

# COMPACT SEMICONDUCTOR FAN HEATER

CSF 028 | 250 W, 400 W



CSF 028 with clip fixing



CSF 028 with screw flange fixing

- > Small, compact design
- > Integrated pre-set thermostat
- > Dynamic heating up
- > Quick connection
- > Clip or screw flange fixing

The compact fan heater prevents formation of condensation and provides an evenly distributed interior air temperature in enclosures with electric/electronic components. The touch-safe plastic housing and the small dimensions makes it ideal for use in enclosures with high packing density. The CSF 028 is equipped with a preset thermostat. It is connected via external clamps. The fan heater is available with two different mounting systems – either mounting by screw flange or by clip. The robust screw flange fixing is particularly suitable for applications with high vibration.



## TECHNICAL DATA

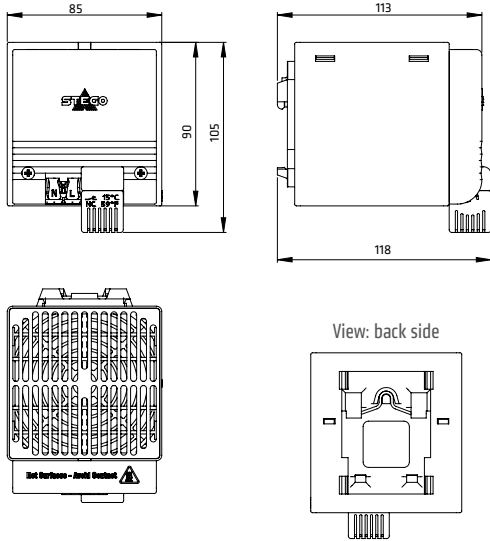
Heating element	PTC resistor – temperature limiting
Temperature safety cut-out	to protect against overheating in case of fan failure, automatic reset
Axial fan, ball bearing	air flow, free flow CSF 028: 45 m <sup>3</sup> /h (AC 230 V), 54 m <sup>3</sup> /h (AC 120 V) service life 40,000 h at +40 °C (+104 °F)
Connection	2-pole dual pressure clamp for rigid wire 2.5 mm <sup>2</sup> , stranded wire (with wire end ferrule) 1.5 mm <sup>2</sup>
Casing	plastic according to UL94 V-0, black
Mounting	clip for 35 mm DIN rail, EN 60715 or screw fixing (Ø 5.5 mm), clamping torque 2 Nm max., washers have to be used
Fitting position	vertical airflow (air outlet up)
Dimensions	models with clip fixing: 105 x 85 x 118 mm, models with screw flange fixing: 105 x 115 x 108 mm
Weight	0.5 kg
Operating/Storage temperature	-40 to +70 °C (-40 to +158 °F)/-45 to +70 °C (-49 to +158 °F)
Operating/Storage humidity	max. 90 % RH (non-condensing)
Protection type/Protection class	IP20 / II (double insulated)

Art. No. clip fixing	Art. No. screw flange fixing	Operating voltage	Heating capacity <sup>1</sup>	Inrush current max.	Recommended pre-fuse I (time-delay)	Switch-off temperature <sup>2</sup>	Switch-on temperature <sup>2</sup>	Approvals		
02821.0-06	02821.0-08	AC 230 V, 50/60 Hz	250 W	9,0 A	10,0 A	+15 °C (+59 °F)	+5 °C (+41 °F)	VDE	UL	EAC
02821.0-09	02821.0-11	AC 230 V, 50/60 Hz	250 W	9,0 A	10,0 A	+25 °C (+77 °F)	+15 °C (+59 °F)	VDE	UL	EAC
02820.0-06	02820.0-08	AC 230 V, 50/60 Hz	400 W	15,0 A	16,0 A	+15 °C (+59 °F)	+5 °C (+41 °F)	VDE	UL	EAC
02820.0-09	02820.0-11	AC 230 V, 50/60 Hz	400 W	15,0 A	16,0 A	+25 °C (+77 °F)	+15 °C (+59 °F)	VDE	UL	EAC
02821.9-06	02821.9-08	AC 120 V, 50/60 Hz	250 W	6,0 A	10,0 A	+15 °C (+59 °F)	+5 °C (+41 °F)	-	UL File No. E234324	EAC
02821.9-09	02821.9-11	AC 120 V, 50/60 Hz	250 W	6,0 A	10,0 A	+25 °C (+77 °F)	+15 °C (+59 °F)	-	UL File No. E234324	EAC
02820.9-06	02820.9-08	AC 120 V, 50/60 Hz	400 W	9,0 A	10,0 A	+15 °C (+59 °F)	+5 °C (+41 °F)	-	UL File No. E234324	EAC
02820.9-09	02820.9-11	AC 120 V, 50/60 Hz	400 W	9,0 A	10,0 A	+25 °C (+77 °F)	+15 °C (+59 °F)	-	UL File No. E234324	EAC

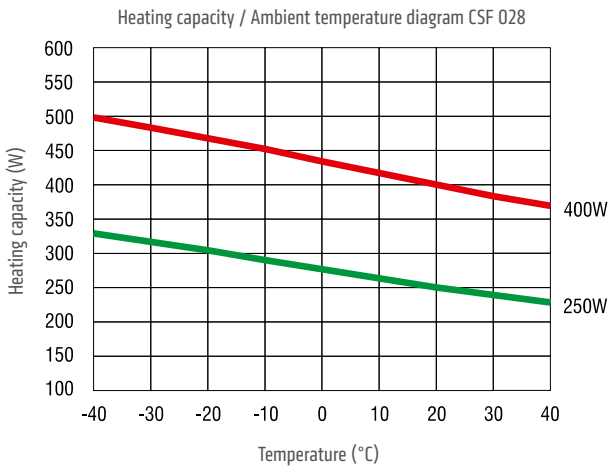
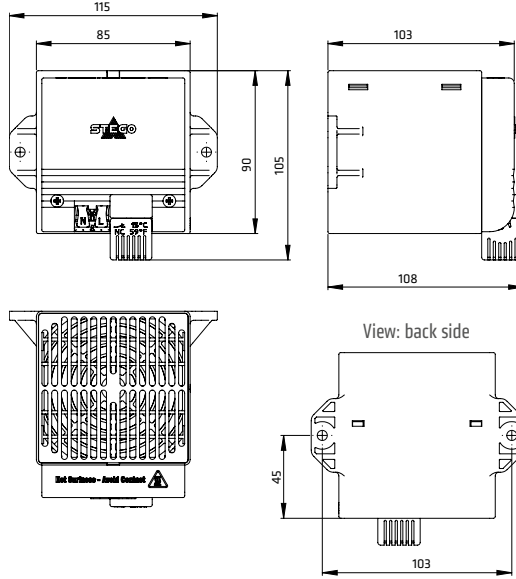
<sup>1</sup> at +20 °C (+68 °F) ambient temperature; <sup>2</sup> tolerance of ±5 K  
**Note:** Other switch-off and switch-on temperatures on request.

TECHNICAL DRAWINGS

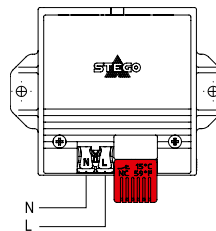
CLIP FIXING



SCREW FLANGE FIXING



Example of connection Fan heater CSF 028



ACCESSORIES

Air duct for improved heat distribution

The air duct is an accessory part for use with the fan heater CSF 028. It can easily be clipped onto the protective grille of the fan heater without use of any tools, and diverts the exiting warm air by 45°. This results in an overall improved heat distribution within an enclosure or cabinet. The temperature above the protective grille is reduced by up to 20 °C (measured 100 mm above protective grille) and may make the use of a heat conduction plate obsolete.



Art. No.	Dimensions <sup>2</sup>	Plastic	1 Packing unit	Weight (approx.)
252017	85 x 85 x 12 mm	according to UL94 V-0, black	1 piece	35 g

<sup>2</sup> Dimensions when mounted on fan heater.