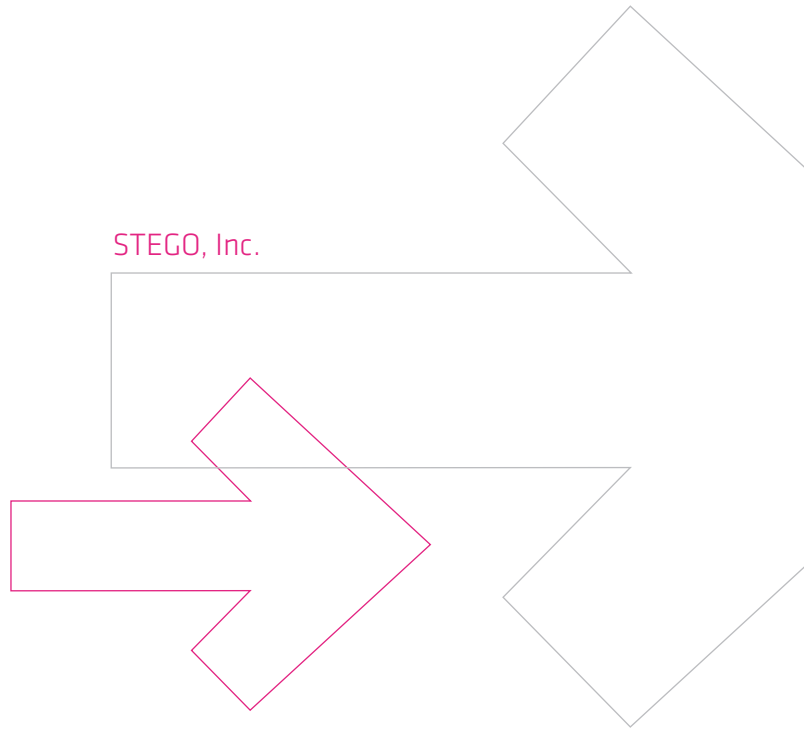


# INNOVATION

FOR PERFECT THERMAL  
MANAGEMENT WORLDWIDE

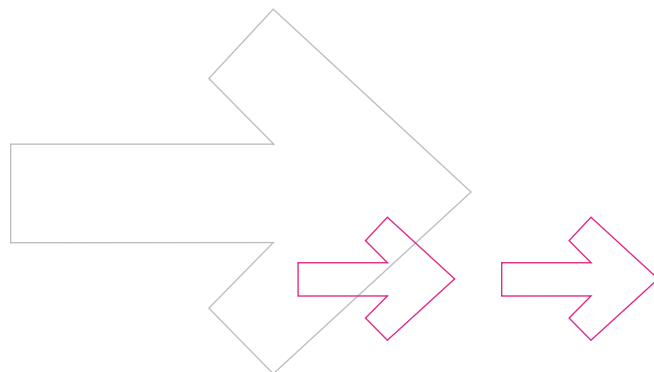






# INNOVATION

→ **Thermal Management**





# COMPANY



## INNOVATION MADE IN GERMANY

We have been developing and producing innovative products for perfect thermal management for over 30 years in Schwäbisch Hall, Germany.

# STEGO: SAFETY IS WHAT DRIVES US

STEGO products are used in all places where sensitive electronic components must be protected from humidity and other climatic influences. Heating elements, regulators, fans and STEGO accessories help you to optimize operating conditions and to reach maximum protection for your installations. So that you can be sure of lasting success!

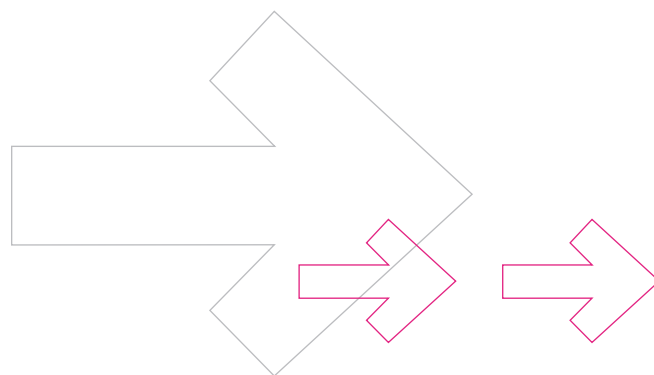
## PERFECT THERMAL MANAGEMENT

Since it was founded in 1980, STEGO Elektrotechnik in Schwäbisch Hall, Germany, has been developing, producing and selling an ever-growing range of products for the protection of electric and electronic components. All STEGO products are aimed at reaching optimum climatic conditions in the most varied environments, ensuring that all sensitive components work reliably at all times.

Tried and tested temperature and humidity control systems ensure these optimized climatic conditions. If temperature and/or humidity are too low or too high, the necessary countermeasure is immediately initiated, for example a heater is turned on or a filter fan circulates cool air. A diversity of conditions such as the change from day to night, or particularly warm or cold regions, make climatization an ever-increasing and challenging task. To meet this challenge, STEGO offers everything that is needed to protect sensitive components from corrosion and malfunction.

## WORLDWIDE SERVICE SUPPORTING QUALITY WORLDWIDE

STEGO's thermal management solutions are exported internationally and find use in the most diverse areas of application and climatic conditions. STEGO maintains an on-going exchange with partners and customers from many branches of industry in order to develop innovative products meeting the demands of the market. This close contact enables STEGO to incorporate market requirements from experts directly into our product design. As part of this global cooperation valuable know-how is permanently exchanged, thus strengthening the competence of our designers beyond local market knowledge. The continuous flow of information not only increases the quality of STEGO products, but also the final products our customers bring onto the market. STEGO believes in sustainability, acts in an environmentally-friendly manner and is quality-oriented. The company is DIN EN ISO 9001:2008 and 14001:2004 certified and has recently introduced the Six Sigma method to improve quality management. STEGO is now represented at 12 locations and by more than 200 sales partners worldwide.





# CONTENT

DISCOVER OUR PORTFOLIO OF TRIED AND TESTED PRODUCTS USED FOR THE PROTECTION OF ELECTRICAL AND ELECTRONIC INSTALLATIONS ON ALL CONTINENTS.

<b>COMPANY STEGO</b>	<b>6</b>
<b>HEATING</b>	<b>10</b>
PTC Heater RCE 016   5 W, 9 W	12
PTC Heater RC 016   8 W to 13 W	13
PTC Heater HGK 047   10 W to 30 W	14
Touch-safe PTC Heater CSK 060   10 W, 20 W	15
PTC Heater HG 140   15 W to 150 W	16
Explosion-proof Heater CREx 020   50 W, 100 W	17
Touch-safe PTC Heater CS 060   50 W to 150 W	18
Touch-safe PTC Heater CSF 060   50 W to 150 W	19
Touch-safe PTC Fan Heater CS 028 / CSL 028   150 W to 400 W	20
Fan Heater HGL 046   250 W, 400 W	21
Touch-safe PTC Fan Heater CSF 028   250 W, 400 W	22
Fan Heater HVL 031   100 W to 400 W	24
PTC Fan Heater CR 027   400 W to 650 W	25
Space-saving Fan Heater (OEM version - no fan provided) HVI 030   500 W to 700 W	26
Space-saving Fan Heater (fan included) HVI 030   500 W to 700 W	27
Foot-mount Fan Heater CR 030   950 W	28
Panel-mount Fan Heater CR 130   950 W	29
Compact PTC Fan Heater CS 032 / CSF 032   1000 W	30
Foot-mount PTC Fan Heater CS 030   1200 W	32
Panel-mount PTC Fan Heater CS 130   1200 W	33
<b>COOLING</b>	<b>34</b>
Filter Fan FF 018   14 CFM to 69 CFM	36
Filter Fan FF 018   136 CFM	38
Filter Fan FF 018   202 CFM	39
Filter Fan FF 018   373 CFM	40
Outdoor Filter Fan FF 018   14 CFM	41
Roof Filter Fan RFP 018   177 CFM to 338 CFM	42
19" Fan Tray LE 019   286 CFM to 1017 CFM	43
STEGOJET SJ 019	44

Indication of measurements in inch. Errors and omissions excepted. Specifications are subject to change without notice. Suitability of the products for their intended use and any associated risks must be determined by the end customer/buyer in their final application. Up-to-date versions of all technical data sheets in pdf-format can be found in the Internet on [www.stegousa.com](http://www.stegousa.com) for download.



We offer calculation modules on our website helping you to determine the required heating or cooling performance for an application. You will also find there latest news, as well as further information about STEGO.

<b>REGULATING</b>	<b>46</b>
Small Thermostat KTO 011 / KTS 011	48
Compact Thumbwheel Thermostat STO 011 / STS 011	49
Tamperproof Thermostat FTO 011 / FTS 011	50
Dual Thermostat ZR 011	51
Tamperproof Dual Thermostat FTD 011	52
Mechanical Thermostat FZK 011	53
Electronic Thermostat ETR 011	54
Electronic Thermostat ET 011   DC 24 V	55
Mechanical Hygrostat MFR 012	56
Electronic Hygrostat EFR 012	57
Electronic Hygrotherm ETF 012	58
Electronic Hygrotherm with external sensor ETF 012	59
Electronic Relay SM 010   DC 24 V + DC 48 V	60
Explosion-proof Thermostat REx 011	61
<b>LIGHTING</b>	<b>62</b>
Light LED 025	64
Slimline Light SL 025	66
Slimline Light SL 025	67
Compact Enclosure Light KL 025	68
<b>ACCESSORIES</b>	<b>70</b>
Enclosure Receptacle SD 035	72
Vent Plug DA 084	73
Vent Plug DA 284	74
Stainless Steel Vent Plug DA 284S	75
Drainage Device DD 084   IP66 / IP67 / IP69K	76
Door Switch DS 013	77
Self-adhesive Mounting Aid STEGOFIX SF 095	78
<b>LOCATIONS</b>	<b>80</b>



# HEATING



## PROTECTION AGAINST FROST AND CONDENSATION

Optimized temperatures are of utmost importance in switch cabinets: STEGO heaters and fan heaters prevent dangerously low temperatures and ensure equal distribution of warm air.

# PTC HEATER

## RCE 016 | 5 & 9 W



- > Compact size
- > Wide voltage range
- > Energy saving

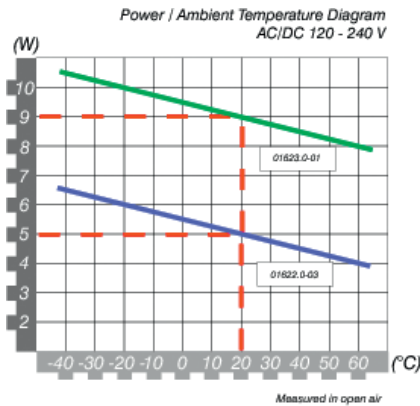
> Heating power adjusts to ambient temperature

The RCE 016 small heaters have been designed to prevent condensation and to ensure a minimum operating temperature in small enclosures.

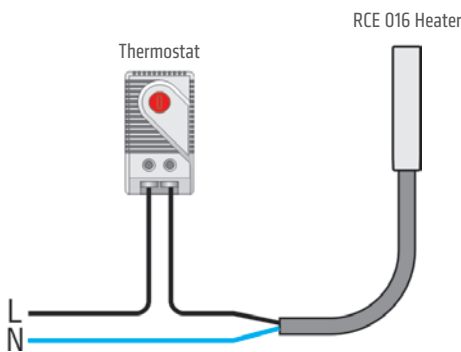


### TECHNICAL DATA

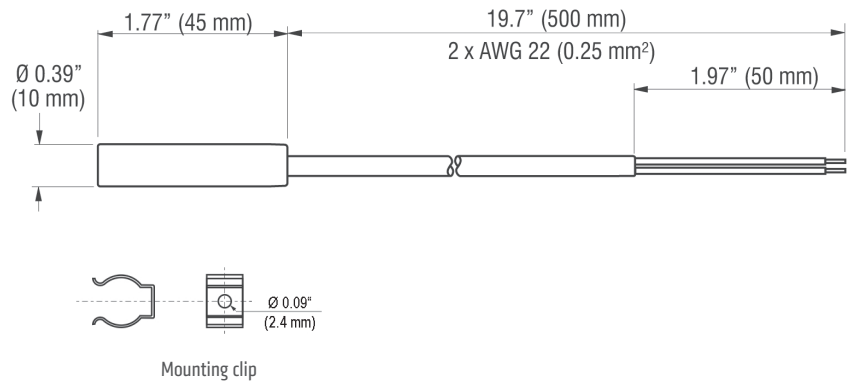
Operating voltage	see table below
Heating element	PTC resistor - temperature limiting
Heater body	aluminum, anodized
Insulation	PTFE / Kapton
Mounting	2 pressure clips included (mounting screws not included)
Mounting position	variable
Operating / Storage temperature	-49 to +158 °F (-45 to +70 °C)
Operating / Storage humidity	max. 90 %RH (non-condensing)
Protection class / Protection type	II (double insulated) / IP54



Wiring example



PTC Heater RCE 016



Part No.	Heating capacity <sup>1</sup>	Operating voltage <sup>2</sup>	Max. current (inrush)	Surface temperature (approx.) <sup>1</sup>	Weight (approx.)	Approvals		
01622.0-03	5 W	AC/DC 120-240 V	2.0 A	329 °F (165 °C)	0.7 oz. (20 g)	UL File No. E234324	VDE	GOST-R
01623.0-01	9 W	AC/DC 120-240 V	2.5 A	347 °F (175 °C)	0.7 oz. (20 g)	UL File No. E234324	VDE	GOST-R
01624.0-03	5 W	AC/DC 12-30 V	5.8 A	284 °F (140 °C)	0.7 oz. (20 g)	UL File No. E234324		GOST-R
01625.0-02	9 W	AC/DC 12-30 V	2.4 A	360 °F (182 °C)	0.7 oz. (20 g)	UL File No. E234324		GOST-R

<sup>1</sup> at 68 °F (20 °C) ambient temperature; <sup>2</sup> operating high voltage heaters below AC/DC 140 V reduces heating performance by approx. 10% (min. 110 V, max 265 V).

# PTC HEATER

## RC 016 | 8 - 13 W



- > Compact size
- > Wide voltage range
- > Energy saving

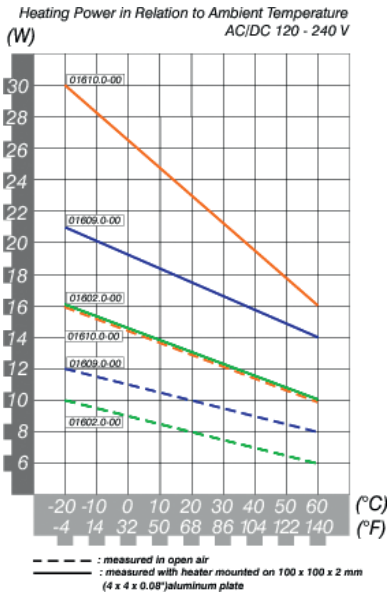
- > Heating power adjusts to ambient temperature

The RC 016 small heaters are designed to prevent condensation and to ensure a minimum operating temperature in small enclosures.

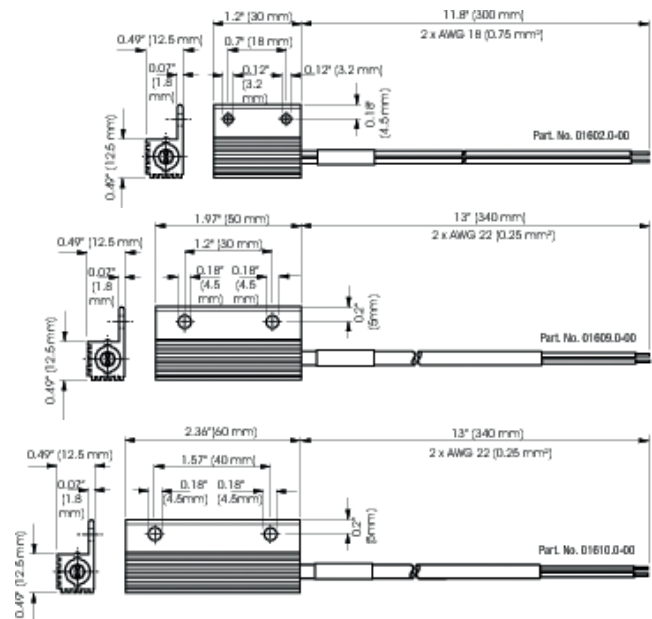
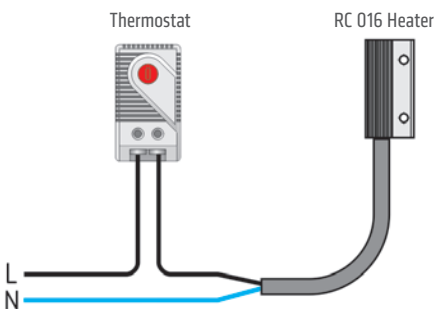


### TECHNICAL DATA

Operating voltage	see table below
Heating element	PTC resistor - temperature limiting
Heater body	aluminum, anodized
Insulation	PTFE / Kapton
Mounting	screw (mounting screws not included)
Mounting position	variable
Operating / Storage temperature	-49 to +158 °F (-45 to +70 °C)
Operating / Storage humidity	max. 90 %RH (non-condensing)
Protection class / Protection type	II (double insulated) / IP54



Wiring example



Part No.	Heating capacity <sup>1</sup>	Operating voltage <sup>2</sup>	Max. current (inrush)	Surface temperature (approx.) <sup>1</sup>	Weight (approx.)	Approvals
01602.0-00	8 W	AC/DC 120-240 V	2.0 A	302 °F (150 °C)	0.7 oz. (20 g)	UL File No. E234324 VDE GOST-R
01602.0-03	8 W	AC/DC 12-30 V	3.7 A	273 °F (134 °C)	0.7 oz. (20 g)	UL File No. E234324 GOST-R
01609.0-00	10 W	AC/DC 120-240 V	2.5 A	311 °F (155 °C)	1.0 oz. (28 g)	UL File No. E234324 VDE GOST-R
01609.0-01	10 W	AC/DC 12-30 V	5.7 A	270 °F (132 °C)	1.0 oz. (28 g)	UL File No. E234324 GOST-R
01610.0-00	13 W	AC/DC 120-240 V	3.0 A	338 °F (170 °C)	1.2 oz. (34 g)	UL File No. E234324 VDE GOST-R
01610.0-01	13 W	AC/DC 12-30 V	10.0 A	298 °F (148 °C)	1.2 oz. (34 g)	UL File No. E234324 GOST-R

<sup>1</sup> at 68°F (20°C) ambient temperature; <sup>2</sup> operating high voltage heaters below AC/DC 140V reduces heating performance by approx. 10% (min. 110V, max 265V).

# PTC HEATER

## HGK 047 | 10 - 30 W



> Compact size  
> Heating power adjusts to ambient temperature

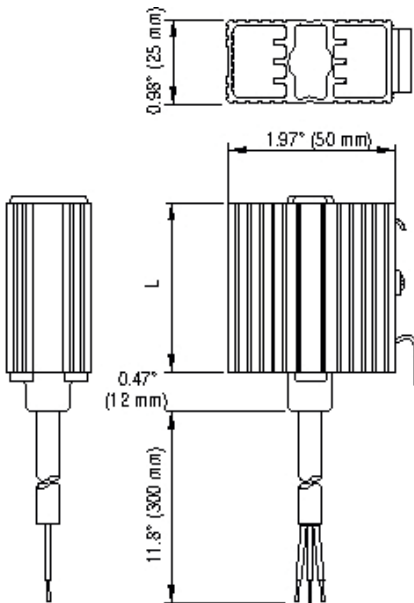
> DIN rail mountable  
> Wide voltage range

The HGK 047 heaters are used in enclosures to maintain minimum operating temperatures and to help prevent failure of electronic components caused by condensation and corrosion.

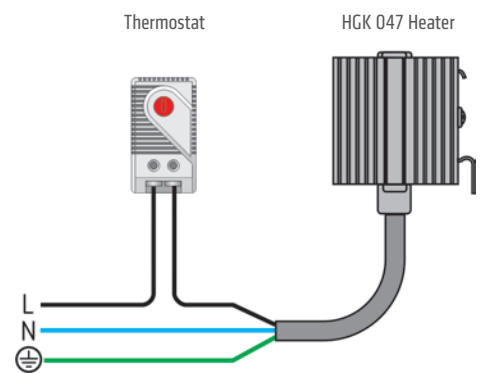


### TECHNICAL DATA

Operating voltage	see table below
Heating element	PTC resistor - temperature limiting
Heater body	extruded aluminum profile, anodized
Connection	3 x AWG 20 (0.5 mm <sup>2</sup> ), 12" (300 mm) length
Mounting	clip for 35 mm DIN rail, EN 60715
Mounting position	vertical
Operating / Storage temperature	-49 to +158 °F (-45 to +70 °C)
Operating / Storage humidity	max. 90 %RH (non-condensing)
Protection class / Protection type	I (grounded) / IP44



Wiring example



Part No.	Heating capacity <sup>1</sup>	Operating voltage <sup>2</sup>	Max. current (inrush)	Length (L)	Weight (approx.)	Approvals
04700.0-00	10 W	AC/DC 140-240 V	1.0 A	2.05" (52 mm)	3.0 oz. (85 g)	VDE GOST-R
04701.0-00	20 W	AC/DC 140-240 V	2.5 A	2.36" (60 mm)	3.6 oz. (100 g)	VDE GOST-R
04702.0-00	30 W	AC/DC 140-240 V	3.0 A	2.76" (70 mm)	4.0 oz. (110 g)	VDE GOST-R
04700.9-00	10 W	AC/DC 110-120 V	1.0 A	2.05" (52 mm)	3.0 oz. (85 g)	UL File No. E234324 GOST-R
04701.9-00	20 W	AC/DC 110-120 V	1.5 A	2.76" (70 mm)	4.0 oz. (110 g)	UL File No. E234324 GOST-R
04702.9-00	30 W	AC/DC 110-120 V	1.5 A	3.94" (100 mm)	5.2 oz. (150 g)	UL File No. E234324 GOST-R

<sup>1</sup> at 68°F (20°C) ambient temperature; <sup>2</sup> operating high voltage heaters below AC/DC 140 V reduces heating performance by approx. 10% (min. 110 V, max 265 V).

# TOUCH-SAFE PTC HEATER

CSK 060 | 10 & 20 W



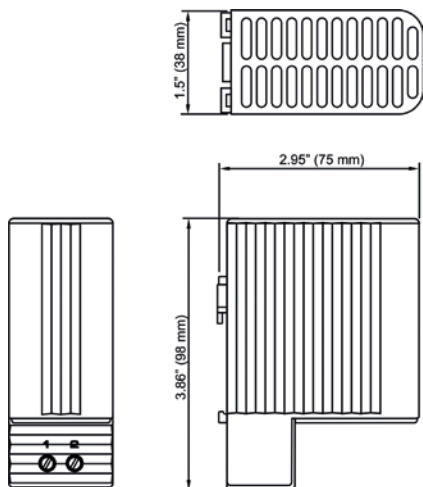
- > Low surface temperature
- > Compact size
- > Wide voltage range
- > Double insulated protection
- > DIN rail mountable

The CSK 060 is a touch-safe heater for use in enclosures. The design of the heater utilizes natural convection which results in a circulating current of warm air. The surface temperatures on the accessible side surfaces of the housing are minimized as a result of the heater design.

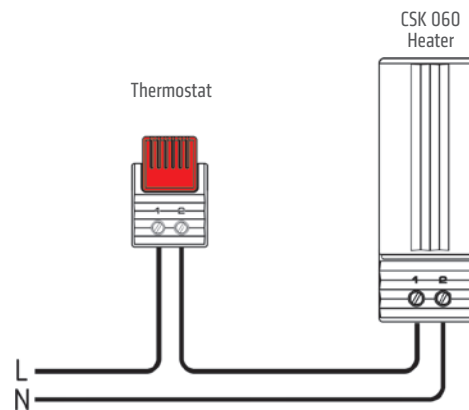


### TECHNICAL DATA

Heating capacity	see table
Heating element	PTC resistor - temperature limiting
Surface temperature	< 185 °F (85 °C), except upper protective grill
Connection	2-pole terminal AWG 14 max. (2.5 mm <sup>2</sup> ), torque 0.8 Nm max.
Mounting	clip for 35 mm DIN rail, EN 60715
Housing	plastic, UL 94V-0, black
Mounting position	vertical
Operating / Storage temperature	-49 to +158 °F (-45 to +70 °C)
Operating / Storage humidity	max. 90 %RH (non-condensing)
Dimensions	3.86" x 2.95" x 1.5" (98 x 75 x 38 mm)
Protection class / Protection type	II (double insulated) / IP20
Approvals	UL File No. E150057, VDE, GOST TR
Note	other voltages available upon request



Wiring example



Part No.	Heating capacity <sup>1</sup>	Operating voltage <sup>2</sup>	Max. current (inrush)	Weight (approx.)
06030.0-00	20 W	AC/DC 120-240 V	2.5 A	6.1 oz. (170 g)
06040.0-00	10 W	AC/DC 120-240 V	1.0 A	5.0 oz. (140 g)

<sup>1</sup> at 68°F (20°C) ambient temperature; <sup>2</sup> operating high voltage heaters below AC/DC 140V reduces heating performance by approx. 10% (min. 110V, max 265V).

# PTC HEATER

## HG 140 | 15 - 150 W



- > Compact size
- > Wide voltage range
- > Heating power adjusts to ambient temperature

- > Cage clamp connectors for quick & easy wiring
- > DIN rail mountable

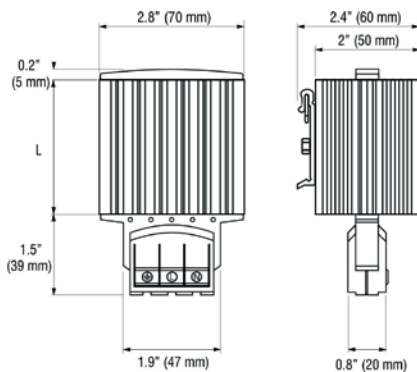
These heaters are used in enclosures where damage from condensation must be prevented, or where the temperature must be maintained above a minimum value. The aluminum profile heater body design has a chimney effect to distribute heat evenly. The cage clamp connectors save time and simplify installation.



### TECHNICAL DATA

Operating voltage <sup>1</sup>	AC/DC 120-240 V (min. 110 V, max. 265 V)
Heating element	PTC resistor - temperature limiting
Heater body	extruded aluminum profile, anodized
Connection	3 cage clamps for solid wire AWG 20-14 (0.5-2.5 mm <sup>2</sup> ), and stranded wire (with wire end ferrule) - AWG 20-16 (0.5-1.5 mm <sup>2</sup> )
Connection casing	plastic, UL 94V-0, black
Mounting	clip for 35 mm DIN rail, EN 60715
Mounting position	vertical
Operating / Storage temperature	-49 to +158 °F (-45 to +70 °C)
Operating / Storage humidity	max. 90 %RH (non-condensing)
Protection class / Protection type	I (grounded) / IP20
Approvals	UL File No. E150057, VDE, GOST-R
Note	other voltages available upon request

<sup>1</sup> Operating high voltage heaters below AC/DC 140 V reduces heating performance by approx. 10%.



Part No.	Heating capacity <sup>2</sup>	Max. current (inrush)	Length (L on dim. dwg.)	Weight (approx.)
14000.0-00	15 W	1.5 A	2.56" (65 mm)	7.6 oz. (215 g)
14001.0-00	30 W	3.0 A	2.56" (65 mm)	7.6 oz. (215 g)
14003.0-00	45 W	3.5 A	2.56" (65 mm)	7.6 oz. (215 g)
14005.0-00	60 W	2.5 A	5.5" (140 mm)	14.1 oz. (400 g)
14006.0-00	75 W	4.0 A	5.5" (140 mm)	14.3 oz. (405 g)
14007.0-00	100 W	4.5 A	5.5" (140 mm)	14.3 oz. (405 g)
14008.0-00	150 W	9.0 A	8.66" (220 mm)	21.3 oz. (600 g)

<sup>2</sup> at 68 °F (20 °C) ambient temperature



# EXPLOSION-PROOF HEATER

CREx 020 | 50 & 100 W



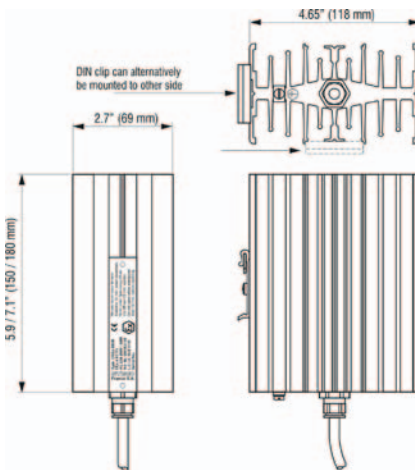
- > Large convection surface
- > Maintenance free

> DIN rail mountable

The CREx 020 convection heaters are used in areas with explosion hazard to maintain minimum operating temperatures to help prevent failure of electronic components caused by condensation and corrosion.



## TECHNICAL DATA



Explosion protection according to EN	LCIE (Laboratoire Central des Industries Electriques)
Conformity certificate	LCIE 01 ATEX 6073 X / 06, IECEx LCI 07.0020 X
Heating element	high performance cartridge
Heater body	aluminum profile, silver anodized
Connection	Si HF - JZ 3 x AWG 18 (0.75 mm <sup>2</sup> ), length 3.3 ft (1 m)
Connection PE	4 mm <sup>2</sup>
Mounting	clip for 35 mm DIN rail, EN 60715
Mounting position	vertical
Storage temperature	-49 to +158 °F (-45 to +70 °C)
Protection class / Protection type	I (grounded) / IP65
Approvals	EAC submitted

Part No.	Operating voltage	Heating capacity	Pre-fuse T (time-delay)	Ambient temperature <sup>1</sup>	Ex Protection type (Ex) II 2 GD		Surface temperature	Length (L)	Weight (approx.)
					Gases	Dusts			
02010.0-00	AC 230-240 V	50 W	0.5 A	-40 to +122 °F (-40 to +50 °C) -40 to +185 °F (-40 to +85 °C)	Ex d IIC T5 Gb Ex d IIC T4 Gb	Ex tb IIIC T100°C Db IP6X Ex tb IIIC T135°C Db IP6X	T5 = +212 °F (+100 °C) T4 = +275 °F (+135 °C)	5.9" (150 mm)	2.9 lbs. (1.3 kg)
02010.0-01	AC 110-120 V	50 W	1 A	-40 to +122 °F (-40 to +50 °C) -40 to +185 °F (-40 to +85 °C)	Ex d IIC T5 Gb Ex d IIC T4 Gb	Ex tb IIIC T100°C Db IP6X Ex tb IIIC T135°C Db IP6X	T5 = +212 °F (+100 °C) T4 = +275 °F (+135 °C)	5.9" (150 mm)	2.9 lbs. (1.3 kg)
02011.0-00	AC 230-240 V	100 W	1 A	-40 to +122 °F (-40 to +50 °C) -40 to +185 °F (-40 to +85 °C)	Ex d IIC T4 Gb Ex d IIC T3 Gb	Ex tb IIIC T135°C Db IP6X Ex tb IIIC T200°C Db IP6X	T4 = +275 °F (+135 °C) T3 = +392 °F (+200 °C)	7.1" (180 mm)	3.3 lbs. (1.5 kg)
02011.0-01	AC 110-120 V	100 W	2 A	-40 to +122 °F (-40 to +50 °C) -40 to +185 °F (-40 to +85 °C)	Ex d IIC T4 Gb Ex d IIC T3 Gb	Ex tb IIIC T135°C Db IP6X Ex tb IIIC T200°C Db IP6X	T4 = +275 °F (+135 °C) T3 = +392 °F (+200 °C)	7.1" (180 mm)	3.3 lbs. (1.5 kg)

<sup>1</sup> Ambient temperature outside of the cabinet/enclosure.

# TOUCH-SAFE PTC HEATER

CS 060 | 50 - 150 W



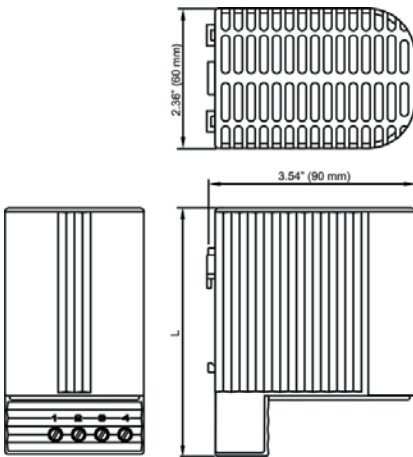
- > Low surface temperature
- > Compact size
- > Wide voltage range
- > Double insulated protection
- > DIN rail mountable

The CS 060 is a touch-safe heater for use in enclosures. The design of the heater utilizes natural convection which results in a circulating current of warm air. The surface temperatures on the accessible side surfaces of the housing are minimized as a result of the heater design. The CS 060 is also available in a version with a plug-in thermostat requiring no additional wiring (CSF 060).



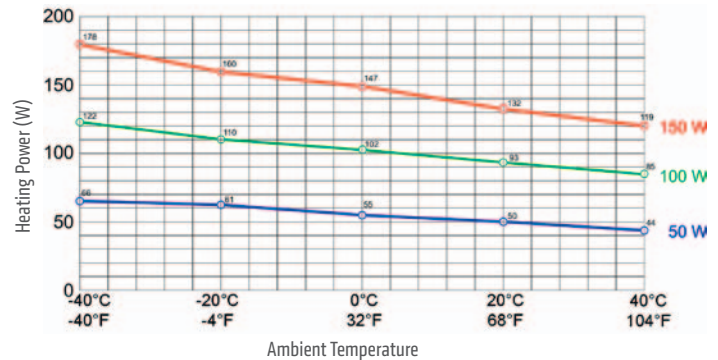
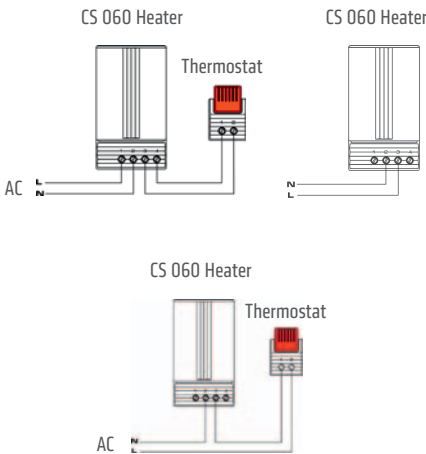
## TECHNICAL DATA

Operating voltage <sup>1</sup>	AC/DC 120-240 V (min. 110 V, max. 265 V)
Heating capacity	see table
Heating element	PTC resistor - temperature limiting
Surface temperature	< 176 °F (80 °C), except upper protective grill
Connection	4-pole terminal AWG 14 max (2.5 mm <sup>2</sup> ), torque 0.8 Nm max.
Housing	plastic, UL 94V-0, black
Mounting	clip for 35 mm DIN rail, EN 60715
Mounting position	vertical
Operating / Storage temperature	-49 to +158 °F (-45 to +70 °C)
Operating / Storage humidity	max. 90 %RH (non-condensing)
Protection class / Protection type	II (double insulated) / IP20
Approvals	UL File No. E150057, VDE, GOST TR
Note	other voltages available upon request



<sup>1</sup> Operating high voltage heaters below AC/DC 140 V reduces heating performance by approx. 10%.

### Wiring examples



Part No.	Heating capacity <sup>2</sup>	Max. current (inrush)	Air outlet temperature <sup>3</sup>	Dimensions	Weight (approx.)
06000.0-00	50 W	2.5 A	187 °F (86 °C)	4.3 x 2.36 x 3.54" (110 x 60 x 90 mm)	10.4 oz. (295 g)
06010.0-00	100 W	4.5 A	248 °F (120 °C)	4.3 x 2.36 x 3.54" (110 x 60 x 90 mm)	10.6 oz. (300 g)
06020.0-00	150 W	8 A	293 °F (145 °C)	5.9 x 2.36 x 3.54" (150 x 60 x 90 mm)	15.5 oz. (440 g)

<sup>2</sup> see Heating Power / Ambient Temperature diagram; <sup>3</sup> measured 2" (50 mm) above protective grill

# TOUCH-SAFE PTC HEATER

CSF 060 | 50-150 W



- > Low surface temperature
- > Wide voltage range
- > Integrated thermostat
- > Double insulated protection
- > Compact size
- > DIN rail mountable

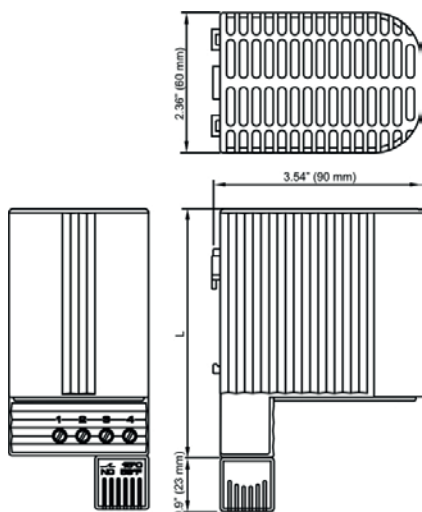
The CSF 060 is a touch-safe heater for use in enclosures. The design of the heater utilizes natural convection which results in a circulating current of warm air. The surface temperatures on the accessible side surfaces of the housing are minimized as a result of the heater design. This model with plug-in thermostat does not require additional wiring. The CSF 060 is also available in a version without thermostat (CS 060).



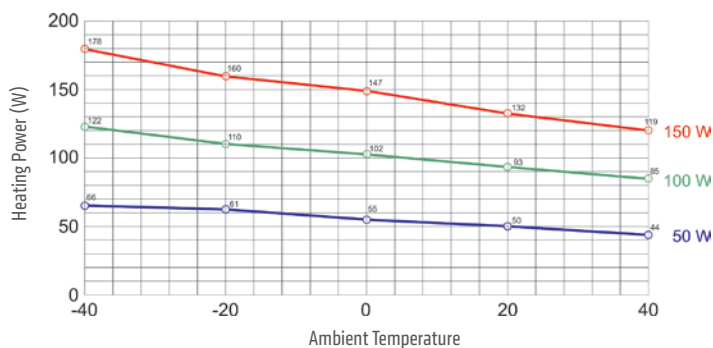
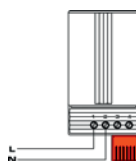
## TECHNICAL DATA

Operating voltage <sup>1</sup>	AC 120-240 V (min. 110 V, max. 265 V)
Heating capacity	see table
Heating element	PTC resistor - temperature limiting
Surface temperature	< 176 °F (80 °C), except upper protective grill
Connection	4-pole terminal AWG 14 max (2.5 mm <sup>2</sup> ), torque 0.8 Nm max.
Housing	plastic, UL 94V-0, black
Mounting	clip for 35 mm DIN rail, EN 60715
Mounting position	vertical
Operating / Storage temperature	-40 to +158 °F (-40 to +70 °C) / -49 to +158 °F (-45 to +70 °C)
Operating / Storage humidity	max. 90 %RH (non-condensing)
Protection class / Protection type	II (double insulated) / IP20
Approvals	VDE, GOST TR

<sup>1</sup> Operating high voltage heaters below AC 140 V reduces heating performance by approx. 10%.



Wiring example  
CSF 060 Heater



Part No.	Heating capacity <sup>2</sup>	Max. current (inrush)	Air outlet temperature <sup>3</sup>	Switch-off temperature <sup>4</sup>	Switch-on temperature <sup>4</sup>	Dimensions	Weight (approx.)
06001.0-00	50 W	2.5 A	187 °F (86 °C)	59 °F (15 °C)	41 °F (5 °C)	5.24 x 2.36 x 3.54" (133 x 60 x 90 mm)	10.8 oz. (305 g)
06002.0-00	50 W	2.5 A	187 °F (86 °C)	77 °F (25 °C)	59 °F (15 °C)	5.24 x 2.36 x 3.54" (133 x 60 x 90 mm)	10.8 oz. (305 g)
06011.0-00	100 W	4.5 A	248 °F (120 °C)	59 °F (15 °C)	41 °F (5 °C)	5.24 x 2.36 x 3.54" (133 x 60 x 90 mm)	11.2 oz. (320 g)
06012.0-00	100 W	4.5 A	248 °F (120 °C)	77 °F (25 °C)	59 °F (15 °C)	5.24 x 2.36 x 3.54" (133 x 60 x 90 mm)	11.2 oz. (320 g)
06021.0-00	150 W	8.0 A	293 °F (145 °C)	59 °F (15 °C)	41 °F (5 °C)	6.8 x 2.36 x 3.54" (173 x 60 x 90 mm)	15.9 oz. (450 g)
06022.0-00	150 W	8.0 A	293 °F (145 °C)	77 °F (25 °C)	59 °F (15 °C)	6.8 x 2.36 x 3.54" (173 x 60 x 90 mm)	15.9 oz. (450 g)

<sup>2</sup> see Heating Power / Ambient Temperature diagram; <sup>3</sup> measured 2" (50 mm) above protective grill; <sup>4</sup> tolerance of ± 5K

Note: Other Switch-off and Switch-on temperatures on request

# TOUCH-SAFE PTC FAN HEATER

CS 028 / CSL 028 | 150 - 400 W



Photo: Fan Heater CSL 028

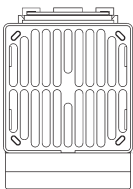
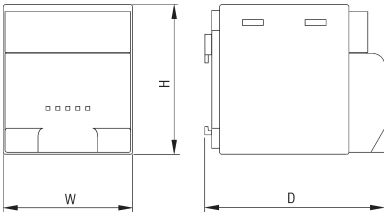
- > Compact size
- > Quiet operation
- > DIN rail or screw mount available
- > Heating power adjusts to ambient temperature

The CS 028 / CSL 028 fan heater prevents formation of condensation and provides an evenly distributed interior air temperature in enclosures. The heater is connected using the internal terminal connectors. The surface temperatures on the accessible side surfaces of the housing are minimized as a result of the heater design. The small size of the CS 028 / CSL 028 make it ideal for use in enclosures where space is at a premium.

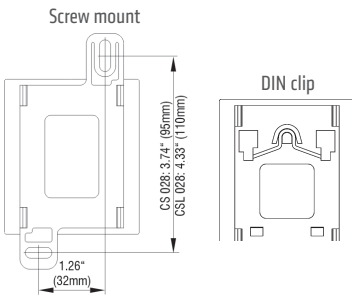


## TECHNICAL DATA

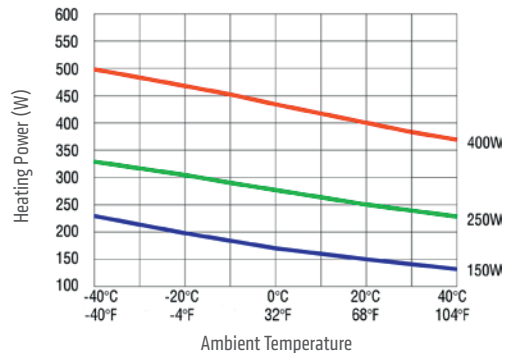
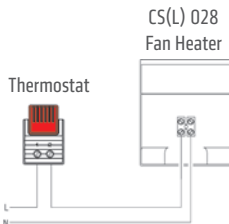
<b>Heating element</b>	PTC resistor - temperature limiting
<b>Surface temperature</b>	150 W / 250 W: max. 122 °F (50 °C) except upper protective grill 400 W: max. 149 °F (65 °C) except upper protective grill measured at 68 °F (20 °C) ambient temperature
<b>Axial fan, ball bearing</b>	service life 40,000 h at 104 °F (40 °C)
<b>Air flow, free blowing</b>	CS 028: 8 cfm (13.8 m <sup>3</sup> /h) CSL 028: 32 cfm (54 m <sup>3</sup> /h) @ AC 120 V; 26 cfm (45 m <sup>3</sup> /h) @ AC 230 V
<b>Connection</b>	2-pole terminal AWG 14 max. (2.5 mm <sup>2</sup> ) with strain relief, torque 0.8 Nm max.
<b>Housing</b>	plastic, UL 94V-0, black
<b>Mounting</b>	screw mount or clip for 35 mm DIN rail, EN 60715
<b>Mounting position</b>	vertical
<b>Operating / Storage temperature</b>	-49 to +158 °F (-45 to +70 °C)
<b>Operating / Storage humidity</b>	max. 90 %RH (non-condensing)
<b>Protection class / Protection type</b>	II (double insulated) / IP20
<b>Approvals</b>	UL File No. E234324 (all), GOST TR (all), VDE (AC 230 V only)
<b>Note</b>	other voltages available upon request



View: back side



Wiring example



Part No. - DIN mount	Part No. - screw mount	Series	Operating voltage	Heating capacity <sup>1</sup>	Max. current (inrush)	Dimensions (H x W x D)	Weight (approx.)
02800.0-00	02800.0-01	CS 028	AC 230 V, 50/60 Hz	150 W	12 A	2.95 x 2.56 x 3.54" (75 x 65 x 90 mm)	10.6 oz. (300 g)
02800.9-00	02800.9-01	CS 028	AC 120 V, 50/60 Hz	150 W	6 A	2.95 x 2.56 x 3.54" (75 x 65 x 90 mm)	10.6 oz. (300 g)
02810.0-00	02810.0-01	CSL 028	AC 230 V, 50/60 Hz	400 W	15 A	3.54 x 3.35 x 4.37" (90 x 85 x 111 mm)	17.6 oz. (500 g)
02810.9-00	02810.9-01	CSL 028	AC 120 V, 50/60 Hz	400 W	9 A	3.54 x 3.35 x 4.37" (90 x 85 x 111 mm)	17.6 oz. (500 g)
02811.0-00	02811.0-01	CSL 028	AC 230 V, 50/60 Hz	250 W	9 A	3.54 x 3.35 x 4.37" (90 x 85 x 111 mm)	17.6 oz. (500 g)
02811.9-00	02811.9-01	CSL 028	AC 120 V, 50/60 Hz	250 W	6 A	3.54 x 3.35 x 4.37" (90 x 85 x 111 mm)	17.6 oz. (500 g)

<sup>1</sup> at 68 °F (20 °C) ambient temperature

# FAN HEATER

## HGL 046 | 250 & 400 W



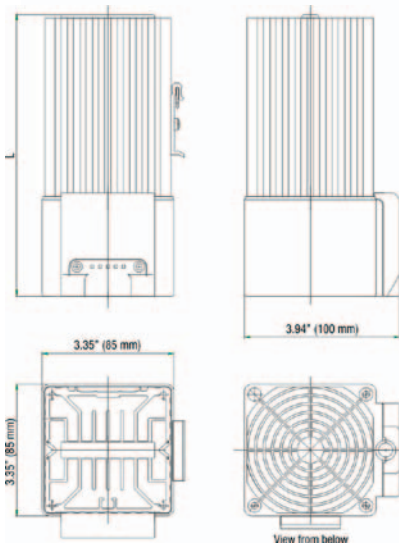
- > Compact size
- > Built-in overheat protection
- > Long service life
- > DIN rail mountable

The compact HGL 046 fan heater prevents formation of condensation. The integrated high performance axial fan provides forced air circulation and so guarantees an even temperature in enclosures. The heater is wired using the internal terminal connectors.

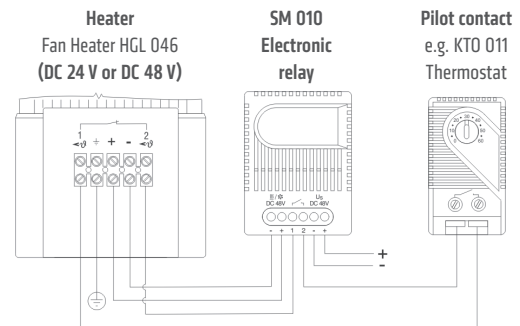
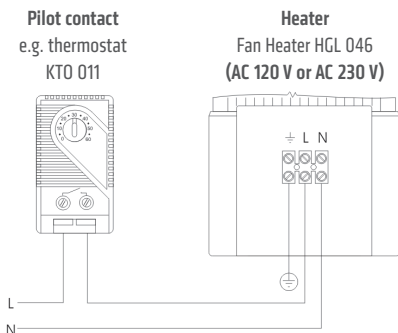


### TECHNICAL DATA

Heating element	resistance - micanite
Overheat protection	built-in temperature limiter
Heater body	extruded aluminum, anodized
Surface temperature	400 W heater - max. 167 °F (75 °C)
Axial fan, ball bearing	service life 50,000 h at 77 °F (25 °C)
Air flow, free blowing	AC: 26 cfm (45 m³/h) - 50 Hz; 32 cfm (54 m³/h) - 60 Hz DC: 32 cfm (54 m³/h)
Connection	3-pole terminal AWG 16 max. (1.5 mm²) with strain relief, clamping torque 0.8 Nm max.
Connection housing	plastic, UL 94V-0, black
Mounting	clip for 35 mm DIN rail, EN 60715
Mounting position	vertical
Operating / Storage temperature	-49 to +158 °F (-45 to +70 °C)
Operating / Storage humidity	max. 90 %RH (non-condensing)
Protection class / Protection type	I (grounded) / IP20



View from below



Part No.	Heating capacity	Operating voltage	Length (L)	Weight (approx.)	Approvals
04640.0-00	250 W	AC 230 V, 50/60 Hz	7.2" (182 mm)	2.4 lbs. (1.1 kg)	UL File No. E234324 VDE GOST TR
04640.9-00	250 W	AC 120 V, 50/60 Hz	7.2" (182 mm)	2.4 lbs. (1.1 kg)	UL File No. E234324 VDE GOST TR
04641.0-00	400 W	AC 230 V, 50/60 Hz	8.7" (222 mm)	3.1 lbs. (1.4 kg)	UL File No. E234324 VDE GOST TR
04641.9-00	400 W	AC 120 V, 50/60 Hz	8.7" (222 mm)	3.1 lbs. (1.4 kg)	UL File No. E234324 VDE GOST TR
04640.1-00	250 W	DC 24 V	7.2" (182 mm)	2.4 lbs. (1.1 kg)	UL File No. E234324 - GOST TR
04640.2-00	250 W	DC 48 V	7.2" (182 mm)	2.4 lbs. (1.1 kg)	UL File No. E234324 - GOST TR
04641.2-00	400 W	DC 48 V	8.7" (222 mm)	3.1 lbs. (1.4 kg)	UL File No. E234324 - GOST TR

Note: In the case of DC 24 V and DC 48 V, the fan heater must be switched via a relay. For this application, the SM 010 Electronic Relay (Part No. 01000.0-01 or 01001.0-01) is recommended.

# TOUCH-SAFE PTC FAN HEATER

## CSF 028 | 250 W, 400 W



CSF 028 with DIN clip



CSF 028 with screw mount tabs

- > Compact size
- > Integrated pre-set thermostat
- > Quiet operation
- > Heating power adjusts to ambient temperature
- > DIN rail or screw tab mount available

The CSF 028 fan heater prevents formation of condensation and provides evenly distributed interior air temperature in enclosures. The touch-safe plastic housing and the small size makes it ideal for use in enclosures with a high packing density. The heater is equipped with a fixed set point thermostat and is easily wired via external pressure clamps. Two different mounting options are available - DIN rail or screw tabs. The robust screw tab mounting is particularly suitable for applications with high vibration.



### TECHNICAL DATA

Heating element	PTC resistor - temperature limiting
Surface temperature	250 W: max. 122 °F (50 °C), 400 W: max. 149 °F (65 °C) each except upper protective grille at 68 °F (20 °C) ambient temperature
Overheat protection	built-in temperature limiter
Axial fan, ball bearing	service life 40,000 h at 104 °F (+40 °C)
Axial fan, free blowing	32 cfm (54 m <sup>3</sup> /h) @ AC 120 V; 26 cfm (45 m <sup>3</sup> /h) @ AC 230 V
Connection	2-pole dual pressure clamp for solid wire AWG 14 max. (2.5mm <sup>2</sup> ), stranded wire (with wire end ferrule) AWG 16 max. (1.5 mm <sup>2</sup> )
Housing	plastic according to UL 94V-0, black
Mounting	clip for 35 mm DIN rail, EN 60715 or screw mount (Ø 5.5 mm), clamping torque 2 Nm max., washers must be used
Mounting position	vertical airflow (air outlet up), horizontal airflow
Dimensions	models with DIN clip: 4.13 x 3.35 x 4.65" (105 x 85 x 118 mm), models w/ screw tabs: 4.13 x 4.53 x 4.25" (105 x 115 x 108 mm)
Weight	17.6 oz. (500 g)
Operating / Storage temperature	-40 to +158 °F (-40 to +70 °C) / -49 to +158 °F (-45 to +70 °C)
Operating / Storage	max. 90 %RH (non-condensing)
Protection class / Protection type	II (double insulated) / IP20
Approvals	UL File No. E150057, VDE

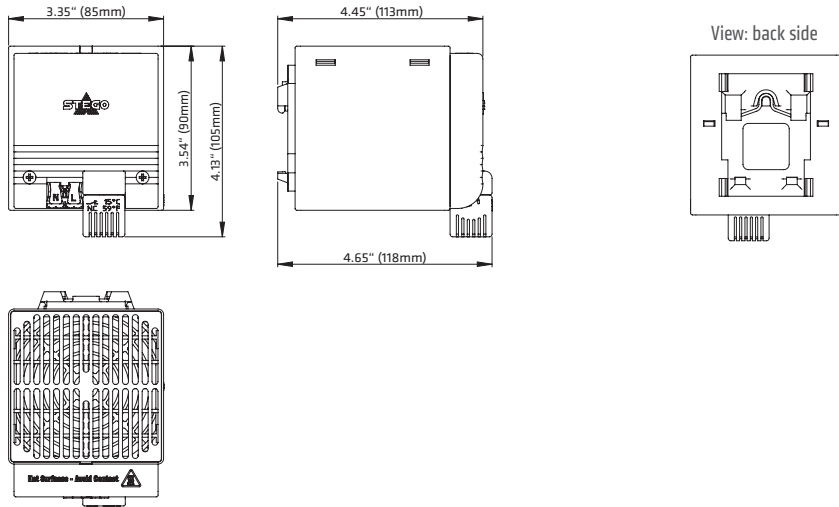
Part No. - DIN mount	Part No. - screw tab mount	Operating voltage	Heating capacity <sup>1</sup>	Inrush current max.	Pre-fuse T (time-delay)	Switch-off temperature <sup>2</sup>	Switch-on temperature <sup>2</sup>
02821.9-06	02821.9-08	AC 120 V, 50/60 Hz	250 W	6 A	10 A	59 °F (15 °C)	41 °F (5 °C)
02821.9-09	02821.9-11	AC 120 V, 50/60 Hz	250 W	6 A	10 A	77 °F (25 °C)	59 °F (15 °C)
02820.9-06	02820.9-08	AC 120 V, 50/60 Hz	400 W	9 A	10 A	59 °F (15 °C)	41 °F (5 °C)
02820.9-09	02820.9-11	AC 120 V, 50/60 Hz	400 W	9 A	10 A	77 °F (25 °C)	59 °F (15 °C)
02821.0-06	02821.0-08	AC 230 V, 50/60 Hz	250 W	9 A	10 A	59 °F (15 °C)	41 °F (5 °C)
02821.0-09	02821.0-11	AC 230 V, 50/60 Hz	250 W	9 A	10 A	77 °F (25 °C)	59 °F (15 °C)
02820.0-06	02820.0-08	AC 230 V, 50/60 Hz	400 W	15 A	16 A	59 °F (15 °C)	41 °F (5 °C)
02820.0-09	02820.0-11	AC 230 V, 50/60 Hz	400 W	15 A	16 A	77 °F (25 °C)	59 °F (15 °C)

<sup>1</sup> at 68 °F (20 °C) ambient temperature; <sup>2</sup> tolerance of ±5 K

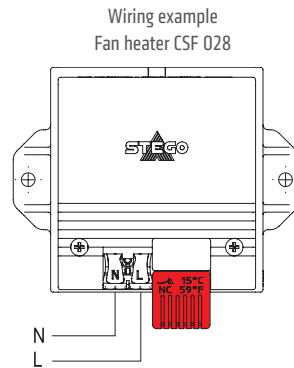
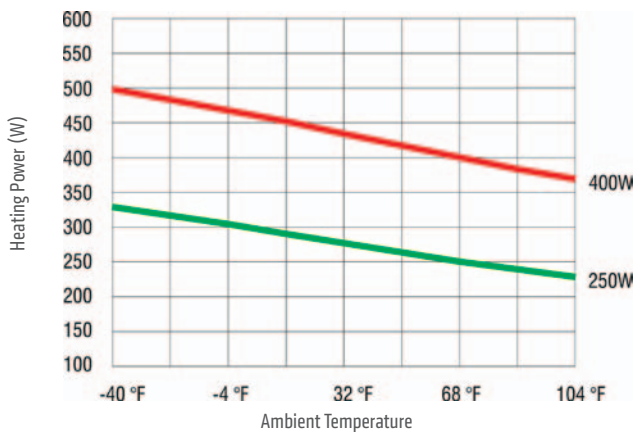
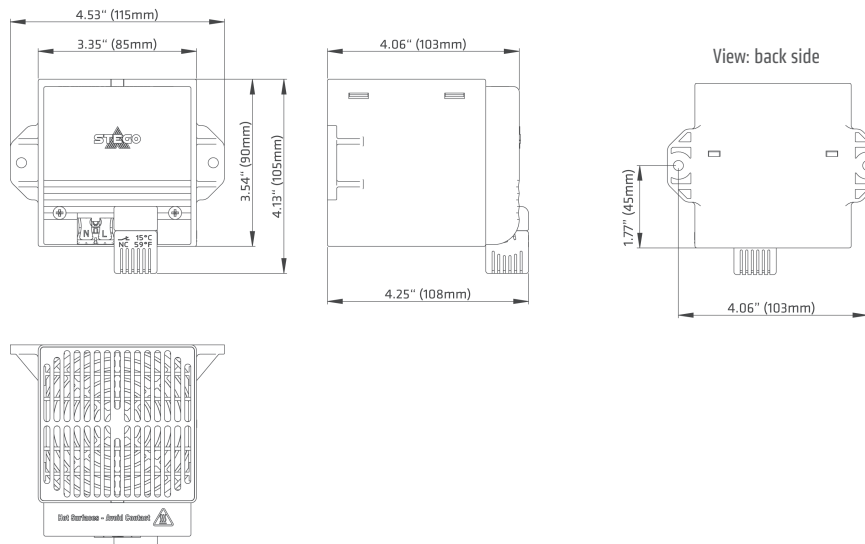
Note: Other Switch-off and Switch-on temperatures on request

TECHNICAL DRAWINGS

DIN RAIL MOUNT

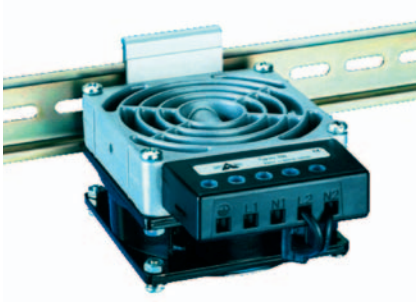


SCREW TAB MOUNT



# FAN HEATER

HVL 031 | 100 - 400 W



Shown: 100 W - HVL 031 Fan Heater

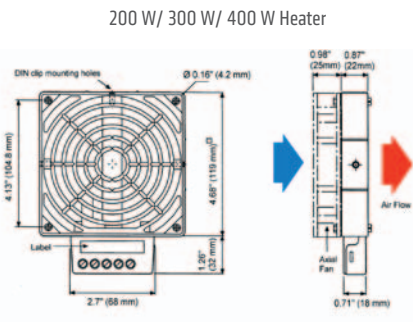
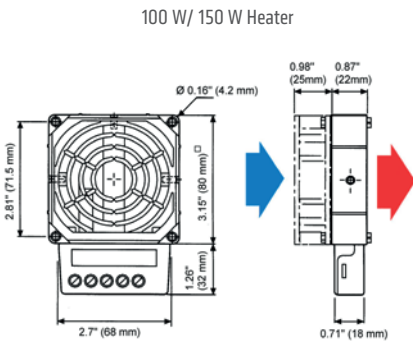
- > Compact size
- > Flat design
- > Built-in overheat protection
- > 3-side DIN rail mountable

The compact HVL 031 high-performance fan heater prevents formation of condensation and provides an evenly distributed interior air temperature in enclosures. For large OEM use, this fan heater can also be provided without the fan, in which case the OEM/customer must provide a fan which meets the minimum airflow requirements.



### TECHNICAL DATA

Heating element	high performance cartridge
Overheat protection	built-in temperature limiter
Heater body	die-cast aluminum, glass bead finish
Axial fan, ball bearing	service life 50,000 h at 77 °F (25 °C)
Air flow, free blowing	see table below
Axial fan connection	2-pole terminal AWG 14 max. (2.5 mm <sup>2</sup> ), terminals L2/N2
Connection	3-pole terminal AWG 14 max. (2.5 mm <sup>2</sup> ), torque 0.8 Nm max.
Connection housing	plastic, UL 94V-0, black
Mounting	clip for 35 mm DIN rail, EN 60715
Mounting position	horizontal
Operating / Storage temperature	-49 to +158 °F (-45 to +70 °C)
Protection class / Protection type	I (grounded) / IP20
Approvals	UL File No. E187294 (all), GOST TR (all), VDE (AC 230 V only)



**Important!** Heater must be operated together with a fan. Operating without a fan creates the danger of overheating.

Part No. - AC 120 V	Part No. - AC 230 V	Heating capacity	Min. airflow (free blowing)	Dimensions (as mounted)	Weight (approx.)
03102.9-00	03102.0-00	100 W	20 cfm (35 m <sup>3</sup> /h)	1.85 x 3.15 x 4.41" (47 x 80 x 112 mm)	1.3 lbs. (600 g)
03103.9-00	03103.0-00	150 W	20 cfm (35 m <sup>3</sup> /h)	1.85 x 3.15 x 4.41" (47 x 80 x 112 mm)	1.3 lbs. (600 g)
03113.9-00	03113.0-00	200 W	63 cfm (108 m <sup>3</sup> /h)	1.85 x 4.68 x 5.94" (47 x 119 x 151 mm)	2.0 lbs. (900 g)
03114.9-00	03114.0-00	300 W	63 cfm (108 m <sup>3</sup> /h)	1.85 x 4.68 x 5.94" (47 x 119 x 151 mm)	2.0 lbs. (900 g)
03115.9-00	03115.0-00	400 W	63 cfm (108 m <sup>3</sup> /h)	1.85 x 4.68 x 5.94" (47 x 119 x 151 mm)	2.0 lbs. (900 g)



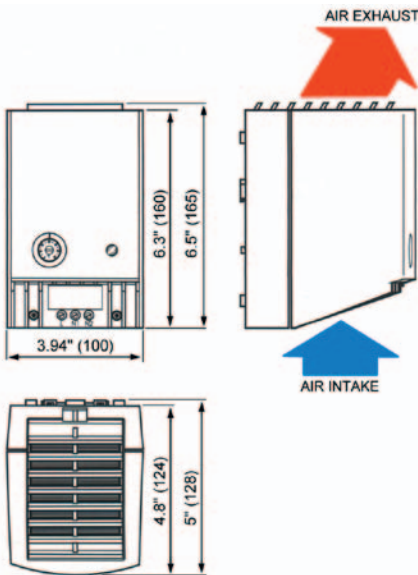
# PTC FAN HEATER

CR 027 | 400 - 650 W



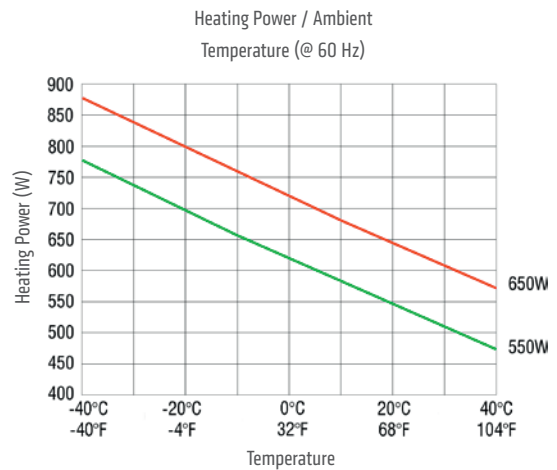
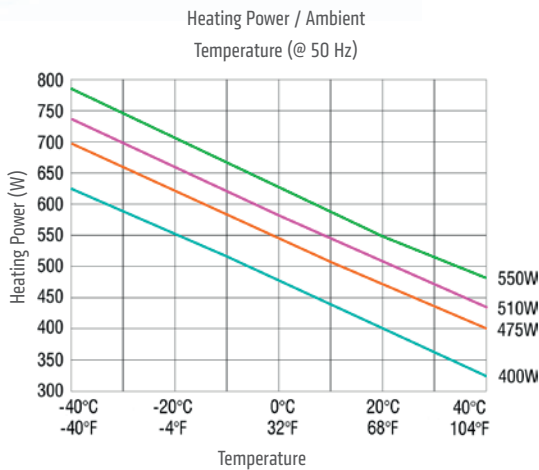
- > Compact fan heater
- > Heating power adjusts to ambient temperature
- > Integrated adjustable thermostat
- > Built-in overheat protection
- > DIN rail mountable

The semiconductor CR 027 fan heater prevents the formation of condensation and ensures an even temperature in enclosures. The integrated thermostat is used to set the desired temperature while the high performance axial fan provides forced air circulation. The CR 027 is also available with a continuously running fan (when powered).



## TECHNICAL DATA

Heating element	PTC resistor - temperature limiting
Overheat protection	built-in temperature limiter
Axial fan, ball bearing	service life 50,000 h at 77 °F (25 °C)
Air flow, free blowing	see table below
Connection	2-pole terminal AWG 14 max. (2.5 mm <sup>2</sup> ), torque 0.8 Nm max.
Housing	plastic, UL 94V-0, light grey
Function control light	LED
Mounting	clip for 35 mm DIN rail, EN 60715
Mounting position	vertical
Operating / Storage temperature	-49 to +158 °F (-45 to +70 °C)
Operating / Storage humidity	max. 90 %RH (non-condensing)
Dimensions	6.5 x 3.94 x 5.0" (165 x 100 x 128 mm)
Protection class / Protection type	II (double insulated) / IP20
Approvals	UL File No. E204590, VDE, GOST TR



Part No.	Heating capacity <sup>1</sup> (@ 50 Hz)	Heating capacity <sup>1</sup> (@ 60 Hz)	Operating voltage	Max. current (inrush)	Air flow, free blowing	Thermostat setting range <sup>2</sup>	Weight (approx.)
02700.0-00	475 W	550 W	AC 220-240 V	11.0 A	20 cfm (35 m <sup>3</sup> /h)	0 to 60 °C	2.0 lbs (0.9 kg)
02700.9-00	400 W	550 W	AC 100-120 V	14.0 A	20 cfm (35 m <sup>3</sup> /h)	32 to 140 °F	2.0 lbs (0.9 kg)
02701.0-00	550 W	650 W	AC 220-240 V	13.0 A	26 cfm (45 m <sup>3</sup> /h)	0 to 60 °C	2.4 lbs (1.1 kg)
02701.9-00	510 W	650 W	AC 100-120 V	15.0 A	26 cfm (45 m <sup>3</sup> /h)	32 to 140 °F	2.4 lbs (1.1 kg)

<sup>1</sup> at 68 °F (20 °C) ambient temperature; <sup>2</sup> Switch temperature difference 7K (±4K tolerance)

**Note:** Only connect the L and N1 terminals - N2 is not used and grounding is not required.

# SPACE-SAVING FAN HEATER (OEM version - no fan provided)

HVI 030 | 500 - 700 W



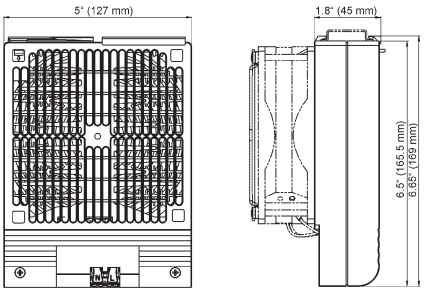
- > Compact size
- > Flat design
- > Built-in overheat protection
- > Twist clip or screw mountable
- > End user must attach fan

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 heater may only be operated together with a fan, but is also available without axial fan (for self-installation). The fan heaters are available with two different mounting systems – either mounting by screws or with a new and unique twist clip mounting system. These options allow for a quick and easy installation of the fan heater.

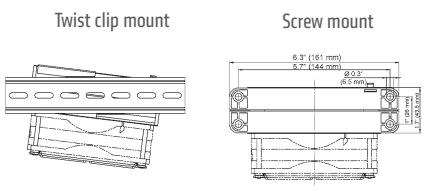


### TECHNICAL DATA

Heating element	high performance cartridge
Overheat protection	with automatic reset and second-tier one shot fuse
Connection	2-pole dual pressure clamp for solid wire AWG 14 max. (2.5 mm <sup>2</sup> ), stranded wire (with wire end ferrule) AWG 16 max. (1.5 mm <sup>2</sup> )
Housing	plastic, UL 94V-0, black
Mounting	twist clip for 35 mm DIN rail, EN 60715 or M6 screws and washers (not included), torque 2 Nm max.
Mounting position	vertical airflow (air outlet up)
Operating temperature	UL: +14 to +104 °F (-10 to +40 °C) VDE: +14 to +122 °F (-10 to +50 °C)
Storage temperature	-49 to +158 °F (-45 to +70 °C)
Operating / Storage humidity	max. 90 %RH (non-condensing)
Dimensions	6.65 x 5.0 x 1.77" (169 x 127 x 45 mm)
Weight	approx. 1.7 lbs (0.77 kg)
Protection class / Protection type	II (double insulated) / IP20
Approvals	UL File No. E234324, VDE, GOST-R
Note	other heating capacities and voltages available on request



View: back side

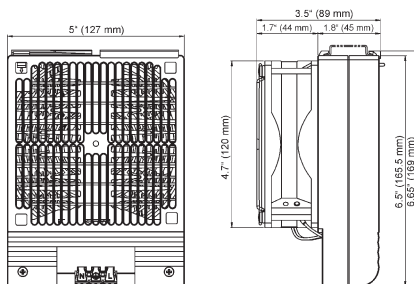


**Important note:** Heater may only be operated together with fan (min. 88 cfm).  
**Danger of overheating!**

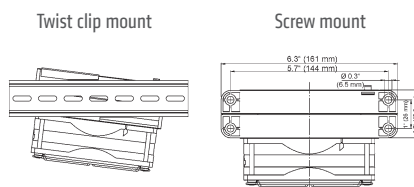
Part No. - twist clip mounting	Part No. - screw mounting	Operating voltage	Heating capacity	Pre-fuse T (time-delay)
03072.0-00	03072.0-01	AC 230 V, 50/60 Hz	700 W	4 A
03072.9-00	03072.9-01	AC 120 V, 50/60 Hz	700 W	8 A
03073.0-00	03073.0-01	AC 230 V, 50/60 Hz	600 W	3.15 A
03073.9-00	03073.9-01	AC 120 V, 50/60 Hz	600 W	6.3 A
03074.0-00	03074.0-01	AC 230 V, 50/60 Hz	500 W	3.15 A
03074.9-00	03074.9-01	AC 120 V, 50/60 Hz	500 W	6.3 A

# SPACE-SAVING FAN HEATER (fan included)

HVI 030 | 500 - 700 W



View: back side



- > Compact size
- > Flat design

- > Built-in overheat protection
- > Twist clip or screw mountable

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 heater may only be operated together with a fan, but is also available without axial fan (for self-installation). The fan heaters are available with two different mounting systems – either mounting by screws or with a new and unique twist clip mounting system. These options allow for a quick and easy installation of the fan heater.



## TECHNICAL DATA

Heating element	high performance cartridge
Temperature safety cut-out	with automatic reset and second-tier one shot fuse
Axial fan, ball bearing	service life 50,000 h at +77 °F (+25 °C)
Air flow, free blowing	88 cfm (150 m <sup>3</sup> /h)
Connection	2-pole dual pressure clamp for solid wire AWG 14 max. (2.5 mm <sup>2</sup> ), stranded wire (with wire end ferrule) AWG 16 max. (1.5 mm <sup>2</sup> )
Housing	plastic, UL 94V-0, black
Mounting	twist clip for 35 mm DIN rail, EN 60715 or M6 screws and washers (not included), torque 2 Nm max.
Mounting position	vertical airflow (air outlet up)
Operating temperature	UL: +14 to +104 °F (-10 to +40 °C) VDE: +14 to +122 °F (-10 to +50 °C)
Storage temperature	-49 to +158 °F (-45 to +70 °C)
Operating / Storage humidity	max. 90 %RH (non-condensing)
Dimensions	6.65 x 5.0 x 3.5" (169 x 127 x 89 mm)
Weight	approx. 3.1 lbs (1.4 kg)
Protection class / Protection type	heater: II (double insulated), fan: I (grounded) / IP20
Approvals	VDE, UL File No. E234324, GOST-R
Note	other heating capacities and voltages available on request



**Important note:** Heater may only be operated together with fan (min. 88 cfm).  
**Danger of overheating!**

Part No. - twist clip mounting	Part No. - screw mounting	Operating voltage	Heating capacity	Pre-fuse T (time-delay)
03082.0-00	03082.0-01	AC 230 V, 50/60 Hz	700 W	4 A
03082.9-00	03082.9-01	AC 120 V, 50/60 Hz	700 W	8 A
03083.0-00	03083.0-01	AC 230 V, 50/60 Hz	600 W	3.15 A
03083.9-00	03083.9-01	AC 120 V, 50/60 Hz	600 W	6.3 A
03084.0-00	03084.0-01	AC 230 V, 50/60 Hz	500 W	3.15 A
03084.9-00	03084.9-01	AC 120 V, 50/60 Hz	500 W	6.3 A

# FOOT-MOUNT FAN HEATER

## CR 030 | 950 W



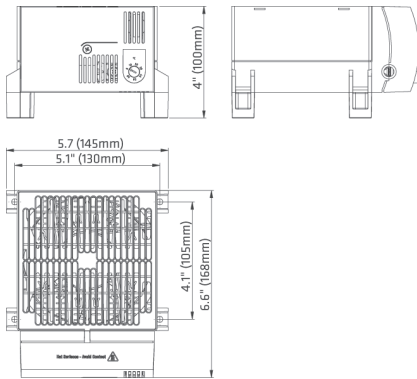
- > Compact design
- > Integrated adjustable thermostat or fixed hygrostat

- > Double insulated plastic housing
- > Built-in overheat protection

The compact CR 030 high performance fan heater prevents formation of condensation and provides an evenly distributed interior air temperature in enclosures. This fan heater is available with an integrated thermostat for temperature control or a pre-set hygrostat for humidity control. The CR 030 was designed as a stationary unit for the bottom of the enclosure. For panel or DIN rail mount, the CR 130 fan heater is recommended.



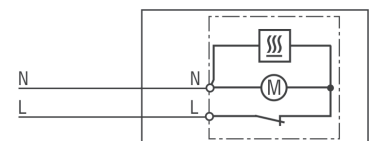
### TECHNICAL DATA



Heating element	high performance cartridge
Overheat protection	with automatic reset and second-tier one shot fuse
Heater body	extruded aluminum
Axial fan, ball bearing	service life 50,000 h at 77 °F (25 °C)
Air flow, free blowing	94 cfm (160 m <sup>3</sup> /h)
Connection	2-pole terminal AWG 16 max. (1.5 mm <sup>2</sup> ) with strain relief, clamping torque 0.8 Nm max.
Housing	plastic, UL 94V-0, black
Mounting	M5 screws (not included)
Mounting position	horizontal
Operating <sup>1</sup> / Storage temperature	-49 to +158 °F (-45 to +70 °C)
Operating / Storage humidity	max. 90 %RH (non-condensing)
Dimensions	3.9 x 5.7 x 6.6" (100 x 145 x 168 mm)
Weight	approx. 3.1 lbs. (1.4 kg)
Protection class / Protection type	II (double insulated) / IP20

<sup>1</sup> Operating temperature of heater with integrated hygrostat: +32 to +140 °F (0 to +60 °C)

Wiring diagram



Part No.	Heating capacity	Operating voltage	Setting range <sup>2</sup>	Approvals
03051.0-00	950 W	AC 230 V, 50/60 Hz	0 to 60 °C	UL File No. E234324, VDE, GOST TR
03051.0-02	950 W	AC 230 V, 50/60 Hz	65 %RH, factory-set	UL File No. E234324, VDE, GOST TR
03051.0-07	950 W	AC 230 V, 50/60 Hz	none (no integrated controls)	UL File No. E234324, VDE, GOST TR
03059.9-00	950 W	AC 120 V, 50/60 Hz	32 to 140 °F	UL File No. E234324, - , GOST TR
03059.9-02	950 W	AC 120 V, 50/60 Hz	none (no integrated controls)	UL File No. E234324, - , GOST TR

<sup>2</sup> Switching difference 12.6 °F ± 7 °F tolerance (7 K ± 4 K)

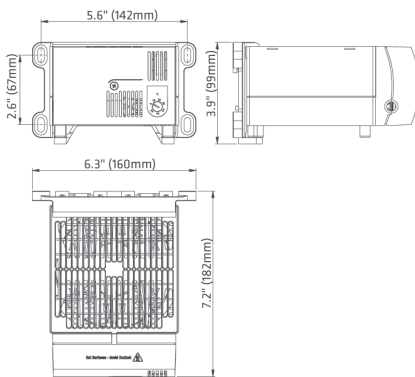
# PANEL-MOUNT FAN HEATER

CR 130 | 950 W



- > Compact design
- > Built-in overheat protection
- > Double insulated plastic housing
- > Integrated adjustable thermostat or fixed hygrostat
- > Panel or DIN rail mounting

The compact CR 130 high performance fan heater prevents formation of condensation and provides an evenly distributed interior air temperature in enclosures. This fan heater is available with an integrated thermostat for temperature control or a pre-set hygrostat for humidity control. The CR 130 was designed as a stationary unit for panel or DIN rail mounting. For foot mounting on the bottom of an enclosure, the CR 030 fan heater is recommended.



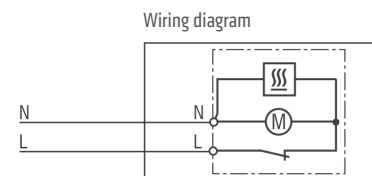
## TECHNICAL DATA

Heating element	High performance cartridge heater
Overheat protection	with automatic reset and second-tier one shot fuse
Heater body	extruded aluminum
Axial fan, ball bearing	Service life 50,000 h at 77 °F (25 °C)
Air flow, free blowing	94 cfm (160 m <sup>3</sup> /h)
Connection	2-pole terminal AWG 16 max. (1.5 mm <sup>2</sup> ) with strain relief, clamping torque 0.8 Nm max.
Housing	plastic, UL 94V-0, black
Mounting	clip for 35 mm DIN rail, EN 60715 or M6 screws (not included)
Mounting position	horizontal
Operating <sup>1</sup> / Storage temperature	-49 to +158 °F (-45 to +70 °C)
Operating / Storage humidity	max. 90 %RH (non-condensing)
Dimensions	7.2 x 6.3 x 3.9" (99 x 160 x 182 mm)
Weight	approx. 3.1 lbs. (1.4 kg)
Protection class / Protection type	II (double insulated) / IP20

<sup>1</sup> Operating temperature of heater with integrated hygrostat: +32 to +140 °F (0 to +60 °C)

Part No.	Heating capacity	Operating voltage	Setting range <sup>2</sup>	Approvals
13051.0-00	950 W	AC 230 V, 50/60 Hz	0 to 60 °C	UL File No. E234324 VDE GOST TR
13051.0-02	950 W	AC 230 V, 50/60 Hz	65 %RH, factory-set	UL File No. E234324 VDE GOST TR
13051.0-03	950 W	AC 230 V, 50/60 Hz	none (no integrated controls)	UL File No. E234324 VDE GOST TR
13059.9-00	950 W	AC 120 V, 50/60 Hz	32 to 140 °F	UL File No. E234324 - GOST TR
13059.9-02	950 W	AC 120 V, 50/60 Hz	none (no integrated controls)	UL File No. E234324 - GOST TR

<sup>2</sup> Switching difference 12.6 °F ± 7 °F tolerance (7 K ± 4 K)



# COMPACT PTC FAN HEATER

## CS 032/CSF 032 | 1000 W



CS 032 Fan Heater



CSF 032 Fan Heater  
with Integrated Thermostat

- > Compact design
- > High heating performance
- > Double insulated plastic housing
- > DIN or screw mount
- > Optional integrated fixed thermostat

The compact CS 032 high performance fan heater prevents the formation of condensation and provides an evenly distributed interior air temperature in enclosures. The plastic housing provides protection against contact with current-carrying components via double insulation (protection class II). The fan heater is also available with an optional fixed-point thermostat as the CSF 032. These series were designed to accommodate DIN rail or screw mounting.



### TECHNICAL DATA

Heating element	PTC resistor - temperature limiting
Overheat protection	built-in temperature limiter
Surface temperature	max. 176 °F (80 °C), except upper protective grille at 68 °F (20 °C) ambient temperature
Air outlet temperature	max. 257 °F (125 °C), 2" (50 mm) above grill
Axial fan, ball bearing	service life 70,000 h at 77 °F (25 °C)
Air flow, free blowing	37 cfm (63 m <sup>3</sup> /h)
Connection	male power insert connector according to IEC320 C18
Housing	plastic, UL 94V-0, black
Mounting	clip for 35 mm DIN rail, EN 60715 or screw mount (M5, not included), tightening torque 2 Nm max.
Mounting position	air flow directed up
Operating / Storage temperature	-40 to +140 °F (-40 to +60 °C) / -40 to +158 °F (-40 to +70 °C)
Operating / Storage humidity	max. 90 %RH (non-condensing)
Dimensions	5.9 x 3.5 x 2.6" (150.5 x 88 x 66 mm)
Weight	approx. 16.5 oz. (650 g)
Protection class / Protection type	II (double insulated) / IP20
Approvals	UL File No. E234324, VDE, GOST TR

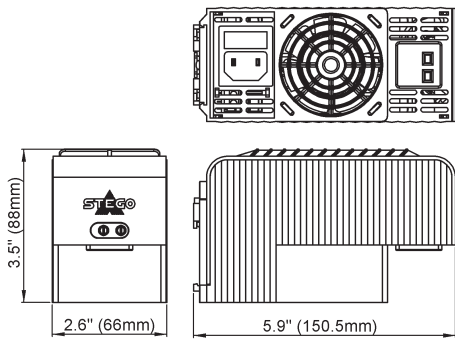
**Important note:** Connectors and cables for electrical connection are not included with the heater. Connection cables are available as accessories.

Part No. - DIN rail mount	Part No. - screw mount	Series	Operating voltage	Heating capacity <sup>1</sup>	Max. current (inrush)	Switch-off temperature <sup>2</sup>	Switch-on temperature <sup>2</sup>
03209.0-00	03209.0-01	CS 032, no thermostat	AC 220-240 V, 50/60 Hz	1000 W	12 A	-	-
03209.9-00	03209.9-01	CS 032, no thermostat	AC 100-120 V, 50/60 Hz	1000 W	18 A	-	-
03201.0-00	03201.0-01	CSF 032, with thermostat	AC 220-240 V, 50/60 Hz	1000 W	12 A	77 °F (25 °C)	59 °F (15 °C)
03201.9-00	03201.9-01	CSF 032, with thermostat	AC 100-120 V, 50/60 Hz	1000 W	18 A	77 °F (25 °C)	59 °F (15 °C)
03202.0-00	03202.0-01	CSF 032, with thermostat	AC 220-240 V, 50/60 Hz	1000 W	12 A	59 °F (15 °C)	41 °F (5 °C)
03202.9-00	03202.9-01	CSF 032, with thermostat	AC 100-120 V, 50/60 Hz	1000 W	18 A	59 °F (15 °C)	41 °F (5 °C)

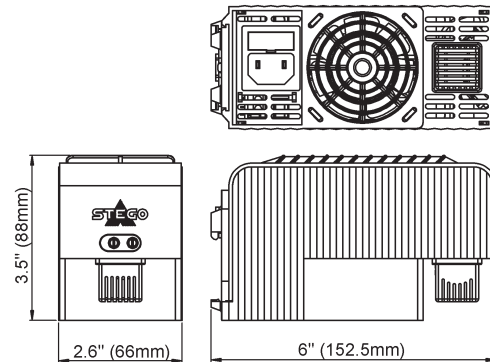
<sup>1</sup> at 77 °F (25 °C) ambient temperature; <sup>2</sup> tolerance of ±5 K

Note: Other Switch-off and Switch-on temperatures on request

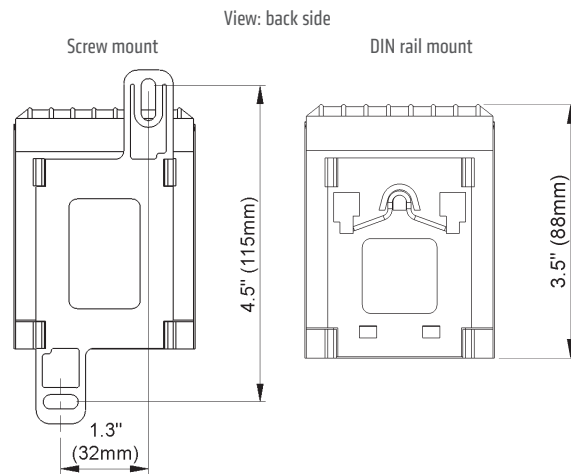
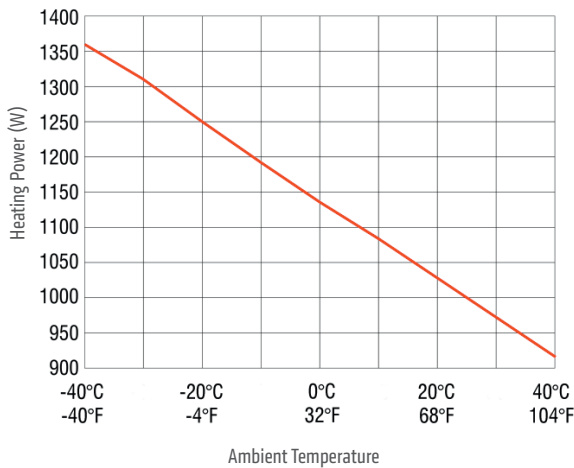
DIMENSIONAL DRAWING



CS 032 Fan Heater

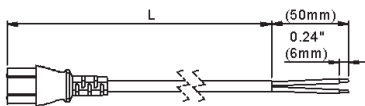


CSF 032 Fan Heater with Integrated Thermostat



ACCESSORIES

Connection cable with female power insert connector according IEC320 C17



Part No.	Length (L)
244379	1.0 m
244380	2.0 m

Retaining Clip



Photo: Retaining clip, Part No. 237009

Part No.	Note
237009	Suitable for female power insert connector on connection cable 244379 and 244380

# FOOT-MOUNT PTC FAN HEATER

## CS 030 | 1200 W



- > Compact design
- > Built-in overheat protection
- > Double insulated plastic housing

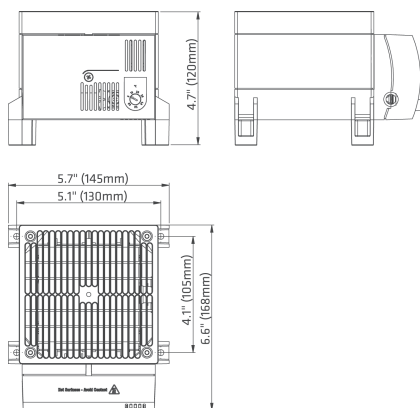
- > Integrated adjustable thermostat (optional)

The compact CS 030 high performance fan heater prevents formation of condensation and provides an evenly distributed interior air temperature in enclosures. This fan heater is available with an optional integrated thermostat for temperature control. The CS 030 was designed as a stationary unit for the bottom of the enclosure. For panel or DIN rail mount, the CS 130 fan heater is recommended.

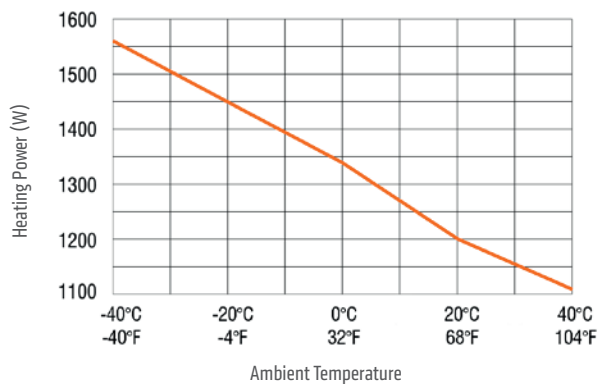
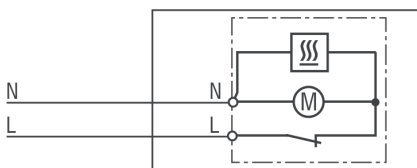


### TECHNICAL DATA

Heating element	PTC resistor - temperature limiting
Overheat protection	built-in temperature limiter
Axial fan, ball bearing	service life 50,000 h at 77 °F (25 °C)
Air flow, free blowing	94 cfm (160 m <sup>3</sup> /h)
Connection	2-pole terminal AWG 16 max. (1.5 mm <sup>2</sup> ) with strain relief, clamping torque 0.8 Nm max.
Housing	plastic, UL 94V-0, black
Mounting	M5 screws (not included)
Mounting position	horizontal
Operating / Storage temperature	-49 to +158 °F (-45 to +70 °C)
Operating / Storage humidity	max. 90 %RH (non-condensing)
Dimensions	4.7 x 5.7 x 6.6" (120 x 145 x 168 mm)
Weight	approx. 2.6 lbs. (1.2 kg)
Protection class / Protection type	II (double insulated) / IP20



Wiring diagram



Part No.	Heating capacity <sup>1</sup>	Operating voltage	Max. current (inrush)	Setting range <sup>2</sup>	Approvals
03060.0-00	1200 W	AC 230 V, 50/60 Hz	13.0 A	0 to 60 °C	UL File No. E234324 VDE GOST TR
03060.0-01	1200 W	AC 230 V, 50/60 Hz	13.0 A	none (no integrated controls)	UL File No. E234324 VDE GOST TR
03060.9-00	1200 W	AC 120 V, 50/60 Hz	16.0 A	32 to 140 °F	UL File No. E234324 - GOST TR
03060.9-01	1200 W	AC 120 V, 50/60 Hz	16.0 A	none (no integrated controls)	UL File No. E234324 - GOST TR

<sup>1</sup> at 68 °F (20 °C) ambient temperature; <sup>2</sup> Switching difference 12.6 °F ± 7 °F tolerance (7 K ± 4 K)



# PANEL-MOUNT PTC FAN HEATER

CS 130 | 1200 W



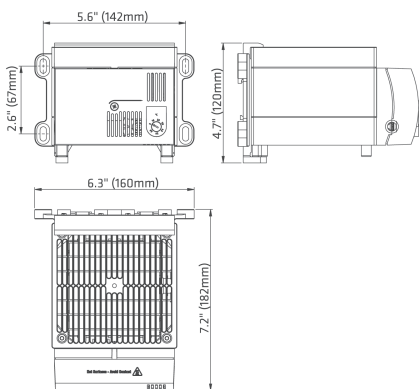
- > Compact design
- > Built-in overheat protection
- > Integrated adjustable thermostat (optional)
- > Double insulated plastic housing
- > Panel or DIN rail mounting

The compact CS 130 high performance fan heater prevents formation of condensation and provides an evenly distributed interior air temperature in enclosures. This fan heater is available with an optional integrated thermostat for temperature control. The CS 130 was designed as a stationary unit for panel or DIN rail mounting. For foot mounting on the bottom of an enclosure, the CS 030 fan heater is recommended.

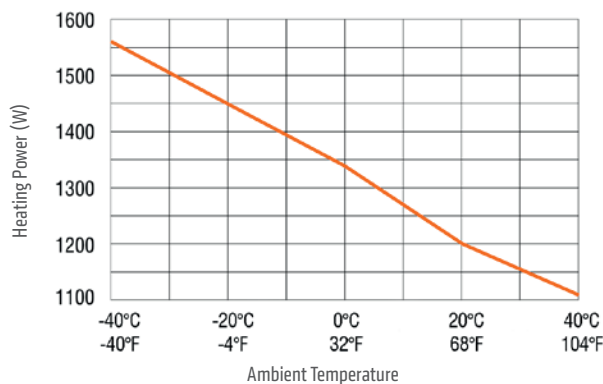
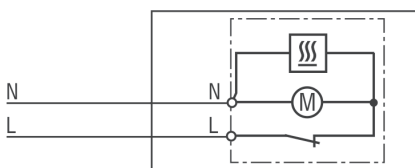


## TECHNICAL DATA

Heating element	PTC resistor - temperature limiting
Overheat protection	built-in temperature limiter
Axial fan, ball bearing	service life 50,000 h at 77 °F (25 °C)
Air flow, free blowing	94 cfm (160 m <sup>3</sup> /h)
Connection	2-pole terminal AWG 16 max. (1.5 mm <sup>2</sup> ) with strain relief, clamping torque 0.8 Nm max.
Housing	plastic, UL 94V-0, black
Mounting	clip for 35 mm DIN rail, EN 60715 or M6 screws (not included)
Mounting position	horizontal
Operating / Storage temperature	-49 to +158 °F (-45 to +70 °C)
Operating / Storage humidity	max. 90 %RH (non-condensing)
Dimensions	4.7 x 6.3 x 7.2" (120 x 160 x 182 mm)
Weight	approx. 2.6 lbs. (1.2 kg)
Protection class / Protection type	II (double insulated) / IP20



Wiring diagram



Part No.	Heating capacity <sup>1</sup>	Operating voltage	Max. current (inrush)	Setting range <sup>2</sup>	Approvals
13060.0-00	1200 W	AC 230 V, 50/60 Hz	13.0 A	0 to 60 °C	UL File No. E234324 VDE GOST TR
13060.0-01	1200 W	AC 230 V, 50/60 Hz	13.0 A	none (no integrated controls)	UL File No. E234324 VDE GOST TR
13060.9-00	1200 W	AC 120 V, 50/60 Hz	16.0 A	32 to 140 °F	UL File No. E234324 - GOST TR
13060.9-01	1200 W	AC 120 V, 50/60 Hz	16.0 A	none (no integrated controls)	UL File No. E234324 - GOST TR

<sup>1</sup> at 68 °F (20 °C) ambient temperature; <sup>2</sup> Switching difference 12.6 °F ± 7 °F tolerance (7 K ± 4 K)



# COOLING

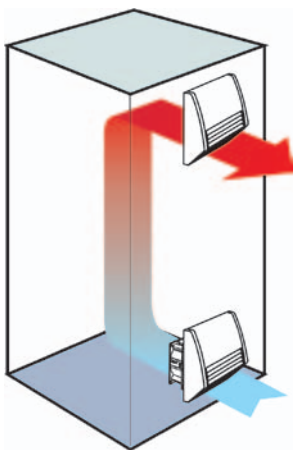


## PROTECTION AGAINST OVERHEATING

To protect installations from excessively high temperatures STEGO filter fans ensure efficient cooling by circulating air.

# FILTER FAN

## FF 018 | 14 - 69 CFM



Enclosure ventilation using a filter fan and exhaust filter

- > Very low noise
  - > Minimal mounting depth
  - > Functional design
- > Time-saving installation
  - > UV resistant plastic

Filter fans are used to provide an optimum climate in enclosures. The interior temperature of an enclosure can be reduced by channeling cooler filtered outside air into the enclosure thus expelling heated internal air. The resulting air flow prevents formation of localized heat pockets and protects the electronic components from overheating. The plastic used for the hood of this filter fan series is impact and UV light resistant. These filter fans are intended for indoor use.



### TECHNICAL DATA

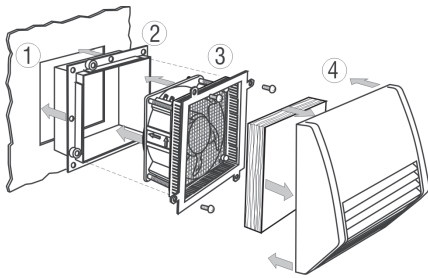
Axial fan, ball bearing	service life min. 50,000 h at 77 °F (25 °C) and 65 %RH aluminum fan body, plastic rotor
Connection	2 wires w/ cage clamps, AWG 14 (2.5 mm <sup>2</sup> ), length 4" (100 mm)
Housing (filter fan and exhaust filter)	plastic, UL 94V-0, light grey
Hood (filter fan and exhaust filter)	plastic, UL 94V-0, light grey; UV light resistant according to UL 746C (f1)
Mounting frame	with double-sided industrial adhesive for mounting to the outside of enclosure; certain operating circumstances may make the additional use of screws necessary; cut-out template included
Filter media rating	G4 acc. to DIN EN 779, filtering degree 94%
Filter material	synthetic fiber with progressive construction, temperature resistant to 212 °F, self-extinguishing class F1; moisture resistant to 100 %RH, reusable - can be cleaned by washing or vacuuming
Operating / Storage temperature	+14 to +158 °F (-10 to +70 °C) / -40 to +158 °F (-40 to +70 °C)
Operating / Storage humidity	max. 90 %RH (non-condensing)
Protection class / Protection type	I (grounded) / IP55 (according to VDE), UL Type 12
Approvals	UL File No. E234324 (all), GOST TR (all), VDE (AC 230 V only)

### Special features

- > The **self-adhesive seal** of the mounting frame prevents dust and water from entering the cabinet.
- > **Functional design** of the intake and exhaust fan hoods very effectively prevents direct infiltration of falling water and dust. The advantage is that the filter mat does not rapidly become contaminated with dirt and therefore does not need to be exchanged as often.
- > The **air channeling** makes the filter fan particularly quiet in operation.
- > The direction of **air flow can easily be switched** by reversing the axial fan.
- > EMC versions and other voltages are available upon request.

Part No.	Operating voltage	Air volume, free blowing	Air volume with exhaust filter	Current consumption	Power consumption	Average noise level (DIN EN ISO 4871)	Mounting depth	Enclosure cut-out	Weight (approx.)
01800.0-00	AC 230 V, 50 Hz <sup>1</sup>	12 cfm (21 m <sup>3</sup> /h)	9 cfm (16 m <sup>3</sup> /h)	80 mA	13 W	31 dB (A)	1.8" (45 mm)	3.8 x 3.8"	1.3 lbs. (0.6 kg)
01800.0-01	AC 120 V, 60 Hz	14 cfm (24 m <sup>3</sup> /h)	11 cfm (18 m <sup>3</sup> /h)	160 mA	13 W	31 dB (A)	1.8" (45 mm)	3.8 x 3.8"	1.3 lbs. (0.6 kg)
01801.0-00	AC 230 V, 50 Hz <sup>1</sup>	32 cfm (55 m <sup>3</sup> /h)	25 cfm (42 m <sup>3</sup> /h)	100 mA	15 W	40 dB (A)	2.3" (58 mm)	4.9 x 4.9"	2.2 lbs. (1.0 kg)
01801.0-01	AC 120 V, 60 Hz	37 cfm (63 m <sup>3</sup> /h)	28 cfm (48 m <sup>3</sup> /h)	180 mA	15 W	40 dB (A)	2.3" (58 mm)	4.9 x 4.9"	2.2 lbs. (1.0 kg)
01802.0-00	AC 230 V, 50 Hz <sup>1</sup>	60 cfm (102 m <sup>3</sup> /h)	40 cfm (68 m <sup>3</sup> /h)	100 mA	15 W	39 dB (A)	3.4" (86 mm)	6.9 x 6.9"	2.9 lbs. (1.3 kg)
01802.0-01	AC 120 V, 60 Hz	69 cfm (117 m <sup>3</sup> /h)	46 cfm (78 m <sup>3</sup> /h)	180 mA	15 W	39 dB (A)	3.4" (86 mm)	6.9 x 6.9"	2.9 lbs. (1.3 kg)

<sup>1</sup> air volume increases by 15% when operating AC 230 V filter fans at 60 Hz



Installation sketch

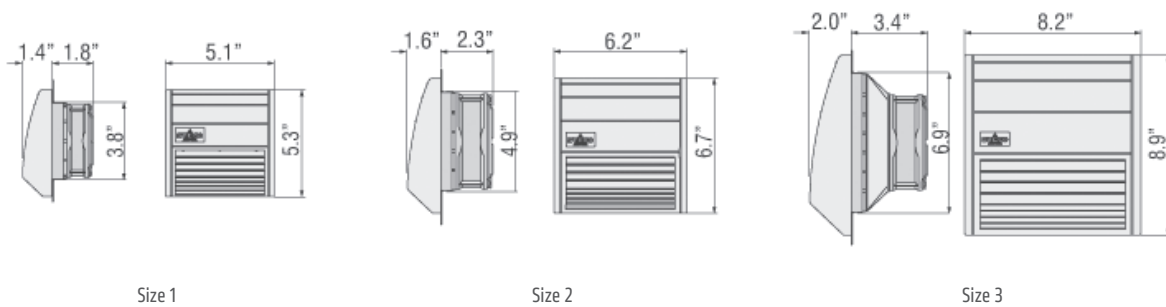
**Time-saving assembly and maintenance**

STEGO's filter fans are easily installed by one person **from outside** the cabinet.

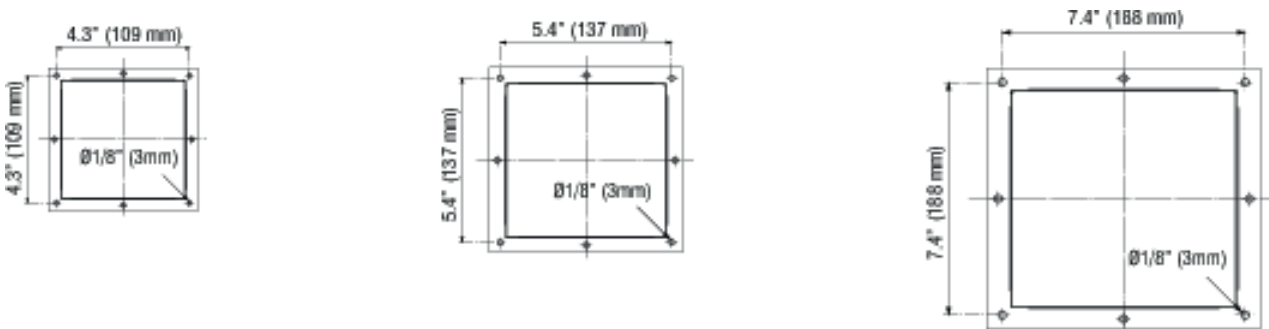
- 1.) Make cut-out in the cabinet wall. The cut edge of the cabinet opening should be free of dirt, filings and grease. A template for the enclosure cut-out is included with the filter fan.
- 2.) Remove protective film from the sealing strips on the mounting frame. Press mounting frame into the cabinet opening. The frame stays permanently in the cabinet.
- 3.) Electrically connect the axial fan using the cage clamp connectors. Push the unit into the mounting frame. Affix using screws if necessary.
- 4.) Insert the filter mat in the hood. Clip on. Finished.

To change the filter mat, simply remove the filter hood, insert the new mat and snap the hood back again. No tools are required. Maintenance of the fan can easily be performed without removing the mounting frame (2).

**TECHNICAL DRAWINGS**



**DRILLING TEMPLATE FOR MOUNTING FRAME**



**EXHAUST FILTER EF 118**

Part No.	Mounting depth	Enclosure cut-out	Weight (approx.)	Filter mat	Protection type
11800.0-00	0.6" (16 mm)	3.8 x 3.8"	0.6 lbs. (0.3 kg)	G4 acc. to DIN EN 779, filtering degree 94%	IP55 <sup>2</sup>
11801.0-00	0.6" (16 mm)	4.9 x 4.9"	0.8 lbs. (0.4 kg)	G4 acc. to DIN EN 779, filtering degree 94%	IP55 <sup>2</sup>
11802.0-00	0.6" (16 mm)	6.9 x 6.9"	1.3 lbs. (0.6 kg)	G4 acc. to DIN EN 779, filtering degree 94%	IP55 <sup>2</sup>

<sup>2</sup> according to VDE

**FILTER MATS FM 086 / FFM 086**

Filter mat	3.5 x 3.5" (89 x 89 mm)	4.6 x 4.6" (118 x 118 mm)	6.6 x 6.6" (168 x 168 mm)
G4 (1 packing unit = 3 pcs.)	Part No. 08600.0-00	Part No. 08601.0-00	Part No. 08602.0-00
F5 (1 packing unit = 3 pcs.)	Part No. 08603.0-00	Part No. 08604.0-00	Part No. 08605.0-00

# FILTER FAN

## FF 018 | 136 CFM



Filter fan

- > High air volume
- > Functional design

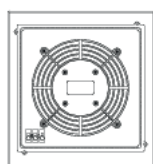
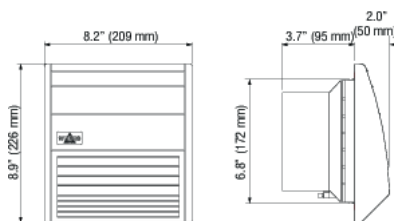
- > Time-saving installation
- > UV resistant plastic

Filter fans are used to provide an optimum climate in enclosures. The interior temperature of an enclosure can be reduced by channeling cooler filtered outside air into the enclosure thus expelling heated internal air. The resulting air flow prevents formation of localized heat pockets and protects the electronic components from overheating. The plastic used for the hood of this filter fan series is impact and UV light resistant. These filter fans are intended for indoor use.

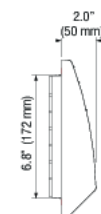


### TECHNICAL DATA

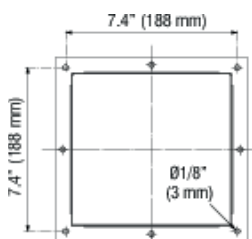
<b>Axial fan, ball bearing</b>	service life min. 50,000 h at 77 °F (25 °C) and 65 %RH aluminum fan body, metal rotor
<b>Connection</b>	3-pole clamp, AWG 14 (2.5 mm <sup>2</sup> ), clamping torque 0.8 Nm max.
<b>Housing (filter fan and exhaust filter)</b>	plastic, UL 94V-0, light grey
<b>Hood (filter fan and exhaust filter)</b>	plastic, UL 94V-0, light grey; UV light resistant according to UL 746C (f1)
<b>Mounting frame</b>	with double-sided industrial adhesive for mounting to the outside of enclosure; certain operating circumstances may make the additional use of screws necessary; cut-out template included
<b>Filter media rating</b>	G4 acc. to DIN EN 779, filtering degree 94%
<b>Filter material</b>	synthetic fiber with progressive construction, temperature resistant to 212 °F, self-extinguishing class F1; moisture resistant to 100 %RH, reusable - can be cleaned by washing or vacuuming
<b>Operating / Storage temperature</b>	AC 120 V: -13 to +140 °F (-25 to +60 °C) AC 230 V: -13 to +122 °F (-25 to +50 °C)
<b>Operating / Storage humidity</b>	max. 90 %RH (non-condensing)
<b>Protection class / Protection type</b>	I (grounded) / IP55 (according to VDE), UL Type 12
<b>Approvals</b>	UL File No. E234324 (all), GOST TR (all), VDE (AC 230 V only)



View from rear



Exhaust filter



Drilling template for mounting frame

Part. No.	Operating voltage	Air volume, free blowing	Air volume with exhaust filter	Current consumption	Power consumption	Average noise level (DIN EN ISO 4871)	Mounting depth	Enclosure cut-out	Weight (approx.)
01804.0-00	AC 230 V, 50 Hz <sup>1</sup>	118 cfm (200 m <sup>3</sup> /h)	74 cfm (125 m <sup>3</sup> /h)	320 mA	45 W	52 dB (A)	3.7" (95 mm)	6.9 x 6.9"	3.7 lbs. (1.7 kg)
01804.0-01	AC 120 V, 60 Hz	136 cfm (230 m <sup>3</sup> /h)	84 cfm (143 m <sup>3</sup> /h)	470 mA	39 W	52 dB (A)	3.7" (95 mm)	6.9 x 6.9"	3.7 lbs. (1.7 kg)

### EXHAUST FILTER EF 118

Part. No.	Mounting depth	Enclosure cut-out	Weight (approx.)	Filter mat	Protection type
11802.0-00	0.6" (16 mm)	6.9 x 6.9"	1.3 lbs. (0.6 kg)	G4 acc. to DIN EN 779, filtering degree 94%	IP55 <sup>2</sup>

### FILTER MATS FM 086

Part. No.	Mounting depth	Enclosure cut-out	Weight (approx.)	Filter mat	Protection type
11802.0-00	0.6" (16 mm)	6.9 x 6.9"	1.3 lbs. (0.6 kg)	G4 acc. to DIN EN 779, filtering degree 94%	IP55 <sup>2</sup>

<sup>1</sup> air volume increases by 15% when operating AC 230 V filter fans at 60 Hz, <sup>2</sup> according to VDE

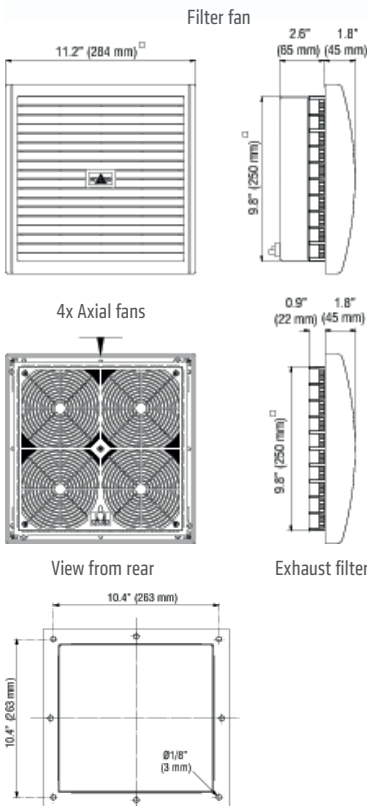
# FILTER FAN

FF 018 | 202 CFM



- > Minimal mounting depth
- > High air volume
- > Functional design
- > Time-saving installation
- > UV resistant plastic

Filter fans are used to provide an optimum climate in enclosures. The interior temperature of an enclosure can be reduced by channeling cooler filtered outside air into the enclosure thus expelling heated internal air. The resulting air flow prevents formation of localized heat pockets and protects the electronic components from overheating. **Four integrated axial fans** provide a particularly high and uniform air circulation which contributes to higher reliability. The plastic used for the hood of this filter fan series is UV light resistant. These filter fans are intended for indoor use.



## TECHNICAL DATA



<b>Axial fan, ball bearing</b>	service life min. 50,000 h at 77 °F (25 °C) and 65 %RH aluminum fan body, plastic rotor
<b>Connection</b>	3-pole clamp, AWG 14 (2.5 mm <sup>2</sup> ), clamping torque 0.8 Nm max.
<b>Housing (filter fan and exhaust filter)</b>	plastic, UL 94V-0, light grey
<b>Hood (filter fan and exhaust filter)</b>	plastic, UL 94V-0, light grey; UV light resistant according to UL 746C (f1)
<b>Mounting frame</b>	with double-sided industrial adhesive for mounting to the outside of enclosure; certain operating circumstances may make the additional use of screws necessary; cut-out template included
<b>Filter media rating</b>	G4 acc. to DIN EN 779, filtering degree 94%
<b>Filter material</b>	synthetic fiber with progressive construction, temperature resistant to 212 °F, self-extinguishing class F1; moisture resistant to 100 %RH, reusable - can be cleaned by washing or vacuuming
<b>Operating / Storage temperature</b>	+14 to +158 °F (-10 to +70 °C) / -40 to +158 °F (-40 to +70 °C)
<b>Operating / Storage humidity</b>	max. 90 %RH (non-condensing)
<b>Protection class / Protection type</b>	I (grounded) / IP55 (according to VDE), UL Type 12
<b>Approvals</b>	UL File No. E234324 (all), GOST TR (all), VDE (AC 230 V only)

Drilling template for mounting frame

Part No.	Operating voltage	Air volume, free blowing	Air volume with exhaust filter	Current consumption	Power consumption	Average noise level (DIN EN ISO 4871)	Mounting depth	Enclosure cut-out	Weight (approx.)
01803.0-00	AC 230 V, 50 Hz <sup>1</sup>	177 cfm (300 m <sup>3</sup> /h)	135 cfm (230 m <sup>3</sup> /h)	400 mA	68 W	56 dB (A)	2.6" (65 mm)	9.8 x 9.8"	7.3 lbs. (3.3 kg)
01803.0-01	AC 120 V, 60 Hz	202 cfm (345 m <sup>3</sup> /h)	156 cfm (265 m <sup>3</sup> /h)	800 mA	68 W	56 dB (A)	2.6" (65 mm)	9.8 x 9.8"	7.3 lbs. (3.3 kg)

## EXHAUST FILTER EF 118

Part No.	Mounting depth	Enclosure cut-out	Weight (approx.)	Filter mat	Protection type
11803.0-00	0.9" (22 mm)	9.8 x 9.8"	2.2 lbs. (1.0 kg)	G4 acc. to DIN EN 779, filtering degree 94%	IP55 <sup>2</sup>

## FILTER MATS FM 086

Filter mat	9.7 x 9.7" (247 x 247 mm)
G4 (1 packing unit = 3 pcs.)	Part No. 08608.0-00
F5 (1 packing unit = 3 pcs.)	Part No. 08609.0-00

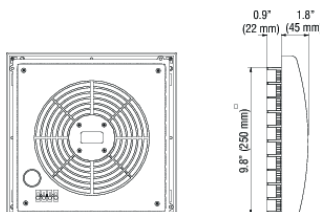
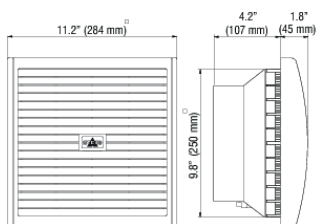
<sup>1</sup> air volume increases by 15% when operating AC 230 V filter fans at 60 Hz, <sup>2</sup> according to VDE

# FILTER FAN

## FF 018 | 373 CFM

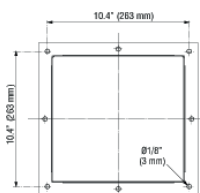


Filter fan



View from rear

Exhaust filter



Drilling template for mounting frame

- > High air volume
- > Functional design
- > Time-saving installation

> UV resistant plastic

Filter fans are used to provide an optimum climate in enclosures. The interior temperature of an enclosure can be reduced by channeling cooler filtered outside air into the enclosure thus expelling heated internal air. The resulting air flow prevents formation of localized heat pockets and protects the electronic components from overheating. The plastic used for the hood of this filter fan series is UV light resistant. These filter fans are intended for indoor use.



### TECHNICAL DATA

<b>Axial fan, ball bearing</b>	service life min. 50,000 h at 77 °F (25 °C) and 65 %RH aluminum fan body, metal rotor
<b>Connection</b>	3-pole clamp, AWG 14 (2.5 mm <sup>2</sup> ), clamping torque 0.8 Nm max.
<b>Housing (filter fan and exhaust filter)</b>	plastic, UL 94V-0, light grey
<b>Hood (filter fan and exhaust filter)</b>	plastic, UL 94V-0, light grey; UV light resistant according to UL 746C (f1)
<b>Mounting frame</b>	with double-sided industrial adhesive for mounting to the outside of enclosure; certain operating circumstances may make the additional use of screws necessary; cut-out template included
<b>Filter media rating</b>	G4 acc. to DIN EN 779, filtering degree 94%
<b>Filter material</b>	synthetic fiber with progressive construction, temperature resistant to 212 °F, self-extinguishing class F1; moisture resistant to 100 %RH, reusable - can be cleaned by washing or vacuuming
<b>Operating / Storage temperature</b>	-13 to +158 °F (-25 to +70 °C)
<b>Operating / Storage humidity</b>	max. 90 %RH (non-condensing)
<b>Protection class / Protection type</b>	I (grounded) / IP55 (according to VDE), UL Type 12
<b>Approvals</b>	UL File No. E234324 (all), GOST TR (all), VDE (AC 230 V only)

Part No.	Operating voltage	Air volume, free blowing	Air volume with exhaust filter	Current consumption	Power consumption	Average noise level (DIN EN ISO 4871)	Mounting depth	Enclosure cut-out	Weight (approx.)
01805.0-00	AC 230 V, 50 Hz <sup>1</sup>	324 cfm (550 m <sup>3</sup> /h)	177 cfm (300 m <sup>3</sup> /h)	300 mA	64 W	65 dB (A)	4.2" (107 mm)	9.8 x 9.8"	5.9 lbs. (2.7 kg)
01805.0-01	AC 120 V, 60 Hz	372 cfm (632 m <sup>3</sup> /h)	203 cfm (345 m <sup>3</sup> /h)	780 mA	85 W	65 dB (A)	4.2" (107 mm)	9.8 x 9.8"	5.9 lbs. (2.7 kg)

### EXHAUST FILTER EF 118

Part No.	Mounting depth	Enclosure cut-out	Weight (approx.)	Filter mat	Protection type
11803.0-00	0.9" (22 mm)	9.8 x 9.8"	2.2 lbs. (1.0 kg)	G4 acc. to DIN EN 779, filtering degree 94%	IP55 <sup>2</sup>

### FILTER MATS FM 086

Filter mat	9.7 x 9.7" (247 x 247 mm)
G4 (1 packing unit = 3 pcs.)	Part No. 08608.0-00
F5 (1 packing unit = 3 pcs.)	Part No. 08609.0-00

<sup>1</sup> air volume increases by 15% when operating AC 230 V filter fans at 60 Hz, <sup>2</sup> according to VDE



# OUTDOOR FILTER FAN

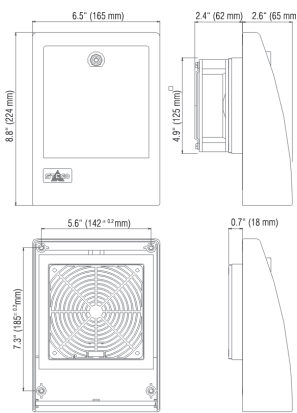
FF 018 | 14 CFM



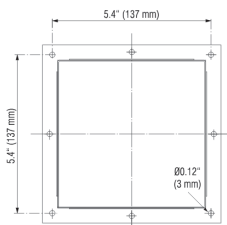
Outdoor filter fan

- > Quick and easy filter change
- > Lockable outer door
- > Impact resistant
- > Weather and UV resistant

This filter fan can be used in outdoor enclosures where warm air has to be dissipated. To clean and exchange the filter mat, it is only necessary to open the lockable door of the outdoor hood eliminating the need to allow interior access to the enclosure. A protection type of IP55 is achieved due to the special design of the hood and the use of fine filter mats. The plastic used for the hood of this filter fan is highly weather and UV light resistant.



View from rear Outdoor exhaust filter



Drilling template for mounting frame

## TECHNICAL DATA

<b>Axial fan, ball bearing</b>	service life min. 50,000 h at 77 °F (25 °C) and 65 %RH aluminum fan body, plastic rotor
<b>Connection</b>	2 wires w/ cage clamps, AWG 14 (2.5 mm <sup>2</sup> ), length 4" (100 mm)
<b>Filter fan and exhaust filter housing</b>	plastic according to UL 94V-0, light grey; weather and UV light resistant according to UL 746C (f1)
<b>Mounting frame</b>	with double-sided industrial adhesive for mounting to the outside of enclosure; certain operating circumstances may make the additional use of screws necessary; cut-out template included
<b>Filter media rating</b>	F5 acc. to DIN EN 779, filtering degree 98%
<b>Filter material</b>	synthetic fiber with progressive construction, temperature resistant to 212 °F, self-extinguishing class F1; moisture resistant to 100 %RH
<b>Operating / Storage temperature</b>	+14 to +158 °F (-10 to +70 °C) / -40 to +158 °F (-40 to +70 °C)
<b>Operating / Storage humidity</b>	max. 90 %RH (non-condensing)
<b>Protection class / Protection type</b>	I (grounded) / IP55
<b>Approvals</b>	UL File No. E234324, VDE, GOST TR

**Note:** The hood is attached permanently to the enclosure from the inside using provided screws. Filter mats can be easily changed from outside the enclosure through the lockable door in the hood.

Part No.	Operating voltage	Air volume, free blowing	Current consumption	Power consumption	Average noise level (DIN EN ISO 4871)	Mounting depth	Enclosure cut-out	Weight (approx.)
01821.0-00	AC 230 V, 50 Hz <sup>1</sup>	12 cfm (20 m <sup>3</sup> /h)	100 mA	15 W	40 dB (A)	2.4" (62 mm)	4.9 x 4.9"	2.6 lbs. (1.2 kg)
01821.0-02	AC 120 V, 60 Hz	14 cfm (23 m <sup>3</sup> /h)	180 mA	15 W	40 dB (A)	2.4" (62 mm)	4.9 x 4.9"	2.6 lbs. (1.2 kg)

<sup>1</sup> air volume increases by 15% when operating AC 230 V filter fans at 60 Hz

## EXHAUST FILTER EF 11821

Part No.	Mounting depth	Enclosure cut-out	Weight (approx.)	Filter mat	Protection type
11821.0-00	0.6" (16 mm)	4.9 x 4.9"	1.6 lbs. (0.6 kg)	F5 acc. to DIN EN 779, filtering degree 98%	IP55

## FILTER MAT FM 086

Filter mat	4.6 x 4.6" (118 x 118 mm)
F5 (1 packing unit = 3 pcs.)	Part No. 08604.0-00

# ROOF FILTER FAN

RFP 018 | 177 - 338 CFM

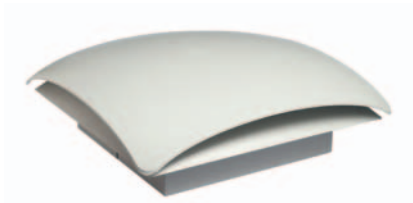


Photo: Part No. 01860.0-00

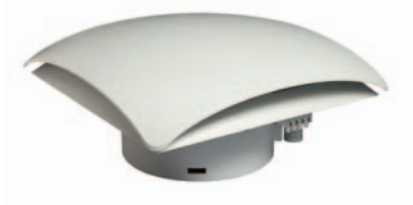
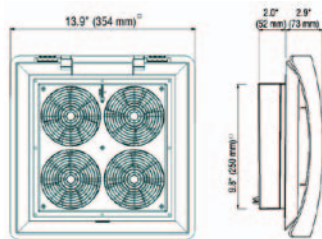
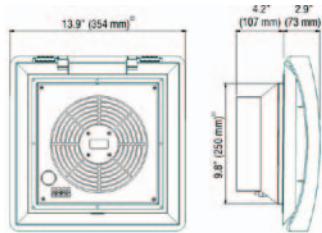


Photo: Part No. 01861.0-00



Roof Filter Fan RFP 018 - 177 cfm (01860.0-xx)



Roof Filter Fan RFP 018 - 338 cfm (01861.0-xx)

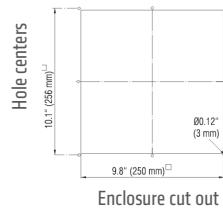
- > Very low noise
- > Minimal mounting depth
- > High air volume
- > High reliability
- > Time-saving installation and mat exchange

Roof filter fans and roof exhaust filters are used in enclosures from which warm air must be diverted due to increased heat development. The ready-to-connect and low-noise roof filter fan is used to expel warm air from within the enclosure. Alternatively, the roof exhaust filter provides passive ventilation. The RFP 018 series comes in two versions: one utilizes four small axial fans, improving reliability and maintaining continuous operations even if one of the fans should fail; the second uses a larger single high capacity fan.



### TECHNICAL DATA

<b>Axial fans, ball bearing</b>	service life min. 50,000 h at 77 °F (25 °C) and 65 %RH aluminum fan body, plastic rotor
<b>Connection</b>	3-pole clamp, AWG 14 (2.5 mm <sup>2</sup> ), clamping torque 0.8 Nm max.
<b>Housing</b>	plastic, UL 94V-0, light grey; UV light resistant according to UL 746C (f1)
<b>Filter mat</b>	G3 acc. to DIN EN 779, filtering degree 85%
<b>Filter material</b>	synthetic fiber with progressive construction, temperature resistant to 212 °F, self-extinguishing class F1; moisture resistant to 100 %RH, reusable - can be cleaned by washing or vacuuming
<b>Operating / Storage temperature</b>	dependent on fan type (see below)
<b>Operating / Storage humidity</b>	max. 90 %RH (non-condensing)
<b>Protection class / Protection type</b>	I (grounded) / IP32
<b>Approvals</b>	GOST TR (all), VDE (AC 230 V only); UL intended



Use included template for precise cut-out dimensions

**Important note:** For reasons of pressure compensation, the roof filter fan must always be operated in combination with another filter fan (e.g. Part No. 01803.0-00) or a passive intake filter (e.g. Part No. 11803.0-00).

Part No.	Operating voltage	Air volume, free blowing	Power consumption	Average noise level (DIN EN ISO 4871)	Mounting depth	Enclosure cut-out	Weight (approx.)	Operating / Storage temperature
01860.0-00	AC 230 V, 50 Hz <sup>1</sup>	177 cfm (300 m <sup>3</sup> /h) - 4 fans	68 W	55 db (A)	2.0" (52 mm)	9.8 x 9.8"	7.3 lbs. (3.3 kg)	+14 to +158 °F (-10 to +70 °C) / -40 to +158 °F (-40 to +70 °C)
01860.0-02	AC 120 V, 60 Hz	203 cfm (345 m <sup>3</sup> /h) - 4 fans	60 W	55 db (A)	2.0" (52 mm)	9.8 x 9.8"	7.3 lbs. (3.3 kg)	-13 to +158 °F (-25 to +70 °C)
01861.0-00	AC 230 V, 50 Hz <sup>1</sup>	294 cfm (500 m <sup>3</sup> /h) - 1 fan	64 W	67 db (A)	4.2" (107 mm)	9.8 x 9.8"	5.7 lbs. (2.6 kg)	+14 to +158 °F (-10 to +70 °C) / -40 to +158 °F (-40 to +70 °C)
01861.0-02	AC 120 V, 60 Hz	338 cfm (575 m <sup>3</sup> /h) - 1 fan	85 W	67 db (A)	4.2" (107 mm)	9.8 x 9.8"	5.7 lbs. (2.6 kg)	-13 to +158 °F (-25 to +70 °C)

### ROOF EXHAUST FILTER REP 118

Part No.	Mounting depth	Enclosure cut-out	Weight (approx.)	Filter mat	Protection type
11860.0-00	0.43" (11 mm)	9.8 x 9.8"	2.2 lbs. (1.0 kg)	G3 acc. to DIN EN 779, filtering degree 85%	IP32

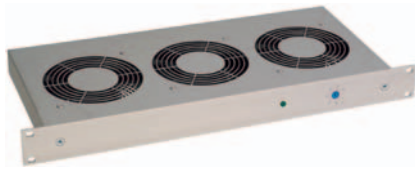
### FILTER MAT FM 086

Filter mat	11.1 x 11.1" (282 x 282 mm)
G3 (1 packing unit = 3 pcs.)	Part No. 08613.0-00

<sup>1</sup> air volume increases by 15% when operating AC 230 V filter fans at 60 Hz

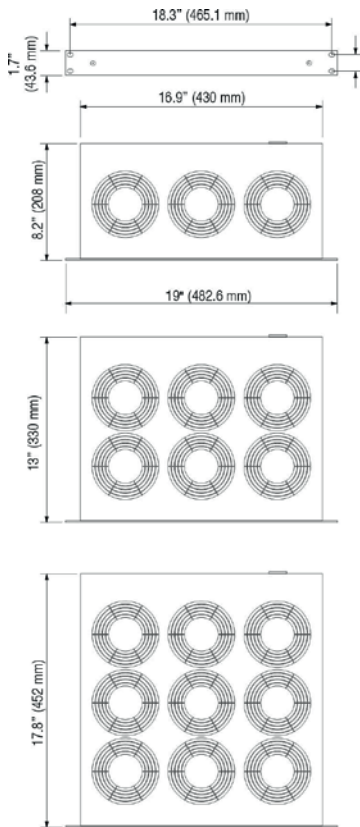
# 19" FAN TRAY

LE 019 | 286 - 1017 CFM



- > High air volume
- > Long service life
- > Easy installation and connection
- > Function control light
- > Optional integrated thermostat

The LE 019 is a compact high performance fan tray for forced circulation of air in enclosures and for cooling of 19" rack mount applications. Natural convection is improved and the formation of hot zones is prevented. Also available with integrated thermostat (see photo).



## TECHNICAL DATA

<b>Axial fans, ball bearing</b>	service life 50,000 h at 77 °F (25 °C) and 65 %RH fan body aluminum, rotor plastic
<b>Material</b>	front panel aluminum, bright anodized casing steel sheet, electrogalvanized
<b>Optical indicator</b>	integrated in front panel
<b>Connection</b>	power inlet on rear of casing, plug included (no cable)
<b>Mounting position</b>	horizontal (direction of air upward)
<b>Operating / Storage temperature</b>	+14 to +140 °F (-10 to +60 °C) / -40 to +158 °F (-40 to +70 °C)
<b>Operating / Storage humidity</b>	max. 90 %RH (non-condensing)
<b>Protection class / Protection type</b>	I (grounded) / IP20

**Note:** The use of a thermostat, whether integrated or external, is recommended.

When using a fan tray with integrated thermostat, an additional thermostat (e.g. KT 011 Part No. 01141.9-00) may be used if it is desired to switch a signal device should the enclosure interior temperature rise above a set limit (e.g. in case of fan failure).

For models without integrated thermostat, the use of a dual thermostat (e.g. ZR 011 Part No. 01176.0-01) provides the same overheat protection, i.e. one thermostat to control the fan tray operation, one thermostat for a signal device.

Part No.	Thermostat	No. of fans	Operating voltage	Air flow, free blowing	Power consumption	Average noise level (DIN EN ISO 4871)	Speed	Weight (approx.)	Approvals
01930.0-00	-	3	AC 230 V, 50 Hz <sup>1</sup>	286 cfm (486 m <sup>3</sup> /h)	45 W	55 db (A)	2600 rpm	6.6 lbs. (3.0 kg)	UL File No. E234324
01930.1-00	0 to 60 °C	3	AC 230 V, 50 Hz <sup>1</sup>	286 cfm (486 m <sup>3</sup> /h)	45 W	55 db (A)	2600 rpm	7.5 lbs. (3.4 kg)	UL File No. E234324
01931.0-00	-	3	AC 120 V, 60 Hz	339 cfm (576 m <sup>3</sup> /h)	45 W	55 db (A)	2900 rpm	6.6 lbs. (3.0 kg)	UL File No. E234324
01931.1-00	0 to 60 °C	3	AC 120 V, 60 Hz	339 cfm (576 m <sup>3</sup> /h)	45 W	55 db (A)	2900 rpm	7.5 lbs. (3.4 kg)	UL File No. E234324
01940.0-00	-	6	AC 230 V, 50 Hz <sup>1</sup>	572 cfm (972 m <sup>3</sup> /h)	90 W	57 db (A)	2600 rpm	11.7 lbs. (5.3 kg)	UL File No. E234324
01940.1-00	0 to 60 °C	6	AC 230 V, 50 Hz <sup>1</sup>	572 cfm (972 m <sup>3</sup> /h)	90 W	57 db (A)	2600 rpm	12.5 lbs. (5.7 kg)	UL File No. E234324
01941.0-00	-	6	AC 120 V, 60 Hz	678 cfm (1152 m <sup>3</sup> /h)	90 W	57 db (A)	2900 rpm	11.7 lbs. (5.3 kg)	UL File No. E234324
01941.1-00	0 to 60 °C	6	AC 120 V, 60 Hz	678 cfm (1152 m <sup>3</sup> /h)	90 W	57 db (A)	2900 rpm	12.5 lbs. (5.7 kg)	-
01950.0-00	-	9	AC 230 V, 50 Hz <sup>1</sup>	858 cfm (1458 m <sup>3</sup> /h)	135 W	58 db (A)	2600 rpm	17.2 lbs. (7.8 kg)	UL File No. E234324
01950.1-00	0 to 60 °C	9	AC 230 V, 50 Hz <sup>1</sup>	858 cfm (1458 m <sup>3</sup> /h)	135 W	58 db (A)	2600 rpm	17.4 lbs. (7.9 kg)	-
01951.0-00	-	9	AC 120 V, 60 Hz	1017 cfm (1728 m <sup>3</sup> /h)	135 W	58 db (A)	2900 rpm	17.2 lbs. (7.8 kg)	UL File No. E234324
01951.1-00	0 to 60 °C	9	AC 120 V, 60 Hz	1017 cfm (1728 m <sup>3</sup> /h)	135 W	58 db (A)	2900 rpm	17.4 lbs. (7.9 kg)	-

<sup>1</sup> air volume increases by 15% when operating AC 230 V filter fans at 60 Hz

# STEGOJET

## SJ 019



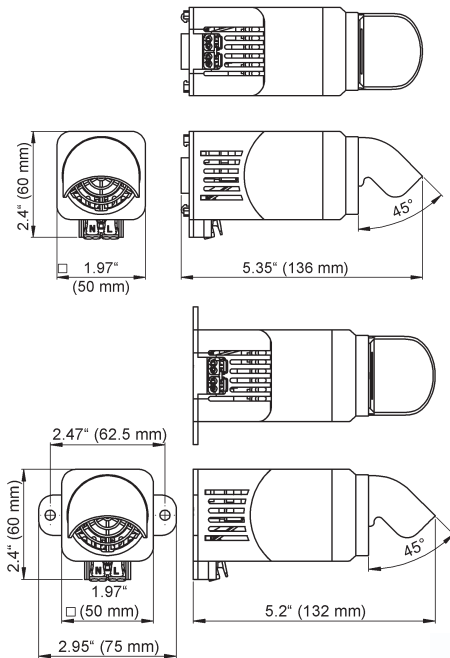
- > Prevents heat pockets
- > Wide voltage range
- > Compact design
- > Quick connection
- > Clip or screw mounting

The STEGOJET is a compact, powerful built-in fan. It allows precise cooling of heat sources and the air flow prevents formation of heat pockets. Its design offers a maximum rotation range with an air output in almost any direction. The dual clip system (two clips at a 90° angle) allows four different positions on a DIN rail, while the hinge in the housing can be moved at a 40° angle. Additionally, the airflow at the air outlet can be directed at a 45° angle and the air duct can be turned 360°.

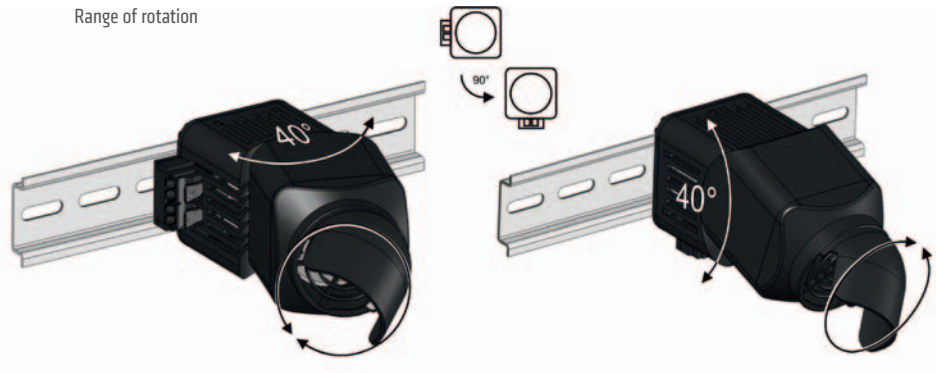


### TECHNICAL DATA

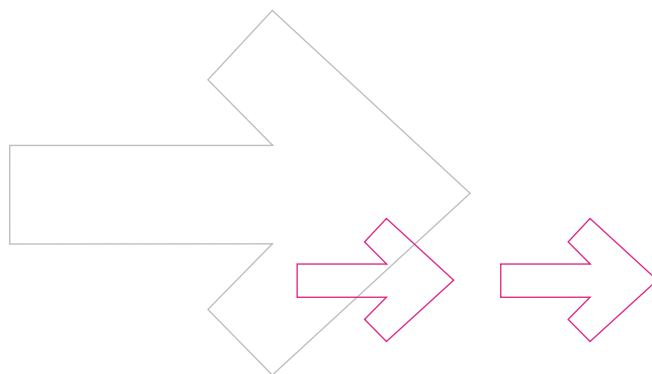
<b>Axial fan, ball bearing</b>	air flow 16.2 cfm (27.6 m <sup>3</sup> /h), free flow service life 40,000 h at 140 °F (60 °C) and 90 %RH
<b>Power consumption</b>	4 W
<b>Connection</b>	2-pole dual cage clamp for solid wire - AWG 14 (2.5 mm <sup>2</sup> ), stranded wire (w/ wire end ferrule) - AWG 16 (1.5 mm <sup>2</sup> )
<b>Housing</b>	plastic, UL 94V-0, black
<b>Mounting</b>	clip for 35 mm DIN rail, EN 60715 or with M5 screws and washers (not included), torque 2 Nm max.
<b>Mounting position</b>	variable
<b>Dimensions</b>	5.2 x 2.95 x 2.4" (132 x 75 x 60 mm)
<b>Weight</b>	approx. 7 oz. (0.2 kg)
<b>Operating / Storage temperature</b>	+14 to +140 °F (-10 to +60 °C) / -22 to +158 °F (-30 to +70 °C)
<b>Operating / Storage humidity</b>	max. 90 %RH (non-condensing)
<b>Protection class / Protection type</b>	II (double insulated) / IP20
<b>Approvals</b>	UL File No. E234324, VDE

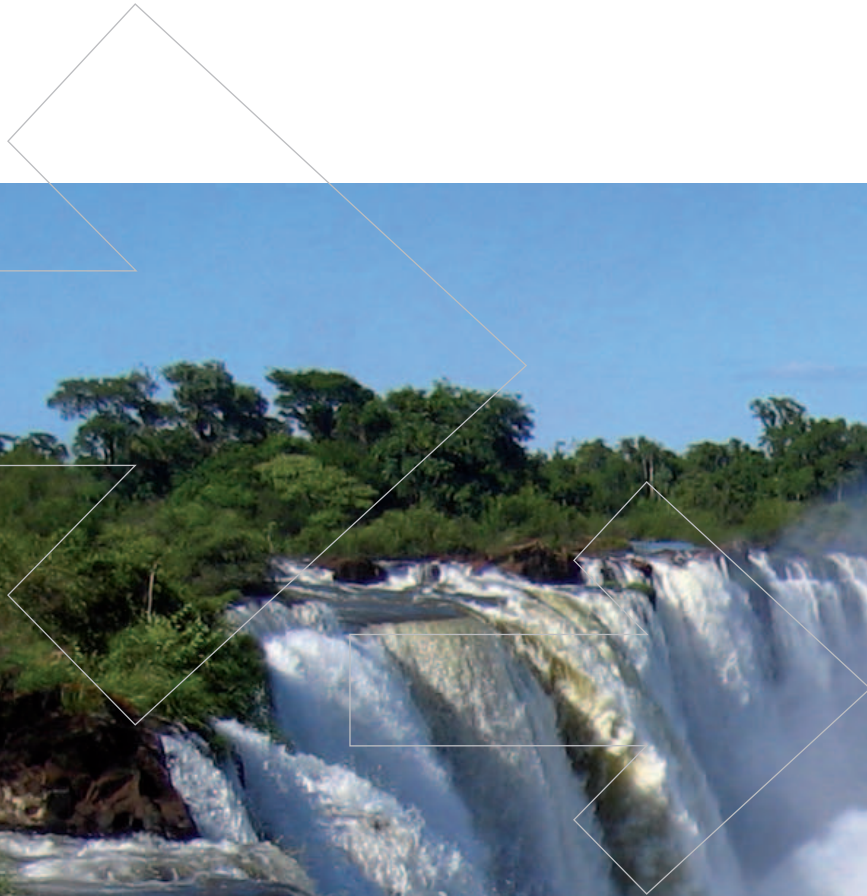


Range of rotation



Part No.	Model	Operating voltage
01925.0-00	DIN rail mounting	AC 100-240 V, 50/60 Hz (min. AC 90 V, max. AC 265 V)
01925.0-01	Screw mounting	AC 100-240 V, 50/60 Hz (min. AC 90 V, max. AC 265 V)





# REGULATING



## OPTIMIZING CLIMATIZATION

STEGO's temperature and humidity control systems perfect operating conditions for electric and electronic installations and therefore safeguard their performance.



# SMALL THERMOSTAT

## KTO 011 / KTS 011

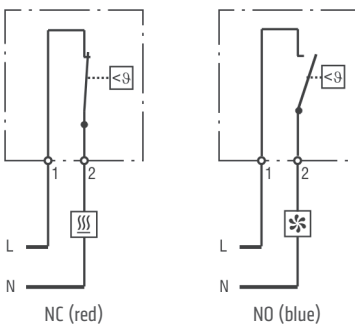
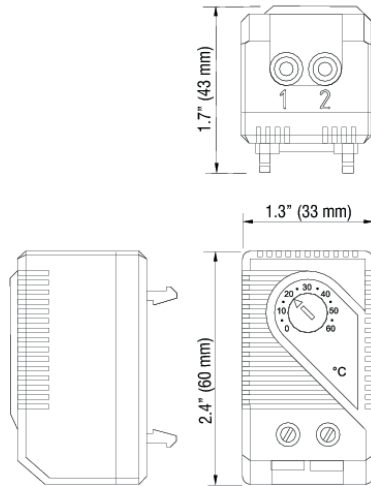


- > Compact design
- > Wide adjustment range

- > Color coded temperature dials
- > DIN rail mountable

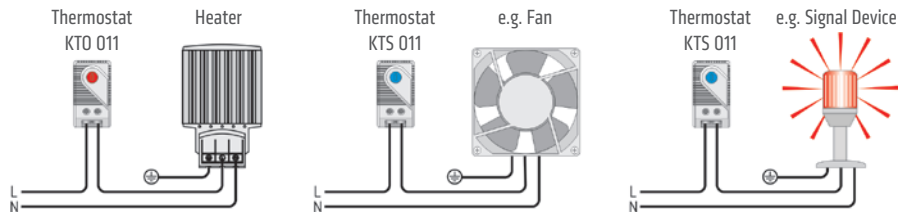
**Thermostat (NC):** Thermostat opens on temperature rise – for regulating heaters or for switching signal devices. Comes with red temperature dial.

**Thermostat (NO):** Thermostat closes on temperature rise – for regulating filter fans and heat exchangers or for switching signal devices. Comes with blue temperature dial.



- Enclosure heater
- Filter fan, cooling equipment, signal device

Wiring examples



### TECHNICAL DATA

Switching difference	12.6 °F ± 7 °F tolerance (7 K ± 4 K)
Sensor element	thermostatic bimetal
Contact type	snap-action contact
Service life	> 100,000 cycles
Max. switching capacity	15 A resistive / 2 A inductive @ AC 120 V 10 A resistive / 2 A inductive @ AC 250 V DC 30 W (DC 24-72 V)
Max. inrush current	AC 16 A for 10 sec.
Connection	2-pole terminal, clamping torque 0.5 Nm max.: solid wire - AWG 14 max. (2.5 mm <sup>2</sup> ) stranded wire <sup>1</sup> - AWG 16 max. (1.5 mm <sup>2</sup> )
Housing	plastic, UL 94V-0, light grey
Mounting	clip for 35 mm DIN rail, EN 60715
Mounting position	vertical
Operating / Storage temperature	-49 to +176 °F (-45 to +80 °C)
Operating / Storage humidity	max. 95 %RH (non-condensing)
Dimensions	2.4 x 1.3 x 1.7" (60 x 33 x 43 mm)
Weight	approx. 1.4 oz. (40 g)
Protection type	IP20

<sup>1</sup> When connecting with stranded wires, wire end ferrules must be used.

**Important note:** The contact system of the regulator is subjected to environmental influences, thus the contact resistance may change. This can lead to a voltage drop and / or self-heating of the contacts.

Setting range	Part No. (NC)	Part No. (NO)	Approvals			
+32 to +140 °F	01140.9-00	01141.9-00	VDE	UL File No. E164102	CSA	EAC
0 to +60 °C	01146.9-00	01147.9-00	VDE	UL File No. E164102	CSA	EAC
-10 to +50 °C	01142.0-00	01143.0-00	VDE	UL File No. E164102	-	EAC
+14 to +122 °F	01142.9-00	01143.9-00	VDE	UL File No. E164102	CSA	EAC
+10 to +70 °C	N/A	01149.9-00	VDE	UL File No. E164102	-	EAC
-15 to +45 °C	01157.0-00	01156.0-00	VDE	UL File No. E164102	-	EAC
+20 to +80 °C	01159.0-00	01158.0-00	VDE	UL File No. E164102	CSA	EAC



# COMPACT THUMBWHEEL THERMOSTAT

## STO 011 / STS 011

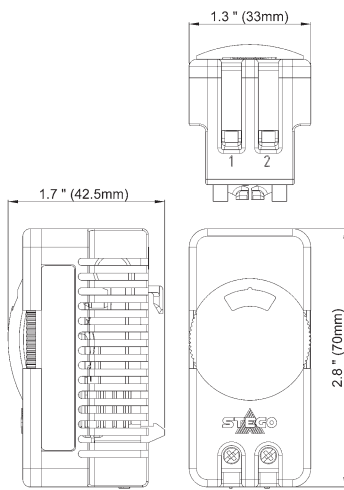


- > Adjustable thumbwheel setting
- > Compact design
- > Small hysteresis
- > High switching capacity
- > DIN rail mountable

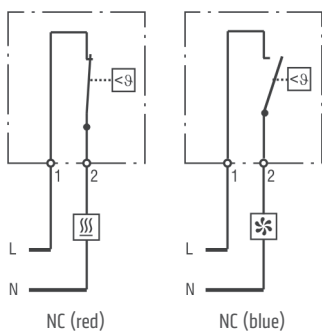
The ST 011 thermostat is an SPST regulator with small hysteresis. The housing design ensures optimized air circulation around the sensor element.

**Thermostat NC (normally closed):** Thermostat opens on temperature rise (red thumbwheel) – for regulating heaters or for switching signal devices when temperature has fallen below the minimum value.

**Thermostat NO (normally open):** Thermostat closes on temperature rise (blue thumbwheel) – for regulating filter fans, heat exchangers, cooling devices or for switching signal devices when temperature limit has been exceeded.



Convenient minimum setpoint symbol on the NC thermostat to assure enclosure temperature remains above freezing.



Enclosure heater  
 Filter fan, cooling equipment, signal device

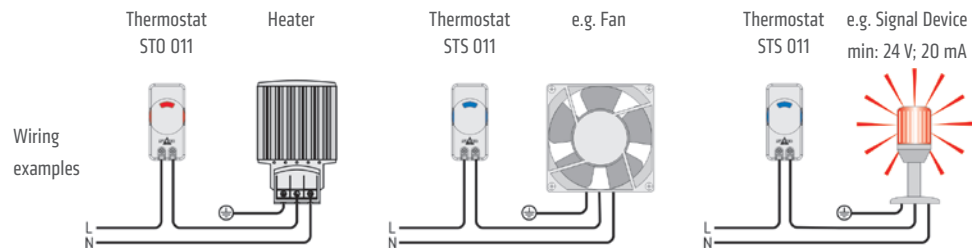
### TECHNICAL DATA



Switching difference	7 °F (4 K) ± 5.4 °F (3 K) tolerance
Sensor element	thermostatic bimetal
Contact type	snap-action contact
Service life	> 100,000 cycles
Max. switching capacity	15 A resistive / 2 A inductive @ AC 120 V 10 A resistive / 2 A inductive @ AC 250 V DC 30 W (DC 24-72 V)
Max. inrush current	AC 16 A for 10 sec.
Connection	2-pole terminal, clamping torque 1 Nm max.: solid/stranded <sup>1</sup> wire - AWG 14 max. (2.5 mm <sup>2</sup> )
Housing	plastic, UL 94V-0, light grey
Mounting	clip for 35 mm DIN rail, EN 60715
Mounting position	vertical
Operating / Storage temperature	-49 to +176 °F (-45 to +80 °C)
Operating / Storage humidity	max. 95 %RH (non-condensing)
Dimensions	2.76 x 1.3 x 1.65" (70 x 33 x 42 mm)
Weight	approx. 1.8 oz. (50 g)
Protection type	IP20
Approvals	UL File No. E164102, VDE, GOST-R

<sup>1</sup> When connecting with stranded wires, wire end ferrules must be used.

**Important note:** The contact system of the regulator is subjected to environmental influences, thus the contact resistance may change. This can lead to a voltage drop and/or self-heating of the contacts.



Part No. (NC)	Part No. (NO)	Setting range
01115.9-00	01116.9-00	+32 to +140 °F
01115.0-00	01116.0-00	0 to +60 °C

# TAMPERPROOF THERMOSTAT

## FTO 011 / FTS 011



- > Compact design
- > Fixed set point
- > Color coded modules
- > DIN rail mountable

**Tamperproof (Pre-set) Thermostat NC (normally closed):** Thermostat opens on temperature rise (red module housing) – for regulating heaters or for switching signal devices when temperature has fallen below the minimum value.

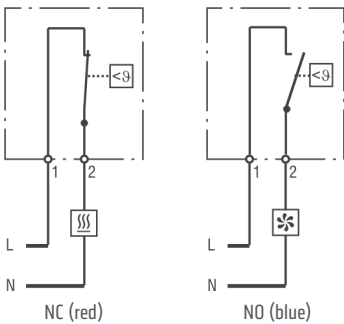
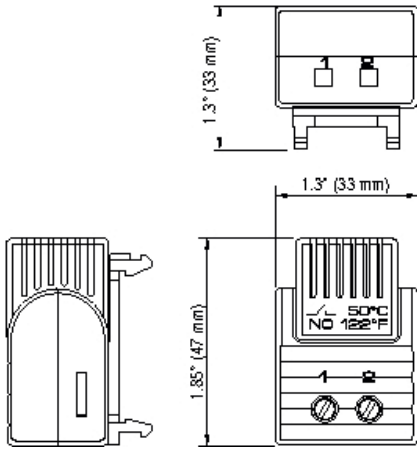
**Tamperproof (Pre-set) Thermostat NO (normally open):** Thermostat closes on temperature rise (blue module housing) – for regulating filter fans, heat exchangers, cooling devices or for switching signal devices when temperature limit has been exceeded.



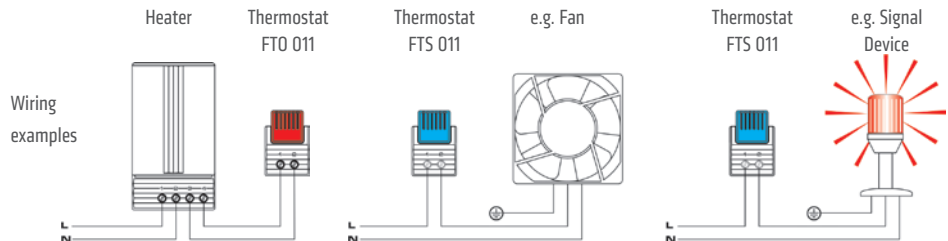
### TECHNICAL DATA

Sensor element	thermostatic bimetal
Contact type	snap-action contact
Service life	> 100,000 cycles
Max. switching capacity	10 A resistive / 2 A inductive @ AC 120 V 5 A resistive / 1.6 A inductive @ AC 250 V DC 30 W
Max. inrush current	AC 16 A for 10 sec.
Connection	2-pole terminal, clamping torque 0.8 Nm max.: solid/stranded <sup>1</sup> wire - AWG 14 max. (2.5 mm <sup>2</sup> )
Housing	plastic, UL 94V-0, light grey
Mounting	clip for 35 mm DIN rail, EN 60715
Mounting position	vertical
Operating / Storage temperature	-40 to +176 °F (-40 to +80 °C) / -49 to +176 °F (-45 to +80 °C)
Operating / Storage humidity	max. 95 %RH (non-condensing)
Dimensions	1.85 x 1.3 x 1.3" (47 x 33 x 33 mm)
Weight	approx. 0.8 oz. (23 g)
Protection type	IP20
Approvals	UL File No. E164102, VDE, EAC (Eurasian Conformity)

<sup>1</sup> When connecting with stranded wires, wire end ferrules must be used.



- Enclosure heater
- Filter fan, cooling equipment, signal device



Part No.	Contact	Switch-off temperature	Switch-on temperature
01160.0-00	NC - open on rise	59 °F / 15 °C (± 9 °F / 5 K tolerance)	41 °F / 5 °C (± 9 °F / 5 K tolerance)
01160.0-01	NC - open on rise	77 °F / 25 °C (± 9 °F / 5 K tolerance)	59 °F / 15 °C (± 9 °F / 5 K tolerance)
Part No.	Contact	Switch-on temperature	Switch-off temperature
01161.0-00	NO - close on rise	122 °F / 50 °C (± 11 °F / 6 K tolerance)	104 °F / 40 °C (± 12.6 °F / 7 K tolerance)
01161.0-01	NO - close on rise	140 °F / 60 °C (± 11 °F / 6 K tolerance)	122 °F / 50 °C (± 12.6 °F / 7 K tolerance)
01161.0-02	NO - close on rise	95 °F / 35 °C (± 11 °F / 6 K tolerance)	77 °F / 25 °C (± 12.6 °F / 7 K tolerance)

Note: Other switch-off and switch-on temperatures on request.

# DUAL THERMOSTAT ZR 011



- > NC / NO or NO / NO in one unit
- > Separate adjustable temperatures
- > Color coded temperature dials
- > DIN rail mountable

The ZR 011 houses two separate thermostats, allowing the independent control of heating and cooling or other equipment.

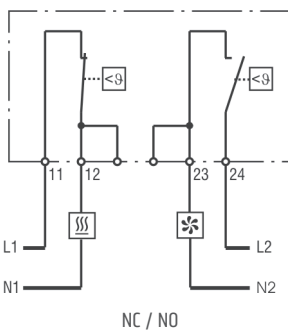
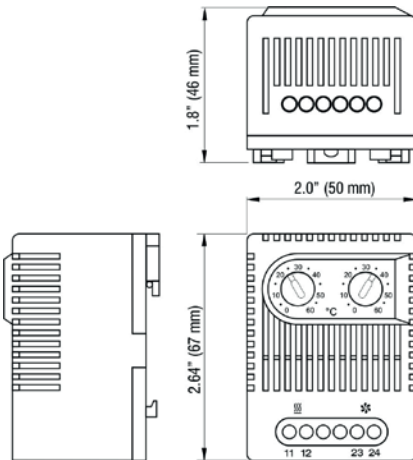
**Thermostat NC (normally closed):** Thermostat opens at temperature rise – for regulating heaters or for switching signal devices. Comes with red temperature dial.

**Thermostat NO (normally open):** Thermostat closes at temperature rise – for regulating filter fans and heat exchangers or for switching signal devices. Comes with blue temperature dial.



### TECHNICAL DATA

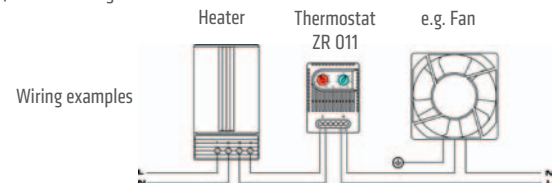
Switching difference	12.6 °F ± 7 °F tolerance (7 K ± 4 K)
Sensor element	thermostatic bimetal
Contact type	snap-action contact
Service life	> 100,000 cycles
Max. switching capacity	NC: 10 A resistive / 2 A inductive @ AC 250 V NO: 5 A resistive / 2 A inductive @ AC 250 V 15 A resistive / 2 A inductive @ AC 120 V DC 30 W (DC 24-72 V)
Max. inrush current	AC 16 A for 10 sec.
Connection	4-pole terminal, clamping torque 0.5 Nm max.: solid wire - AWG 14 max. (2.5 mm <sup>2</sup> ) stranded wire <sup>1</sup> - AWG 16 max. (1.5 mm <sup>2</sup> )
Housing	plastic, UL 94V-0, light grey
Mounting	clip for 35 mm DIN rail, EN 60715
Mounting position	vertical
Operating / Storage temperature	-49 to +176 °F (-45 to +80 °C)
Operating / Storage humidity	max. 95 %RH (non-condensing)
Dimensions	2.6 x 2.0 x 1.8" (67 x 50 x 46 mm)
Weight	approx. 3.2 oz. (90 g)
Protection type	IP20
Approvals	UL File No. E164102, CSA, VDE, EAC (Eurasian Conformity)



- Enclosures heater
- Filter fan, cooling equipment, signal device

<sup>1</sup> When connecting with stranded wires, wire end ferrules must be used.

**Important note:** The contact system of the regulator is subjected to environmental influences, thus the contact resistance may change. This can lead to a voltage drop and/or self-heating of the contacts.



Part No.	Setting Range		Setting Range	
01172.0-00	NC - open on rise	0 to +60 °C	NO - close on rise	0 to +60 °C
01172.0-01	NC - open on rise	+32 to +140 °F	NO - close on rise	+32 to +140 °F
01175.0-00	NC - open on rise	-10 to +50 °C	NO - close on rise	-20 to +80 °C
01175.0-01	NC - open on rise	+14 to +122 °F	NO - close on rise	+68 to +176 °F
01176.0-00 <sup>2</sup>	NO - close on rise	0 to +60 °C	NO - close on rise	0 to +60 °C
01176.0-01 <sup>2</sup>	NO - close on rise	+32 to +140 °F	NO - close on rise	+32 to +140 °F

<sup>2</sup> For regulating heat exchangers and fans (e. g. LE 019) and as an alarm contact for monitoring the interior temperature of electronic enclosures.

# TAMPERPROOF DUAL THERMOSTAT

## FTD 011



- > NC / NO or NO / NO in one unit
- > Fixed set points
- > Color coded modules
- > DIN rail mountable

**Two thermostats in one housing:**

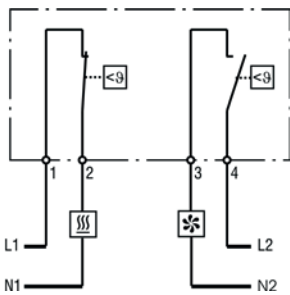
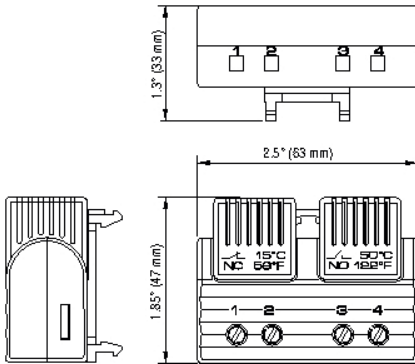
**Tamperproof (Pre-set) Thermostat NC (normally closed):** Thermostat opens on temperature rise (red module housing) – for regulating heaters or for switching signal devices when temperature has fallen below the minimum value.

**Tamperproof (Pre-set) Thermostat NO (normally open):** Thermostat closes on temperature rise (blue module housing) – for regulating filter fans, heat exchangers, cooling devices or for switching signal devices when temperature limit has been exceeded.



**TECHNICAL DATA**

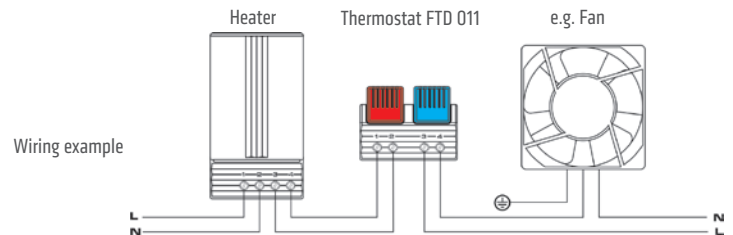
Sensor element	thermostatic bimetal
Contact type	snap-action contact
Service life	> 100,000 cycles
Max. switching capacity	10 A resistive / 2 A inductive @ AC 120V 5 A resistive / 1.6 A inductive @ AC 240V DC 30 W
Max. inrush current	AC 16 A for 10 sec.
Connection	4-pole terminal, clamping torque 0.8 Nm max.: solid wire - AWG 14 max. (2.5 mm <sup>2</sup> ) stranded wire <sup>1</sup> - AWG 16 max. (1.5 mm <sup>2</sup> )
Housing	plastic, UL 94V-0, light grey
Mounting	clip for 35 mm DIN rail, EN 60715
Mounting position	vertical
Operating / Storage temperature	-40 to +176 °F (-40 to +80 °C) / -49 to +176 °F (-45 to +80 °C)
Operating / Storage humidity	max. 95 %RH (non-condensing)
Dimensions	1.85 x 2.5 x 1.3" (47 x 63 x 33 mm)
Weight	approx. 14.1 oz. (40 g)
Protection type	IP20
Approvals	UL File No. E164102, VDE, EAC (Eurasian Conformity)



Thermostat FTD 011 (NC/NO)

- Enclosure heater
- Filter fan, cooling equipment, signal device

<sup>1</sup> When connecting with stranded wires, wire end ferrules must be used.



Part No.	NC – open on rise		NO – close on rise	
	Switch-off temperature	Switch-on temperature	Switch-on temperature	Switch-off temperature
01163.0-00	59 °F / 15 °C (± 9 °F / 5 K tolerance)	41 °F / 5 °C (± 9 °F / 5 K tolerance)	122 °F / 50 °C (± 11 °F / 6 K tolerance)	104 °F / 40 °C (± 12.6 °F / 7 K tolerance)
01163.0-01	77 °F / 25 °C (± 9 °F / 5 K tolerance)	59 °F / 15 °C (± 9 °F / 5 K tolerance)	140 °F / 60 °C (± 11 °F / 6 K tolerance)	122 °F / 50 °C (± 12.6 °F / 7 K tolerance)
01163.0-02	59 °F / 15 °C (± 9 °F / 5 K tolerance)	41 °F / 5 °C (± 9 °F / 5 K tolerance)	95 °F / 35 °C (± 11 °F / 6 K tolerance)	77 °F / 25 °C (± 12.6 °F / 7 K tolerance)
01163.0-03	77 °F / 25 °C (± 9 °F / 5 K tolerance)	59 °F / 15 °C (± 9 °F / 5 K tolerance)	122 °F / 50 °C (± 11 °F / 6 K tolerance)	104 °F / 40 °C (± 12.6 °F / 7 K tolerance)

Part No.	NO – close on rise		NO – close on rise	
	Switch-on temperature	Switch-off temperature	Switch-on temperature	Switch-off temperature
01164.0-00	122 °F / 50 °C (± 11 °F / 6 K tolerance)	104 °F / 40 °C (± 12.6 °F / 7 K tolerance)	140 °F / 60 °C (± 11 °F / 6 K tolerance)	122 °F / 50 °C (± 12.6 °F / 7 K tolerance)

Note: Other switch-off and switch-on temperatures on request.

# MECHANICAL THERMOSTAT

## FZK 011



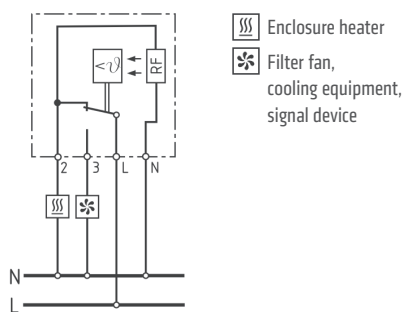
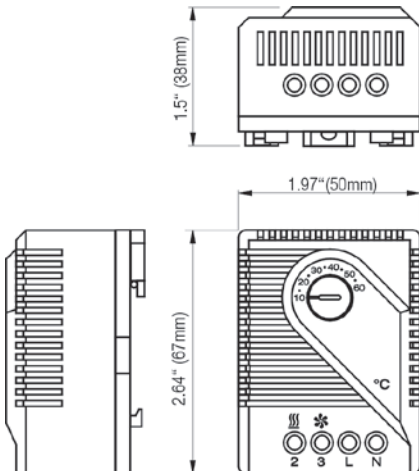
- > Wide adjustment range
- > High switching capacity
- > SPDT (change-over) contact
- > Very low hysteresis option
- > DIN rail mountable

The FZK 011 mechanical thermostat is used for controlling heating and cooling equipment, filter fans or signal devices where a higher degree of sensing accuracy is required. An integrated resistor (RF) can be connected to improve the switch temperature difference (see Option note). The thermostat registers the surrounding air and can switch both inductive and resistive loads via snap-action contact.



### TECHNICAL DATA

Switching difference	approx. 9 °F (5 K), tolerance -5.4/+3.6 °F (-3/+2 K) <sup>1</sup>
Sensor element	thermostatic bimetal
Contact type	SPDT / change-over contact
Service life	> 100,000 cycles
Min. switching capacity	10 mA
Max. switching capacity, NC	10 A resistive / 4 A inductive @ AC 120 V 10 A resistive / 4 A inductive @ AC 250 V DC 30 W
Max. switching capacity, NO	5 A resistive / 2 A inductive @ AC 120 V 5 A resistive / 2 A inductive @ AC 250 V DC 30W
Connection	4-pole terminal, clamping torque 0.5 Nm max.: solid/stranded <sup>2</sup> wire - AWG 14 max. (2.5 mm <sup>2</sup> )
Housing	plastic, UL 94V-0, light grey
Mounting	clip for 35 mm DIN rail, EN 60715
Mounting position	vertical
Operating / Storage temperature	-49 to +149 °F (-45 to +65 °C)
Operating / Storage humidity	max. 95 %RH (non-condensing)
Dimensions	2.64 x 1.97 x 1.5" (67 x 50 x 38 mm)
Weight	approx. 2 oz. (60 g)
Protection type	IP20
Approvals	UL File No. E164102, GOST-R



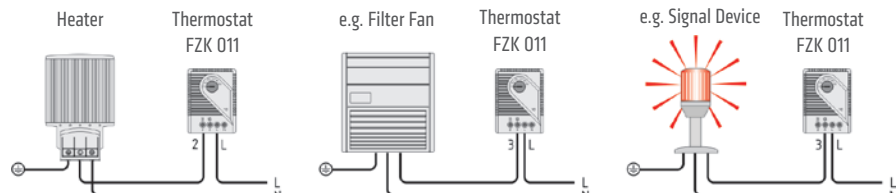
<sup>1</sup> If the Normally Closed contact is used, the switch temperature difference could be reduced by connecting terminal "N" (RF heating resistor). It causes the thermal feedback which is subject to surrounding conditions and thus has to be determined for each individual application.

<sup>2</sup> When connecting with stranded wires, wire end ferrules must be used.

<sup>3</sup> Voltage only needs to be specified if the optional use of the RF resistor is desired.

**Important note:** The contact system of the regulator is subjected to environmental influences, thus the contact resistance may change. This can lead to a voltage drop and/or self-heating of the contacts.

Part No.	Operating voltage <sup>3</sup>	Setting range
01170.0-00	AC 230 V	5 to 60 °C
01170.0-01	AC 230 V	40 to 140 °F
01170.9-00	AC 120 V	40 to 140 °F
01170.9-01	AC 120 V	5 to 60 °C



Wiring examples

# ELECTRONIC THERMOSTAT

## ETR 011



- > Large setting range
- > Compact design
- > Small hysteresis

- > Optical function display (LED)
- > DIN rail mountable

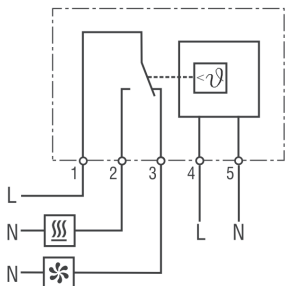
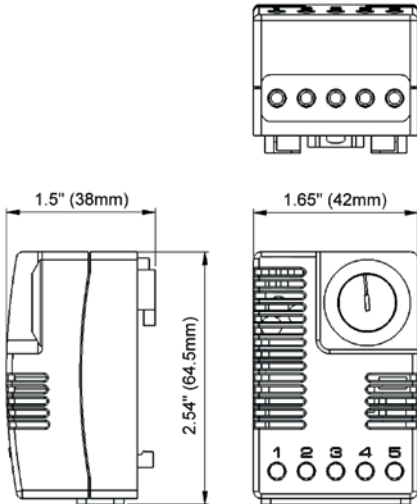
The ETR 011 electronic thermostat is used for controlling heating and cooling equipment, filter fans or signal devices. The thermostat senses the surrounding air temperature and can switch both resistive and inductive loads via an SPDT contact. The integrated LED is lit when the NC is closed (i.e. connected heater is operating).



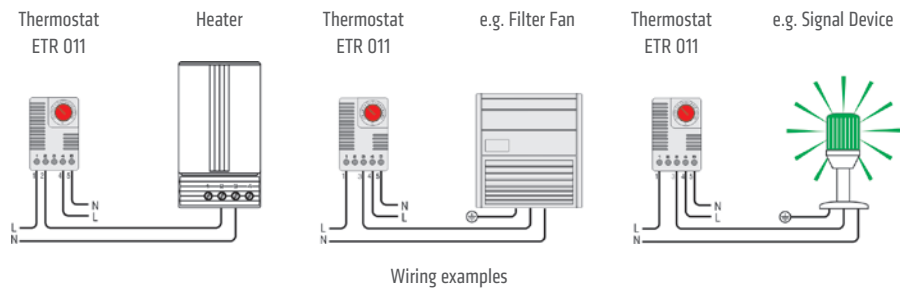
### TECHNICAL DATA

Switching difference	7 °F (4 K) ±1.8 °F (1 K) tolerance at +68 °F (+20 °C)
Sensor element	NTC
Reaction time	approx. 5 seconds
Contact type	SPDT / change-over contact (relay)
Service life	> 50,000 cycles
Max. switching capacity (relay output)	8 A resistive / 1.6 A inductive @ AC 120 V 8 A resistive / 1.6 A inductive @ AC 240 V 100 W @ DC 24 V
Max. inrush current	AC 16 A for 10 sec.
Connection	5-pole terminal, clamping torque 0.5 Nm max.: solid/stranded <sup>1</sup> wire - AWG 14 max. (2.5 mm <sup>2</sup> )
Housing	plastic, UL 94V-0, light grey
Mounting	clip for 35 mm DIN rail, EN 60715
Mounting position	vertical
Operating / Storage temperature	-40 to +185 °F (-40 to +85 °C)
Operating / Storage humidity	max. 95 %RH (non-condensing)
Dimensions	2.54 x 1.65 x 1.5" (64.5 x 42 x 38 mm)
Weight	approx. 2 oz. (60 g)
Protection type	IP20

<sup>1</sup> When connecting with stranded wires, wire end ferrules must be used.



- Enclosure heater
- Filter fan, cooling equipment, signal device



Part No.	Operating voltage	Setting range	Approvals		
01131.0-00	AC 230 V, 50/60 Hz	-20 to +60 °C	VDE	UL File No. E164102	GOST-R
01131.9-00	AC 120 V, 50/60 Hz	-4 to +140 °F	VDE	UL File No. E164102	GOST-R

# ELECTRONIC THERMOSTAT

ET 011 | DC 24 V



- > 16 Amp DC switching capacity
- > Low hysteresis

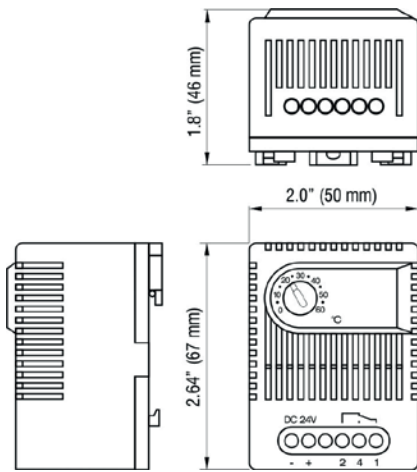
- > Wide adjustment range
- > DIN rail mountable

The ET 011 is an electronic thermostat for regulating high performance DC 24 V equipment. Heating or cooling equipment, as well as signal devices, can be switched via the SPDT (change-over) contact. A relatively small hysteresis sets the ET 011 Thermostat apart from less accurate mechanical thermostats.

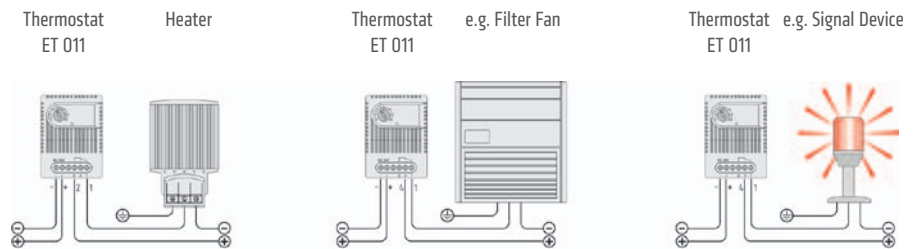
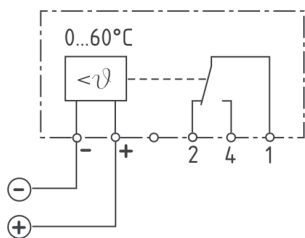


### TECHNICAL DATA

Switching difference	approx. 5.4 °F ± 1.8 °F tolerance (3 K ± 1 K)
Sensor element	PTC
Contact type	SPDT / change-over contact
Service life	> 100,000 cycles
Max. switching capacity	16 A @ DC 28 V
Max. inrush current	DC 16 A
Connection	5-pole terminal, clamping torque 0.5 Nm max.: solid wire - AWG 14 max. (2.5 mm <sup>2</sup> ) stranded wire <sup>1</sup> - AWG 16 max. (1.5 mm <sup>2</sup> )
Housing	plastic, UL 94V-0, light grey
Mounting	clip for 35 mm DIN rail, EN 60715
Mounting position	vertical
Operating / Storage temperature	+14 to +140 °F (-10 to +60 °C) / -49 to +176 °F (-45 to +80 °C)
Operating / Storage humidity	max. 95 %RH (non-condensing)
Dimensions	2.6 x 2.0 x 1.8" (67 x 50 x 46 mm)
Weight	approx. 2.4 oz. (70 g)
Protection type	IP20



<sup>1</sup> When connecting with stranded wires, wire end ferrules must be used.



Wiring examples

Part No.	Operating voltage	Setting range
01190.0-00	DC 24 V (DC 20-28 V)	0 to 60 °C
01190.0-01	DC 24 V (DC 20-28 V)	32 to 140 °F

# MECHANICAL HYGROSTAT

## MFR 012

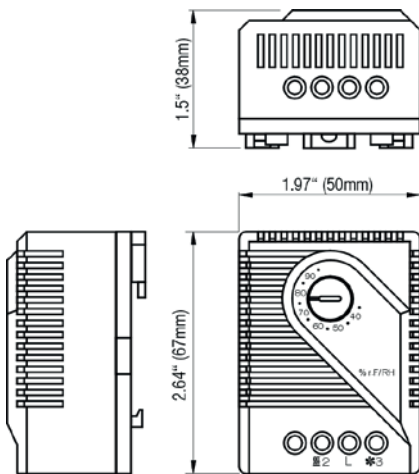


- > Efficient condensation control
- > Adjustable relative humidity range

- > High switching capacity
- > DIN rail mountable

The MFR 012 electromechanical hygrometer is designed to control the relative humidity inside enclosures. When connected to an enclosure heater (dehumidifier), it will energize the heater at the humidity set point in order to raise the dew point. This helps prevent damage and malfunction of electronic components caused by condensation and corrosion.<sup>1</sup> The MFR 012 can also be used to control cooling fans, warning lights or other devices.

<sup>1</sup> The critical relative humidity level for most components is 65%. Above 65% RH, condensation can form and cause malfunctions of electronic equipment. Long term, this can lead to corrosion and permanent damage of electronic components and systems.

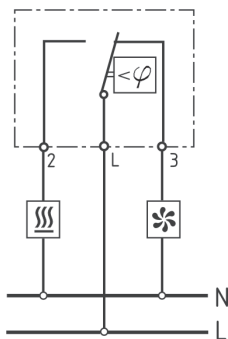


### TECHNICAL DATA

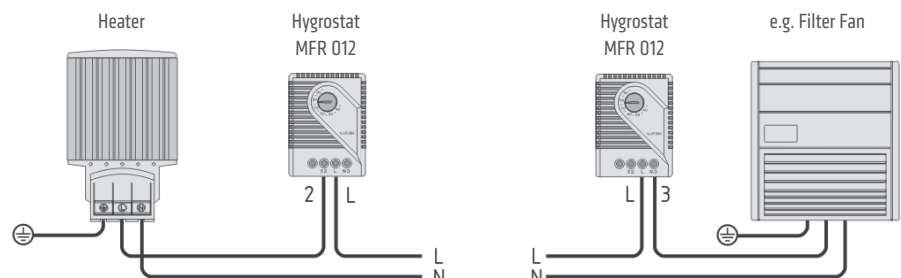


Switching difference	4 %RH ( $\pm 3\%$ tolerance) - at 50 %RH
Permissible air velocity	50 ft/sec (15 m/s)
Contact type	SPDT / change-over contact
Service life	> 50,000 cycles
Min. Switching capacity	100 mA @ AC/DC 20 V
Max. Switching capacity	5 A resistive @ AC 250 V DC 20 W
Connection	3-pole terminal, clamping torque 0.5 Nm max.: solid wire - AWG 14 max. (2.5 mm <sup>2</sup> ) stranded wire <sup>1</sup> - AWG 16 max. (1.5 mm <sup>2</sup> )
Housing	plastic, UL 94V-0, light grey
Mounting	clip for 35 mm DIN rail, EN 60715
Mounting position	vertical
Operating / Storage temperature	+32 to +140 °F (0 to +60 °C) / -40 to +140 °F (-40 to +60 °C)
Operating / Storage humidity	max. 95 %RH (non-condensing)
Dimensions	2.64 x 1.97 x 1.5" (67 x 50 x 38 mm)
Weight	approx. 2 oz. (60 g)
Protection type	IP20
Approvals	UL File No. E164102, GOST-R

<sup>1</sup> When connecting with stranded wires, wire end ferrules must be used.



- Enclosure heater
- Filter fan, cooling equipment, signal device



Wiring examples

Part. No.	Setting range
01220.0-00	35 to 95 %RH



# ELECTRONIC HYGROSTAT

## EFR 012

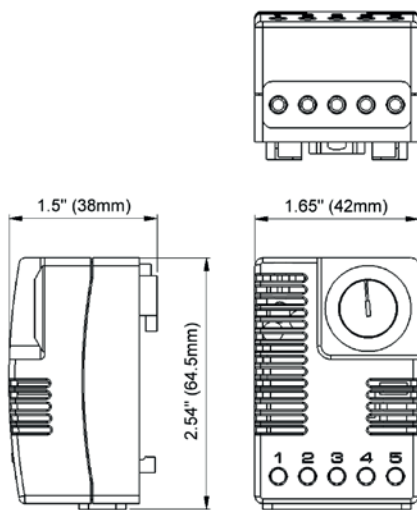


- > Adjustable & pre-set relative humidity setpoints
- > Compact design
- > High switching capacity
- > Optical function display (LED)
- > DIN rail mountable

The EFR 012 electronic hygrometer senses the relative humidity in an enclosure and turns on a heater at the set point, helping prevent the formation of condensation in the enclosure. The integrated LED is lit when the connected device is in operation.

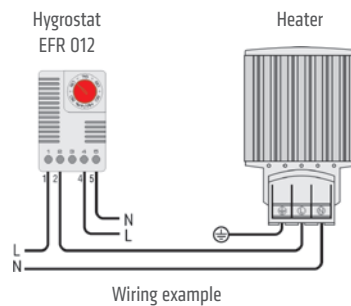
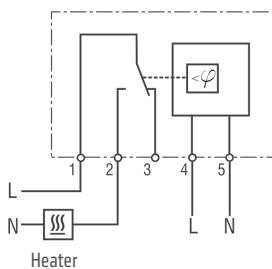


### TECHNICAL DATA



Switching difference	5 %RH (± 1 % tolerance) - at 77 °F (25 °C) and 50 %RH
Reaction time	approx. 5 seconds
Contact type	SPDT / change-over contact (relay)
Service life	> 50,000 cycles
Max. switching capacity (relay output)	8 A resistive / 1.6 A inductive @ AC 120 V 8 A resistive / 1.6 A inductive @ AC 240 V 100 W @ DC 24 V
Max. inrush current	AC 16 A for 10 sec.
Connection	5-pole terminal, clamping torque 0.5 Nm max.: solid/stranded <sup>1</sup> wire - AWG 14 max. (2.5 mm <sup>2</sup> )
Housing	plastic, UL 94V-0, light grey
Mounting	clip for 35 mm DIN rail, EN 60715
Mounting position	vertical
Operating / Storage temperature	+32 to +140 °F (0 to +60 °C) / -4 to +158 °F (-20 to +70 °C)
Operating / Storage humidity	90 %RH (non-condensing)
Dimensions	2.54 x 1.65 x 1.5" (64.5 x 42 x 38 mm)
Weight	approx. 2.3 oz. (65 g)
Protection type	IP20

<sup>1</sup> When connecting with stranded wires, wire end ferrules must be used.



Part No.	Operating voltage	Setting range	Approvals		
01245.0-00	AC 230 V, 50/60 Hz	40 to 90 %RH	VDE	UL File No. E164102	GOST-R
01245.9-00	AC 120 V, 50/60 Hz	40 to 90 %RH	-	UL File No. E164102	GOST-R
01246.0-00	AC 230 V, 50/60 Hz	65 %RH pre-set	VDE	UL File No. E164102	GOST-R
01246.0-01	AC 230 V, 50/60 Hz	50 %RH pre-set	VDE	UL File No. E164102	GOST-R
01246.9-00	AC 120 V, 50/60 Hz	65 %RH pre-set	-	UL File No. E164102	GOST-R

# ELECTRONIC HYGROTHERM

## ETF 012



- > Efficient temperature & humidity control
- > Wide voltage range

- > Operating temperature down to -40 °C
- > High switching capacity
- > DIN rail mountable

The ETF 012 senses the ambient temperature and relative air humidity in an enclosure. Depending on which contact combination is chosen, it then turns on or off a connected device if either the temperature is below or the humidity is above the set point. The integrated LED in each adjustment knob is lit when indicating the active function.

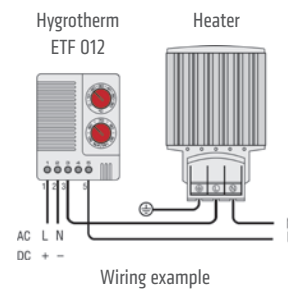
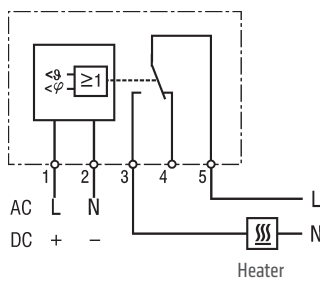
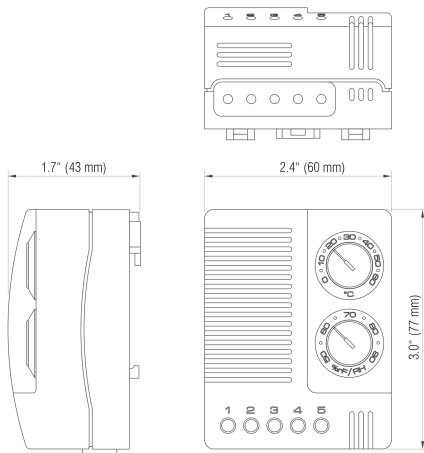


### TECHNICAL DATA

Switching difference (temperature)	2 K ( $\pm 1$ K tolerance) at +25 °C (+77 °F), 50 %RH
Switching difference (humidity)	4 %RH ( $\pm 1$ % tolerance) at +25 °C (+77 °F), 50 %RH
Reaction time (humidity)	approx. 5 sec.
Contact type	change-over contact (relay)
Service life	VDE: NO/NC > 15,000 cycles UL: NO/NC > 30,000 cycles
Max. switching capacity (relay output)	10 A resistive / 1.6 A inductive @ AC 240 V 0.6 A @ DC 60 V <sup>1</sup>
Max. inrush current	AC 30 A for 10 sec.
Connection	5-pole terminal, clamping torque 0.5 Nm max.: solid/stranded <sup>2</sup> wire - AWG 14 max. (2.5 mm <sup>2</sup> )
Housing	plastic, UL 94V-0, light grey
Mounting	clip for 35 mm DIN rail, EN 60715
Mounting position	vertical
Operating/Storage temperature	-40 to +140 °F (-40 to +60 °C)
Operating/Storage humidity	max. 95 %RH (non-condensing)
Dimensions	3.0 x 2.4 x 1.7" (77 x 60 x 43 mm)
Weight	approx. 3.5 oz. (100 g)
Protection type	IP20
Approvals	UL File No. E164102, VDE, GOST-R

<sup>1</sup> not UL confirmed

<sup>2</sup> When connecting with stranded wires, wire end ferrules must be used.



Part No.	Operating voltage	Setting range – temperature	Setting range – humidity
01230.0-00	AC 100-240 V, 50/60 Hz (min. AC 90 V, max. AC 265 V)	0 to +60 °C	50 to 90 %RH
01230.9-00	AC 100-240 V, 50/60 Hz (min. AC 90 V, max. AC 265 V)	+32 to +140 °F	50 to 90 %RH
01230.1-00	DC 24-48 V (min. DC 20 V, max. DC 60 V)	0 to +60 °C	50 to 90 %RH

# ELECTRONIC HYGROTHERM WITH EXTERNAL SENSOR

## ETF 012



- > Efficient temperature & humidity control
- > Wide voltage range

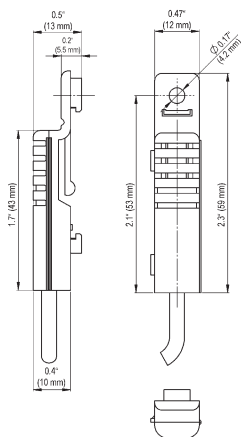
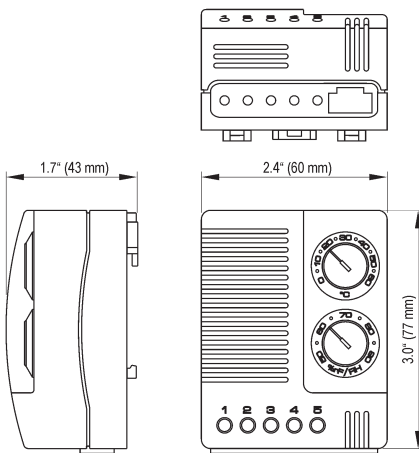
- > Operating temperature down to -40 °C
- > High switching capacity
- > With external sensor

The ETF 012 senses the ambient temperature and relative humidity in an enclosure. Depending on which contact combination is chosen, it then turns on or off a connected device if either the temperature is below or the humidity is above the set point. The integrated LED in each adjustment knob is lit when indicating the active function. The external sensor can be positioned freely anywhere in the enclosure for precise measurements.



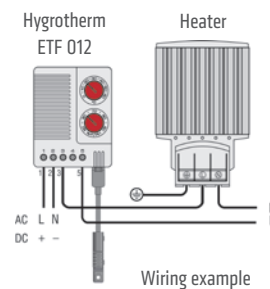
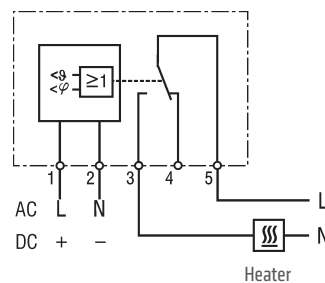
### TECHNICAL DATA

Switching difference (temperature)	2 K (±1 K tolerance) at +25 °C (+77 °F), 50 %RH
Switching difference (humidity)	4 %RH (±1 % tolerance) at +25 °C (+77 °F), 50 %RH
Reaction time (humidity)	approx. 5 sec.
Contact type	change-over contact (relay)
Service life	VDE: NO/NC > 15,000 cycles UL: NO/NC > 30,000 cycles
Max. switching capacity (relay output)	10 A resistive / 1.6 A inductive @ AC 240 V 0.6 A @ DC 60 V <sup>1</sup>
Max. inrush current	AC 30 A for 10 sec.
Connection	5-pole terminal, clamping torque 0.5 Nm max.: solid/stranded <sup>2</sup> wire - AWG 14 max. (2.5 mm <sup>2</sup> )
Housing	plastic, UL 94V-0, light grey
Mounting	clip for 35 mm DIN rail, EN 60715
Mounting position	vertical
Operating/Storage temperature	-40 to +140 °F (-40 to +60 °C)
Operating/Storage humidity	max. 95 %RH (non-condensing)
Dimensions	3.0 x 2.4 x 1.7" (77 x 60 x 43 mm)
Weight	approx. 3.5 oz. (100 g)
Protection type	IP20
Approvals	UL File No. E164102, VDE, GOST-R



<sup>1</sup> not UL confirmed

<sup>2</sup> When connecting with stranded wires, wire end ferrules must be used.



Part No. Cable - 1 m	Part no. Cable - 2 m	Operating voltage	Setting range - temperature	Setting range - humidity
01231.0-00	01231.0-01	AC 100-240 V, 50/60 Hz (min. AC 90 V, max. AC 265 V)	0 to +60 °C	50 to 90 %RH
01231.9-00	01231.9-01	AC 100-240 V, 50/60 Hz (min. AC 90 V, max. AC 265 V)	+32 to +140 °F	50 to 90 %RH
01231.1-00	01231.1-01	DC 24-48 V (min. DC 20 V, max. DC 60 V)	0 to +60 °C	50 to 90 %RH

# ELECTRONIC RELAY

SM 010 | DC 24 V & DC 48 V



- > 16 Amp DC switching capacity
- > Variety of applications

- > Compact design
- > DIN rail mountable

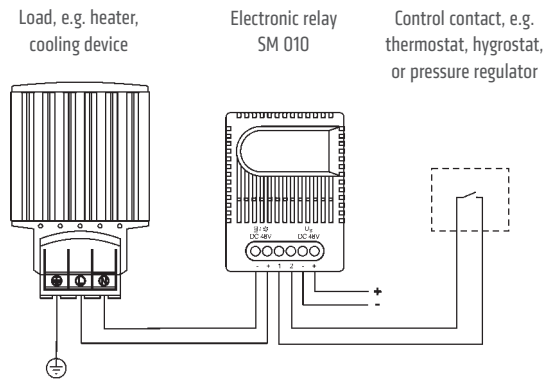
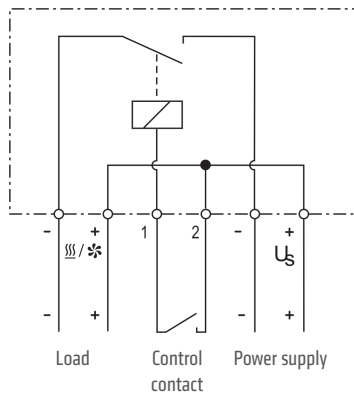
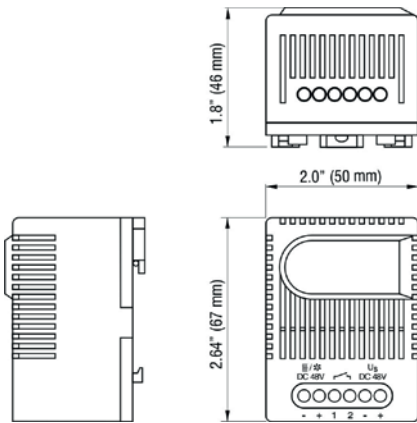
The SM 010 Electronic Relay is used for switching high powered DC operated equipment, such as heaters, up to 16 amps. A separate conventional switch contact is used as controller (e.g. thermostat, hygrostat). The electronic relay is available in DC 24 V and DC 48 V versions.



## TECHNICAL DATA

Contact type	NO - normally open (Relay/MOSFET)
Service life	> 100,000 cycles
Max. inrush current	DC 16 A
Connection	6-pole terminal, clamping torque 0.5 Nm max.: solid wire - AWG 14 max. (2.5 mm <sup>2</sup> ) stranded wire <sup>1</sup> - AWG 16 max. (1.5 mm <sup>2</sup> )
Housing	plastic, UL 94V-0, light grey
Mounting	clip for 35 mm DIN rail, EN 60715
Mounting position	vertical
Operating / Storage temperature	-49 to +158 °F (-45 to +70 °C)
Operating / Storage humidity	max. 95 %RH (non-condensing)
Dimensions	2.6 x 2.0 x 1.8" (67 x 50 x 46 mm)
Weight	approx. 3.0 oz. (85 g)
Protection type	IP20
Approvals	UL File No. E342261, GOST-R

<sup>1</sup> When connecting with stranded wires, wire end ferrules must be used.



Wiring example

Part No.	Operating voltage	Max. Switching capacity	Signal current
01000.0-01	DC 48 V (DC 38-56 V)	16 A @ DC 56 V	10 mA @ DC 38 V / 18 mA @ DC 56 V
01001.0-01	DC 24 V (DC 20-28 V)	16 A @ DC 28 V	13 mA @ DC 20 V / 22 mA @ DC 28 V

# EXPLOSION-PROOF THERMOSTAT

## REx 011



- > Compact design
- > Fixed temperature setpoints
- > High switching capacity
- > DIN rail mountable

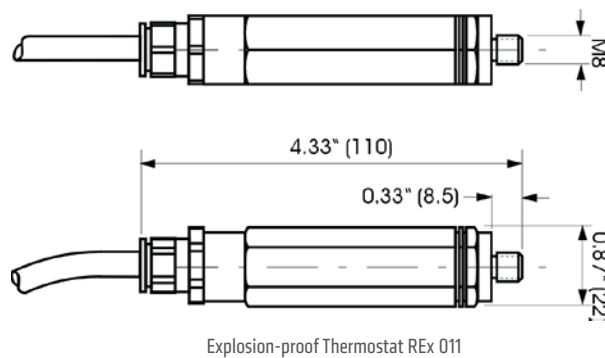
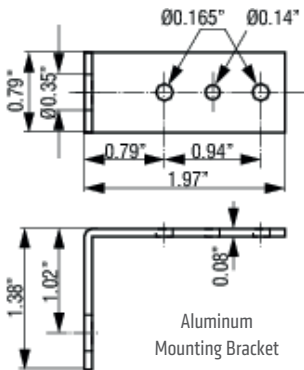
The design of the REx 011 thermostat ensures high accuracy, small switching difference (hysteresis) and a long service life. Because of the high switching capacity of the thermostat, heaters can usually be directly connected and switched without the need for additional relays.



### TECHNICAL DATA

Explosion proof according to EN	LCIE (Laboratoire Central des Industries Electriques)
Conformity certificate	01 ATEX 6074/04, LCIE N°06 ATEX Q8011, IECEx LCI 07. 0021
Sensor element	thermostatic bimetal
Contact type	NC - normally closed (opens on temperature rise)
Service life	> 100,000 cycles
Max. switching capacity	1.3 A resistive / 0.65 A inductive @ AC 250 V
Max. inrush current	AC 4 A for 12 sec.
Connection	Si HF - JZ 3 x AWG 18 (0.75 mm <sup>2</sup> ), length 3.3 ft (1 m)
Housing	aluminum, black anodized
Mounting	mounting bracket with M8 nut and clip for 35 mm DIN rail
Mounting position	variable
Operating / Storage temperature <sup>1</sup>	-40 to +185 °F (-40 to +85 °C) / -49 to +158 °F (-45 to +70 °C)
Dimensions	length 4.33" (110 mm)
Weight	approx. 7 oz. (200 g)
Protection class / Protection type	I (grounded) / IP65
Approvals	EAC submitted

<sup>1</sup> Ambient temperature of the cabinet/enclosure: -40 to +140°F (-40 to +60°C)



Part No.	Ex protection type	Switch-off temperature	Switching difference
01180.0-00	d IIC T6 - Ex tD A21 IP6X T85°C	59 °F ± 7 °F tolerance (15 °C ± 4 K tolerance)	7 °F ± 2 °F tolerance (4 K ± 1 K tolerance)
01181.0-00	d IIC T6 - Ex tD A21 IP6X T85°C	77 °F ± 7 °F tolerance (25 °C ± 4 K tolerance)	7 °F ± 2 °F tolerance (4 K ± 1 K tolerance)



# LIGHTING



## ELECTRONICS DO NOT SLEEP

Our lighting solutions ensure that maintenance on electronic installations can be carried out night and day.

# LIGHT

## LED 025

LED 025 Light with on/off switch and magnet mount



- > Energy saving LED technology
- > Wide voltage range
- > Integrated power unit

- > Magnet, screw or clip mount
- > Wide variety of connections
- > On/off switch or motion sensor

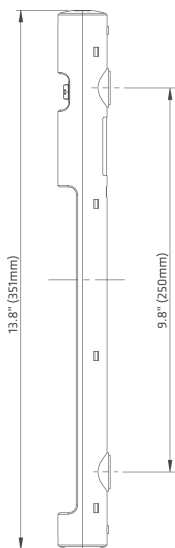
The LED 025 light series is suitable for all types of panels and enclosures, especially where space is at a premium. These lights have a very long service life due to the use of LED technology. They are available with powerful non-slip rubberized magnets allowing them to be easily positioned in any steel enclosure. Screw mounting is also available as an option. The power output allows up to 10 lights to be connected to each other (daisy chain) with both the input and output plugs snap-locking into place.



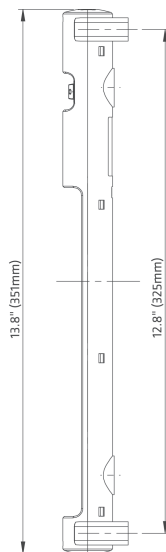
### TECHNICAL DATA

Power consumption	max. 5 W (~ 75 W incandescent bulb)
Luminosity	290 Lm at 120° (870 Lm at 360° or equivalent 75W light bulb)
Lamp type	LED, 120° angle of radiation light color - daylight, color temperature - 6,500 K
Service life	60,000 hrs. at 68 °F (20 °C)
Connection	2-pole plug with snap lock; AC: max. 2.5 A / AC 240 V, white connector; DC: max. 2.5 A / DC 60 V, blue connector
Housing	plastic, transparent
Mounting	magnet, M5 screws (not included), or clip (M6 screws) torque 2 Nm max.
Operating / Storage temperature	-22 to +140 °F (-30 to +60 °C) / -40 to +185 °F (-40 to +85 °C)
Operating / Storage humidity	max. 90 %RH (non-condensing)
Dimensions	see drawings
Protection type/Protection class	IP20 / II (double insulated)
Accessories	input and output connector, cable for supply or daisy chain
Approvals	UL File No. E234324, VDE (except clip mount versions), GOST-R

On/off switch light w/magnet or screw mount

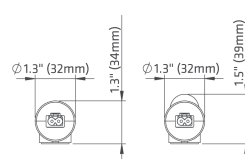


On/off switch light w/clip mount

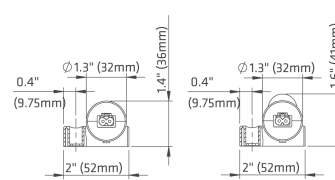


Mounting options: The lights are available with magnet mount for easy positioning in any steel cabinet or enclosure. Other options are the LED 025 with screw mount, and specifically designed clip holders for clip mount of the LED 025 can also be positioned anywhere in the cabinet. The clip holders are screwed to the cabinet wall, the lamp is simply snapped into the clip holders and can be rotated as needed for a perfect illumination.

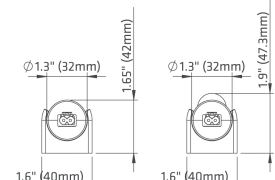
Magnet mount end view



Screw mount end view



Clip mount end view



### LIGHT KITS WITH INPUT CONNECTOR INCLUDED

Part No. - magnet mount	Part No. - screw mount	Part No. - clip mount	Operating voltage	Switch type	Weight
02540.0-00-0003	02540.0-01-0003	02540.0-03-0003	AC 100-240 V, 50/60 Hz (min. AC 90 V, max. AC 265 V)	on/off switch	4.8 oz. (135 g)
02540.1-00-0003	02540.1-01-0003	02540.1-03-0003	DC 24-48 V (min. DC 20 V, max. DC 60 V)	on/off switch	4.8 oz. (135 g)
02541.0-00-0003	02541.0-01-0003	02541.0-03-0003	AC 100-240 V, 50/60 Hz (min. AC 90 V, max. AC 265 V)	PIR motion sensor <sup>1</sup>	5.0 oz. (140 g)
02541.1-00-0003	02541.1-01-0003	02541.1-03-0003	DC 24-48 V (min. DC 20 V, max. DC 60 V)	PIR motion sensor <sup>1</sup>	5.0 oz. (140 g)

<sup>1</sup> Passive Infrared (PIR) motion sensor is factory pre-set to turn the light off 6 minutes after all motion ceases



LIGHT ONLY

Part No. - magnet mount	Part No. - screw mount	Part No. - clip mount	Operating voltage	Switch type	Weight
02540.0-00	02540.0-01	02540.0-03	AC 100-240 V, 50/60 Hz (min. AC 90 V, max. AC 265 V)	on/off switch	4.8 oz. (135 g)
02540.1-00	02540.1-01	02540.1-03	DC 24-48 V (min. DC 20 V, max. DC 60 V)	on/off switch	4.8 oz. (135 g)
02541.0-00	02541.0-01	02541.0-03	AC 100-240 V, 50/60 Hz (min. AC 90 V, max. AC 265 V)	PIR motion sensor <sup>1</sup>	5.0 oz. (140 g)
02541.1-00	02541.1-01	02541.1-03	DC 24-48 V (min. DC 20 V, max. DC 60 V)	PIR motion sensor <sup>1</sup>	5.0 oz. (140 g)

<sup>1</sup> Passive Infrared (PIR) motion sensor is factory pre-set to turn the light off 6 minutes after all motion ceases

ACCESSORIES

CONNECTION CABLE WITH INPUT CONNECTOR AND WIRE LEADS



Photo: Connection cable, Part No. 244357

Part No.	Model	Length	Voltage	Color	Approvals <sup>2</sup>
244357	connection cable 2 x AWG 16 with input connector	2.0 m	AC	connector: white - cable: white	UL, VDE
244361	connection cable 2 x AWG 16 with input connector	2.0 m	DC	connector: blue - cable: white	UL, VDE

<sup>2</sup> applies only to the individual components (cable and connectors)

EXTENSION CABLE WITH 2 CONNECTORS FOR DAISY CHAIN (INPUT & OUTPUT) CONNECTION



Photo: Extension cable, Part No. 244359

Part No.	Model	Length	Voltage	Color	Approvals <sup>2</sup>
244359	extension cable 2 x AWG 16 with 2 connectors	1.0 m	AC	connectors: white - cable: white	UL, VDE
244363	extension cable 2 x AWG 16 with 2 connectors	1.0 m	DC	connectors: blue - cable: white	UL, VDE

<sup>2</sup> applies only to the individual components (cable and connectors)

INPUT / OUTPUT CONNECTORS



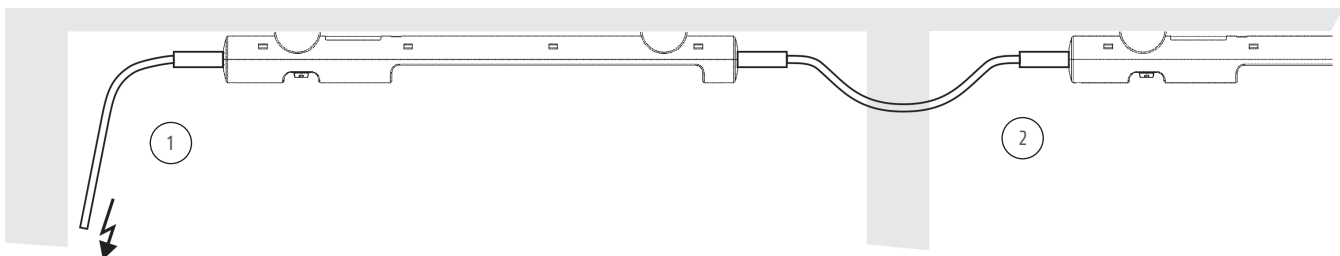
Photo: Input connector, Part No. 264057



Photo: Output connector, Part No. 264058

Part No.	Model	Voltage	Color	Approvals
264057	input connector	AC	white	UL, VDE
264058	output connector	AC	white	UL, VDE
264059	input connector	DC	blue	UL, VDE
264060	output connector	DC	blue	UL, VDE

CONNECTION EXAMPLE



This illustration shows the LED 025 light in a daisy chain application. The lights are easily connected via quick connection plugs - up to 10 lights can be daisy-chained this way. The snap-lock connectors ensure a stable electrical connection even when subjected to vibration. Input / output connectors are also available to assemble cables in non-standard lengths.

# SLIMLINE LIGHT

## SL 025



- > Compact design
- > Electronic ballast
- > Optional integrated receptacle
- > Screw or magnet mount
- > Long-life energy saving lamp
- > On/off switch

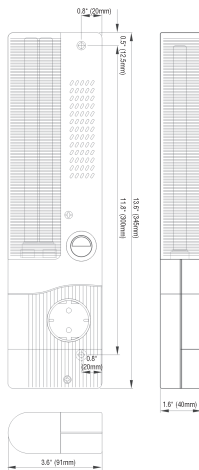
The SL 025 light was designed to fit in tight spaces in enclosures. It features an optional integrated receptacle so that electrical devices (e.g. power tools) can be easily plugged in when needed. The standard light can be screw mounted in a variety of positions, or the light can be fitted with an available magnet mount.

Photo: Slimline light with on/off switch and integrated receptacle (Germany), Part No. 02520.0-00



### TECHNICAL DATA

<b>Power consumption</b>	11 W (~ 75 W incandescent bulb)
<b>Luminosity</b>	900 Lm
<b>Lamp type</b>	compact fluorescent, 2G7 base, electronic ballast
<b>Service life</b>	10,000 hrs.
<b>Switch (for light only)</b>	on/off switch
<b>Connection</b>	3-pole terminal AWG 16 max. (1.5 mm <sup>2</sup> ) with strain relief only (cable not included), clamping torque 0.8 Nm max.
<b>Housing</b>	plastic, UL 94V-0, light grey
<b>Mounting</b>	M5 screws (not included), 11.8" (300 mm) hole distance or optional attached magnet (see part nos. below)
<b>Operating / Storage temperature</b>	-4 to +122 °F (-20 to +50 °C) / -49 to +158 °F (-45 to +70 °C)
<b>Operating / Storage humidity</b>	max. 90 %RH (non-condensing)
<b>Dimensions</b>	13.6 x 3.6 x 1.6" (345 x 91 x 40 mm)
<b>Weight</b>	approx. 0.9 lbs. (400 g), 1.3 lbs (600 g) with magnet
<b>Protection type</b>	IP20
<b>Note</b>	DC 24-48 V available upon request

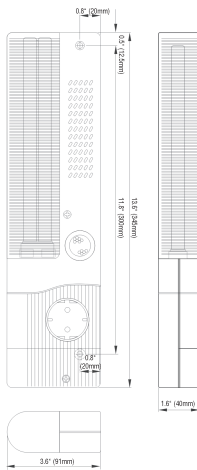


Part No. with On/Off Switch	Model	Operating Voltage	Receptacle	Rec. max. current	Protection class	Approvals
02520.0-00	without magnet	AC 230 V, 50/60 Hz	Germany/Russia	16 A	I (grounded)	VDE-GS - GOST-R
02520.1-00	with magnet	AC 230 V, 50/60 Hz	Germany/Russia	16 A	I (grounded)	VDE-GS - GOST-R
02521.0-00	without magnet	AC 230 V, 50/60 Hz	France/Poland	16 A	I (grounded)	VDE-GS - GOST-R
02521.1-00	with magnet	AC 230 V, 50/60 Hz	France/Poland	16 A	I (grounded)	VDE-GS - GOST-R
02522.0-00	without magnet	AC 230 V, 50/60 Hz	Switzerland	10 A	I (grounded)	VDE-GS - GOST-R
02522.1-00	with magnet	AC 230 V, 50/60 Hz	Switzerland	10 A	I (grounded)	VDE-GS - GOST-R
02523.0-00	without magnet	AC 230 V, 50/60 Hz	UK/Ireland	13 A	I (grounded)	VDE-GS - GOST-R
02523.1-00	with magnet	AC 230 V, 50/60 Hz	UK/Ireland	13 A	I (grounded)	VDE-GS - GOST-R
02524.0-01	without magnet	AC 120 V, 50/60 Hz	USA/Canada	15 A	I (grounded)	- UL File No. E234324 GOST-R
02524.1-01	with magnet	AC 120 V, 50/60 Hz	USA/Canada	15 A	I (grounded)	- UL File No. E234324 GOST-R
02527.0-00	without magnet	AC 230 V, 50/60 Hz	none	-	II (double insulated)	VDE-GS UL File No. E234324 GOST-R
02527.1-00	with magnet	AC 230 V, 50/60 Hz	none	-	II (double insulated)	VDE-GS UL File No. E234324 GOST-R
02527.0-10	without magnet	AC 120 V, 50/60 Hz	none	-	II (double insulated)	- UL File No. E234324 GOST-R
02527.1-10	with magnet	AC 120 V, 50/60 Hz	none	-	II (double insulated)	- UL File No. E234324 GOST-R

# SLIMLINE LIGHT SL 025



Photo: Slimline light with motion sensor and integrated receptacle (Germany), Part No. 02520.0-03



- > Compact design
- > Electronic ballast
- > Optional integrated receptacle
- > Screw or magnet mount
- > Long-life energy saving lamp
- > Motion sensor

The SL 025 light was designed to fit in tight spaces in enclosures. It features an optional integrated receptacle so that electrical devices (e.g. power tools) can be easily plugged in when needed. The standard light can be screw mounted in a variety of positions, or the light can be fitted with an available magnet mount. The motion sensor version was designed to eliminate the need for a door switch.



### TECHNICAL DATA

<b>Power consumption</b>	11 W (~ 75 W incandescent bulb)
<b>Luminosity</b>	900 Lm
<b>Lamp type</b>	compact fluorescent, 2G7 base, electronic ballast
<b>Service life</b>	10,000 hrs.
<b>Switch (for light only)</b>	PIR motion sensor <sup>1</sup>
<b>Connection</b>	3-pole terminal AWG 16 max. (1.5 mm <sup>2</sup> ) with strain relief only (cable not included), clamping torque 0.8 Nm max.
<b>Housing</b>	plastic, UL 94V-0, light grey
<b>Mounting</b>	M5 screws (not included), 11.8" (300 mm) hole distance or optional attached magnet (see part nos. below)
<b>Operating / Storage temperature</b>	-4 to +122 °F (-20 to +50 °C) / -49 to +158 °F (-45 to +70 °C)
<b>Operating / Storage humidity</b>	max. 90 %RH (non-condensing)
<b>Dimensions</b>	13.6 x 3.6 x 1.6" (345 x 91 x 40 mm)
<b>Weight</b>	approx. 0.9 lbs. (400 g), 1.3 lbs (600 g) with magnet
<b>Protection type</b>	IP20
<b>Note</b>	DC 24-48 V available upon request



<sup>1</sup> The Passive Infrared (PIR) motion sensor detects the motion of the enclosure door being opened and automatically turns on the light. The sensor is factory pre-set to turn the light off 6 minutes after all motion ceases. The motion sensor does not detect movement through glass, allowing for installation in enclosures with glass doors.

Part No. with Motion Sensor	Model	Operating Voltage	Receptacle	Rec. max. current	Protection class	Approvals		
02520.0-03	without magnet	AC 230 V, 50/60 Hz	Germany/Russia	16 A	I (grounded)	VDE-GS	-	GOST-R
02520.1-03	with magnet	AC 230 V, 50/60 Hz	Germany/Russia	16 A	I (grounded)	VDE-GS	-	GOST-R
02521.0-03	without magnet	AC 230 V, 50/60 Hz	France/Poland	16 A	I (grounded)	VDE-GS	-	GOST-R
02521.1-03	with magnet	AC 230 V, 50/60 Hz	France/Poland	16 A	I (grounded)	VDE-GS	-	GOST-R
02522.0-03	without magnet	AC 230 V, 50/60 Hz	Switzerland	10 A	I (grounded)	VDE-GS	-	GOST-R
02522.1-03	with magnet	AC 230 V, 50/60 Hz	Switzerland	10 A	I (grounded)	VDE-GS	-	GOST-R
02523.0-03	without magnet	AC 230 V, 50/60 Hz	UK/Ireland	13 A	I (grounded)	VDE-GS	-	GOST-R
02523.1-03	with magnet	AC 230 V, 50/60 Hz	UK/Ireland	13 A	I (grounded)	VDE-GS	-	GOST-R
02524.0-04	without magnet	AC 120 V, 50/60 Hz	USA/Canada	15 A	I (grounded)	-	UL File No. E234324	GOST-R
02524.1-04	with magnet	AC 120 V, 50/60 Hz	USA/Canada	15 A	I (grounded)	-	UL File No. E234324	GOST-R
02527.0-04	without magnet	AC 230 V, 50/60 Hz	none	-	II (double insulated)	VDE-GS	UL File No. E234324	GOST-R
02527.1-04	with magnet	AC 230 V, 50/60 Hz	none	-	II (double insulated)	VDE-GS	UL File No. E234324	GOST-R
02527.0-12	without magnet	AC 120 V, 50/60 Hz	none	-	II (double insulated)	-	UL File No. E234324	GOST-R
02527.1-12	with magnet	AC 120 V, 50/60 Hz	none	-	II (double insulated)	-	UL File No. E234324	GOST-R

# COMPACT ENCLOSURE LIGHT

## KL 025



- > Magnet or DIN rail mounting
- > Energy-saving lamp
- > Integrated receptacle

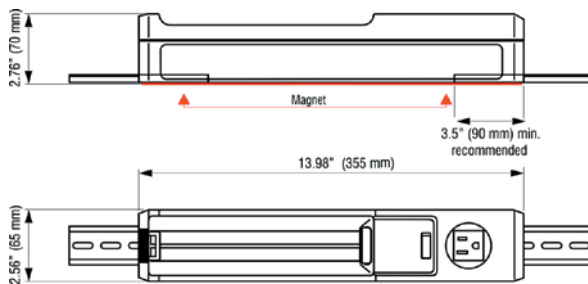
- > On/off switch

The compact KL 025 light was designed for use in industrial enclosures and control cabinets. A strong magnet allows simple and quick installation and flexibility for various mounting positions. The light also features an optional integrated receptacle so that electrical devices can easily be plugged in when needed.



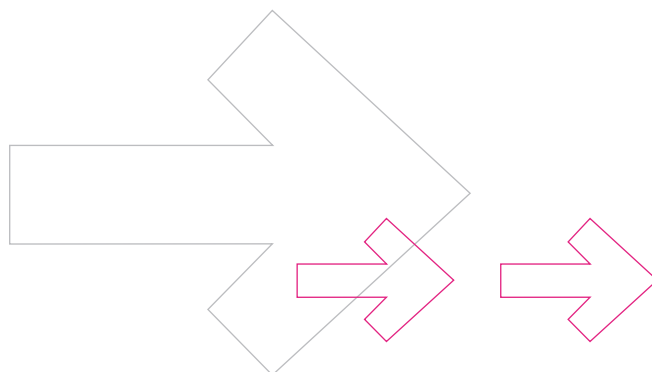
### TECHNICAL DATA

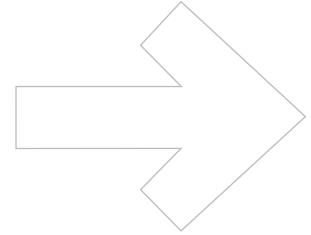
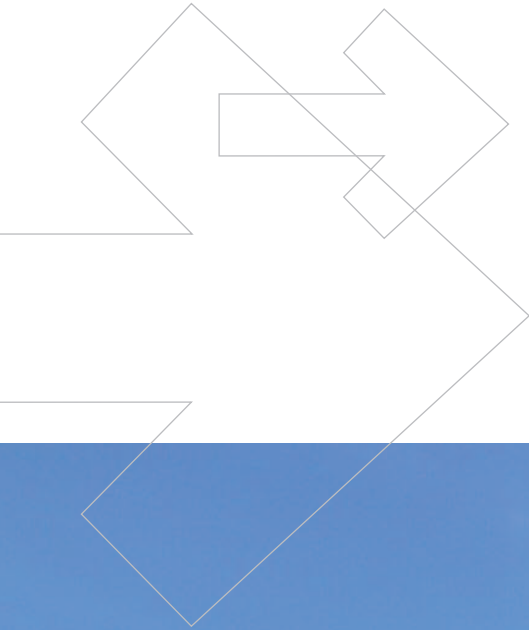
Power consumption	see table below
Luminosity	900 Lm
Lamp type	compact fluorescent, G23 base, inductive ballast
Service life	5,000 hrs.
Switch	on/off switch (for light only)
Connection	3-pole terminal AWG 14 max. (2.5 mm <sup>2</sup> ) with strain relief only (cable not included), clamping torque 0.8 Nm max.
Housing	plastic, light grey
Mounting	magnet mounting or on 35mm DIN rail, EN 60715
Operating / Storage temperature	-4 to +122 °F (-20 to +50 °C) / -49 to +158 °F (-45 to +70 °C)
Operating / Storage humidity	max. 90 %RH (non-condensing)
Dimensions	13.98 x 2.56 x 2.76" (355 x 65 x 70 mm)
Weight	approx. 2.2 lbs (1.0 kg)
Protection type	IP20



In plastic, aluminum or stainless steel cabinets the light can be mounted using screws together with inserted 35mm DIN rail sections. The drawing shows mounting on two 7 inch long pieces of 35mm DIN rail.

Part No.	Operating voltage	Receptacle	Power consumption	Receptacle max. current	Protection class	Approvals
02500.0-07	AC 230 V, 50 Hz	none	11 W (~ 75 W incandescent bulb)	-	II (double insulated)	GOST-R
02500.0-14	AC 230 V, 50 Hz	Germany	11 W (~ 75 W incandescent bulb)	16 A	I (grounded)	GOST-R
02500.0-21	AC 120 V, 60 Hz	none	9 W (~ 60 W incandescent bulb)	-	II (double insulated)	GOST-R
02505.9-02	AC 120 V, 60 Hz	USA/Canada	9 W (~ 60 W incandescent bulb)	15 A	I (grounded)	GOST-R





# ACCESSORIES



## HARMONY AND DIVERSITY

Accessory products from STEGO complement the climatization portfolio appropriately and offer more specific solutions for individual needs.

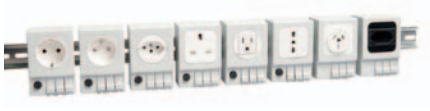
# ENCLOSURE RECEPTACLE

## SD 035



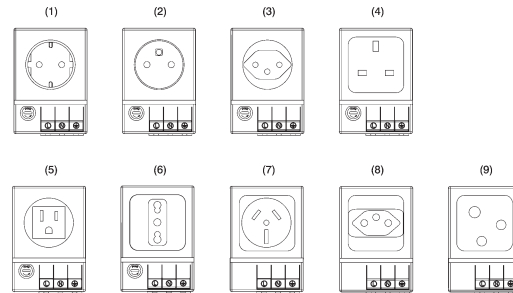
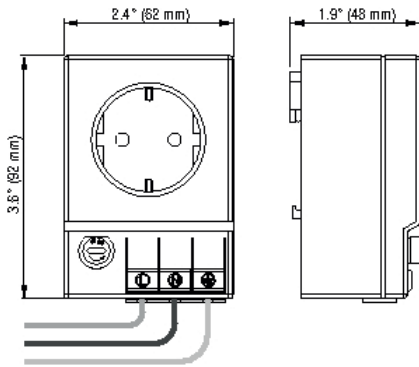
- > Quick connections
- > Available with or without fuse
- > DIN rail mountable

The DIN rail mounted electrical receptacle can be quickly fitted and connected in enclosures allowing the use of auxiliary products such as hand lamps and power tools. The unit is available with and without fuse, and in many world outlet standards.



### TECHNICAL DATA

Connection	3 cage clamps for solid and stranded wire AWG 20-14 (0.5-2.5 mm <sup>2</sup> )
Housing	plastic, UL94 V-0, light grey
Mounting	clip for 35mm DIN rail, EN 60715
Mounting position	vertical
Operating / Storage temperature	-49 to +158 °F (-45 to 70 °C)
Operating / Storage humidity	max. 90 %RH (non-condensing)
Dimensions	3.6 x 2.4 x 1.9" (92 x 62 x 48 mm)
Weight	approx. 7 oz. (200 g)
Protection class / Protection type	I (grounded) / IP20



Part No.	Operating voltage max.	Socket	Model	Nominal current	Approvals
03500.0-00	AC 250 V	Germany/Russia (1)	with fuse <sup>1</sup>	6.3 A	-
03500.0-01	AC 250 V	Germany/Russia (1)	without fuse	16.0 A	-
03501.0-00	AC 250 V	France/Poland (2)	with fuse <sup>1</sup>	6.3 A	-
03501.0-01	AC 250 V	France/Poland (2)	without fuse	16.0 A	-
03502.0-00	AC 250 V	Switzerland (3)	with fuse <sup>1</sup>	6.3 A	-
03502.0-01	AC 250 V	Switzerland (3)	without fuse	10.0 A	-
03503.0-00	AC 250 V	UK/Ireland (4)	with fuse <sup>1</sup>	6.3 A	-
03503.0-01	AC 250 V	UK/Ireland (4)	without fuse	13.0 A	-
03504.0-00	AC 125 V	USA/Canada (5)	with fuse <sup>1</sup>	6.3 A	UL File No. E222026
03504.0-01	AC 125 V	USA/Canada (5)	without fuse	15.0 A	UL File No. E222026
03505.0-00	AC 250 V	Italy (6)	with fuse <sup>1</sup>	6.3 A	-
03505.0-01	AC 250 V	Italy (6)	without fuse	16.0 A	-
03507.0-01	AC 240 V	Australia (7)	without fuse	10.0 A	-
03508.0-01	AC 250 V	Brazil (8)	without fuse	10.0 A	-
03509.0-01	AC 250 V	Old British - BS 546 (9)	without fuse	5.0 A	-

<sup>1</sup> fuse Ø 5 x 20 mm



# VENT PLUG

## DA 084



- > High degree of protection (IP55)
- > Easy to install

It has become increasingly important to provide a protected enclosure environment for valuable and crucial electrical and electronic components. In a tightly closed enclosure, pressure differentials can occur during extreme temperature variations, such as day/night operation. When this occurs, the risk of dust and humidity ingress into the control panel increases dramatically. The specially designed DA 084 vent plug permits a controlled change in pressure and can easily be installed in any enclosure. The vent plug is suitable for the use in enclosures and electrical cabinets in accordance with DIN EN 62208.



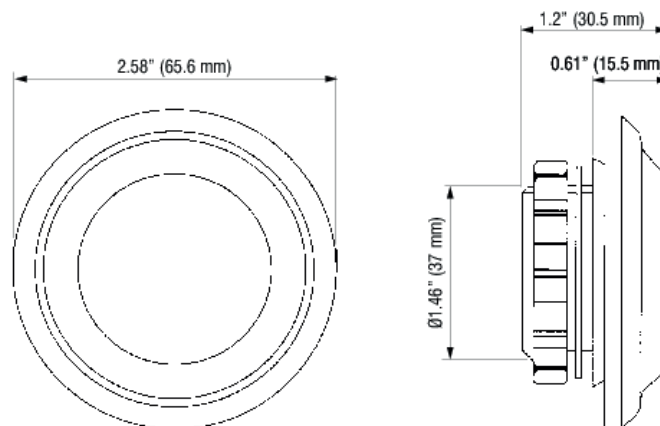
### TECHNICAL DATA

Mounting	PG 29 thread with union nut
Torque	5 Nm (max. 10 Nm)
Mounting position	vertical <sup>1</sup>
Material	plastic, UL 94V-0, light grey weather proof and UV light resistant according to UL746C (f1)
Sealing	NBR gasket
Air Interface	Approx. 1.5 cm <sup>2</sup>
Operating / Storage temperature	-49 to +158 °F (-45 to +70 °C)
Dimensions	Ø 2.58" x 1.2" (Ø 65.5 x 30.5 mm)

<sup>1</sup> Protection type is restricted to IP54 if mounting position is not vertical

### Installation

A hole with a diameter of 1.46" (37 mm) is required for mounting. Make sure that the sealing gasket is placed on the outer side panel of the enclosure. For optimal pressure compensation, it is recommended to use two devices on opposite sides towards the top of the enclosures.



Part No.	Protection type	Weight (approx.)
08400.9-01	IP55	1.1 oz. (31 g)

# VENT PLUG

## DA 284



Photo: DA 284, M40



Photo: DA 284, M12

- > UL Type 1, 4, 4X & IP66 protection
- > Waterproof membrane
- > Easy to install
- > Two sizes - M40 & M12

Pressure differentials in a hermetically sealed enclosure are a result of the heat generated by electrical and electronic components in the enclosure, as well as the fluctuation of the outside temperature. In the case of negative pressure or vacuum, for example, dust and humidity can enter the enclosure through the door seal. The DA 284 Vent Plug provides a protected enclosure environment for valuable and crucial components with a UL 4X rated degree of protection. A waterproof membrane inside the device allows air and humidity to leave the enclosure while not allowing moisture and dust from the outside to enter.

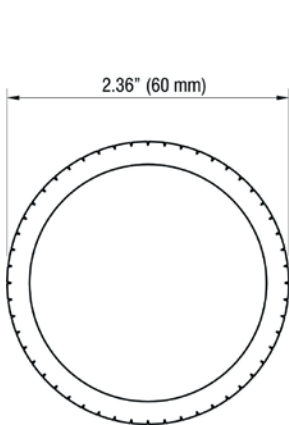


### TECHNICAL DATA

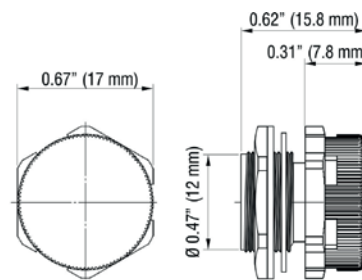
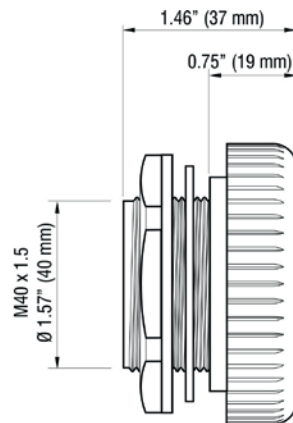
Mounting	thread with nut (see below)
Torque	5 Nm (max. 10 Nm)
Material	plastic according to UL 94V-0, light grey, weather and UV light resistant according to UL 746C (f1)
Sealing	NBR gasket
Filter	waterproof membrane
Operating / Storage temperature	-31 to +158 °F (-35 to 70 °C)
Protection type	see below
Agency approvals	UL File No. E234324
Environmental rating	Type 1, 4 and 4X

### Installation

Make cut-out in enclosure wall of diameter 1.58 inches (40-40.2 mm) for size M40 or 0.48 inches (12-12.2 mm) for size M12, and mount vent plug with nut. Make sure that the sealing gasket is placed on the outer side of the enclosure. For optimal pressure compensation, it is recommended to use two devices on opposite sides towards the top of the enclosure.



Dimensional drawing: DA 284, M40

Dimensional drawing: DA 284, M12  
(drawing is not proportional to M40)

Part No.	Modelç	Thread length (depth in enclosure)	Protection type	Air permeability <sup>1</sup>	1 packing unit	Weight (approx.)
28405.0-00	M40 x 1.5	approx. 16 mm	IP66 (EN 60529) / IPX9K (EN 40050-9)	1200 liters/hr	2 pieces	3.2 oz. (90 g) total
28406.0-00	M12 x 1.5	approx. 10 mm	IP66 (EN 60529)	120 liters/hr	2 pieces	0.14 oz. (4 g) total

<sup>1</sup> at a pressure difference of min. 70 mbar

# STAINLESS STEEL VENT PLUG

## DA 284S



Photos: DA284S, M40

- > High degree of protection (IP66)
- > Waterproof membrane
- > Corrosion resistant
- > Easy to install
- > Two sizes - M40 & M12

Pressure differentials in a hermetically sealed enclosure are a result of the heat generated by electrical and electronic components in the enclosure, as well as the fluctuation of the outside temperature. In the case of negative pressure or vacuum, for example, dust and humidity can enter the enclosure through the door seal.

The DA 284S Stainless Steel Vent Plug provides a protected enclosure environment for valuable and crucial components with an IP66 rated degree of protection. A waterproof membrane inside the device allows air and humidity to leave the enclosure while not allowing moisture and dust from the outside to enter.

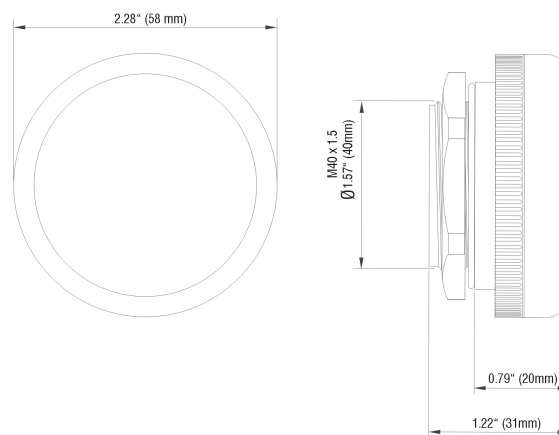


### TECHNICAL DATA

Mounting	thread with nut
Torque	5 Nm (max. 10 Nm)
Material	stainless steel V2A (DIN 1.4305 / AISI 303)
Sealing	NBR gasket
Filter	waterproof membrane
Operating / Storage temperature	-49 to +176 °F (-45 to 80 °C)
Protection type	see below

### Installation

Make cut-out in enclosure wall of diameter 1.58 inches (40-40.2 mm) for size M40 or 0.48" (12-12.2 mm) for size M12, and mount vent plug with nut. Make sure that the sealing gasket is placed on the outer side of the enclosure. For optimal pressure compensation, it is recommended to use two devices on opposite sides towards the top of the enclosure.



Dimensional drawing: DA 284S, M40

Part No.	Model	Thread length (depth in enclosure)	Protection type	Air permeability <sup>1</sup>	1 packing unit	Weight (approx.)
28401.0-00	M40 x 1.5	approx. 9 mm	IP66 (EN 60529) / IPX9K (EN 40050-9)	1200 liters/hr	1 piece	5.6 oz. (160 g)
28402.0-01	M12 x 1.5	approx. 4 mm	IP66 (EN 60529)	120 liters/hr	1 piece	0.6 oz. (17 g)

<sup>1</sup> at a pressure difference of min. 70 mbar

# DRAINAGE DEVICE

DD 084 | IP66 / IP67 / IP69K



> High degree of protection  
> Good drainage performance

> Easy to install  
> Weather and UV-light resistant

Condensation can occur in enclosures with high protection types by variations in temperature. The use of a DD 084 drainage device allows the removal of the condensate without losing the maximum IP66 protection type.

The specific characteristic of the water permeable membrane ensures the drainage of the condensate via capillary action. The unique construction also prohibits the ingress of splash water into the enclosure. Additionally, the drainage device effectively provides pressure compensation with variations in temperature.

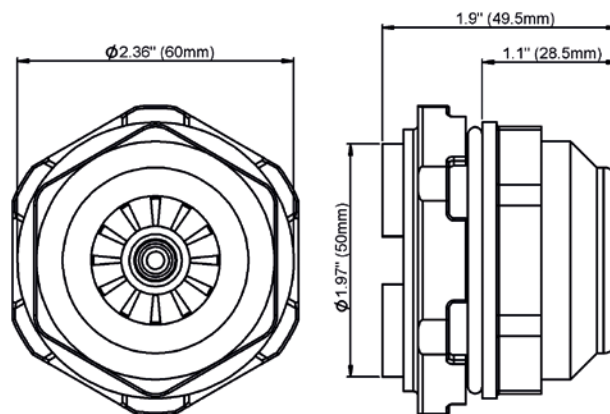
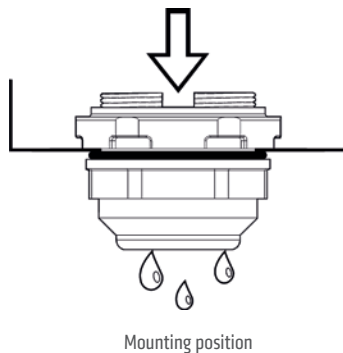


## TECHNICAL DATA

Mounting	thread M50 x 1.5 with nut (wrench size 60 mm, housing 50 mm)
Torque	6 Nm max.
Depth in enclosure	approx. 0.7" (17.5 mm)
Material	plastic according to UL 94V-0, umbra grey, weather and UV light resistant according UL 746C (f1)
Water entry height	0 mm (at 0.5 mm wall thickness)
Sealing	sealing gasket NBR
Water flow-through	approx. 200 ml/hr at 5 mm water column
Dimensions	Ø 2.36" x 1.9" (Ø 60 x 49.5 mm)
Mounting position	vertical, lowest point
Operating / Storage temperature	-49 to +158 °F (-45 to +70 °C)

## Installation

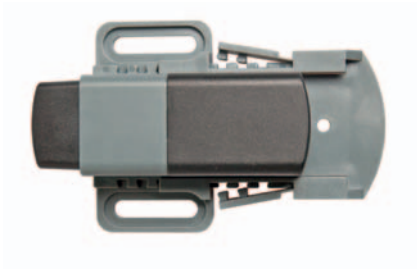
Make cut-out Ø 2.0 inches (50.5+0.5 mm) in enclosure bottom and mount drainage device with nut. Please make sure that the sealing gasket is put in place on the outer side panel of the enclosure and the hole is free of burrs.



Part No.	Protection type	Enclosure wall thickness	1 package unit	Weight (approx.)
08410.0-00	IP66 / IP67 (EN 60529) / IP69K (EN 40050-9)	0.5 - 5.5 mm	1 piece	2 oz. (60 g)

# DOOR SWITCH

## DS 013



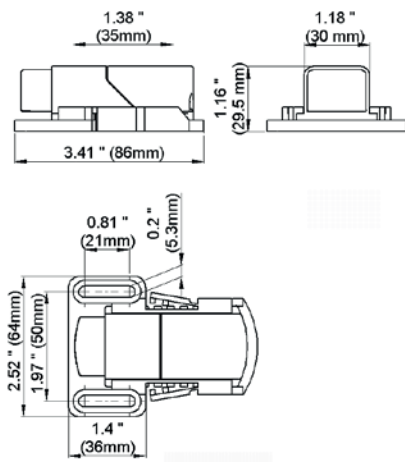
- > Tool-free adjustable switch positioning
- > Strain relief, suitable for range of cable diameters
- > High switching capacity
- > Suitable for lamp LED 025 and other devices

The door switch monitors the position of cabinet doors and is available in three versions. For example, it can be used for switching a light when opening a door (NC), or to activate a fan when closing a door (NO). The version with change-over contact (CO) can be used as a normally closed and/or normally open contact. The wide mechanical adjustment range of the door switch DS 013 offers versatile mounting: the housing is adjustable within a 1-3/8" (35 mm) range, while the screw flange with a slotted hole offers an additional 13/16" (21 mm). The travel of the switch itself is another 5/16" (8 mm).

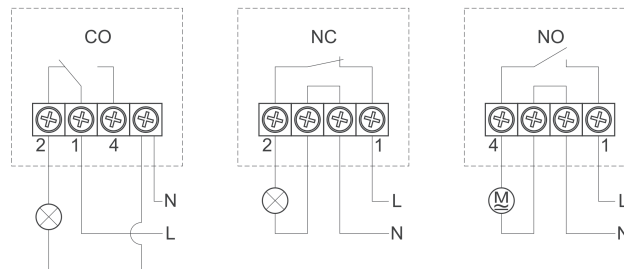


### TECHNICAL DATA

Max. switching capacity	10 A resistive / 1.5 A inductive @ AC 250 V
Service life	VDE: > 10,000 cycles UL: > 6,000 cycles
Connection	4-pole clamp with strain relief, clamping torque 0.5 Nm max.
Housing	plastic according to UL 94V-0, grey/black
Mounting	M5 screws (not included)
Mounting position	variable
Operating / Storage temperature	-4 to +185 °F (-20 to +85 °C)
Operating / Storage humidity	max. 90 %RH (non-condensing)
Dimensions	3.4 x 2.5 x 1.2" (87 x 64 x 30 mm)
Weight	approx. 1.8 oz. (50 g)
Protection type	IP20
Approvals	UL + VDE intended



### Wiring diagrams



Part No.	Model	Suitable wire
01350.0-00	change-over (CO)	Round cable, stranded wire (with wire end ferrule) AWG 18 to 17 (0.75 mm <sup>2</sup> to 1 mm <sup>2</sup> )
01351.0-00	normally closed (NC)	Round cable, stranded wire (with wire end ferrule) AWG 18 to 16 (0.75 mm <sup>2</sup> to 1.5 mm <sup>2</sup> )
01352.0-00	normally open (NO)	Round cable, stranded wire (with wire end ferrule) AWG 18 to 16 (0.75 mm <sup>2</sup> to 1.5 mm <sup>2</sup> )

# SELF-ADHESIVE MOUNTING AID STEGOFIX

## SF 095



> Direct mounting of small devices and  
35 mm DIN rails

> Strong self-adhesive  
> Simple to mount

STEGOFIX is a small aid specially designed to make mounting of smaller DIN rail mountable components easier. It can be used whenever the installation of a DIN rail is impractical, or when there is not enough space left in an enclosure. Because of its industrial grade self-adhesive it can be installed much easier and quicker than a conventional DIN rail, without the effort of hole drilling and screw mounting. This is especially practical for subsequent changes or additions in an already equipped enclosure. STEGOFIX can hold components up to 1.1 lbs in weight. Some of the many applications include the mounting of timing relays, series terminals, thermostats, cable channels and even small heaters. In addition, DIN rails can be mounted simply by using several STEGOFIX units. If the weight of attached components exceeds the load limit, or if a more secure mounting is desired, (e.g. on rough surfaces), it can also be screw-mounted. All that is necessary to install STEGOFIX is a smooth and clean surface. The initial adhesive power is 40%, and after 24 hours, it has its full holding power of 1.1 lbs.

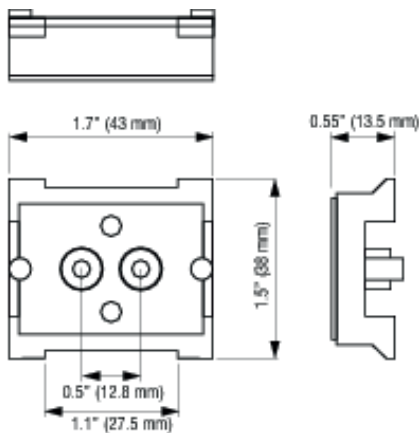


### TECHNICAL DATA

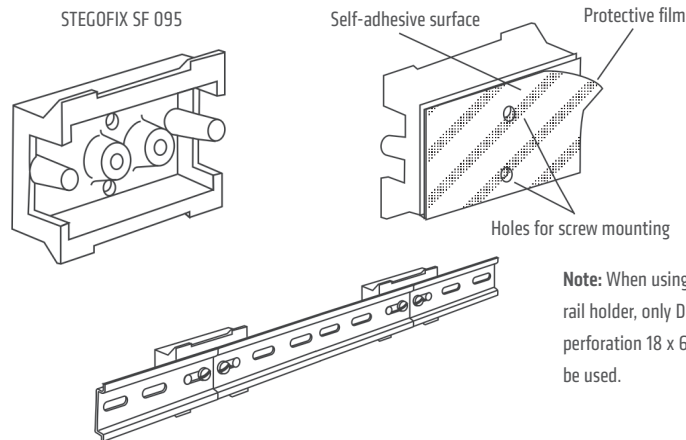
Load	1.1 lbs. (500 g) after a 24 hour waiting period <sup>1</sup>
Mounting	self-adhesive (non-aging, high-performance adhesive strip)
Material	plastic according to UL 94V-0, black
Hole pattern	0.5" distance, Ø 0.14" (12.8 mm; Ø 3.6 mm)
Operating / Storage temperature	-49 to +158 °F (-45 to 70 °C)
Dimensions	1.7 x 1.5 x 0.55" (43 x 38 x 14 mm)

<sup>1</sup> depending on the conditions of use (e.g. surface condition, size of the device to be mounted, etc.) higher loads can be achieved.

**Installation:** STEGOFIX can only be mounted on smooth surfaces, e.g. metals, lacquered surfaces and plastics (except polyethylene, polypropylene and rubber). The surfaces must be dry and free from dust, oil, separating agents and other contamination.

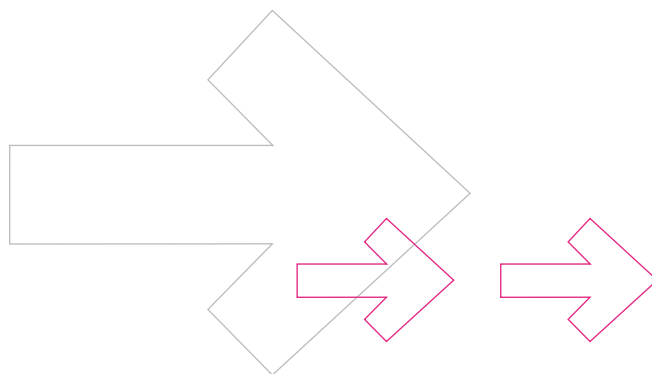


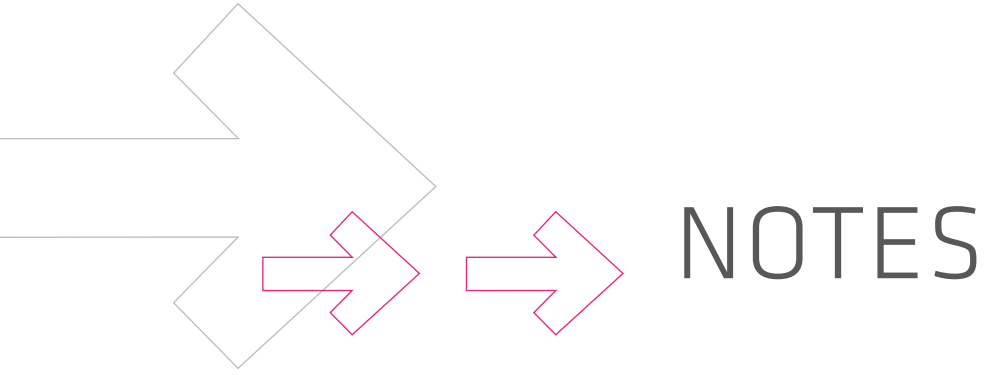
Application example



**Note:** When using the STEGOFIX as a DIN rail holder, only DIN rails (EN 60715) with perforation 18 x 6.2mm or 18 x 5.2mm can be used.

Part No.	1 packing unit	Weight (approx.)
09510.0-01	5 pieces	2.1 oz. (60 g) total / 0.42 oz. (12 g) per piece





A series of horizontal lines for writing notes, consisting of 20 evenly spaced lines.





# LOCATIONS

## THE FAST TRACK TO STEGO



STEGO is represented globally and proud to offer its customers maximum availability, personal visits and consultations. With 12 locations and more than 200 sales partners worldwide, customer service is our top priority. Whenever you need support in matters of enclosure climatization and thermal management – your STEGO contact is not far away.

You will find contact details of our subsidiaries below:

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