

# High Speed Fuses

## Square body DIN 43 653 — 690V/700V (IEC/UL): 40-2000A

### 690V/700V (IEC/UL) 40-2000A

#### Specifications

Description: Square body DIN 43 653 stud-mount high speed fuses.

**Dimensions:** See dimensions illustration.

#### Ratings:

Volts: — 690Vac (IEC)  
— 700Vac (UL)

Amps: — 40-2000A

IR: — 200kA RMS Sym.

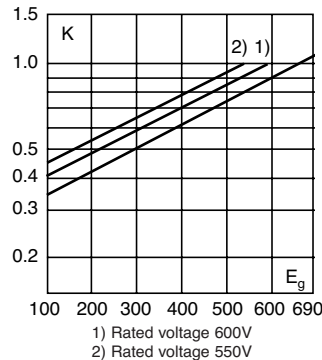
**Agency Information:** CE, Designed and tested to IEC 60269: Part 4, UL Recognized. Consult Cooper Bussmann for UL Recognition/CSA Component Acceptance status.



#### Electrical Characteristics

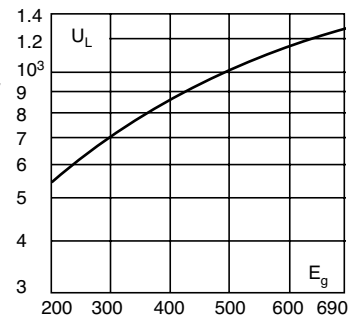
##### Total Clearing I<sup>2</sup>t

The total clearing I<sup>2</sup>t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I<sup>2</sup>t is found by multiplying by correction factor, K, given as a function of applied working voltage, E<sub>g</sub>, (rms).



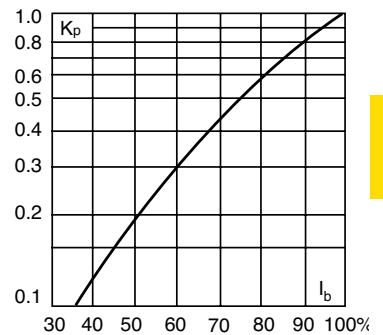
#### Arc Voltage

This curve gives the peak arc voltage, U<sub>L</sub>, which may appear across the fuse during its operation as a function of the applied working voltage, E<sub>g</sub>, (rms) at a power factor of 15%.



#### Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K<sub>p</sub>, is given as a function of the RMS load current, I<sub>b</sub>, in % of the rated current.



#### Features and Benefits

- Excellent dc performance
- Low arc voltage and low energy let-through (I<sup>2</sup>t)
- Low watts loss
- Superior cycling capability

#### Typical Applications

- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

#### Dimensions (mm)

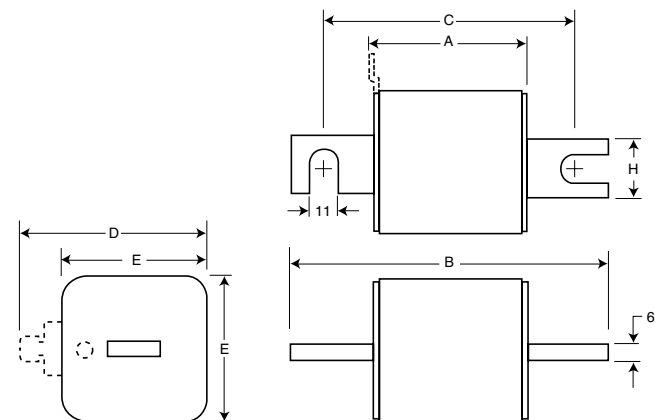
Type -/80, -TN/80, -/110, -TN/110.

Size	A	B	B**	C	C**	D***	E	H
1*	50	104	134	78	108	58	45	22
1	50	108	138	78	108	66	53	25
2	50	108	138	78	108	75	61	25
3	51	109	139	78	108	90	76	30

\*\*Valid for fuses type -/110, -TN/110.


\*\*\*Microswitch.

1mm = 0.0394" / 1" = 25.4mm



High Speed Fuses

**Did You Know?**



Cooper Bussmann® fuses are used in all kinds of oil-well drilling equipment around the world.

# High Speed Fuses

## Square body DIN 43 653 — 690V/700V (IEC/UL): 40-2000A

### Catalog Numbers

Catalog Numbers				Size	Electrical Characteristics				
-/80 Visual Watts Indicator	-TN/80 Type T Indicator for Micro	-/110 Visual Indicator	-TN/110 Type T Indicator for Micro		Rated RMS-Amps	I <sup>2</sup> t (A <sup>2</sup> Sec)		Clearing Loss	
						Current Pre-arc	at 660V		
170M3008	170M3058	170M3158	170M3208	1*	40	40	270	9	
170M3009	170M3059	170M3159	170M3209		50	77	515	11	
170M3010	170M3060	170M3160	170M3210		63	115	770	14	
170M3011	170M3061	170M3161	170M3211		80	185	1250	18	
170M3012	170M3062	170M3162	170M3212		100	360	2450	21	
170M3013	170M3063	170M3163	170M3213		125	550	3700	26	
170M3014	170M3064	170M3164	170M3214		160	1100	7500	30	
170M3015	170M3065	170M3165	170M3215		200	2200	15000	35	
170M3016	170M3066	170M3166	170M3216		250	4200	28500	40	
170M3017	170M3067	170M3167	170M3217		315	7000	46500	50	
170M3018	170M3068	170M3168	170M3218		350	10000	68500	55	
170M3019	170M3069	170M3169	170M3219		400	15000	105000	60	
170M3020	170M3070	170M3170	170M3220		450	21000	140000	65	
170M3021	170M3071	170M3171	170M3221		500	27000	180000	70	
170M3022	170M3072	170M3172	170M3222		550	34000	230000	75	
170M3023	170M3073	170M3173	170M3223		630	48500	325000	80	
170M4008	170M4058	170M4158	170M4208		1	200	1650	11500	45
170M4009	170M4059	170M4159	170M4209			250	3100	21000	55
170M4010	170M4060	170M4160	170M4210			315	6200	42000	58
170M4011	170M4061	170M4161	170M4211	350		8500	59000	60	
170M4012	170M4062	170M4162	170M4212	400		13500	91500	65	
170M4013	170M4063	170M4163	170M4213	450		17000	120000	70	
170M4014	170M4064	170M4164	170M4214	500		25000	170000	72	
170M4015	170M4065	170M4165	170M4215	550		34000	230000	75	
170M4016	170M4066	170M4166	170M4216	630		52000	350000	80	
170M4017	170M4067	170M4167	170M4217	700		69500	465000	85	
170M4018	170M4068	170M4168	170M4218	800		105000	725000	95	
170M4019	170M4069	170M4169	170M4219	±900	155000	±850000	100		
170M5008	170M5058	170M5158	170M5208	2	400	11000	74000	65	
170M5009	170M5059	170M5159	170M5209		450	15500	105000	70	
170M5010	170M5060	170M5160	170M5210		500	21500	145000	75	
170M5011	170M5061	170M5161	170M5211		550	28000	190000	80	
170M5012	170M5062	170M5162	170M5212		630	41000	275000	90	
170M5013	170M5063	170M5163	170M5213		700	60500	405000	95	
170M5014	170M5064	170M5164	170M5214		800	86000	575000	105	
170M5015	170M5065	170M5165	170M5215		900	125000	840000	110	
170M5016	170M5066	170M5166	170M5216		1000	180000	1250000	115	
170M5017	170M5067	170M5167	170M5217		1100	245000	1600000	120	
170M5018	170M5068	170M5168	170M5218	1250	365000	2400000	130		
170M6008	170M6058	170M6158	170M6208	3	500	14000	95000	95	
170M6009	170M6059	170M6159	170M6209		550	19500	135000	100	
170M6010	170M6060	170M6160	170M6210		630	31000	210000	105	
170M6011	170M6061	170M6161	170M6211		700	44500	300000	110	
170M6012	170M6062	170M6162	170M6212		800	69500	465000	115	
170M6013	170M6063	170M6163	170M6213		900	100000	670000	120	
170M6014	170M6064	170M6164	170M6214		1000	140000	945000	125	
170M6015	170M6065	170M6165	170M6215		1100	190000	1300000	130	
170M6016	170M6066	170M6166	170M6216		1250	290000	1950000	140	
170M6017	170M6067	170M6167	170M6217		1400	370000	2450000	155	
170M6018	170M6068	170M6168	170M6218		1500	460000	3100000	160	
170M6019	170M6069	170M6169	170M6219		1600	580000	3900000	160	
170M6020	170M6070	170M6170	170M6220		†1800	880000	†5250000	165	
170M6021	170M6071	170M6171	170M6221		‡2000	1150000	‡6350000	175	

†Rated voltage (IEC) 600V.

‡Rated voltage (IEC) 550V.

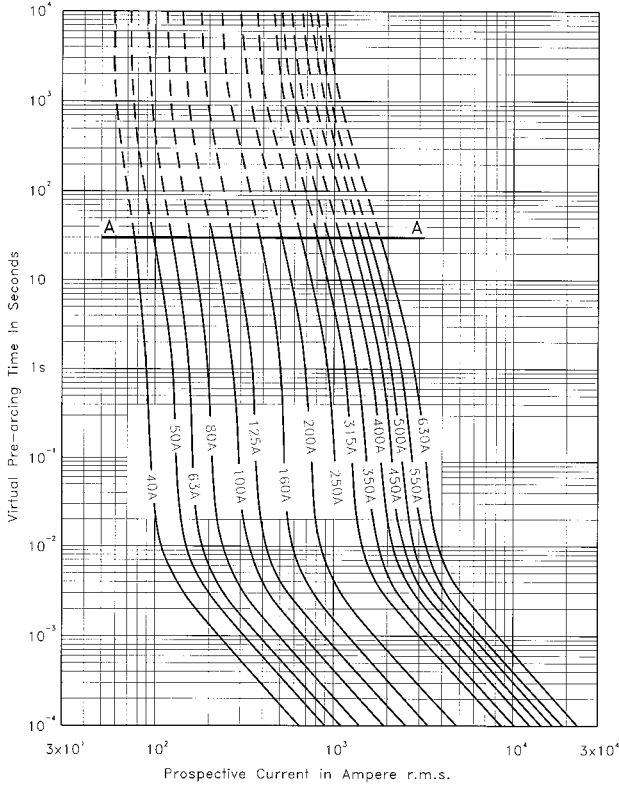
•Watts loss provided at rated current.

•Microswitch indicator ordered separately. See accessories on pages 179-180.

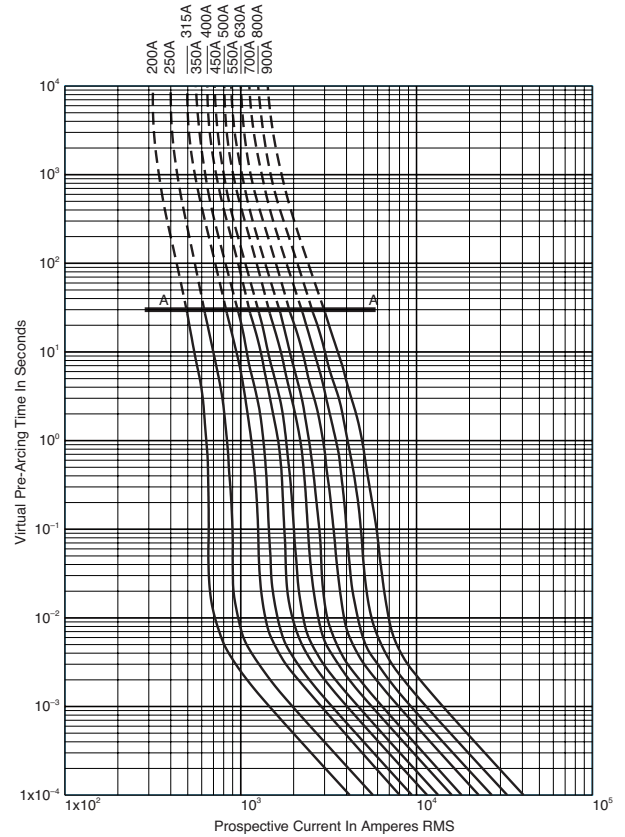
# High Speed Fuses

## Square body DIN 43 653 — 690V/700V (IEC/UL): 40-2000A

**Size 1\* — 40-630A: 690V**  
Time-Current Curve

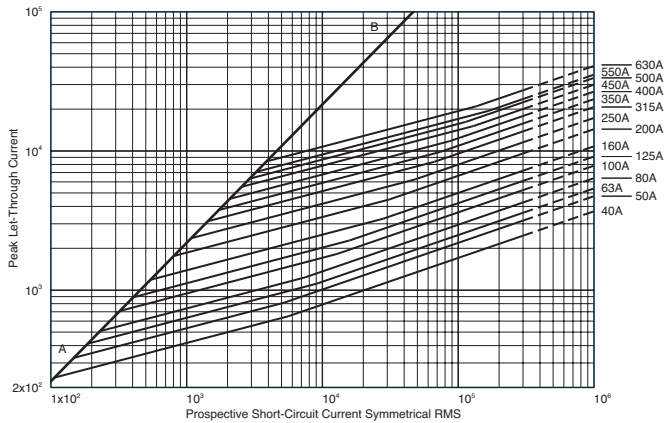


**Size 1 — 200-900A: 690V**  
Time-Current Curve

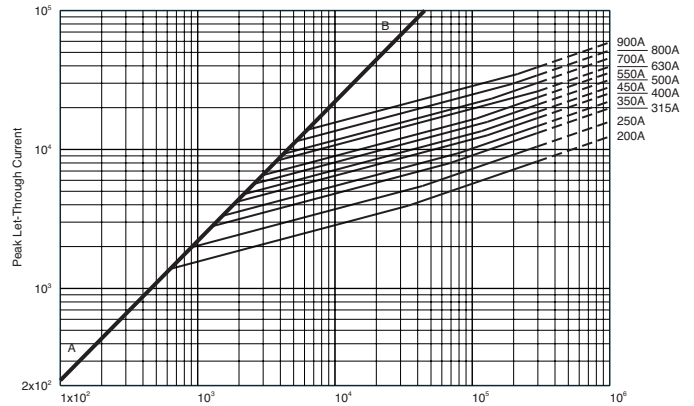


High Speed Fuses

**Peak Let-Through Curve**



**Peak Let-Through Curve**



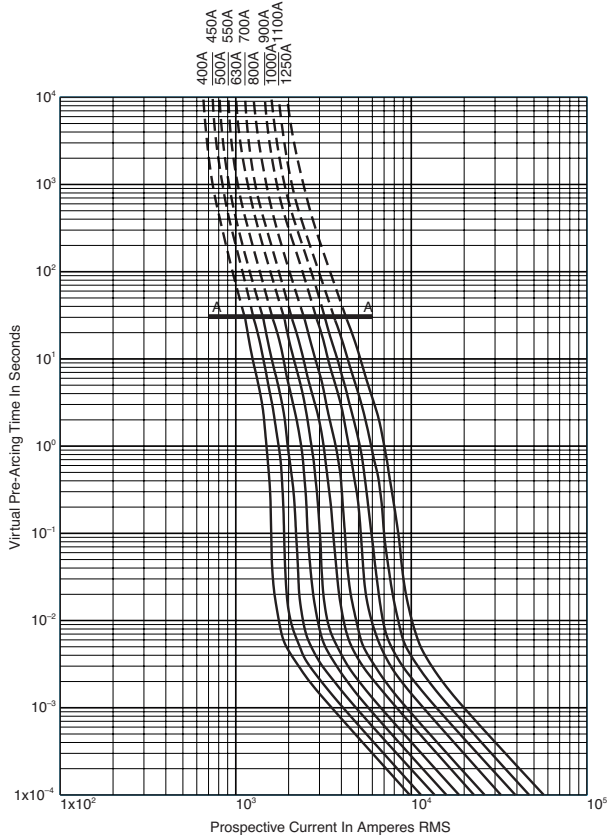
900 amp fuse is derated to 550V (IEC).

**High Speed Fuses**

**Square body DIN 43 653 — 690V/700V (IEC/UL):  
40-2000A**

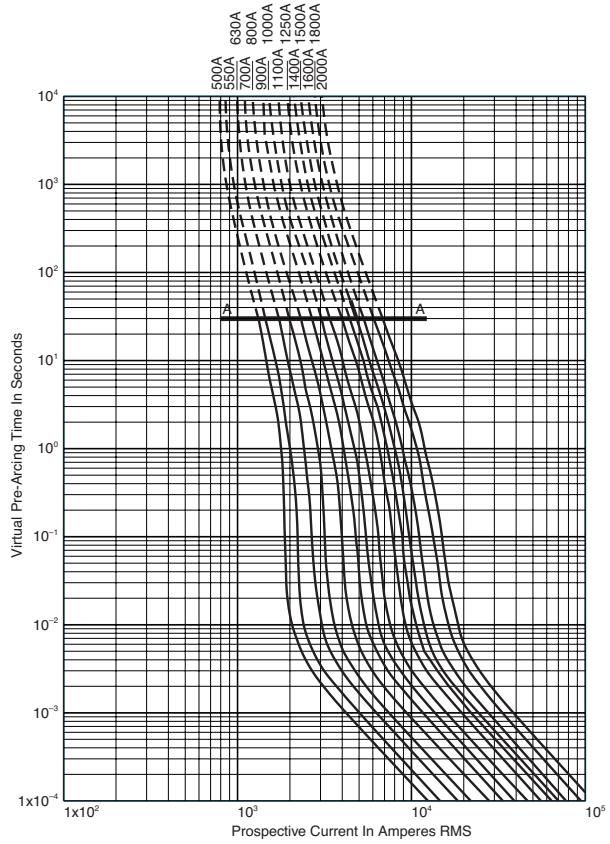
**Size 2 — 400-1250A: 690V**

**Time-Current Curve**

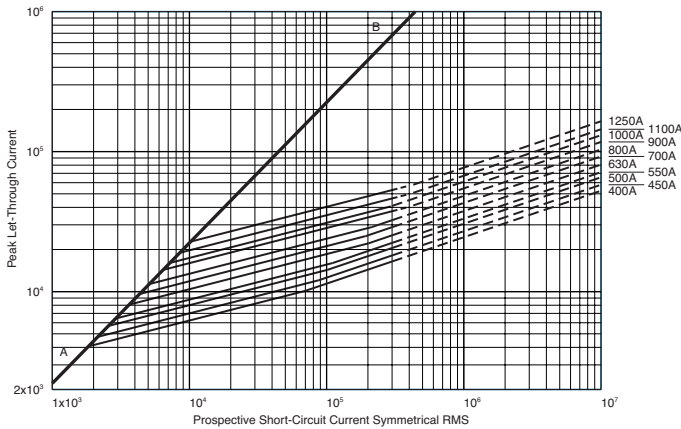


**Size 3 — 500-2000A: 690V**

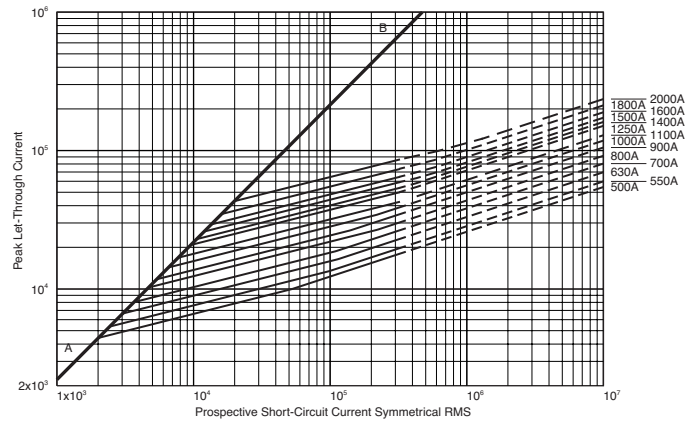
**Time-Current Curve**



**Peak Let-Through Curve**



**Peak Let-Through Curve**



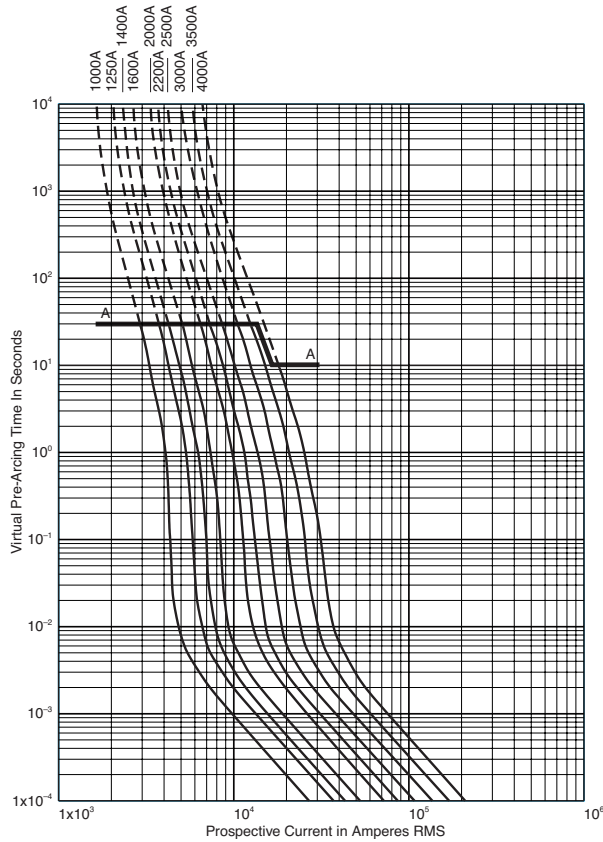
1800A fuse is derated to 600V (IEC).  
2000A fuse is derated to 550V (IEC).

## High Speed Fuses

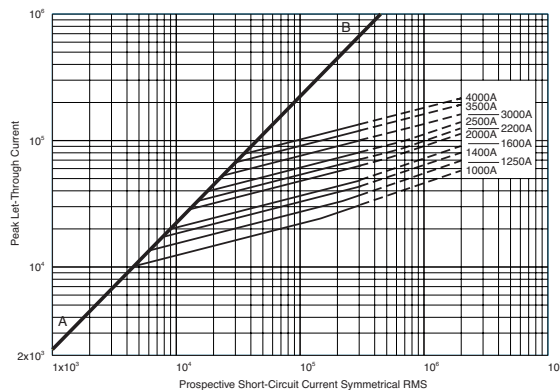
# Square body DIN 43 653 — 690V/700V (IEC/UL): 40-2000A

**Size 4 — 1000-4000A: 690V**

**Time-Current Curve**



### Peak Let-Through Curve



4000A fuse is derated to 500V (IEC).

**Data Sheet: 17056328**



### Did You Know?

#### Cooper Bussmann® Customer Satisfaction Minimizes Downtime Caused by the 2003 North American Northeast Coast Blackout

An enormous power failure blacked out population centers from New York City to Toronto on Thursday, August 14, 2003. As power slowly came back on, surges and spikes began to “blow” existing fuses. Airports reopened Friday.

The Cooper Bussmann Customer Satisfaction team handled 11 emergency phone calls that weekend, including:

A Michigan-based utility required a large fuse order to protect its control switches before it could reactivate electrical power to thousands of customers. Ordered Friday, 8:27 p.m. Order delivered Saturday, 12:30 p.m.

An Indiana steel mill required specialized fuses. A Cooper Bussmann engineer was called to assist. Ordered Sunday, 1:46 p.m. Order delivered same day, 11:00 p.m.

A pharmaceutical plant in New Jersey needed to get its line back up. Ordered Saturday 10:36 a.m. Order delivered Sunday, 4:00 a.m.

An Ontario utility required more than 100 Cooper Bussmann® Fusetron® FRN-R-200 fuses. Ordered Saturday, 11:01 a.m.. Order delivered Sunday, 9:00 a.m. including customs processing.