





We make what matters work.*



At Eaton, we believe that power is a fundamental part of just about everything people do. That's why we're dedicated to helping our customers find new ways to manage electrical, hydraulic and mechanical power more efficiently, safely and sustainably. To improve people's lives, the communities where we live and work, and the planet our future generations depend upon. Because this is what really matters. And we're here to make sure it works.

To learn more go to: Eaton.com/whatmatters

EATON

Powering Business Worldwide

We make what matters work.

Eaton's Bussmann series pre-production and sample electric vehicle square body fuse links

Eaton's Bussmann series pre-production and sample electric vehicles 500 V d.c. and 1000 V d.c. square body fuse links are the ideal fusible circuit protection solution for battery and drive inverter protection, as well as DC charging and short-circuit back-up protection.

Eaton's world expertise in the design, manufacture and specifications of fuse links ensure your application will be protected by the best circuit protection solutions available.

Visit <https://www.eaton.com/us/en-us/catalog/emobility/ev-fuses.html> for information about electric vehicles fuse links



Description

Eaton's Bussmann series pre-production and sample electric vehicle square body fuse links have been specifically selected and designed to meet the power requirement for battery and drive inverter protection, as well as DC charging and short-circuit back-up protection. Therefore, we offer a range of standardised 500Vd.c. and 1000Vd.c. production samples for incorporation in test program.

Catalogue symbol

Fuse body sizes	Rated voltage	
	500 V d.c.	1000 V d.c.
1*	XEV1XSQ-Amps	XEV1XSQ-Amps-V
1	XEV1SQ-Amps	XEV1SQ-Amps-V
2	XEV2SQ-Amps	XEV2SQ-Amps-V

Standards/Approvals

These pre-production and sample fuse links are selected specifically with automotive environmental and mechanical conditions in mind, capable to withstand common automotive tests requirements for passenger vehicles, e.g. thermal shock, mechanical shock and vibration withstand (for parts attached to sprung masses). Common test plans carried out for automotive OEM's and tier 1 customers include tests from automotive standards:

- LV 124
- ISO 8820-8

Consult the Eaton technical team for further information on environmental and mechanical capability:
EVProtection@eaton.com

Technical data

- Rated voltage: 500 V d.c. and 1000 V d.c. (higher voltage available on request)
- Rated current: 125 A to 1000 A (higher current available on request)
- Fuse body sizes: 1*, 1 and 2

Note: Other rated current and fuse body sizes available on request

Features and benefits

- Standardised bolt-on tags are suitable for adequate heat transfer supporting high duty cyclic performance
- The high speed operation performance enables co-ordination with EV contactors as the thermal let-through and current limiting ability under short-circuit conditions is second to none
- The fuses current limiting ability reduces the peak currents seen by the system contactors during an electrical fault, thus reducing the magnetic forces that would otherwise cause levitation of contacts and the destruction of the system contactors
- Rating to 2ms time constant to reflect typical vehicle battery architecture
- Produced under IATF16949 quality system to ensure your application is safe

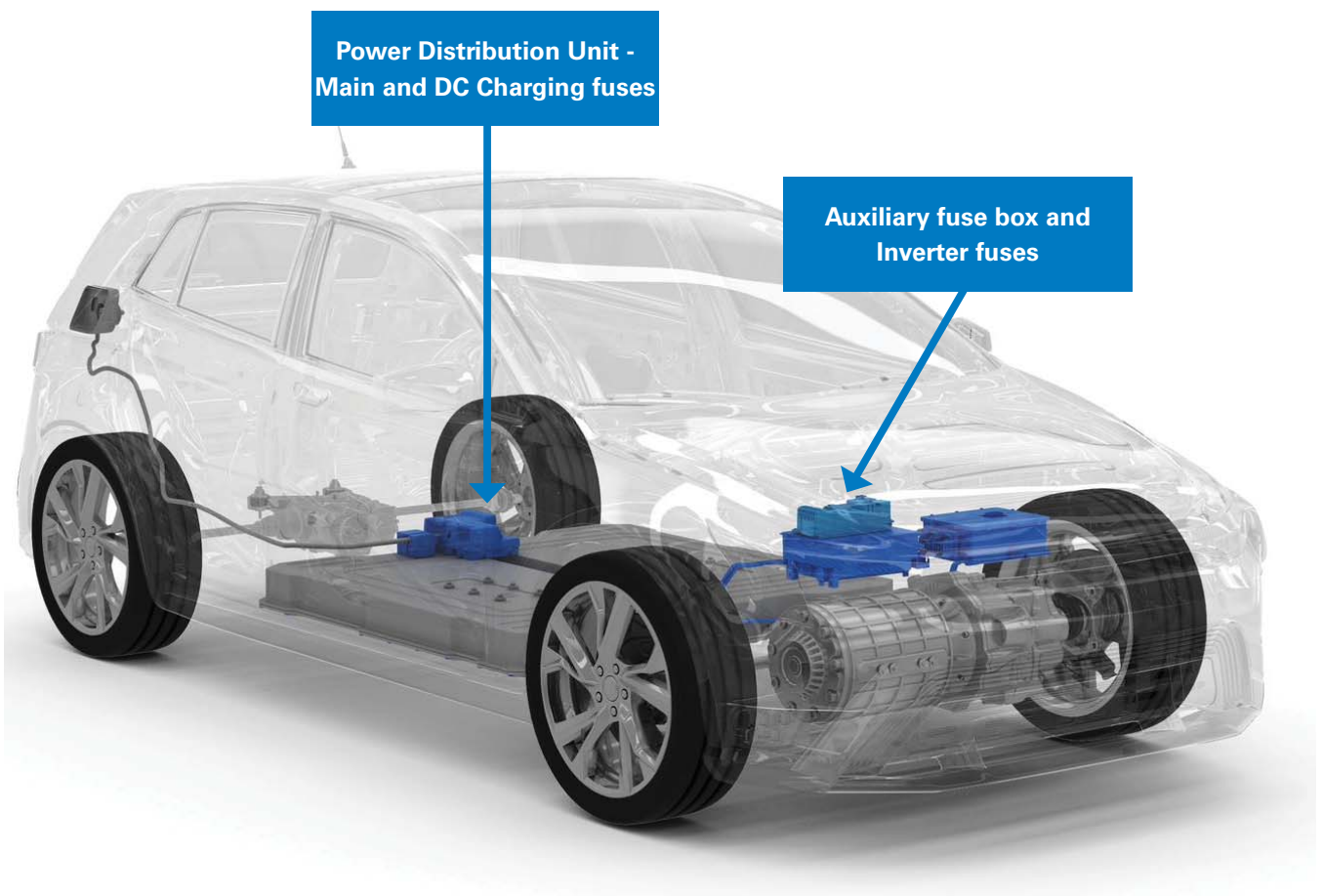


Pre-production and sample electric vehicles square body fuse links - Range overview

Rated current	125 A	160 A	200 A	250 A	315 A	350 A	400 A	450 A	500 A	550 A	630 A	700 A	800 A	900 A	1000 A
500 V d.c.															
1*				✓	✓	✓	✓	✓	✓	✓	✓				
1												✓	✓		
2														✓	✓
1000 V d.c.															
1*	✓	✓	✓	✓	✓	✓									
1							✓	✓	✓	✓	✓				
2												✓	✓		

Note: Other rated current and fuse body sizes available on request

Electric vehicles square body fuse links - Application



500 V d.c. Pre-production and sample electric vehicles square body fuse links

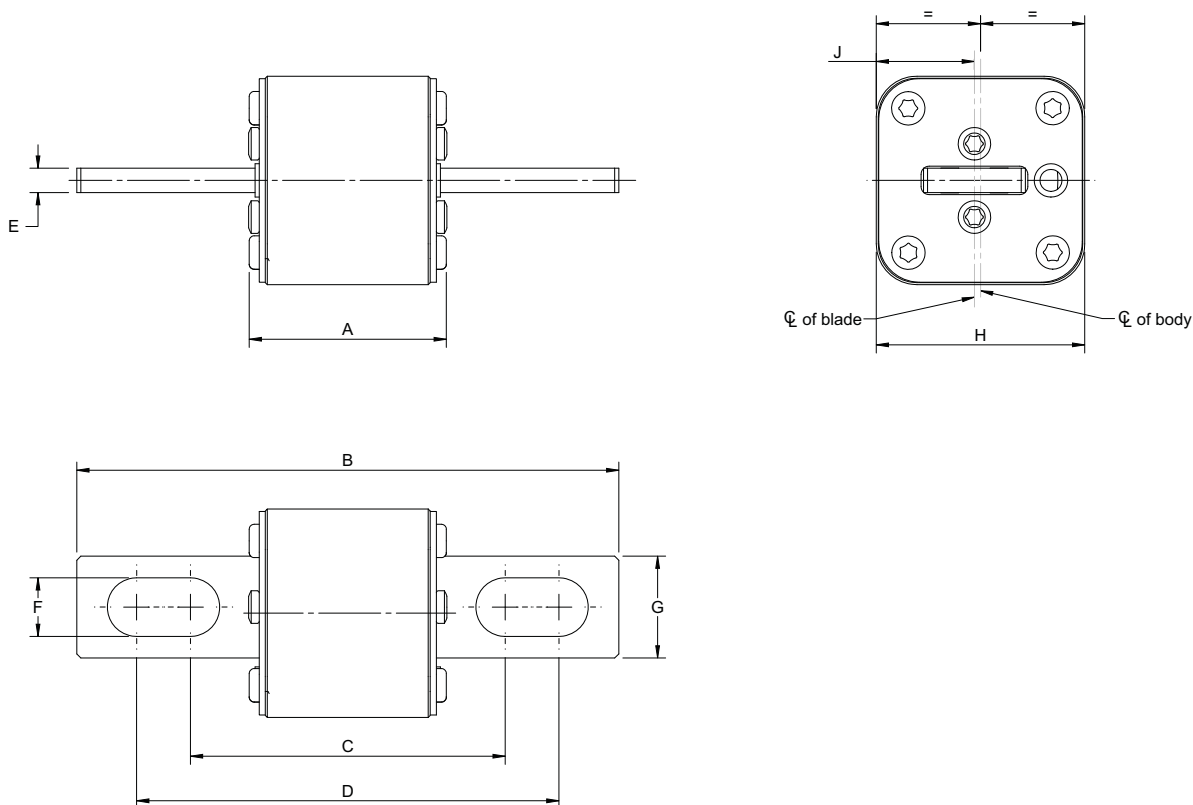
Pre-production and sample electric vehicle square body fuse links, 500 V d.c. 250 to 1000 Amps, fuse body sizes 1* to 2

Technical data

Catalogue number with bolted blade	Fuse body size	Rated current (Amps)	Rated voltage (V d.c.)	Pre-arcing I^2t	Power loss at $0.5 \times I_n$ (W)	Power loss at I_n (W)
XEV1XSQ-250	1*	250	500	4200	8	40
XEV1XSQ-315	1*	315	500	7000	10	50
XEV1XSQ-350	1*	350	500	10,000	10	55
XEV1XSQ-400	1*	400	500	15,000	11	60
XEV1XSQ-450	1*	450	500	21,000	12	65
XEV1XSQ-500	1*	500	500	27,000	13	70
XEV1XSQ-550	1*	550	500	34,000	14	75
XEV1XSQ-630	1*	630	500	48,500	15	80
XEV1SQ-700	1	700	500	69,500	16	85
XEV1SQ-800	1	800	500	105,000	18	95
XEV2SQ-900	2	900	500	125,000	21	110
XEV2SQ-1K0	2	1000	500	180,000	22	115



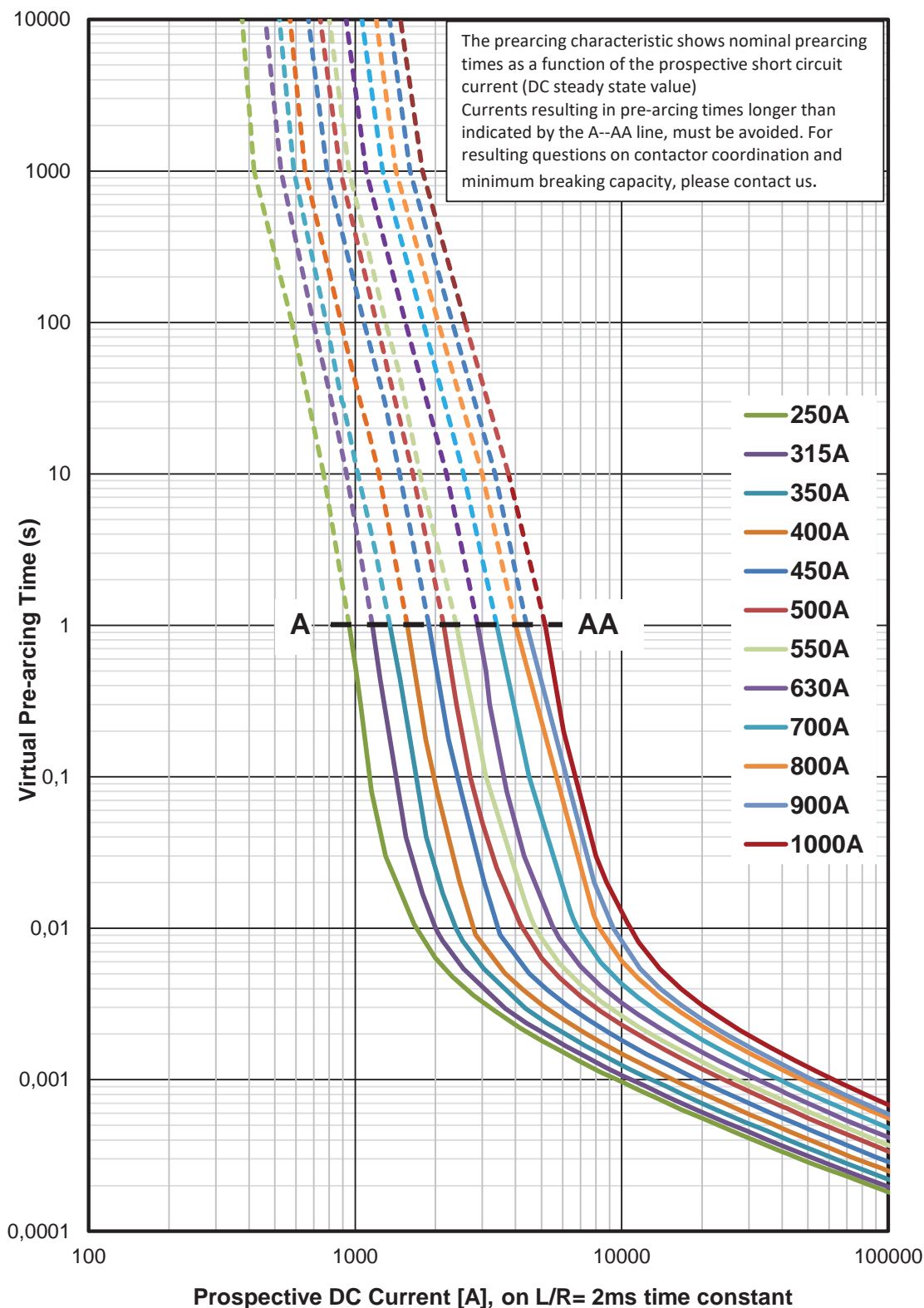
Dimensions - mm, sizes 1*, 1 and 2



Fuse body size	A max	B	C	D	E	F	G	H	J
XEV1XSQ	50.4	108.6	71	86	6	10.4	20	43	20
XEV1SQ	50.7	133.6	77.8	104.2	6	14.4	25	51.2	24.1
XEV2SQ	50.7	132.9	77.1	103.5	6	14.4	25	59	28.9

Pre-production and sample electric vehicle square body fuse links, 500 V d.c. 250 to 1000 Amps, fuse body sizes 1* to 2

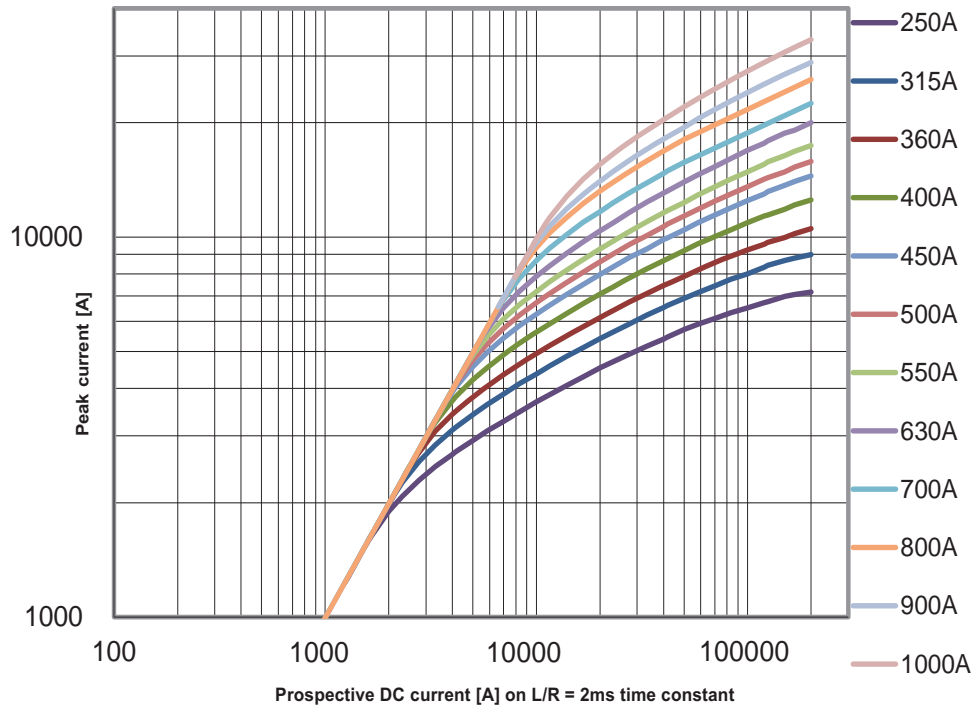
Time-current curve



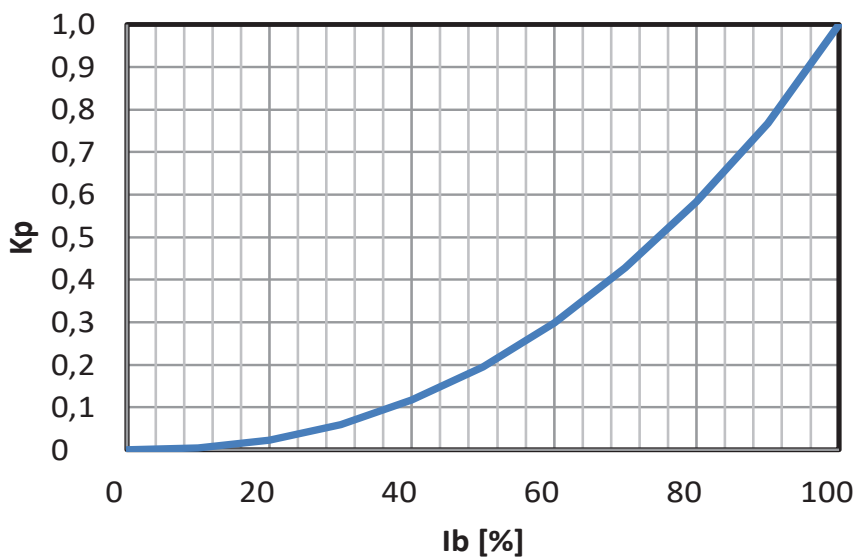
500 V d.c. Pre-production and sample electric vehicles square body fuse links

Pre-production and sample electric vehicle square body fuse links, 500 V d.c. 250 to 1000 Amps, fuse body sizes 1* to 2

Cut-off curve



Power loss curve



Ib : R.M.S. value of load current as % of rated current
Kp: correction factor for power loss

1000 V d.c. Pre-production and sample electric vehicle square body fuse links

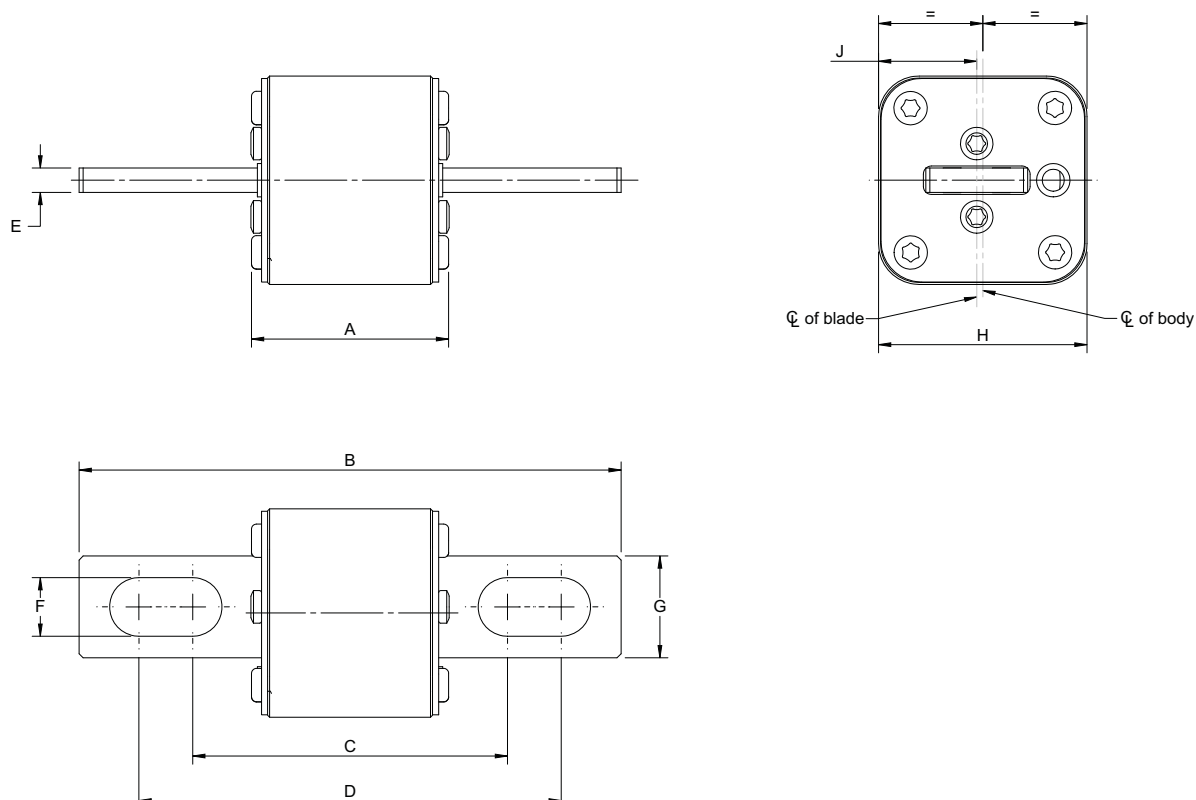
Pre-production and sample electric vehicle square body fuse links, 1000 V d.c. 125 to 800 Amps, fuse body sizes 1* to 2

Technical data

Catalogue number with bolted blade	Fuse body size	Rated current (Amps)	Rated voltage (V d.c.)	Pre-arcing i_{pt}	Power loss at $0.5 \times I_n$ (W)	Power loss at I_n (W)
XEV1XSQ-125-V	1*	125	1000	1450	7	35
XEV1XSQ-160-V	1*	160	1000	2600	8	40
XEV1XSQ-200-V	1*	200	1000	5150	9	45
XEV1XSQ-250-V	1*	250	1000	9200	11	55
XEV1XSQ-315-V	1*	315	1000	18,500	12	60
XEV1XSQ-350-V	1*	350	1000	27,000	13	65
XEV1SQ-350-V	1	350	1000	20,000	14	70
XEV1SQ-400-V	1	400	1000	29,500	15	75
XEV1SQ-450-V	1	450	1000	42,000	16	80
XEV1SQ-500-V	1	500	1000	69,500	17	85
XEV1SQ-550-V	1	550	1000	95,000	19	95
XEV1SQ-630-V	1	630	1000	130,000	20	100
XEV2SQ-700-V	2	700	1000	160,000	25	125
XEV2SQ-800-V	2	800	1000	245,000	26	130



Dimensions - mm, sizes 1*, 1 and 2

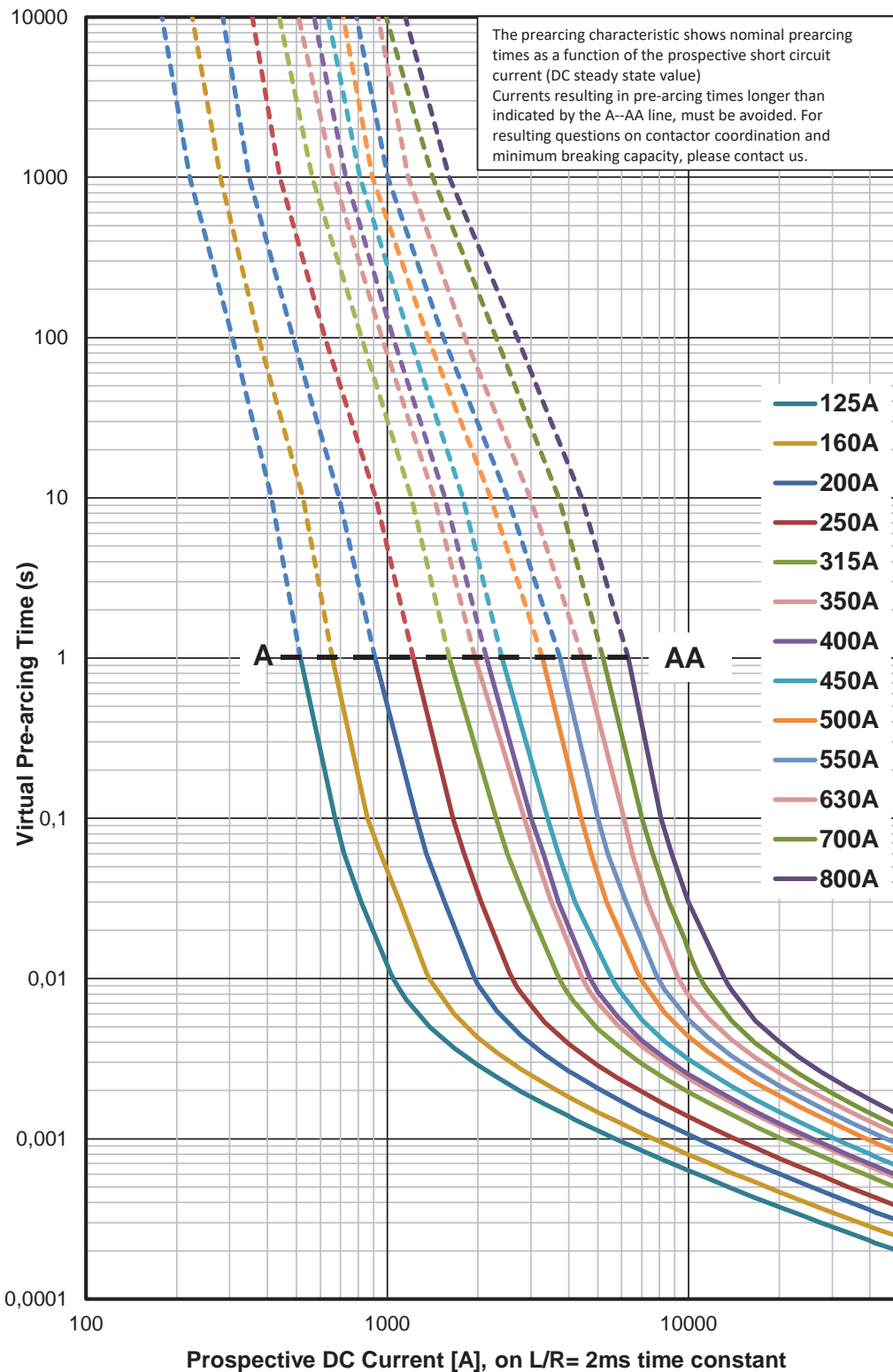


Fuse body size	A max	B	C	D	E	F	G	H	J
XEV1XSQ-V	80.7	159.0	106.6	136.0	6	10.3	20	43	20
XEV1SQ-V	74.7	156.6	100.8	127.2	6	14.4	25	51.2	24.1
XEV2SQ-V	75.0	156.9	101.1	127.5	6	14.4	25	59.2	28.9

1000 V d.c. Pre-production and sample electric vehicle square body fuse links

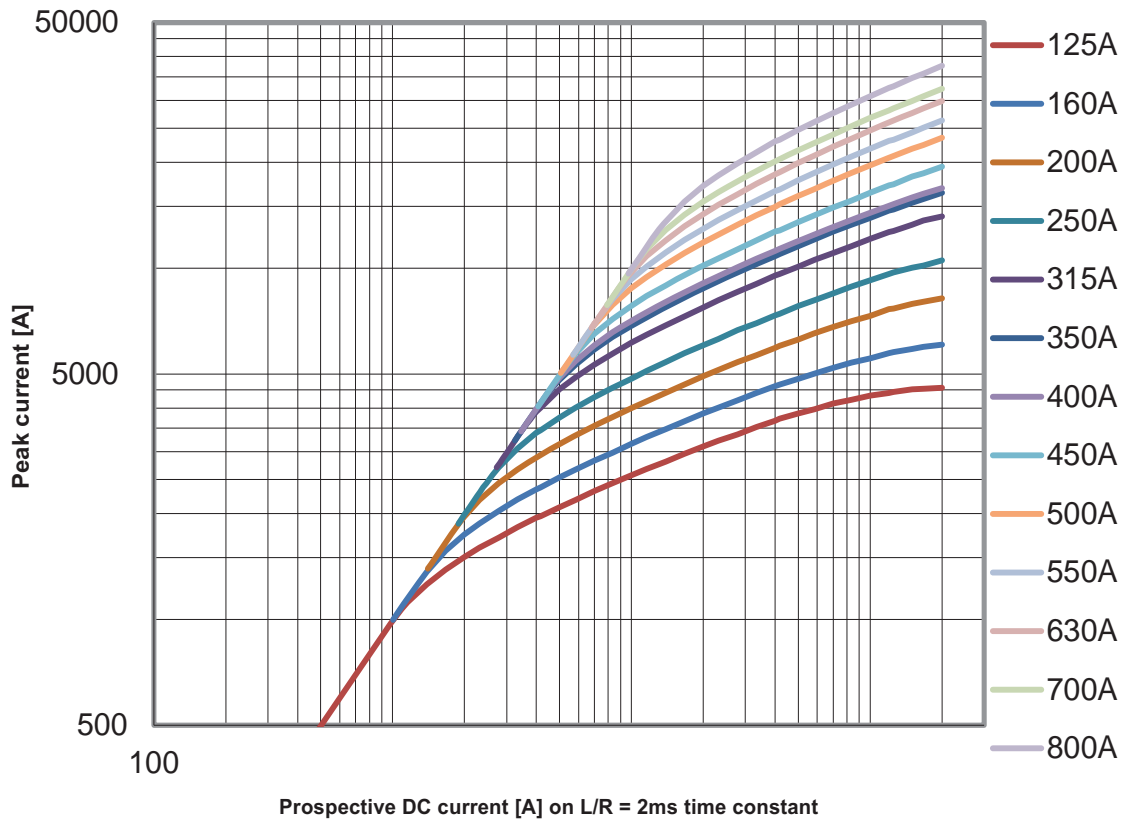
Pre-production and sample electric vehicle square body fuse links, 1000 V d.c. 125 to 800 Amps, fuse body sizes 1* to 2

Time-current curve

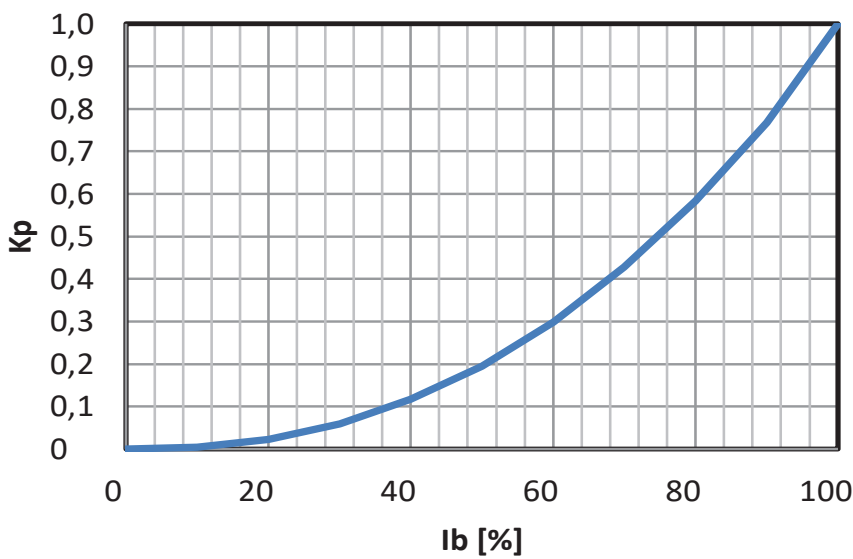


Pre-production and sample electric vehicle square body fuse links, 1000 V d.c. 125 to 800 Amps, fuse body sizes 1* to 2

Cut-off curve



Power loss curve



Ib : R.M.S. value of load current as % of rated current
 Kp: correction factor for power loss



Custom solutions available

Our teams of fields application engineers and engineers are able to draw upon a wealth of knowledge to fully meet your electric vehicle needs, help you select the best fuse and also develop customised products specific to your application.

Please contact us for custom solutions and deviating system requirements such as:

- Rated voltage greater than 1000 V d.c.
- Rated current greater than 1000 Amps
- Charging/driving profile simulation
- Tags and mounting requirements
- Contact coordination and cable protection requirements, such as minimum breaking capacity or let-through energy limits

Contact us today:

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USA: FUSETECH@eaton.com

Eaton's mission is to improve the quality of life and the environment through the use of power management technologies and services. We provide sustainable solutions that help our customers effectively manage electrical, hydraulic, and mechanical power – more safely, more efficiently, and more reliably. Eaton's 2020 revenues were \$17.9 billion, and we sell products to customers in more than 175 countries. We have approximately 92,000 employees. For more information, visit Eaton.com.

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