

# COMPACT SEMICONDUCTOR FAN HEATER

CS 028 / CSL 028 | 150 W to 400 W



Fan Heaters CSL 028/CS 028 with clip fixing



Fan Heaters CSL 028/CS 028 with screw fixing

- > Small, compact design
- > Quiet in operation

- > Dynamic heating up
- > Clip or screw fixing

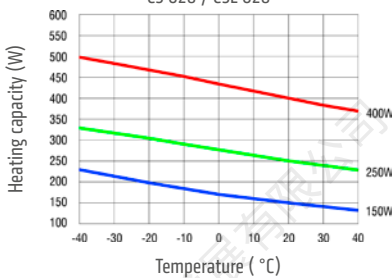
These fan heaters prevent formation of condensation and provide an evenly distributed interior air temperature in enclosures with electric/electronic components. The heaters are connected using the internal terminal connectors. The small size of the CS / CSL 028 heaters make them ideal for use in enclosures where space is at a premium.



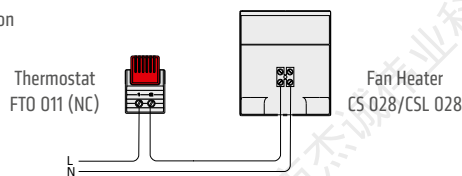
## TECHNICAL DATA

Heating element	PTC resistor – temperature limiting
Axial fan, ball bearing	air flow, free flow CS 028: 13.8 m <sup>3</sup> /h CSL 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 clamp max. 2.5 mm <sup>2</sup> (CSL 028 with strain relief), clamping screw torque 0.8 Nm max.
Casing	plastic according to UL94 V-0, black
Mounting	clip for 35 mm DIN rail, EN 60715 or screw fixing (Ø 5.3 mm)
Fitting position	vertical airflow (air outlet up)
Dimensions	see drawings
Operating/Storage temperature	-45 to +70 °C (-49 to +158 °F)
Operating/Storage humidity	max. 90 % RH (non-condensing)
Protection type/Protection class	IP20 / II (double insulated)
Note	other voltages on request

Heating capacity / Ambient temperature diagram  
CS 028 / CSL 028



Example of connection



### FAN HEATER CS 028

Art. No. clip fixing	Art. No. screw fixing	Operating voltage	Heating capacity <sup>1</sup>	Inrush current max.	Recommended pre-fuse T (time-delay)	Weight (approx.)	Approvals
02800.0-00	02800.0-01	AC 230 V, 50/60 Hz	150 W	12.0 A	10.0 A	0.3 kg	VDE UL EAC
02800.9-00	02800.9-01	AC 120 V, 50/60 Hz	150 W	6.0 A	10.0 A	0.3 kg	- UL File No. E234324 EAC

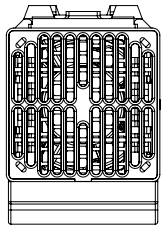
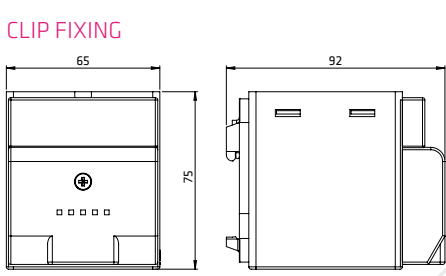
### FAN HEATER CSL 028

Art. No. clip fixing	Art. No. screw fixing	Operating voltage	Heating capacity <sup>1</sup>	Inrush current max.	Recommended pre-fuse T (time-delay)	Weight (approx.)	Approvals
02810.0-00	02810.0-01	AC 230 V, 50/60 Hz	250 W	9.0 A	10.0 A	0.5 kg	VDE UL EAC
02810.0-00	02810.0-01	AC 230 V, 50/60 Hz	400 W	15.0 A	16.0 A	0.5 kg	VDE UL EAC
02811.9-00	02811.9-01	AC 120 V, 50/60 Hz	250 W	6.0 A	10.0 A	0.5 kg	- UL File No. E234324 EAC
02810.9-00	02810.9-01	AC 120 V, 50/60 Hz	400 W	9.0 A	10.0 A	0.5 kg	- UL File No. E234324 EAC

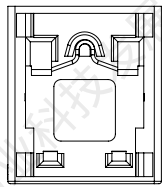
<sup>1</sup> at +20 °C (+68 °F) ambient temperature

TECHNICAL DRAWINGS

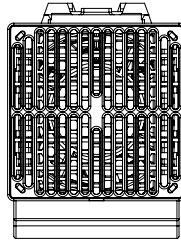
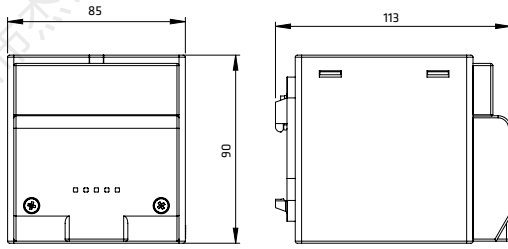
CLIP FIXING



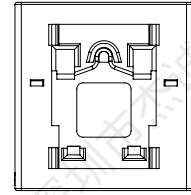
Fan Heater CS 028



View: back side

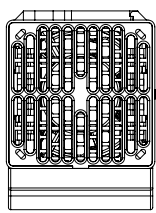
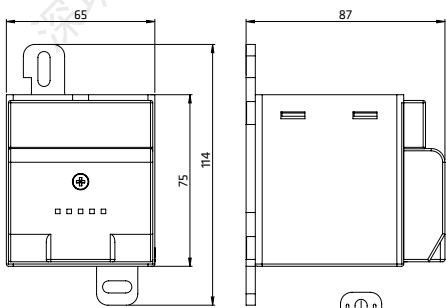


Fan Heater CSL 028

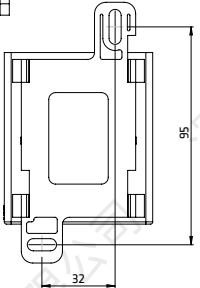


View: back side

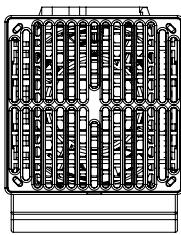
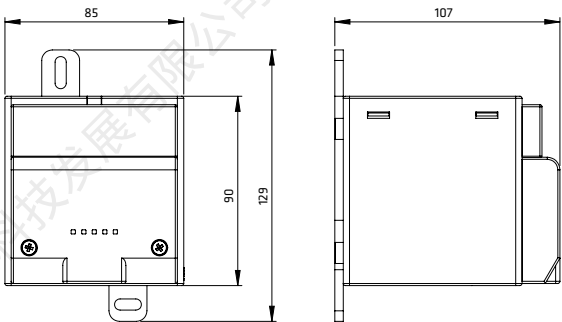
SCREW FIXING



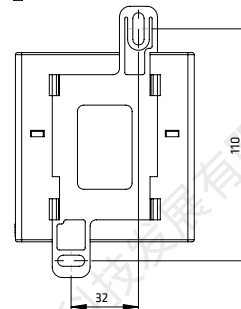
Fan Heater CS 028



View: back side



Fan Heater CSL 028



View: back side

ACCESSORY PART FOR FAN HEATER CSL 028

Air duct for improved heat distribution

The air duct is an accessory part for use with the fan heater CSL 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.



Air duct Art. No. 252017

Fan heater with air duct

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.