



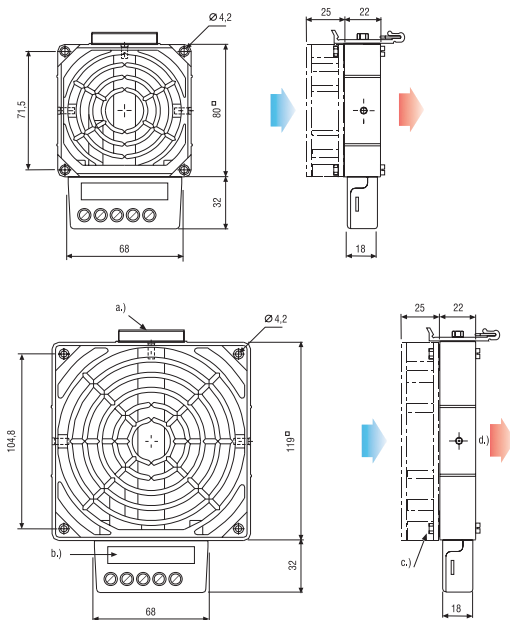
- Compact
- Flat design
- High air through-flow
- Temperature safety cut-out
- Clip fixing

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).



### Technical Data

<b>HV 031</b>	Heater without fan (fan mounting kit included)
<b>HVL 031</b>	Heater with fan
<b>Heating element</b>	high performance cartridge
<b>Temperature safety cut-out</b>	to protect against overheating in case of fan failure
<b>Heater body</b>	die-cast aluminium (glass bead blasted)
<b>Connection</b>	3-pole screw connector 2.5mm <sup>2</sup> , clamping torque 0.8Nm
<b>Connection casing</b>	plastic according to UL94 V-0, black
<b>Mounting</b>	clip for 35mm DIN rail, EN 50022
<b>Fitting position</b>	horizontal
<b>Operating/Storage temperature</b>	-45 to +70°C (-49 to +158°F)
<b>Protection type / Protection class</b>	IP20 / I (earthed)
<b>*Axial fan, ball bearing</b>	airflow see table service life 50,000h at 25°C (77°F)
<b>*Connection (axial fan) (*HVL 031 only)</b>	2-pole screw connector 2.5mm <sup>2</sup> (L2/N2)
<b>Approvals</b>	UL File No. E187294 (only 230VAC: VDE)



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



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

Art. No. HV 031 230VAC, 50/60Hz	Art. No. HV 031 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

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



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

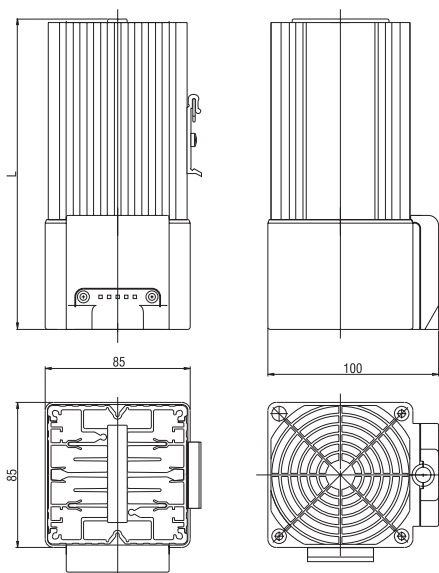
Compact fan heater prevents formation of condensation. The integrated high performance axial fan provides forced air circulation and so guarantees an even temperature in enclosures. With internal terminal connector.



### Technical Data

Heating element	resistance heater
Temperature safety cut-out	to protect against overheating in case of fan failure
Heater body	anodised extruded aluminium profile
Surface temperature	max. 75°C (400W)
Axial fan, ball bearing	Airflow, free flow AC: 45m³/h (50Hz) or 54m³/h (60Hz) DC: 54m³/h
Connection	internal connection terminal 1.5mm² with cable clamp, clamping torque 0.8Nm
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°C (-49 to +158°F)
Protection type / Protection class	IP20 / I (earthed)

**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).



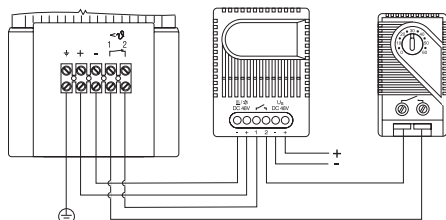
View from below

Electronic relay  
SM 010

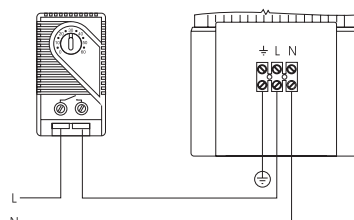
Control contact,  
e.g. Temperature regulator KTO 011

Control contact,  
e.g. Temperature regulator KTO 011

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



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



Art. No.	Operating voltage	Heating capacity	Length (L)	Weight (approx.)	Approvals
04640.0-00	230VAC, 50/60Hz	250W	182mm	1.10kg	VDE + UL File No. E150057
04641.0-00	230VAC, 50/60Hz	400W	222mm	1.40kg	VDE + UL File No. E150057
04640.9-00	120VAC, 50/60Hz	250W	182mm	1.10kg	VDE + UL File No. E150057
04641.9-00	120VAC, 50/60Hz	400W	222mm	1.40kg	VDE + UL File No. E150057
04640.1-00	24VDC	250W	182mm	1.10kg	-
04640.2-00	48VDC	250W	182mm	1.10kg	-
04641.2-00	48VDC	400W	222mm	1.40kg	-



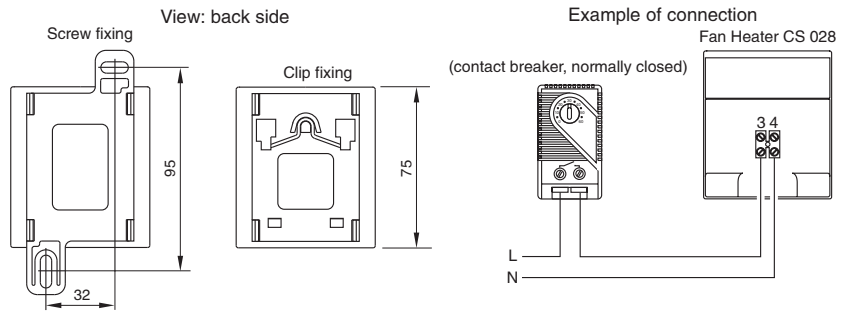
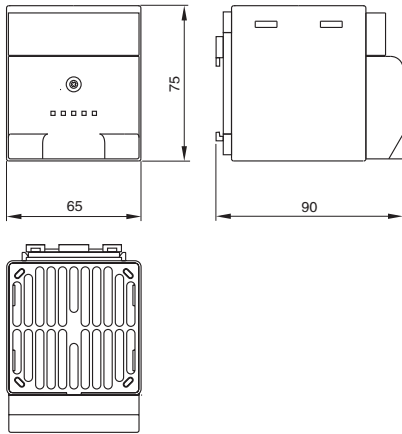
- ◆ 紧凑型设计 Small, compact design
- ◆ 无噪声 Quiet in operation
- ◆ 高效加热 Dynamic heating up
- ◆ 导轨或螺丝安装 Clip or screw fixing

风扇加热器使用于配电柜中，该产品可用螺丝安装或DIN导轨安装，该加热器可保护开关元件和控制柜内的温度，防止凝露。

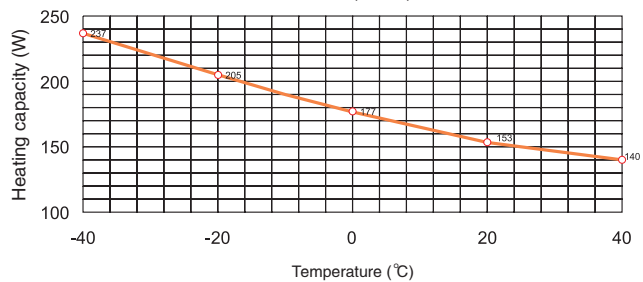
Fan heater prevents formation of condensation in enclosures with electric/electronic components. The heater is connected using the internal terminal connectors. The CS 028s small size make it ideal for use in enclosures where space is at a premium.

◆ 技术参数 Technical Data

发热元件 Heating element	PTC发热元件 PTC heating element
最大峰值电流 Inrush current max.	2A at 230VAC, 5A at 120VAC
表面温度 Surface temperature	最高 65°C (149°F) Max. 65°C (149°F)
滚珠风机 Axial fan, ball bearing	空气流动 13.8 m³/h, (在 40°C 时使用寿命 40,000h) air flow 13.8 m³/h, free flow (service life 40,000h at 40°C)
接线方式 Connection	螺丝 2-pole clamp max. 2.5mm² 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
安装方式 Fitting position	垂直 vertical
重量 Weight	大约 0.30 千克 approx. 0.30kg
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)
注意 Note	其他电压可定做 other voltages on request



Heating capacity / Ambient temperature diagram  
CS 028 (150W)



订货代号 Art. No.	操作电压 Operating voltage	功率 Heating capacity	尺寸 Dimensions	安装方式 Mounting
02800.0-00	230VAC, 50/60Hz	150W	87 x 65 x 75mm	导轨 Clip fixing
02800.0-01	230VAC, 50/60Hz	150W	87 x 65 x 114mm	螺丝 Screw fixing
02800.9-00	120VAC, 50/60Hz	150W	87 x 65 x 75mm	导轨 Clip fixing
02800.9-01	120VAC, 50/60Hz	150W	87 x 65 x 114mm	螺丝 Screw fixing

\*at 20°C (68° F) ambient temperature



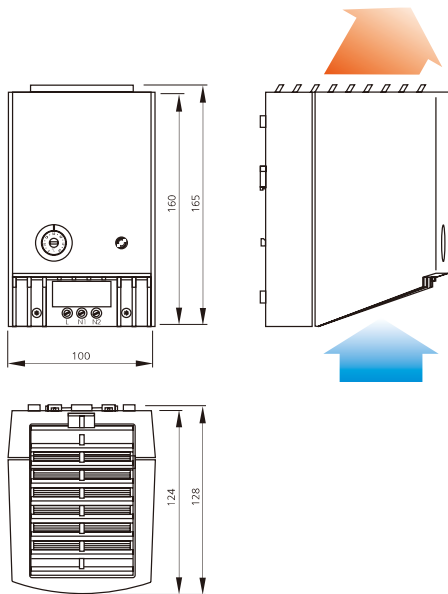
- Compact heater
- Heating capacity adjusts to ambient temperature
- Adjustable temperature range
- Clip fixing
- Optical indicator
- Temperature safety cut-out

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.

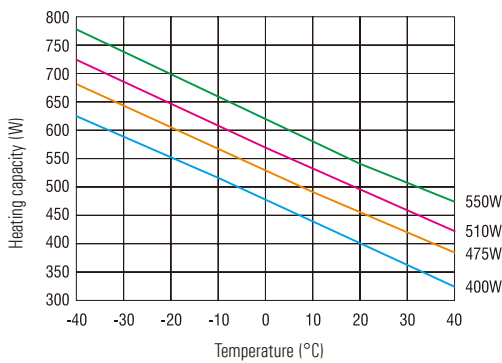


### Technical Data

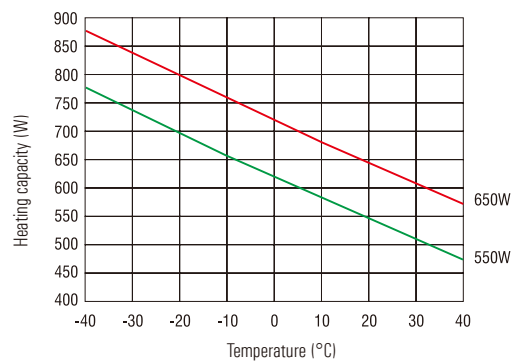
Heating element	PTC resistor, temperature limiting
Temperature safety cut-out	to protect against overheating in case of fan failure
Axial fan, ball bearing	airflow see table service life 50,000h at 25°C (77°F)
Connection	2-pole clamp 2.5mm <sup>2</sup> , clamping torque 0.8Nm max.
Casing	plastic according to UL94 V-0, light grey
Optical indicator	thermostat control lamp
Mounting	clip for 35mm DIN rail, EN 60715
Fitting position	vertical
Dimensions	100 x 128 x 165mm
Operating / Storage temperature	-45 to +70°C (-49 to +158°F)
Protection type / Protection class	IP20 / II (double insulated)
Approvals	UL File No. E204590



Heating capacity / Ambient temperature diagram CR 027 (50Hz)



Heating capacity / Ambient temperature diagram CR 027 (60Hz)



Art. No.	Operating voltage	Heating capacity* (50Hz)	Heating capacity* (60Hz)	Inrush current max.	Airflow, free flow	Setting range Temp. regulator	Weight (approx.)
02700.0-00	220-240VAC, 50/60Hz	475W	550W	11.0A	35m <sup>3</sup> /h	0 to +60°C	0.9kg
02701.0-00	220-240VAC, 50/60Hz	550W	650W	13.0A	45m <sup>3</sup> /h	0 to +60°C	1.1kg
02700.9-00	100-120VAC, 50/60Hz	400W	550W	14.0A	35m <sup>3</sup> /h	+32 to +140°F	0.9kg
02701.9-00	100-120VAC, 50/60Hz	510W	650W	15.0A	45m <sup>3</sup> /h	+32 to +140°F	1.1kg

\*at 20°C (68°F) ambient temperature



- Compact design
- Double insulated
- Integrated thermostat or hygrostat

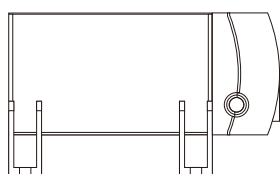
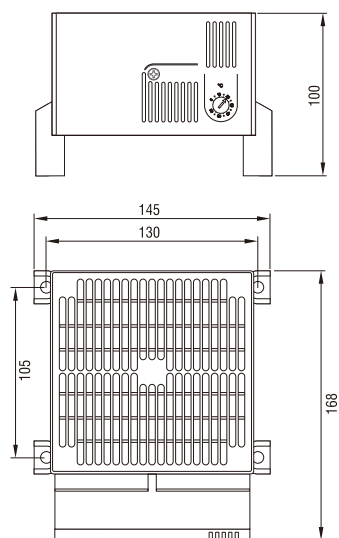
The compact high performance fan heater prevents formation of condensation and provides an evenly distributed interior air temperature in enclosures with electric/electronic components. The plastic enclosure provides double insulation and acts as protection against contact. The fan heater is available 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.



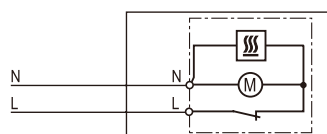
### Technical Data

<b>Heating element</b>	high performance cartridge
<b>Temperature safety cut-out</b>	to protect against overheating in case of fan failure, automatic reset
<b>Heater body</b>	extruded aluminium profile
<b>Axial fan, ball bearing</b>	airflow 160m³/h, free flow service life 50,000h at 25°C (77°F)
<b>Connection</b>	2-pole max. 2.5mm², clamping screw with strain relief, torque 0.8Nm max.
<b>Casing</b>	plastic according to UL94 V-0, black
<b>Mounting</b>	screw fixing (M5)
<b>Fitting position</b>	horizontal
<b>Dimensions</b>	168 x 145 x 100mm
<b>Weight</b>	approx. 1.40kg
<b>Operating* / Storage temperature</b>	-45 to +70°C (-49 to +158°F)
<b>Protection type / Protection class</b>	IP20 / II (double insulated)
<b>Note</b>	other heating capacities from 200W up available on request

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



Connection diagram



Art. No.	Model	Operating voltage	Heating capacity	Setting range	Approvals
03051.0-00	Fan Heater with thermostat	230VAC, 50/60Hz	950W	0 to +60°C	VDE + UL File No. E234324*
03051.0-02	Fan Heater with hygrostat	230VAC, 50/60Hz	950W	65% RH, factory-set	VDE + UL File No. E234324*
03059.9-00	Fan Heater with thermostat	120VAC, 50/60Hz	950W	+32 to +140°F	UL File No. E234324*

\*according to UL499 in combination with UL508A

## (Semiconductor)



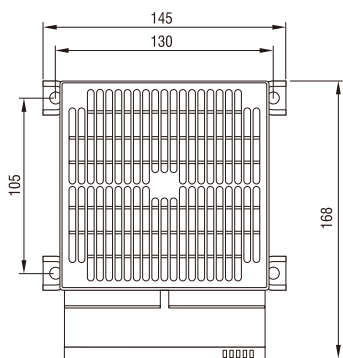
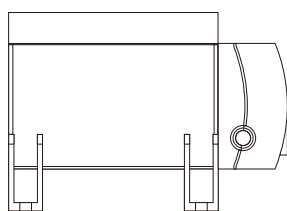
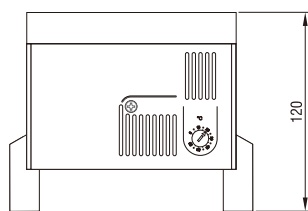
- Compact design
- High heating performance
- Double insulated
- Integrated thermostat (optional)

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 the bottom of the enclosure. For wall fixing the fan heater CS 130 is recommended.

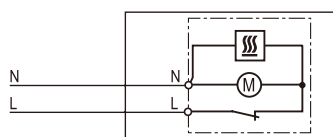


### Technical Data

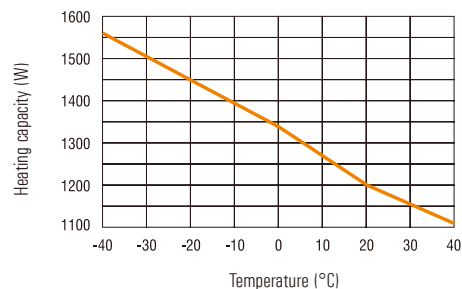
Heating element	PTC resistor - temperature limiting
Temperature safety cut-out	to protect against overheating in case of fan failure
Axial fan, ball bearing	airflow 160m <sup>3</sup> /h, free flow service life 50,000h at 25°C (77°F)
Connection	2-pole max. 2.5mm <sup>2</sup> , clamping screw with strain relief, torque 0.8Nm max.
Casing	plastic according to UL94 V-0, black
Mounting	screw fixing (M5)
Fitting position	horizontal
Dimensions	168 x 145 x 120mm
Weight	approx. 1.20kg
Operating / Storage temperature	-45 to +70°C (-49 to +158°F)
Protection type / Protection class	IP20 / II (double insulated)



Connection diagram



Heating capacity / Ambient temperature diagram CS 030



Art. No.	Model	Operating voltage	Heating capacity*	Inrush current max.	Setting range	Approvals
03060.0-00	Fan Heater with thermostat	230VAC, 50/60Hz	1,200W	13A	0 to +60°C	VDE; (UL intended)
03060.0-01	Fan Heater without thermostat	230VAC, 50/60Hz	1,200W	13A	-	VDE; (UL intended)
03060.9-00	Fan Heater with thermostat	120VAC, 50/60Hz	1,200W	16A	+32 to +140°F	UL intended
03060.9-01	Fan Heater without thermostat	120VAC, 50/60Hz	1,200W	16A	-	UL intended

\* at 20°C (68°F) ambient temperature



- **Compact design**
- **Double insulated**
- **Integrated thermostat or hygrostat**
- **Optional clip or screw fixing**

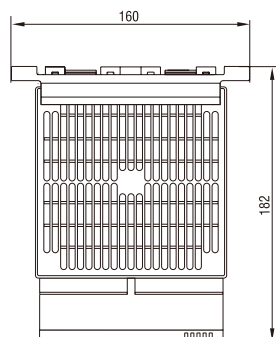
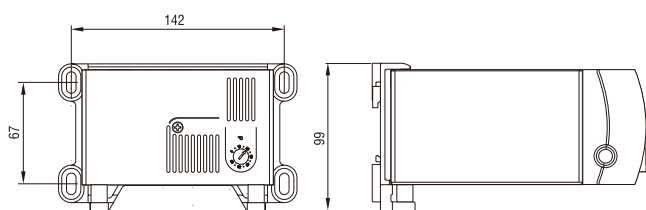
The compact high performance fan heater prevents formation of condensation and provides an evenly distributed interior air temperature in enclosures with electric/electronic components. The plastic enclosure provides double insulation and acts as protection against contact. The fan heater is available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



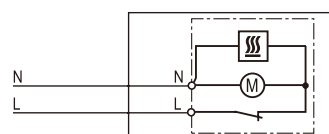
### Technical Data

<b>Heating element</b>	high performance cartridge
<b>Temperature safety cut-out</b>	to protect against overheating in case of fan failure, automatic reset
<b>Heater body</b>	extruded aluminium profile
<b>Axial fan, ball bearing</b>	airflow 160m <sup>3</sup> /h, free flow service life 50,000h at 25°C (77°F)
<b>Connection</b>	2-pole max. 2.5mm <sup>2</sup> , clamping screw with strain relief, torque 0.8Nm max.
<b>Casing</b>	plastic according to UL94 V-0, black
<b>Mounting</b>	clip for 35mm DIN rail, EN 50022 or screw fixing (M6)
<b>Fitting position</b>	horizontal
<b>Dimensions</b>	182 x 160 x 99mm
<b>Weight</b>	approx. 1.45kg
<b>Operating* / Storage temperature</b>	-45 to +70°C (-49 to +158°F)
<b>Protection type / Protection class</b>	IP20 / II (double insulated)
<b>Note</b>	other heating capacities from 200W up available on request

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



Connection diagram



Art. No.	Model	Operating voltage	Heating capacity	Setting range	Approvals
13051.0-00	Fan Heater with thermostat	230VAC, 50/60Hz	950W	0 to +60°C	VDE + UL File No. E234324*
13051.0-02	Fan Heater with hygrostat	230VAC, 50/60Hz	950W	65% RH, factory-set	VDE + UL File No. E234324*
13059.9-00	Fan Heater with thermostat	120VAC, 50/60Hz	950W	+32 to +140°F	UL File No. E234324*

\*according to UL499 in combination with UL508A



# Compact high-performance Fan Heater CS 130 1,200W (Semiconductor)



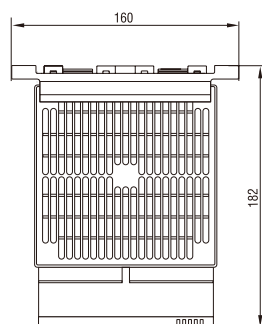
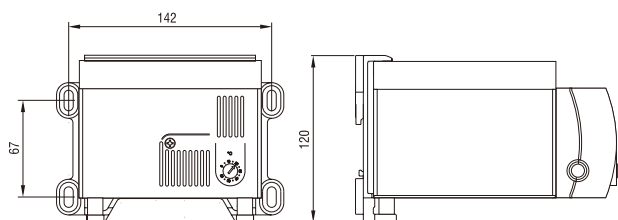
- Compact design
- High heating performance
- Double insulated
- Integrated thermostat (optional)
- Optional clip or screw fixing

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.

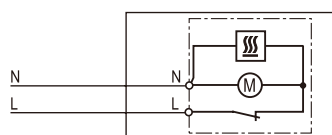


## Technical Data

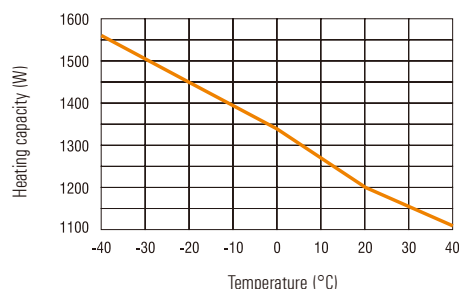
Heating element	PTC resistor - temperature limiting
Temperature safety cut-out	to protect against overheating in case of fan failure
Axial fan, ball bearing	airflow 160m <sup>3</sup> /h, free flow service life 50,000h at 25°C (77°F)
Connection	2-pole max. 2.5mm <sup>2</sup> , clamping screw with strain relief, torque 0.8Nm max.
Casing	plastic according to UL94 V-0, black
Mounting	clip for 35mm DIN rail, EN 50022 or screw fixing (M6)
Fitting position	horizontal
Dimensions	182 x 160 x 120mm
Weight	approx. 1.25kg
Operating / Storage temperature	-45 to +70°C (-49 to +158°F)
Protection type / Protection class	IP20 / II (double insulated)



Connection diagram



Heating capacity / Ambient temperature diagram CS 130



Art. No.	Model	Operating voltage	Heating capacity*	Inrush current max.	Setting range	Approvals
13060.0-00	Fan Heater with thermostat	230VAC, 50/60Hz	1,200W	13A	0 to +60°C	VDE; (UL intended)
13060.0-01	Fan Heater without thermostat	230VAC, 50/60Hz	1,200W	13A	-	VDE; (UL intended)
13060.9-00	Fan Heater with thermostat	120VAC, 50/60Hz	1,200W	16A	+32 to +140°F	UL intended
13060.9-01	Fan Heater without thermostat	120VAC, 50/60Hz	1,200W	16A	-	UL intended

\* at 20°C (68°F) ambient temperature