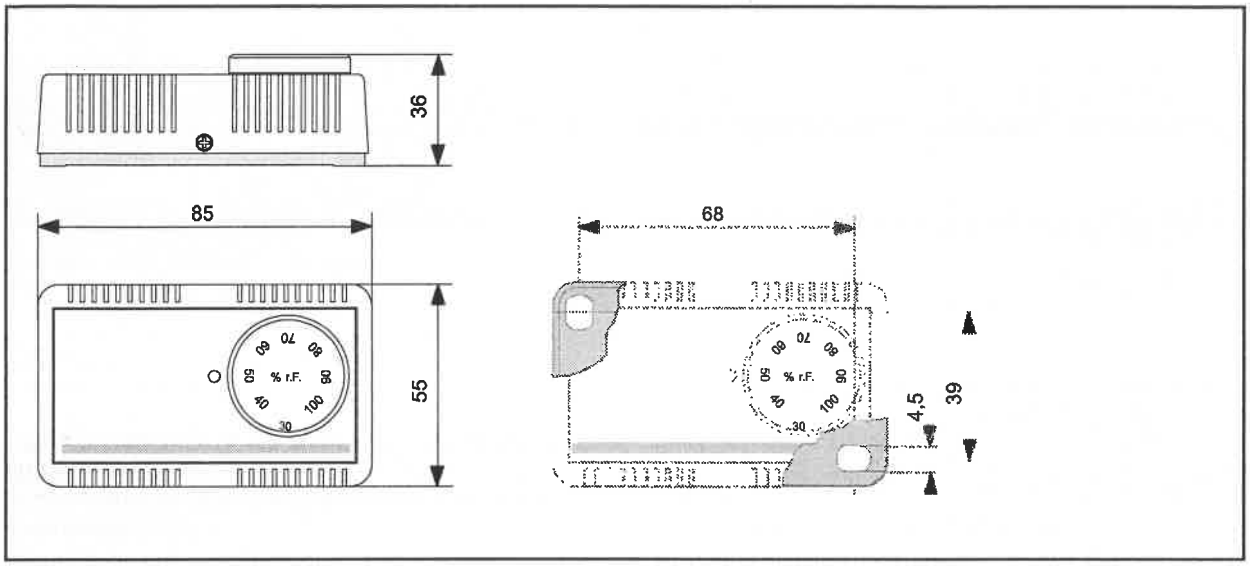
The humidistat type **HG Mini** is used as an on-off controller to control the relative air humidity. It can be used to control air humidifiers and dehumidifiers in offices and computer rooms. Other areas of use are storage of foodstuffs and luxury foods, cooling rooms for fruit and vegetables, greenhouses for gardening use, the textile industry, the paper and printing industry, the film industry and hospitals. The humidistats can be used almost anywhere that air humidity has to be regulated or monitored.

The room humidistat **HG Mini-i** is designed so that the adjusting knob and the scale are inside the housing. This makes unauthorized manipulation by third parties more difficult.

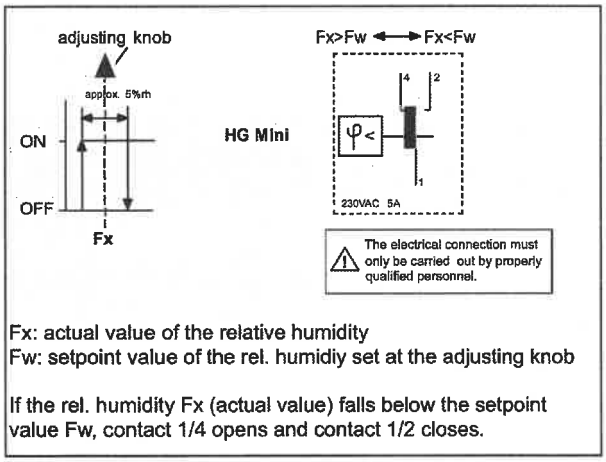
Notes on voltage

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.

Dimensions diagram



Slot diagram



Fx: actual value of the relative humidity
Fw: setpoint value of the rel. humidiy set at the adjusting knob

If the rel. humidity Fx (actual value) falls below the setpoint value Fw, contact 1/4 opens and contact 1/2 closes.

Physical influence of temperature on the relative air humidity

at a temperature fluctuation of ±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.

Mounting

- The humidistat 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.
- The humidistat should be exposed to the flow of air.

Cleaning instruction

1. Unscrew 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, printed circuit boards.

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

Maintenance

The measuring element is maintenance-free in pure ambient air. Depending on their type and concentration, aggressive media containing solvents can cause incorrect reasings or cause the humidistat to fail. As with almost all humidity measuring elements, substances deposited on the measuring element (e. g. resin aerosols, paint aerosols, smoke deposits etc.) are harmful as they eventually form a water-repellent film.

NOTE
Contact with the inner parts nullifies the guarantee.

Part No. 3035161
Model No. F2000P-TH-K02(-WT)-(A)
Humidity & Temperature Controller – External Sensor
User's Manual

Important safety information Warning

- Always turn off power before installing, remove, cleaning controller.
- Read all of the information in this manual before installing the controller.
- Notice of the supply power voltage of the controller: 230VAC
  Do not confuse them and do not install the controller over the voltages range.

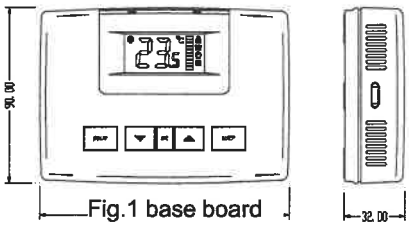
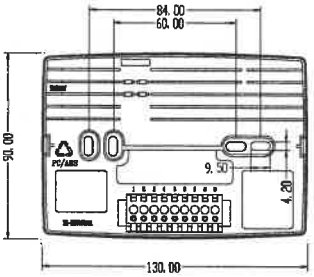
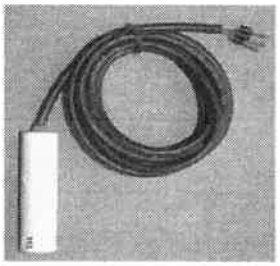


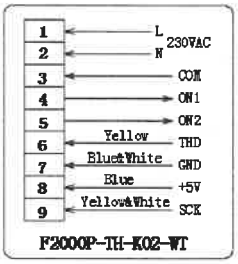
Fig.1 base board

Mounting and Wiring Diagram

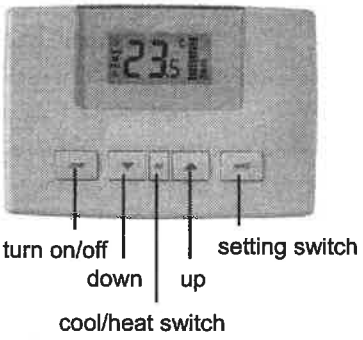
- Find the two ears which are on both sides of the controller, press them to take off the main part from the base part.
- Mount the base part on the wall firstly: Mark the place of mounting holes. Mount controller on the wall, 1.2-1.3 meter above the floor. Do not behind a door, in a corner, near diffuser, in direct sunlight, or near any heat or steam generating fixtures. See Fig 1. There are two dimensions available.
- Connect wires to terminal strip. See the wiring diagrams fig.2. Make sure wiring connections correct and secure.
- Finally install the main part on the base part.

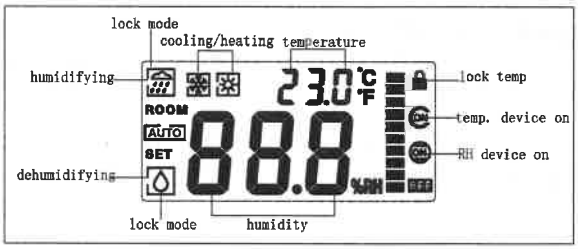






Buttons and LCD Display





Operation

1. Press the **power** button for 2 seconds to turn on the controller. The measurement humidity displays on the below line of LCD and the measurement temperature displays on the upper line of LCD. Also **ROOM** symbol displays on the left.
2. **switch** button: Use to select humidity or temperature setting. Press **switch** to select which value can be set now (humidity or temperature). When selecting, relevant number is blinking and you may set the value with pressing ▼ or ▲ button.
3. Setting humidity: Measurement range and setting range of humidity is 0~100%RH/0~100%RH. Press ▼ or ▲ button for humidity setting and each press will change 0.1%RH. Continuously press ▼ or ▲ button to adjust the value quickly. When adjusting, the symbol of humidity number will blink, which means that the setting is not confirmed. After blinking for 6 seconds, the setting is confirmed and then it returns to display measured humidity. ON appearing on LCD indicates humidifier/dehumidifier on working. ON disappearing indicates humidifier/dehumidifier stops working.
4. Setting temperature: Measurement range and setting range of temperature is 0℃~60℃(32.0~140℉)/5~35℃

(41.0~95.0℉). Press ▼ or ▲ button for temperature setting and each press will change 0.1℃(0.1℉). Continuously press ▼ or ▲ button to adjust the value quickly. When adjusting, the number of temperature blinks, which means that the setting is not confirmed. After blinking for 6 seconds, the setting is confirmed and then it returns to display measured temperature. ON appearing on right of the LCD indicates cooling/heating device on working. ON disappearing indicates s cooling/heating device stops working.

5. set button : Use to select cooling or heating mode for temperature control . In cooling, ❄ symbol appears on the top left of LCD. In heating, ☼symbol appears on the top left of LCD. Press set button for 6 seconds until ❄ or ☼appearing. It indicates that the cooling/heating mode is locked. Now the working mode can not be changed.
6. Lock the set point: Press ▼and ▲ at the same time for about 6 seconds until the symbol 🔒appearing on the top right of LCD, which indicates that the set points of humidity and temperature are locked, after that, it's impossible to adjust humidity or temperature by ▼and ▲button.
7. Unlock set point : press ▼and ▲ at the same time for about 7 seconds under the locking mode until the symbol 🔒 disappearing.

Advanced Setup (V. A031)

Please use the below parameter setup carefully. Don't change any default setting before you read and understand all parameters.

Cut off power and press the ears on both sides to take off the main part from the base part. Then you will find a set of four DIP switches DIP1~DIP4 on the top left of the circuit board.

DIP1: ON—parameters setting OFF—normal use (leave factory: OFF)
DIP2: ON—Fahrenheit for temperature display
OFF—Celsius for temperature display (leave factory: OFF)
DIP3: ON—Dehumidify mode; OFF—humidify mode (leave factory: OFF)
DIP4: Unuseful for the model

Put the DIP1 to ON (up is ON, down is OFF) and put the main part to the base part, then you can set up the following parameters. Press switch button to select parameter and set up its value by press ▼or ▲.

Warning: must cut off power before open the controller.

LCD	Parameter	Range of setup	Default
-1	RS485 communication address	1~255	1
-2	RS485 communication rate	1-4800, 2-9600, 3-14400, 4-19200, 5-38400	4
-3	RS485 communication odd/even calibration and stop bit	1- none 1 stop bit 2- none 2 stop bits 3- odd calibration 1 stop bit 4- even calibration 1 stop bit	1
-4	temperature modification	±3℃/±6℉	0℃
-5	humidity modification	±5%RH	0%RH
-6	maximum limit of temperature setting	0~60℃/32~140℉	35℃
-7	minimum limit of temperature setting	0~60℃/32~140℉	5℃
-8	differential humidity to control the replay action 0~5%RH For example, when it is set 2 and humidity set point is 40%RH, in humidify mode, the relay1 will be on when measurement humidity< setting; if measurement humidity> (40+2)%RH, the relay1 will be off. Dehumidifier working is in reverse mode.		2
-9	Differential temperature to control the relay action 0.0~3℃/0.0~6.0℉ For example, when it is set 1 and the setting temperature is 25℃, in heating mode, the relay2 will be on when measurement temperature< setting; if measurement temperature>(25+1) ℃, the relay2 will be off. In cooling mode it is in reverse mode.		1
-10	The state when the controller electrify again after power broken	0- Turn off after electrify 1- Turn on after electrify 2- Keep the same state before power broken	2

Reset: in the state of parameter setup (DIP1=ON), cover the main part and turn it on. Press switch for about 25 seconds until the controller turns off. The all parameters reset to default. After finish parameter setup, you must cut off the power open the main part again, put the DIP1 to OFF, then the controller can work again.

Part No. 3035159
Model No. F2000P-TH-K02-a(A)
Humidity & Temperature Controller – Internal Sensor
User's Manual

Important safety information Warning

- Always turn off power before installing, remove, cleaning controller.
- Read all of the information in this manual before installing the controller.
- Notice of the supply power voltage of the controller: 220 VAC±10%
  Do not confuse them and do not install the controller over the voltages range.

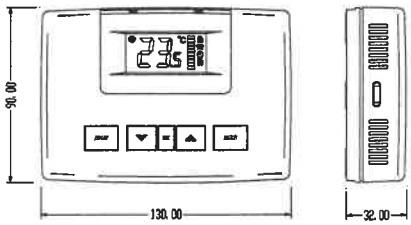


Fig.1 base board

Mounting and Wiring Diagram

- Find the two ears which are on both sides of the controller, press them to take off the main part from the base part.
- Mount the base part on the wall firstly: Mark the place of controller on the wall, 1.2-1.3 meter above the floor. Do not corner, near diffuser, in direct sunlight, or near any heat or See Fig 1. There are two dimensions available.
- Connect wires to terminal strip. See the wiring diagrams connections correct and secure.
- Finally install the main part on the base part.

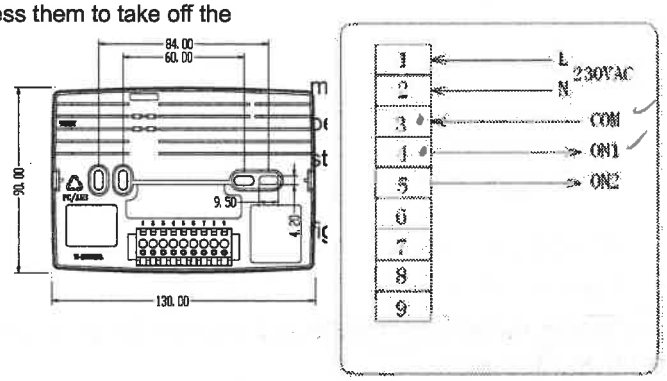
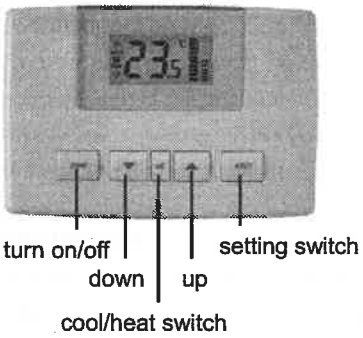
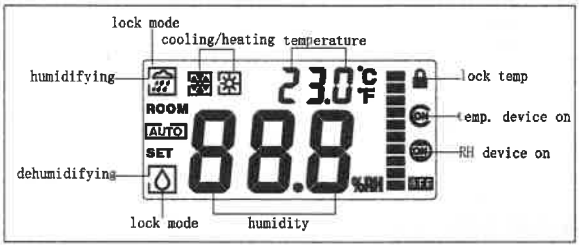


Fig.2

Buttons and LCD Display





Operation

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4. Setting temperature: Measurement range and setting range of temperature is 0℃~60℃(32.0~140℉)/5~35℃(41.0~95.0℉). Press ▼ or ▲ button for temperature setting and each press will change 0.1℃(0.1℉). Continuously press ▼ or ▲ button to adjust the value quickly. When adjusting, the number of temperature blinks, which means that the setting is not confirmed. After blinking for 6 seconds, the setting is confirmed and then it returns to display measured temperature. ON appearing on right of the LCD indicates cooling/heating device on working. ON disappearing indicates s cooling/heating device stops working.
5. **set** button : Use to select cooling or heating mode for temperature control . In cooling, ❄ symbol appears on the top left

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6. Lock the set point: Press ▼and ▲ at the same time for about 6 seconds until the symbol 🔒 appearing on the top right of LCD, which indicates that the set points of humidity and temperature are locked, after that, it's impossible to adjust humidity or temperature by ▼and ▲button.
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Advanced Setup (V.A031)

Please use the below parameter setup carefully. Don't change any default setting before you read and understand all parameters.

Cut off power and press the ears on both sides to take off the main part from the base part. Then you will find a set of four DIP switches DIP1~DIP4 on the top left of the circuit board.

DIP1: ON—parameters setting OFF—normal use (leave factory: OFF)
DIP2: ON—Fahrenheit for temperature display
OFF—Celsius for temperature display (leave factory: OFF)
DIP3: ON—Dehumidify mode; OFF—humidify mode (leave factory: OFF)
DIP4: Ineffective for model F2000P-TH-K01

Put the DIP1 to ON (up is ON, down is OFF) and put the main part to the base part, then you can set up the following parameters. Press switch button to select parameter and set up its value by press ▼or ▲.

Warning: must cut off power before open the controller.

LCD	Parameter	Range of setup	Default
-1	RS485 communication address (Ineffective for model F2000P-TH-K02)	1~255	1
-2	RS485 communication rate (Ineffective for model F2000P-TH-K021)	1-4800, 2-9600, 3-14400, 4-19200, 5-38400	4
-3	RS485 communication odd/even calibration and stop bit (Ineffective for model F2000P-TH-K02)	1- none 1 stop bit 2- none 2 stop bits 3- odd calibration 1 stop bit 4- even calibration 1 stop bit	1
-4	Temperature modification	±3℃/±6℉	0℃
-5	Humidity modification	±5%RH	0%RH
-6	Maximum limit of temperature setting	0~60℃/32~140℉	35℃
-7	Minimum limit of temperature setting	0~60℃/32~140℉	5℃
-8	Differential humidity to control the replay action 0~5%RH For example, when it is set 2 and humidity set point is 40%RH, in humidify mode, the relay1 will be on when measurement humidity< setting; if measurement humidity> (40+2)%RH, the relay1 will be off. Dehumidifier working is in reverse mode.		2
-9	Differential temperature to control the relay action 0.0~3℃/0.0~6.0℉ For example, when it is set 1 and the setting temperature is 25℃, in heating mode, the relay2 will be on when measurement temperature< setting; if measurement temperature>(25+1) ℃, the relay2 will be off. In cooling mode it is in reverse mode.		1
-10	The state when the controller electrify again after power broken	0- Turn off after electrify 1- Turn on after electrify 2- Keep the same state before power broken	2

Reset: in the state of parameter setup (DIP1=ON), cover the main part and turn it on. Press **switch** for about 25 seconds until the controller turns off. The all parameters reset to default. After finish parameter setup, you must cut off the power open the main part again, put the DIP1 to OFF, then the controller can work again.