LINKWELL

Heater/Thermostat /Hygrostat

KTOMF 012/KTSMF 012 Thermostat

Benifits:

- Integrated integration: AC input, AC output, offering convenience in use.
- With LED indicator,easier to recognize working state.
- Small size for a variety of applications.
- Stable long - time operating.
- ROHS compliant.

Features:

- Humidity control: If the relative humidity exceeds the value set on the humidity dial, the electric circuit is cut off. Return difference is 5 - 10% RH.
- Temperature control: If the ambient temperature rises above the value set on the temperature dial, the electric circuit is cut off. A tolerance of 1 - 3°C is allowed.
- Power: AC220V. Other voltage is alternative.
- Current: Max 46mA.
- Operating conditions: Temperature: - 10 to 50°C; Humidity: 40 - 90%RH.
- Storage conditions: Temperature: - 20 to 60°C; Humidity: 20 - 95%RH.
- Humidity sensor: Polymer humidity resistance.
- Temperature sensor: Bimetal sensor.

Elements:

- Set up the operation range by adjusting the knob. When the relative humidity drops below the value pre - set, the electric circuit is closed via terminal LED illuminates. When the relative humidity rises above the value pre - set, the electric circuit is cut off via terminal LED blacks out. In order to protect the loads not to work too frequently, the return difference is 5 - 10%RH, means the electric circuit is closed when the humidity drops 5 - 10% below more than the value pre - set.
- Set up the operation range by adjusting the knob. When the ambient temperature drops below the value pre - set, the electric circuit is closed via terminal LED illuminates. When the ambient temperature rises above the value pre - set, the electric circuit is opened via terminal LED blacks out.

Humidity switching difference	4%RH(±3% tolerance)
Temperature switching difference	7k(±4k tolerance)
Temperature sensor element	Bimetal sensor
Relative humidity range	35% - 95%RH
Temperature control contact mode	Step type contact point
Humidity control contact mode	Chang - over switch
Mean life	750,000 cycles
Min Switching capacity	20VAC/DC 100m A
Max Switching capacity	250VAC/DC 5(1)A DC30W
Connection	5 - pole terminal,clamping torque 0.5Nm Max for solid wire 2.5mm² and stranded wire(with wire and ferrule) 1.5mm²
Installation	35mm Din rail
Casing	UL94V - 0, light grey
Dimension	70x63x40mm
Weight	90g
Fitting position	Cabinet top
Operating temperature	0—+60°C(+32—+140°F)
Storage temperature	- 20—+80°C(- 4—+176°F)
Protection level	IP20

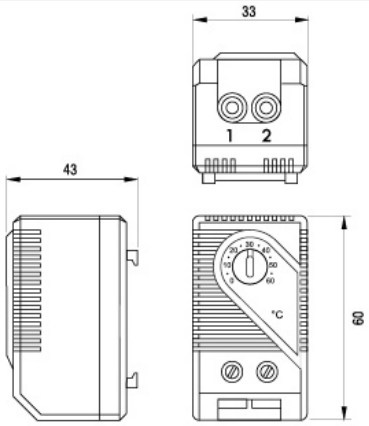
KTO 011/KTS 011 Thermostat

- Large setting range
- Small size
- Simple to mount
- High switching performance

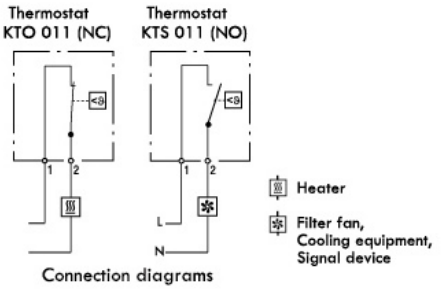
KTO 011: Thermostat(normally closed); contact breaker for regulating heaters.

KTS 011: Thermostat (normally open): contact maker for regulating filter fans and heat exchangers or for switching signal device when temperature limit has been exceeded.

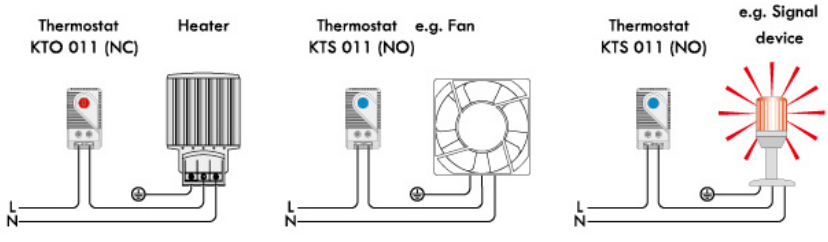
Installing method



Temperature range	0-60℃
KTO 011 NC(Normally closed)	When the temperature reaches the set value, open circuit
KTS 011 NO(Normally open)	When the temperature exceeds the set value action, closed circuit
Switch temperature difference	7K(±4K tolerance)
Sensor element	thermostatic bimetal
Contact type	Snap-action
Contact resistance	＜10m ohm(Incidental connection line)
Service life	>100,000 cycles
Max. Switching capacky	250VAC,10(2)A 120VAC,15(2)A 30WDC at 24VDC to 72VDC
Connection	2-pole terminal, clamping torque 0.5Nm max.: rigid wire 2.5mm², stranded wire (with wire end ferrule) 1.5mm²
Casing	plastic according to UL94 V-0, light grey
Installation	35mm DIN Installation guide
Dimensions	60×33×43mm
Weight	40g
fitting position	variable
Operating/Storage temperature	-20℃ to +80℃
Protection type	IP20



Connection diagrams



Examples of connection

Setting range	Art. No. Contact Breaker (NC)	Art. No. Contact Maker (NO)	Approvals
0 to +60°C	KTO 011	KTS 011	CE

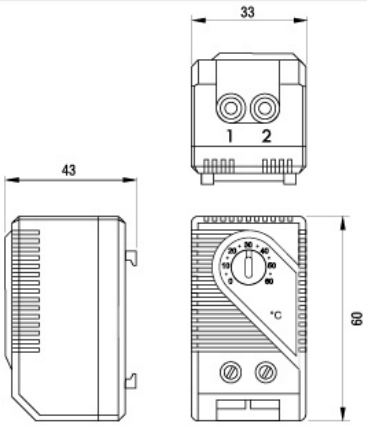
KTO 011-2/KTS 011-2 Thermostat

- Large setting range
- Small size
- Simple to mount
- High switching performance

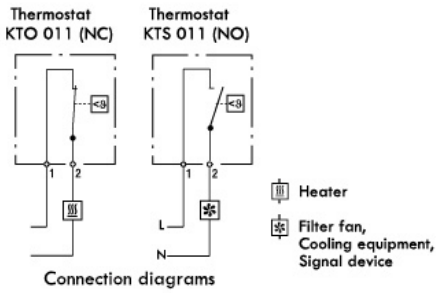
KTS 011-2: Thermostat(normally closed); contact breaker for regulating heaters.

KTS 011-2: Thermostat (normally open): contact maker for regulating filter fans and heat exchangers or for switching signal device when temperature limit has been exceeded.

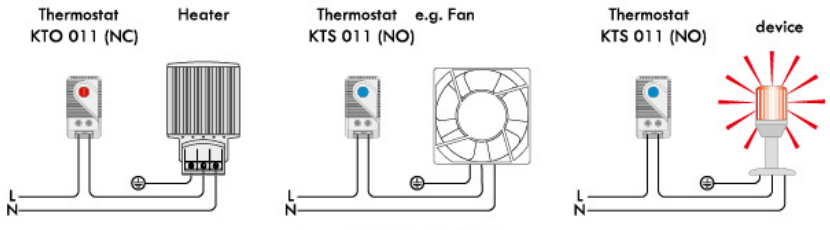
Installing method



KTO 011-2 NC(Normally closed)	When the temperature reaches the set value, open circuit
KTS 011-2 NO(Normally open)	When the temperature exceeds the set value action, closed circuit
Switch temperature difference	7K(±4K tolerance)
Sensor element	thermostatic bimetal
Contact type	Snap-action
Contact resistance	＜10m ohm(Incidental connection line)
Service life	>100,000 cycles
Max. Switching capacky	250VAC,10(2)A 120VAC,15(2)A 30WDC at 24VDC to 72VDC
Connection	2-pole terminal, clamping torque 0.5Nm max.: rigid wire 2.5mm², stranded wire (with wire end ferrule) 1.5mm²
Casing	plastic according to UL94 V-0, light grey
Installation	35mm DIN Installation guide
Dimensions	60×33×43mm
Weight	40g
fitting position	variable
Operating/Storage temperature	-20℃ to +80℃
Protection type	IP20



Connection diagrams



Examples of connection

Setting range	Art. No. Contact Breaker (NC)	Art. No. Contact Maker (NO)	Approvals
0 to +60°C	01140.0-00	01141.0-00	CE
-10 to +50°C	01142.0-00	01143.0-00	CE
+20 to +80°C	01159.0-00	01158.0-00	CE
0 to +60°C	01146.9-00	01147.9-00	CE

ZR 011 Dual Thermostat

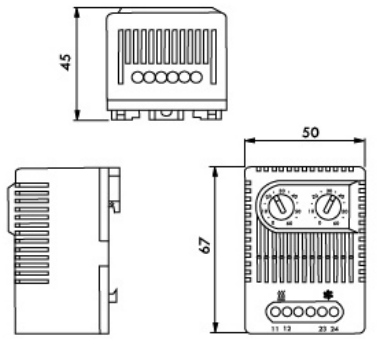
- NO and NC in one casing
- Separate adjustable temperatures
- High switching capacity
- Terminals easily accessible
- Clip Fixing

Two thermostats in one casing:

Thermostat(contact breaker, normally closed)for regulating heaters
Thermostat(contact make, normally open) for regulating filter fans and heat exchangers or switching signal devices when temperature limit has been exceeded.

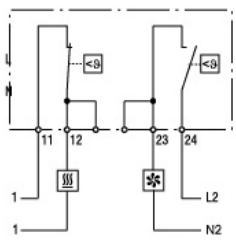
Heaters and cooling equipment can be switched independently from each other with a temperature offset a he usual change-over contacts.

Size chart



Temperature range	NO/NC:0-60℃
Switch temperature difference	7K(+4K tolerance)
Sensor element	thermostatic bimetal
Contact type	Snap-action
Contact resistance	＜10m ohm
Service life	>100,000 cycles
Max. Switching capacky	250VAC,10(2)A 120VAC,15(2)A DC 30W
Connection	4-pole terminal, clamping torque 0.5Nm max.: rigid wire 2.5mm², stranded wire (with wire end ferrule) 1.5mm²
Installation	35mm DIN Installation guide
Casing	UL94 V-0 Plastic, light gray
Dimensions	67×50×46mm
Weight	90g
fitting position	variable
Operating/Storage temperature	-20℃ to +80℃
Protection type	IP20

Thermostat
ZR 011(NC/NO)



Connection diagram

Heater

Filter fan, Cooling equipment, Signal device

Art. No.	Setting Range		Setting Range	
ZR 011	Contact breaker (NC)	0 to +60°C	Contact maker (NO)	0 to +60°C

ZR 011-2 Dual Thermostat

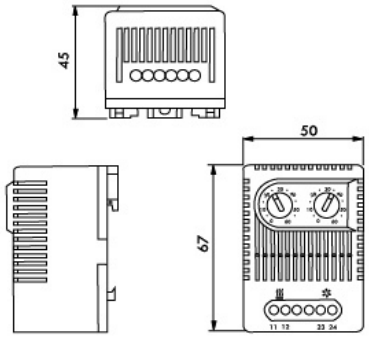
- NO and NC in one casing
- Separate adjustable temperatures
- High switching capacity
- Terminals easily accessible
- Clip Fixing

Two thermostats in one casing:

Thermostat(contact breaker, normally closed)for regulating heaters
Thermostat(contact make, normally open) for regulating filter fans and heat exchangers or switching signal devices when temperature limit has been exceeded.

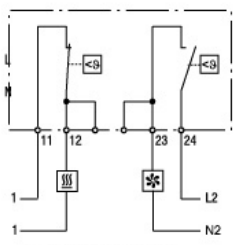
Heaters and cooling equipment can be switched independently from each other with a temperature offset as opposed to the usual change-over contacts.

Size chart



Temperature range	NO/NC:0-60℃
Switch temperature difference	7K(+4K tolerance)
Sensor element	thermostatic bimetal
Contact type	Snap-action
Contact resistance	＜10m ohm
Service life	>100,000 cycles
Max. Switching capacky	250VAC,10(2)A 120VAC,15(2)A DC 30W
Connection	4-pole terminal, clamping torque 0.5Nm max.: rigid wire 2.5mm², stranded wire (with wire end ferrule) 1.5mm²
Installation	35mm DIN Installation guide
Casing	UL94 V-0 Plastic, light gray
Dimensions	67×50×46mm
Weight	90g
fitting position	variable
Operating/Storage temperature	-20℃ to +80℃
Protection type	IP20

Thermostat
ZR 011(NC/NO)



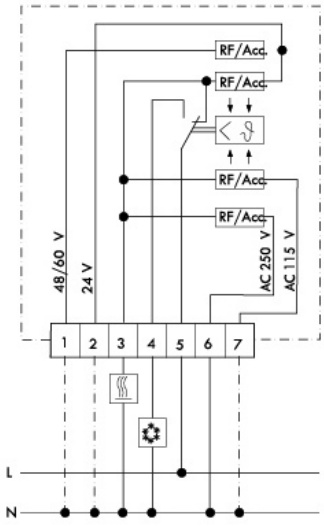
Connection diagram

Heater

Filter fan, Cooling equipment, Signal device

Art. No.	Setting Range		Setting Range	
ZR 011-2	Contact breaker (NC)	0 to +60°C	Contact maker (NO)	0 to +60°C

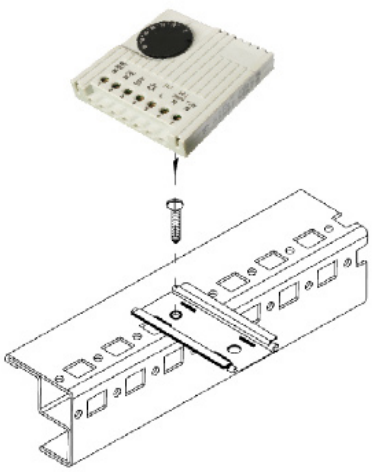
JWT6011 Enclosure Internal Thermostat



- Bi-metal controller as a temperature sensitive element with thermal feedback.
- Contact population: Single-pole change-over contact as a quick-break contact.
- Permissible contact load:
  Cat. 5 - 3 (heating) AC 10 (4*) A, DC = 30 W Cat. 5 - 4 (cooling) AC 5 (4*) A, DC = 30 W
  * ( ) = inductive load at cos phi = 0.6
  Setting range: 0 °C to + 60 °C
- Weight: 105g appr Size: 71x71x33.5mm Switch discrepancy: 1K ± 0.8K
- Voltage scope is wide, any type could be used from 24V to 230 V
- Time-saving connection, terminal block could be installed screw from outside
- Easy installation, could be installed to 35mm din rail vertically or horizontally, according to EN50 022,it could be clipped to TS/35 cabinet profile with its accessory adapter.

Application Especially suitable for controlling fan-and-filter units, heaters and heat exchangers, this thermostat can also be used as a signal generator for monitoring the enclosure internal temperature.

Sensing element	Bimetallic
Shock configuration	Conversion of electric shock as a transient unipolar switching elements
Permissible contact load	Cat. 5 - 3 (heating) AC 10 (4*) A, DC = 30 W Cat. 5 - 4 (cooling) AC 5 (4*) A, DC = 30 W * ( ) = inductive load at cos phi = 0.6
Temperature adjustment range	0°C to +60°C
Rated voltage	230/115/60/48/24V (AC) 60/48/24V (DC)
Weight	105g
Size	71X71X33.5mm
Switching difference	1K ± 0.8K



Rated voltage

230/115/60/48/24V(AC)
60/48/24V (DC)

48V 60V N	24V N			(L1*) L	(L2*) 250V N	115V N
1	2	3	4	5	6	7

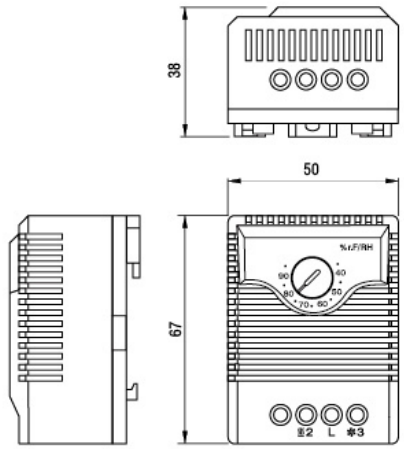
MFR 012 Electromechanical Hygrostat

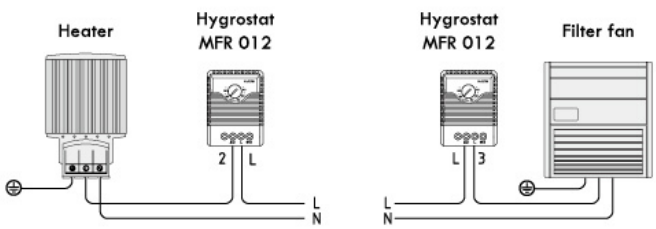
- Adjustable relative humidity
- Change-over contact
- High switching capacity
- Easily accessible terminals
- Clip fixing

The electromechanical hygrostat is designed to control enclosure heaters so that the dew point is raised when a critical relative humidity of 65% is exceeded. In this way condensation and corrosion in enclosures with electric/electronic components is effectively prevented.

Switching error	4% RH (±3% tolerance)
Relative humidity range	35%-95%
Allow wind speed	15m/sec
Contact type	Changeover contact
Contact resistance	<10m ohm
Service life	>50,000 cycles
Mix. Switching capacky	20V AC/DC 100 mA
Max. Switching capacky	25 VAC, 5 A
Connection	3-pole terminal for 2.5mm², clamping torque 0.5Nm max.: rigid wire 2.5mm², stranded wire (with wire end ferrule) 1.5mm²
Installation	35mm DIN Installation guide
Casing	UL94 V-0 Plastic, light gray
Dimensions	67x50x38mm
Weight	about 60g
Fitting position	variable
Operating/Storage temperature	0 ~ +60°C (+32 ~ +140°F) / -20 ~ +80°C (-4 ~ +176°F)
Protection type	IP20

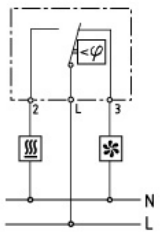
Connection





Examples of connection

Connection diagram



Enclosure heater

Filter fan, Cooling equipment, Signal device

Art. No.	Setting range
MFR 012	35 to 95% RH

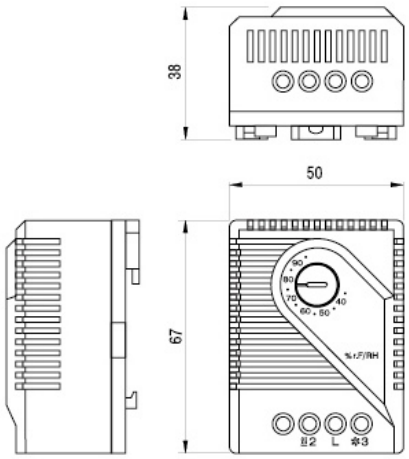
MFR012-2 Mechanical Hygrostat

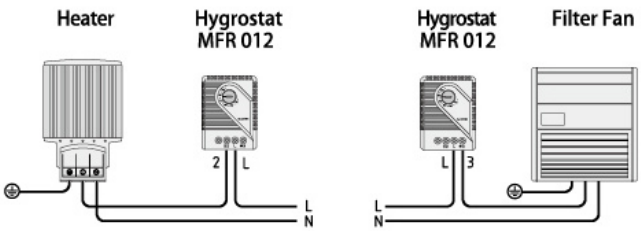
- Adjustable relative humidity
- Change-over contact
- High switching capacity
- Easily accessible terminals
- Clip fixing

The electromechanical hygrostat is designed to control enclosure heaters so that the dew point is raised when a critical relative humidity of 65% is exceeded. In this way condensation and corrosion in enclosures with electric/electronic components is effectively prevented.

Switch difference*	4% RH (± 3% tolerance)
Permissible air velocity	15m/sec.
Contact type	change-over contact
Service life	>50,000 cycles
Mix. Switching capacky	250VAC, 5A 20WDC
Max. Switching capacky	5AAC
Connection	3-pole terminal for 2.5mm², clamping torque 0.5Nm max.:rigid wire 2.5mm² stranded wire (with wire end ferrule) 1.5mm²
Mounting	clip for 35mm DIN rail, EN 60715
Casing	plastic according to UL94 V-0, light grey
Dimensions	67 x 50 x 38mm
Weight	approx. 60g
Fitting position	variable
Operating / Storage temperature	0 to +60°C (+32 to +140°F) / -40 to +60°C (-40 to +140°F)
Operating / Storage humidity	max. 90% RH (non-condensing)
Protection type	IP20
Approvals	UL File No. E164102

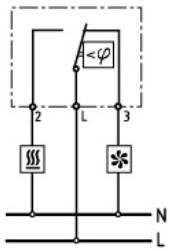
Connection





Examples of connection

Connection diagram



Enclosure heater

Filter fan, Cooling equipment, Signal device

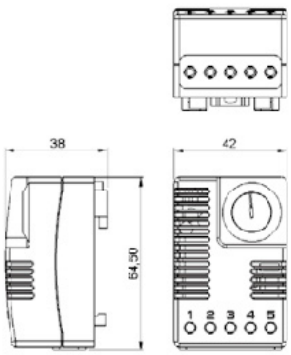
Art. No.	Setting range
MFR012-2	35 to 95% RH

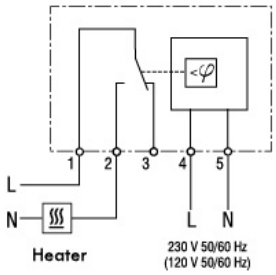
EFR012 Electronic Hygrostat

- Temperature and humidity adjustable
- Optical operating display (LED)
- High switching capacity
- Clip fixing

The electronic hygrotherm senses the ambient temperature and relative humidity in an enclosure with electric / electronic components and turns on a heater (or alternatively a fan) at either set point, helping prevent the formation of condensation in the enclosure. The LED integrated in the adjustment knob on the active controller is lit when the connected device is in operation.

Size chart

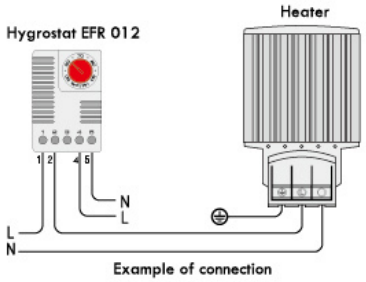




Connection diagram

Switch difference	5% RH (±1% RH tolerance) at 25°C/77°F (50% RH)
Reaction time	5 sec.
Contact type	change-over contact (relay)
Service life	> 50,000 cycles
Max. switching capacity (relay output)	240VAC, 8(1.6) A ; 120VAC, 8 (1.6)A; 100WDC at 24VDC
EMC	acc.to EN 55014-1-2, EN 61000-3-2, EN 61000-3-3
Optical indicator	LED
Connection	5-pole terminal, clamping torque 0.5Nm max.:rigid wire
	2.5mm²stranded wire (with wire end ferrule) 1.5mm²
Mounting	clip for 35mm DIN rail, (EN50022)
Casing	UL94 V-0, light grey
Dimensions	64.5 x 42 x 38mm
Weight	approx. 70g
Fitting position	vertical
Operating / Storage temperature	0 to+60°C(+32 to+140°F) / -20 to+70°C(-4 to+158°F)
Operating / Storage humidity	max. 90 % RH (non-condensing)
Protection type	IP20

Art. No.	Operating voltage	Setting range
01245.0-00	230VAC, 50/60Hz	40 to 90% RH
01246.0-00	230VAC, 50/60Hz	65% RH pre-set
01245.9-00	120VAC, 50/60Hz	40 to 90% RH
01246.9-00	120VAC, 50/60Hz	65% RH pre-set



Example of connection

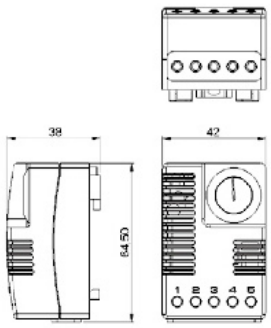
Art. No.	Operating voltage	Setting range	Approvals
01245.0-00	230VAC, 50/60Hz	40 to 90% RH	CE
01246.0-00	230VAC, 50/60Hz	65% RH pre-set	CE
01245.9-00	120VAC, 50/60Hz	40 to 90% RH	CE
01246.9-00	120VAC, 50/60Hz	65% RH pre-set	CE

ETR 011 Electronic Thermostat

- Large setting range
- Small hysteresis
- Optical operating display (LED)
- Change-over contact
- Clip fixing

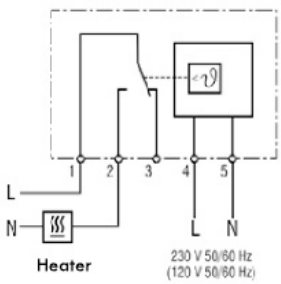
The electronic thermostat is used for controlling heating and cooling equipment, filter fans or signal devices. The thermostat registers the surrounding air and can switch both inductive and resistive loads via relay with change-over contact. The LED integrated in the adjustment knob is lit when the NC contact is closed (e.g. when a connected heater is operating).

Size chart

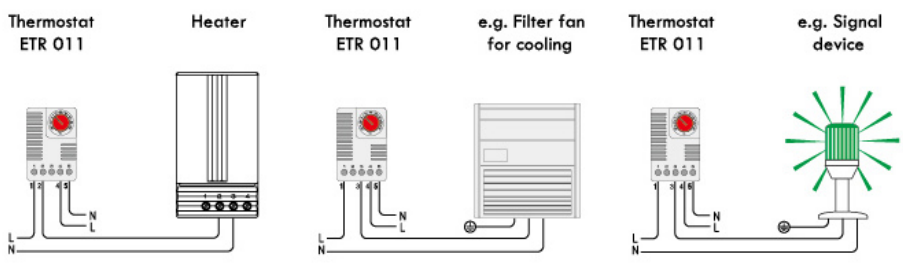


Switch difference	4K (±1K tolerance) at 20 °C/68 °F
Sensor element	NTC
Reaction time	5 sec
Contact type	change-over contact (relay)
Service life	> 50,000 cycles
Max. switching capacity (relay output)	240VAC,8(1.6)A/120VAC,8(1.6)A`100WDC at 24VDC
Max. inrush current	16AAC for 10 sec.
Optical indicator	LED
Connection	5-pole terminal, clamping torque 0.5Nm max.:rigid wire 2.5mm²stranded wire (with wire end ferrule) 1.5mm²
Mounting	clip for 35mm DIN rail, EN 60715
Casing	plastic according to UL94 V-0, light grey
Dimensions	64.5 x 42 x 38mm
Weight	approx. 70g
Fitting position	vertical
Operating / Storage temperature	-40 to +85°C (-40 to +185°F)
Operating / Storage humidity	max. 90 % RH (non-condensing)
Protection type	IP20

Art. No.	Operating voltage	Setting range
01131.0-00	230VAC,50/60Hz	-20 ~ 60°C



Connection diagram



Examples of connection

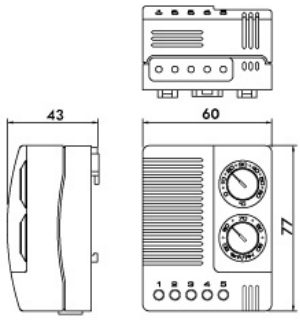
Art. No.	Operating voltage	Setting range	Approvals
01131.0-00	230VAC, 50/60Hz	-20 to 60°C	CE

Electronic Hygrotherm ETF 012

- Temperature and humidity adjustable
- High switching capacity
- Optical operating display (LED)
- Clip fixing

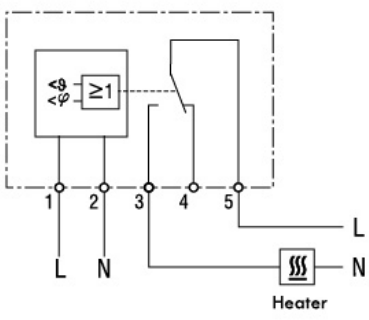
The electronic hygrotherm senses the ambient temperature and relative humidity in an enclosure with electric / electronic components and turns on a heater (or alternatively a fan) at either set point, helping prevent the formation of condensation in the enclosure. The LED integrated in the adjustment knob on the active controller is lit when the connected device is in operation.

Size chart

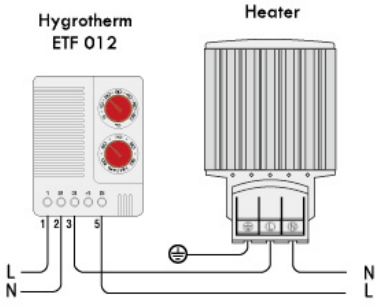


Switch difference (temperature)	2K (±1K tolerance) at 25°C/77°F (50% RH)
Switch difference (humidity)	4% RH (±1% tolerance) at 25°C/77°F (50% RH)
Reaction time (humidity)	5 sec.
Contact type	change-over contact (relay)
Contact resistance	< 10m ohm
Service life	NC: 50,000 cycles
	NO: 100,000 cycles
Max. Switching capacity (relay output)	NC:240VAC,6(1)A
	NO:120VAC,8(1.6)A
	NC:240VAC,6(1)A
	NO:120VAC,8(1.6)A
	100WDC at 24VDC
EMC	acc.to EN 55014-1-2、EN 61000-3-2
	EN 61000-3-3
Optical indicator	LED
Connection	5-pole terminal for 2.5mm², clamping torque 0.5Nm max,
	rigid wire2.5mm²stranded wire (with wire end ferrule) 1.5mm²
Mounting	clip for 35mm DIN rail, EN 60715
Casing	plastic according to UL94 V-0.light grey
Dimensions	77×60×43mm
Weight	approx. 0.2kg
Fitting position	vertical
Operating / Storage temperature	0 to+60°C (+32°C to+140°F) /-20°C to +80°C (-4°C to +176°F)
Protection type	IP20

Connection diagram



Example of connection



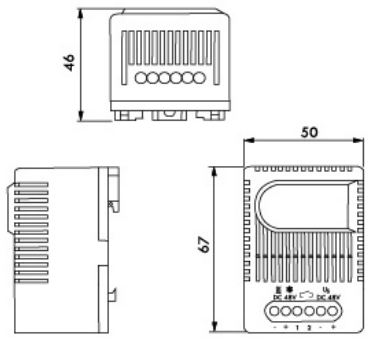
Art. No.	Operating voltage	Setting range temperature	Setting range humidity	Approvals
01230.0-00	230VAC, 50/60Hz	0 to +60°C	50 to 90% RH	CE
01230.9-01	120VAC, 50/60Hz	0 to +60°C	50 to 90% RH	CE

Switch Module SM010 (24VDC+48VDC)

- High DC switching capacity
- Variety of applications
- Compact design
- Simple connection
- Clip fixing

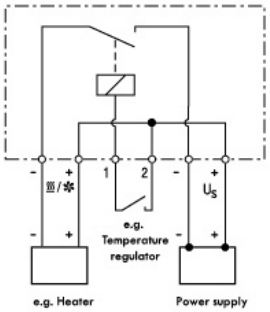
Switch module for switching DC appliances with high switching capacity. A Separate conventional switch contact is used as contoler (e.g. temperature regulator, humidity regulator),The switch module is availale in 24VDC and 48VDC versions.

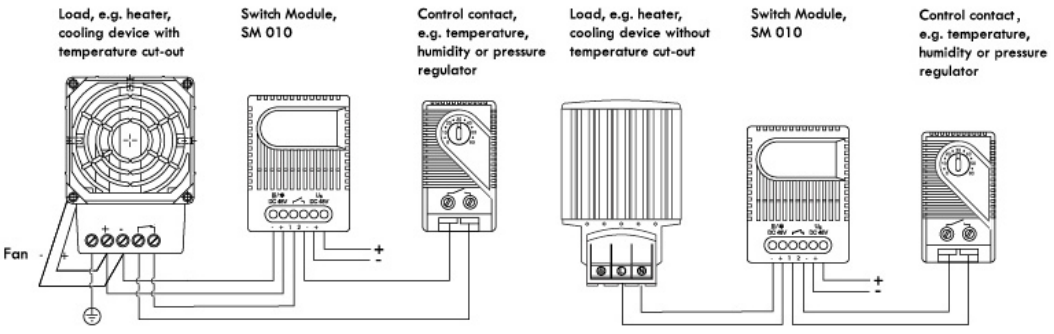
Size chart



Cotact type	contact maker, normally open(Relay/MOSFET)
Contact resistance	< 10m ohm
Service life	> 100 000 cycles
EMC	acc. to EN 55014-1-2, EN 61000-3-2, EN 61000-3-3
Connection	6-pole terminal,clamping torque0.5Nm max, rigid wire 2.5mm²
Mounting	clip for 35mm DIN rail, EN50022
Casing	plaltic according toUL94 V-O,light grey
Dimensions	67 x 50 x 46mm
Weight	approx,85g
Fitting position	variable
Operating/Storage temperature	-45 to +70°C (-49 to +158°F)
Protection type	IP20
Certificate	VDE intended

Art.No.	Operating voltage.	Max.Switching capacity
01001.0-00	24VDC (20-28VDC)	28VDC 16A
01000.0-00	48VDC (38-56VDC)	56VDC 16A





Art. No.	Operating voltage	Max. switching capacity	Max. inrush current
01001.0-00	24VDC (20-28VDC)	28VDC 16A	16ADC
01000.0-00	48VDC (38-56VDC)	56VDC 16A	16ADC

Dehumidifier used for switchgear
LKHP 20 Series

General

LKHP 20 series dehumidifier is designed specifically for the needs of the various cabinet anti-condensation, use thermoelectric semiconductor with high thermoelectric conversion efficiency, compact, high efficiency dehumid-ifier, can effectively prevent equipment insulation level decline due to condensation and attached filth on equip-ment insulating surface, avoid creepage and flashover accidents caused by condensation.

Technical parameter

Power supply	AC/DC 110~220V±10% DC 48V±10%; DC24V±10%
Humidity accuracy	±5%RH
Temperature accuracy	±1℃

Advantage

◆ Compact, suitable for switchgear, small impact on the structure and layout of the cabinet.

◆ High humidity gas entering the dehumidifier will dew after contacted with thermoelectric semiconductor, and condensation will be discharge cabinet. If is a high efficiency dehumidifier.

◆ With strong ability of dehumidification, 30W power consumption to ensure 1m^3 switchgear internal humidity is maintained at 60% RH.

◆ Non-heat sources, can protect switch cabinet equipment. Dehumidification equipment in more traditional switchgear is heater, although certain dehumidifying effect, but the long-term use will due to high temperature that may cause switchgear equipment damage.

◆ Semiconductor dehumidifier can reduce the moisture content of unit volume, which can effectively prevent the generation of condensation; heater dehumidification mode only reduces the relative humidity and does not reduce the water content in a unit volume of air, so once match temperature conditions, condensation will happen.

◆ Automatic control based on temperature and humidity, can effectively reduce energy consumption.

◆ Dehumidification function failure alarm contact output.

◆ Semi-permanent lossless parts as the main components, long life, long-term use without maintenance.

Model explanation

Model	Dehumidification 30℃ 85%RH	Cubage	Humidity	Temperature	Power Supply	Power	Dimension H×W×D mm
LKHP20-A1	10ml/Hr	1m^3	≥55%RH Dehumidify ≤45%RH Stop Dehumidify	Suction air ≥50℃ or≤5℃ Stop Dehumidify	AC/DC 110~220V±10%	≤30W	200×134×70.5
LKHP20-B1					DC 48V±10%		
LKHP20-C1					DC 24V±10%		
LKHP20-A2	22ml/Hr	2m^3			AC/DC 110~220V±10%	≤60W	
LKHP20-B2					DC 48V±10%		
LKHP20-C2					DC 24V±10%		

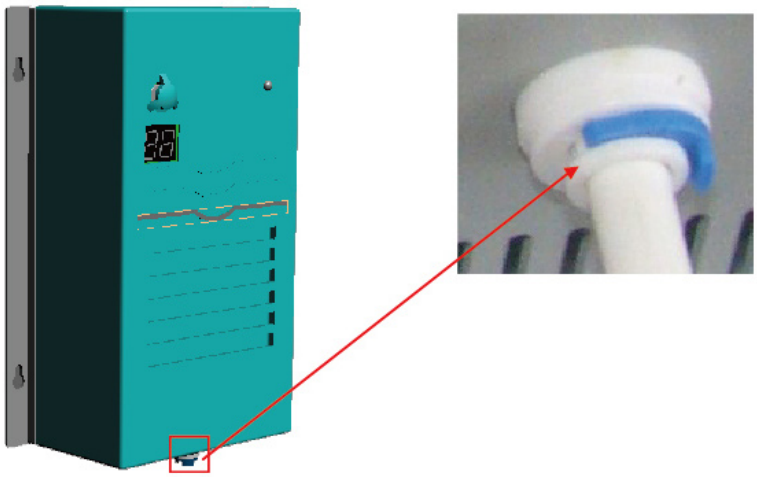
Note: If without control based on humidity and temperature, model is add "-NC",e.g. LKHP20-A1-NC.

Terminal and Interface

Terminal	1、2	Power supply.1：L（+）；2：N(-)
	3、4	Alarm output contact, Passive contact,AC250V 5A. NO,close while function of dehumidifier is out of order. Function out of order defined: Temperature sensor or humidity sensor fault; Duration of Dehumidifier work is over 24 hours, RH≥80%RH.
Indicator	Power indicator. On front panel of dehumidifier, lights up if power supply normal, Green.	
Display	Display windows display real-time humidity.	

Installation Instructions

6.1 Drainage tube installation



Drainage tube connector

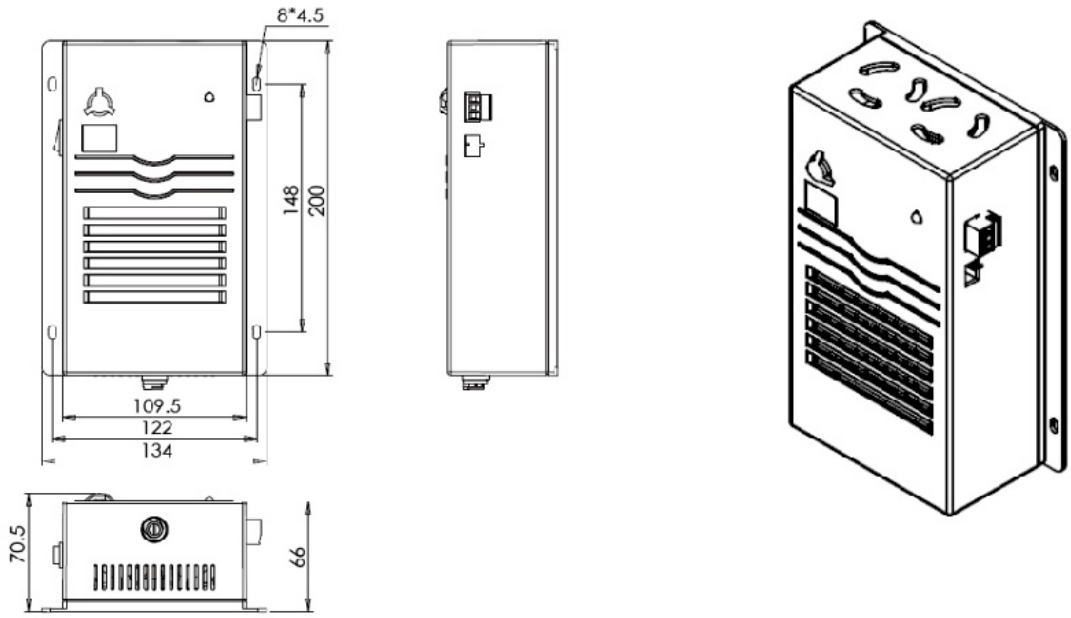
Install drainage tube: Drainage tube inserted into this connector, and put on the blue clamp to complete the installation
Dismounting drainage tube: Remove the blue clamp, draw out the drainage tube after press the white tube tongue to bottom.
External diameter of drainage of tube is 6.5mm.

Note: Drainage tube should be kept straight, winding, and other end leads to the outer cabinet.

6.2 Please ensure the dehumidifier and the horizontal plane is vertical, not tilted installation.

6.3 10 cm space around the dehumidifier and other devices; guarantee that the blower outlet flow, shall not be covered.

Dimension



Temperature Controller KTC3150

Features:

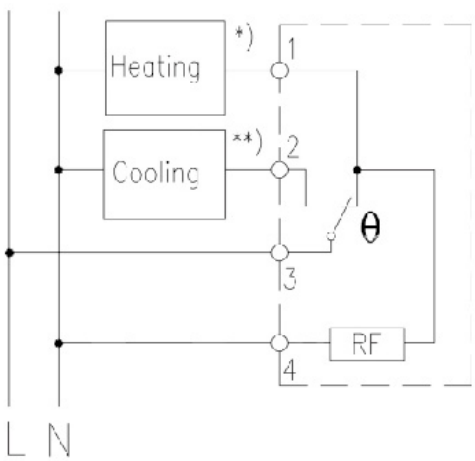
- Easily mounted on 35mm DIN rails with snap on attachment per EN50022

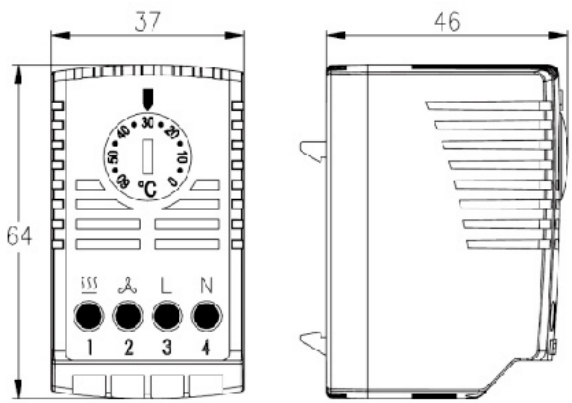
Product Description:

Temperature controller for controlling cabinet heaters, filter fans, slide-in fans, heat excahngers etc.

- Locking adjusting knob grey scala
- Standard thermic reduction

Storage temperature	-20° bis + 80°C
Switching current	100-250VAC
Heating (opened con.)	10 A (2) DC 30W
Cooling (closed con.)	5 A (2) DC 30W
Switching hysteresis	Approx. 5 K (with thermic reduction approx.1K)
Contact	2 way
Connection	4 screw terminals 2,5 mm²
Sensor element	Bimetal
Service life time	> 100.000 switching cycles
Temperature control range	0...+60°C
Surface finish	Plastic light grey UL94VO
Dimension (WxHxD)	37x64x46mm
Weight	0.06 kg
Protection type	IP20



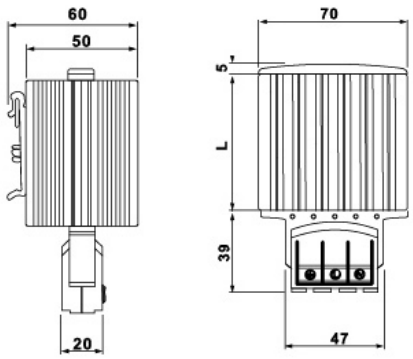


HG140 Type Heater

- Pressure clamp connectors
- Dynamic heating up
- wide voltage range
- Temperature limiting
- Energy saving
- Clip fixing
- Quick installation

These heaters are used in enclosures where damage from condensation must be prevented or where the temperature may not fall below a minimum value. The aluminium profile heater body design has a chimney effect and distributes the heat evenly. The pressure clamp connectors save time and simplify installation.

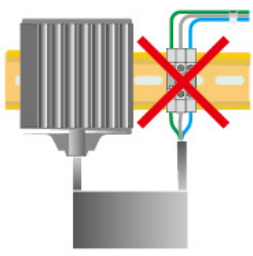
Size chart

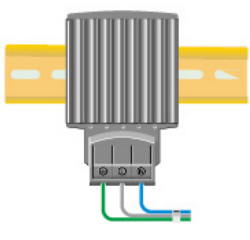


Operating voltage	120-250V AC/DC
Heating element	PTC resistor, self regulating and temperature limiting
Heater bady	extruded aluminium profile, anodised
Connection casing	3 perssure clamps for stranded wire 0.5-1.5mm² (with wire and terrule) and rigid wire 0.5-2.5mm² plastic according to UL94 V-0, black
Mounting	clip for 35mm DIN rail, EN 50022
Fitting position	vertical
Operating/Storage temperature	-45 to + 70°C (-49 to +158°F)
Protection type/Protection class	IP20/I(earthed)
Certificate	CE

Operating with voltages below 140V AC/DC reduces heating performance by approx, 10%

Type	Heating capacity	Inrush current max.	Length(L) (mm)	Weight (approx)
HG 140	15W	1.5	75	0.3
HG 140	30W	3	75	0.3
HG 140	45W	3.5	75	0.3
HG 140	60W	2.5	75	0.3
HG 140	75W	4	75	0.3
HG 140	100W	4.5	145	0.5
HG 140	150W	9	145	0.5



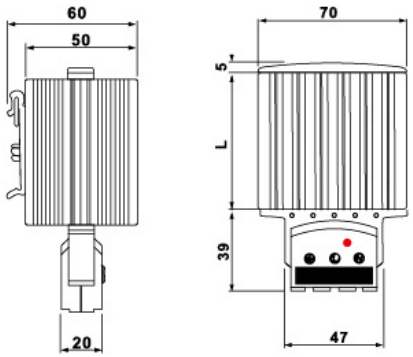


LK140 Type Compact Fan Heater

- Screw terminal connector
- Dynamic heating up
- wide voltage range
- Temperature limiting
- With indicator showing on/off
- Energy saving
- Clip fixing
- Quick installation

These heaters are used in enclosures where damage from condensation must be prevented or where the temperature may not fall below a minimum value. The aluminium profile heater body design has a chimney effect and distributes the heat evenly. The pressure clamp connectors save time and simplify installation.

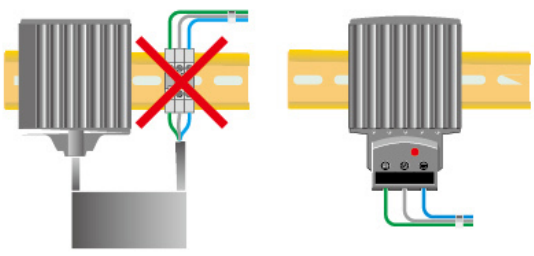
Size chart



Operating voltage	120-250V AC/DC
Heating element	PTC resistor, self regulating and temperature limiting
Heater bady	extruded aluminium profile, anodised
Connection casing	3 perssure clamps for stranded wire 0.5-1.5mm² (with wire and terrule) and rigid wire 0.5-2.5mm² plastic according to UL94 V-0, black
Mounting	clip for 35mm DIN rail, EN 50022
Fitting position	vertical
Operating/Storage temperature	-45 to + 70°C (-49 to +158°F)
Protection type/Protection class	IP20/I(earthed)
Certificate	CE

Operating with voltages below 140V AC/DC reduces heating performance by approx, 10%

Type	Heating capacity	Inrush current max.	Length(L) (mm)	Weight (kg)
LK 140	15W	1.5	65	0.2
LK 140	30W	2.5	65	0.2
LK 140	45W	3	65	0.2
LK 140	60W	3.5	65	0.2
LK 140	75W	4	65	0.2
LK 140	100W	4.5	145	0.4
LK 140	150W	9	145	0.4



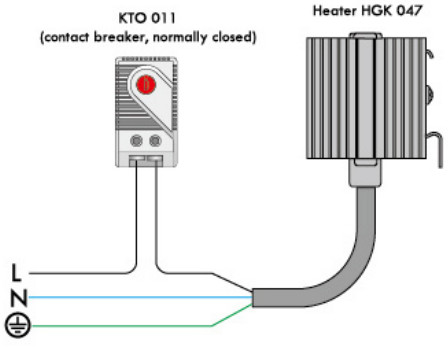
Small semiconductor Heater
HGK 047 Series 10W to 30W

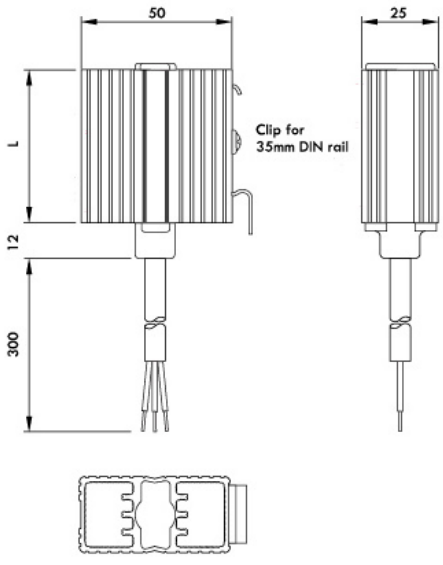
- Dynamic heating up
- Energy saving
- Wide voltage range
- Clip fixing

The heaters are used in enclosures where condensation is to be prevented or the temperature
may not fall below a minimum value. In this way corrosion is avoided and an even temperature
is ensured. The heaters are designed for permanent operation.

Heating element	PTC resistor - temperature limiting
Heater body	extruded aluminium profile, anodised
Mounting	clip for 35mm DIN rail, EN 60715
Fitting position	vertical airflow (air outlet up, connection on bottom)
Operating / Storage	-45 to +70°C (-49 to +158°F)
Operating / Storage humidity	max. 90% RH (non-condensing)
Protection type / Protection class	IP44 / I (earthed)
Accessories	screw fixing
Note	other voltages on request

Example of connection





Art. No.	Operating voltage	Heating capacity[1]	Inrush current max.	Pre-fuse T (time-delay)	Length (L)	Weight (approx.)	Connection	Approvals
04700.0-00	120-240V AC/DC[2]	10W	1.0A	1A	52mm	0.1kg	3 x 0.5mm² x 300mm cable (silicone)	CE
04701.0-00	120-240V AC/DC[2]	20W	2.5A	2A	60mm	0.2kg	3 x 0.5mm² x 300mm cable (silicone)	CE
04702.0-00	120-240V AC/DC[2]	30W	3.0A	2A	70mm	0.2kg	3 x 0.5mm² x 300mm cable (silicone)	CE
04700.9-00	110-120V AC/DC	10W	1.0A	1A	52mm	0.1kg	3 x AWG 20 x 300mm cable	CE
04701.9-00	110-120V AC/DC	20W	1.5A	2A	70mm	0.2kg	3 x AWG 20 x 300mm cable	CE
04702.9-00	110-120V AC/DC	30W	1.5A	2A	100mm	0.2kg	3 x AWG 20 x 300mm cable	CE

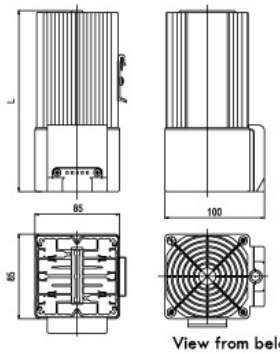
[1] at 20°C (68°F) ambient temperature; [2] (min. 110V, max 265V) Operating with voltages below 140V AC/DC reduces heating performance by approx. 10%.

HGL046 Type Compact Fan Heater

- Compact Design
- Clip fixing
- Long service life
- Maintenance free
- Temperature safety cut-out

Compact fan heater prevents formation of condensation. The integrated high performance axial fan provides forced air circulation and so guarantees an even temperature in enclosures. With internal terminal connector.

Size chart

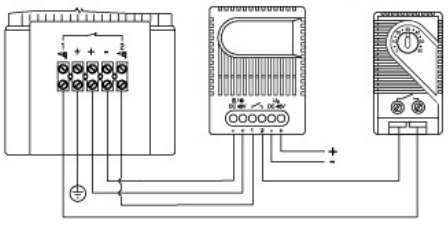


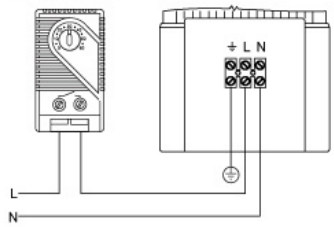
View from below

Operating voltage	230V AC 50/60Hz
Heating element	PTC resistor, self regulating and temperature limiting
Temperature safety cut-out	to protect against overheating in case of fan failure
Heater body	anodised extruded aluminium profile
Surface temperature	max. 75 ℃(400W)
Axial fan, ball bearing	Airflow, free flow AC: 45m³/h (50HZ) or 54m³/h (60Hz) DC: 54m³/h service life 50 000h at 25℃ (77°F)
Connection	internal connection terminal 1.5mm² with strain relief clamping torque 0.8Nm max.
Connection casing	plastic according to UL94 V-0,black
Mounting	clip for 35mm DIN rail, EN 50022
Fitting position	vertical
Operating/Storage temperature	-45 to +70 ℃(-49 to+158°F)
Protection type/Protection class	IP20 / I (earthed)

Type	Operating voltage	Heating capacity	Length (L)	Weight (approx.)
HGL046-250	230VAC, 50/60HZ	250W	85x182x85mm	1.10kg
HGL046-400	230VAC, 50/60HZ	400W	85x222x85mm	1.40kg

Heater
Fan Heater HGL 046 (DC 24V and 48V) with temperature safety cut-out





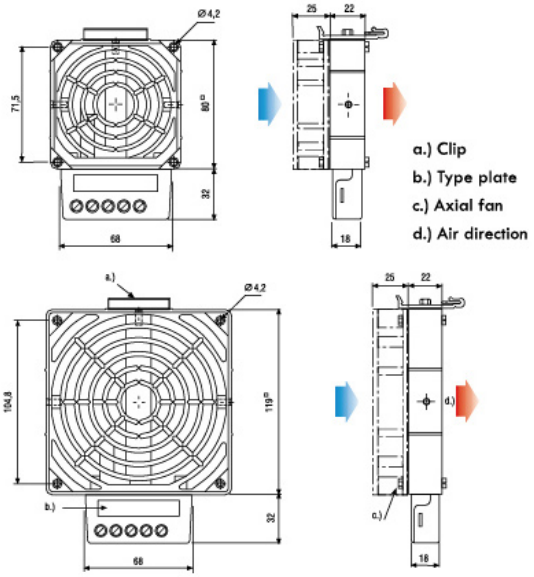
Heater
Fan Heater HGL 046 (AC 230V and 120V) with temperature safety cut-out

HV/HVL 031 Heater

- Compact / Flat design
- High air through-flow
- Temperature safety cut-out
- Clip fixing

Compact high-performance fan heater prevents formation of condensation and frost and provides an evenly distributed interior air temperature in enclosures with electric/electronic components. This fan heater is available without fan (HV 031) and with fan (HVL 031).

Size chart



Important! Heater may only be operated together with fan. Danger of overheating!

HV 031	Heater without fan (fan mounting kie included)
HVL 031	Heater with fan
Heating element	high performance cartridge
Temperature safety cut-out	to protect against overheating in case of fan failure
Heater body	die-cast aluminium(glass bead blasted)
Connection	3-pole screw connector 2.5mm²,clamping toeque 0.8Nm max
Connection casing	plastic according to UL94 V-0,BLACK
Mounting	clip for 35mm DIN rail,EN50022
Fitting position	horizontal
Operating/Storage temperature	-45 to+70°C/(-49to+158°F)
Protection type/Protection class	IP20/1(earthed)
Service life	service life 50,000h at25°C/(77°F)
Connection(axial fan)	2-pole screw connector 2.5mm²(L2/N2)

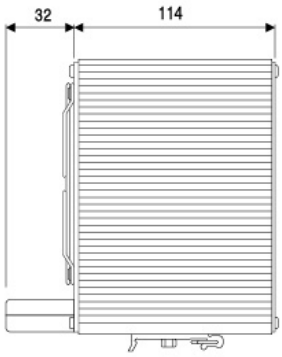
Art.no.HV 031	Art.no.HV 031	Heating capacity	Dimensions	Weight(approx.)
230vac,50/60Hz	120 vac,50/60Hz			
03100.0-00	03100.9-00	100W	80×112×22mm	0.40kg
03101.0-00	03101.9-00	150W	80×112×22mm	0.40kg
03110.0-00	03110.9-00	200W	119×151×22mm	0.50kg
03111.0-00	0311.9-00	300W	119×151×22mm	0.50kg
03112.0-00	03112.9-00	400W	119×151×22mm	0.50kg

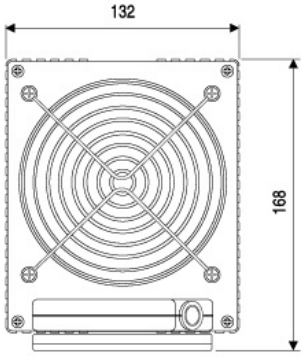
Art.no.HVL 031	Art.no.HVL 031	Heating capacity	Airflow min	Dimensions	Weight(approx.)
230vac,50/60Hz	120 vac,50/60Hz		free flow		
03102.0-00	03102.9-00	100W	35m³/h	80×112×47mm	0.60kg
03103.0-00	03103.9-00	150W	35m³/h	80×112×47mm	0.60kg
03113.0-00	03113.9-00	200W	108m³/h	119×151×47mm	0.90kg
03114.0-00	03114.9-00	300W	108m³/h	119×151×47mm	0.90kg
03115.0-00	03115.9-00	400W	108m³/h	119×151×47mm	0.90kg

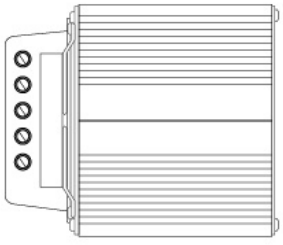
LINKWELL

Fan heaters 800-1500W

Fan Assisted PTC Heaters







Heating Capacity		W	800W	1000W	1200W	1500W
Aticle number	230	V/HZ	800.0-00	1000.0-00	1200.0-00	1500.0-00
	110		800.9-00	1000.9-00	1200.9-00	1500.9-00
Max. current		A	8.0	9.0	12.0	13.0
Heating element			PTC			
Thermal protection			Thermal out out fuse in cose of fan failure			
Radieter			Extruded aluminium profile, anodized			
Axial fan			Ball bearing, service life 50.000 hrs at 25°C(77°F), air flow rate 35m³/h, free flow			
Electrical connections			5 screw terminals for stranded or rigid wire 2.5mm²			
Terminal block			plastic according to V-0, black			
Protection class IEC			Class°C ,Earthed			
Protection degree EN80529			IP20			
Operating/Storage temperature			-25/+70°C			
Mounting			clip for 35MM DIN rail, EN 50022			
Fitting position			vertical			
Dimensions H*W*D		mm	132×168×146			
Weight		KG	1.5			
Conformity			CE			

Pressure Compensation Device
DA 084/284

DA 084

DA 284

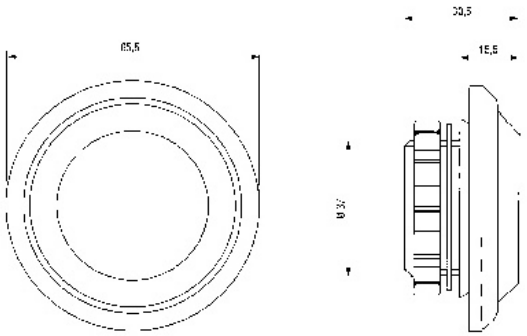
- High degree of protection
- Easy to install

It has become more and more important to provide a protected enclosure environment for valuable and crucial electrical and electronic components. In a tightly closed enclosure, pressure differentials can occur during extreme temperature variations. The specially designed pressure compensation device DA 084 permits a controlled change in pressure and avoids the enterring of dust and water. The pressure compensation device is suitable for the use in enclosures and housings in accordance with DIN EN 62208.

Mounting	PG 29 thread with union nut
Material	plastic according to UL94 V-0
Air interface	approx. 7cm²
Dimensions	ϕ 65.5×30.5mm
Operating / Storage temperature	-45 to+70°C(-49to+158°F)
Art. No.	DA 084
Description	mount pressure compensation device
Protection type	IP45
1 packing unit	2 pieces
Weight	31g/pieces

Installation

Make cut-out ϕ 37^{-1}mm in enclosure wall and mount pressure compensation device with nut. Please make sure that the sealing gasket is put in place on the outer side panel of the enclosure. For optimal pressure compensation we recommend to use two devices on opposite sides towards the top of the enclosure.



Art. No.	Protection type	1 packing unit	Weight (approx.)
08400.0-04	IP55	2 pieces	62g (31g/piece)

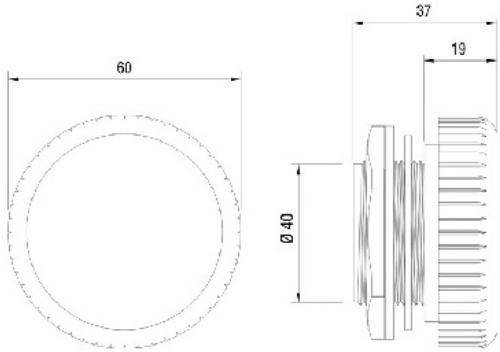
- High degree of protection
- Easy to install
- Waterproof membrane

Pressure differentials in enclosures with a high degree of protection are a result of internal and external temperature changes. In the case of negative pressure or partical vacuum, dust and humidity can enter the enclosure through the door seal. When the air inside the enclosure cools down, condensation may occur because the humidity cannot escape the enclosure. The easy-to-install pressure compensation device DA 284 provides compensation of pressure at a protection degree of IP66. Even with a slight overpressure, a waterproof membrane inside the plug allows the humidity to escape whilst blocking water and dirt from entering the enclosure.

Mounting	thread M40 x 1.5 with nut
Torque	5Nm (max. 10Nm)
Depth in enclosure	approx. 16mm
Sealing	sealing gasket NBR
Filter	waterproof membrane
Air permeability	1200l/h at a pressure difference of min. 70mbar
Dimensions	Ø 60 x 37mm
Fitting position	variable
Operating/Storage temperature	-35 to +70°C (-31 to +158°F)

Installation

Make cut-out Ø 40.5+0,5mm in enclosure wall and mount pressure compensation device with nut. Please make sure that the sealing gasket is put in place on the outer side panel of the enclosure. For optimal pressure compensation we recommend to use two devices on opposite sides towards the top of the enclosure.



Art. No.	Protection type	1 packing unit	Weight (approx.)
28400.0-00	IP66/IPX9K	2 pieces	90g (45g/piece)