

1500 V DC ESS2(-NI) aR and aBat Size 2 fuse links



Product description

Eaton's Bussmann series ESS2 and ESS2-NI aR size 2 square body fuse links, are specifically designed for the protection of inverters, converters and battery racks.

Applications

- DC to AC Inverters
- DC to DC Converters
- Battery storage applications
- Electric Vehicle charging stations
- Power conversion systems
- Regenerate drives
- DC common bus protection

Features and benefits

- The surge in solar photovoltaic (PV) installations and energy storage systems has driven the adoption of 1500 VDC systems, as higher voltages reduce power losses and enable longer string lengths. Our 1500 V DC Fuses are therefore indispensable in protecting PV strings, battery racks, inverters and combiners.
- Low power dissipation, to prevent abnormal temperature rise, increases energy efficiency and lowers running cost
- Designed and tested to IEC 60269-4 and -7 and UL 248-13
- Handles extreme fault currents: In large-scale photovoltaic arrays, railway traction systems, energy storage facilities, or industrial DC networks, fault currents can quickly escalate to catastrophic levels. Our ESS fuses with a 250 kA breaking capacity ensure that, even in worst-case scenarios, the system is protected from the full spectrum of short-circuit events.
- Minimizes arc energy: The ability to interrupt high currents rapidly minimizes the duration and energy of electrical arcs. This is especially important in DC circuits, where arcs tend to persist longer than in AC circuits because there is no zero-crossing.
- 400% In minimum breaking current offers easy coordination within DC applications and reduces dimensioning requirements of DC contactors to optimize space and decrease overall cost of the installation.
- aR and aBat operating class

Catalogue symbol

- ESS2(fuse type)-Amp rating, e.g. ESS2L-100
- ESS2(fuse type)-Amp rating-NI, e.g. ESS2L-100-NI

Technical data

- Rated voltage: 1500 V DC
- Rated current: 100 A to 450 A
- Fuse body size: 2
- Operating class: aR and aBat
- Breaking capacity:
 - 150 kA at 10ms L/R
 - 250 kA at 4ms L/R

Standards/Approvals

- Designed and tested to IEC 60269 part 4 and 7
- UL 248-13 Recognised
- RoHS Compliant

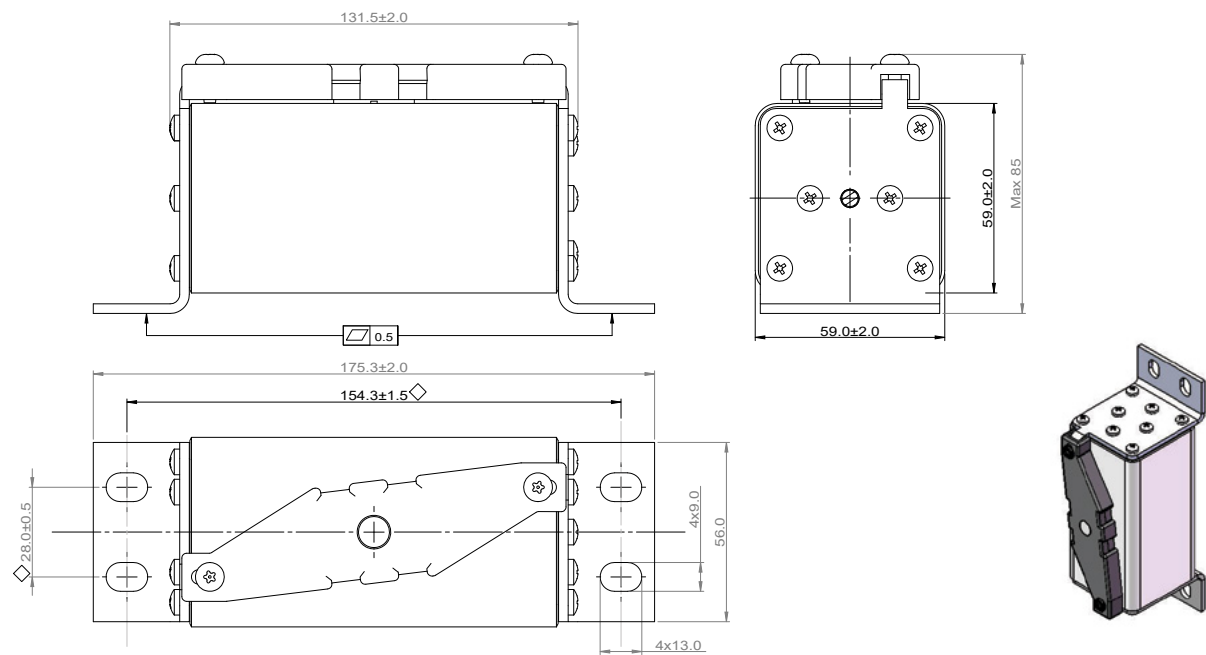
Catalog numbers - ESS

Catalog number											
Fuse body size	Rated voltage	Rated current (Amps)	Breaking capacity	Minimum breaking current (Amps)	Pre-arcing I ² t (A ² Sec)	Power loss at I _n (W)	Fuse type: 2L (Dual slotted)	Fuse type: 2H (US Style)	Fuse type: 2B (Flush end)	Fuse type: 2J (DIN 43653)	Fuse type: 2J-L (DIN 43653)
2	1500 V d.c. (IEC/UL)	100	150 kA at 10ms L/R	500	1000	50	ESS2L-100	ESS2H-100	ESS2B-100	ESS2J-100	ESS2J-100L
		125	250 kA at 4ms L/R	625	3000	60	ESS2L-125	ESS2H-125	ESS2B-125	ESS2J-125	ESS2J-125L
		160		800	5300	74	ESS2L-160	ESS2H-160	ESS2B-160	ESS2J-160	ESS2J-160L
		200		1000	10,000	87	ESS2L-200	ESS2H-200	ESS2B-200	ESS2J-200	ESS2J-200L
		250		1250	19,000	94	ESS2L-250	ESS2H-250	ESS2B-250	ESS2J-250	ESS2J-250L
		315		1575	38,000	113	ESS2L-315	ESS2H-315	ESS2B-315	ESS2J-315	ESS2J-315L
		350		1750	53,000	117	ESS2L-350	ESS2H-350	ESS2B-350	ESS2J-350	ESS2J-350L
		400		2000	79,000	129	ESS2L-400	ESS2H-400	ESS2B-400	ESS2J-400	ESS2J-400L
		450		2250	111,000	139	ESS2L-450	ESS2H-450	ESS2B-450	ESS2J-450	ESS2J-450L

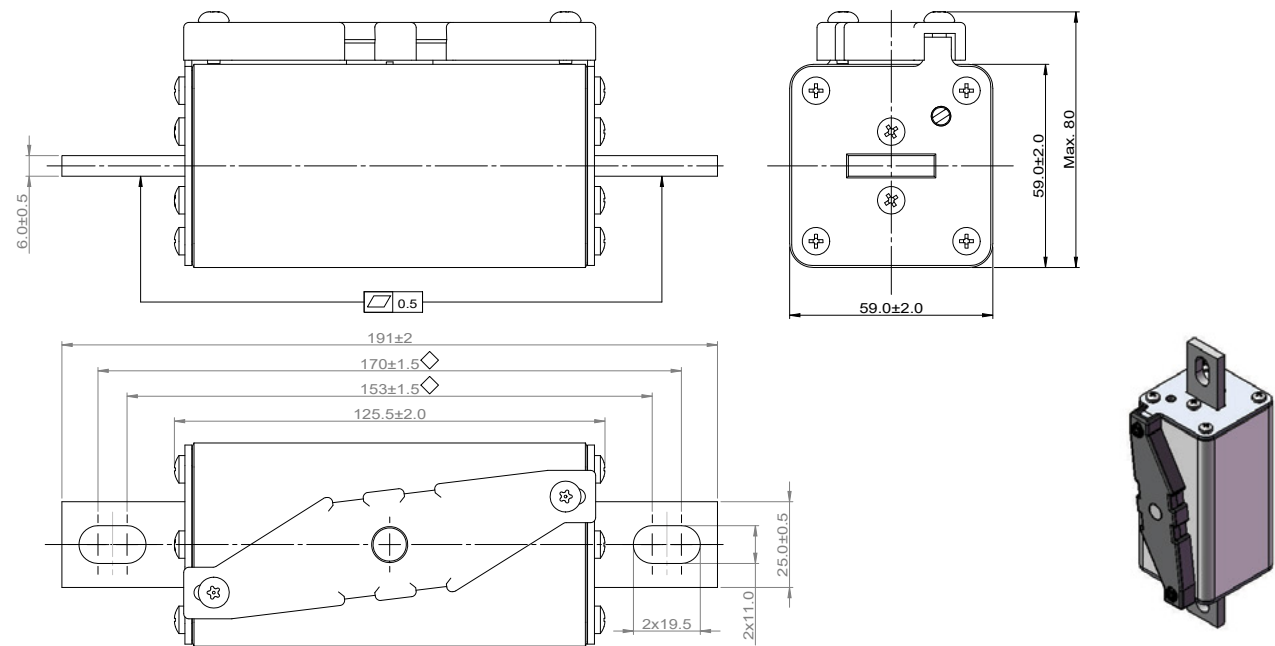
Catalog numbers - ESS-NI

Catalog number											
Fuse body size	Rated voltage	Rated current (Amps)	Breaking capacity	Minimum breaking current (Amps)	Pre-arcing I ² t (A ² Sec)	Power loss at I _n (W)	Fuse type: 2L (Dual slotted)	Fuse type: 2H (US Style)	Fuse type: 2B (Flush end)	Fuse type: 2J (DIN 43653)	Fuse type: 2J-L (DIN 43653)
2	1500 V d.c. (IEC/UL)	100	150 kA at 10ms L/R	500	1000	50	ESS2L-100-NI	ESS2H-100-NI	ESS2B-100-NI	ESS2J-100-NI	ESS2J-100L-NI
		125	250 kA at 4ms L/R	625	3000	60	ESS2L-125-NI	ESS2H-125-NI	ESS2B-125-NI	ESS2J-125-NI	ESS2J-125L-NI
		160		800	5300	74	ESS2L-160-NI	ESS2H-160-NI	ESS2B-160-NI	ESS2J-160-NI	ESS2J-160L-NI
		200		1000	10,000	87	ESS2L-200-NI	ESS2H-200-NI	ESS2B-200-NI	ESS2J-200-NI	ESS2J-200L-NI
		250		1250	19,000	94	ESS2L-250-NI	ESS2H-250-NI	ESS2B-250-NI	ESS2J-250-NI	ESS2J-250L-NI
		315		1575	38,000	113	ESS2L-315-NI	ESS2H-315-NI	ESS2B-315-NI	ESS2J-315-NI	ESS2J-315L-NI
		350		1750	53,000	117	ESS2L-350-NI	ESS2H-350-NI	ESS2B-350-NI	ESS2J-350-NI	ESS2J-350L-NI
		400		2000	79,000	129	ESS2L-400-NI	ESS2H-400-NI	ESS2B-400-NI	ESS2J-400-NI	ESS2J-400L-NI
		450		2250	111,000	139	ESS2L-450-NI	ESS2H-450-NI	ESS2B-450-NI	ESS2J-450-NI	ESS2J-450L-NI

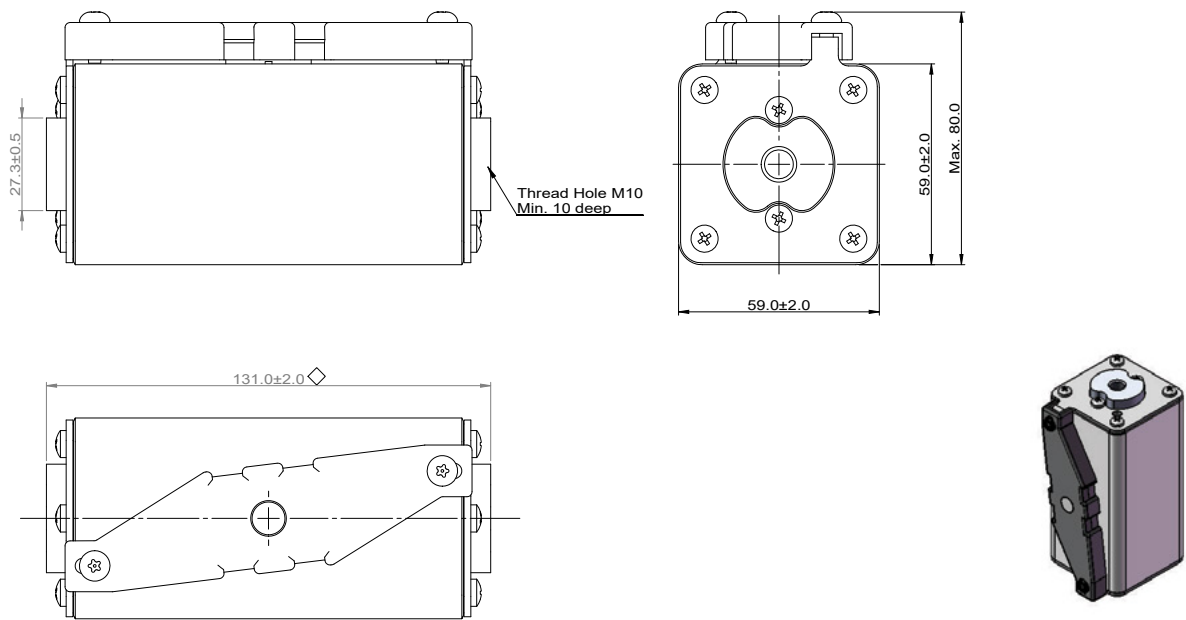
Dimensions (mm) - ESS2L (Dual slotted)



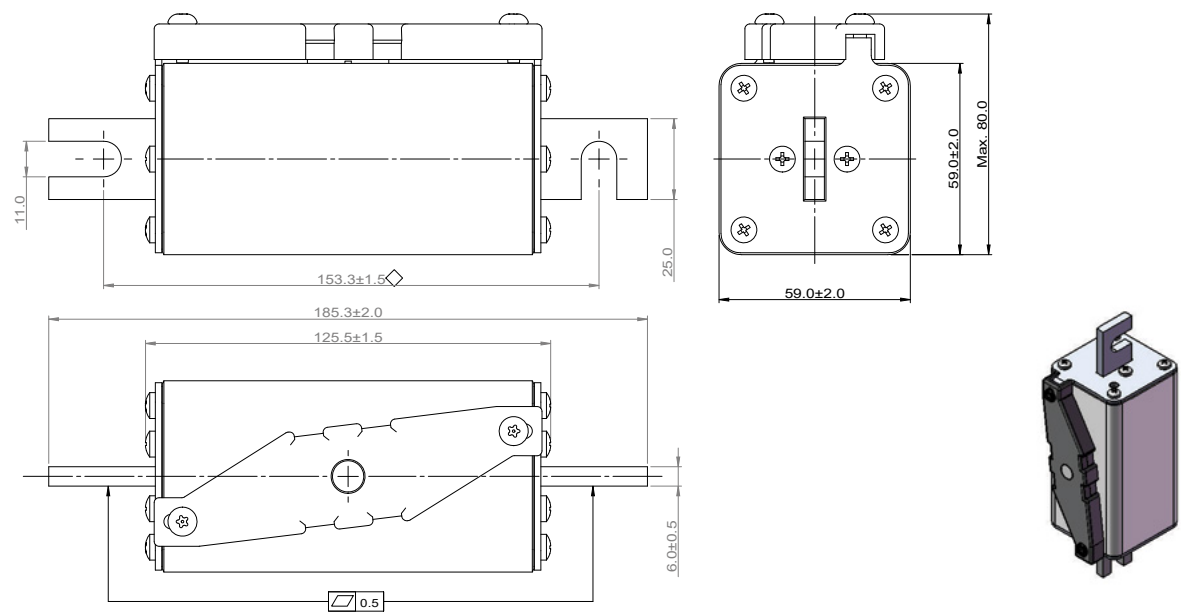
Dimensions (mm) - ESS2H (US Style)



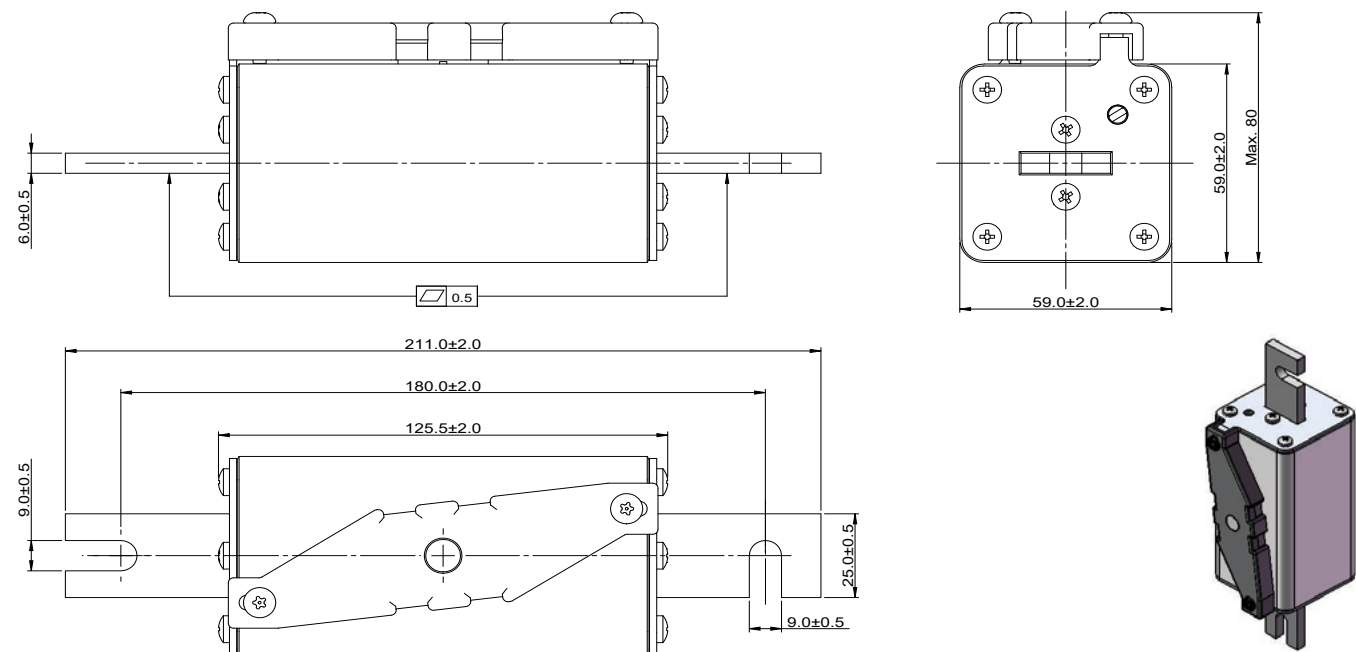
Dimensions (mm) - ESS2B (Flush end)



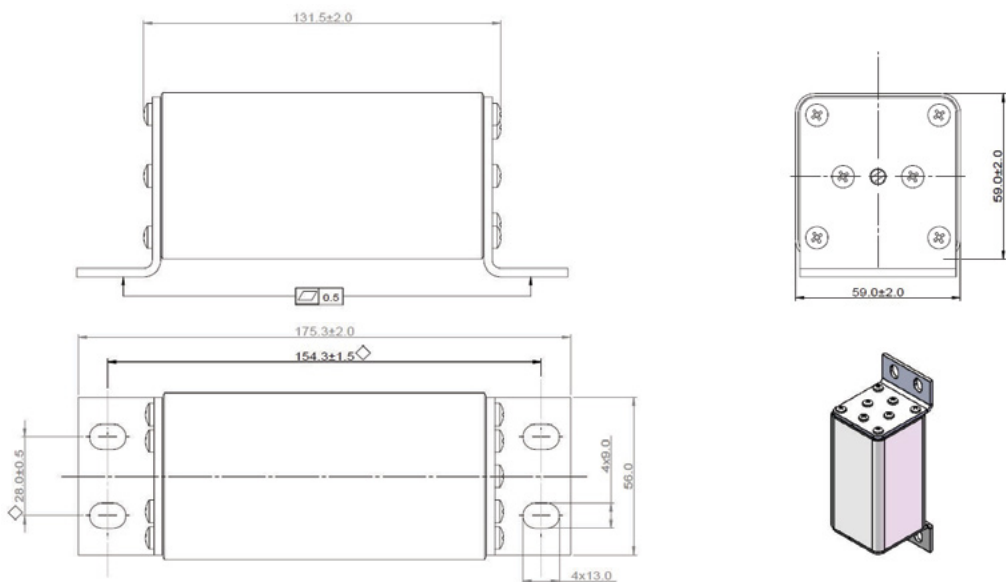
Dimensions (mm) - ESS2J (DIN 43653)



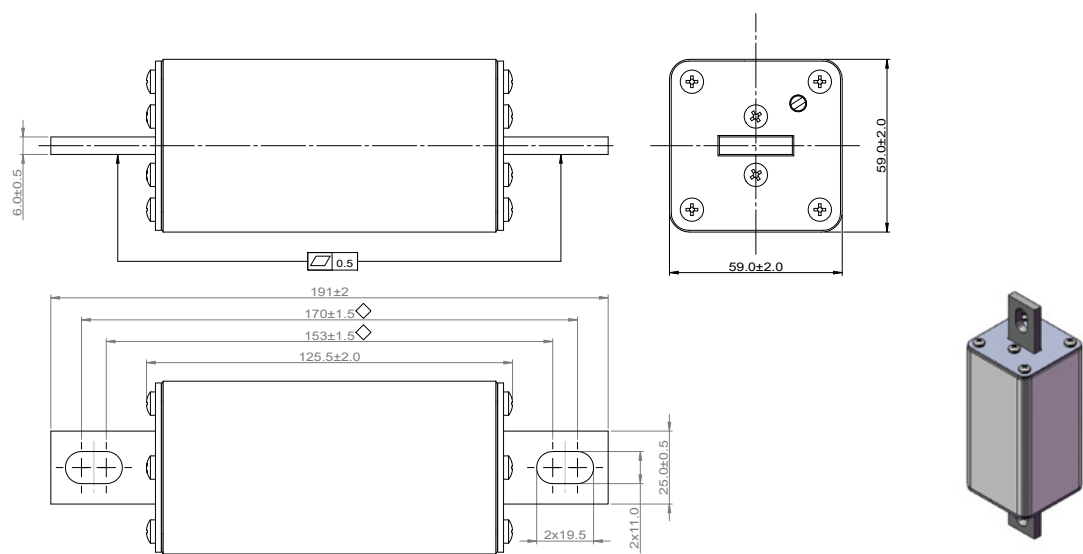
Dimensions (mm) - ESS2J-L (DIN 43653)



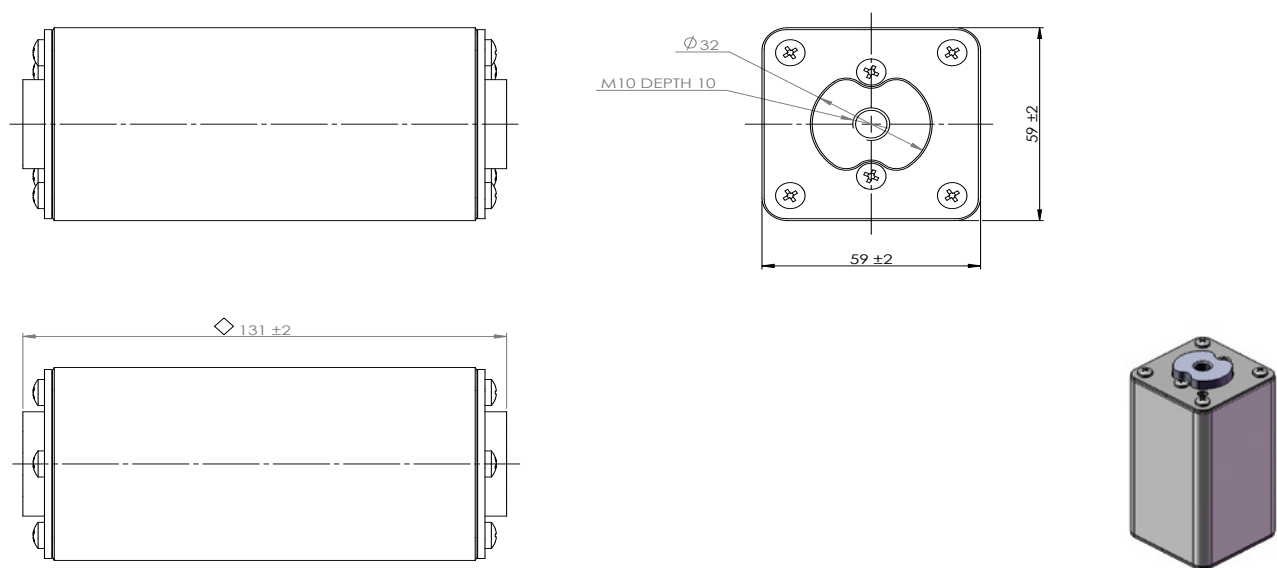
Dimensions (mm) - ESS2L-NI (Dual slotted)



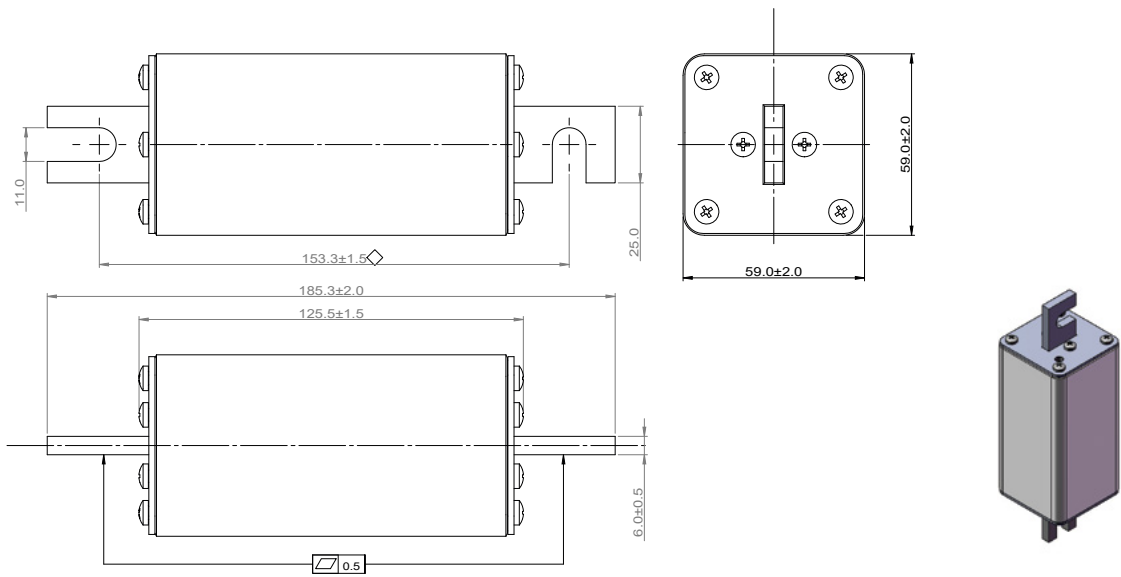
Dimensions (mm) - ESS2H-NI (US Style)



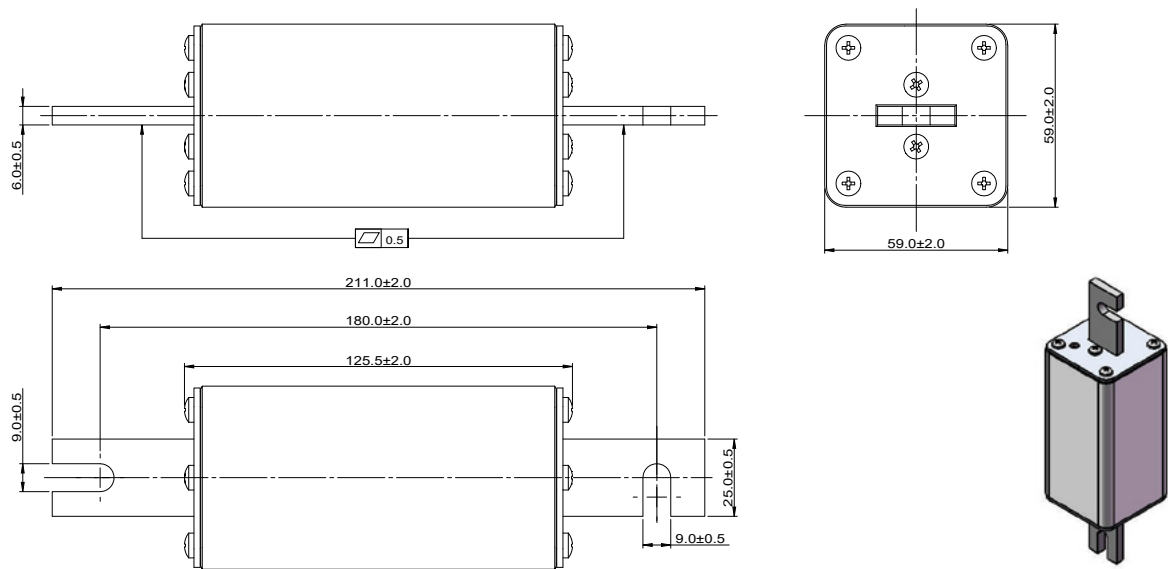
Dimensions (mm) - ESS2B-NI (Flush end)



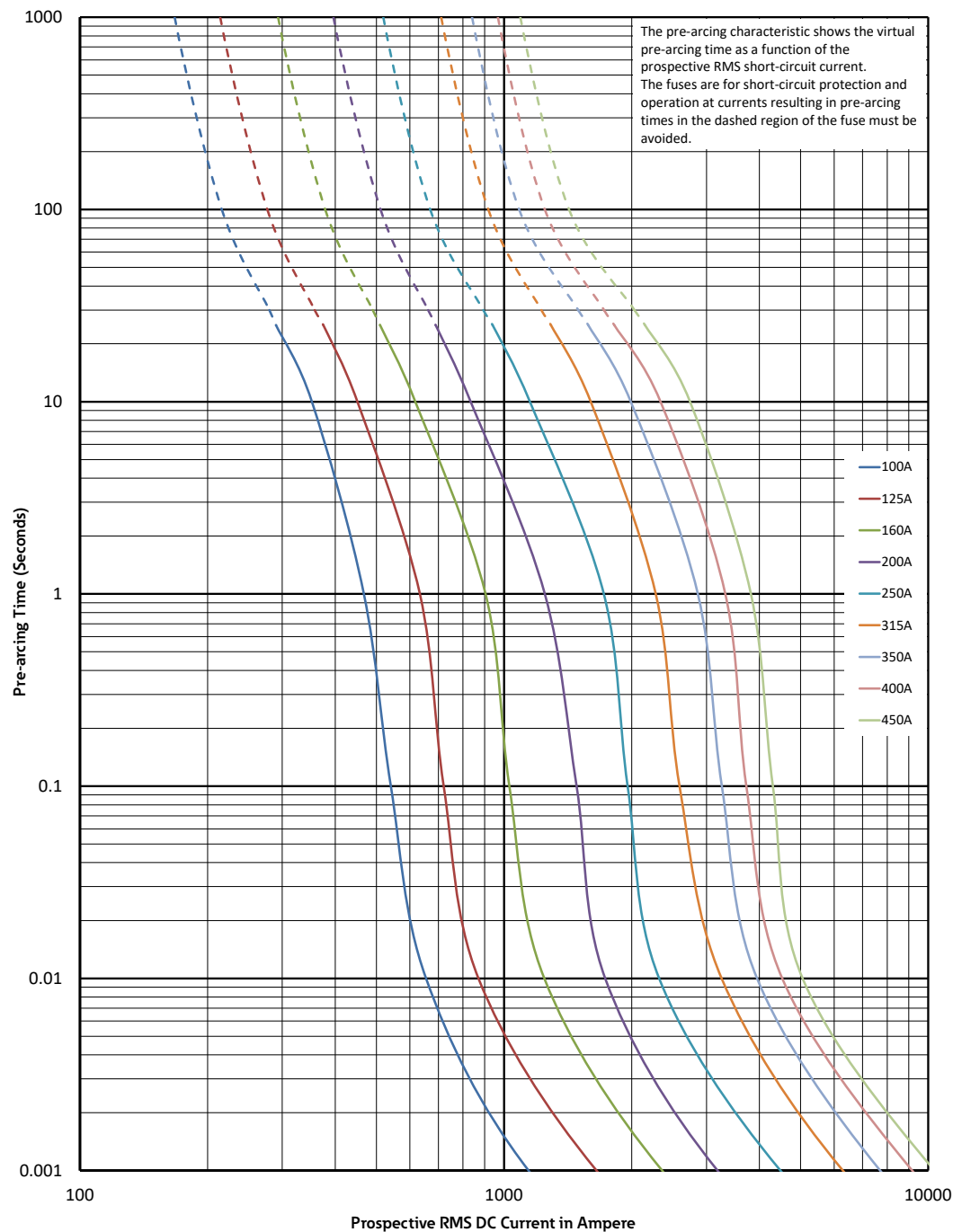
Dimensions (mm) - ESS2J-NI (DIN 43653)



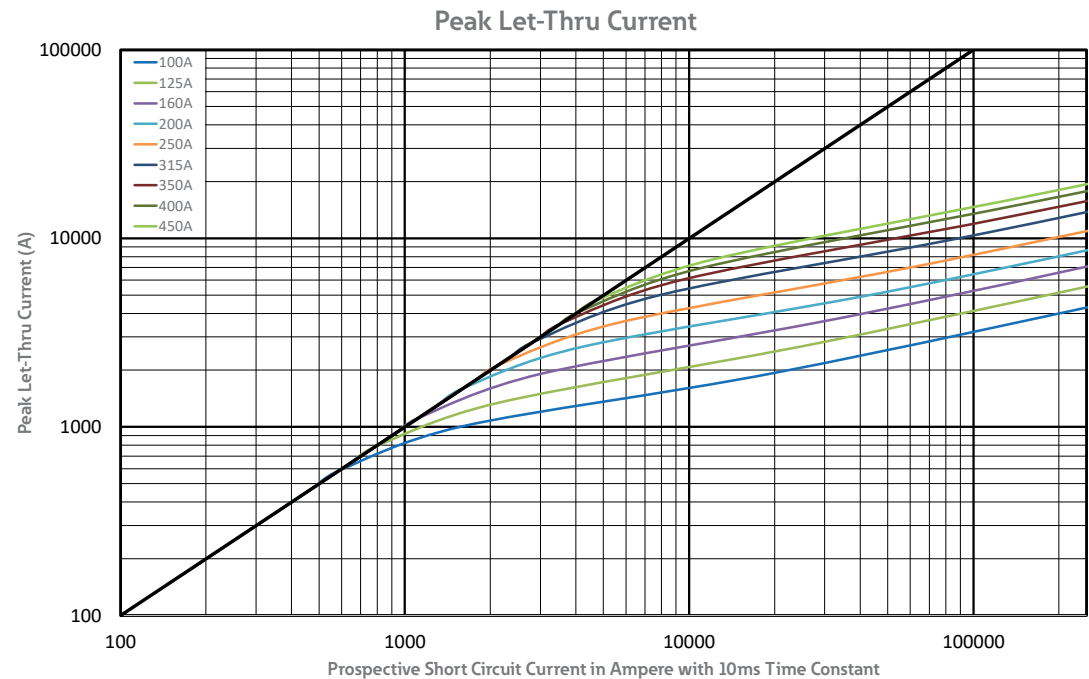
Dimensions (mm) - ESS2J-L-NI (DIN 43653)



Time-current curve

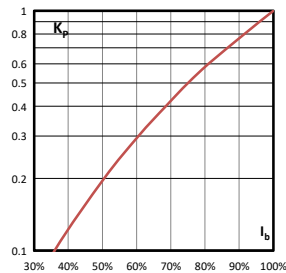


Peak-let through curve



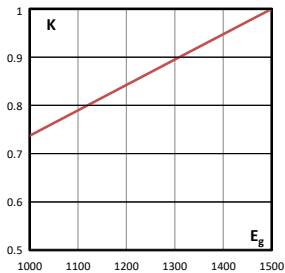
Watts losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the watts losses at load currents lower than the rated current. The correction factor, K_p , is given as a function of the RMS load current, I_b , in percent of the rated current.



Total clearing I^2t

The total clearing I^2t at rated voltage and tested DC time constant are given in electrical characteristics. For other voltages the clearing I^2t is found by multiplying by correction factor, K , given as a function of applied working voltages, E_g .



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Publication No. TD135030EN
February 2026