

1500 V DC ESS3(-NI) aR and aBat Size 3 fuse links



Product description

Eaton's Bussmann series ESS3 and ESS3-NI aR size 3 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

- ESS3-Amp rating, e.g. ESS3-100
- ESS3-Amp rating-NI, e.g. ESS3-100-NI

Standards/Approvals

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

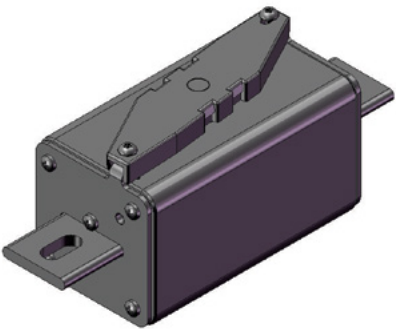
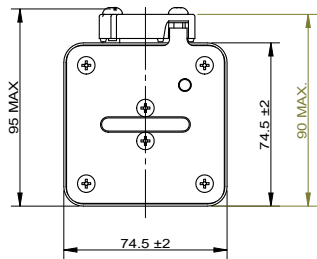
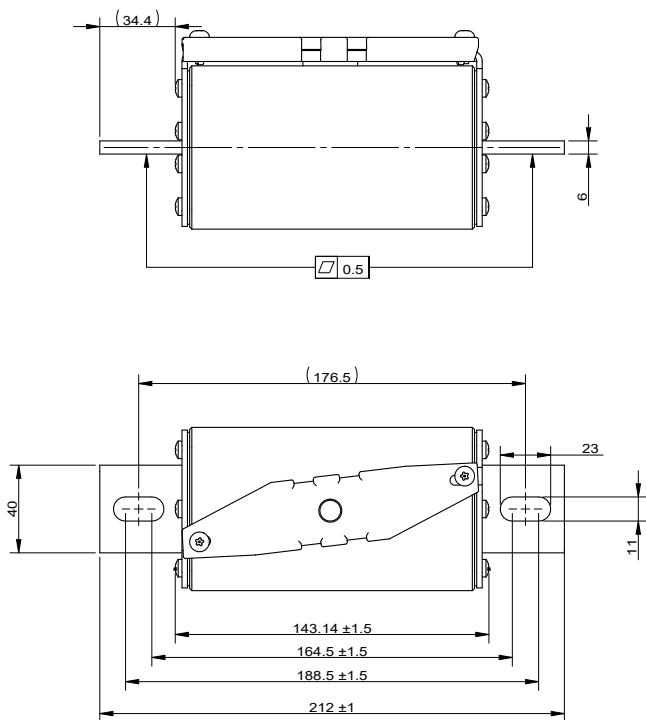
Technical data

- Rated voltage: 1500 V DC
- Rated current: 100 A to 630 A
- Fuse body size: 3
- Operating class: aR and aBat
- Breaking capacity: 250 kA at 4ms L/R

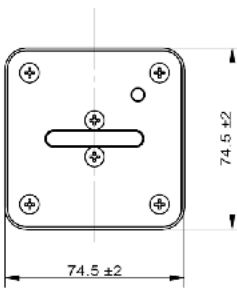
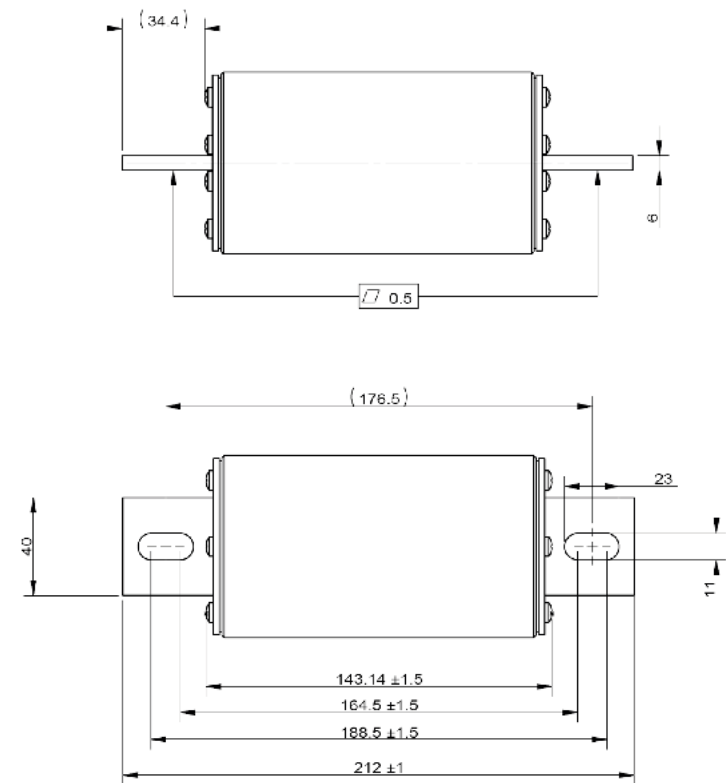
Technical data

Fuse body size	Rated voltage	Rated current (Amps)	Breaking capacity (kA at 4ms)	Minimum breaking current (Amps)	Pre-arcing I^2t (A ² Sec)	Power loss at In (W)	Catalog number	
3	1500 V d.c. (IEC/UL)	100	250	500	1200	55	ESS3-100	ESS3-100-NI
		125	250	625	2200	70	ESS3-125	ESS3-125-NI
		160	250	800	3900	85	ESS3-160	ESS3-160-NI
		200	250	1000	6600	90	ESS3-200	ESS3-200-NI
		250	250	1250	13,600	115	ESS3-250	ESS3-250-NI
		315	250	1575	24,100	120	ESS3-315	ESS3-315-NI
		350	250	1750	34,700	125	ESS3-350	ESS3-350-NI
		400	250	2000	60,000	135	ESS3-400	ESS3-400-NI
		450	250	2250	78,000	150	ESS3-450	ESS3-450-NI
		500	250	2500	96,000	170	ESS3-500	ESS3-500-NI
		550	250	2750	112,000	185	ESS3-550	ESS3-550-NI
		630	250	3150	172,000	198	ESS3-630	ESS3-630-NI

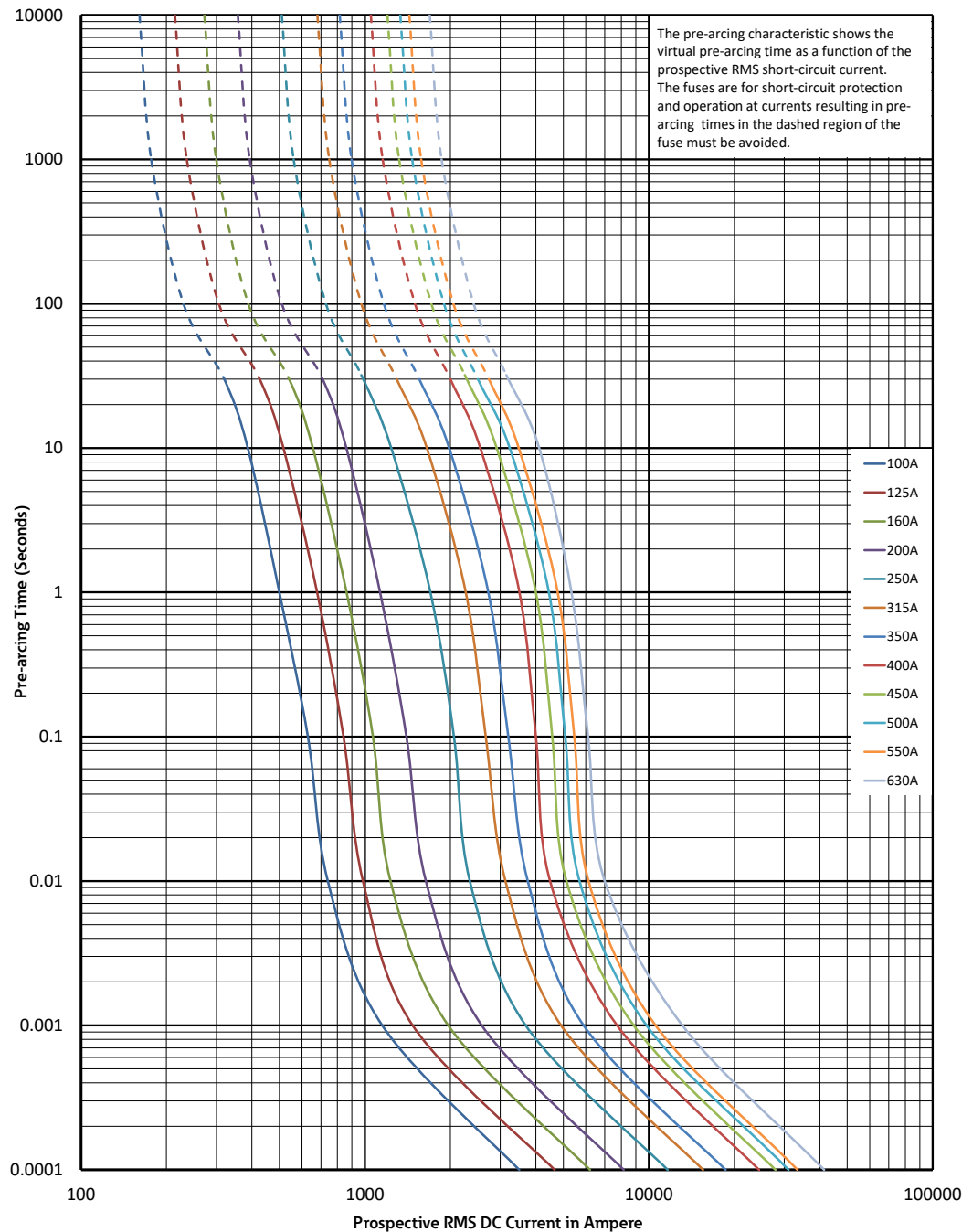
Dimensions (mm) - ESS3



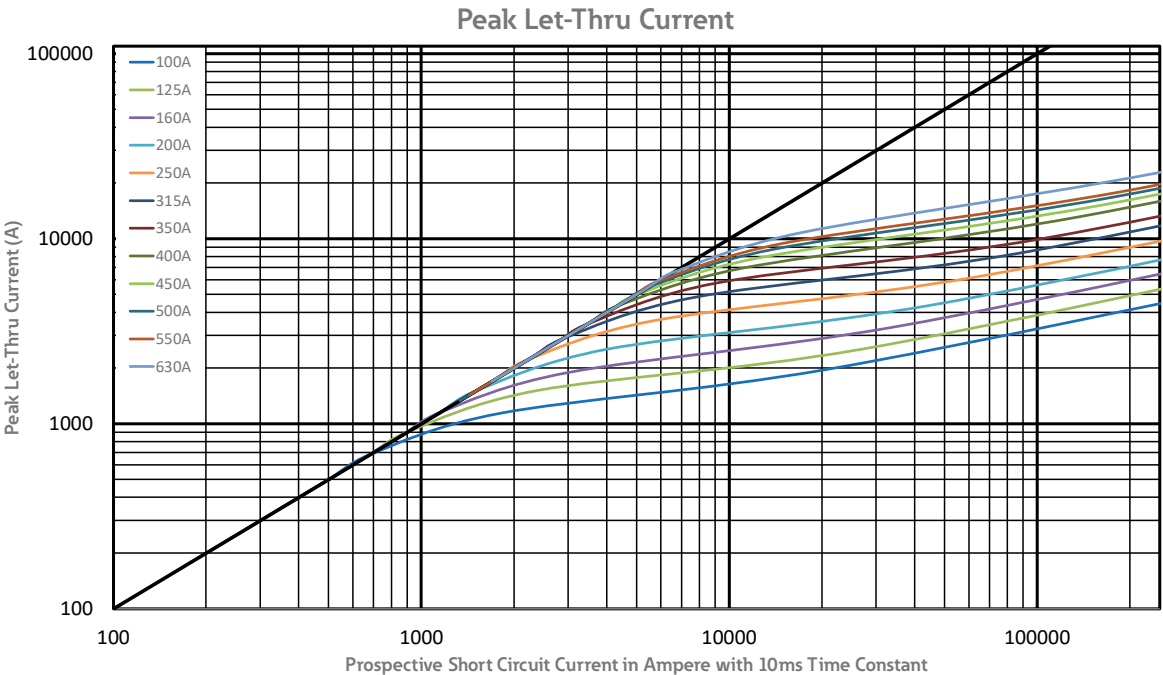
Dimensions (mm) - ESS3-NI



Time-current curve

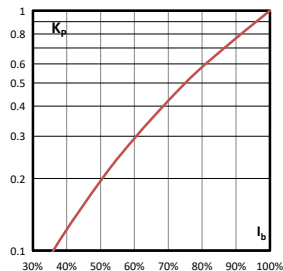


Peak-let through curve



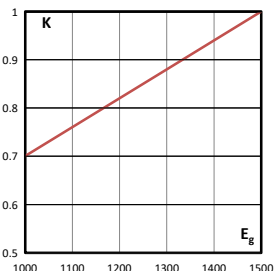
Watts losses

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. TD135031EN
February 2026