



**New**

## 1000 V d.c. FWE High speed fuses specifically designed for EV Charging stations

Eaton's Bussmann series 1000 V d.c. FWE High speed fuses, specifically designed for EV Charging stations, now available in multiple fuse body sizes.



### 1000 V d.c fuse body sizes

- Cylindrical 10 x 38 mm
- Cylindrical 14 x 51 mm
- North American round body fuse

### Technical data

- Rated voltage 1000 V d.c. (IEC/UL)
- Rated current up to 600 A
- 100 kA breaking capacity tested
- 10 ms time constant tested (suitable for most DC applications)
- Operating class: Ultra rapid characteristics available as partial and full range operating class

### Standards

- CE
- IEC 60269-4
- UL 248-13 recognised

### Features and benefits

- Eaton's Bussmann® series High-speed fuse links have leading DC performance making them the ideal choice for the protection of high-power DC Charging station applications.
- Wide range of solutions available for the protection of DC conditioning circuits and high Voltage DC/DC Converters for up to 400kW+ rated chargers.
- Supports the full range of charger output ratings up to 1000VDC defined by CCS & CHAdeMO Protocols
- Compact, space saving design coupled with a low minimum breaking current which offers easy coordination within DC applications and reduces dimensioning requirements of DC contactors to optimize space and decrease overall cost of system
- Demonstrated performance in extreme temperature cycling conditions ensure your installation will be protected by the best possible and most suitable electrical circuit protection solutions.

### Typical applications

- DC Charging stations:
  - Private & Public charging stations
  - Slow (low power) and fast (high power)
- Specialist vehicle onboard applications
- General DC power conversion equipment and battery systems

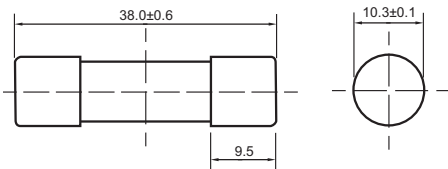
**EATON**

Powering Business Worldwide

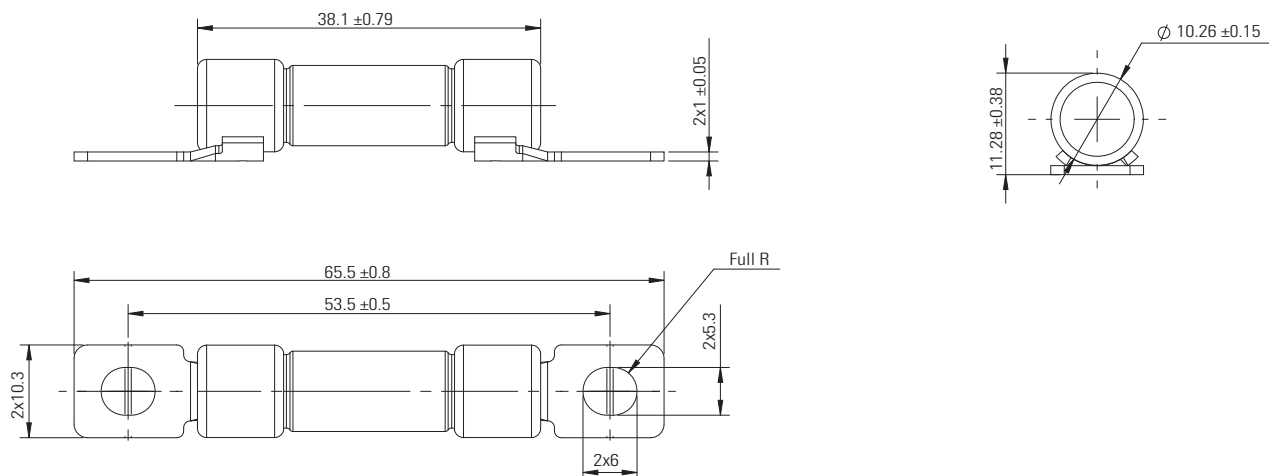
## Catalogue numbers

Fuse link type	Fuse body size	Rated voltage	Catalogue number	Rated current	Watts loss (50% rated current)	Watts loss (100% rated current)	Pre-arcing I <sup>2</sup> t (A <sup>2</sup> Sec)	Clearing I <sup>2</sup> t	Breaking capacity	Operating class	Pack qty
10 x 38 mm and 14 x 51 mm available in 3 versions: - ferrule - with bolted tags - tags for PCB mountable		1000 V d.c. (IEC/UL)	Enquire at Eaton bulehighspeed-technical@eaton.com	15 A	TBC	2.8	120	700	50 kA	gR	N/A
				20 A	TBC	3.7	227	1200	50 kA	gR	N/A
				25 A	TBC	4	480	2200	50 kA	gR	N/A
				30 A	TBC	4.9	677	3400	50 kA	gR	N/A
				35 A	TBC	7.5	415	2100	50 kA	gR	N/A
				40 A	TBC	8.2	620	3000	50 kA	gR	N/A
				50 A	TBC	9.2	1200	5500	50 kA	gR	N/A
North American round body	25 mm	1000 V d.c. (IEC/UL)	FWE-70A	70 A	3.8	21	680	5060	100 kA	aR	5
			FWE-80A	80 A	4.2	24	1020	7240	100 kA	aR	5
			FWE-90A	90 A	4.6	27	1400	9400	100 kA	aR	5
			FWE-100A	100 A	5	30	1820	12300	100 kA	aR	5
North American round body	30 mm	1000 V d.c. (IEC/UL)	FWE-125A	125 A	6	43	1830	8400	100 kA	aR	1
			FWE-150A	150 A	7	49	2670	12900	100 kA	aR	1
			FWE-175A	175 A	8	52	4670	22300	100 kA	aR	1
			FWE-200A	200 A	9	56	6900	31600	100 kA	aR	1
North American round body	40 mm	1000 V d.c. (IEC/UL)	FWE-225A	225 A	10	69	7880	34600	100 kA	aR	1
			FWE-250A	250 A	11	79	9940	46700	100 kA	aR	1
			FWE-275A	275 A	12	83	13000	57000	100 kA	aR	1
			FWE-300A	300 A	13	87	16800	73900	100 kA	aR	1
North American round body	50 mm	1000 V d.c. (IEC/UL)	FWE-350A	350 A	15	100	21100	132000	100 kA	aR	1
			FWE-400A	400 A	16	110	31500	186000	100 kA	aR	1
North American round body	60 mm	1000 V d.c. (IEC/UL)	FWE-450A	450 A	19	139	35300	161000	100 kA	aR	1
			FWE-500A	500 A	21	155	49300	197000	100 kA	aR	1
			FWE-550A	550 A	23	167	58600	312000	100 kA	aR	1
			FWE-600A	600 A	25	180	74700	335000	100 kA	aR	1

## Dimensions (mm) - 10 x 38 mm fuse links - ferrule

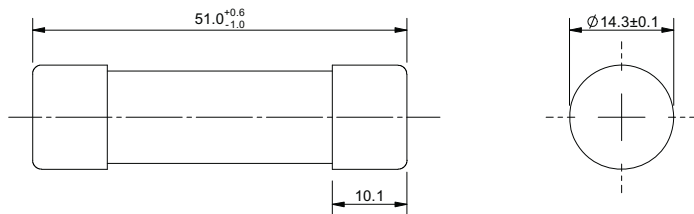


## Dimensions (mm) - 10 x 38 mm fuse links - bolted tags

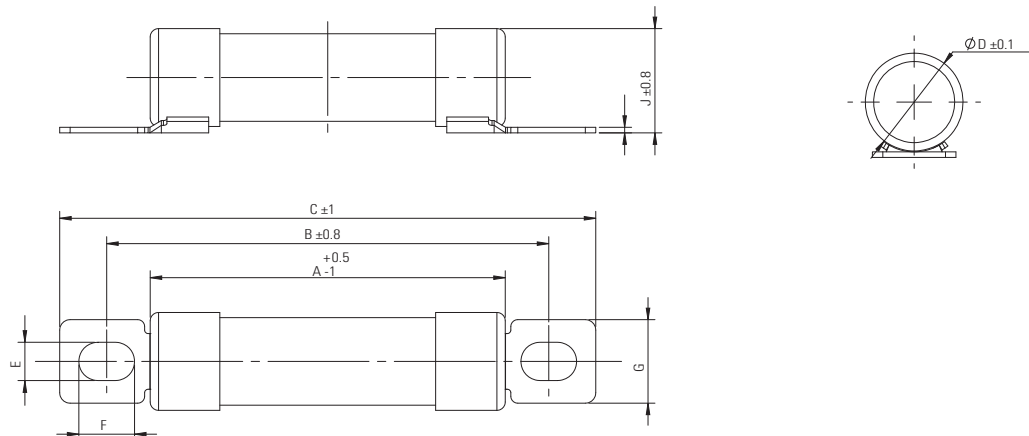


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### Dimensions (mm) - 14 x 51 mm fuse links - ferrule

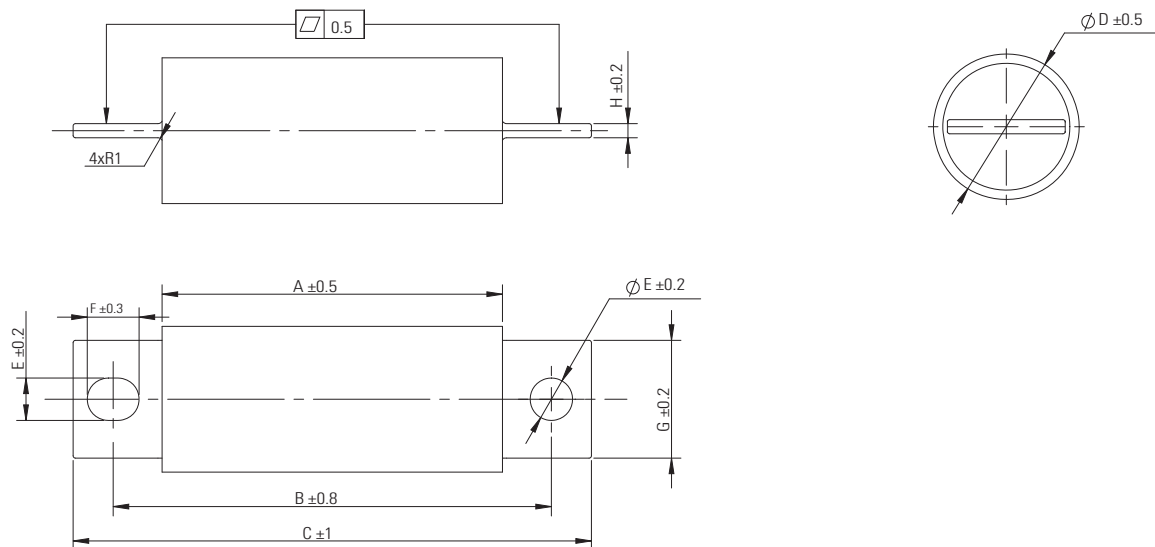


### Dimensions (mm) - 14 x 51 mm fuse links - bolted tags



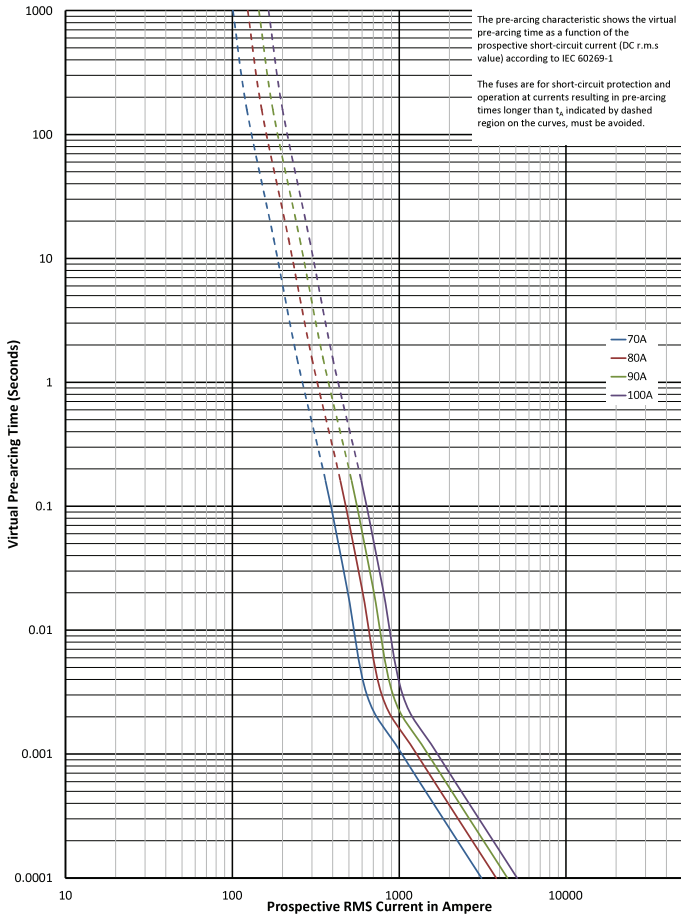
Rated current	A	B	C	D	E	F	G	H	J
35 A to 50 A	51	63.5	77	14.3	5.5	8	12	0.8	15.1

### Dimensions (mm) - North American round body fuse links

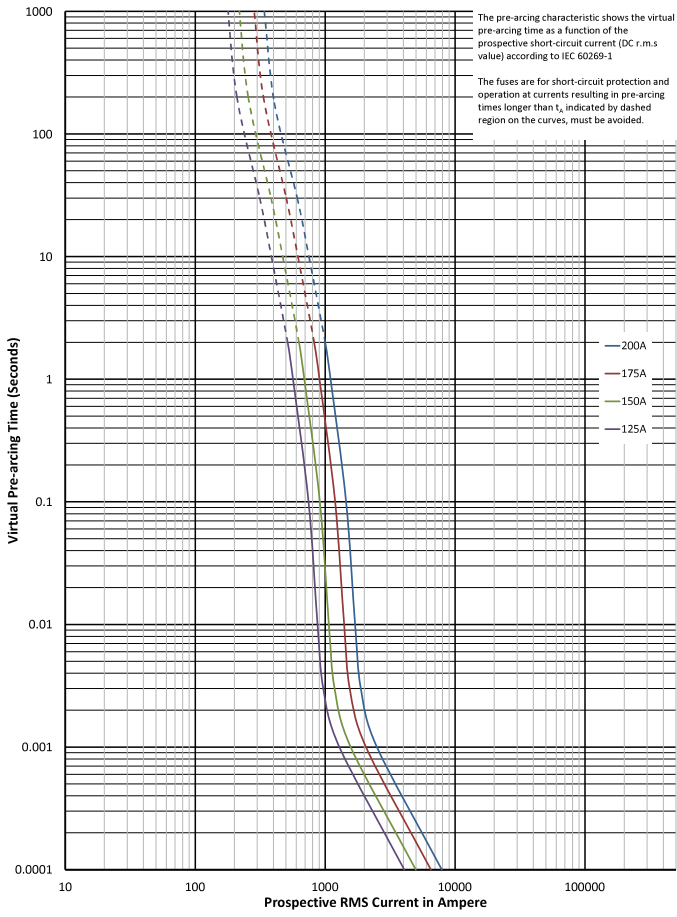


Catalogue number	A	B	C	D	E	F	G	H
FWE-70A to FWE-100A	72.2	93	110	25.4	9	11	19	2.2
FWE-125A to FWE-200A	72.2	93	110	31	9	11	25	3
FWE-225A to FWE-300A	72.2	100	122	38.1	11	13	28	3.5
FWE-350A to FWE-400A	72.2	100	122	50.8	11	13	28	5
FWE-450A to FWE-600A	72.2	100	122	63.5	11	13	40	6

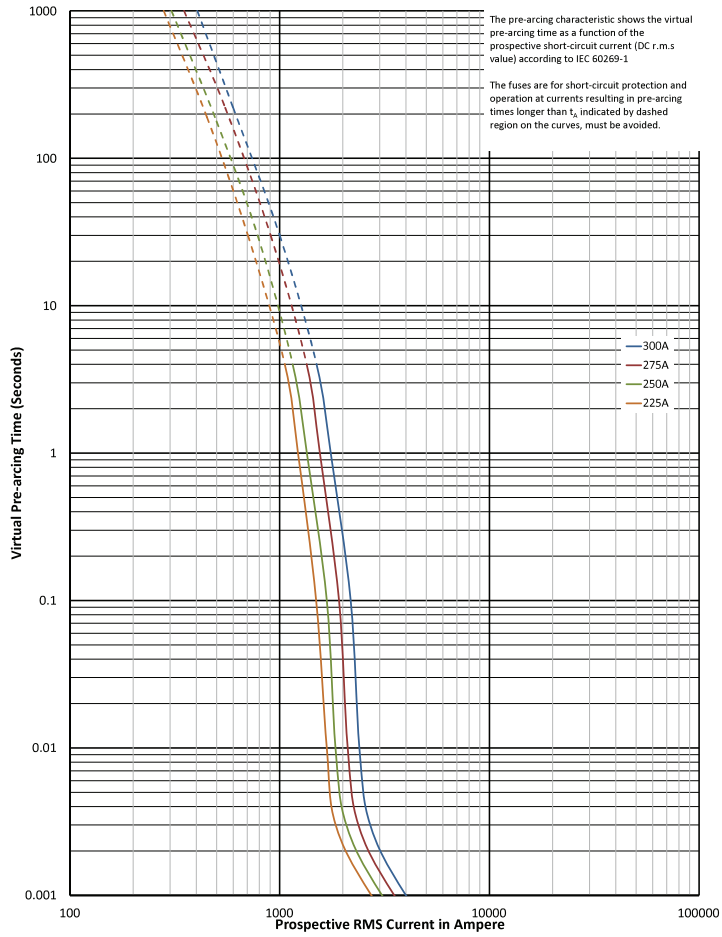
## Time current curve - 70 A to 100 A



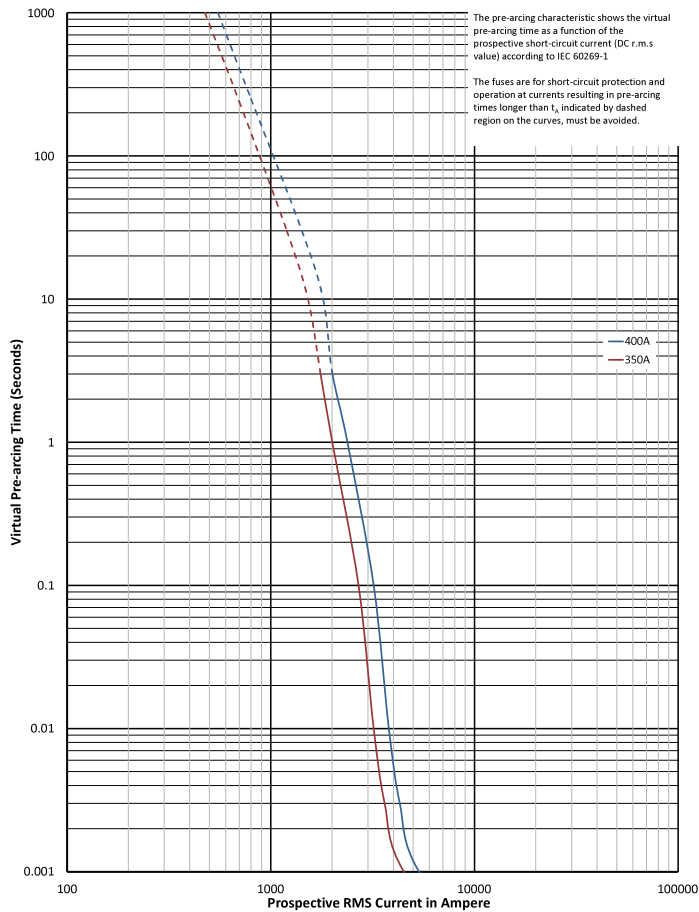
## Time current curve - 125 A to 200 A



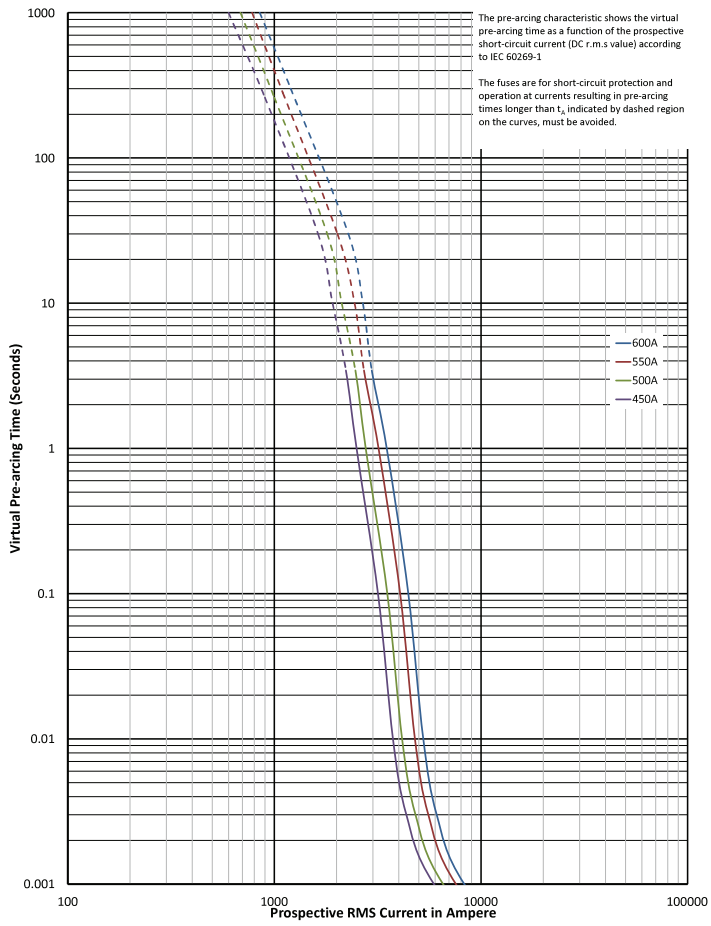
## Time current curve - 225 A to 300 A



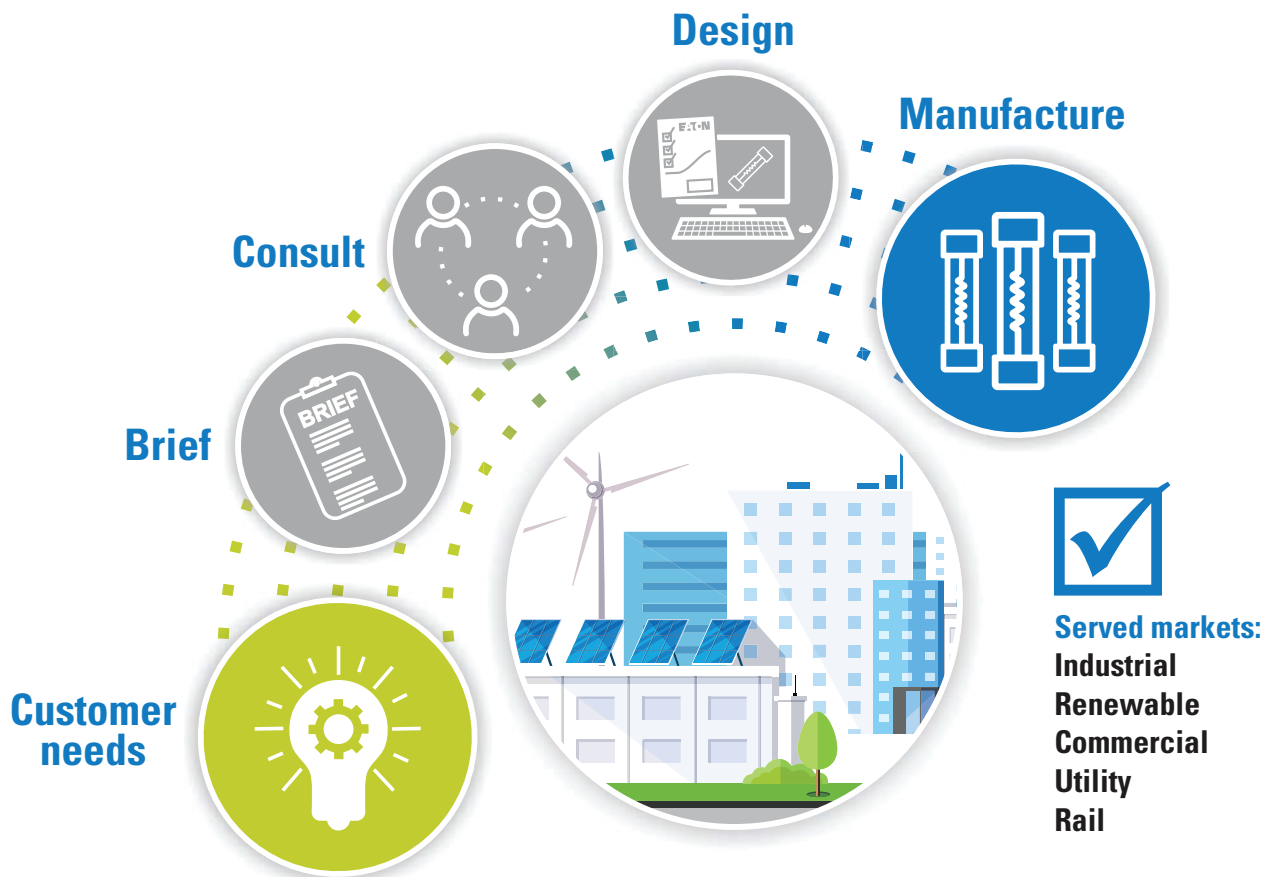
## Time current curve - 350 A and 400 A



## Time current curve - 450 A to 600 A



# Customised fuse design service



**Eaton's Field Applications Engineers** are able to draw upon more than 100 years of fuse design knowledge to fully meet your application needs and ensure you can rely on the best in class electrical circuit protection solutions.

As the trend towards clean energy continues to drive new technologies in renewable energy generation, energy storage, electrical transportation and the adoption of DC technology throughout wider industries, the demand for customised fusing products has only increased.

Our Application and Design Engineers located at R&D centres in North America, Europe and Asia can leverage over 100 years of fuse design and application experience along with our in-house test labs to meet any customised solution requests for **Eaton's Bussmann series fuses**.

Our services include:

- New current/voltage ratings
- Design to meet  $I^2t$  requirements
- Customised mounting connection and plating materials
- Modify indicator locations/ add or remove indicators
- Special end connections
- Acquire UL/IEC/CCC/CSA certificates
- Customised testing such as shock vibration

**Contact us today:**

**For general fuse enquiries:** [buletechnical@eaton.com](mailto:buletechnical@eaton.com)

**For high speed fuses enquiries :** [bulehighspeedtechnical@eaton.com](mailto:bulehighspeedtechnical@eaton.com)

Eaton is an intelligent power management company dedicated to improving the quality of life and protecting the environment for people everywhere. We are guided by our commitment to do business right, to operate sustainably and to help our customers manage power - today and well into the future. By capitalizing on the global growth trends of electrification and digitalization, we're accelerating the planet's transition to renewable energy, helping to solve the world's most urgent power management challenges, and doing what's best for our stakeholders and all of society.

Founded in 1911, Eaton has been listed on the NYSE for nearly a century. We reported revenues of \$19.6 billion in 2021 and serve customers in more than 170 countries. For more information, visit [www.eaton.com](http://www.eaton.com). Follow us on Twitter and LinkedIn.

## Contact your local Eaton office

Eaton Electrical Products Limited  
Unit 1, Hawker Business Park  
Melton Road  
Burton-on-the-Wolds  
LE12 5TH  
Leicestershire  
United Kingdom  
[GBBURsales@eaton.com](mailto:GBBURsales@eaton.com)  
[www.eaton.com](http://www.eaton.com)

**Eaton Electrical Products Limited**  
Unit 1, Hawker Business Park,  
Melton Road, Burton-on-the-Wolds  
Leicestershire, LE12 5TH  
United Kingdom

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