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Products Manual

Thermostat & Heater
温控器、加热器选型手册



To create products
that deliver happiness to everyone

—— 铸造充满幸福的产品 ——

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Deliver happiness to everyone

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关于斯普威尔

SAIPWELL ELEC.



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Us.

斯普威尔电气是赛普电气集团旗下的电气公司，是全球箱体领域的引领者。主要业务涉及电气机柜、IT机柜、成套电器和新能源产品等核心领域。自2006年成立以来，一直助力产品的提质升级，传递安全、智能和幸福的价值理念。

斯普威尔电气引进国外资深管理与经验丰富的专业人事，以严谨的管理、有创意的研发团队、先进的营销理念，在传统产品的基础上创造和发展了更具前感、设计感和良好性价比的产品。

斯普威尔电气设有3大营销公司，分别在上海宝山、广州增城、温州瓯江口；4大生产基地，分布在浙江温州、浙江乐清、浙江丽水、山东烟台；并拥有超过100家的代理和遍布全球的销售网络。

提供产品，更提供智慧。斯普威尔与多家国际化公司建立了良好的长期合作伙伴关系，并一如既往地坚持“合作发展，共同提高”的服务宗旨，以真诚的合作态度来最大程度地满足客户的需求，助力电气行业实现可持续发展的期望，确立全球市场的领先地位。

Saipwell Electricity is a subsidiary of Saip Electric Group and is a leader in the global enclosure market. Its main business involves the manufacturing of electrical and IT enclosures, assembly of whole electrical switchgear systems and development of enclosures for use in new energy solutions. Since our company's inception in 2006, we have been improving and upgrading the quality of our products as we work towards our goal of delivering happiness to our customers through their use of our safe and intelligent products.

Saipwell Electricity has been actively recruiting employees with management experience in both local and foreign companies. With this wealth of experience, creative marketing strategies and innovative R&D, we strive to create and develop more cutting-edge, cost-effective and well-designed products than their predecessors.

Saipwell Electricity has 3 authorized distributors in Baoshan (Shanghai), Zengcheng (Guangzhou), Oujiangkou (Wenzhou) and a total of 4 production sites in Wenzhou (Zhejiang), Yueqing (Zhejiang), Lishui (Zhejiang), Yantai (Shandong). We also have a global sales network of more than 100 agents supporting our customers worldwide.

We provide not just products, but also solutions to our customers. Saipwell has established good long-term partnerships with many international companies over the years. Together with our partners, we aim to achieve our mission of collective development and improvement by adopting a sincere attitude in meeting the needs of our customers; and in the process play a role in helping the Chinese electrical industry establish sustainable development and a leading position in the global electrical market.



BRAND STORY.

品牌故事

SAIPWELL ELEC.

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斯普威尔logo形似一只可爱灵动的海豚，用它的灵性与友好向世人传递着美好、快乐与幸福。

早在古希腊人们就很喜欢海豚，他们认为看到海豚在船周围的波浪中是一个好兆头。传说阿里翁曾被所乘船上的水手抢劫，被迫跳海，一只海豚被他的歌声打动，因而把他救上岸。直至今日，海豚这种大海里的精灵仍然深受全世界人民的喜爱，一直在人类文化中扮演着重要的角色。斯普威尔也有着海豚般的聪慧与友爱，在您最需要我们的时候为您提供最大的支持，用我们的灵感和智慧，用最靠谱的性格，成为您最真诚的伙伴。

The inspiration of our logo came from the cute-looking dolphin and its spirit of friendliness and ability to bring happiness to everyone around it.

Since ancient Greek times, dolphins are well-loved animals and it is thought to be a good sign if one sees them in the waves or waters. Legend has it that Arion was robbed by sailors in his boat and forced to jump into the sea. Moved by his singing, a dolphin rescued him to shore. Today, dolphins, the spirits of the sea, are loved by people all over the world and play an important role in human culture. Saipwell too, with a dolphin-like intelligence and friendship will provide you with the greatest support when you need it. Using our inspiration and knowledge, we hope to become your most reliable and sincere partner.

Vision.

公司愿景

SAIP WELL ELEC.

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“创领未来箱体”这一公司愿景恰恰反映了我们希望为世界带来积极的影响。斯普威尔拥有强大的研发设计能力，目前已拥有20余项箱体专利技术和著作权。最新落成的温州生产基地采用柔性钣金生产线（FMS），箱体的生产实现了自动上下料、自动切割、自动冲剪、机器人折弯、机器人焊接、交互式PU发泡和理光UV彩色打印。专注研发生产和科技投入，这是斯普威尔扎根行业发展恒久不变的基调，未来的每一步成长，我们都愿意与您共同参与，相濡以沫，携手并进。

Creating Enclosures of the Future. This enterprise vision reflects our desire to make a positive impact on the world. Saipwell has strong R&D and design capabilities and currently has more than 20 enclosure design trademarks and technology patents. Our newly completed Wenzhou production base is fitted with an automated flexible sheet metal production line (FMS). Through automatic loading and unloading, automatic punching and cutting, robot bending, robot welding, interactive PU foaming and Ricoh UV color printing, product precision and costs efficiencies are achieved.

A focus on R&D and technological investments will continue to be cornerstones of Saipwell's development. We look forward to you participating in every step of our growth and making progress together, hand in hand.



铸造充满幸福的产品

To create products that deliver happiness to everyone





Concept.

经营理念 

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商业原则
BUSINESS
PRINCIPLE

做简单的生意 简单地做生意
To conduct business in a simple
straightforward manner.

企业精神
CORPORATE
SPIRIT

耐心 细心
Patience Dedication

人生观
HUMAN
PRINCIPLE

客户至上 员工第一
Customers are our topmost priority,
followed by our employees and stakeholders

工作观
WORKING
PRINCIPLE

快乐工作 幸福生活
To work and live happily

产品观
PRODUCT
PRINCIPLE

文化电气 / 幸福电气 / 品质电气 / 信息电气 / 便捷电气
To manufacture quality, innovative products that bring
convenience to its users

Value

价值观



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平等——人人平等

拼搏——全力以赴，付出不亚于任何人的努力

创新——思想创新、产品创新、管理创新

信任——相信别人并敢于托付

感恩——活着就要感谢

利他——积善行，思利他

Equality – Everyone is equal

Fighting Spirit – Putting in the best effort in everything

Innovation – Innovative & creative product development and management

Trust – To trust and be trusted

Gratitude – Be grateful and appreciative

Altruism – Do good deeds and be considerate of others



Honor

斯普威尔的证书 +

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KTS 011(NO)

KTO 011(NC)

KTO 011/KTS 011

产品特性 Features

- 宽范围温度设置 Large setting range
- 小尺寸 Small size
- 安装简单 Simple to mount
- 灵敏度高 High switching performance

KTO 011: 温控器(常闭), 用于调控加热器。

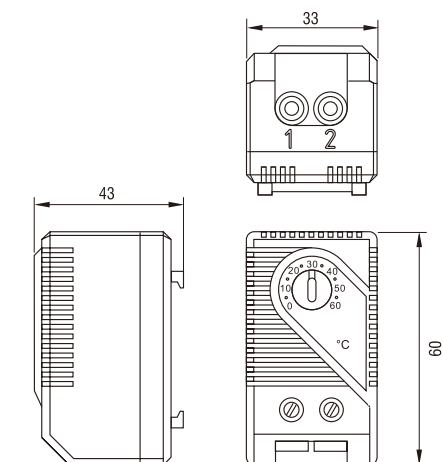
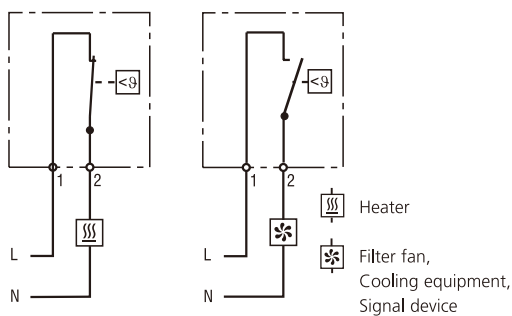
KTS 011: 温控器(常开), 当温度超出设定值时开关装置可以启动风机或信号装置。

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

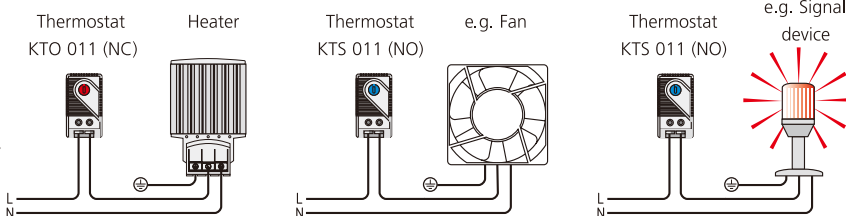
KTS 011: Thermostat (normally open), contact maker for regulating of filter fans and heat exchangers or for switching signal device when temperature limit has been exceeded.

技术参数 Technical Data

开关温差 Switch temperature difference	7K (±4K tolerance)
传感元件 Sensor element	感温材料 thermostatic bimetal
触点类型 Contact type	快速动作接点 snap-action contact
触点电阻 Contact resistance	< 10mΩ
使用寿命 Service life	> 100,000 cycles
开关最大容量 Max. Switching capacity	250VAC, 10 (2) A 120VAC, 15 (2) A DC 30W
EMC	acc. to EN 55014-1-2, EN 61000-3-2, EN 61000-3-3
接线方式 Connection	2极接线端子 2.5mm ² 导线 2-pole terminal, clamping torque 0.5Nm max.; rigid wire 2.5mm ² stranded wire (with wire end ferrule) 1.5mm ²
安装方式 Mounting	35mm DIN轨道 clip for 35mm DIN rail, EN60715 or for exit filter EF 118 Series
外壳材料 Casing	塑料 UL94标准 V-0防火等级, plastic according to UL94 V-0, light grey
外观尺寸 Dimensions	60 x 33 x 43mm
重量 Weight	约40克 approx. 40g
安装位置 Fitting position	任意 variable
操作/储存温度 Operating/Storage temperature	-20 to +80°C (-4 to +176°F) / -45 to +80°C (-49 to +176°F)
防护等级 Protection type	IP20

Thermostat
KTO 011 (NC)Thermostat
KTS 011 (NO)

接线示意图 Example of connection



接线示意图 Example of connection

设定范围 Setting range	订货代码 Art. No. Contact Breaker (NC)	订货代码 Art. No. Contact Breaker (NO)	产品证书 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
+32 to +140°F	01140.9-00	01141.9-00	CE
+14 to +122°F	01142.9-00	01143.9-00	CE



ZR 011

产品特性 Features

- 常开常闭一体化设计 NO and NC in one casing
- 温度独立控制 Separate adjustable temperatures
- 灵敏度高 High switching capacity
- 易操作 Terminals easily accessible
- 导轨安装 DIN rail mounted

加热散热两用型温控器；常闭用于调控加热器；常开用于调控风机或开关信号装置。

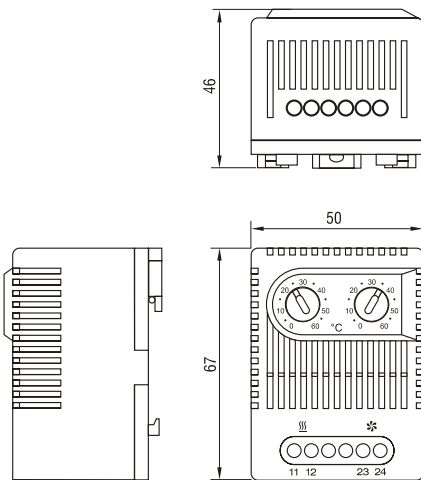
Two thermostats in one casing:

Thermostat (contact breaker, normally closed) for regulating heaters.

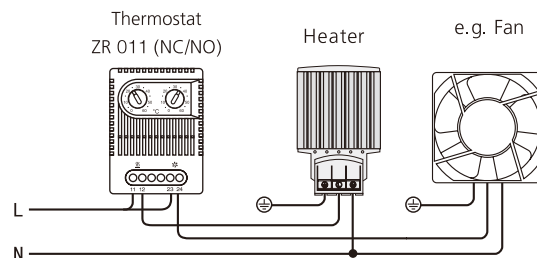
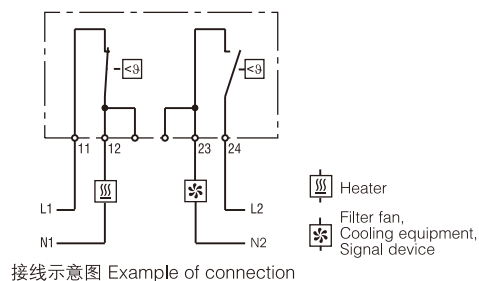
Thermostat (contact maker, normally open) for regulating filter fans and heat exchangers or switching signal devices when temperature limit has been exceeded. Heaters and cooling equipment can be switched independently from each other with a temperature offset as opposed to the usual change-over contacts.

技术参数 Technical Data

开关温差 Switch temperature difference	7K (±4K tolerance)
传感元件 Sensor element	感温材料 thermostatic bimetal
触点类型 Contact type	快速动作触点 snap-action contact
触点电阻 Contact resistance	< 10mΩ
使用寿命 Service life	> 100,000 cycles
开关最大容量 Max. Switching capacity	250VAC, 10 (2) A 120VAC, 15 (2) A DC 30W
EMC	acc. to EN 55014-1-2, EN 61000-3-2, EN 61000-3-3
接线方式 Connection	4极接线端子 2.5mm ² 导线 4-pole terminal, clamping torque 0.5Nm max.; rigid wire 2.5mm ² stranded wire (with wire end ferrule) 1.5mm ²
安装方式 Mounting	35mm DIN轨道 clip for 35mm DIN rail, EN60715 or for exit filter EF 118 Series
外壳材料 Casing	塑料 UL94标准 V-0 防火等级, plastic according to UL94 V-0, light grey
外观尺寸 Dimensions	67 x 50 x 46mm
重量 Weight	approx. 90g
安装位置 Installation position	任意 variable
操作/储存温度 Operating/Storage temperature	-20 to +80°C (-4 to +176°F) / -45 to +80°C (-49 to +176°F)
防护等级 Protection type	IP20



Thermostat
ZR 011 (NC/NO)



订货代码 Art. No.	设定范围 Setting range	设定范围 Setting range
01172.0-00	contact breaker, normally closed 0 to +60°C	contact maker, normally open 0 to +60°C
01172.0-01	contact breaker, normally closed +32 to +140°F	contact maker, normally open +32 to +140°F
01175.0-00	contact breaker, normally closed -10 to +50°C	contact maker, normally open +20 to +80°C
01175.0-01	contact breaker, normally closed +14 to +122°F	contact maker, normally open +68 to +176°F
01176.0-00*	contact maker, normally open 0 to +60°C	contact maker, normally open 0 to +60°C
01176.0-01*	contact maker, normally open +32 to +140°F	contact maker, normally open +32 to +140°F



FZK 021

产品特性 Features

- 可调节温度 Adjustable temperature
- 高分断能力 High switching capacity
- 低磁滞后 Small hysteresis
- 端子易接入 Terminals easily accessible
- 导轨安装 DIN rail mounted
- 转换接点 Change-over contact

机械式恒温器是用于控制加热器和冷风机或信号装置。

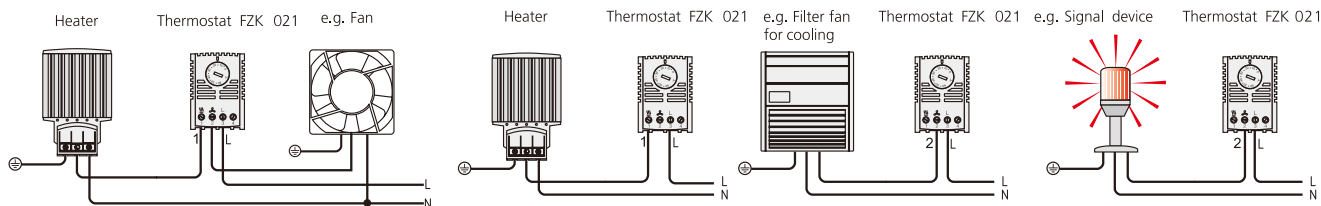
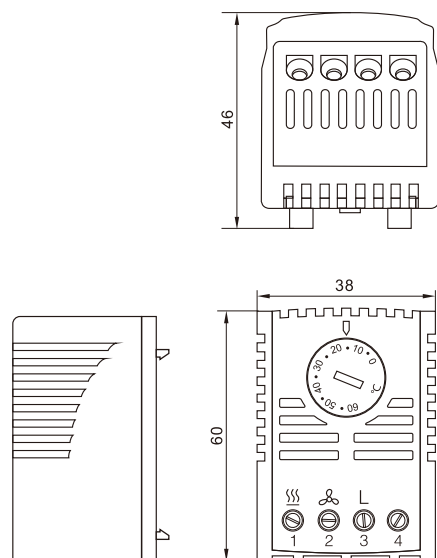
The mechanical thermostat is used for controlling heating and cooling equipment, filter fans or signal devices. The thermostat registers the surrounding air and can switch both inductive and resistive loads via snap-action contact.

技术参数 Technical Data

开关温差 Switch temperature difference	4K ($\pm 1.5K$ tolerance)
传感元件 Sensor element	感温材料 Thermostatic bimetal
触点类型 Contact type	快速动作接点 Snap-action contact
触点电阻 Contact resistance	$< 10m\Omega$
使用寿命 Service life	$> 100,000$ cycles
开关最大容量 Max. Switching capacity	250VAC, 10 (4) A 120VAC, 10 (4) A DC 30W
最大开关容量 NC Max. Switching capacity, NC	250VAC, 5 (2) A 120VAC, 5 (2) A DC 30W
EMC	acc. To EN 55014-1-2, EN 61000-3-2, EN 61000-3-3
接线方式 Connection	4极接线端子 2.5mm ² 导线 4-pole terminal, damping torque 0.5Nm max.; rigid wire 2.5mm ² stranded wire (with wire end ferrule) 1.5mm ²
安装方式 Mounting	35mm DIN 轨道 clip for 35mm DIN rail, EN60715 or for exit filter EF 118 Series
外壳材料 Casing	塑料 UL94 标准 V-0 防火等级, plastic according to UL94 V-0, light grey
外观尺寸 Dimensions	67 x 50 x 38mm
重量 Weight	Approx. 0.10kg
安装方式 Fitting position	任意 variable
操作/储存温度 Operating/Storage temperature	-20 to +80°C (-4 to +176°F) / -45 to +80°C (-49 to +176°F)
防护等级 Protection type	IP20

*连接端子 N (RF 加热电阻器) 可反馈热量信号, 从而减少温差大约 0.5K。

*Connecting terminal "N" (RF heating resistor) causes the thermal feedback to work and so reduces the switch temperature difference to approx. 0.5K.



接线示意图 Example of connection

订货代码 Art. No.	操作电压 Operating voltage	设定范围 Setting range
01170.0-00	230VAC	+5 to +60°C
01170.0-01	230VAC	+40 to +140°F
01170.0-02	230VAC	-20 to +30°C
01170.9-00	120VAC	+40 to +140°F
01170.9-01	120VAC	+5 to +60°F



ETF 012

产品特性 Features

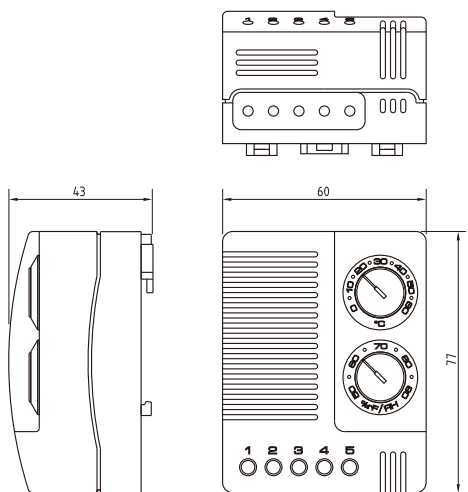
- 温度和湿度都可调节 Temperature and humidity adjustable
- LED显示 Optical operating display (LED)
- 高分断能力 High switching capacity
- 导轨安装 DIN rail mounted

电子式温湿度传感器能根据环境温度与相对湿度来控制加热器和风机的打开与关闭。

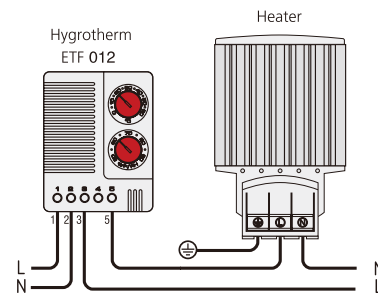
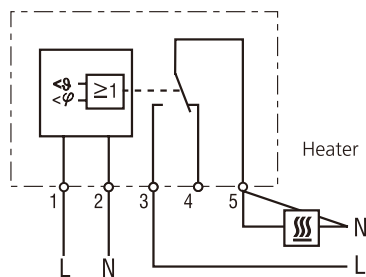
Electronic temperature and humidity sensor can control the on & off of the heater and fan according to ambient temperature and relative humidity.

技术参数 Technical Data

开关温差 Switch temperature difference	2K (±1K tolerance) at 25 °/77°F (50% RH)	
开关湿度差 Switch difference (humidity)	4% RH (±1% tolerance) at 25°C /77° F (50% RH)	
反应时间 Reaction time (humidity)	approx. 5 sec.	
触点类型 Contact type	转换触点 change-over contact (relay)	
触点电阻 Contact resistance	< 10mΩ	
使用寿命 Service life	NC: > 50,000 cycles NO: > 100,000 cycles	
最大开关容量 Max. Switching capacity (Relay output)	NC: 240VAC, 6 (1) A NO: 240VAC, 8 (1.6) A NC: 120VAC, 6 (1) A NO: 120VAC, 8 (1.6) A 24VDC, 4A	
EMC	acc. to EN 55014-1-2, EN 61000-3-2, EN 61000-3-3	
指示灯 Optical indicator	LED	
接线方式 Connection	5极接线端子 2.5mm ² 导线 5-pole terminal, clamping torque 0.5Nm max.; rigid wire 2.5mm ² stranded wire (with wire end ferrule) 1.5mm ²	
安装方式 Mounting	35mm DIN 轨道 clip for 35mm DIN rail, EN6075 or for exit filter EF 118 Series	
外壳材料 Casing	塑料 UL94标准 V-0 防火等级, plastic according to UL94 V-0, light grey	
外观尺寸 Dimensions	77 x 60 x 43mm	
重量 Weight	approx. 0.20kg	
安装位置 Installation position	任意 vertical	
操作/储存温度 Operating/Storage temperature	0 to +60°C (+32 to +140°F) / -20 to +80°C (-4 to +176°F)	
防护等级 Protection type	IP20	



Connection diagram



接线示意图 Example of connection

订货代码 Art. No.	操作电压 Operating voltage	温度设定范围 Setting range temperature	湿度设定范围 Setting range humidity
S1230.0-00	230VAC, 50/60Hz	0 to +60 °C	50 to 90% RH
S1230.9-00	120VAC, 50/60Hz	+32 to +140 °F	50 to 90% RH
S1230.9-01	120VAC, 50/60Hz	0 to +60 °C	50 to 90% RH



ETR 011

产品特性 Features

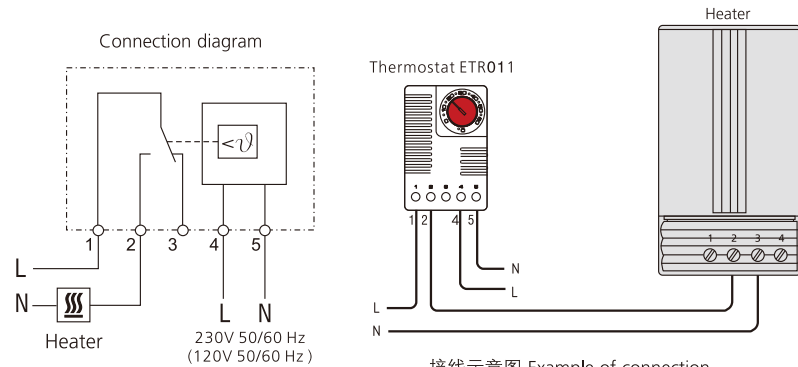
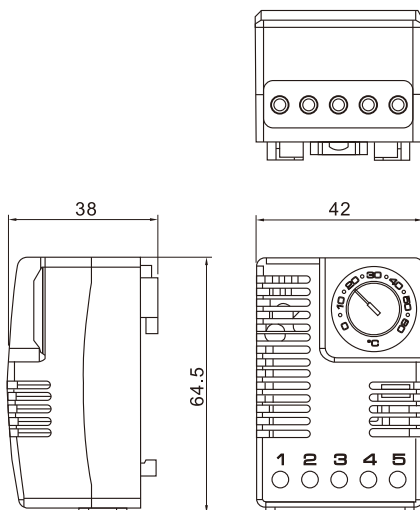
- 可调节温度 Adjustable temperature
- LED显示 Optical operating display (LED)
- 高分断能力 High switching capacity
- 导轨安装 DIN rail mounted

电子式温度传感器能根据环境温度来控制加热器的打开与关闭。

Electronic temperature sensors can control the on & off of heater according to the ambient temperature.

技术参数 Technical Data

开关温差 Switch temperature difference	2K (± 1K tolerance) at 25°C/77° F (50% RH)	
反应时间 Reaction time (humidity)	approx. 5 sec.	
触点类型 Contact type	转换触点 change-over contact (relay)	
触点电阻 Contact resistance	< 10mΩ	
使用寿命 Service life	NC: > 50,000 cycles NO: > 100,000 cycles	
最大开关容量 Max. Switching capacity (Relay output)	NC: 240VAC, 6 (1) A NO: 240VAC, 8 (1.6) A NC: 120VAC, 6 (1) A NO: 120VAC, 8 (1.6) A 24VDC, 4A	
EMC	acc. to EN 55014-1-2, EN 61000-3-2, EN 61000-3-3	
指示灯 Optical indicator	LED	
接线方式 Connection	5极接线端子 2.5mm ² 导线 5-pole terminal clamping torque 0.5Nm max.: rigid wire 2.5mm ² stranded wire (with wire end ferrule) 1.5mm ²	
安装方式 Mounting	35mm DIN 轨道 clip for 35mm DIN rail, EN6075 or for exit filter EF 118 Series	
外壳材料 Casing	塑料 UL94标准 V-0 防火等级, plastic according to UL94 V-0, light grey	
外观尺寸 Dimensions	64.5 x 42 x 38mm	
重量 Weight	approx. 70g	
安装位置 Installation position	任意 vertical	
操作/储存温度 Operating/Storage temperature	0 to +60°C (+32 to +140°F) / -20 to +80°C (-4 to +176°F)	
防护等级 Protection type	IP20	



订货代码 Art. No.	操作电压 Operating voltage	温度设定范围 Setting range temperature	湿度设定范围 Setting range humidity
01131.0-00	230VAC, 50/60Hz	-20 to +60 °C	CSA-US (VDE submitted)
01131.9-00	120VAC, 50/60Hz	-4 to +140 °F	140°F CSA-US



FZK 011

产品特性 Features

- 可调节温度 Adjustable temperature
- 低磁滞 Small hysteresis
- 导轨安装 DIN rail mounted
- 高分断能力 High switching capacity
- 端子易接入 Terminals easily accessible
- 转换接点 Change-over contact

电子式恒温器是用于控制加热器和冷风机或信号装置。

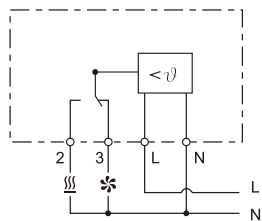
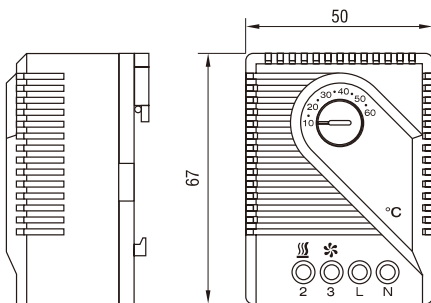
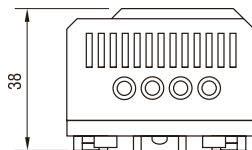
The electronic thermostat is used for controlling heating and cooling equipment, filter fans or signal devices. The thermostat registers the surrounding air and can switch both inductive and resistive loads via snap-action contact.

技术参数 Technical Data

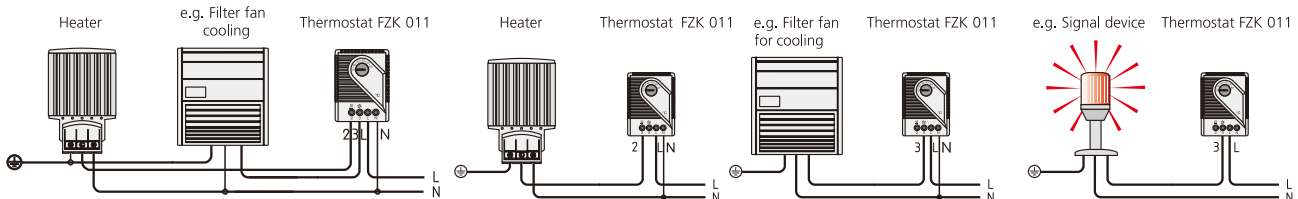
开关温差 Switch temperature difference	4K (± 1.5K tolerance)
传感元件 Sensor element	感温材料 Thermostatic bimetal
触点类型 Contact type	快速动作接点 snap-action contact
触点电阻 Contact resistance	< 10mΩ
使用寿命 Service life	> 100,000 cycles
开关最大容量 Max. Switching capacity	250VAC, 10 (4) A 120VAC, 10 (4) A DC 30W
最大开关容量 NC Max. Switching capacity, NC	250VAC, 5 (2) A 120VAC, 5 (2) A DC 30W
EMC	Acc. To EN 55014-1-2, EN 61000-3-2, EN 61000-3-3
接线方式 Connection	4极接线端子 2.5mm ² 导线 4-pole terminal, damping torque 0.5Nm max.; rigid wire 2.5mm ² stranded wire (with wire end ferrule) 1.5mm ²
安装方式 Mounting	35mm DIN 轨道 clip for 35mm DIN rail, EN60715 or for exit filter EF 118 Series
外壳材料 Casing	塑料 UL94标准 V-0 防火等级, plastic according to UL94 V-0, light grey
外观尺寸 Dimensions	67 x 50 x 38mm
重量 Weight	Approx. 0.10kg
安装位置 Installation position	任意 variable
操作/储存温度 Operating/Storage temperature	-20 to +80°C (-4 to +176°F) / -45 to +80°C (-49 to +176°F)
防护等级 Protection type	IP20

*连接端子 N (RF 加热电阻器) 可反馈热量信号, 从而减少温差大约 0.5K。

*Connecting terminal "N" (RF heating resistor) causes the thermal feedback to work and so reduces the switch temperature difference to approx. 0.5K.



Connection diagram



接线示意图 Example of connection

订货代码 Art. No.	操作电压 Operating voltage	设定范围 Setting range
01170.0-00	230VAC	+5 to +60°C
01170.0-01	230VAC	+40 to +140°F
01170.0-02	230VAC	-20 to +30°C
01170.9-00	120VAC	+40 to +140°F
01170.9-01	120VAC	+5 to +60°C



ET 011 24VDC

产品特性 Features

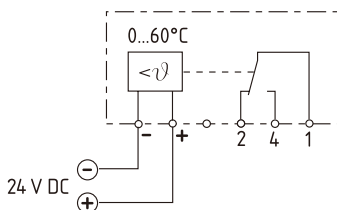
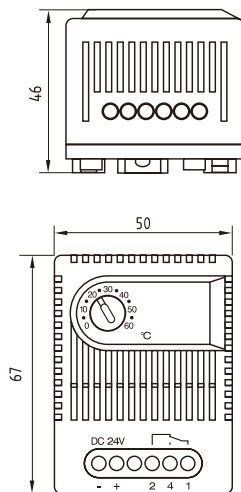
- 高直流分断能力 High DC breaking capacity
- 低滞后 Low hysteresis
- 可调整温度 Adjustable temperature
- 切换接点 Change-over contact
- 导轨安装 DIN rail mounted

直流24V高性能电子温控器，可以调控加热器散热以及信号装置。与机械式温控器相比，ET011有低滞后性，使切换点和设置精度更加精确。

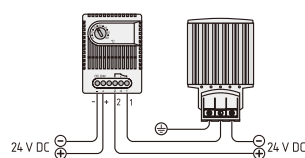
Electronic thermostat for regulating high performance DC 24V equipment. Heating or cooling appliances as well as signal devices can be switched via the potential free change-over contact. In comparison to mechanical thermostats, the ET 011 has a low hysteresis making the switching point and setting accuracy more precise.

技术参数 Technical Data

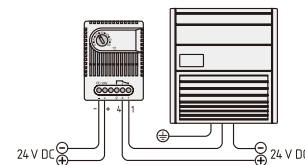
开关温差 Switch temperature difference	Approx. 3K
传感器元件 Sensor element	PTC
触点类型 Contact type	切换型 Change-over
触点电阻 Contact resistance	< 10mΩ
使用寿命 Service life	> 100,000 cycles
最大开关容量 Max. switching capacity	28VDC, 16A
EMC	Acc. To EN 55014-1-2, EN 61000-3-2, EN 61000-3-3
接线方式 Connection	5极接线端子 2.5mm ² 导线 5-pole terminal, clamping torque 0.5Nm max.: rigid wire 2.5mm ² stranded wire (with wire end ferrule) 1.5mm ²
安装方式 Mounting	35mm DIN 轨道 clip for 35mm DIN rail, EN60715 or for exit filter EF 118 Series
外壳材料 Casing	塑料 UL94标准 V-0 防火等级, plastic according to UL94 V-0, light grey
外观尺寸 Dimensions	67 x 50 x 46mm
重量 Weight	Approx. 80g
安装位置 Installation position	任意 variable
操作/储存温度 Operating/Storage temperature	0 to +60°C (32 to +140°F) / -45 to +80°C (-49 to +176°F)
防护等级 Protection type	IP20



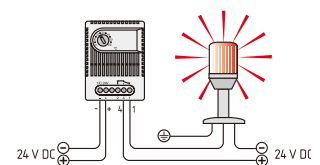
Thermostat ET 011 Heater



Thermostat ET 011 e.g. Filter fan for cooling



Thermostat ET 011 e.g. Signal device



接线示意图 Example of connection

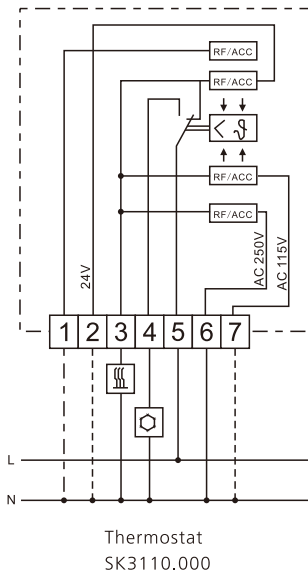
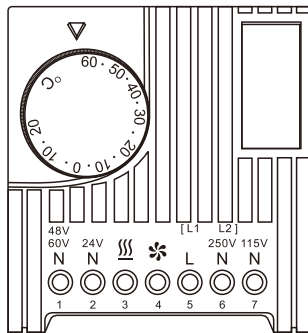
订货代码 Art. No.	操作电压 Operating voltage	温度设定范围 Setting range
01190.0-00	24VDC (20-28VDC)	0 to +60°C

SK3110.000

产品特性 Features

主要用于控制风机、加热器和转换器，也可以用于监控配电柜内的温度。

Especially used for controlling fan filter, heater and exchanger,also could be monitoring the electric cabinet inner temperature when working as signal arcuser.



接线示意图 Example of connection

参数说明 Parameter Clarification

- ◇温度调节范围：-20℃到+60℃
- ◇重量：105克
- ◇外观尺寸：70×70×33.5mm
- ◇使双金属传感器热灵敏度设置反馈热。
- ◇接触点方案：单开关接触点为瞬时开关组件
- ◇允许接触点荷载
- ◇Adjusting range:-20℃ to +60℃
- ◇Weight:105g
- ◇Size :70 × 70 × 33.5mm
- ◇Make bimetal sensor as heat sensitivity set to feedback of heat.
- ◇Contact point scheme: single switch over contact point as instant switch component
- ◇allowed load of contact point

KL5-3

AC10(4)A

DC=30W

KL5-4(冷却)(Cooling)

AC5(4)DA

DC=30W

(D) =在COS φ = 0.6敏感性负

- ◇开关误差 1K±0.8K
- ◇宽电压范围, 24V~230V
- ◇连接方便, 端子能够从外部用螺丝固定连接.
- ◇安装简单, 它能够垂直或水平安装在35mm导轨上.
- ◇Switch discrepancy" 1K±0.8K
- ◇Voltage scope is wide, any type could be used from 24V to 230V
- ◇Time-saving connection, terminal block could be installed with screw from outside
- ◇Easy installation, it could be installed to 35mm din rail vertically or horizontally



REX 011 15°C, 25°C

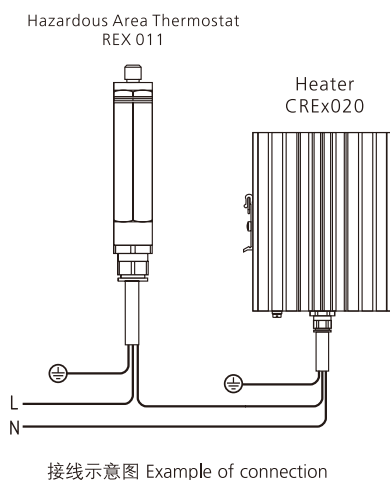
产品特性 Features

- 紧凑型设计 Compact design
- 可设置温度 Set temperature
- 高分断能力 High switching capacity

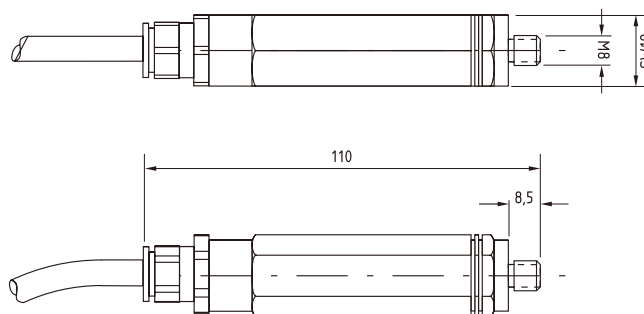
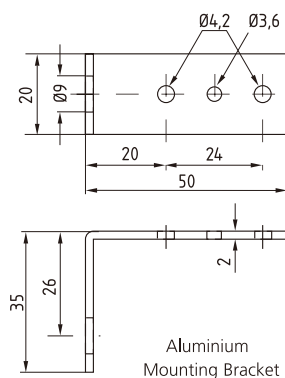
小型机械式防爆温控器用于调节温度和控制热量。例如在传送装备中,控制面板和测量仪器被放置在防爆区域。这种特殊的监控器体积小,温度精度高(误差小)、寿命长,可直接控制加热器。

Compact small mechanical thermostat for temperature regulation and monitoring of heaters, for example in transmitter cabinets, control panels and measuring equipment which are deployed in areas with explosion hazard. The special switch construction enables high response accuracy, small switch temperature difference and a very long service life. High switching performance allows direct control of the heaters.

技术参数 Technical Data



Explosion proof according to EN	LCIE (Laboratoire Central des Industries Electriques)
符合的认证Conformity certificate	01 ATEX 6074/02, LCIE N° 06 ATEX Q8011, IECEx LCI 07. 0021
传感器元件Sensor element	感温材料thermostatic bimetal
触点方式(1P)Contact type (1-pole)	打开控制温度上升opens with rising temperature
使用寿命Service life	> 100,000 cycles
最大开关容量Max. Switching capacity	250VAC, 4 (1) A
接线方式Connection	SI HF – JZ 3 x 0.75mm ² length 1m
安装方式Mounting	安装支架带M8螺母mounting bracket with nut M8 (see illustration)
外壳材料Casing	铝aluminium, black anodised
外观尺寸Dimensions	length 110mm
重量Weight	approx. 0.20kg
安装位置Installation position	任选variable
操作/储存环境Operating/Storage temperature	-20 to +40°C (-4 to +104°F) / -45 to +70°C (-49 to +158°F)
防护等级Protection type/Protection class	IP65 / I (earthed)



接线示意图 Example of connection

订货代码	Ex保护等级	开关温度	开启温度差
Art. No.	Ex protection type	Switch-off temperature	Switch temperature difference
01180.0-00	 d IIC T6 - Ex tD A21 IP6X T85°C	+15°C (± 4K tolerance)	4K (± 1K tolerance)
01181.0-00	 d IIC T6 - Ex tD A21 IP6X T85°C	+25°C (± 4K tolerance)	4K (± 1K tolerance)

EFR 012

产品特性 Features

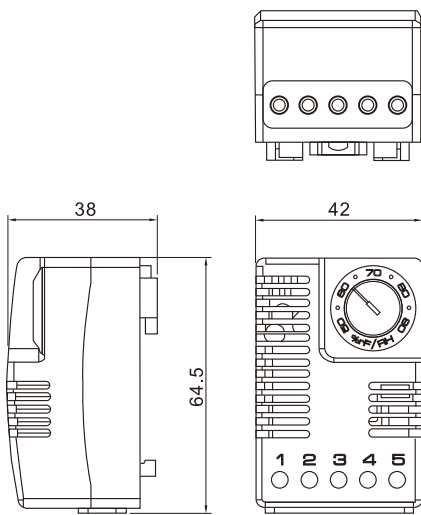
- 高分断能力 High switching capacity
- 灵敏度高 High switching capacity
- 可调节湿度 Adjustable humidity
- 切换接点 Change-over contact
- 导轨安装 DIN rail mounted



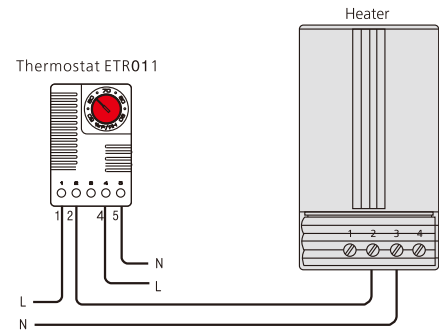
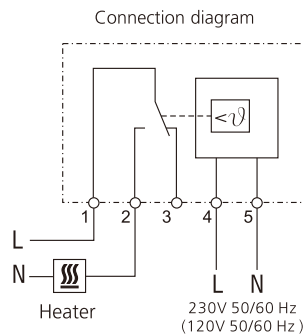
当配电箱内相对湿度超出65%时，EFR012可控制加热器加热，以减少水份凝结和有效防止腐蚀。与机械式温控器相比，EFR012有低滞后性，使切换点和设置精度更加精确。

When the relative humidity in the power distribution box exceeds 65%, EFR012 will control the heater heating, in order to reduce the moisture condensation and effectively prevent corrosion. Compared with mechanical thermostat, EFR012 with low hysteresis, making it's switching point and setting accuracy more precise.

技术参数 Technical Data



开关湿差 Switch temperature difference	5% RH(± 3% RH tolerance) at 25°C
传感器元件 Sensor element	PTC
触点类型 Contact type	切换型 Change-over
触点电阻 Contact resistance	< 10mΩ
使用寿命 Service life	> 100,000 cycles
最大开关容量 Max. switching capacity	28VDC, 16A
EMC	Acc. To EN 55014-1-2, EN 61000-3-2, EN 61000-3-3
接线方式 Connection	5极接线端子 2.5mm ² 导线 5-pole terminal, clamping torque 0.5Nm max.: rigid wire 2.5mm ² stranded wire (with wire end ferrule) 1.5mm ²
安装方式 Mounting	35mm DIN 轨道 clip for 35mm DIN rail, EN60715 or for exit filter EF 118 Series
外壳材料 Casing	塑料 UL94标准 V-0 防火等级, plastic according to UL94 V-0, light grey
外观尺寸 Dimensions	64.5 x 42 x 38mm
重量 Weight	Approx. 80g
安装位置 Installation position	任意 variable
操作/储存温度 Operating/Storage temperature	0 to +60°C (32 to +140°F) / -45 to +80°C (-49 to +176°F)
防护等级 Protection type	IP20



接线示意图 Example of connection

订货代码 Art. No.	操作电压 Operating voltage	湿度设定范围 Setting range humidity
01245.0-00	230VAC, 50/60Hz	40 to 90% RH VDE + UL intended
01246.0-00	230VAC, 50/60Hz	65% RH pre-set VDE + UL intended
01245.9-00	120VAC, 50/60Hz	40 to 90% RH UL intended
01246.9-00	120VAC, 50/60Hz	65% RH pre-set UL intended



MFR 012

产品特性 Features

- 相对湿度调节 Adjustable relative humidity
- 转换触点 Change-over contact
- 灵敏度高 High switching capacity
- 易操作 Easily accessible terminals
- 导轨安装 DIN rail mounted

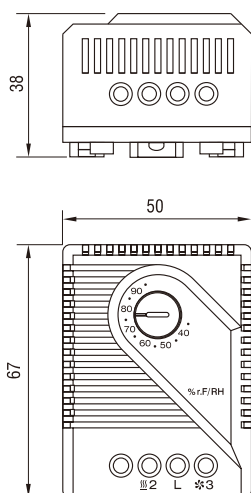
当配电箱内相对湿度超出65%时，MFR012可控制加热器加热，以减少水份凝结和有效防止腐蚀。

The electromechanical hygrostat MFR 012 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 is effectively prevented.

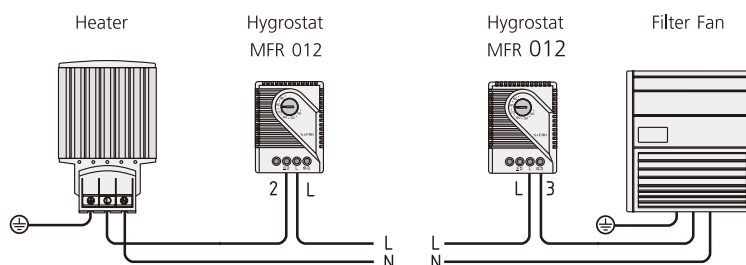
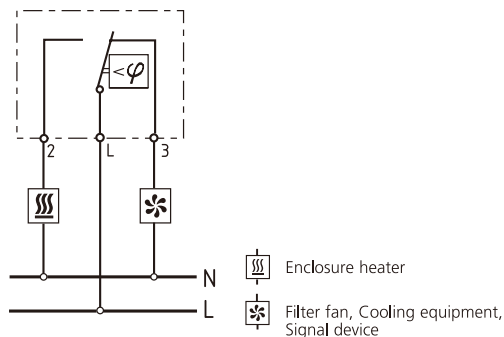
技术参数 Technical Data

开关湿度差 Switch difference	4% RH (±3% tolerance)
气流速度 Permissible air velocity	15m/sec
触点类型 Contact type	转换触点 change-over contact
触点电阻 Contact resistance	< 10mΩ
使用寿命 Service life	> 100,000 cycles
开关最小容量 Min. Switching capacity	20V AC/DC, 100mA
开关最大容量 Max. Switching capacity	250VAC, 5 (1) A DC 20W
EMC	acc. to EN 55014-1-2, EN 61000-3-2, EN 61000-3-3
接线方式 Connection	3极接线端子 2.5mm ² 导线 3-pole terminal, damping torque 0.5Nm max.: rigid wire 2.5mm ² stranded wire (with wire end ferrule) 1.5mm ²
安装方式 Mounting	35mm DIN 轨道 dip for 35mm DIN rail, EN60715 or for exit filter EF 118 Series
外壳材料 Casing	塑料 UL94标准 V-0 防火等级, plastic according to UL94 V-0, light grey
安装尺寸 Dimensions	67 x 50 x 38mm
重量 Weight	approx. 60g
安装位置 Installation position	任意 variable
操作/储存温度 Operating/Storage temperature	-20 to +80°C (-4 to +176°F) / -45 to +80°C (-49 to +176°F)
防护等级 Protection type	IP20

*at 50% RH



Connection diagram



接线示意图 Example of connection

订货代码

Art. No.

01220.0-00

湿度设定范围

Setting range

35 to 95% RH

LC 013/LCF 013

产品特性 Features

- 机械式开关触点Mechanical switch contact
- 应用广泛Versatile fields of application
- 体积小Small size
- 易安装Easy to connect

风感器是用于指示风机或过滤器的风量损失。

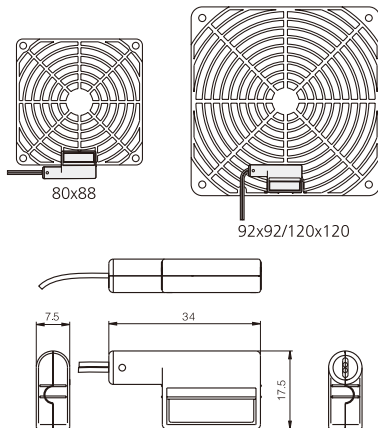
Air flow sensor is used to indicate the air loss of a fan or fan filter.

技术参数 Technical Data

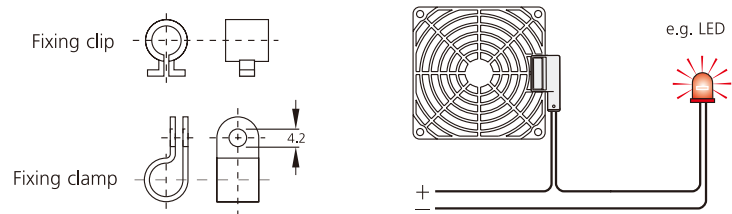
触点类型Contact type	磁触点Reed / magnet contact
常闭Normally Closed (NC)	空气流动时开关触点打开Switch contact open when air is flowing
常开Normally Open (NO)	空气流动时开关触点关闭Switch contact closed when air is flowing
最大开关电压Max. switching voltage	NC: 240VDC (UL), 240V AC/DC (VDE) / NO: 60VDC
最大开关电流Max. switching current	NC: DC 500mA / NO: DC 170mA
最大切换容量Max. switching capacity	10W (电阻负载resistive load)
风速开关切换值 Switching threshold of airflow velocity	> 2.5m/s (hysteresis: > 1m/s)
最大风速Max. airflow velocity	50m/s
触点电阻Contact resistance	< 370mΩ (with wire)
最大空气湿度Max. air humidity	70% RH (not precipitating)
使用寿命Service life	> 100,000 cycles
接线方式Connection	2条AWG26电线长度500mm, NC为黑线, NO为蓝线 2 x single strand AWG 26, length 500mm, tip of stranded wire 5mm stripped and tinned (NC: black, NO: blue)
安装方式Mounting	卡入式 alternatively integrated in protective grille, mounting clamp or mounting clip
外壳材料Casing	塑料UL94-HB黑色plastic according to UL94-HB, black
安装位置Installation position	卡入风机网罩内bidirectional tab perpendicular to airflow
操作/储存温度Operating/Storage temperature	-20 to +50°C (-4 to +122°F) / +20 to +80°C (-4 to +176°F)
防护等级Protection type	IP20

风感器配有保护罩

Airflow monitor integrated in protective grille



Connection example

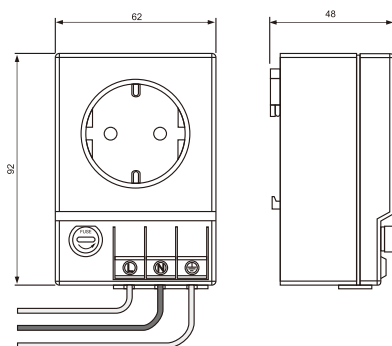


接线示意图 Example of connection

描述 Description	订货代码 Art. No.(NC)	订货代码 Art. No.(NO)	尺寸 Dimensions	重量 Weight(approx.)
Airflow monitor with mounting clamp and mounting clip LC 013	01300.0-00	01300.1-00	34 x 17.5 x 7.5mm	5g
Airflow monitor integrated in protective grille (plastic) LCF 013	01301.0-00	01301.1-00	80 x 88 x 10.5mm	20g
	01302.0-00	01302.1-00	92 x 92 x 10mm	20g
	01303.0-00	01303.1-00	120 x 120 x 10mm	30g



配件



Connections from mains

SD 035

产品特性 Features

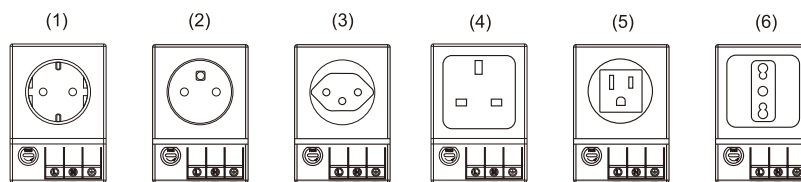
- 快速连接 Quickly connected
- 可带或不带保险丝 Available with or without fuse
- 固定夹 Clip fixing

导轨安装的电源插座，可以快速安装和连接到配电箱，允许使用辅助产品，如手提灯，测量装置，电烙铁等。该产品适合带保险丝及不带保险丝使用。符合大部分国家及地区插座标准。

The DIN rail mounted electrical socket can be quickly fitted and connected in enclosures allowing the use of auxiliary products such as hand lamps, measuring devices, soldering irons etc. The unit is available with and without fuse and in many world socket standards.

技术参数 Technical Data

连接 Connection	3 x 压力钳夹刚性导线 0.5-2.5mm ² 3 x pressure clamps for stranded and rigid wire 0.5-2.5mm ²
安装 Mounting	夹为35mm的导轨, EN 60715 clip for 35mm DIN rail, EN 60715
套管 Casing	塑料依据 Plastic according to UL94 v-O, 浅灰色 light grey
尺寸 Dimensions	92x62x48mm
重量 Weight	大约 approx. 0.2kg
安装方式 Fitting position	可变的 variable
工作/储存温度 Operating/Storage temperature	-45 to +70° C (-49 to +158° F)
工作/储存湿度 Operating/Storage humidity	最大 90%RH (非冷凝) Max 90%RH (non-condensing)
保护类型/防护等级 Protection type/Protection class	IP20 / I (earched)



订货代码 Art. No.	操作电压 Operating voltage	插座 Socket	模式 Model	额定电流 Nominal Current
03500.0-00	250VAC	Germany/Russia(1)	with fuse* 带熔丝	6.3A
03500.0-01	250VAC	Germany/Russia(1)	without fuse 不带熔丝	16.0A
03501.0-00	250VAC	F/PL/CZ/SK(2)	with fuse* 带熔丝	6.3A
03501.0-01	250VAC	F/PL/CZ/SK(2)	without fuse 不带熔丝	16.0A
03502.0-00	250VAC	Switzerland(3)	with fuse* 带熔丝	6.3A
03502.0-01	250VAC	Switzerland(3)	without fuse 不带熔丝	10.0A
03503.0-00	250VAC	UK/Ireland(4)	with fuse* 带熔丝	6.3A
03503.0-01	250VAC	UK/Ireland(4)	without fuse 不带熔丝	13.0A
03504.0-00	125VAC	USA/Canada(5)	with fuse* 带熔丝	6.3A
03504.0-01	125VAC	USA/Canada(5)	without fuse 不带熔丝	15.0A
03505.0-00	250VAC	Italy(6)	with fuse* 带熔丝	6.3A
03505.0-01	250VAC	Italy(6)	without fuse 不带熔丝	16.0A

*fuse 熔丝 Φ5x20mm

DA 084

产品特性 Features

■ 高度保护 High degree of protection

■ 易于安装 Easy to install

- ① 该装置为电气配电柜，提供一个安全的有气密保护性的环境。
- ② 密闭的箱子当中，因为昼夜交替时温度的变化而引起箱内气压变化。
- ③ 避免灰尘及湿气的吸入。
- ④ DA084气压密封装置允许气压在允许的范围内发生变化。
- ⑤ 因为气密装置有IP45高度保护能力，所以当我们把它安装在任何箱子里，都不会影响箱体的功能。

① It has become more and more important to provide a protected enclosure environment for valuable and crucial electrical and electronic components.

② In a tightly closed enclosure, pressure differentials can occur during extreme temperature variations, such as day/night operation.

③ When this occurs, the risk of dust and humidity being absorbed into the control panel increases dramatically.

④ The specially designed pressure compensation plug DA 084 permits a controlled change in pressure.

⑤ It can be installed easily in any enclosure. Because of the pressure compensation plug's high degree of protection (IP45), the protection type of the enclosure will not be affected.



DA084



Photo: Inside view

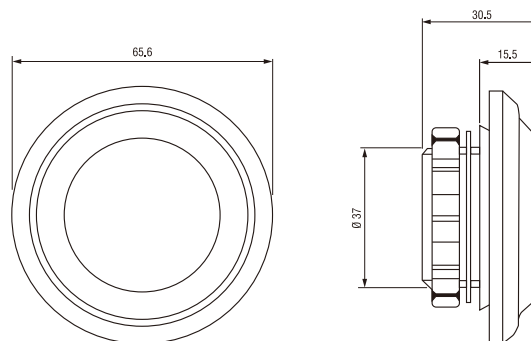
技术参数 Technical Data

安装方式 Mounting	PG 29 thread with union nut
材料 Material	UL94标准材料 V-0防火等级塑料 according to UL94 V-0
与空气的接触面积 Air interface	approx. 7cm ²
外观尺寸 Dimensions	Φ 65.5 x 30.5mm
安装位置 Installation position	任意 variable
操作/储存温度 Operating/Storage temperature	-45 to +70°C (-49 to +158°F)

安装 Installation

在箱壁上开一个直径为37mm的孔，用螺丝钉把气密装置安装上去。请确保密封圈放在箱板的外侧，为了达到最佳密封效果，建议在箱子两侧各安装一个。

Make cut-out Φ37 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.



接线示意图 Example of connection

订货代码 Art. No.	型号 Model	保护等级 Protection type	包装 Packing unit	重量 Weight (approx.)
08400.0-00	without gasket	IP45	2 pieces	62g (31g/piece)
08400.0-04	with gasket	IP55	2 pieces	62g (31g/piece)

DA 284

产品特性 Features

- 高防护等级 High degree of protection
- 防水膜 Waterproof membrane
- 便于安装 Easy to install

内部和外部的温度变化导致防护配电箱具有高度压力差。在负压或真空环境下，灰尘和湿气通过密封门进入配电箱。当外壳内的空气冷却下来，由于湿气无法逃出外壳，可能会出现冷凝。易于安装的压力补偿装置DA284在IP66防护等级下提供压力补偿。即使有轻微的过压，塞子里面的防水膜允许湿气排出而阻止水和灰尘进入外壳。

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 partial 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.

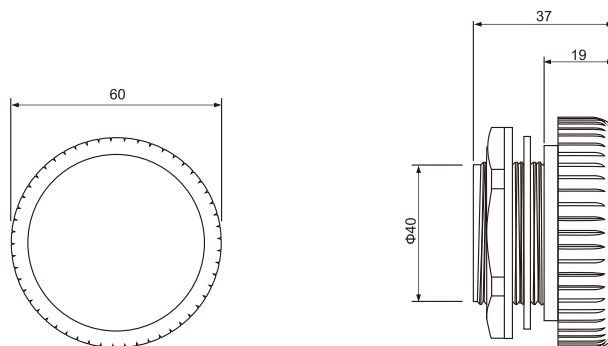
技术参数 Technical Data

安装 Mounting	M40X1.5螺母 thread M40 x 1.5 with nut
扭矩 Torque	5Nm(最大.10Nm) 5Nm(max.10Nm)
外壳深度 Depth in enclosure	大约 approx.16mm
材质 Material	塑料, 浅灰色 plastic, light grey
密封 Sealing	密封垫 sealing gasket NBR
过滤器 Filter	防水膜 waterproof membrane
透气性 Air permeability	最小压力差 1200l/h at a pressure difference of min.70mbar
尺寸 Dimensions	φ60 x 37mm
安装位置 Fitting position	可变的 variable
工作/储存温度 Operating/Storage temperature	-35 to +70° C (-31 to +158° F)

安装 Installation

用 $\phi 40.5^{+0.5}$ mm的螺母将压力补偿装置安装在外壳上。请确保密封垫片放在外壳的外侧面板上适当的位置，为了获得最佳压力补偿，我们建议使用两个DA284D外壳顶部的两侧。

Make cut-out $\phi 40.5^{+0.5}$ 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.



接线示意图 Example of connection

订货代码 Art. No.	保护等级 Protection type	包装 Packing unit	重量 Weight (approx.)
28400.0-00	IP66(EN 60529)/IPX9K(EN 40050-9)	2 pieces	90g(45g/piece)
28400.0-01	IP66(EN 60529)/IPX9K(EN 40050-9)	1 pieces	45g

SP-1000

摘要 Summary

SP-1000温控器通常用于商业、工业和民用建筑，它能控制空调的风机线圈、水阀，使温度保持在设定的范围内。

SP-1000 series thermostats are usually used on the commercial, industrial and civil constructions, which can control the fan coil of air-conditioning, water valve and wind valvelet. It can make the temperature balance in the setting range in the location, and switches are manual witch, Very simple to manipulate.

特征 Characteristics

拨动按钮来设置温度：指示的那个地方显示的是当前温度值。

系统开关：用以打开/关闭温控器。

工作开关：加热/制冷开关，加热/制冷模式。

风速开关：低速-中速-高速，风闸控制器无此功能。

Dialing button for setting the temperature: The place the finger points to is the current temperature value.

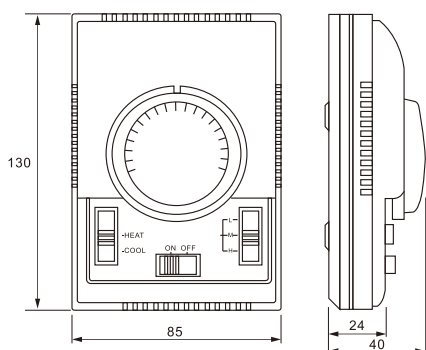
ON/OFF Switch for System: Press ON/OFF Key to turn on/off of the thermostat .

Working Mode switch: Press HEAT/COOL key to switch the heating / cooling mode.

Fan Speed Key:-L-M-H,that is, Low speed-Middle speed-High speed, Wind valve controller does not have this flection.

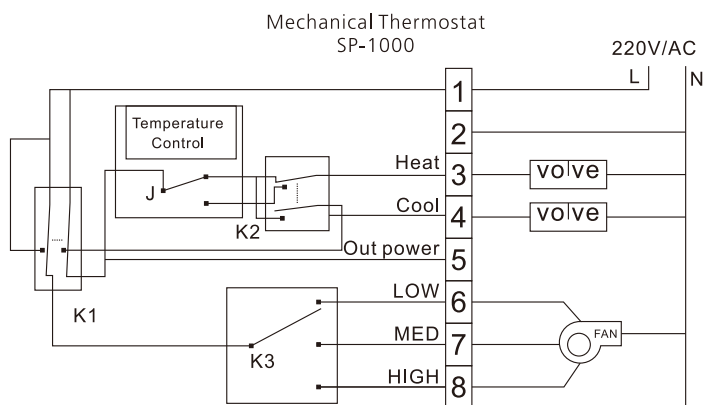


SP-1000



功能说明 Functions spec

型号 Model	功能说明 Function Explanation	控制对象 Objects Controlled
SP-1000	4 tubes fan coil controller , can be set up to control the fan coil	3 gears of fan coil ,2 and 3 wire of motorized valve , magnetic value on/off wind valve ,3 wires of wind valve .



接线示意图 Example of connection



SP-2000

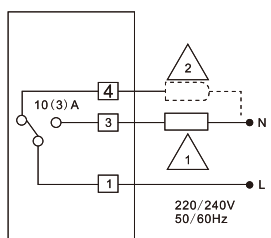
技术参数 Technical Data

- 应用: 适用于中央空调
- 温度控制范围: 10°C~30°C
- 工作电压: 220V~/50Hz
- 最大负载: 10A
- Application: control of central air conditioner or heating
- Temperature control range: 10°C~30°C
- Work voltage :220V~/50Hz
- Max load :10A
- SENSOR type: gas filled sylphon
- With on/off switch ,without LED indicator for power

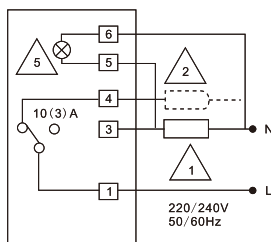
房间温度控制器 Room Temperature Controller

应用于水暖（地暖）采暖系统，可用于商业楼，住宅楼，轻工大厦等直接采用电加热系统的地方。

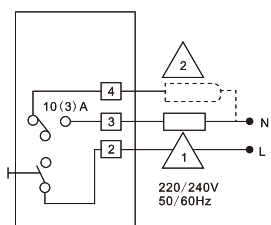
For the control of warm-water(floor)heating systems and direct electric heating systems used in Commercial buildings, Residential buildings, Light in dustrial buildings...



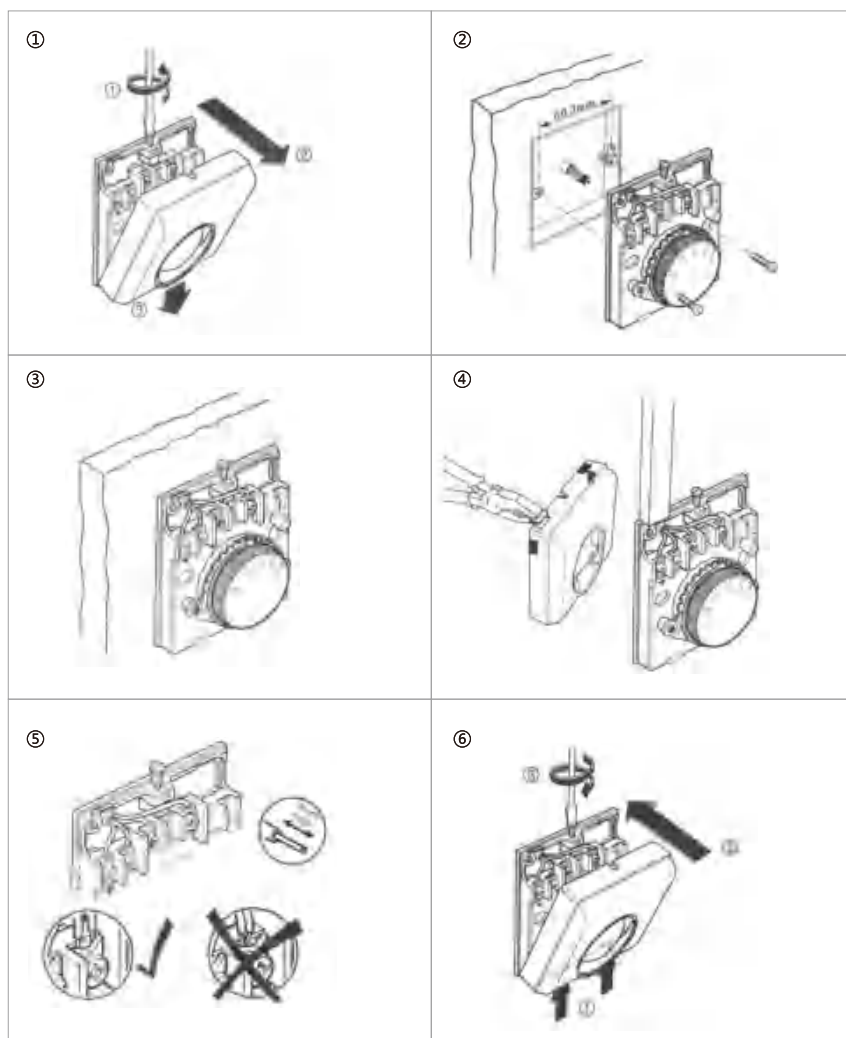
A



B



C



SP-6000

概述 Overview



SP-6000

该RTC70.xx用于两位控制带开关输出的室内温度控制，其依靠一个放置在恒温器外部或内部的NTC传感器来控制。温控器使用其内置传感器或地板传感器获取室温，当室内温度降至设定点以下，加热器将开始工作。

The RTC70.xx is used for 2-position control with on/off output for the control the temperature by means of an NTC sensor placed externally or internally in the thermostat. the thermostat acquires the room temperature with its built-in sensor or floor sensor, and the heating contact will close when the room temperature falls below the selected setpoint.

应用 Application

应用于水暖（地暖）采暖系统，可用于商业楼，住宅楼，轻工大厦等直接采用电加热系统的地方。

For the control of warm-water(floor)heating systems and direct electric heating systems used in Commercial buildings,Residential buildings, Light in dustrial buildings...

功能特性 Afeatures

当手动打开加热开关后，LED指示灯亮。旋钮是为了方便控制加热装置输出的开与关。

LED in dicator is light when heating is onwith manual switch and knob for easy operation On/off control output for heating device

技术参数 Technical Data

电压: AC230V

电流: 16A

功耗: 5W

温控范围: 4°C ~ 45°C

温度开关偏差: $\pm 0.5K$

环境温差: -5°C ~ 50°C

外壳防护: IP20

外壳材质: 热塑性橡胶, NTC探头

外置传感器: 线长度为3米

Voltage: AC230V

Output relay: 16A

Power consumption: 5W

Setting range: 4°C ~ 45°C

Switching differential: $\pm 0.5K$

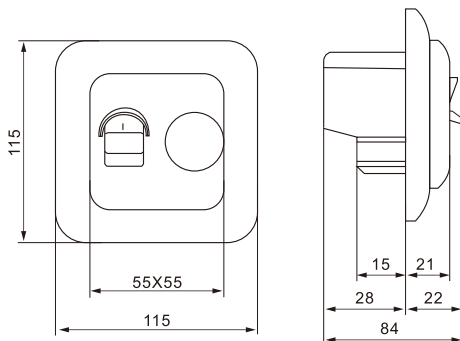
Ambient temperature: -5°C ~ 50°C

Protective housing: IP20

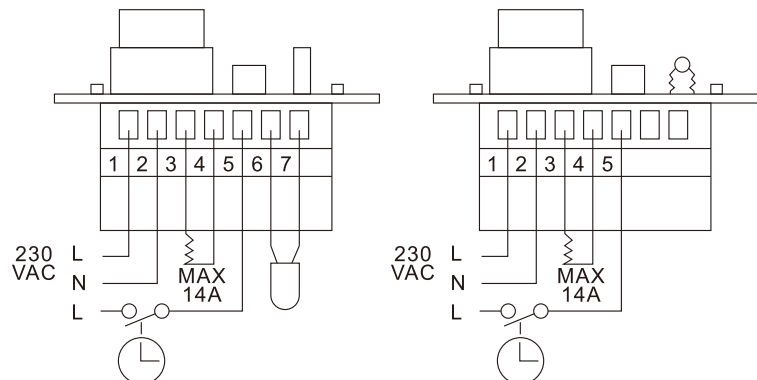
Housing material: self-exting uishing PC

Floor sensor: rubber-thermoplastic NTC sensor

Cable length is 3m



Mechanical Thermostat
SP-6000



接线示意图 Example of connection

SP7000

产品特性 Features

■ 房间温控器使用说明 Use Instructions Room Thermostat

双金属房间温控器主要用于控制加热和中央空调，断路触点的分段能力具有电子式和机械式特点，10A,250V A.C(电阻负载)，误差值:0.5K

Bimetallic room thermostat for heating and air-conditioning installations Thermal, electrical and mechanical features Breaking capacity on opening contact,10A-250V A.C.(ohmic load) Differential: 0.5K

■ 温度范围调控 Temperature's Scale Adjustment

经过近2天的安装，获得了精确的刻度调整，测量房间的温度，用一个参考温度计，放在一边温控器，持密粗面部分的旋钮，把指标用硬币，为了达到同一个值的温度计，我们建议安装设备从地板 about1.5mt和远离热源。

After almost two days from the installation,to obtain a precise scale adjustment, measure the room temperature with a reference thermometer, placed aside the thermostat, holding the shagreened part of the knob, turn the index with a coin, to reach the same value of the thermometer,We suggest to install the equipment at about1.5mt from the floor and far from any heat source.

■ 零部件 Pattern

- ①底座Base
- ②盖子Cover
- ③上盖螺丝Cover screw
- ④锁销，用于固定Knob Lockpins, The lock pins for scale limitation
- ⑤调节盘，位于固定孔的位置，与温控器底座分隔开。

are to be derached from the base of the thermostat.They are Located on the fixing holes.

- ⑥刻度盘，房间温控器可以直接用螺丝安装在墙面上。

Index:The fixing of the room thermostat can be done directly on the wall by screws and nags.

B1-常闭触点

B1-With N.C.contact.

B2-常闭触点和开关

B2-With N.C.contact and ON-OFF switch

B3-单刀双掷（转换开关）

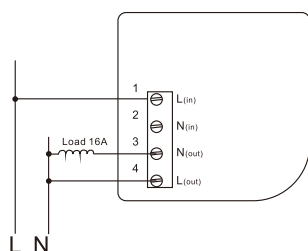
B3-With SPDT contact(change-over)

B4-转换开关（单刀双掷）和开关

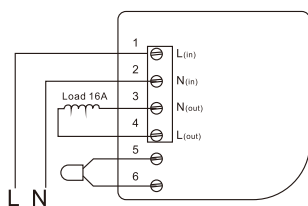
B4-With change-over contact(SPDT)and ON-OFF switch

B7-冬常闭，夏常开，以及夏冬双选开关

B7-With normally closed contact on "Winter" and normally opencontact on "Summer" plus "Summer-Winter" selector-switch



SP7000A Wiring



SP7000B Wiring

注意事项 Important

- ①交流电源超过220V-250V时，电阻会增大。

Accelerating resistance with voltage to 220-250V a.c.

- ②温控器设置有加速阻力，必须完全连接好，确保温控器的正常运转。

This thermostat is provided with an accelerating resistance which mustbe absolutely connected in order to obtain the regulation's performances.

- ③4端口必须按照外壳图示所示，连接到空挡位置。

The terminal 4has thus to be connected to the neutral according to the diagram shown on the cover.

- ④该接线方式下，指示灯指示温控器的加热操作。

This connection allows also the working of the pilot lamp which indicates the operation of the heating.

SM 010 24VDC +48VDC

产品特性 Features

- 高直流分断能力 High DC switching capacity
- 应用广泛 Variety of applications
- 紧凑型设计 Compact design
- 接线简便 Simple connection
- 导轨安装 DIN rail mounted

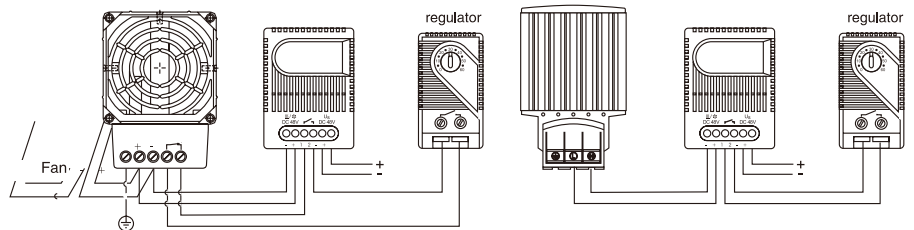
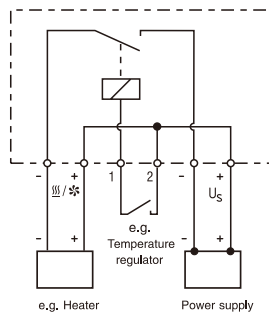
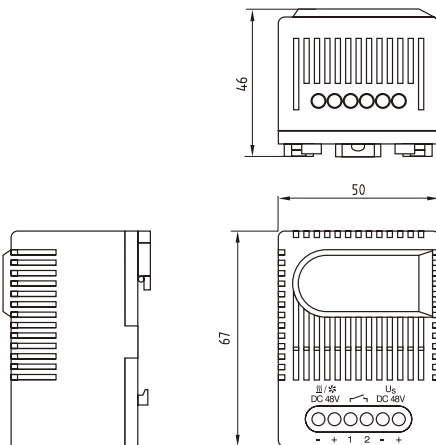
该直流电子式继电器具有较高的直流分断能力，有24VDC和48VDC两种电压可选。

Electronic relay for switching DC appliances with high switching capacity. A separate conventional switch contact is used as controller (e.g. temperature regulator, humidity regulator). The electronic relay is available in 24VDC and 48VDC versions.



技术参数 Technical Data

触点类型 Contact type	接触开关, 常开 contact maker, normally open (Relay/MOSFET)
触点电阻 Contact resistance	< 10mΩ
使用寿命 Service life	> 100,000 cycles
EMC	acc. to EN 55014-1-2, EN 61000-3-2, EN 61000-3-3
接线方式 Connection	6极端子, 2.5mm²导线 6-pole terminal, clamping torque 0.5Nm max.: rigid wire 2.5mm²
安装方式 Mounting	35mm DIN轨道 clip for 35mm DIN rail, EN60715 or for exit filter EF 118 Series
外壳材料 Casing	塑料 UL94标准 V-0 防火等级, plastic according to UL94 V-0, light grey
外观尺寸 Dimensions	67 x 50 x 46mm
重量 Weight	approx. 85g
安装位置 Installation position	任意 variable
操作/储存温度 Operating/Storage temperature	-20 to +80°C (-4 to +176°F) / -45 to +80°C (-49 to +176°F)
防护等级 Protection type	IP20



接线示意图 Example of connection

订货代码 Art. No.	工作电压 Operating voltage	最大开关容量 Max. Switching capacity
01001.0-00	24VDC (20-28VDC)	28VDC 16A
01000.0-00	48VDC (38-56VDC)	56VDC 16A

RCE016 5W, 9W

产品特性 Features

- 温度限定 Temperature limiting
- 电压范围宽 Wide voltage range
- 高效加热 Dynamic heating up
- 节能 Energy saving
- 轻巧 Compact

小型加热器主要用于开关箱，可预防产生凝露。

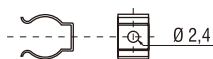
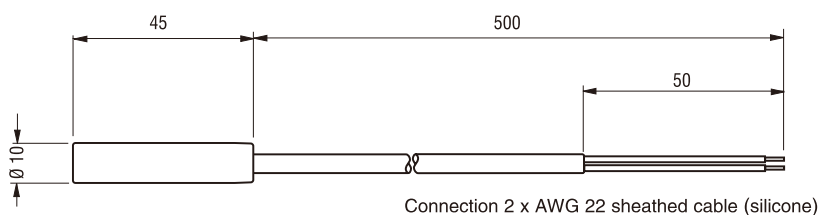
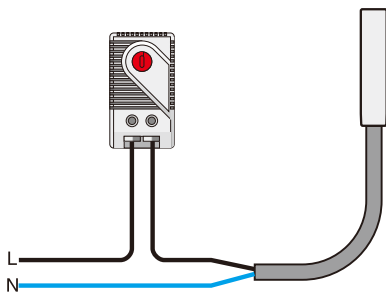
Small heaters designed to prevent condensation and to ensure a minimum operating temperature in small enclosures.

技术参数 Technical Data

操作电压 Operating voltage	120-240V AC/DC (min. 110V, max. 265V)
发热元件 Heating element	PTC发热体 resistor, self regulating and temperature limiting
放热体 Heater body	阳极处理铝型材 aluminium, anodised
安装方式 Connection	螺丝安装 screw fixing
安装位置 Installation position	任选 variable
操作/储存环境 Operating/Storage temperature	-45 to +70°C (-49 to +158°F)
防护等级 Protection type/Protection class	IP32 / II (double insulated)
外观尺寸 Dimensions	长度45mm, 直径10mm length 45mm, Φ 10mm
配件 Accessories	安装夹 mounting clips (see illustration), Art.No.09008.0-01

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

Example of connection
Thermostat KTO 011 (NC)
(contact breaker, normally closed) Heater RCE 016



Mounting clips Art. No. 09008.0-01 (1 packing unit = 2 pieces)

订货代码 Art. No.	功率 (50Hz) Heating capacity	最大电流 Inrush current max.	表面温度 Surface temperature (approx.)	接线方式 Connection	重量 Weight (approx.)
01623.0-00	5W	2.0A	165° C	2xAWG 22 sheathed cable(silicone)	20g
01622.0-00	9W	2.5A	175° C	2xAWG 22 sheathed cable(silicone)	20g

*at 20°C (68°F) ambient temperature

RC 016 8W,10W,13W

产品特性 Features

- 温度限定 Temperature limiting
- 电压范围宽 Wide voltage range
- 高效加热 Dynamic heating up
- 节能 Energy saving
- 轻巧 Compact

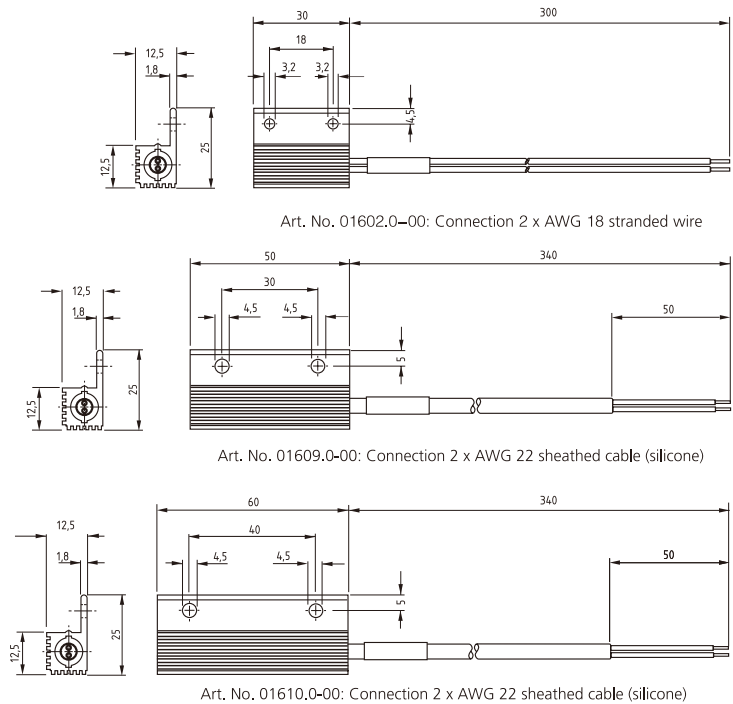
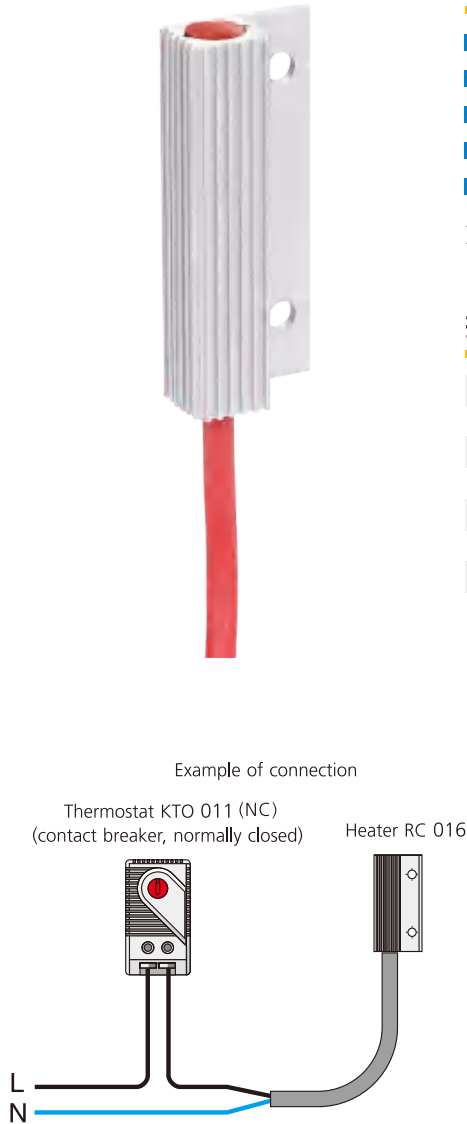
小型加热器主要用于开关箱，可预防产生凝露。

These small heaters are designed to prevent condensation and to ensure a minimum operating temperature in small enclosures.

技术参数 Technical Data

操作电压 Operating voltage	120-240V AC/DC (min. 110V, max. 265V)
发热元件 Heating element	PTC 发热体 resistor, self regulating and temperature limiting
放热体 Heater body	阳极处理铝型材 aluminium, anodised
安装方式 Connection	螺丝安装 screw fixing
安装位置 Installation position	任选 variable
操作/储存环境 Operating/Storage temperature	-45 to +70°C (-49 to +158°F)
防护等级 Protection type/Protection class	IP32 / II (double insulated)

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



订货代码 Art. No.	功率 Heating capacity	最大电流 Inrush current max.	表面温度 Surface temperature (approx.)	接线方式 Connection	重量 Weight (approx.)
01602.0-00	8W	2.0A	150□	2 x AWG 18 stranded wire	20g
01609.0-00	10W	2.5A	155□	2 x AWG 22 sheathed cable (silicone)	30g
01610.0-00	13W	3.0A	170□	2 x AWG 22 sheathed cable (silicone)	40g

*at 20°C (68°F) ambient temperature



HGK 047 10W -150W

产品特性 Features

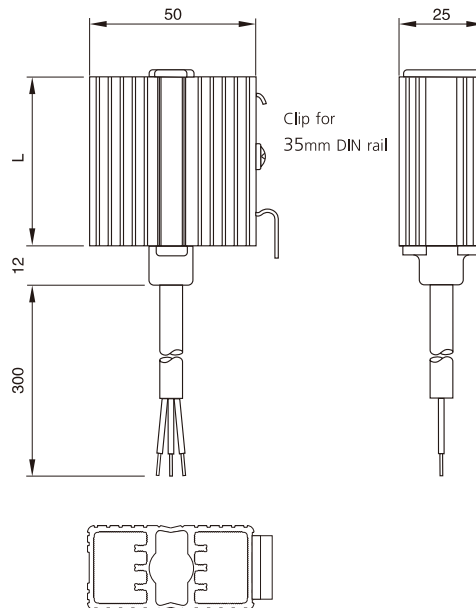
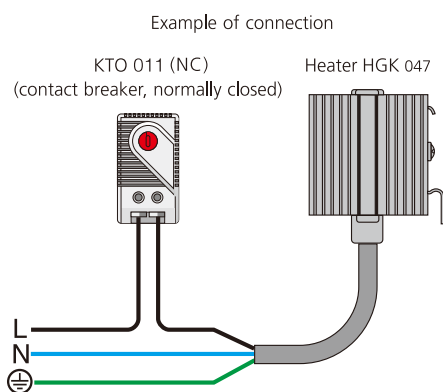
- 高效加热 Dynamic heating up
- 节能 Energy saving
- 电压范围宽 Wide voltage range
- 温度限定 Temperature limiting
- 导轨安装 DIN rail mounted

加热器主要用于开关箱，可避免产生凝露，预防温度降至零下或降至最小需求值时，用此方法可避免生锈，确保箱内温度恒定。

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.

技术参数 Technical Data

发热元件 Heating element	PTC发热体，自我调节和温度控制 PTC resistor, self regulating and temperature limiting
发热体 Heater body	阳极处理挤压铝型材 extruded aluminium profile, anodised
安装方式 Mounting	35mm DIN 轨道, EN 50022 clip for 35mm DIN rail, EN 60715
安装位置 Installation position	垂直方向 vertical
操作/储存环境 Operating/Storage temperature	-45 to +70°C (-49 to +158°F)
防护等级 Protection type/Protection class	IP54 / I (earthed)



订货代码 Art. No.	操作电压 Operating voltage	功率 Heating capacity ¹⁾	电流最大值 Inrush current max.	长度(L) Length (L)	重量 Weight(approx.)	接线方式 Connection
04700.0-00	120-240V AC/DC	10W	1.0A	50mm	0.10kg	3 x 0.5mm ² x 300mm sheathed cable(silicone)护套电缆
04701.0-00	120-240V AC/DC	20W	2.5A	60mm	0.20kg	3 x 0.5mm ² x 300mm sheathed cable(silicone)护套电缆
04702.0-00	120-240V AC/DC	30W	3.0A	70mm	0.20kg	3 x 0.5mm ² x 300mm sheathed cable(silicone)护套电缆
04700.9-00	110-120V AC/DC	10W	1.0A	50mm	0.10kg	3 x AWG 20 x 300mm sheathed cable护套电缆
04701.9-00	110-120V AC/DC	20W	1.5A	70mm	0.20kg	3 x AWG 20 x 300mm sheathed cable护套电缆
04702.9-00	110-120V AC/DC	30W	1.5A	100mm	0.20kg	3 x AWG 20 x 300mm sheathed cable护套电缆

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%.

HG 140 15W -150W

产品特性 Features

- 端子式接线 Pressure clamp connectors
- 高效加热 Dynamic heating up
- 电压范围宽 Wide voltage range
- 温度限定 Temperature limiting
- 节能 Energy saving
- 导轨固定 DIN rail mounted
- 快速安装 Quick installation

电热器使用于开关箱当中预防产生凝露，防止温度降至零下或降至最低设定值。

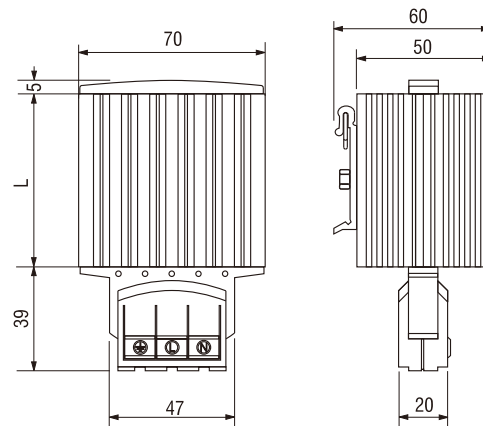
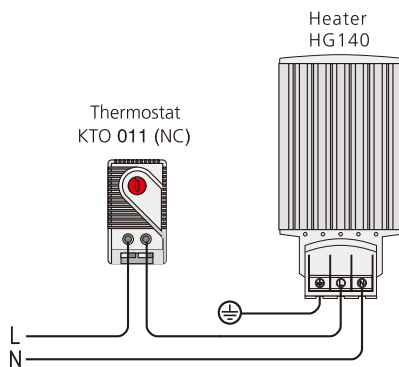
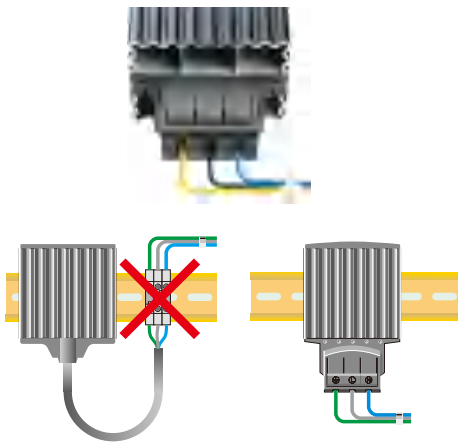
These heaters are used in enclosures where damage from condensation must be prevented, or where the temperature may not fall below a minimum value. The aluminium profile heater body design has a chimney effect and distributes the heat evenly. The pressure clamp connectors save time and simplify installation.

技术参数 Technical Data

操作电压 Operating voltage	120-240V AC/DC*(min.110V,max.265V)
发热原件 Heating element	PTC发热体 PTC resistor, self regulating and temperature limiting
发热体 Heater body	阳极处理挤压铝型材 extruded aluminium profile, anodised
接线方式 Connection	3个接线端子接入线径0.5-1.5mm ² 3 pressure clamps for stranded wire 0.5-1.5mm ² (with wire end ferrule) and rigid wire 0.5-1.5mm ²
外壳材料 Connection casing	黑色塑料,UL94V-0标准,V-0防火等级 plastic according to UL94 V-0,black
安装方式 Mounting	35mmDIN导轨,clip for 35mm DIN rail, EN 60715
安装位置 Installation position	垂直 vertical
操作/储存环境 Operating/Storage temperature	-20 to +70°C(-4 to +158°F)
防护等级 Protection type/Protection class	IP54 / I (earthed)

*工作电压低于140VAC/DC时，加热性能降低约10%

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



订货代码 Art. No.	功率 Heating capacity	最大电流 Inrush current max.	长度(L) Length (L)	重量 Weight (approx.)
14000.0-00	15W	1.5A	65mm	0.30kg
14001.0-00	30W	3.0A	65mm	0.30kg
14003.0-00	45W	3.5A	65mm	0.30kg
14005.0-00	60W	2.5A	140mm	0.40kg
14006.0-00	75W	4.0A	140mm	0.50kg
14007.0-00	100W	4.5A	140mm	0.50kg
14008.0-00	150W	9.0A	220mm	0.70kg

*at 20°C(68°F) ambient temperature

CREx 020 50W, 100W

产品特性 Features

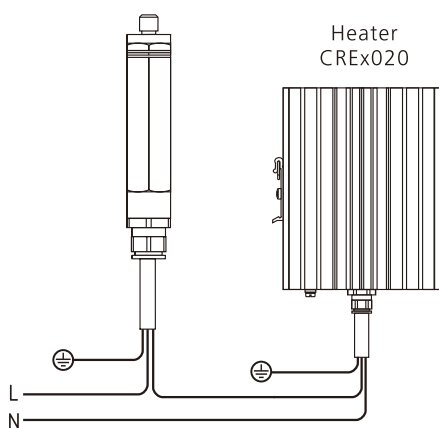
- 高效表面散热 Large convection surface
- 导轨安装 DIN rail mounted
- 使用方便 Ready for use
- 免维护 Maintenance free

防爆加热器用于危险区域场所，防止因环境温度变化时形成凝露。

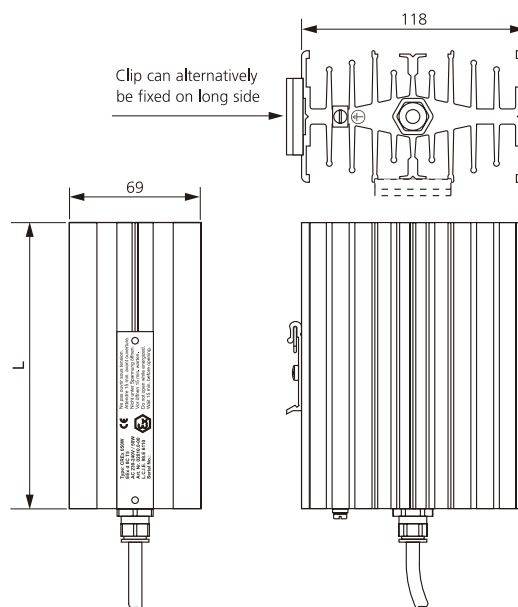
Compact convection heater for use in areas with explosion hazard for prevention of formation of condensation, temperature fluctuations and for protection against frost in transmitter housings, switch cabinets and measuring equipment.

技术参数 Technical Data

防爆认证EN Explosion protection according to EN	LCIE (Laboratoire Central des Industries Electriques)
符合的认证Conformity certificate	01 ATEX 6073/03, LCIE N° 06 ATEX Q8011, IECEx LCI 07. 0020
发热元件Heating element	high performance cartridge
发热体Heater body	阳极处理铝合金aluminium profile, black anodised
接线方式Connection	Si HF-JZ 3 x 0.75mm ² cable, length 1m
连接PEConnection PE	4mm ²
安装方式Mounting	35mm DIN导轨安装, clip for 35mm DIN rail, EN 60715
安装位置Installation position	垂直方向vertical
操作/储存环境Operating/Storage temperature	-20 to +40°C (-4 to +104°F) / -45 to +70°C (-49 to +158°F)
防护等级Protection type/Protection class	IP65 / I (earthed)

Hazardous Area Thermostat
REX 011

接线示意图 Example of connection

Hazardous area Thermostat REX 011
see page 39

订货代码 Art. No.	操作电压 Operating voltage	功率 Heating capacity	防爆保护类型 Ex protection type	表面温度 Surface temperature	长度(L) Length (L)	重量 Weight (approx.)
02010.0-00	230-240VAC	50W	Ex d IIC T5 - Ex tD A21 IP6X T100°F	100°F	150mm	1.30kg
02011.0-00	230-240VAC	100W	Ex d IIC T4 - Ex tD A21 IP6X T135°F	135°F	180mm	1.50kg
02010.0-01	110-120VAC	50W	Ex d IIC T5 - Ex tD A21 IP6X T100°F	100°F	150mm	1.30kg
02011.0-01	110-120VAC	100W	Ex d IIC T4 - Ex tD A21 IP6X T135°F	135°F	180mm	1.50kg



CS 060 50W-150W

产品特性 Features

- 表面温度低 Low surface temperature
- 导轨式安装 DIN rail mounted
- 双绝缘 (塑料) Double insulated (plastic)
- 宽电压范围 Wide voltage range
- 小体积 Small size

触摸安全型加热器主要用于有关电气和电子的配件的开关箱中，其设计采用自然对流方案，从产品加热体到外壳表面的设计采用温度逐渐降低的设计理念。我们全系列的温控器和湿度控制器均可直接连接到加热器CS 060上使用。其次该加热器也可与外挂恒温器连接，不用单独接线。

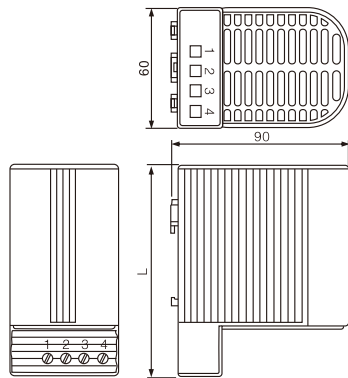
Touch-safe heater for the use in enclosures with electrical/electronic components. The design of the heater supports the natural convection which results in a high air-current of warm air. The surface temperatures on the accessible side surfaces of the housing are kept down as a result of the heater design. Our complete range of thermostats and hygrometers can directly be connected to the heater CS 060. This heater is also available in a version with plug-in thermostat requiring no additional wiring (CSF 060). Both versions are designed for permanent operation.

技术参数 Technical Data

操作电压 Operating voltage	120-240V AC/DC *(min.110V,max.265V)
加热功率 Heating capacity	见下表 see table
加热原件 Heater element	PTC 限温元件 PTC resistor-temperature limiting
表面温度 Surface temperature	除了上部防护的网格均<80°C(176°F) <80°C(176°F), except upper protective grille
接线方式 Connection	螺丝 4-pole terminal 2.5mm ² , torque 0.8Nm max.
外壳材料 Casing	黑色塑料, UL94V-0标准, V-0防火等级 Plastic according to UL94-V-0, black
安装方式 Mounting	35mm DIN导轨安装 clip for 35mm DIN rail, EN 50022
安装位置 Installation position	垂直 Vertical
操作储存环境 Operating/storage temperature	-45 to +70°C (-49 to +158°F)
防护等级 Protection type/Protection class	IP20/II (double insulated)
认证 Approvals	CE
注意 Note	其他电压可定做 other voltages on request

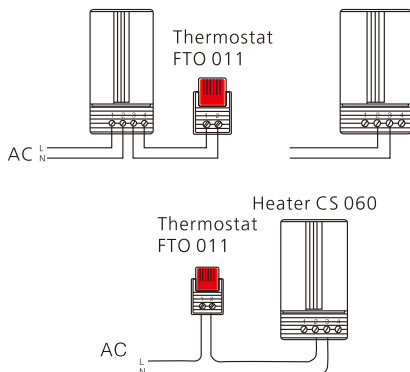
*工作电压低于140VAC/DC时，加热性能降低约10%

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



Heater CS 060

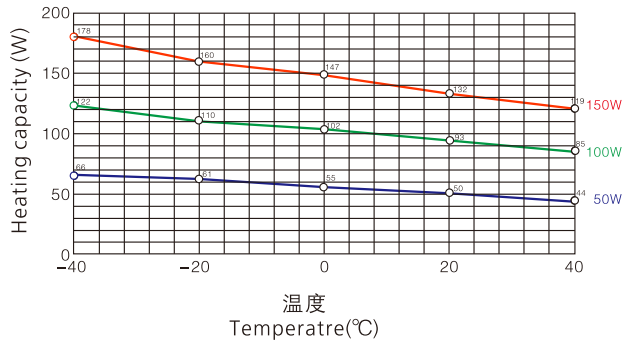
Heater CS 060



接线示意图
Examples of connection

加热功率

Heating capacity / Ambient temperature diagram CS 060



订货代码 Art. No.	功率 Heating capacity	电流最大值 Inrush current max.	空气出口温度 Air outlet temperature	尺寸 Dimensions	重量 Weight (approx.)
06000.0-00	50W	2.5A	+86°C (186.8° F)	110x60x90mm	0.30kg
06010.0-00	100W	4.5A	+120°C (248° F)	110x60x90mm	0.30kg
06020.0-00	150W	8A	+145°C (293° F)	150x60x90mm	0.30kg

1) ambient temperature-see Heating capacity/Ambient temperature diagram; 2) measured 50mm above protective grille;



CSF 060 50W-150W

产品特性 Features

- 表面温度低 Low surface temperature
- 导轨式安装 DIN rail mounted
- 双绝缘 (塑料) Double insulated (plastic)
- 宽电压范围 Wide voltage range
- 小体积 Small size
- 智能温控器 Integrated thermostat

触摸安全型加热器主要用于有关电气和电子配件的开关箱中，其设计采用自然对流方案，从产品加热体到外壳表面的设计采用温度逐渐降低的设计理念，该加热器也可与外挂恒温器连接，不用单独接线，也可以在不加温控器的情况下使用。

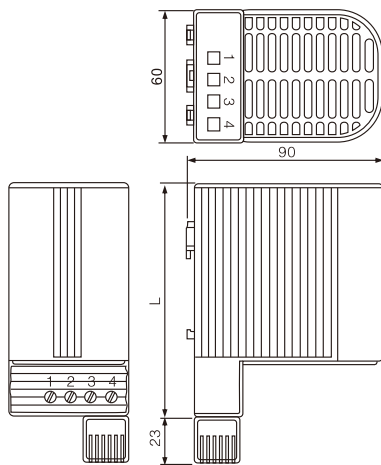
Touch-safe heater for the use in enclosures with electrical/electronic components. The design of the heater supports the natural convection which results in a high air-current of warm air. The surface temperatures on the accessible side surfaces of the housing are kept down as a result of the heater design. This model with plug-in thermostat does not require additional wiring. The heaters are designed for permanent operation. This heater is also available in a version without thermostat (CS 060).

技术参数 Technical Data

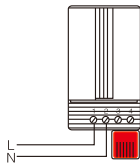
操作电压 Operating voltage	120-240V AC/DC* (min.110V, max.265V)
加热功率 Heating capacity	见下表 see table
加热原件 Heater element	PTC 限温元件 PTC resistor-temperature limiting
表面温度 Surface temperature	除了上部防护的网格均 <80°C (176° F) <80°C (176° F), except upper protective grille
接线方式 Connection	螺丝 4-pole terminal 2.5mm ² , torque 0.8Nm max.
外壳材料 Casing	黑色塑料, UL94V-0标准, V-0防火等级 Plastic according to UL94-V-0, black
安装方式 Mounting	35mm DIN 导轨安装 clip for 35mm DIN rail, EN 50022
安装位置 Installation position	垂直 Vertical
操作储存环境 Operating/storage temperature	-20 to +70°C (-4 to +158° F) / -45 to +70°C (-49 to +158° F)
防护等级 Protection type/Protection class	IP20/II (double insulated)
认证 Approvals	VDE+UL File No.E15057 (according to UL499 in combination with UL508A)
注意 Note	其他电压可定做 other voltages on request

*工作电压低于140VAC/DC时，加热性能降低约10%

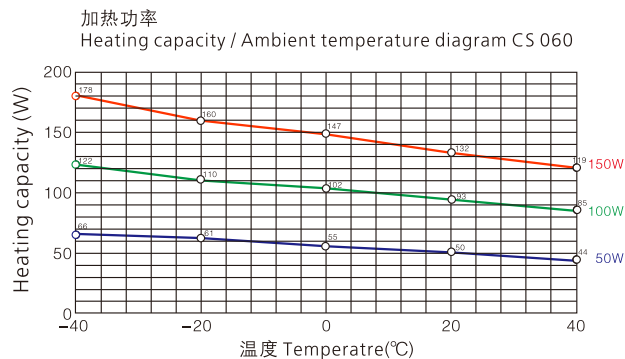
*Operating with voltages below 140V AC/DC reduces heating performance by approx. 10%.



Heater CS 060



接线示意图
Examples of connection



订货代码 Art. No.	功率 Heating capacity	电流最大值 Inrush current max.	空气出口温度 Air outlet temperature	关断温度 Switch-off temperature	尺寸 Dimensions	重量 Weight (approx.)
06001.0-00	50W	2.5A	+86°C (186.8° F)	+15°C (59° F)	110x60x90mm	0.30kg
06002.0-00	50W	2.5A	+86°C (186.8° F)	+25°C (77° F)	110x60x90mm	0.30kg
06011.0-00	100W	4.5A	+120°C (248° F)	+15°C (59° F)	150x60x90mm	0.30kg
06012.0-00	100W	4.5A	+120°C (248° F)	+25°C (77° F)	150x60x90mm	0.30kg
06021.0-00	150W	8A	+145°C (293° F)	+15°C (59° F)	150x60x90mm	0.50kg
06022.0-00	150W	8A	+145°C (293° F)	+25°C (77° F)	150x60x90mm	0.50kg

1) ambient temperature-see Heating capacity/Ambient temperature diagram; 2) measured 50mm above protective grille;

HGL 046 250W-400W

产品特性 Features

- 紧凑的设计 Compact design
- 导轨式安装 DIN rail mounted
- 使用寿命长 Long service life
- 免维护 Maintenance free
- 安全温度断流功能 Temperature safety cut-out

轻巧型风机加热器可预防冷凝的形成，一体化高性能轴流风扇可提供强力空气循环，使开关箱内温度恒定。当风扇发生故障时，加热器内安全切断开关会自动停止加热器的工作。

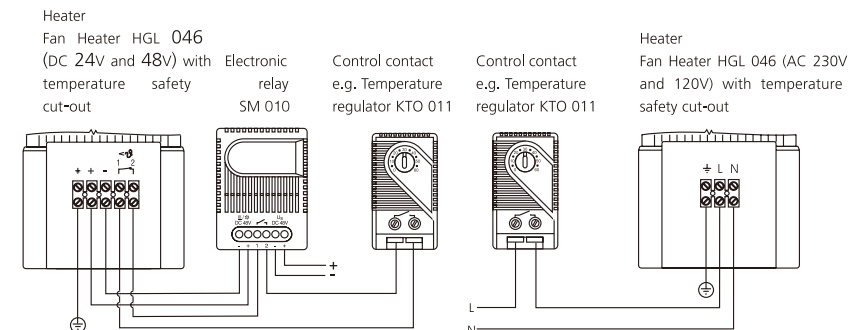
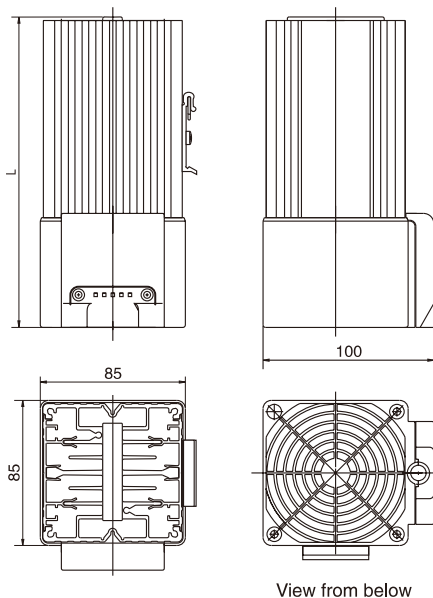
Compact fan heater prevents formation of condensation. The integrated high performance axial fan provides forced air circulation and so guarantees an even temperature in enclosures. With internal terminal connector.

技术参数 Technical Data

发热元件 Heating element	电阻加热器 resistance heater
温度保护 Temperature safety cut-out	防止过热引起风扇不运转 to protect against overheating in case of fan failure
发热体 Heater body	通过极化处理的铝型材 anodised extruded aluminium profile
表面温度 Surface temperature	最高 75°C max. 75°C (400W)
滚珠轴流式风扇 Axial fan, ball bearing	气流自由流动 Airflow, free flow AC: 45m³/h (50Hz) or 54m³/h (60Hz) DC: 54m³/h 使用寿命 50,000 小时 service life 50,000h at 25°C (77°F)
接线方式 Connection	1.5mm² 导线引入 internal connection terminal 1.5mm² with strain relief, clamping torque 0.8Nm max.
外壳材料 Connection casing	黑色塑料, UL94V-0 标准 V-0 防火等级 plastic according to UL94 V-0, black
安装方式 Mounting	35mm DIN 导轨安装, clip for 35mm DIN rail, EN 60715
安装位置 Installation position	垂直 vertical
操作/储存环境 Operating/Storage temperature	-45 to +70°C (-49 to +158°F)
防护等级 Protection type/Protection class	IP20 / I (earthed)

注意：在 24VDC 和 48VDC 情况下，风机加热器经过电子继电器转换，因此我们推荐我们的继电器 SM010 (Art. No. 01000.0-00 and 01001.0-00)

Note: In the case of 24VDC and 48VDC the fan heater has to be switched via a relay. For this purpose we recommend our electronic relay SM 010 (Art. No. 01000.0-00 and 01001.0-00).



订货代码 Art. No.	操作电压 Operating voltage	功率 Heating capacity	长度(L) Length (L)	重量 Weight (approx.)
04640.0-00	230VAC, 50/60Hz	250W	182mm	1.10kg
04641.0-00	230VAC, 50/60Hz	400W	222mm	1.40kg
04640.9-00	120VAC, 50/60Hz	250W	182mm	1.10kg
04641.9-00	120VAC, 50/60Hz	400W	222mm	1.40kg
04640.1-00	24VDC	250W	182mm	1.10kg
04640.2-00	48VDC	250W	182mm	1.10kg
04641.2-00	48VDC	400W	222mm	1.40kg

HV SPACE-SAVING FAN HEATER

HVL 风机加热器



HV 031/HVL 031 100W- 400W

产品特性 Features

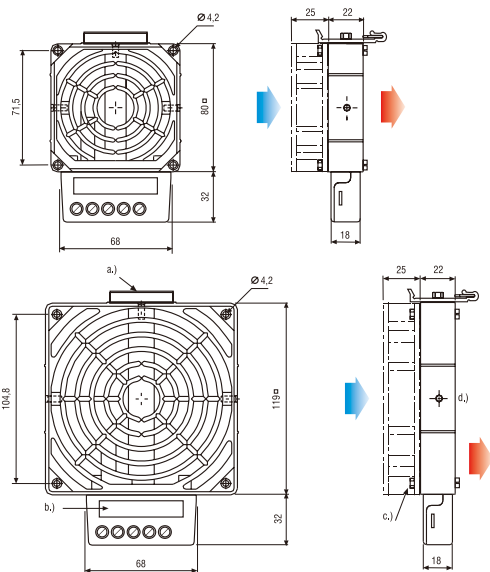
- 紧凑 Compact
- 扁平设计 Flat design
- 空气流动性好 High air through-flow
- 温度安全保护开关 Temperature safety cut-out
- 导轨安装 DIN rail mounted

紧凑高性能风机加热器可预防凝露的形成，该产品有带风机式加热器，型号为HVL031，也有不带风机式的，型号为HV031。

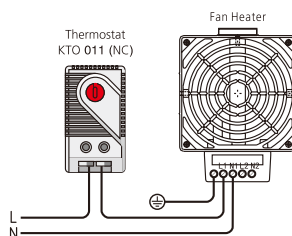
The compact high-performance fan heater prevents formation of condensation in control or switch systems and provides an evenly distributed interior air temperature in enclosures. This fan heater is available without fan (HV 031) as well as with fan (HVL 031).

技术参数 Technical Data

HV 031	无风机加热器 Heater without fan (fan mounting kit included)
HVL 031	带风机加热器 Heater with fan
发热元件 Heating element	高性能芯子 high performance cartridge
温度安全保护 Temperature safety cut-out	保护过热引起的风扇不工作 to protect against overheating in case of fan failure
加热体材料 Heater body	铝 die-cast aluminium (glass bead blasted)
接线方式 Connection	3极钳压 2.5mm ² , 最大扭矩 0.8Nm 3-pole screw connector 2.5mm ² clamping torque 0.8Nm max.
端子接线盒材料 Connection casing	黑色塑料, UL94V-0标准, V-0防火等级 plastic according to UL94 V-0, black
安装方式 Mounting	35mm DIN 导轨安装, clip for 35mm DIN rail, EN 60715
安装位置 Installation position	水平 horizontal
操作/储存环境 Operating/Storage temperature	-45 to +70°C (-49 to +158°F)
防护等级 Protection type/Protection class	IP20 / I (earthed)
滚珠风机 Axial fan, ball bearing	使用寿命 50,000 小时 25°C (77°F) airflow see table service life 50,000h at 25°C (77°F)
风机连接方式 Connection (axial fan)	2极螺丝连接 2.5mm ² 导线 (L2/N2) 2-pole screw connector 2.5mm ² (L2/N2)



a.) Clip b.) Type plate c.) Axial fan d.) Air direction



重要！加热器只能与风扇一起操作，过热危险！
Important! Heater may only be operated together with fan. Danger of overheating!

订货代号 Art. No. HV 031	订货代号 Art. No. HV 031	功率	尺寸	重量
230VAC, 50/60Hz	120VAC, 50/60Hz	Heating capacity	Dimensions	Weight (approx.)
03100.0-00	03100.9-00	100W	80 x 112 x 22mm	0.40kg
03101.0-00	03101.9-00	150W	80 x 112 x 22mm	0.40kg
03110.0-00	03110.9-00	200W	119 x 151 x 22mm	0.50kg
03111.0-00	03111.9-00	300W	119 x 151 x 22mm	0.50kg
03112.0-00	03112.9-00	400W	119 x 151 x 22mm	0.50kg

订货代号 Art. No. HVL 031	订货代号 Art. No. HVL 031	功率	最小风流量	尺寸	重量
230VAC, 50/60Hz	120VAC, 50/60Hz	Heating capacity	Airflow min., free flow	Dimensions	Weight (approx.)
03102.0-00	03102.9-00	100W	35m ³ /h	80 x 112 x 47mm	0.60kg
03103.0-00	03103.9-00	150W	35m ³ /h	80 x 112 x 47mm	0.60kg
03113.0-00	03113.9-00	200W	108m ³ /h	119 x 151 x 47mm	0.90kg
03114.0-00	03114.9-00	300W	108m ³ /h	119 x 151 x 47mm	0.90kg
03115.0-00	03115.9-00	400W	108m ³ /h	119 x 151 x 47mm	0.90kg

CR027

产品特性 Features

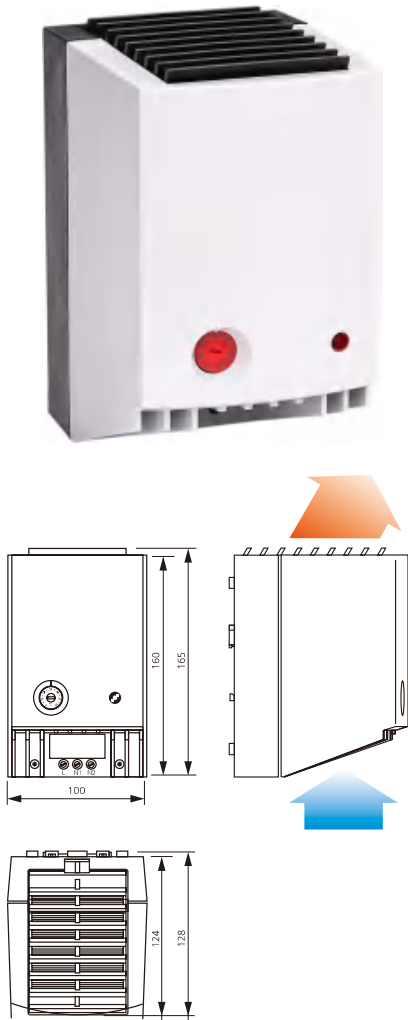
- 紧凑型加热器 Compact heater
- 加热功率可调 Heating capacity adjusts to ambient temperature
- 温度范围可调 Adjustable temperature range
- 导轨安装 DIN rail mounted
- 信号指示 Optical indicator
- 温度安全保护 Temperature safety cut-out

半导体式风机加热器主要用于配电柜体内，防止产生凝露，一体设计的调节器用于调整温度的变化。

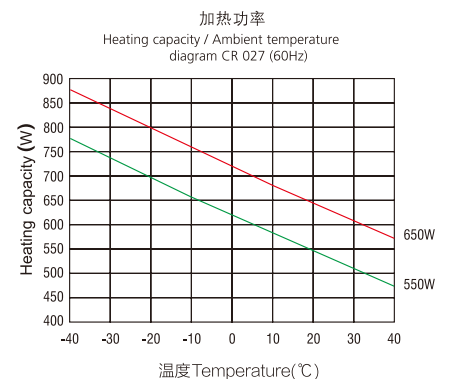
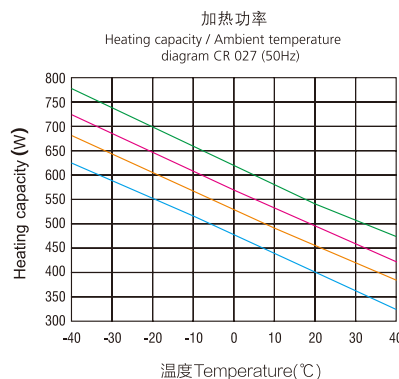
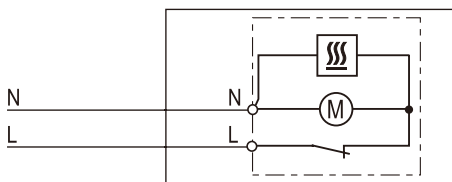
Semiconductor fan heaters prevent the formation of condensation and ensure an even temperature in switch and control equipment. The built-in regulator is used to set the desired temperature.

技术参数 Technical Data

发热体 Heater body	PTC resistor, self regulating and temperature limiting
温度保护 Temperature safety cut-out	过热保护 to protect against overheating in case of fan failure
滚珠风机 Axial fan, ball bearing	风量见如下图表 airflow see table service life 50,000h at 25°C (77°F)
接线方式 Connection	两极钳压 2.5mm ² , 最大扭矩 0.8Nm 2-pole clamp max. 2.5mm ² clamping screw torque 0.8Nm max.
外壳材料 Casing	浅灰色塑料, UL94V-0 标准, V-0 防火等级 plastic according to UL94 V-0, light grey
信号指示 Optical indicator	恒温控制灯 thermostat control lamp
安装方式 Mounting	35mm DIN 导轨安装, clip for 35mm DIN rail, EN 60715
安装位置 Installation position	垂直 vertical
外观尺寸 Dimensions	100 x 128 x 165mm
操作/储存环境 Operating/Storage temperature	-45 to +70°C (-49 to +158°F)
防护等级 Protection type/Protection class	IP20 / II (double insulated)



接线示意图
Connection Diagram



订货代码 Art. No.	工作电压 Operating voltage	功率(50Hz) Heating capacity	功率(60Hz) Heating capacity	最大电流 Inrush current max.	风量 Airflow, free flow	温度范围 Setting range Temp. regulator	重量 Weight
02700.0-00	220-240VAC, 50/60Hz	475W	550W	11.0A	35m ³ /h	0 to +60°C	0.90kg
02701.0-00	220-240VAC, 50/60Hz	550W	650W	13.0A	45m ³ /h	0 to +60°C	1.10kg
02700.9-00	100-120VAC, 50/60Hz	400W	550W	14.0A	35m ³ /h	+32 to +140°F	0.90kg
02701.9-00	100-120VAC, 50/60Hz	510W	650W	15.0A	45m ³ /h	+32 to +140°F	1.10kg

*at 20°C(68°F) ambient temperature

CR 030 750W,850W,950W

产品特性 Features

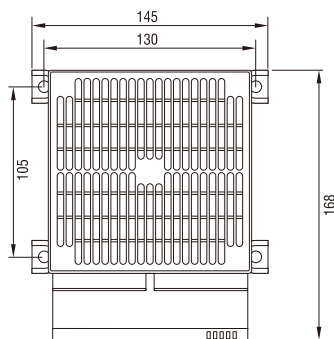
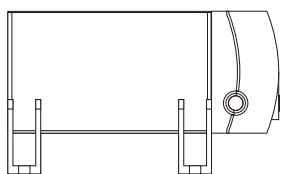
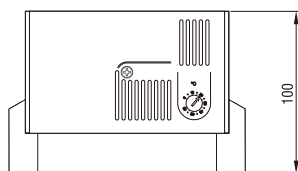
- 紧凑型设计 Compact design
- 双绝缘 Double insulated
- 智能温控器 Integrated thermostat (optional)

这种紧凑高性能风机加热器能防止产生凝露，为机箱内部提供分布均匀的空气温度环境。塑料外壳具有双绝缘功能，起接触保护作用。这款风机加热器可提供集成的恒温或先的温度或湿度控制恒温器。CR130可固定在配电柜的底部，也可以固定在上。

The compact high performance fan heater prevents formation of condensation and provides an evenly distributed interior air temperature in enclosures with electric/electronic components.

The plastic enclosure provides double insulation and acts as protection against contact. The fan heater is available with integrated thermostat or pre-set hygrostat for temperature or humidity control. The CR 030 was designed as a stationary unit for the bottom of the enclosure.

For wall fixing the fan heater CR 130 is recommended.



技术参数 Technical Data

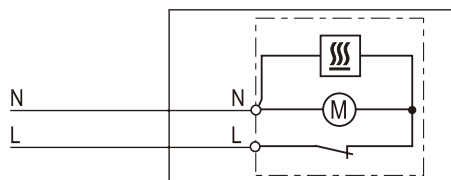
加热元件 Heater element	高性能管壳 High performance cartridge
温度保护 Temperature safety cut-out	过热保护 to protect against overheating in case of fan failure
	自动复位 automatic reset
加热主体 Heater body	极化处理铝型材 extruded aluminium profile
滚珠轴流式风机 Axial fan, ball bearing	气流 160m³/h, 自由流动 Airflow 160m³/h, free flow
	使用寿命 50,000 小时 at 25°C (77°F) service life 50,000h at 25°C (77°F)
接线方式 Connection	2-极点最大值。2.5mm² 固定螺丝溢放口力矩最大值 2-pole max. 2.5mm², clamping screw with strain relief, torque 0.8Nm max.
外壳材料 Casing	黑色塑料, UL94V-0 标准, V-0 防火等级 plastic according to UL94 V-0, black
安装方式 Mounting	螺丝固定 (M5) screw fixing (M5)
安装位置 Installation position	水平 horizontal
外观尺寸 Dimensions	168 x 145 x 100mm
重量 Weight	大约 1.40 千克 approx. 1.40kg
操作/储存环境 Operating/Storage temperature	-45 to +70°C (-49 to +158°F)
防护等级 Protection type/Protection class	IP20 / II 双绝缘 (double insulated)
备注 Note	功率达到 2000W 以上可定制 Other heating capacities from 200W up available on request

*加热器的工作温度：0 到 +60°C (+32 to +140°F)

Operating temperature of heater with integrated hygrostat: 0 to +60°C (+32 to +140°F)

接线示意图

Connection Diagram



订货代码 Art. No.	型号 Model	工作电压 Operating voltage	功率 Heating capacity	设定范围 Setting range
03051.0-00	支持恒温器的暖风机 Fan Heater with thermostat	230VAC, 50/60Hz	950W	0 to +60°C
03051.0-01	支持恒温器的暖风机 Fan Heater with hygrostat	230VAC, 50/60Hz	950W	65% RH, Factory-set
03059.9-00	支持恒温器的暖风机 Fan Heater with thermostat	120VAC, 50/60Hz	950W	+32 to +140°F

*根据 UL499 并结合 UL508A; according to UL499 in combination with UL508A

CR 130 750W,850W,950W

产品特性 Features

- 紧凑型设计 Compact design
- 双绝缘 Double insulated
- 智能温控器 Integrated thermostat (optional)
- 导轨或螺丝固定 DIN rail or screw fixing

这种紧凑高性能风机加热器能防止产生凝露，为机箱内部提供分布均匀的空气温度环境。塑料外壳具有双绝缘功能，起接触保护作用。这款风机加热器可提供集成的恒温或先的温度或湿度控制恒温器。CR130可固定在配电柜的底部，也可以固定在上。

The compact high performance fan heater prevents formation of condensation and provides an evenly distributed interior air temperature in enclosures with electric/electronic components.

The plastic enclosure provides double insulation and acts as protection against contact. The fan heater is available with integrated thermostat or pre-set hygrostat for temperature or humidity control. The CR 130 was designed as a stationary unit for the bottom of the enclosure.

For wall fixing the fan heater CR 130 is recommended.

技术参数 Technical Data

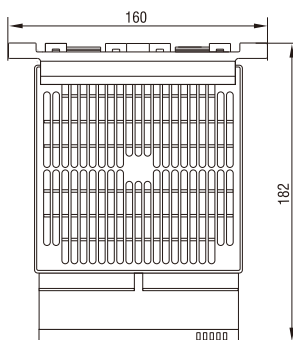
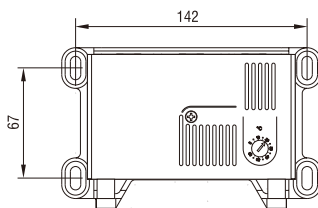
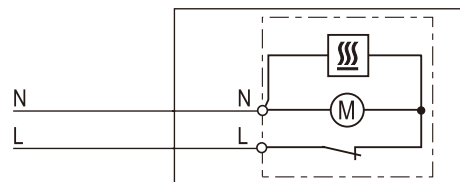
加热元件 Heater element	高性能管壳 High performance cartridge
温度保护 Temperature safety cut-out	过热保护 to protect against overheating in case of fan failure
	自动复位 automatic reset
加热主体 Heater body	极化处理铝型材 extruded aluminium profile
滚珠轴流式风机 Axial fan, ball bearing	气流 160m³/h, 自由流动 Airflow 160m³/h, free flow
	使用寿命 50,000 小时 at 25°C (77°F) service life 50,000h at 25°C (77°F)
接线方式 Connection	2-极点最大值, 2.5mm² 固定螺丝 溢放口力矩最大值 2-pole max. 2.5mm², clamping screw with strain relief, torque 0.8Nm max.
外壳材料 Casing	黑色塑料, UL94V-0 标准 V-0 防火等级 plastic according to UL94 V-0, black
安装方式 Mounting	35mm DIN 导轨安装, Clip for 35mm Din rail, EN 50022, Screw fixing (M6)
安装位置 Installation position	水平 horizontal
外观尺寸 Dimensions	182 x 160 x 99mm
重量 Weight	大约 1.45 千克 approx. 1.45kg
操作/储存环境 Operating/Storage temperature	-45 to +70°C (-49 to +158°F)
防护等级 Protection type/Protection class	IP20 / II 双绝缘 (double insulated)
备注 Note	功率达到 2000W 以上可定制 Other heating capacities from 200W up available on request

*加热器的工作温度: 0 到 +60°C (+32 to +140°F)

Operating temperature of heater with integrated hygrostat: 0 to +60°C (+32 to +140°F)

接线示意图

Connection Diagram



订货代码 Art. No.	型号 Model	工作电压 Operating voltage	功率 Heating capacity	设定范围 Setting range
13051.0-00	支持恒温器的暖风机 Fan Heater with thermostat	230VAC, 50/60Hz	950W	0 to +60°C
13051.0-01	支持恒湿器的暖风机 Fan Heater with hygrostat	230VAC, 50/60Hz	950W	65% RH, Factory-set
13059.9-00	支持恒温器的暖风机 Fan Heater with thermostat	120VAC, 50/60Hz	950W	+32 to +140°F

*根据 UL499 并结合 UL508A; according to UL499 in combination with UL508A



CS 030 750W,850W,950W

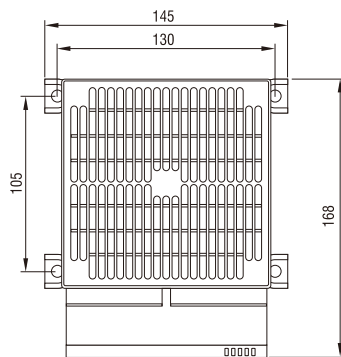
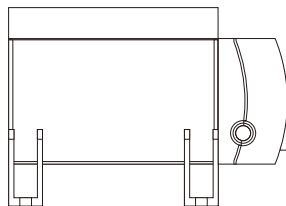
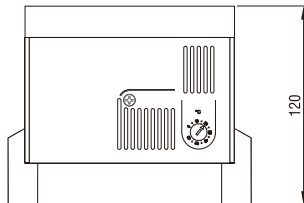
产品特性 Features

- 紧凑型设计 Compact design
- 双绝缘 Double insulated
- 智能温控器 Integrated thermostat (optional)
- 导轨或螺丝固定 DIN rail or screw fixing

这种紧凑高性能风机加热器能防止产生凝露，为机箱内部提供分布均匀的空气温度环境。塑料外壳具有双绝缘功能，起接触保护作用。这款风机加热器可根据要求与温控器连起来控制温度。CS 030可固定在配电柜的底部，也可以固定在墙上。

The compact high performance fan heater prevents formation of condensation and provides an evenly distributed interior air temperature in enclosures with electric/electronic components.

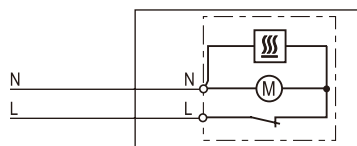
The plastic enclosure provides double insulation and acts as protection against contact. The fan heater is available with optional integrated thermostat for temperature control. The CS 030 was designed as a stationary unit for wall fixing. For fixing on the bottom of the enclosure the fan heater CS 130 is recommended.



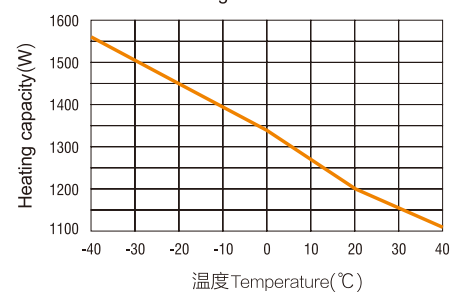
技术参数 Technical Data

温度保护 Temperature safety cut-out	过热保护 to protect against overheating in case of fan failure
滚珠风机 Axial fan, ball bearing	气流 160m ³ /h, 自由流动 160m ³ /h, free flow,
	使用寿命 50,000小时 service life 50,000h at 25°C (77°F)
接线方式 Connection	2-极点最大值。2.5mm ² 固定螺丝溢放口力矩最大值 2-pole clamp max. 2.5mm ² clamping screw
	torque 0.8Nm max.
外壳材料 Casing	黑色塑料, UL94V-0标准, V-0防火等级 plastic according to UL94 V-0, black
安装方式 Mounting	螺丝安装 (M5) Screw fixing (M5)
安装位置 Installation position	横向 horizontal
外观尺寸 Dimensions	168 x 145 x 120mm
重量 Weight	大约 1.20 千克 approx. 1.20kg
工作温度 Operating/Storage temperature	-45 to +70°C (-49 to +158°F)
防护等级 Protection type/Protection class	IP20 / II 双绝缘 (double insulated)

接线示意图
Connection Diagram



加热功率 CS 030
Heating capacity / Ambient temperature diagram CS 030



订货代码 Art. No.	型号 Model	工作电压 Operating voltage	功率 Heating capacity	最大电流 Inrush current max.	设定范围 Setting range
03060.0-00	支持恒温器的暖风机 Fan Heater with thermostat	230VAC, 50/60Hz	1200W	13A	0 to +60°C
03060.0-01	不支持恒温器的暖风机 Fan Heater without thyrostat	230VAC, 50/60Hz	1200W	13A	-
03060.9-00	支持恒温器的暖风机 Fan Heater with thermostat	120VAC, 50/60Hz	1200W	16A	+32 to +140° F
03060.9-01	不支持恒温器的暖风机 Fan Heater without thyrostat	120VAC, 50/60Hz	1200W	16A	-

* 室温 at 20°C (68°F), at 20°C (68°C) ambient temperature

CS 130 700W,900W,1200W

产品特性 Features

- 紧凑型设计 Compact design
- 高效率散热 High heating performance
- 双绝缘 Double insulated
- 智能温控器 Integrated thermostat (optional)
- 导轨或螺丝固定 DIN rail or screw fixing

这种紧凑高性能风机加热器能防止产生凝露，为机箱内部提供分布均匀的空气温度环境。塑料外壳具有双绝缘功能，起接触保护作用。根据要求可与温控器连用来控制温度。CS130具有墙上固定功能，如果需要安装在配电柜底部的话，建议选用CS030。

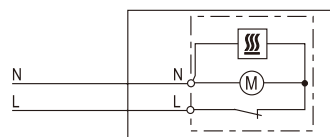
The compact high performance fan heater prevents formation of condensation and provides an evenly distributed interior air temperature in enclosures with electric/electronic components. The plastic enclosure provides double insulation and acts as protection against contact. The fan heater is available with optional integrated thermostat for temperature control. The CS 130 was designed as a stationary unit for wall fixing. For fixing on the bottom of the enclosure the fan heater CS 030 is recommended.

技术参数 Technical Data

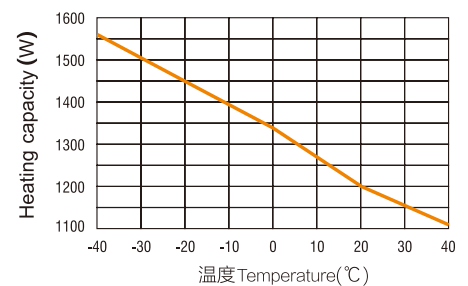
加热元件 Heater element	PTC 自动限温调节元件 PTC resistor, self regulating and temperature limiting
温度保护 Temperature safety cut-out	过热保护 to protect against overheating in case of fan failure
滚珠风机 Axial fan, ball bearing	风量见如下图表 airflow see table service life 50,000h at 25°C (77°F)
接线方式 Connection	螺丝 2-pole clamp max. 2.5mm ² clamping screw torque 0.8Nm max.
外壳材料 Casing	黑色塑料, UL94V-0 标准, V-0 防火等级 plastic according to UL94 V-0, black
安装方式 Mounting	35mm DIN 导轨安装, clip for 35mm DIN rail, EN 60715
安装位置 Installation position	横向 horizontal
外观尺寸 Dimensions	182 x 160 x 142mm
重量 Weight	大约 1.25 千克 approx. 1.25kg
操作/储存环境 Operating/Storage temperature	-45 to +70°C (-49 to +158°F)
防护等级 Protection type/Protection class	IP20 / II (double insulated)

接线示意图

Connection Diagram



加热功率
Heating capacity / Ambient temperature
diagram CS 130



订货代码 Art. No.	型号 Model	工作电压 Operating voltage	功率 Heating capacity	最大电流 Inrush current max.	设定范围 Setting range
13060.0-00	Fan Heater with thermostat	230VAC, 50/60Hz	1,200W	13A	0 to +60°C
13060.0-01	Fan Heater without thermostat	230VAC, 50/60Hz	1,200W	13A	-
13060.9-00	Fan Heater with thermostat	120VAC, 50/60Hz	1,200W	16A	+32 to +140°F
13060.9-01	Fan Heater without thermostat	120VAC, 50/60Hz	1,200W	16A	-

* 室温 at 20°C (68°F), * at 20°C (68°F) ambient temperature

HGM050 200W-1500W

产品特性 Features

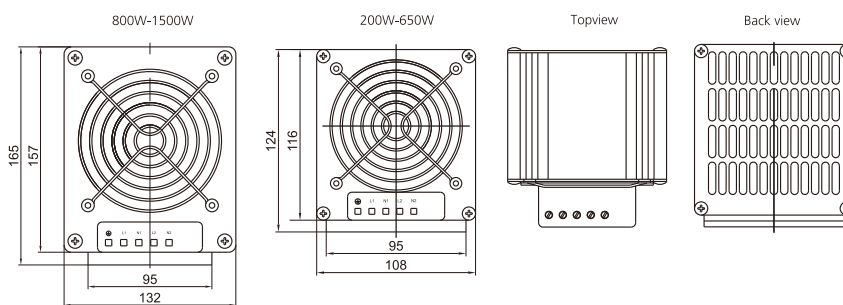
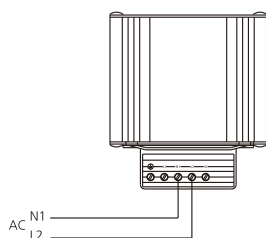
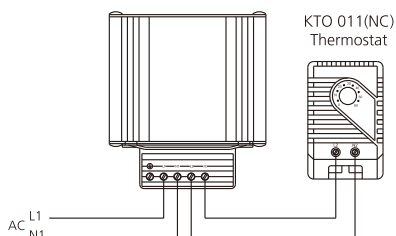
- 紧凑的设计 Compact design
- 导轨式安装 DIN rail mounted
- 使用寿命长 Long service life
- 免维护 Maintenance free
- 安全温度断流功能 Temperature safety cut-out

轻巧型风机加热器可预防冷凝的形成，一体化高性能轴流风扇可提供强力空气循环，使开关箱内温度恒定。当风扇发生故障时，加热器内安全切断开关会自动停止加热器的工作。

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 thermal protector.

技术参数 Technical Data

发热元件 Heating element	PTC
温度保护 Temperature safety cut-out	防止过热引起风扇不运转 to protect against overheating in case of fan failure
发热体 Heater body	通过极化处理的铝型材 anodised extruded aluminium profile
表面温度 Surface temperature	最高 75°C max. 75°C
滚珠轴流式风扇 Axial fan, ball bearing	气流自由流动 Airflow, free flow AC: 45m³/h (50Hz) or 54m³/h (60Hz) DC: 54m³/h 使用寿命 50,000 小时 service life 50,000h at 25°C (77°F)
接线方式 Connection	导线引入 internal connection terminal 1.5mm² with strain relief, clamping torque 0.8Nm max.
外壳材料 Connection casing	黑色塑料, UL94V-0 标准, V-0 防火等级 plastic according to UL94 V-0, black
安装方式 Mounting	35mm DIN 导轨安装, clip for 35mm DIN rail, EN 60715
安装位置 Installation position	垂直 vertical
操作/储存环境 Operating/Storage temperature	-45 to +70°C (-49 to +158°F)
防护等级 Protection type/Protection class	IP20 / I (earthed)

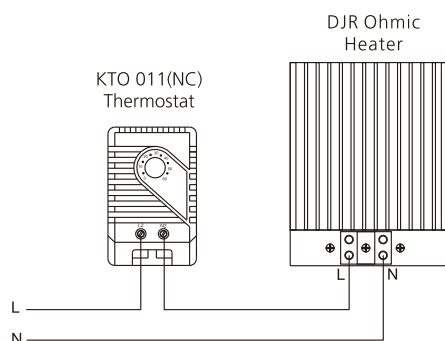
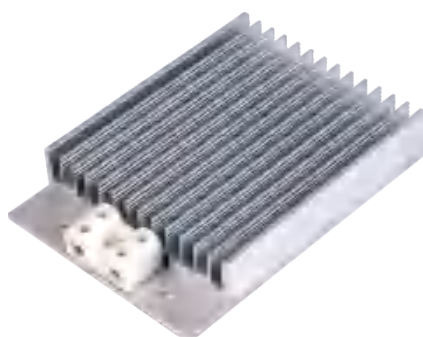


订货代码 Art. No.	工作电压 Operating voltage	功率 Heating capacity	长度(L) Length (L)	重量 Weight (approx.)
05040.0-00	230VAC, 50/60Hz	200W	122mm	0.90kg
05041.0-00	230VAC, 50/60Hz	250W	122mm	0.93kg
05042.0-00	230VAC, 50/60Hz	300W	122mm	0.95kg
05043.0-00	230VAC, 50/60Hz	400W	122mm	1.00kg
05044.0-00	230VAC, 50/60Hz	650W	132mm	1.15kg
05045.0-00	230VAC, 50/60Hz	800W	136mm	1.50kg
05046.0-00	230VAC, 50/60Hz	1000W	136mm	1.54kg
05047.0-00	230VAC, 50/60Hz	1200W	136mm	1.58kg
05049.0-00	230VAC, 50/60Hz	1500W	136mm	1.65kg

*注意: 110VAC; 24VDC; 48VDC 可订做 Notice: 110VAC; 24VDC; 48VDC available

DJR

产品特性 Features



DJR加热器，是根据国标(GB/T-15470-1995)研制生产的散热式电加热器。该产品采用6063-T5特制铝合金型材为传导散热体，为增大其散热面积，每个散热片上都设计有细小的波纹。其内部采用优质Ni80Cr20镍铬合金电阻丝为发热芯，精工制作而成。该产品体积小，重量轻，散热面积大，使用寿命长。接线装置安全可靠，不易损坏。整体设计，结构合理，外型美观。主要应用于高低压开关柜、中置柜、环网柜、端子箱、箱式变电站等电力设备防潮、防凝露、提高电气元件工作环境温度及一切需要除湿加热的场所，与我司的KT0011系列凝露温度监控器配套使用，可实现除湿升温自动化。该加热器具有加热效果好，使用安全可靠，平均无故障工作时间长，安装方便，国内各型号加热器通用等特点。

DJR Heater, is the development and Production of the heat dissipation electrical heater based on national standard GB/T-15470-1995. The Product adopts a special aluminum extrusions of 6063-T5 for conducting the radiator, in order to increase the cooling area, and designs small ripples on each heat sink. Its internal uses the quality Ni80Cr20 nickel-chromium alloy resistance wire for heater, seiko produced The Product has small size, light weight, big heat dissipation area and long service life. And the terminal device is safe and reliable, not easy to damage. As for the overall design, it has reasonable structure and beautiful appearance, mainly used in high and low voltage switch cabinet, centrally installed cabinet, ring counter, terminal box, substation and other power equipment for moisture-proof, anti-condensation, dehumidification to improve the working environment temperature and all the spaces need dehumidification and heating. Supporting the use of KT0011 series condensation temperature division monitor can realize the dehumidification and warming automation. The heater has the features of good heating effect, safe and reliable usage, long working time without failures, easy installation and universally used for the domestic various models of heater.

技术参数 Technical Data

工作电压：AC110V、220V、380V或DC220V、380V(客户根据需求来选型)
Working voltage: AC110V、220V、380V or DC220V、380V(to select by the custom)

工作频率：50Hz(仅适用于交流电压)
Operating frequency: 50Hz(only apply to the AC voltage)

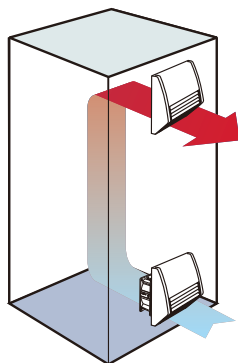
绝缘电阻：>50M欧姆
Insulation resistance: >50M Ohm

抗电强度：>2000V(接线端与铝介质之间)
Dielectric strength: >2000V(between terminal and aluminum medium)

连续工作时间：>5000小时
Continuous working time: >5000 hours

额定功率：50-500W
Rated power: 50-500W

订货代码	工作电压	功率	外观尺寸 (MM)	安装孔距 (MM)
Art. No.	Operating voltage	Heating capacity	Dimensions	Mounting Holes
DJR-A-1	110V/220V	50-300W	148 X 75 X 22	55
DJR-A-2	110V/220V	50-600W	200 X 104 X 22	55
DJR-B-1	110V/220V	50-300W	132 X 85 X 23	55
DJR-B-2	110V/220V	50-300W	163 X 100 X 28	55
DJR-B-3	110V/220V	50-300W	155 X 100 X 25	55



Enclosure air-conditioning using
a filter fan and exit filter

机箱空调使用一个过滤器
的风机和出口过滤器

FF 018 200M/3H

产品特性 Features

- 低噪音 Very low noise
- 体积小 Minimal depth in enclosure
- 多功能设计 Functional design
- 易安装 Time-saving installation
- 防腐蚀, 防紫外线 Weather proof and UV resistant

技术参数 Technical Data

轴流式滚珠风机 Axial fan, ball bearing	使用寿命最小50,000小时 service life min. 50,000h at 25°C/77° F (65% RH) fan body aluminium, rotor plastic
连接方式 Connection	2 wires with pressure clamps 2.5mm ² , length 100mm
外壳材料 Casing (filter fan and exit filter)	淡灰色塑料, UL94V-0, V-0 防火等级 plastic according to UL94 V-0, light grey
机罩(风机过滤器和风机出口) Hood (filter fan and exit filter)	淡灰色塑料, UL94V-0, V-0 防火等级 plastic according to UL94 V-0, light grey 防腐和防紫外线 UL746C (f1) weather proof and UV light resistant according to UL746C (f1)
安装架 Mounting frame	用工业双面粘合剂固定在外面的附件上, 在确定操作的情况下可以用另外的螺丝。 with double-sided industrial adhesive band for fixing to the outside of enclosure; certain operating circumstances can make the additional use of screws necessary (see drilling template); included in the delivery of the filter fans is a template for the enclosure cut-out
过滤垫 Filter mat	过滤度94% , G4 acc. to DIN EN 779, filtering degree 94%
过滤材料 Filter material	高级合成纤维构造, 100°C耐高温, F1型自灭材料, 可循环清理洗涤或用吸尘器清理 synthetic fibre with progressive construction, temperature resistant to 100°C, self-extinguishing class F1; moisture resistant to 100% RH, reusable—cleaning by washing or vacuuming
操作/储存环境 Operating/Storage temperature	-45 to +70°C (-49 to +158° F)
防护等级 Protection type/Protection class	IP54 / I (earthed)

*可用F5过滤器增加保护等级到IP55, 但会减少空气流量。

*Using fine filter mats type F5 increases the protection type to Ip55, but reduces the air volume.

- 安装架带粘性的封条阻止了灰尘和水进入到柜内。
- 通风口多功能的设计有效阻止了掉落的灰尘和水, 其优势是过滤垫不会很快的被灰尘弄脏, 这样就不需要经常更换。
- 风道使风机过滤器在操作中特别安静。
- 多功能和现代化的设计使安装时间减少。
- 所有的风机过滤器, 都有气流监控器。
- EMC版本和其它电压可按要求提供。
- 空气的方向可以随轴流式风机方向的改变而改变。
- The self-adhesive seal of the mounting frame prevents dust and water from entering the cabinet.
- Functional design of the intake and exit fan hoods very effectively prevents direct intrusion of falling water and dust. The advantage is that the filter mat does not get so quickly contaminated with dirt and thus does not need to be exchanged so often.
- The air channelling makes the filter fan particularly quiet in operation.
- Functional and modern design enables time-saving assembly and maintenance.
- All filter fan models are also available with integrated airflow monitor.
- EMC versions and other voltages on request.
- The direction of air can easily be switched by reversing the axial fan (sizes 1 to 3).

订货代号	操作电压	空气流量	空气流量 (带过滤罩)	电流	功率	平均噪音	箱体深度	开孔尺寸	重量
Art. No.	Operating voltage	Air volume free flow	Air volume free flow	Current consumption	Power consumption	Average noise level (DIN EN ISO4871)	Depth in enclosure	Enclosure cut-out	Weight (approx.)
01800.0-00	230VAC, 50Hz	21m ³ /h	16m ³ /h	80mA	13W	31dB (A)	45mm	97 x 97mm + 0.4	0.60kg
01801.0-00	230VAC, 50Hz	55m ³ /h	42m ³ /h	100mA	15W	40dB (A)	58mm	125 x 125mm + 0.4	1.00kg
01802.0-00	230VAC, 50Hz	102m ³ /h	68m ³ /h	100mA	15W	39dB (A)	86mm	176 x 176mm + 0.4	1.30kg
01800.0-01	120VAC, 60Hz	24m ³ /h	18m ³ /h	160mA	13W	31dB (A)	45mm	97 x 97mm + 0.4	0.60kg
01801.0-01	120VAC, 60Hz	63m ³ /h	48m ³ /h	180mA	15W	40dB (A)	58mm	125 x 125mm + 0.4	1.00kg
01802.0-01	120VAC, 60Hz	117m ³ /h	78m ³ /h	180mA	15W	39dB (A)	86mm	176 x 176mm + 0.4	1.30kg