Pre-production and sample electric vehicle power fuses — 500 Vdc, 50-400 A

RoHS 2011/65/EU

Fuse size/ratings

- 20 mm diameter, 50-150 A
- 25 mm diameter, 100-250 A
- 30 mm diameter, 200-400 A

Description

Eaton's Bussmann™ series Electric Vehicle (EV) fuses for protecting high power battery charging and management systems up to 500 Vdc in ratings from 50 to 400 amps.

Specifications:

Ratings

- Volts - 500 Vdc
- Amps – 50-400 A
- Interrupting rating
  - Max DC – 20 kA
  - Min DC 200%

Agency information

- Designed to:
  - JASO D622
  - ISO 8820-8
- Manufactured under a IATF 16949 quality system for compliance with automotive requirements
- RoHS compliant
- REACH declaration available upon request

Features

- Higher voltage rating provides overall system efficiency using smaller, more economical conductors while meeting the needs of higher voltage battery packs
- Higher interrupting rating protects high capacity battery packs needed for vehicle acceleration and range requirements
- Up to ten times faster opening under high fault current conditions helps assure reliable protection of circuits and components
- Requires up to 48% less space than conventional high speed fuses to help reduce space and weight
- Data logging system marks each fuse with a serial number and date code for traceability of Critical to Quality characteristics
- To help project the life of the fuse in your application, unique driving profiles and conditions can be simulated to verify proper fuse size and performance under a wide range of driving behaviors
- Operation as low as 200% overload provides back up protection to the battery management system
- Can be applied in parallel to realize greater ampacity within sizing guidelines

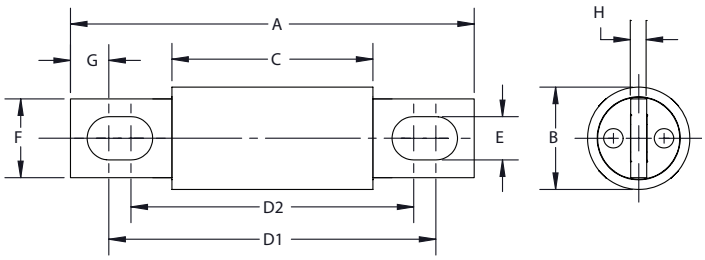
Fuse ratings

Amps	Average @ 20 kA/500 Vdc*		Power loss (W) @ 50%**
	Melting I^2t	Clearing I^2t	
20 mm diameter case			
50	368	746	1.19
60	529	1074	1.43
70	720	1462	1.67
80	910	2200	1.90
100	1470	2983	2.38
125	1384	4114	3.12
150	1993	5924	3.75
25 mm diameter case			
100	1043	2317	3.00
125	1630	3620	3.75
150	1618	5499	4.50
175	2202	7485	5.25
200	3398	10,220	6.00
225	4300	12,934	6.97
250	5309	15,968	7.75
30 mm diameter case			
200	3211	8665	6.74
225	4064	10,967	7.58
250	5017	13,539	8.42
300	7224	19,496	10.11
350	9833	26,536	11.79
400	12,843	34,660	13.47

* For system parameters below 500 Vdc and 20 kA, see clearing I^2t correction factors on page 9.

**50 percent of fuse label amp rating tested at 23°C ± 2°C.

Dimensions† — mm



Fuse diameter (mm)	Amp range	A	B	C	D1	D2	E	F	G	H
20	50-150	81	20	40	66	57	8.7	16	7.7	3.2
25	100-250	92	25	53	77	68	8.8	19	7.8	3.2
30	200-400	92	31	53	75	68	8.8	25	9.0	4.8

† Dimension are nominal values.

Available pre-production and sample catalog numbers

Catalog no.		Amps
Pre-production fuses*	Sample fuses**	
20 mm diameter case		
XEV20-50	XEV20-50-SP	50
XEV20-60	XEV20-60-SP	60
XEV20-70	XEV20-70-SP	70
XEV20-80	XEV20-80-SP	80
XEV20-100	XEV20-100-SP	100
XEV20-100-S	XEV20-100-S-SP	
XEV20-125	XEV20-125-SP	125
XEV20-125-S	XEV20-125-S-SP	
XEV20-150	XEV20-150-SP	150
XEV20-150-PX	XEV20-150-PX-SP	
XEV20-150-S	XEV20-150-S-SP	
25 mm diameter case		
XEV25-100	XEV25-100-SP	100
XEV25-125	XEV25-125-SP	125
XEV25-150	XEV25-150-SP	150
XEV25-175	XEV25-175-SP	175
XEV25-200	XEV25-200-SP	200
XEV25-225	XEV25-225-SP	225
XEV25-250	XEV25-250-SP	250
30 mm diameter case		
XEV30-200	XEV30-200-SP	200
XEV30-225	XEV30-225-SP	225
XEV30-250	XEV30-250-SP	250
XEV30-300	XEV30-300-SP	300
XEV30-300-CE	XEV30-300-CE-SP	
XEV30-350	XEV30-350-SP	350
XEV30-400	XEV30-400-SP	400

* Pre-production fuses sold in non-breakable quantities for these case sizes: 20 mm - 250 fuses, 25 mm - 100 fuses, 30 mm - 100 fuses.

**Sample fuses sold in non-breakable quantities of four fuses.

To order pre-production or sample fuses, contact Bussmann Customer Service

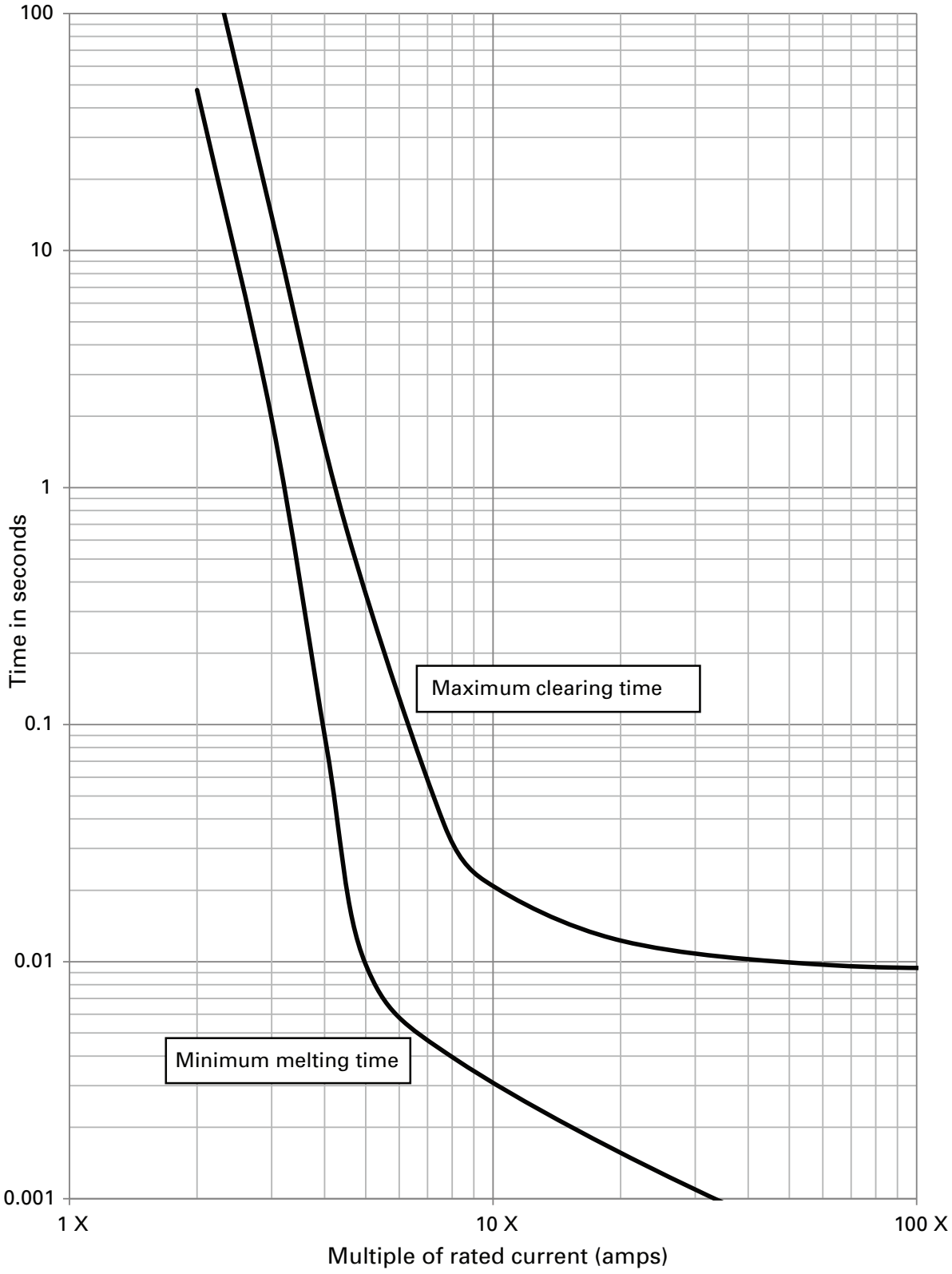
Phone: 855-BUSSMANN (855-287-7626) M—F,
7:00 a.m. — 6:00 p.m., Central time

Email: BussCustSat@Eaton.com

For information on production fuses, contact your local Bussmann product sales representative.

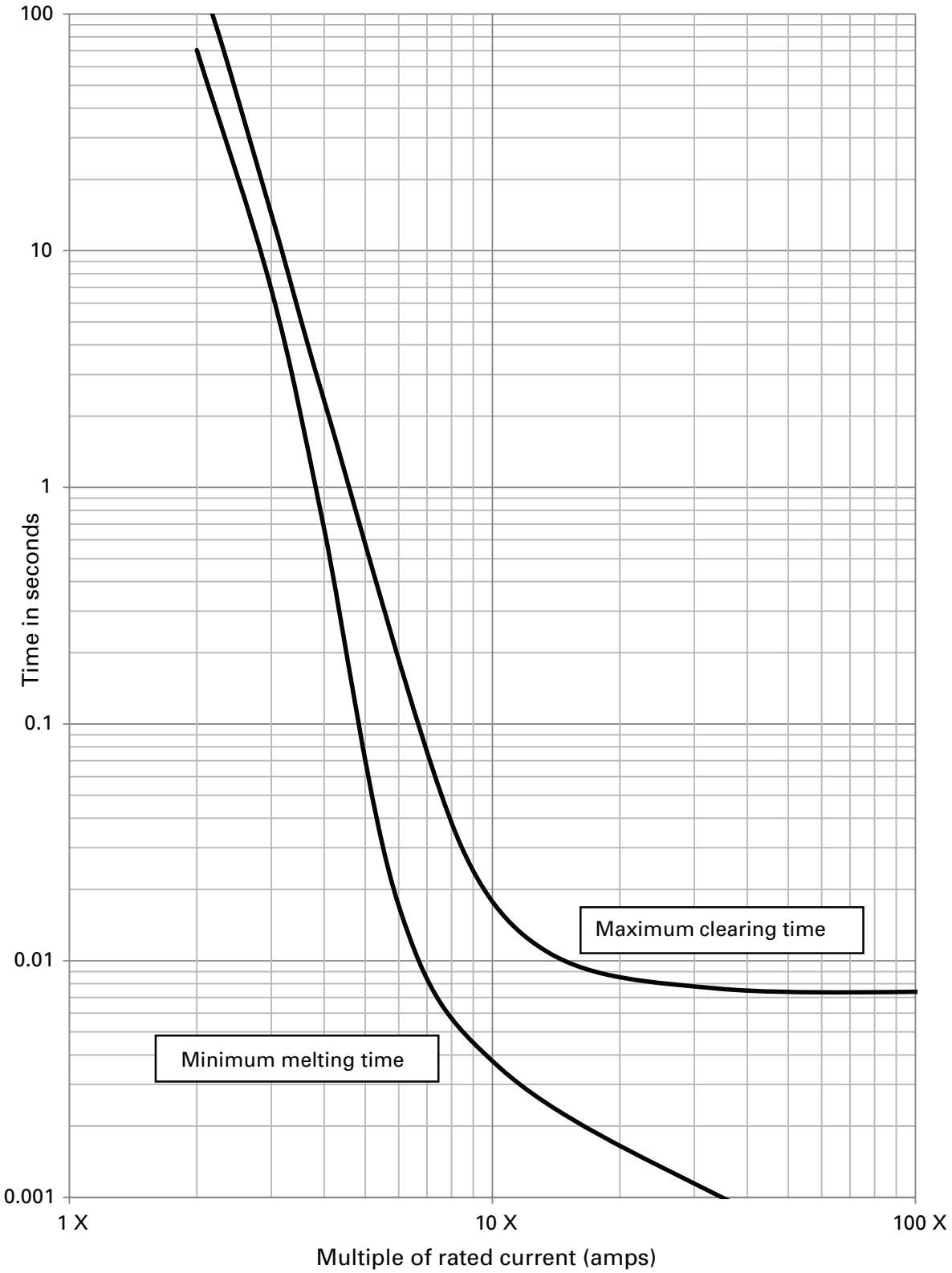
20 mm diameter DC minimum melt / maximum clearing time-current curves — multiple of rated current

For 50 to 100 amp fuses supplied via DC rectifier @ 500 Vdc and time constant (L/R) 2 ms ± 0.5 ms



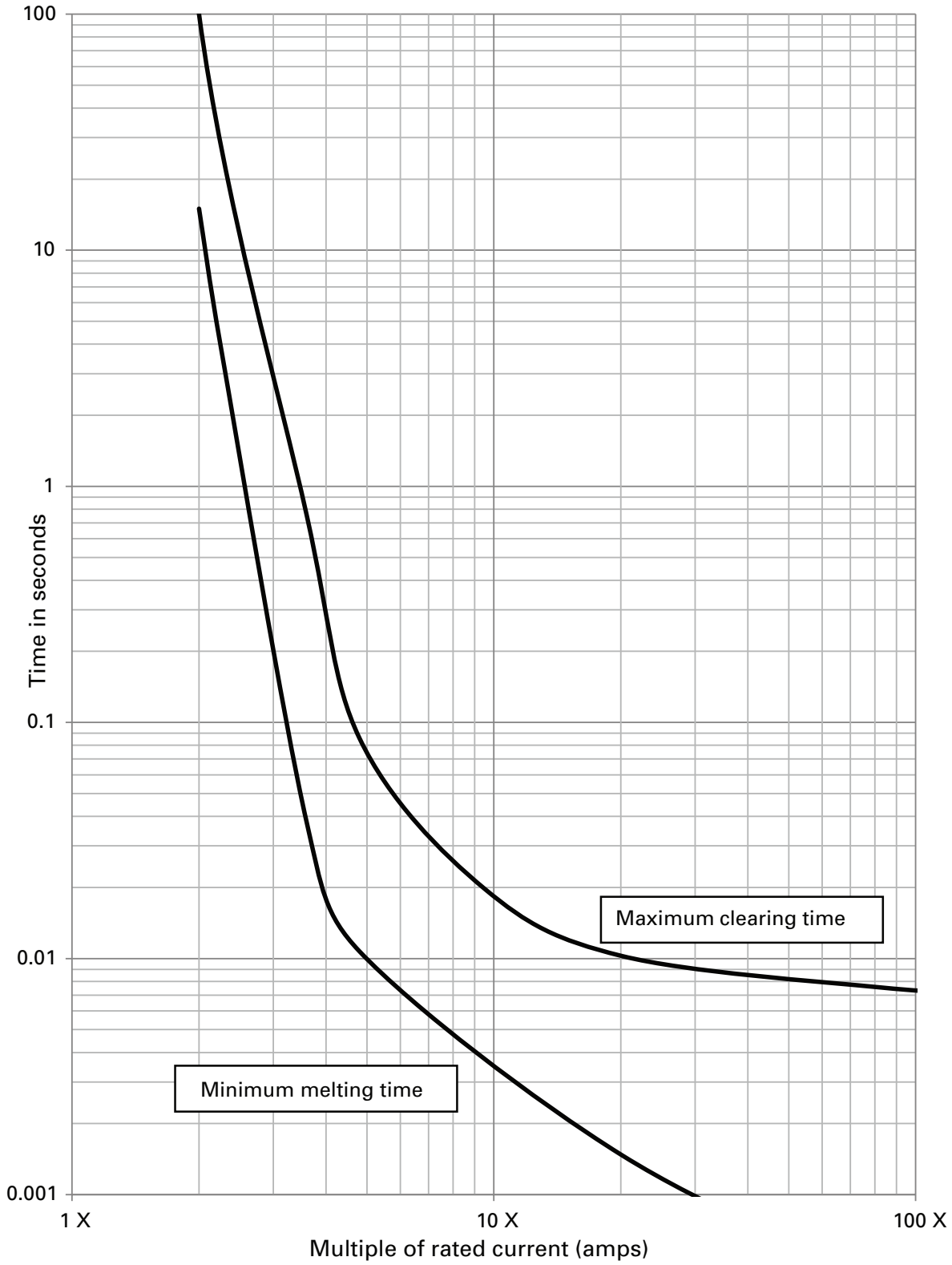
20 mm diameter DC minimum melt / maximum clearing time-current curves — multiple of rated current

For 125 to 150 amp fuses supplied via DC rectifier @ 500 Vdc and time constant (L/R) 2 ms ± 0.5 ms



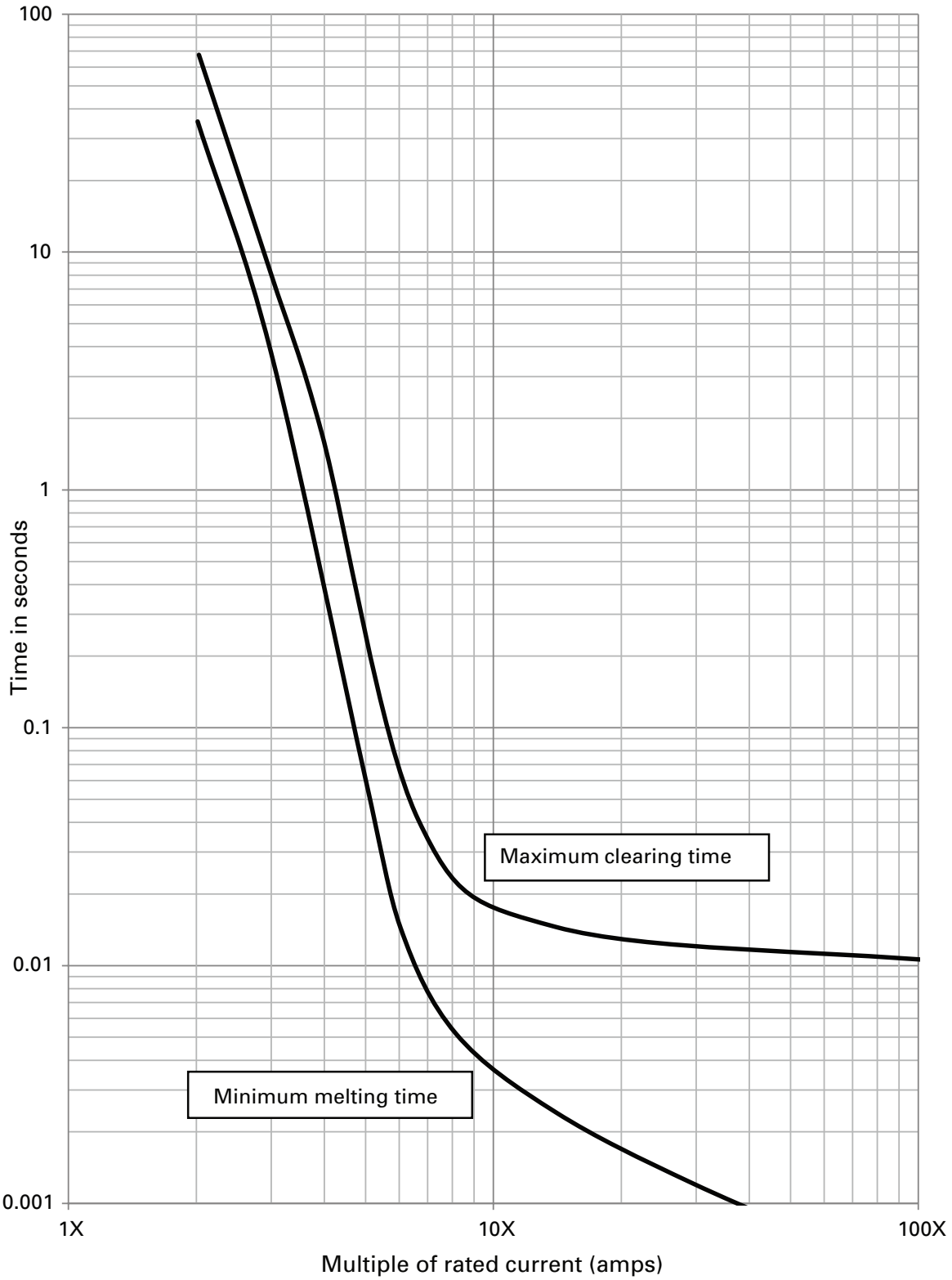
25 mm diameter DC minimum melt / maximum clearing time-current curves — multiple of rated current

For 100 to 150 amp fuses supplied via DC rectifier @ 500 Vdc and time constant (L/R) 2 ms ± 0.5 ms



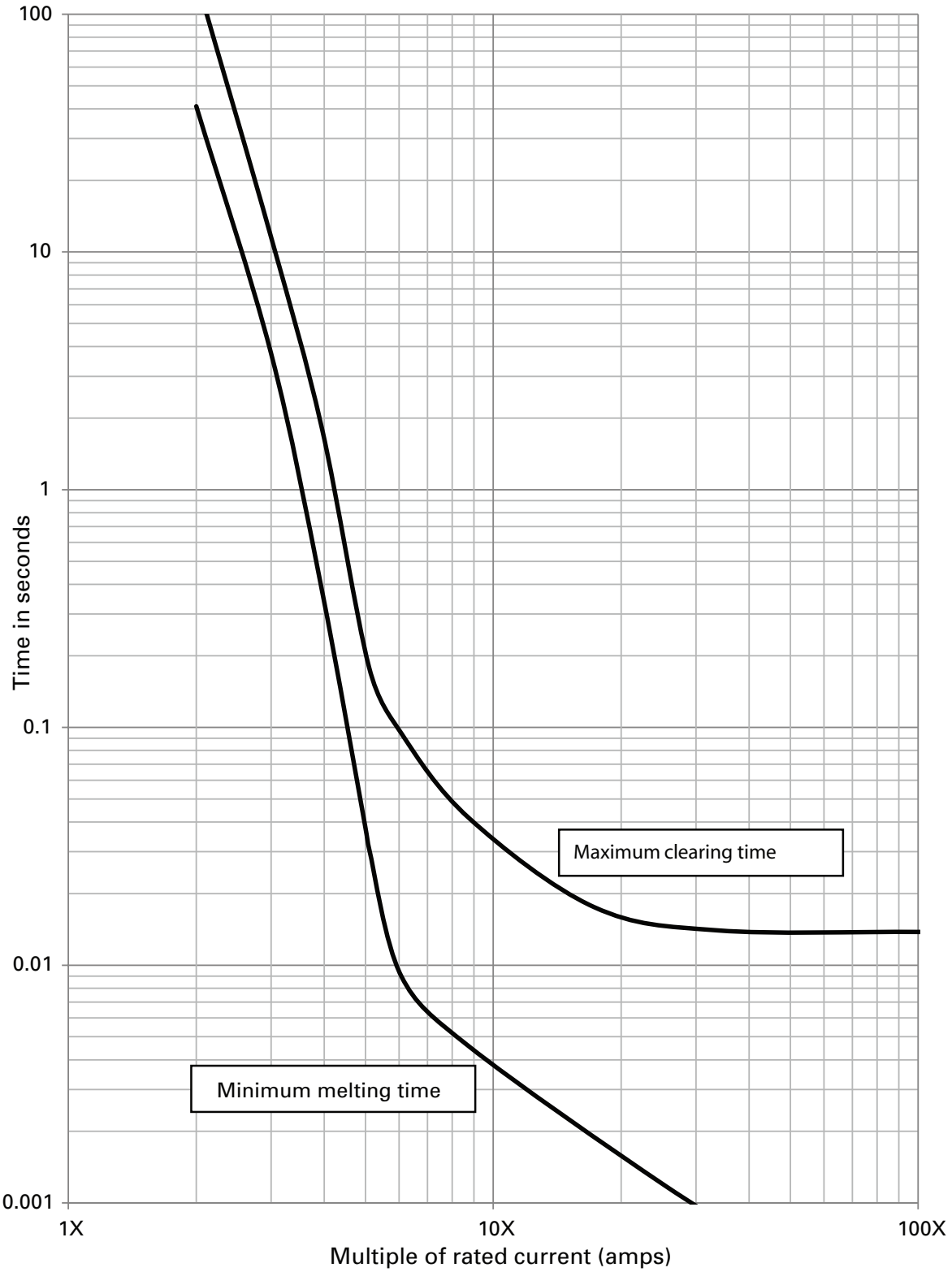
25 mm diameter DC minimum melt / maximum clearing time-current curves — multiple of rated current

For 175 to 250 amp fuses supplied via DC rectifier @ 500 Vdc and time constant (L/R) 2 ms ± 0.5 ms

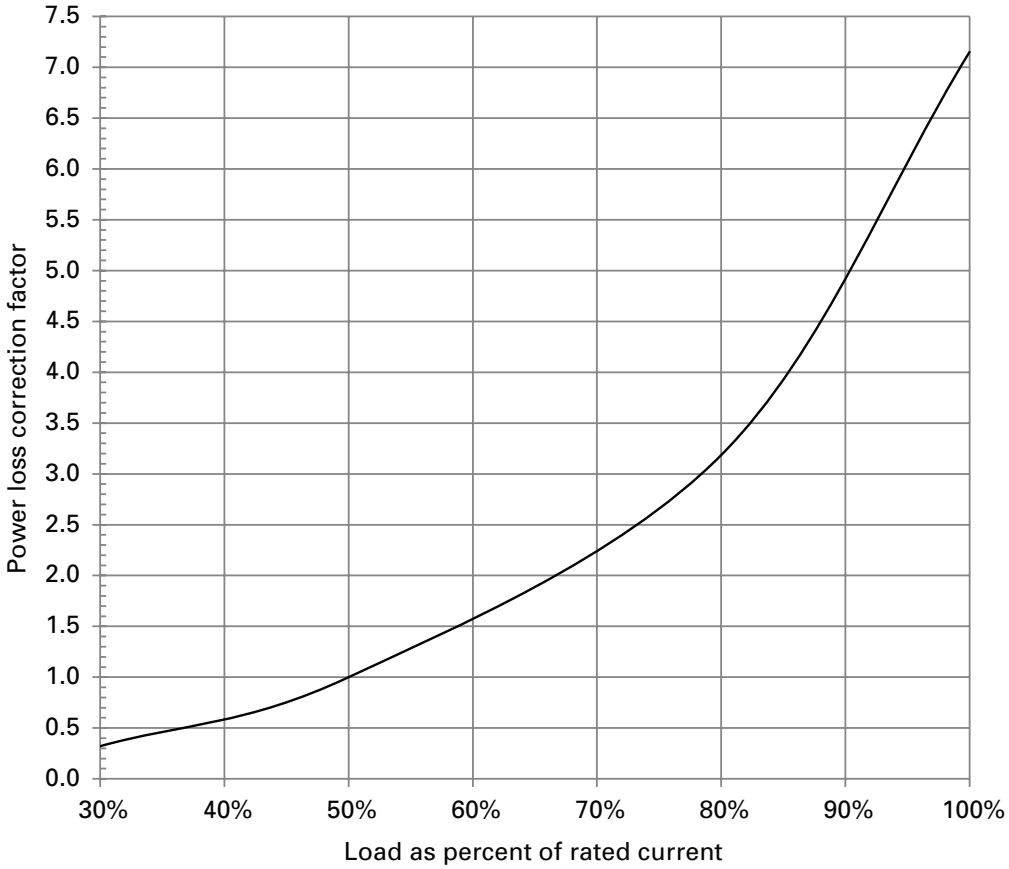


30 mm diameter DC minimum melt / maximum clearing time-current curves — multiple of rated current

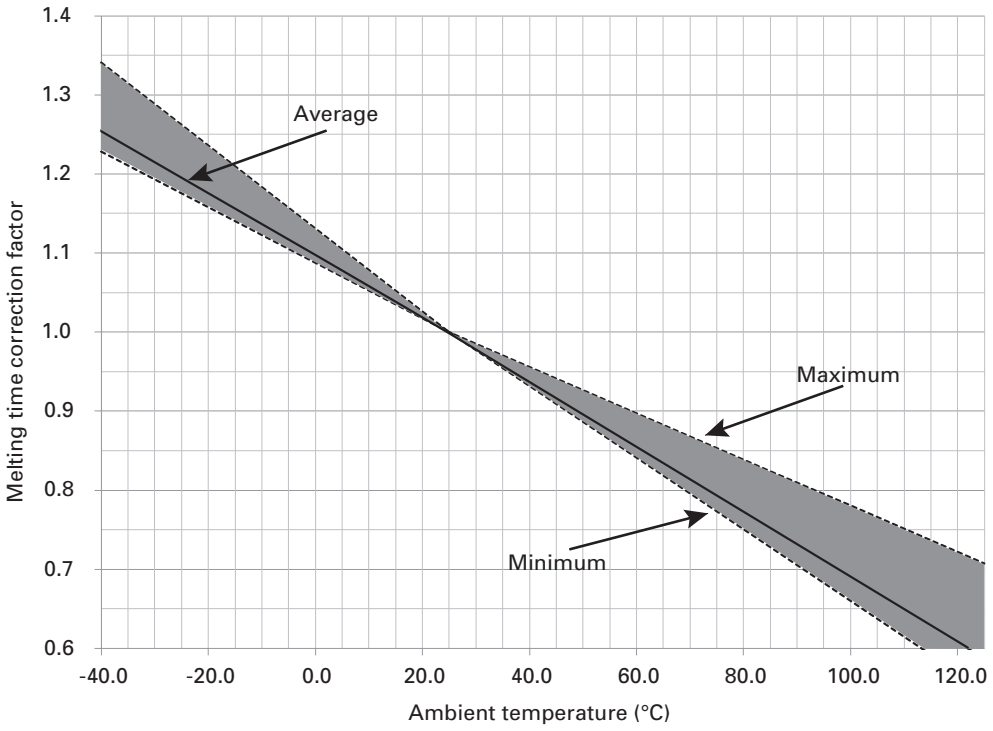
For 200 to 400 amp fuses supplied via DC rectifier @ 500 Vdc and time constant (L/R) 2 ms ± 0.5 ms



Power loss correction factors

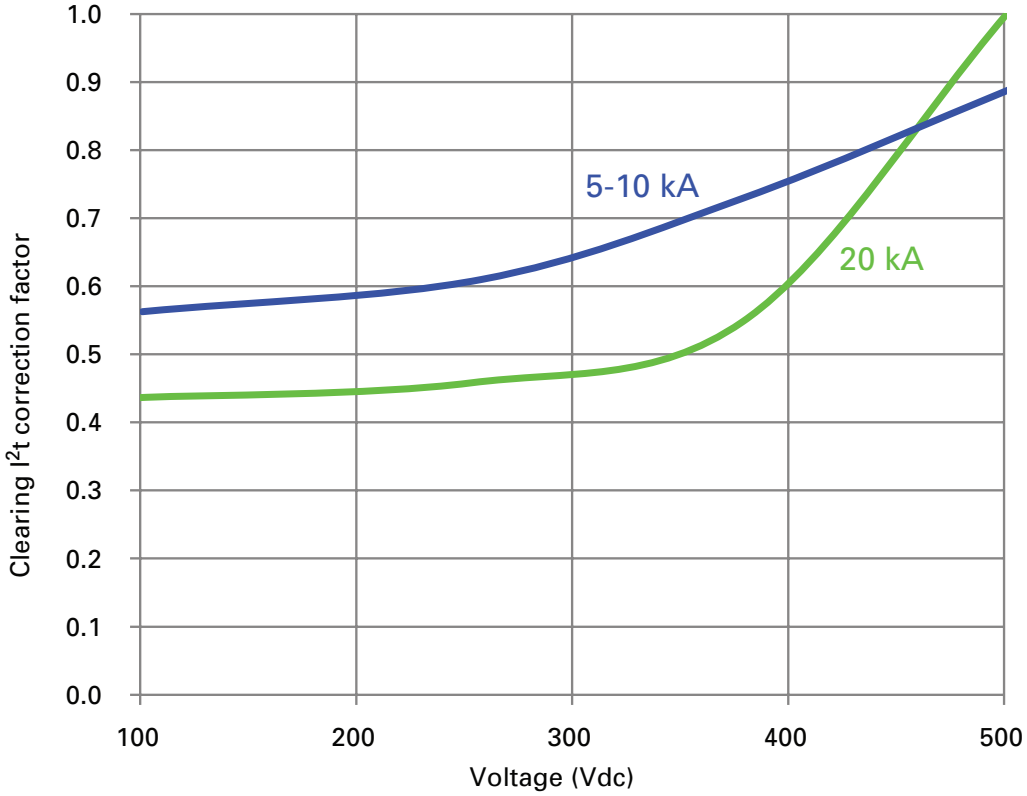


Melting time correction factors (tolerance band)*



* Average at 250 percent of rated current.

Clearing I^2t correction factors — 5 to 10 kA and 20 kA



* Correction factor applies to I^2t clearing at 20 kA in the catalog number table on page 2.

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Printed in USA
Publication No. 10863 — BU-MC18089
December 2018

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