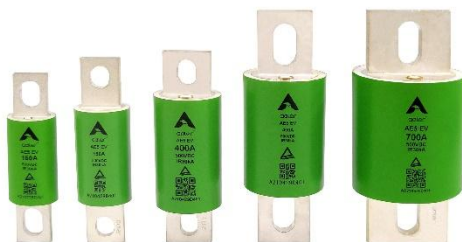




AE5 500 Vdc EV FUSE



FEATURES

- Reliable clearing of DC fault currents
- High cycling performance
- Low watt losses
- Ultra-compact size and power density
- High breaking capacity to 50kA
- Operation as low as 200% In overload protection
- Full coverage of battery module current
- QR code marks on each fuse for traceability

DESCRIPTION

Adler AE5 series EV fuses are specially engineered and tested to provide best-in-class protection performance in protecting high power battery charging and managing systems of Electrical Vehicles and Hybrid Electrical Vehicles, up to 500 Vdc In ratings from 50A to 800A.

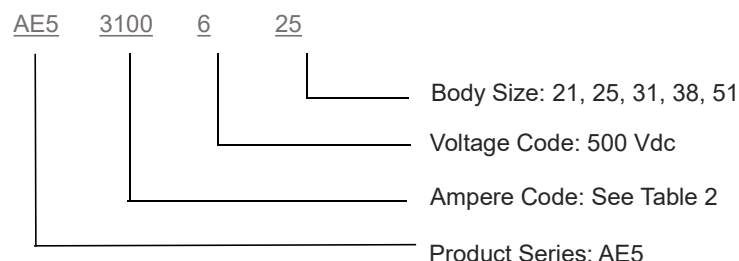
AGENCY INFORMATION

- Designed to JASO D622, ISO 8820-8, GB/T 31465
- UL, TUV certified (50A-400A), UL, TUV 400-800A in process
- Manufactured under IATF 16949 quality system
- RoHS and REACH Compliant

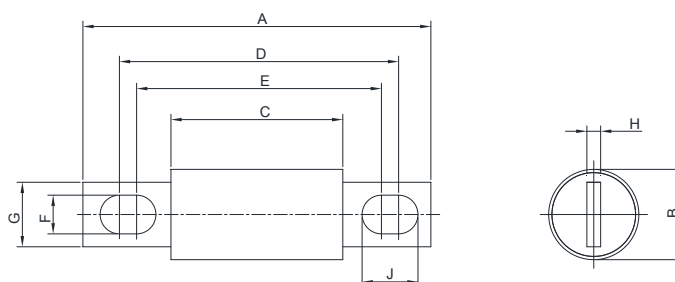
APPLICATIONS

- Battery Charging Protection
- BMS Protection

PART NUMBERING SYSTEM



DIMENSIONS (mm)



Fuse Size	A ± 0.8mm	B ± 0.5mm	C ± 0.8mm	D ± 0.8mm	E ± 0.8mm	F ± 0.5mm	G ± 0.5mm	H ± 0.25mm	J ± 0.5mm
Φ21x40	81	21	40	66	57	8.5	15	3.2	13
Φ25x44	89	25	44	73	71	9	18	3.2	10
Φ31x53	92	31	53	76	69	8.5	22	5	12
Φ38x53	110	38	53	88	70	10.5	24.8	6	19.5
Φ51x53	110	51	53	90	71	10.5	38	6	20

PACKING INFORMATION

Fuse Size	Box Specifications (mm)	Packing Quantity / Outer Box	Weight / PCS (g)	Recommended Screw	Recommended Tightening Torque (N·m)
Φ21x40	380×245×200	192pcs	52±3%	M8	12±1
Φ25x44	380×245×200	120pcs	82±3%	M8	12±1
Φ31x53	380×245×200	75pcs	145±3%	M8	12±1
Φ38x53	380×245×200	64pcs	227±3%	M10	20±1
Φ51x53	380×245×200	24pcs	392±3%	M10	20±1

Table 1

ELECTRICAL SPECIFICATIONS

Size (mm)	Part Number	Rated Current	Ampere Code	Rated Voltage	Breaking Capacity			Melting I ² t (A ² s)	Clearing I ² t (A ² s)	Watt Loss (W) 0.5 I _n
					TUV	UL	Self-Certified			
21x40	AE52500620	50A	2500	500Vdc	30kA	50kA	50kA	201	1510	1.4
	AE52600620	60A	2600	500Vdc	30kA	50kA	50kA	274	2164	1.5
	AE52700620	70A	2700	500Vdc	30kA	50kA	50kA	345	2933	1.8
	AE52800620	80A	2800	500Vdc	30kA	50kA	50kA	392	3565	2.1
	AE53100620	100A	3100	500Vdc	30kA	50kA	50kA	639	6826	2.4
	AE53125620	125A	3125	500Vdc	30kA	50kA	50kA	930	11396	2.9
	AE53150620	150A	3150	500Vdc	30kA	50kA	50kA	1062	14680	3.6
25x44	AE53100625	100A	3100	500Vdc	30kA	50kA	50kA	806	7258	2.4
	AE53125625	125A	3125	500Vdc	30kA	50kA	50kA	1260	11340	3.1
	AE53150625	150A	3150	500Vdc	30kA	50kA	50kA	1814	16330	3.8
	AE53175625	175A	3175	500Vdc	30kA	50kA	50kA	2474	22755	4.2
	AE53200625	200A	3200	500Vdc	30kA	50kA	50kA	3455	31097	4.9
	AE53225625	225A	3225	500Vdc	30kA	50kA	50kA	5040	40320	5.3
	AE53250625	250A	3250	500Vdc	30kA	50kA	50kA	6870	46500	5.9

31x53	AE53200631	200A	3200	500Vdc	30kA	50kA	50kA	4907	45631	5.2
	AE53225631	225A	3225	500Vdc	30kA	50kA	50kA	6192	55109	5.6
	AE53250631	250A	3250	500Vdc	30kA	50kA	50kA	7677	65256	6.1
	AE53300631	300A	3300	500Vdc	30kA	50kA	50kA	12700	102871	6.9
	AE53350631	350A	3350	500Vdc	30kA	50kA	50kA	15142	116596	8.3
	AE53400631	400A	3400	500Vdc	30kA	50kA	50kA	18620	139400	9.0
38x53	AE53400638	400A	3400	500Vdc	○	○	50kA	30897	185382	9.0
	AE53500638	500A	3500	500Vdc	○	○	50kA	59600	274000	11.6
	AE53550638	550A	3550	500Vdc	○	○	50kA	105700	290670	15.7
	AE53600638	600A	3600	500Vdc	○	○	50kA	133000	310400	18.2
51x53	AE53500651	500A	3500	500Vdc	50kA	50kA	50kA	50454	252272	11.3
	AE53550651	550A	3550	500Vdc	50kA	50kA	50kA	59080	295400	11.9
	AE53600651	600A	3600	500Vdc	50kA	50kA	50kA	71269	313583	14.2
	AE53700651	700A	3700	500Vdc	50kA	50kA	50kA	103000	449000	15.5
	AE53800651	800A	3800	500Vdc	50kA	50kA	50kA	131000	532000	17.3

Table 2

TUV File: J50437773; J50437772; J50433104

UL File: E506668(Φ 21-Φ 31) E485737(Φ 51)

○ --- certification is processing

Time constant: 2 ± 0.5ms

OPERATING CONDITIONS

Where the following conditions apply, fuses complying with this standard are deemed capable of operating satisfactorily without further qualification.

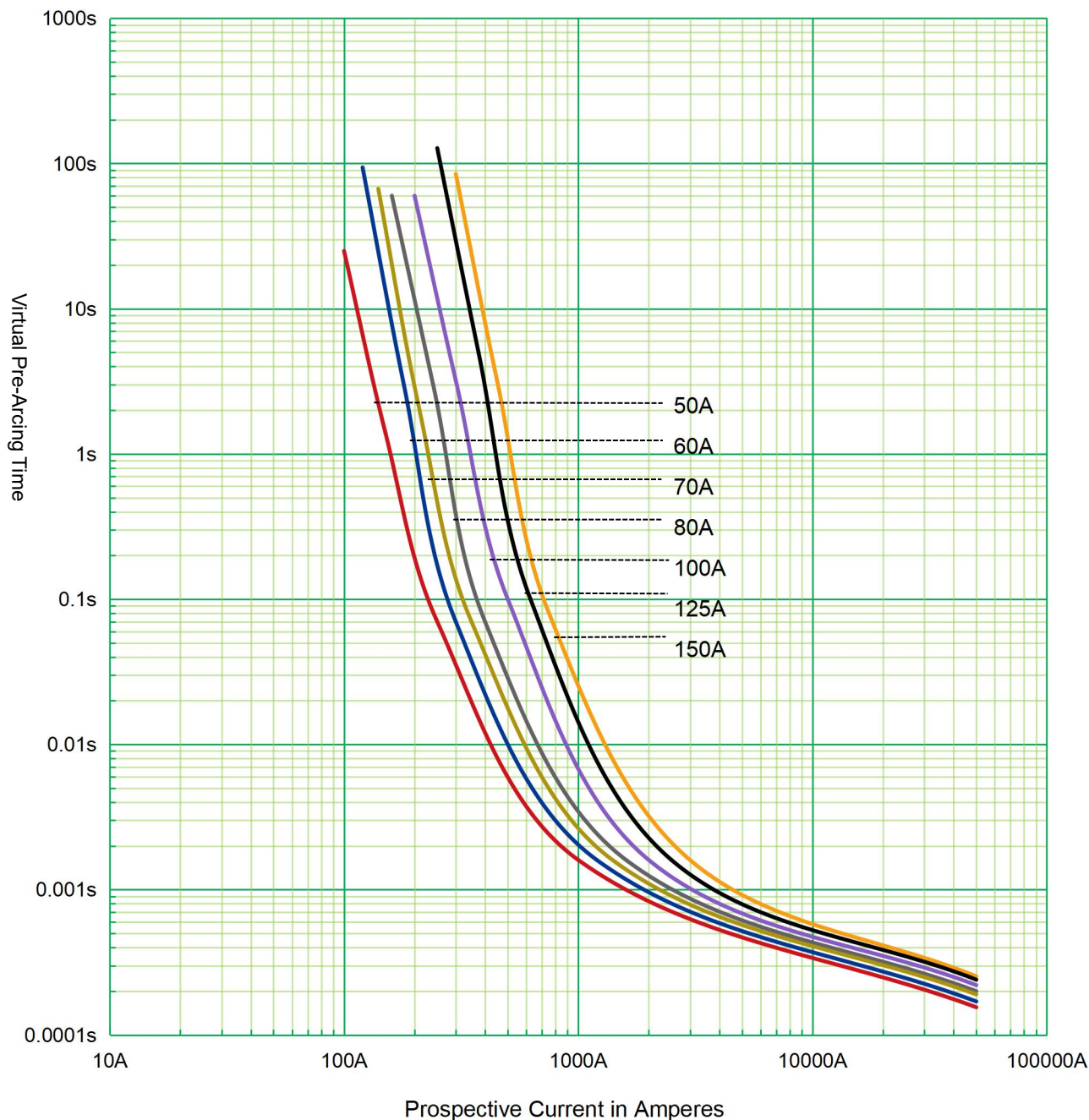
- Normal temperature: -5°C-40°C, permissible operating temperature: -40°C-120°C.
- The altitude of the normal site of installation of the fuses does not exceed 2000m above sea level and permissible altitude site of installation does not exceed 5000m.
- The air is clean and its relative humidity does not exceed 50 % at the maximum temperature of 40°C.
- Higher relative humidity is permitted at lower temperatures, e.g. 90 % at 20°C.
- Pollution grade III.
- Under these conditions, moderate condensation may occasionally occur due to variation in temperature.
- For operating conditions other than above, please contact manufacturer.

STORAGE

During transportation and storage, avoid water seepage and mechanical damage.

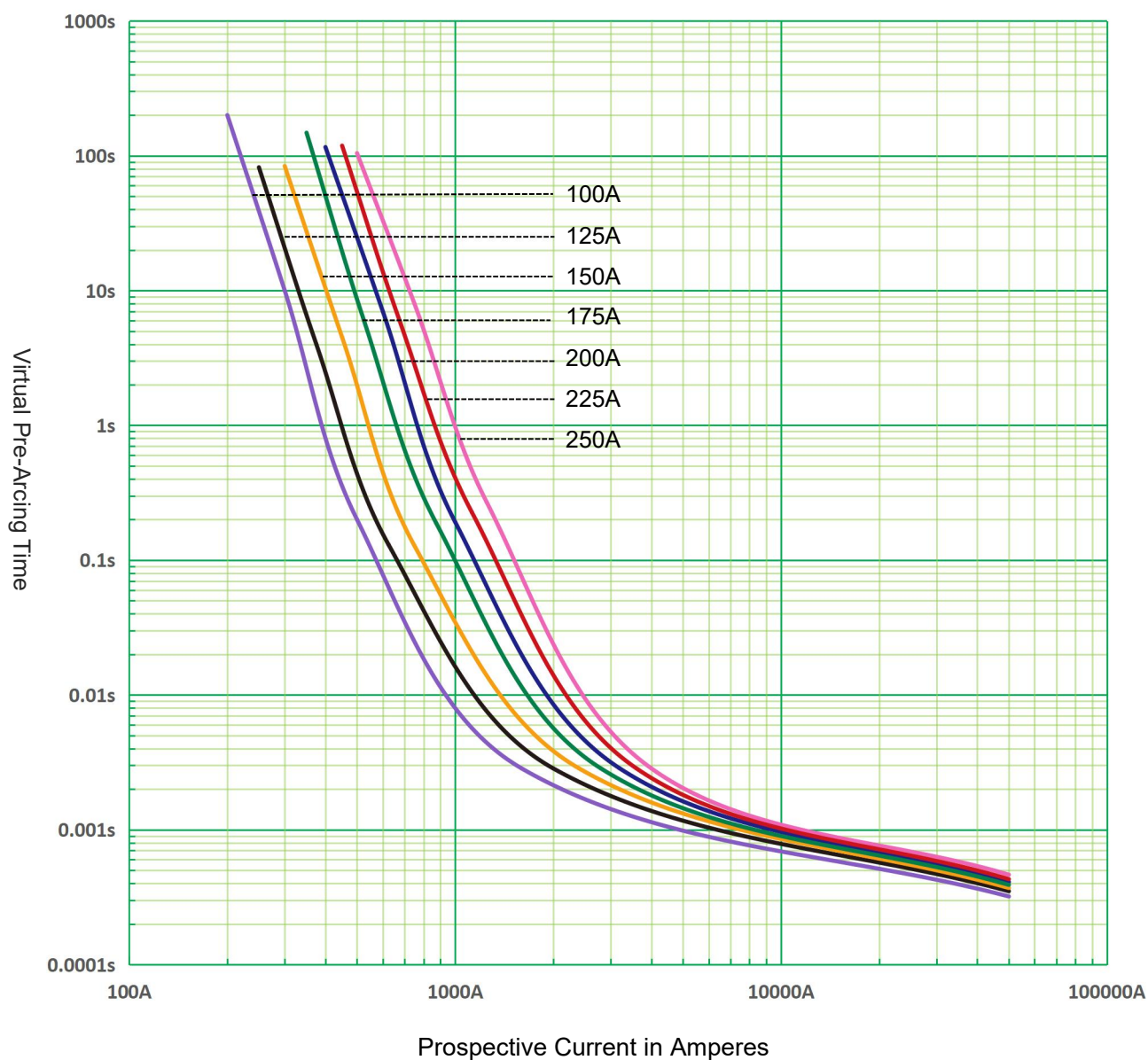
TIME CURRENT CURVE

AE5xxx620 50A – 150A



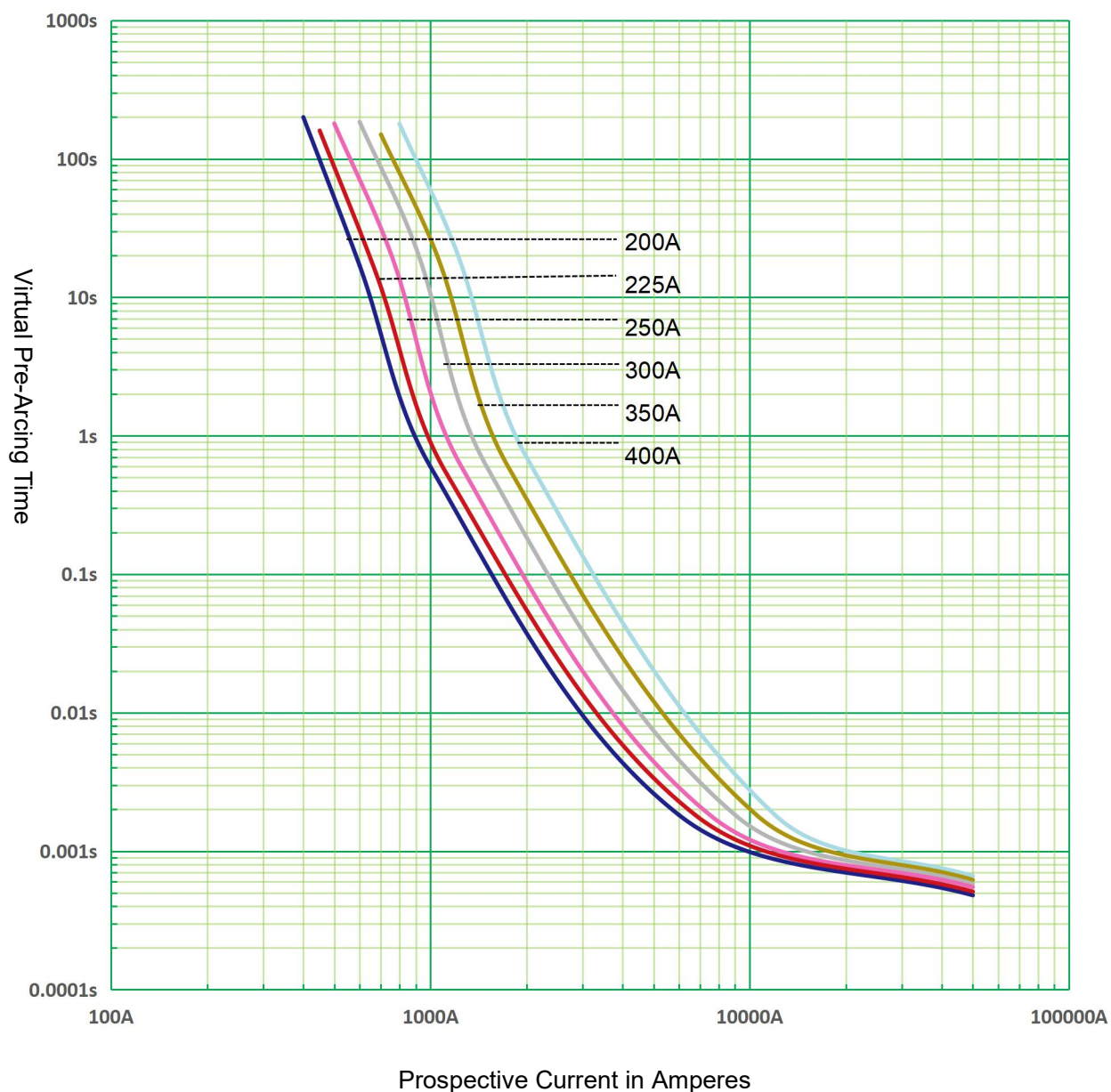
TIME CURRENT CURVE

AE5xxx625 100A – 250A



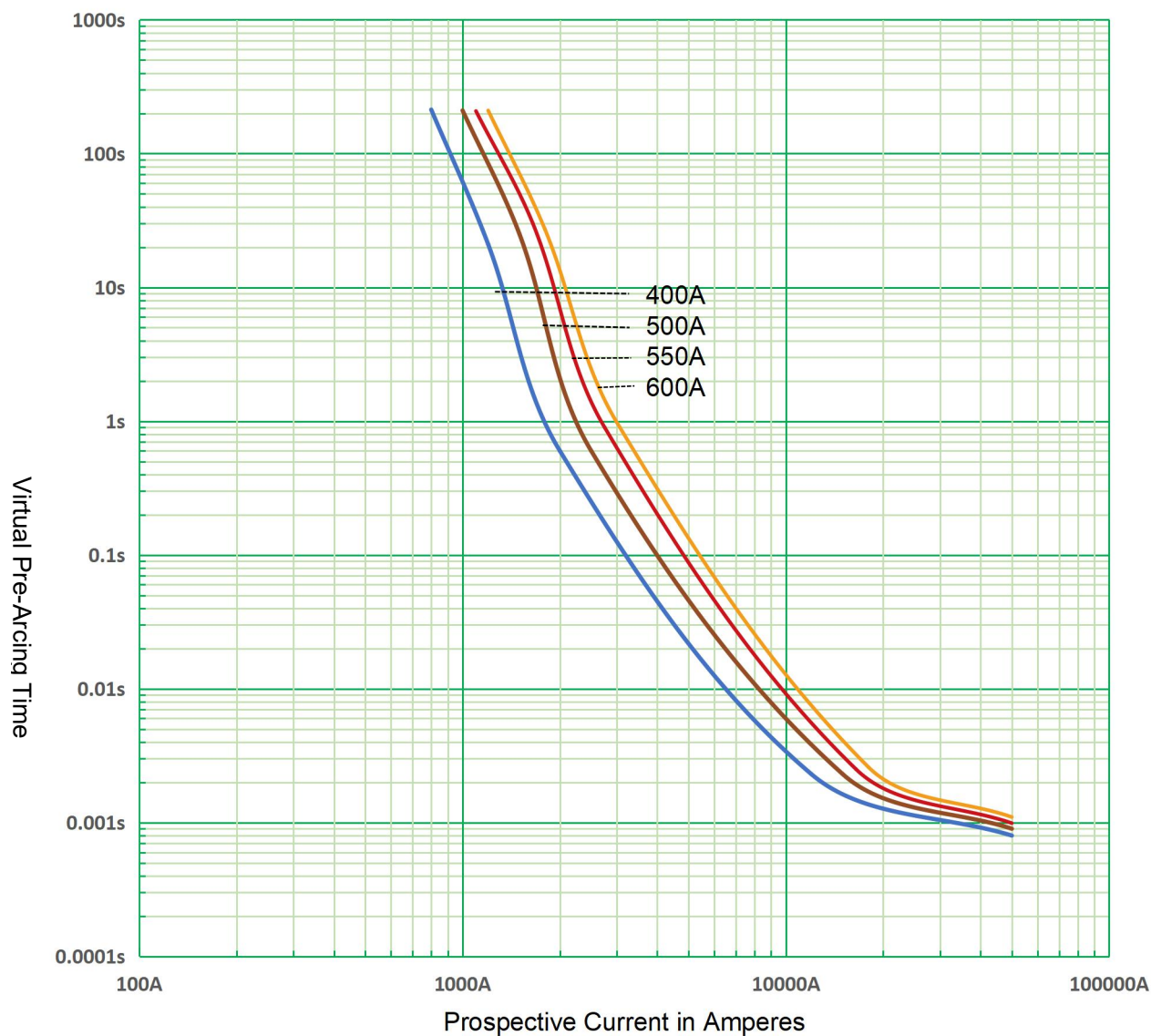
TIME CURRENT CURVE

AE5xxx631 200A – 400A



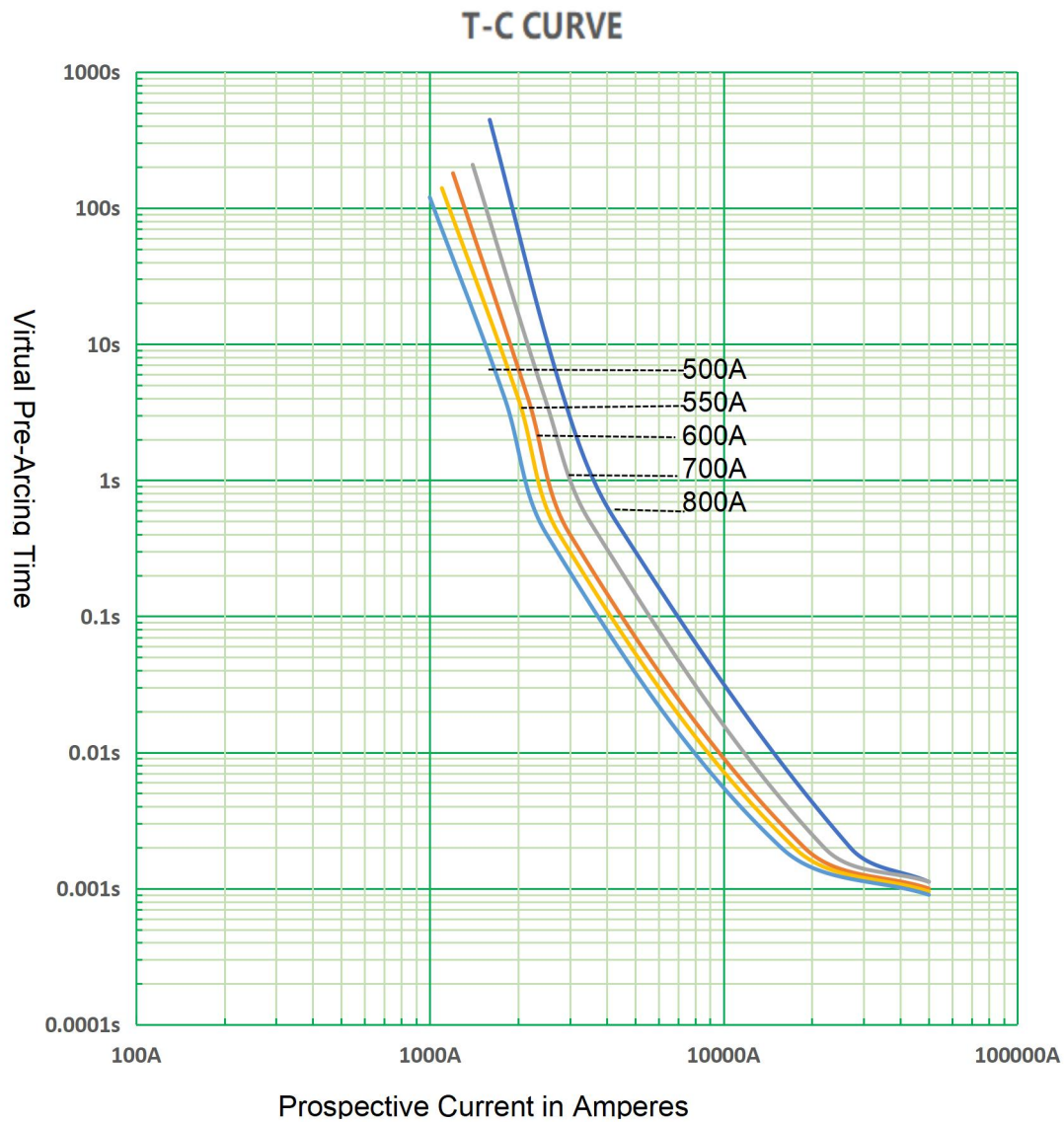
TIME CURRENT CURVE

AE5xxx638 400A – 600A

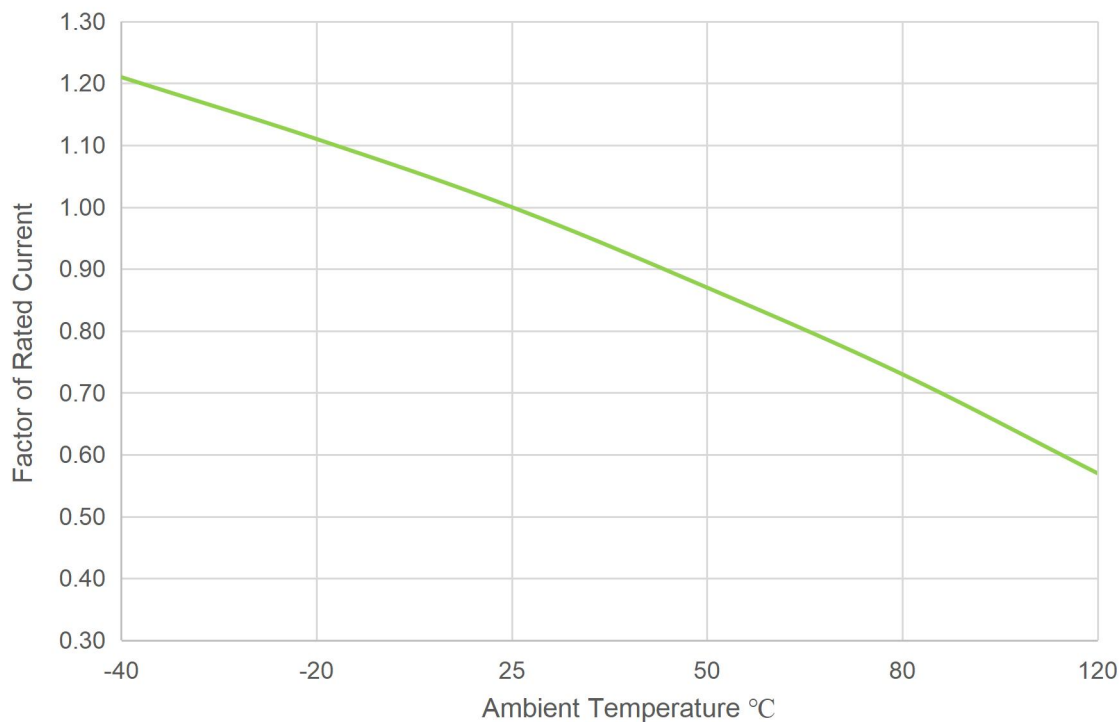


TIME CURRENT CURVE

AE5xxx651 500A – 800A



Temperature derating curve



WEB RESOURCES

Download the latest technical documents: www.adlerelectric.com. Specifications are subject to change without notice.

Change record				
Edition	Date	Content Change	Editor	Approver
A/0	2022.04.07	New release	May Lei	Glenn Starling
A/1	2022.08.22	Add packing information	May Lei	Glenn Starling
A/2	2022.10.26	Add UL Certified information	May Lei	Glenn Starling
A/3	2022.12.28	Add 550A information	May Lei	Glenn Starling
A/4	2023.05.25	Update describing: operating conditions for item 1st and 2nd	May Lei	Glenn Starling
A/5	2023.09.15	Add 800A information	May Lei	Glenn Starling
A/6	2023.12.07	Add $\phi 51$ tube UL Certified information	May Lei	Glenn Starling
A/7	2023.12.27	Update file template	Linyu Li	Glenn Starling
A/8	2024.01.23	Cancel "Preliminary"	May Lei	Glenn Starling
A/9	2024.06.07	Add specification & curves for 550A & 600A	Chushen Deng	Carlos Du
B/0	2024.03.07	Update 51 tube IT curve	Chushen Deng	Sufyan Muhammad