

POWR-SPEED® Fuse

ESR Series High-Speed Square Body

Battery Protection Fuses • 1500 V Dc • Class aBat • 125 A



Description

The Littelfuse Energy Storage Rack (ESR) series of fuses is designed specifically to protect battery racks in energy storage systems, inverters, and many other dc applications. The 1500 V dc high-speed square body fuse is extremely fast-acting to respond quickly to a range of fault currents to safeguard the battery module or other devices.

This Class aBat partial range fuse has superior short circuit protection and a low minimum breaking capacity (MBC)—from 300 % or 3 times the fuse’s rated current to 175 kA (250 kA self-certified)—to cover a range of over currents that traditional high-speed partial range fuses do not protect against.

The ESR fuse safely interrupts most faults in a battery storage system to avoid catastrophic failures and costly shutdowns.

Features & Benefits

FEATURES	BENEFITS
High dc interrupting rating	Provides superior short-circuit protection and the ability to scale-up systems without the need to redesign the existing circuit protection, saving time and costs
Low minimum breaking current	Offers easy coordination with battery modules and reduces size and rating of dc contactors to save space and costs
Extremely fast acting	Delivers high-speed performance
Low watt loss	Maximizes efficiency by preventing energy loss and minimizing the wasted power of components
Conforms to the IEC60269-7 battery standard	Specifically design to safeguard evolving battery technologies with fuse circuit protection
Compact NH 1XL size	Saves space and offers design flexibility

Applications

- Battery energy storage systems (BESSs)
 - Battery Protection Unit (BPU) and battery racks
- Power conversion systems
- Dc common bus systems
- Hybrid PV-BESS inverters

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Specifications

Voltage Rating	1500 V dc
Amperage Rating	125 A
Interrupting Rating	175 kA UL (250 kA self-certified)
Time Constant	</= 3 ms
Mounting	Bolted-blade style, DIN-blade style
Material	Body: ceramic Contacts: plated copper (bladed)
Applicable Standards	UL 248-13, IEC 60269-7
Environmental	RoHS Compliant, REACH, Halogen Free
Operating Temperature	-55 °C to +125 °C
Storage Temperature	Up to +35 °C with relative humidity <65 %
Country of Origin	Mexico

Certification & Compliance

cURus	cURus Recognized (File: E71611)
CE	ESR_UB_220411_0
RoHS	RoHS 2 Directive 2011/65/EU Directive (EU) 2015/863
REACH	Regulation (EC) 1907/2006
UKCA	UKCA-ESR_UB_220621_0

Ordering Information

CASE SIZE	CATALOG NUMBER	ORDERING NUMBER	UPC	BOX QUANTITY
NH 1XL	ESR1XLDB0125	ESR1XLDB0125X	07945830630	1 pc/box
NH 1XL	ESR1XLUB0125	ESR1XLUB0125X	07945830629	1 pc/box

Electrical Specifications

CASE SIZE	CATALOG NUMBER		AMPERE RATING (A)	VOLTAGE RATING (V)	INTERRUPTING RATING	MINIMUM BREAKING CAPACITY (A)	MELTING (PRE-ARC) I ² T (A ² S)	TOTAL CLEARING I ² T (A ² S) AT RATED VOLTAGE	WATTS LOSS AT 100 % RATED CURRENT (W)	AGENCY CERTIFICATION
	BOLTED BLADE (UB)	DIN BLADE (DB)		DC	DC			DC		cURus
NH 1XL	ESR1XLUB0125	ESR1XLDB0125	125	1500	175 kA (250 kA Self-certified)	375	2245	45000	53	•

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Dimensions

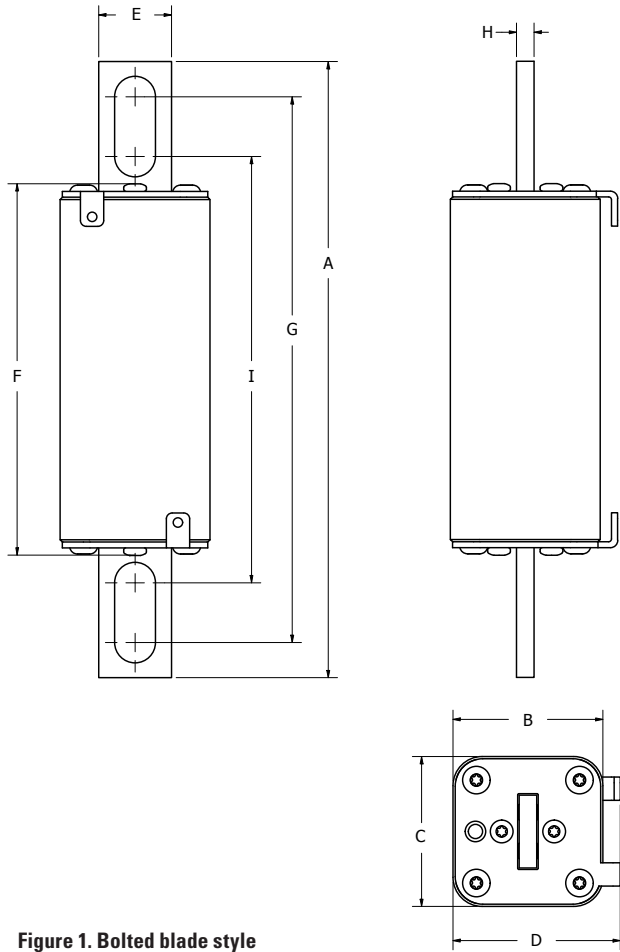


Figure 1. Bolted blade style

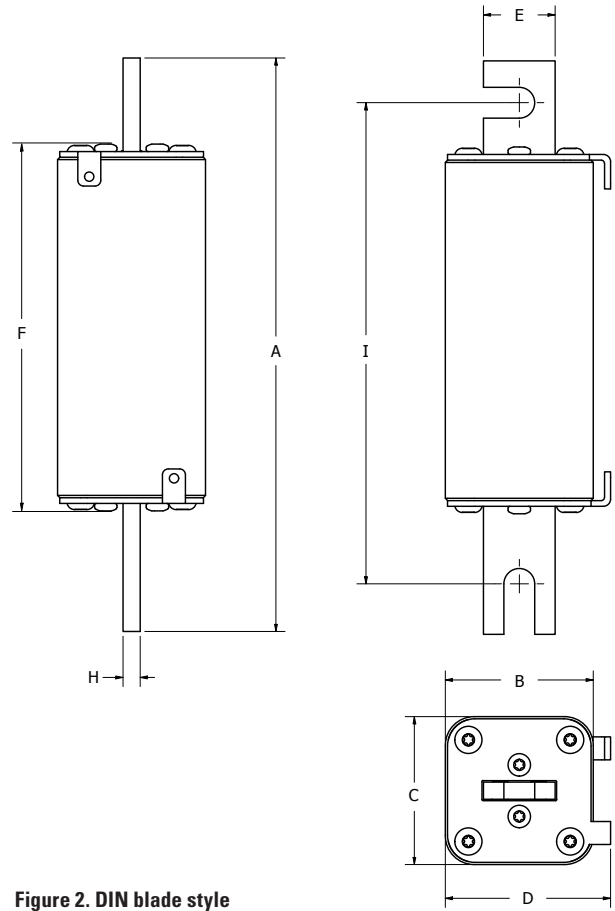


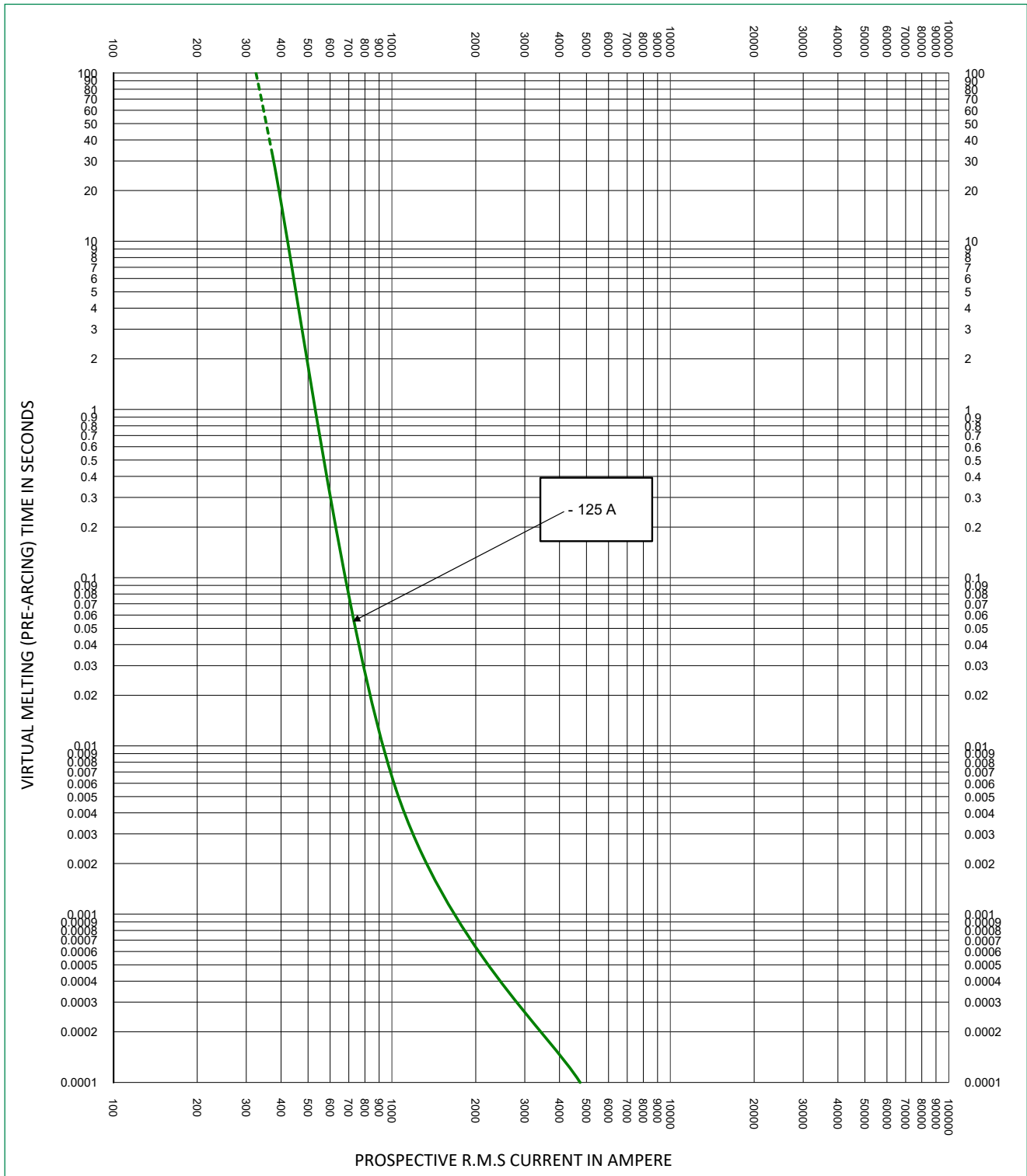
Figure 2. DIN blade style

DIMENSIONS MM (IN)													
CASE SIZE	MOUNTING STYLE	FIGURE	A	B	C	D	E	F	G	H	I	RECOMMENDED FASTENER	RECOMMENDED TORQUE
NH 1XL	BOLTED BLADE (UB)	1	211.7 (8.33)	51.5 (2.03)	51.5 (2.03)	57.5 (2.26)	25.0 (0.98)	127.7 (5.03)	187.5 (7.38)	6.0 (0.24)	146.5 (5.77)	12 (½)	64 Nm
NH 1XL	DIN BLADE (DB)	2	199.7 (7.86)	51.5 (2.03)	51.5 (2.03)	57.5 (2.26)	25.0 (0.98)	127.7 (5.03)	-	6.0 (0.24)	167.5 (6.59)	10 (3/8)	26 Nm

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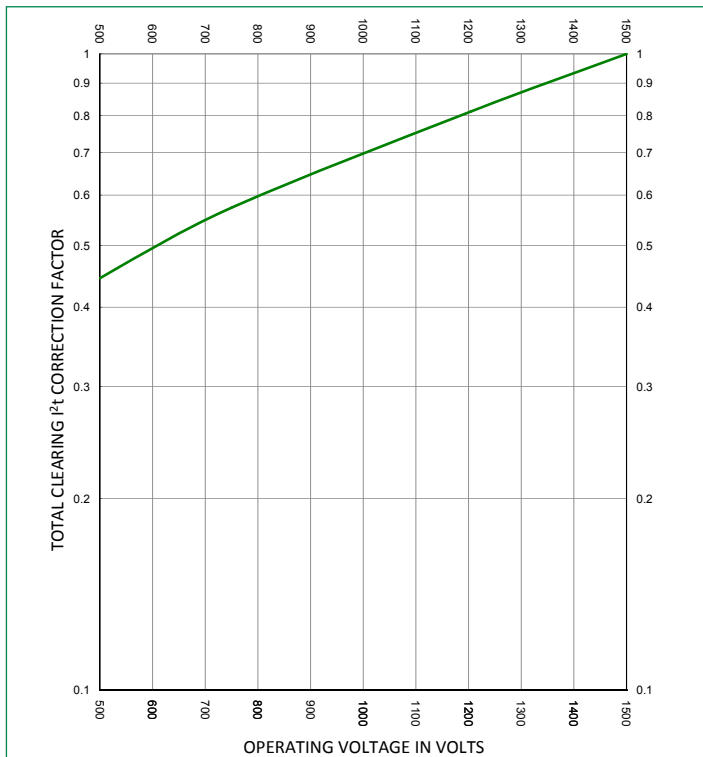
Time Current Curve (1XL Case Size 125 A)



POWR-SPEED® Fuse

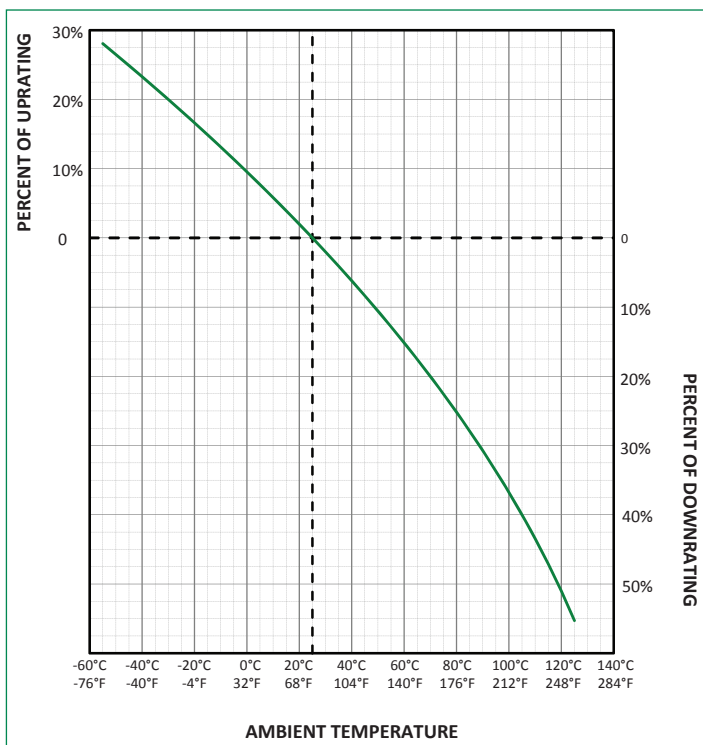
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Total Clearing I²T Correction Factor Curve (1XL)



Temperature Derating Curve

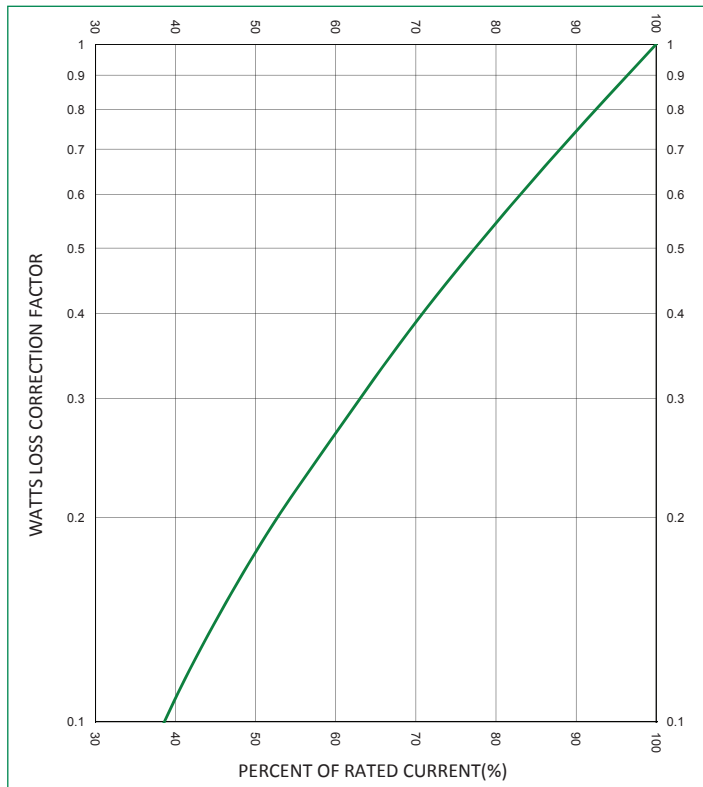
Ambient temperature: temperature of air immediately surrounding fuse



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Watts Loss Correction Factor Curve



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