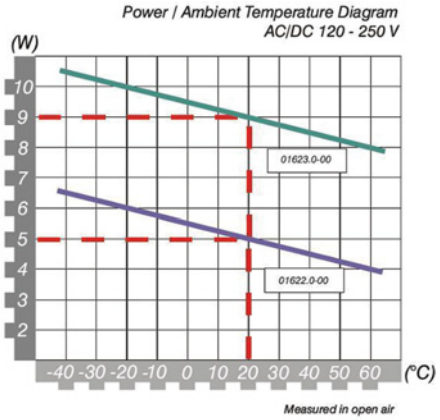
RCE 016 PTC Heater 5 & 9W

- **Compact size**
- **Wide voltage range**
- **Heating power adjusts to ambient temperature**
- **Energy saving**

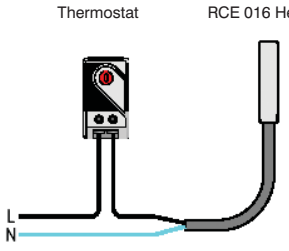
The RCE 016 small heaters have been designed to prevent condensation and to ensure a minimum operating temperature in small enclosures.



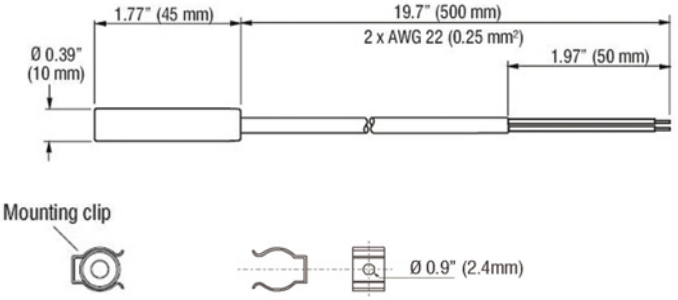
Technical Data

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)
Protection class	II (double insulated)
Protection type	IP32

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



Wiring example



Data subject to change without notice.

Part No.	Heating capacity[1]	Operating voltage	Max. current (inrush)	Surface temperature (approx.)[1]	Weight (approx.)	Approvals
01622.0-03	5W	AC/DC 120-250V	2.0A	329°F (165°C)	0.7 oz. (20g)	UL File No. E150057, VDE
01623.0-01	9W	AC/DC 120-250V	2.5A	347°F (175°C)	0.7 oz. (20g)	UL File No. E150057, VDE
01624.0-03	5W	AC/DC 12-30V	5.8A	284°F (140°C)	0.7 oz. (20g)	UL File No. E150057
01625.0-02	9W	AC/DC 12-30V	2.4A	360°F (182°C)	0.7 oz. (20g)	UL File No. E150057

[1] at 68°F (20°C) ambient temperature

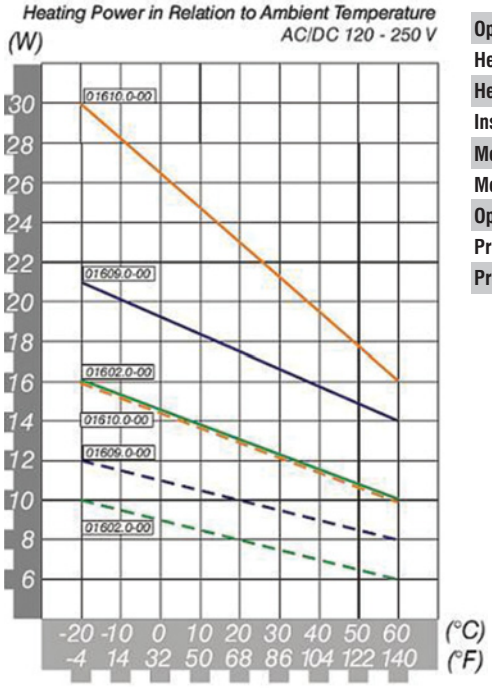
RC 016 PTC Heater 8 - 13W

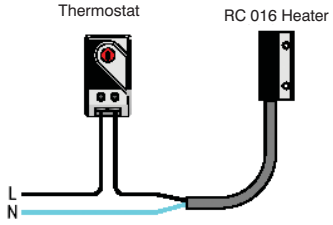
Compact size
Wide voltage range
Heating power adjusts to ambient temperature
Energy saving

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

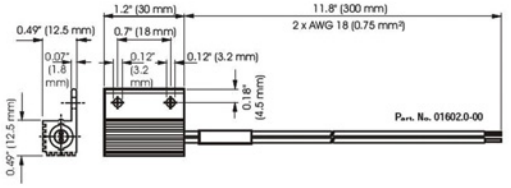
Technical Data

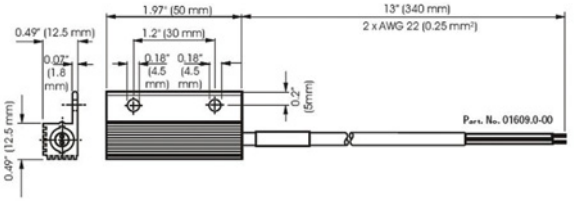
Operating voltage	see table below
Heating element	PTC resistor - temperature limiting
Heater body	aluminum, anodized
Insulation	PTFE / Kapton
Mounting	screw (mounting screws not included)
Mounting position	variable
Operating / Storage temperature	-49 to +158°F (-45 to +70°C)
Protection class	II (double insulated)
Protection type	IP32

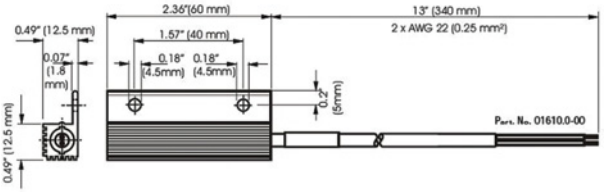




Wiring example







Part No.	Heating capacity[1]	Operating voltage	Max. current (inrush)	Surface temperature (approx.)[1]	Weight (approx.)	Approvals
01602.0-00	8W	AC/DC 120-240V	2.0A	302°F (150°C)	0.7 oz. (20g)	UL File No. E150057, VDE
01602.0-03	8W	AC/DC 12-30V	3.7A	273°F (134°C)	0.7 oz. (20g)	UL File No. E150057
01609.0-00	10W	AC/DC 120-240V	2.5A	311°F (155°C)	1.0 oz. (30g)	UL File No. E150057, VDE
01609.0-01	10W	AC/DC 12-30V	5.7A	270°F (132°C)	1.0 oz. (30g)	UL File No. E150057
01610.0-00	13W	AC/DC 120-240V	3.0A	338°F (170°C)	1.4 oz. (40g)	UL File No. E150057, VDE
01610.0-01	13W	AC/DC 12-30V	10.0A	298°F (148°C)	1.4 oz. (40g)	UL File No. E150057

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

Data subject to change without notice.

CSK 060 Touch-Safe Heater 10 & 20W

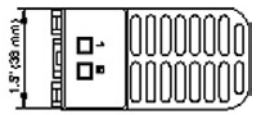
- **Low surface temperature**
- **Compact size**
- **Wide voltage range**
- **Double insulated protection**
- **DIN rail mountable**

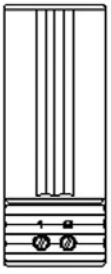
The CSK 060 is a touch-safe heater for use in enclosures. The design of the heater utilizes natural convection which results in a circulating current of warm air. The surface temperatures on the accessible side surfaces of the housing are minimized as a result of the heater design.

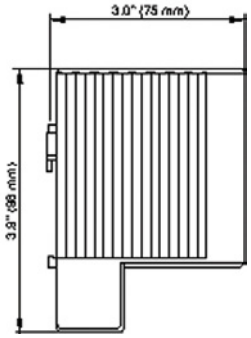
Technical Data

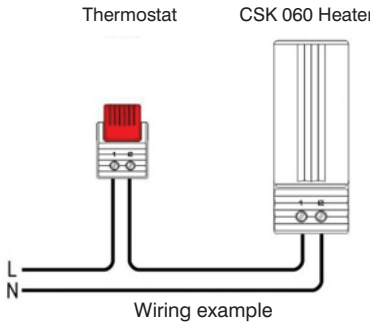
Heating capacity	see table
Heating element	PTC resistor - temperature limiting
Surface temperature	< 176°F (80°C), except upper protective grill
Connection	4-pole terminal AWG 14 max (2.5mm²), torque 0.8Nm max.
Mounting	clip for 35mm DIN rail, EN 60 715
Housing	plastic, UL 94V-0, black
Mounting position	vertical
Operating temperature	-4 to +158°F (-20 to +70°C)
Storage temperature	-49 to +158°F (-45 to +70°C)
Protection class	II (double insulated)
Protection type	IP20
Approvals	UL File No. E150057, VDE
Note	other voltages available upon request

*Operating with voltages below 140VAC reduces heating performance by approx. 10%.









Wiring example

Part No.	Heating capacity[1]	Operating voltage	Max. current (inrush)	Dimensions	Weight (approx.)
06030.0-00	20W	AC/DC 120-240V	2.5A	3.9 x 3.0 x 1.5" (98 x 75 x 38mm)	10.6 oz. (300g)
06040.0-00	10W	AC/DC 120-240V	1.0A	3.9 x 3.0 x 1.5" (98 x 75 x 38mm)	7.1 oz. (200g)
06040.1-00	10W	AC/DC 12-30V	8A	3.9 x 3.0 x 1.5" (98 x 75 x 38mm)	7.1 oz. (200g)

[1] at 68°F (20°C) ambient temperature

Data subject to change without notice.

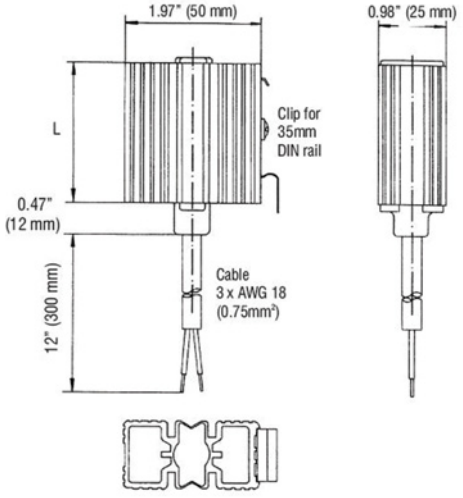
HGK 047 PTC Heater 10 - 30W

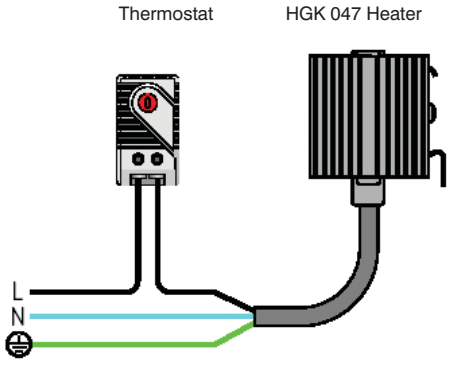
- **Compact size**
- **Wide voltage range**
- **Heating power adjusts to ambient temperature**
- **DIN rail mountable**

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 (0.5mm²), 12" (300mm) length
Mounting	clip for 35mm DIN rail, EN 60 715
Mounting position	vertical
Operating / Storage temperature	-49 to +158°F (-45 to +70°C)
Protection class	I (grounded)
Protection type	IP54





Wiring example

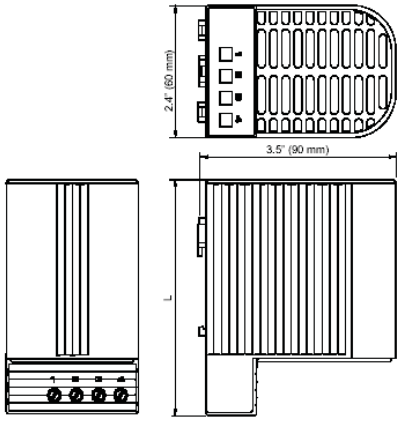
Part No.	Heating capacity[1]	Operating voltage[2]	Max. current (inrush)	Length (L)	Weight (approx.)	Approvals
04700.0-00	10W	AC/DC 140-240V	1.0A	1.97" (50mm)	3.5 oz. (100g)	VDE
04701.0-00	20W	AC/DC 140-240V	2.5A	2.36" (60mm)	7.1 oz. (200g)	VDE
04702.0-00	30W	AC/DC 140-240V	3.0A	2.76" (70mm)	7.1 oz. (200g)	VDE
04700.9-00	10W	AC/DC 110-120V	1.0A	1.97" (50mm)	3.5 oz. (100g)	UL File No. E150057
04701.9-00	20W	AC/DC 110-120V	1.5A	2.76" (70mm)	7.1 oz. (200g)	UL File No. E150057
04702.9-00	30W	AC/DC 110-120V	1.5A	3.94" (100mm)	7.1 oz. (200g)	UL File No. E150057

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

CS 060 Touch-Safe Heater 50 - 150W

- **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).



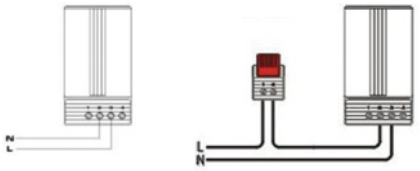
Technical Data

Operating voltage	120-240VAC* (min. 110V, max. 265V)
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 (2.5mm²), torque 0.8Nm max.
Housing	plastic, UL 94V-0, black
Mounting	clip for 35mm DIN rail, EN 60 715
Mounting position	vertical
Operating / Storage temperature	-4 to +158°F (-20 to +70°C) / -49 to +158°F (-45 to +70°C)
Protection class / Protection type	II (double insulated) / IP20
Approvals	UL File No. E150057, VDE
Note	other voltages available upon request

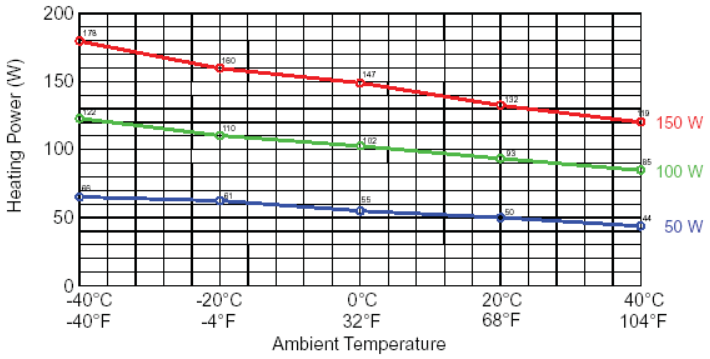
*Operating with voltages below 140V AC/DC reduces heating performance by approx. 10%.

CS 060 Heater

Thermostat CS 060 Heater



Wiring examples



Part No.	Heating capacity[1]	Max. current (inrush)	Air outlet temperature[2]	Dimensions	Weight (approx.)
06000.0-00	50W	2.5A	187°F (86°C)	4.3 x 2.4 x 3.5" (110 x 60 x 90mm)	290g
06010.0-00	100W	4.5A	248°F (120°C)	4.3 x 2.4 x 3.5" (110 x 60 x 90mm)	300g
06020.0-00	150W	8A	293°F (145°C)	5.9 x 2.4 x 3.5" (150 x 60 x 90mm)	440g

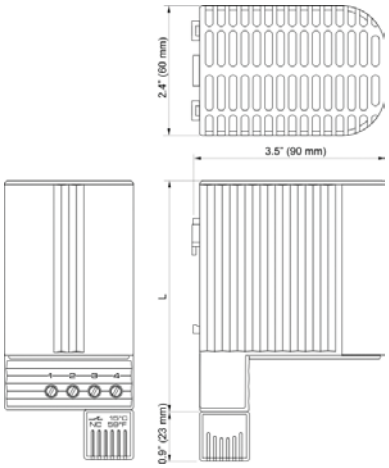
[1] see Heating capacity / Ambient temperature diagram
[2] measured 2" (50mm) above protective grill
[3] tolerance of ± 5K

Data subject to change without notice.

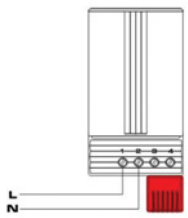
CSF 060 Touch-Safe Heater 50W - 150W

- **Low surface temperature**
- **Integrated thermostat**
- **Compact size**
- **Wide voltage range**
- **Double insulated protection**
- **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).



CSF 060 Heater

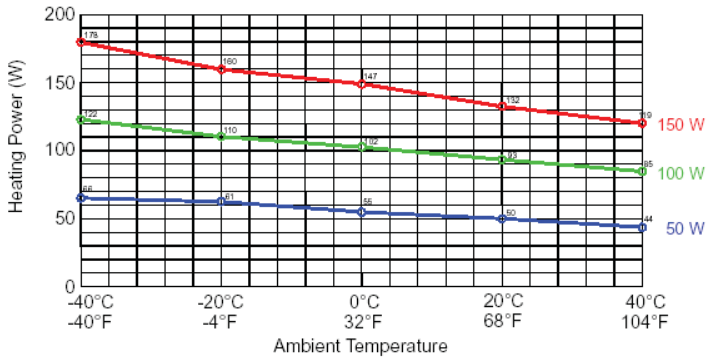


Wiring example

Technical Data

Operating voltage	120-240VAC* (min. 110V, max. 265V)
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 (2.5mm²), torque 0.8Nm max.
Housing	plastic, UL 94V-0, black
Mounting	clip for 35mm DIN rail, EN 60 715
Mounting position	vertical
Operating / Storage temperature	-4 to +158°F (-20 to +70°C) / -49 to +158°F (-45 to +70°C)
Protection class	II (double insulated)
Protection type	IP 20
Approvals	UL File No. E150057, VDE

*Operating with voltages below 140VAC reduces heating performance by approx. 10%.



Data subject to change without notice.

Part No.	Heating capacity[1]	Max. current (inrush)	Air outlet temperature[2]	Switch-off temperature[3]	Switch-on temperature[3]	Dimensions	Weight (approx.)
06001.0-00	50W	2.5A	187°F (86°C)	59°F (15°C)	41°F (5°C)	5.2 x 2.4 x 3.5" (133 x 60 x 90mm)	10.6 oz. (300g)
06002.0-00	50W	2.5A	187°F (86°C)	77°F (25°C)	59°F (15°C)	5.2 x 2.4 x 3.5" (133 x 60 x 90mm)	10.6 oz. (300g)
06011.0-00	100W	4.5A	248°F (120°C)	59°F (15°C)	41°F (5°C)	5.2 x 2.4 x 3.5" (133 x 60 x 90mm)	10.9 oz. (310g)
06012.0-00	100W	4.5A	248°F (120°C)	77°F (25°C)	59°F (15°C)	5.2 x 2.4 x 3.5" (133 x 60 x 90mm)	10.9 oz. (310g)
06021.0-00	150W	8.0A	293°F (145°C)	59°F (15°C)	41°F (5°C)	6.8 x 2.4 x 3.5" (173 x 60 x 90mm)	15.5 oz. (440g)
06022.0-00	150W	8.0A	293°F (145°C)	77°F (25°C)	59°F (15°C)	6.8 x 2.4 x 3.5" (173 x 60 x 90mm)	15.5 oz. (440g)

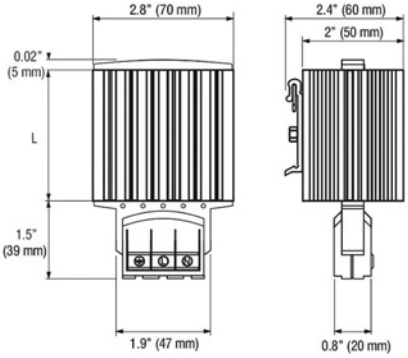
[1] see Heating capacity / Ambient temperature diagram
[2] measured 2" (50mm) above protective grill
[3] tolerance of ± 5K

HG 140 PTC Heater 15 -150W

Compact size
Wide voltage range
Heating power adjusts to ambient temperature
Cage clamp connectors for quick & easy wiring
DIN rail mountable

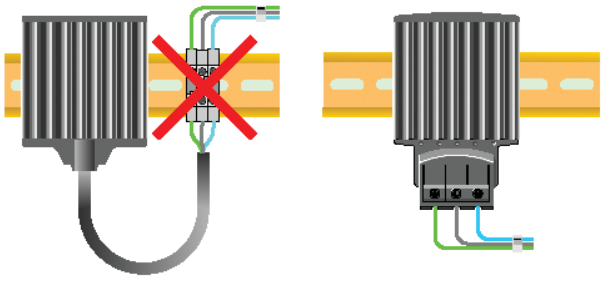
These heaters are used in enclosures where damage from condensation must be prevented, or where the temperature must be maintained above a minimum value. The aluminum profile heater body design has a chimney effect to distribute heat evenly. The cage clamp connectors save time and simplify installation.

Technical Data



Operating voltage	120-240V AC/DC* (min. 110V, max. 265V)
Heating element	PTC resistor - temperature limiting
Heater body	extruded aluminum profile, anodized
Connection	3 cage clamps for solid wire AWG 20-14 (0.5-2.5mm²),
and	stranded wire AWG 20-16 (0.5-1.5mm²) with
wire end ferrule	
Connection casing	plastic, UL 94V-0, black
Mounting	clip for 35mm DIN rail, EN 60 715
Mounting position	vertical
Operating / Storage temperature	-49 to +158°F (-45 to +70°C)
Protection class	I (grounded)
Protection type	IP20
Approvals	UL File No. E150057, VDE
Note	other voltages available upon request

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



Part No.	Heating capacity[1]	Max. current (inrush)	Length (L)	Weight (approx.)
14000.0-00	15W	1.5A	2.6" (65mm)	10.6 oz. (300g)
14001.0-00	30W	3.0A	2.6" (65mm)	10.6 oz. (300g)
14003.0-00	45W	3.5A	2.6" (65mm)	10.6 oz. (300g)
14005.0-00	60W	2.5A	5.5" (140mm)	14.1 oz. (400g)
14006.0-00	75W	4.0A	5.5" (140mm)	17.6 oz. (500g)
14007.0-00	100W	4.5A	5.5" (140mm)	17.6 oz. (500g)
14008.0-00	150W	9.0A	8.7" (220mm)	24.7 oz. (700g)

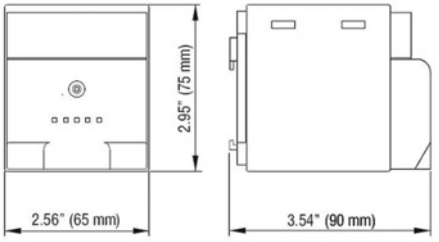
[1] at 68°F (20°C) ambient temperature

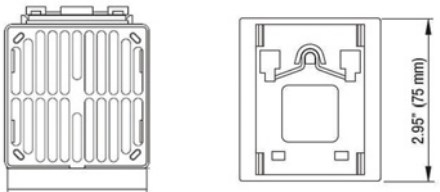
Data subject to change without notice.

CS 028 Touch-Safe PTC Fan Heater 150W

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

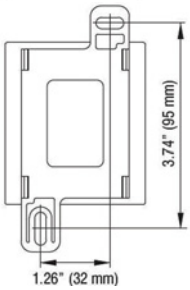
The CS 028 fan heater prevents formation of condensation and provides an evenly distributed interior air temperature in enclosures. The heater is connected using the internal terminal connectors. The surface temperatures on the accessible side surfaces of the housing are minimized as a result of the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





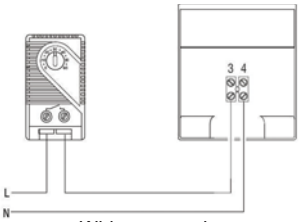
DIN clip

View: back side



Screw mount

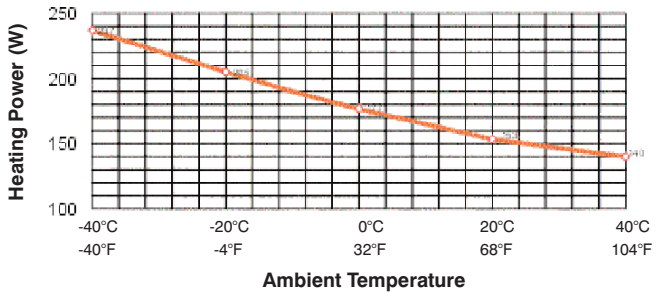
Thermostat CS 028 Fan Heater



Wiring example

Technical Data

Heating element	PTC resistor - temperature limiting
Max. current (inrush)	2A @ 230VAC, 5A @ 120VAC
Surface temperature	max. 122°F (50°C) at housing, 212°F (100°C) at top grill; measured at 68°F (20°C) ambient temperature
Axial fan, ball bearing	service life 40,000h at 104°F (40°C)
Air flow, free blowing	approx. 8 cfm (13.8 m³/h)
Connection	2-pole terminal AWG 14 max. (2.5mm²), torque 0.8Nm max.
Mounting	clip for 35mm DIN rail, EN 60 715 or screw mount
Housing	plastic, UL 94V-0, black
Weight	approx. 10.6 oz. (300g)
Mounting position	vertical
Operating / Storage temperature	-49 to +158°F (-45 to +70°C)
Protection class	II (double insulated)
Protection type	IP20
Note	other voltages available upon request



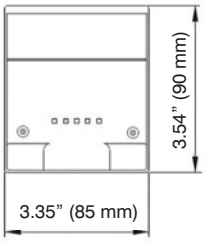
Part No.	Heating capacity[1]	Operating voltage	Dimensions	Mounting	Approvals
02800.0-00	150W	230VAC, 50/60Hz	2.95 x 2.56 x 3.54" (75 x 65 x 90mm)	DIN clip	UL submitted, VDE
02800.0-01	150W	230VAC, 50/60Hz	4.49 x 2.56 x 3.54" (114 x 65 x 90mm)	Screw mount	UL submitted, VDE
02800.9-00	150W	120VAC, 50/60Hz	2.95 x 2.56 x 3.54" (75 x 65 x 90mm)	DIN clip	UL submitted
02800.9-01	150W	120VAC, 50/60Hz	4.49 x 2.56 x 3.54" (114 x 65 x 90mm)	Screw mount	UL submitted

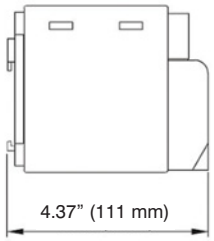
[1] at 68°F (20°C) ambient temperature

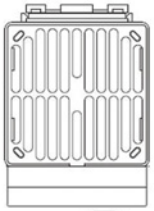
CSL 028 Touch-safe PTC Fan Heater 250 & 400W

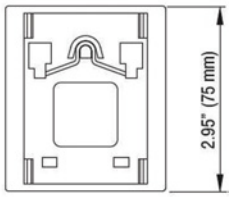
Compact size
Quiet operation
Heating power adjusts to ambient temperature
DIN rail or screw mount available

The 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 CSL 028's small size make it ideal for use in enclosures where space is at a premium.

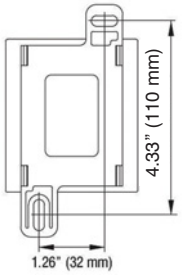








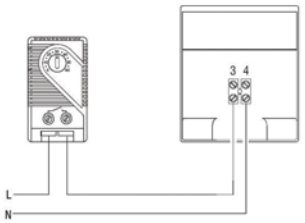
DIN clip



Screw mount

View: back side

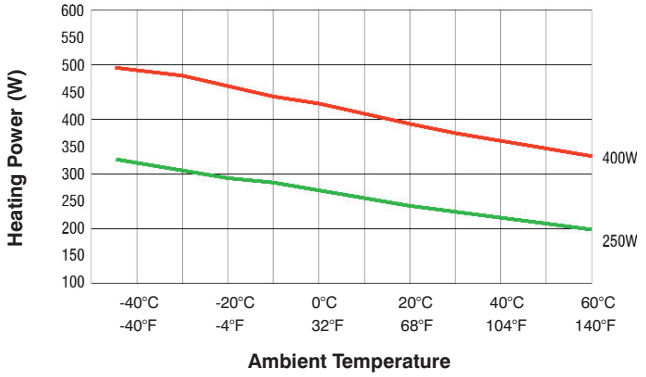
Thermostat CSL 028 Fan Heater



Wiring example

Technical Data

Heating element	PTC resistor - temperature limiting
Surface temperature	250W: max. 122°F (50°C) except upper protective grill
	400W: max. 149°F (65°C) except upper protective grill
	measured at 68°F (20°C) ambient temperature
Axial fan, ball bearing	service life 40,000h at 104°F (40°C)
Air flow, free blowing	32 cfm (54 m³/h) at 120 VAC; 26 cfm (45 m³/h) at 230VAC
Connection	2-pole terminal AWG 14 max. (2.5mm²) with strain relief,
	screw torque 0.8Nm max.
Mounting	clip for 35mm DIN rail, EN 60 715 or screw mount
Housing	plastic, UL 94V-0, black
Weight	approx. 17.6 oz. (500g)
Mounting position	vertical
Operating / Storage temperature	-49 to +158°F (-45 to +70°C)
Protection class	II (double insulated)
Protection type	IP20



Part No.	Heating capacity[1]	Operating voltage	Max. current (inrush)	Dimensions	Mounting	Approvals
02810.0-00	400W	230VAC, 50/60Hz	15A	3.54 x 3.35 x 4.37" (90 x 65 x 111mm)	DIN clip	UL submitted, VDE
02810.0-01	400W	230VAC, 50/60Hz	15A	5.08 x 3.35 x 4.37" (129 x 65 x 111mm)	Screw mount	UL submitted, VDE
02810.9-00	400W	120VAC, 50/60Hz	9A	3.54 x 3.35 x 4.37" (90 x 65 x 111mm)	DIN clip	UL submitted
02810.9-01	400W	120VAC, 50/60Hz	9A	5.08 x 3.35 x 4.37" (129 x 65 x 111mm)	Screw mount	UL submitted
02811.0-00	250W	230VAC, 50/60Hz	9A	3.54 x 3.35 x 4.37" (90 x 65 x 111mm)	DIN clip	UL submitted, VDE
02811.0-01	250W	230VAC, 50/60Hz	9A	5.08 x 3.35 x 4.37" (129 x 65 x 111mm)	Screw mount	UL submitted, VDE
02811.9-00	250W	120VAC, 50/60Hz	6A	3.54 x 3.35 x 4.37" (90 x 65 x 111mm)	DIN clip	UL submitted
02811.9-01	250W	120VAC, 50/60Hz	6A	5.08 x 3.35 x 4.37" (129 x 65 x 111mm)	Screw mount	UL submitted

[1] at 68°F (20°C) ambient temperature

Data subject to change without notice.

HVL 031 Fan Heater 100 - 400W

Shown: 100W - HVL 031 Fan Heater

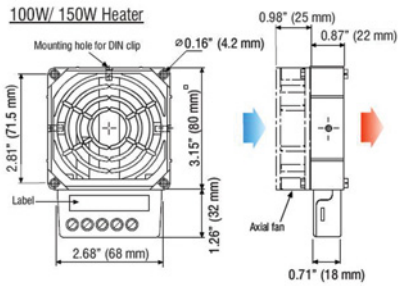
- **Compact size**
- **Flat design**
- **Built-in overheat protection**
- **3-side DIN rail mountable**

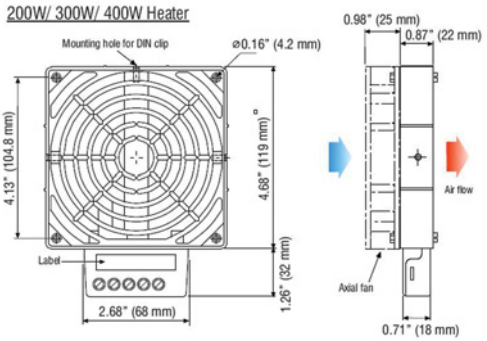
The compact HVL 031 high-performance fan heater prevents formation of condensation and provides an evenly distributed interior air temperature in enclosures. For large OEM use, this fan heater can also be provided without the fan, in which case the OEM/customer must provide a fan which meets the minimum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

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

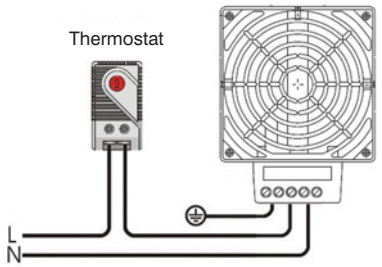
Technical Data

Heating element	high performance cartridge
Overheat protection	built-in temperature limiter
Heater body	die-cast aluminum, glass bead finish
Connection	3-pole terminal AWG 14 max. (2.5mm²), torque 0.8Nm max..
Connection housing	plastic, UL 94V-0, black
Mounting	clip for 35mm DIN rail, EN 60 715
Mounting position	horizontal
Operating / Storage temperature	-49 to +158°F (-45 to +70°C)
Protection class / Protection type	I (grounded) / IP20
Axial fan, ball bearing	service life 50,000h at 77°F (25°C)
Air flow, free blowing	see table below
Axial fan connection	2-pole terminal AWG 14 max. (2.5mm²), terminals L2/N2
Approvals	UL File No. E187294 (all), VDE (230VAC only)





HVL 031 Fan Heater



Data subject to change without notice.

Part No. - 120VAC	Part No. - 230VAC	Heating capacity	Min. airflow (free blowing)	Dimensions (as mounted)	Weight (approx.)
03102.9-00	03102.0-00	100W	20 cfm (35m³/h)	1.85 x 3.15 x 4.41" (47 x 80 x 112mm)	1.3 lbs. (600g)
03103.9-00	03103.0-00	150W	20 cfm (35m³/h)	1.85 x 3.15 x 4.41" (47 x 80 x 112mm)	1.3 lbs. (600g)
03113.9-00	03113.0-00	200W	63 cfm (108m³/h)	1.85 x 4.68 x 5.94" (47 x 119 x 151mm)	2.0 lbs. (900g)
03114.9-00	03114.0-00	300W	63 cfm (108m³/h)	1.85 x 4.68 x 5.94" (47 x 119 x 151mm)	2.0 lbs. (900g)
03115.9-00	03115.0-00	400W	63 cfm (108m³/h)	1.85 x 4.68 x 5.94" (47 x 119 x 151mm)	2.0 lbs. (900g)

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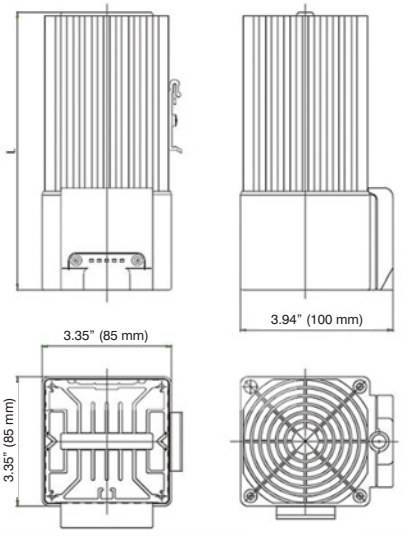
HGL 046 Fan Heater 250 & 400W

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.



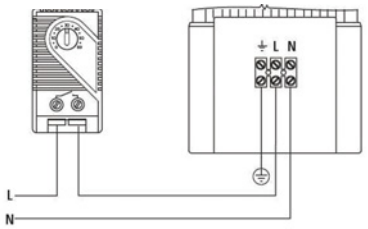
Technical Data

Heating element	resistance - micanite
Overheat protection	built-in temperature limiter
Heater body	extruded aluminum, anodized
Surface temperature	400W heater - max. 167°F (75°C)
Axial fan, ball bearing	service life 50,000h at 77°F (25°C)
Air flow, free blowing	AC: 26 cfm (45m³/h) - 50Hz; 32 cfm (54m³/h) - 60Hz
	DC: 32 cfm (54m³/h)
Connection	3-pole terminal AWG 16 max. (1.5mm²) with strain relief,
	clamping torque 0.8Nm max.
Connection housing	plastic, UL 94V-0, black
Mounting	clip for 35mm DIN rail, EN 60 715
Mounting position	vertical
Operating / Storage temperature	-49 to +158°F (-45 to +70°C)
Protection class	I (grounded)
Protection type	IP20

Note: In the case of **24VDC and 48VDC**, the fan heater must be switched via a relay. For this application, the SM 010 Electronic Relay (Part No. 01000.0-00 or 01001.0-00) is recommended.

Pilot contact
e.g. KT 011 Thermostat

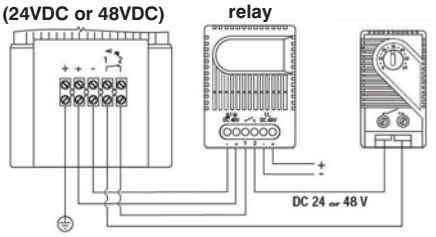
Heater
Fan Heater HGL 046
(120VAC or 230VAC)



Heater
Fan Heater HGL 046
(24VDC or 48VDC)

SM 010 Electronic relay

e.g. KT 011 Thermostat



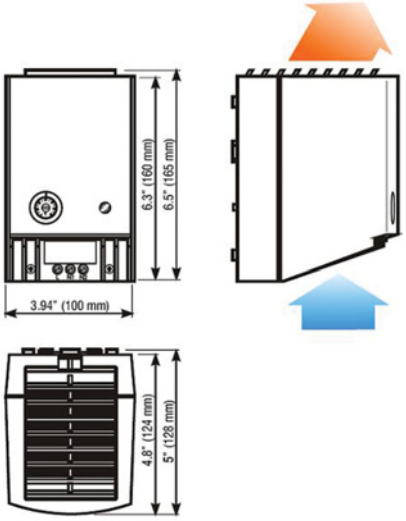
Part No.	Heating capacity	Operating voltage	Length (L)	Weight (approx.)	Approvals
04640.0-00	250W	230VAC, 50/60Hz	7.2" (182mm)	2.4 lbs. (1.1kg)	UL File No. E150057, VDE
04641.0-00	400W	230VAC, 50/60Hz	8.7" (222mm)	3.1 lbs. (1.4kg)	UL File No. E150057, VDE
04640.9-00	250W	120VAC, 50/60Hz	7.2" (182mm)	2.4 lbs. (1.1kg)	UL File No. E150057, VDE
04641.9-00	400W	120VAC, 50/60Hz	8.7" (222mm)	3.1 lbs. (1.4kg)	UL File No. E150057, VDE
04640.1-00	250W	24VDC	7.2" (182mm)	2.4 lbs. (1.1kg)	-
04640.2-00	250W	48VDC	7.2" (182mm)	2.4 lbs. (1.1kg)	-
04641.2-00	400W	48VDC	8.7" (222mm)	3.1 lbs. (1.4kg)	-

Data subject to change without notice.

CR 027 PTC Fan Heater 400 - 650W

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

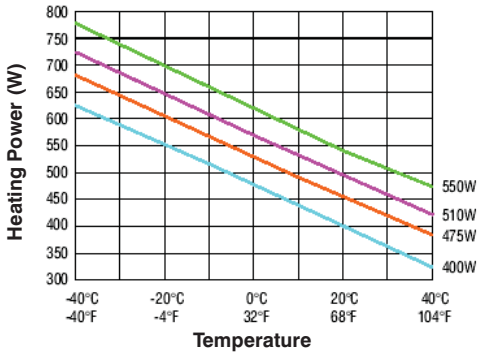
Semiconductor fan heaters prevent the formation of condensation and ensure an even temperature in enclosures. The integrated thermostat is used to set the desired temperature.



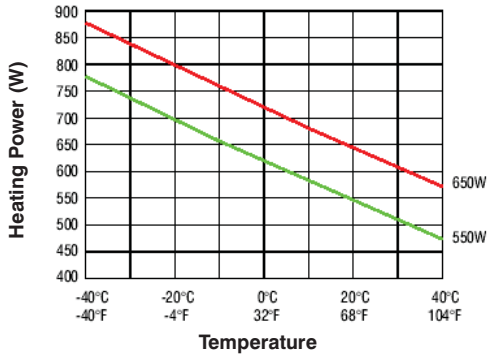
Technical Data

Heating element	PTC resistor - temperature limiting
Overheat protection	built-in temperature limiter
Axial fan, ball bearing	service life 50,000h at 77°F (25°C)
Air flow, free blowing	see table below
Connection	2-pole terminal AWG 14 max. (2.5mm²), torque 0.8Nm max.
Housing	plastic, UL 94V-0, light grey
Function control light	LED
Mounting	clip for 35mm DIN rail, EN 60 715
Mounting position	vertical
Operating/Storage temperature	+32 to +140°F (0 to +60°C) / -49 to +158°F (-45 to +70°C)
Dimensions	6.5 x 3.94 x 5.0" (165 x 100 x 128mm)
Protection class	II (double insulated)
Protection type	IP20
Approvals	UL File No. E204590

Heating Power / Ambient Temperature (@ 50Hz)



Heating Power / Ambient Temperature (@ 60Hz)



Data subject to change without notice.

Part No.	Heating capacity[1] (@ 50Hz)	Heating capacity[1] (@ 60Hz)	Operating voltage	Max. current (inrush)	Air flow, free blowing	Thermostat setting range	Weight (approx.)
02700.0-00	475W	550W	220-240VAC	11.0A	20 cfm (35m³/h)	0 to 60°C	2.0 lbs. (0.9kg)
02701.0-00	550W	650W	220-240VAC	13.0A	26 cfm (45m³/h)	0 to 60°C	2.4 lbs (1.10kg)
02700.9-00	400W	550W	100-120VAC	14.0A	20 cfm (35m³/h)	32 to 140°F	2.0 lbs. (0.9kg)
02701.9-00	510W	650W	100-120VAC	15.0A	26 cfm (45m³/h)	32 to 140°F	2.4 lbs (1.10kg)

[1] at 68°F (20°C) ambient temperature

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CR 030 Foot-mount Fan Heater 950W

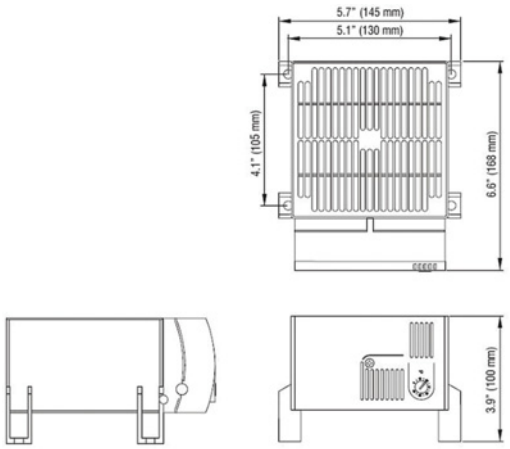
Compact design
Built-in overheat protection
Integrated adjustable thermostat or fixed hygrostat
Double insulated plastic housing

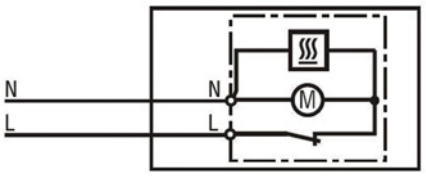
The compact CR 030 high performance fan heater prevents formation of condensation and provides an evenly distributed interior air temperature in enclosures. This fan heater is available with an integrated thermostat for temperature control or a pre-set hygrostat for humidity control. The CR 030 was designed 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	built-in temperature limiter
Heater body	extruded aluminum
Axial fan, ball bearing	service life 50,000h at 77°F (25°C)
Air flow, free blowing	94 cfm (160m³/h)
Connection	2-pole terminal AWG 16 max. (1.5mm²) with strain
	relief, clamping torque 0.8Nm 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)
Dimensions	3.9 x 5.7 x 6.6" (100 x 145 x 168mm)
Weight	approx. 3.1 lbs. (1.4kg)
Protection class	II (double insulated)
Protection type	IP20

* 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	Approvals
03051.0-00	950W	230VAC, 50/60Hz	0 to 60°C	UL File No. E234324, VDE
03051.0-02	950W	230VAC, 50/60Hz	65% RH, factory-set	UL File No. E234324, VDE
03059.9-00	950W	120VAC, 50/60Hz	32 to 140°F	UL File No. E234324
03059.9-02	950W	120VAC, 50/60Hz	none (no integrated controls)	UL File No. E234324

Data subject to change without notice.

CR 130 Panel-mount Fan Heater 950W

Compact design

Built-in overheat protection

Integrated adjustable thermostat or fixed hygrostat

Double insulated plastic housing

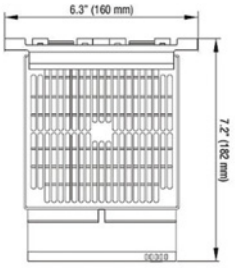
Panel or DIN rail mounting

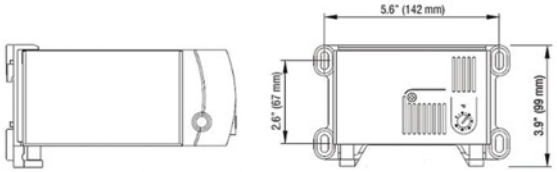
The compact CR 130 high performance fan heater prevents formation of condensation and provides an evenly distributed interior air temperature in enclosures. This fan heater is available with an integrated thermostat for temperature control or a pre-set hygrostat for humidity control. The CR 130 was designed 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.

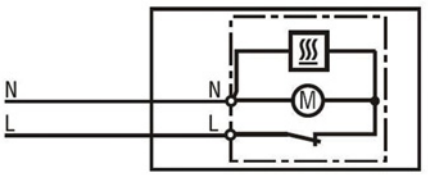
Technical Data

Heating element	high performance cartridge
Overheat protection	built-in temperature limiter
Heater body	extruded aluminum
Axial fan, ball bearing	service life 50,000h at 77°F (25°C)
Air flow, free blowing	94 cfm (160m³/h)
Connection	2-pole terminal AWG 16 max. (1.5mm²) with strain relief,
	clamping torque 0.8Nm max.
Housing	plastic, UL 94V-0, black
Mounting	clip for 35mm DIN rail, EN 60 715 or M6 screws (not included)
Mounting position	horizontal
Operating*/Storage temperature	-49 to +158°F (-45 to +70°C)
Dimensions	3.9 x 6.3 x 7.2" (99 x 160 x 182mm)
Weight	approx. 3.1 lbs. (1.4kg)
Protection class	II (double insulated)
Protection type	IP20

* 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	Approvals
13051.0-00	950W	230VAC, 50/60Hz	0 to 60°C	UL File No. E234324, VDE
13051.0-02	950W	230VAC, 50/60Hz	65% RH, factory-set	UL File No. E234324, VDE
13059.9-00	950W	120VAC, 50/60Hz	32 to 140°F	UL File No. E234324
13059.9-02	950W	120VAC, 50/60Hz	none (no integrated controls)	UL File No. E234324

Data subject to change without notice.

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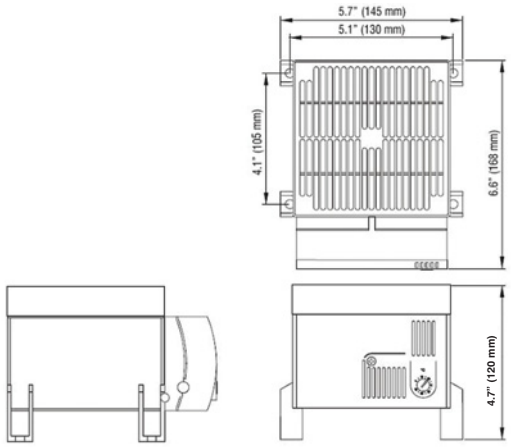
CS 030 Foot-mount Fan Heater 1200W

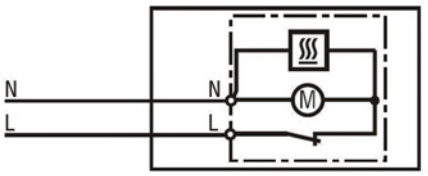
Compact design
Built-in overheat protection
Integrated adjustable thermostat (optional)
Double insulated plastic housing

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 - remperature limiting
Overheat protection	built-in temperature limiter
Axial fan, ball bearing	service life 50,000h at 77°F (25°C)
Air flow, free blowing	94 cfm (160m³/h)
Connection	2-pole terminal AWG 16 max. (1.5mm²) with strain
	relief, clamping torque 0.8Nm 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)
Dimensions	4.7 x 5.7 x 6.6" (120 x 145 x 168mm)
Weight	approx. 2.6 lbs. (1.2kg)
Protection class	II (double insulated)
Protection type	IP20





Wiring diagram

Part No.	Heating capacity[1]	Operating voltage	Max. current (inrush)	Setting range	Approvals
03060.0-00	1200W	230VAC, 50/60Hz	13.0A	0 to 60°C	UL File No. E150057, VDE
03060.0-01	1200W	230VAC, 50/60Hz	13.0A	none (no integrated controls)	UL File No. E150057, VDE
03060.9-00	1200W	120VAC, 50/60Hz	16.0A	32 to 140°F	UL File No. E150057
03060.9-01	1200W	120VAC, 50/60Hz	16.0A	none (no integrated controls)	UL File No. E150057

[1] at 68°F (20°C) ambient temperature

Data subject to change without notice.

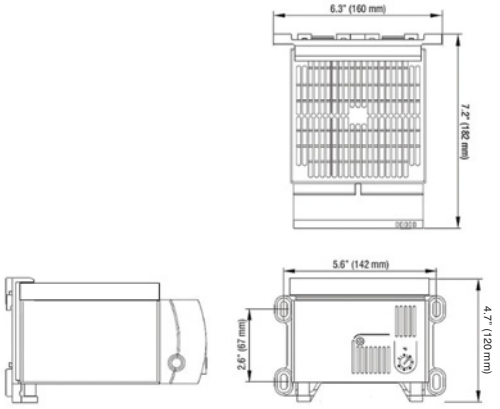
CS 130 Panel-mount Fan Heater 1200W

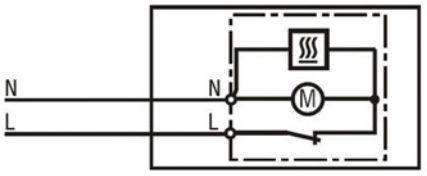
- **Compact design**
- **Built-in overheat protection**
- **Integrated adjustable thermostat (optional)**
- **Double insulated plastic housing**
- **Panel or DIN rail mounting**

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 - remperature limiting
Overheat protection	built-in temperature limiter
Axial fan, ball bearing	service life 50,000h at 77°F (25°C)
Air flow, free blowing	94 cfm (160m³/h)
Connection	2-pole terminal AWG 16 max. (1.5mm²)
	with strain relief, clamping torque 0.8Nm max.
Housing	plastic, UL 94V-0, black
Mounting	clip for 35mm DIN rail, EN 60 715 or M6 screws (not included)
Mounting position	horizontal
Operating/Storage temperature	-49 to +158°F (-45 to +70°C)
Dimensions	4.7 x 6.3 x 7.2" (120 x 160 x 182mm)
Weight	approx. 2.6 lbs. (1.2kg)
Protection class	II (double insulated)
Protection type	IP20





Wiring diagram

Part No.	Heating capacity[1]	Operating voltage	Max. current (inrush)	Setting range	Approvals
13060.0-00	1200W	230VAC, 50/60Hz	13.0A	0 to 60°C	UL File No. E150057, VDE
13060.0-01	1200W	230VAC, 50/60Hz	13.0A	none (no integrated controls)	UL File No. E150057, VDE
13060.9-00	1200W	120VAC, 50/60Hz	16.0A	32 to 140°F	UL File No. E150057
13060.9-01	1200W	120VAC, 50/60Hz	16.0A	none (no integrated controls)	UL File No. E150057

[1] at 68°F (20°C) ambient temperature

Data subject to change without notice.

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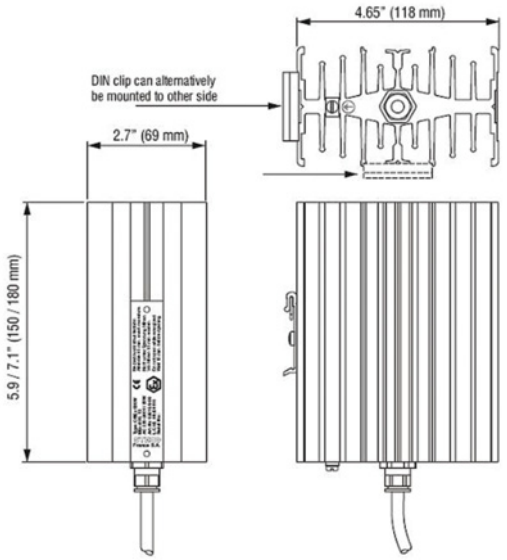
CREx 020 Explosion-proof Heater

- **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	01 ATEX 6073/03, LCIE N°06 ATEX Q8011, IECEx LCI 07. 0021
Heating element	high performance cartridge
Heater body	aluminum profile, black anodized
Connection	Si HF - JZ 3 x AWG 18 (0.75mm²), length 3.3 ft (1m)
Connection PE	4mm²
Mounting	clip for 35mm DIN rail, EN 60 715
Mounting position	vertical
Operating temperature	--4 to +104°F (-20 to +40°C)
Storage temperature	-49 to +158°F (-45 to +70°C)
Protection class	I (grounded)
Protection type	IP65



Part No.	Operating voltage	Heating capacity	Ex protection type	Surface temperature	Length (L)	Weight (approx.)
02010.0-00	230-240VAC	50W	II 2 GD - EEx d IIC T5 IP6x T100°C	212°F (100°C)	5.9" (150mm)	2.9 lbs. (1.3kg)
02010.0-01	110-120VAC	50W	II 2 GD - EEx d IIC T5 IP6x T100°C	212°F (100°C)	5.9" (150mm)	2.9 lbs. (1.3kg)
02011.0-00	230-240VAC	100W	II 2 GD - EEx d IIC T4 IP6x T135°C	275°F (135°C)	7.1" (180mm)	3.3 lbs. (1.5kg)
02011.0-01	110-120VAC	100W	II 2 GD - EEx d IIC T4 IP6x T135°C	275°F (135°C)	7.1" (180mm)	3.3 lbs. (1.5kg)

Data subject to change without notice.

Large enclosure heater - Series PXFT

Quick Features :

- Designed to maintain a suitable temperature inside enclosures
- All heaters have a built-in thermostat
- High surface aluminum heat emitter eliminates the need for a fan while providing low radiation and high convection heating.
- A movable bracket allows the heater to be floor or wall mounted with the terminal box located on the left, right, top or bottom side.
- Wire guards are provided with the PXFT-300, 400 and 600 watt heaters and optionally available with the 50, 125 and 200 W units.

Technical Data :

Thermostat rating :	25A at 240V, S.P.S.T., adjustable from 0°C to 50°C (30-120°F)	
Use environment :	Not suitable for use outdoors, unprotected from the weather. Moisture resistant heaters available upon request.	
Surface temp. :	50W unit :	~100°C (212°F)
	125W unit :	~170°C (338°F)
	All other units :	~210°C (410°F)

CATALOG NUMBER	VOLTAGE	POWER (see note)	WIRE GUARD INCLUDED ?	DIMENSION 'L' (Lenght)	SHIPPING WEIGHT
PXFT050	120 V	50 W	No, optional	8 3/8"	3
PXFT125	120 V	125 W	No, optional	8 3/8"	3
PXFT200	120 V	200 W	No, optional	8 3/8"	3
PXFT300	120 V, 240 V	300 W	Yes	15"	4
PXFT400	120 V, 240 V	400 W	Yes	21 3/4"	6
PXFT600	120 V, 240 V	600 W	Yes	28 1/2"	8

Determine the right heater size for your needs

Wattage selection

The wattage requirement is determined from a consideration of the surface area, insulation properties of the enclosure, the temperature difference between the ambient and the enclosure and the heating power generated by existing components (e.g. transformer). The following formula can generally be used to calculate wattage requirements for uninsulated enclosures :

$$P_h = (A \times \Delta T \times k) - P_v$$

P_h = Required heating power for your application in Watts (W)
P_v = Heating power generated by existing components in Watts
A = Exposed enclosure surface area in square meters (m^2)
ΔT = Temperature differential between the desired minimum interior temperature and the lowest possible external temperature of the enclosure in Kelvin (K). 1.8°F = 1°C = 1K
k = Heat transmission coefficient of the enclosure material used :

Painted steel :	5.5W/m^2K
Stainless steel :	3.7W/m^2K
Aluminum :	12W/m^2K
Plastic :	3.5W/m^2K

For outdoor applications, it is recommended to double the heating power.

This formula is supplied for reference purposes only. EXM offers no warranty, expressed nor implied, as to the application of this table in different environments, as the equipment may be subjected to conditions out of our control.

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