



<b>Rated Voltage</b>	<b>415V a.c. 250V d.c.</b>
<b>Current ratings</b>	<b>2A to 800A</b>
<b>Rated breaking capacity</b>	<b>80kA at 415V a.c. 40kA at 250V d.c.</b>
<b>Breaking range &amp; utilisation category</b>	<b>gG</b>
<b>Outline dimensions</b>	<b>SK410, SK411, SK412, SK413</b>
<b>Time/current characteristics</b>	<b>SK414, SK415</b>
<b>Power dissipation</b>	<b>SK416</b>
<b>Current carrying capability</b>	<b>SK417</b>
<b>Cut-off characteristics</b>	<b>SK418</b>
<b>I<sup>2</sup>t characteristics</b>	<b>SK419</b>
<b>Motor starting capability</b>	<b>SK420</b>

Lawson Type 'N&T' fuse-links are for use in industrial installations and can be fitted into BS 88 bolted fuse-holders and distribution fusegear.

Dimensions and current ratings of the Lawson type N&T Industrial Fuse-Links comply with the standardised requirements of IEC 60269-2 and BS 88-2.

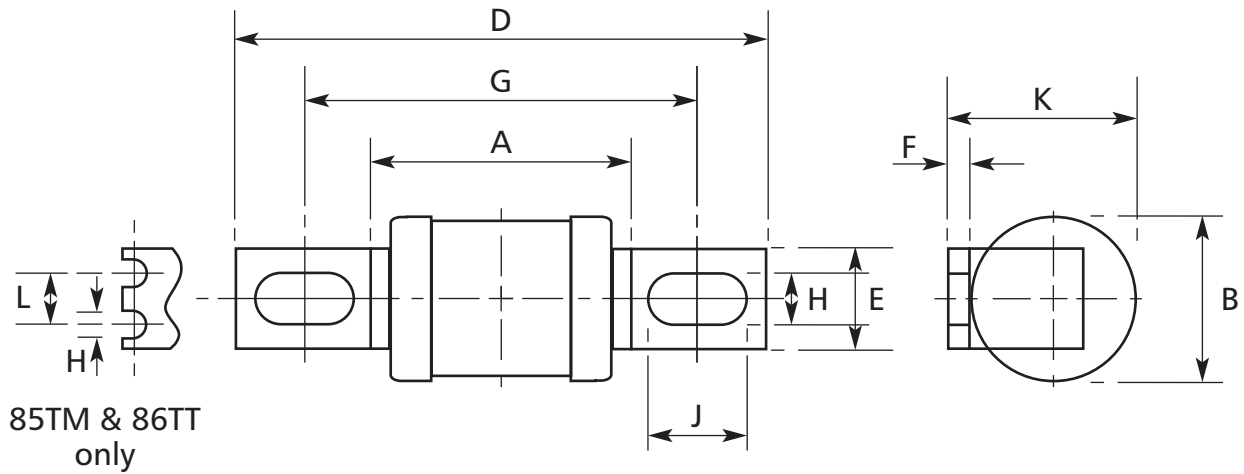
Additional types and current ratings are included in the range. Lawson type N&T Industrial Fuse-Links can be fitted in Boltin Fuse-Holders or suitable fusegear.

A schedule of Motor Starting Capability for Lawson type N&T Industrial Fuse-Links is also available

## OUTLINE DIMENSIONS

Type 'N&T' Industrial Fuse-Links (Offset Tag)


Issue: 5 Date: 16.7.2021 Approved TH



BS 88-2:2013 (Fuse System E) Reference "A" Fuse-Link dimensions and tag variants

BS88 Ref.	Type Ref.	Current Ratings (A)	Dimensions (mm)									
			A max	B max	D max	E max	F nom	G nom	H nom	J nom	K max	L nom
A1	NIT	2, 4, 6, 10, 16 20, 25*, 32*	33	12.7	56	9.5	0.8	44.5	4.8	open ended slot	14.3	
A2	TIA	2, 4, 6, 10, 16 20, 25, 32	34	14.3	86	9	1.2	73	5.5	8	16	
A3	TIS	35, 40, 50, 63	49	22	89	13	1.2	73	5.5	open ended slot	24	
		80*, 100*, 125*	49	26	89	13	1.2	73	5.5	open ended slot	28	
A4	TCP	6, 10, 16, 20, 25, 32, 35, 40, 50, 63	51	22	110	20	2.4	94	8.7	11	25	
		80, 100,	51	26	110	20	2.4	94	8.7	11	29	
-	CTFP	125, 160, 200	51	31	110	20	2.4	94	8.7	11	38	
-	TFP	125, 160, 200	51	35	110	20	2.4	94	8.7	11	38	
-	85TM	200, 250, 315, 355*, 400	56	51	117	45	4.8	102	8.7	open ended slot	45	22
-	86TT	450*, 500, 560*, 630	56	61	117	45	4.8	102	8.7	open ended slot	54	22
		670*, 710*, 750*, 800	56	73	117	45	4.8	102	8.7	open ended slot	61	22

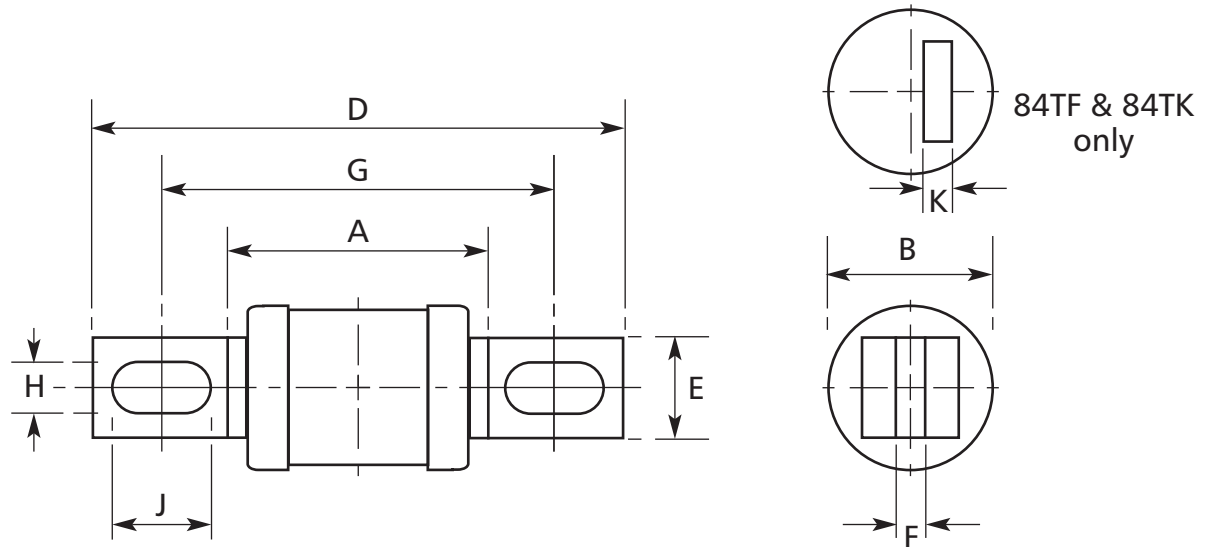
\*NON-STANDARDISED CURRENT RATINGS ADDITIONAL TO BS 88-2:2013 (FUSE SYSTEM E)

IEC 60269-2:2013 / BS HD 60269-2:2013 / BS 88-2:2013 (Fuse System E)  
 Rated Voltage 415V a.c. 250V d.c. Breaking Range and Utilisation Category "gG"  
 Rated Breaking Capacity - 80 kA at 415V a.c.  
 ASTA  Certified

## OUTLINE DIMENSIONS

Type 'N&T' Industrial Fuse-Links (Central Tag, Single Hole)

Issue: 5 Date: 16.7.2021 Approved TH



BS 88-2:2013 (Fuse System E) Reference "B" Fuse-Link dimensions and tag variants

BS88 Ref.	Type Ref.	Current Ratings (A)	Dimensions (mm)								
			A max	B max	D max	E max	F nom	G nom	H nom	J nom	K max
-	TB	2, 4, 6, 10, 16, 20, 25, 32 35, 40, 50, 63	45	22	111	13	1.2	97	7.1	13	
as B1	TBC	2, 4, 6, 10, 16, 20, 25, 32 35, 40, 50, 63	45	22	137	15	1.4	111	8.7	14	
B1	TC	80, 100	45	26	137	20	3.2	111	8.7	14	
B2	CTF	125, 160, 200	45	31	137	20	3.2	111	8.7	14	
B2	TF	125, 160, 200	45	35	137	20	3.2	111	8.7	14	
-	84TF	80, 100, 125, 160, 200	45	35	121	20	3.2	99	8.7	14	5
B3	TKF	250, 315	45	41	137	26	3.2	111	8.7	14	
-	84TK	250, 315	45	41	121	26	3.2	99	8.7	14	8
-	TKM	125, 160, 200, 250, 315	45	41	159	26	3.2	133	10.3	14	
B4	TMF	315, 355*, 400	52	51	137	26	6.4	111	8.7	16	

\*NON-STANDARDISED CURRENT RATINGS ADDITIONAL TO BS 88-2:2013 (FUSE SYSTEM E)

IEC 60269-2:2013 / BS HD 60269-2:2013 / BS 88-2:2013 (Fuse System E)

Rated Voltage 415V a.c. 250V d.c. Breaking Range and Utilisation Category "gG"

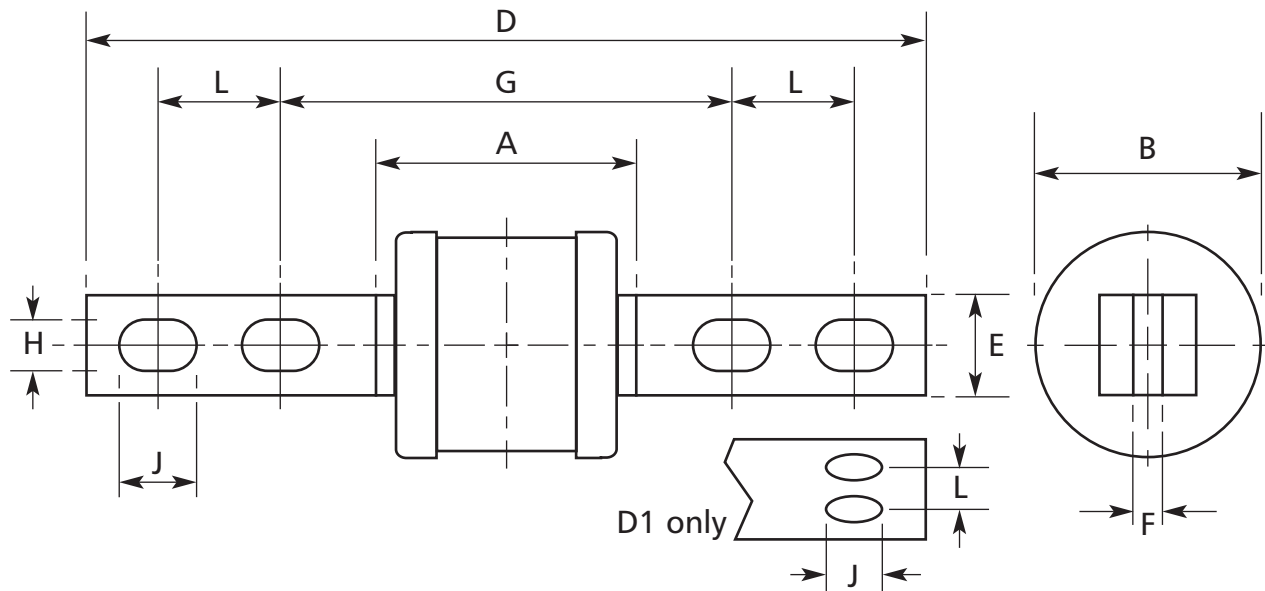
Rated Breaking Capacity - 80 kA at 415V a.c.

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## OUTLINE DIMENSIONS

Type 'N&T' Industrial Fuse-Links (Central Tag, Double Hole)

Issue: 5 Date: 16.7.2021 Approved TH



BS 88-2:2013 (Fuse System E) Reference "C & D" Fuse-Link dimensions and tag variants


BS88 Ref.	Type Ref.	Current Ratings (A)	Dimensions (mm)								
			A max	B max	D max	E max	F nom	G nom	H nom	J nom	L nom
C1	TM	250*, 315*, 355*, 400	52	51	210	26	6.3	133	10.3	16	25.4
-	TMT	355*, 400	52	51	267	26	6.3	165	10.3	16	31.8
C2	TTM	450*, 500, 560*, 630	54	61	210	26	7.8	133	10.3	16	25.4
-	TT	450*, 500, 560*, 630	54	61	267	26	7.8	165	10.3	16	31.8
C3	TLM	670*, 710*, 750*, 800	56	73	210	26	9.5	133	10.3	16	25.4
-	TLT	670*, 710*, 750*, 800	56	73	267	26	9.5	165	10.3	16	31.8
D1	TLU	450*, 500, 560*, 630 670*, 710*, 750*, 800	56	73	267	26	9.5	149	10.3	16	31.8

\*NON-STANDARDISED CURRENT RATINGS ADDITIONAL TO BS 88-2:2013 (FUSE SYSTEM E)

IEC 60269-2:2013 / BS HD 60269-2:2013 / BS 88-2:2013 (Fuse System E)

Rated Voltage 415V a.c. 250V d.c. Breaking Range and Utilisation Category "gG"

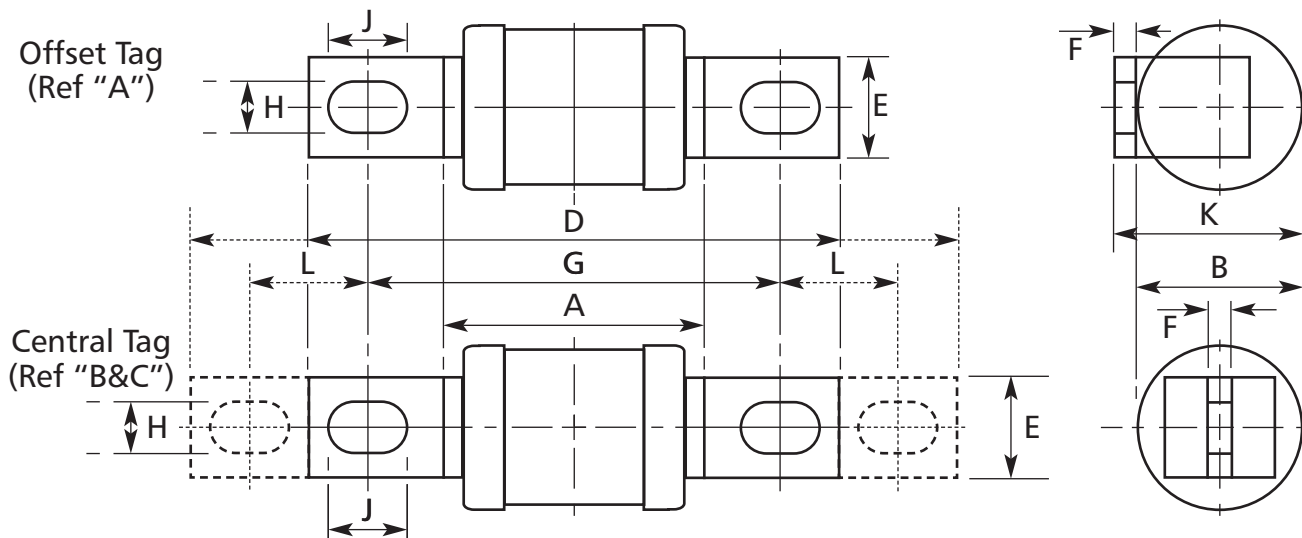
Rated Breaking Capacity - 80 kA at 415V a.c.

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## OUTLINE DIMENSIONS

Type 'N&T' Industrial Motor-Circuit Protection Fuse-Links


Issue: 5 Date: 16.7.2021 Approved TH

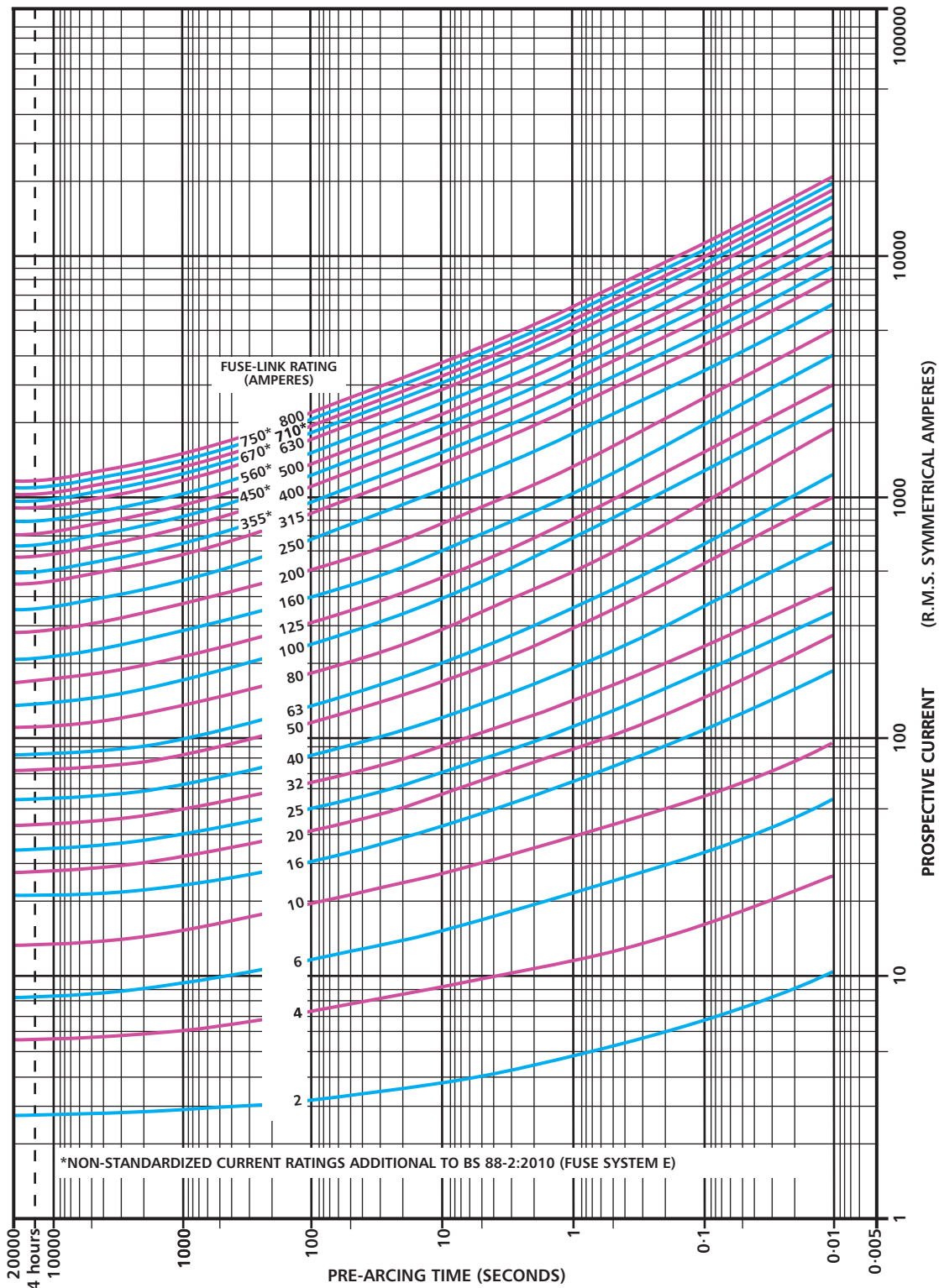


BS88 Ref.	Type Ref.	Current Ratings contMmotor (A) (A)	Dimensions (mm)									
			A <sub>max</sub>	B <sub>max</sub>	D <sub>max</sub>	E <sub>max</sub>	F <sub>nom</sub>	G <sub>nom</sub>	H <sub>nom</sub>	J <sub>nom</sub>	K <sub>max</sub>	L <sub>nom</sub>
<b>OFFSET TAG</b>												
A1	NIT	20M25, 32	33	12.7	56	9.5	0.8	44.5	4.8	open ended slot	14.3	
-	NIT	32M40*, 50*, 63*	36.5	17.5	56	9.5	0.8	44.5	4.8	open ended slot	18.3	
A2	TIA	32M40, 50, 63	49	22	86	9	1.2	73	5.5	8	24	
A3	TIS	63M80, 100, 100M125*	49	26	89	13	1.2	73	5.5	open ended slot	28	
A4	TCP	63M100*, 80M100*	51	26	110	20	2.4	94	8.7	11	38	
A4	CTCP	100M125, 160, 200	51	31	110	20	2.4	94	8.7	11	38	
A4	TCP	100M125, 160, 200	51	35	110	20	2.4	94	8.7	11	38	
-	TFP*	200M250*, 315*	51	41	110	20	2.4	94	8.7	11	45	
<b>CENTRAL TAG (SINGLE HOLE)</b>												
-	TB*	63M80*, 100*	45	26	111	13	1.2	97	7.1	13		
as B1	TBC	63M80*, 100*	45	26	137	20	3.2	111	8.7	14		
B1	CTC	100M125, 160, 200	45	31	137	20	3.2	111	8.7	14		
B1	TC	100M125, 160, 200	45	35	137	20	3.2	111	8.7	14		
B2	TF	200M250, 315	45	41	137	20	3.2	111	8.7	14		
B3	TKF*	315M355*, 400*	45	51	137	26	6.4	111	8.7	14		
B4	TMF*	400M450*, 500*	52	61	137	26	6.4	111	8.7	16		
<b>CENTRAL TAG (DOUBLE HOLE)</b>												
C1	TM*	400M450*, 500*	52	61	210	26	6.4	133	10.3	16		25.4


\*NON-STANDARDISED DIMENSIONS AND CURRENT RATINGS ADDITIONAL TO BS 88-2:2013 (FUSE SYSTEM E)

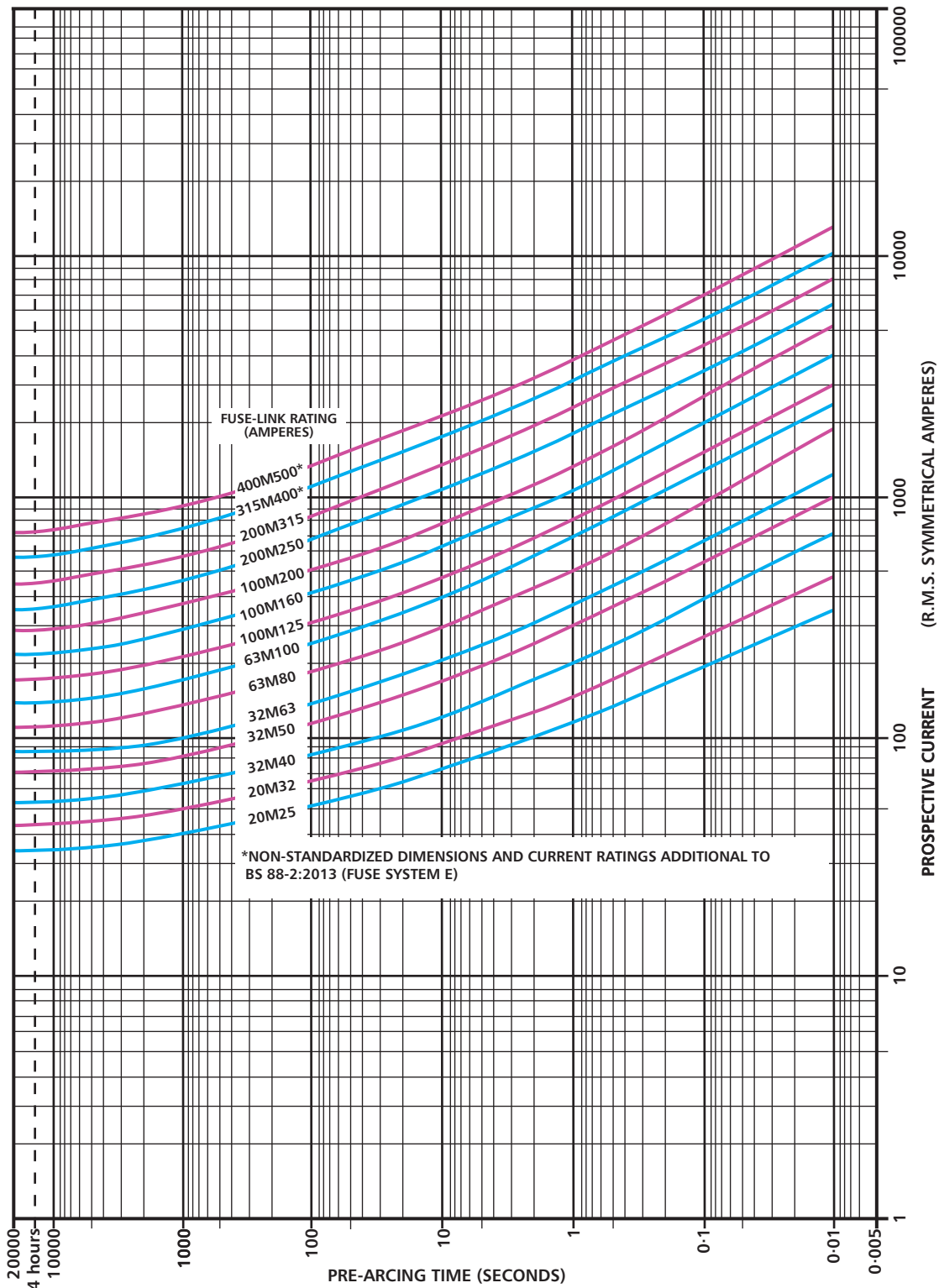
IEC 60269-2:2013 / BS HD 60269-2:2013 / BS 88-2:2013 (Fuse System E) Rated Voltage 415V a.c. 250V d.c. Breaking Range and Utilisation Category "gG" Rated Breaking Capacity - 80 kA at 415V a.c.

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IEC 60269-2:2013 / BS HD 60269-2:2013 / BS 88-2:2013 (Fuse System E)  
 Rated Voltage 415V a.c. 250V d.c. Breaking Range and Utilisation Category "gG"  
 Rated Breaking Capacity - 80 kA at 415V a.c.

ASTA  Certified



IEC 60269-2:2013 / BS HD 60269-2:2013 / BS 88-2:2013 (Fuse System E)  
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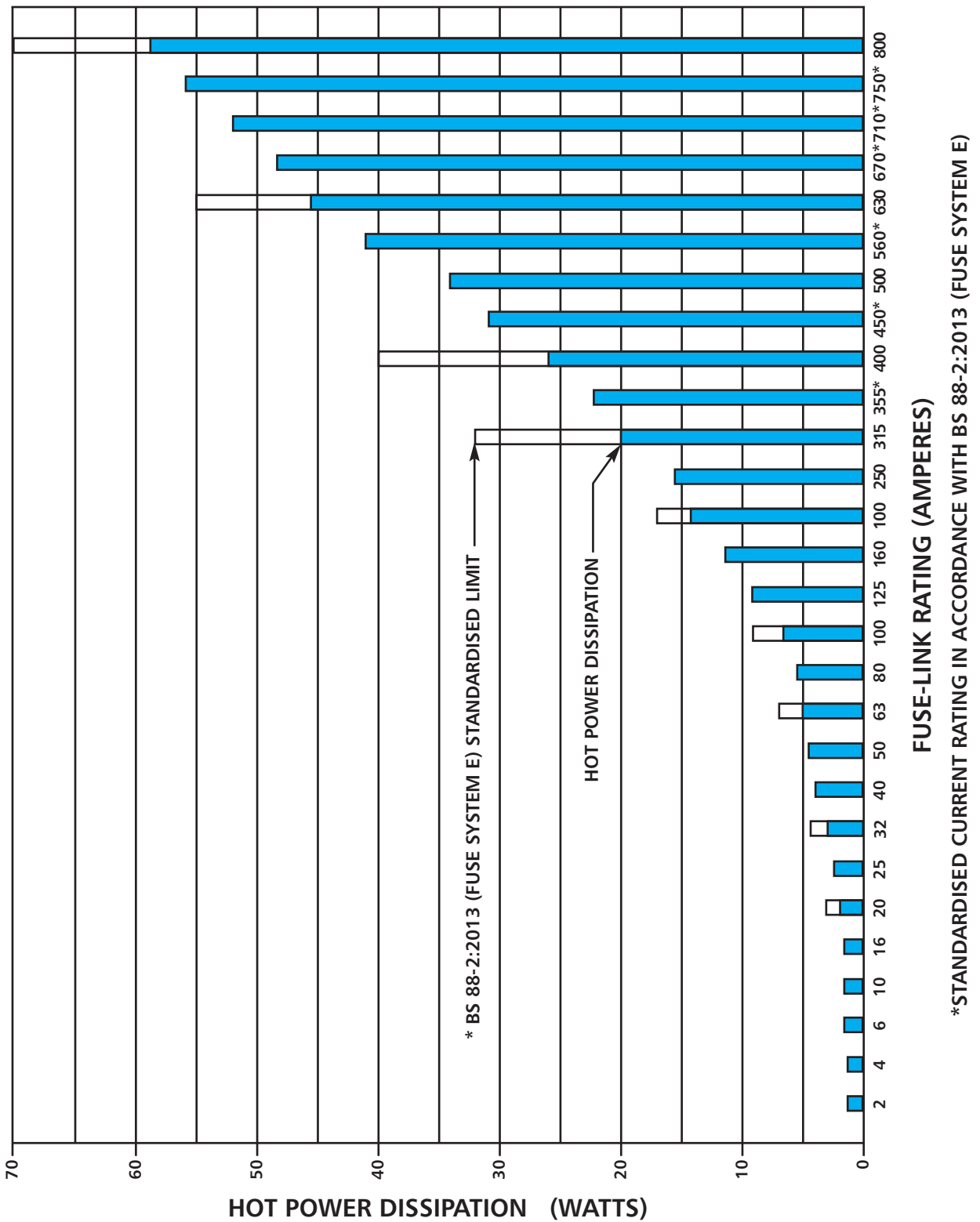
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## POWER DISSIPATION

Type 'N&T' Industrial Fuse-Links

Issue: 5 Date: 16.7.2021 Approved TH



IEC 60269-2:2013 / BS HD 60269-2:2013 / BS 88-2:2013 (Fuse System E)  
 Rated Voltage 415V a.c. 250V d.c. Breaking Range and Utilisation Category "gG"  
 Rated Breaking Capacity - 80 kA at 415V a.c.  
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FUSE-LINK RATING (A)	CURRENT CARRYING CAPABILITY (IN AMPERES) AT ELEVATED TEMPERATURES								
	40°C	45°C	50°C	55°C	60°C	65°C	70°C	75°C	80°C
2,4,6,10									
16									15
20								18	16
	<b>FUSE-LINKS FULLY RATED</b>								
25							23	21	19
32							31	30	29
40							39	38	37
50							49	48	47
63							61	59	57
80							79	78	76
100							98	96	94
125							122	119	116
160							150	145	140
200					195	190	185	180	175
250					240	230	220	210	200
315					310	300	290	270	250
355*					345	335	320	300	280
400				390	380	370	350	330	310
450*				445	430	410	390	370	350
500				490	480	460	440	420	400
560*				550	530	510	490	470	450
630		620	610	590	570	550	530	510	490
670*		660	640	620	600	580	560	540	520
710*		700	680	660	640	620	600	580	560
750*		740	730	710	690	670	650	630	600
800		780	760	740	720	700	680	660	640

\*NON-STANDARDISED CURRENT RATING IN ACCORDANCE WITH BS 88-2:2013 (FUSE SYSTEM E)

Where the Fuse-Link is mounted in the open, the elevated temperature is the ambient air temperature ( $T_a$ ).

Where the fuse-link is mounted in an enclosure, the elevated temperature is the internal "fluid environment temperature" ( $T_e$ ) within the enclosure. Where this is not known, it should be assumed to be 15°C higher than the ambient air temperature external to the enclosure i.e.  $T_e = T_a + 15^\circ\text{C}$ .

- EXAMPLES
- 100A fuse-link mounted in the open at an ambient air temperature of 65°C.  
CURRENT CARRYING CAPABILITY = 100A.
  - 200A fuse-link mounted in the open at an ambient air temperature of 60°C.  
CURRENT CARRYING CAPABILITY = 195A.
  - 400A fuse-link mounted in an enclosure having an internal temperature of 65°C.  
CURRENT CARRYING CAPABILITY = 370A.
  - 800A fuse-link mounted in an enclosure with an unknown internal temperature and an external ambient air temperature of 40°C. Assume the internal temperature is 55°C (40°C + 15°C).  
CURRENT CARRYING CAPABILITY = 740A.

IEC 60269-2:2013 / BS HD 60269-2:2013 / BS 88-2:2013 (Fuse System E)

Rated Voltage 415V a.c. 250V d.c. Breaking Range and Utilisation Category "gG"

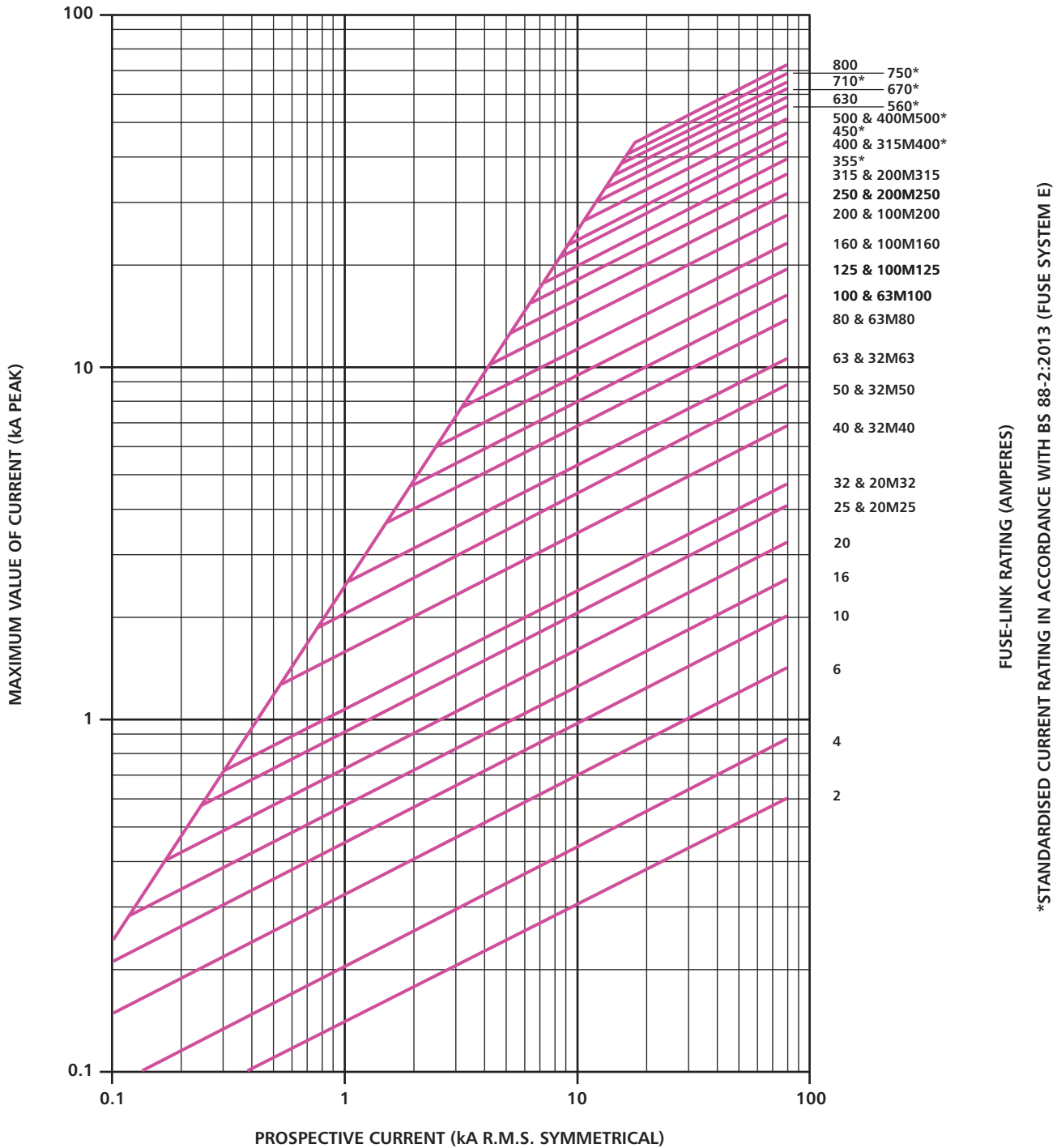
Rated Breaking Capacity - 80 kA at 415V a.c.

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## CUT-OFF CURRENT CHARACTERISTICS

Type 'N&T' Industrial (Including Motor Circuit Protection) Fuse-Links

Issue: 5 Date: 16.7.2021 Approved TH



IEC 60269-2:2013 / BS HD 60269-2:2013 / BS 88-2:2013 (Fuse System E)

Rated Voltage 415V a.c. 250V d.c. Breaking Range and Utilisation Category "gG"

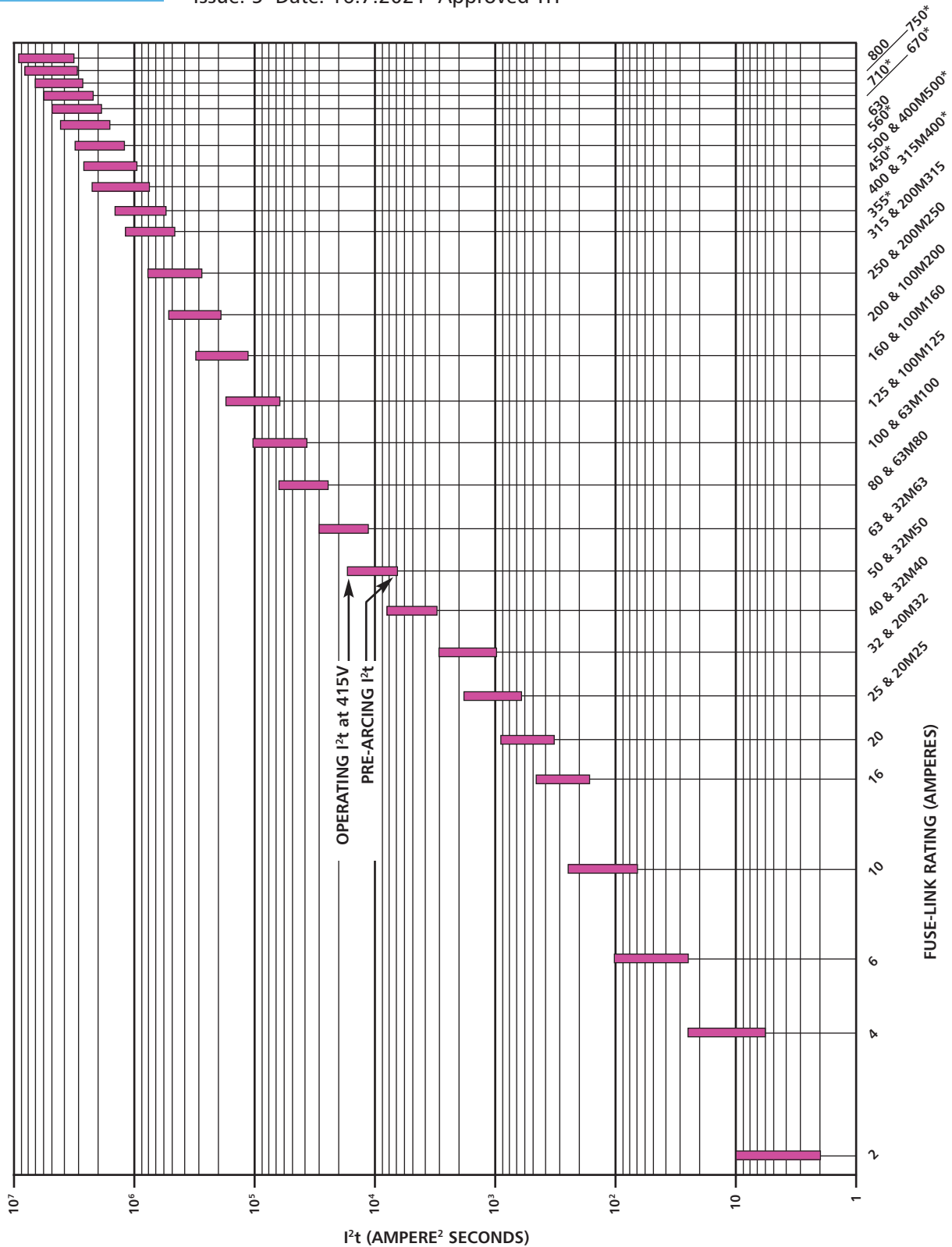
Rated Breaking Capacity - 80 kA at 415V a.c.

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## I<sup>2</sup>t CHARACTERISTICS

Type 'N&T' Industrial (Including Motor Circuit Protection) Fuse-Links

Issue: 5 Date: 16.7.2021 Approved TH



\*STANDARDISED CURRENT RATING IN ACCORDANCE WITH BS 88-2:2013 (FUSE SYSTEM E)

IEC 60269-2:2013 / BS HD 60269-2:2013 / BS 88-2:2013 (Fuse System E)

Rated Voltage 415V a.c. 250V d.c. Breaking Range and Utilisation Category "gG"

Rated Breaking Capacity - 80 kA at 415V a.c.

ASTA  Certified

## MOTOR STARTING CAPABILITY

Type 'N&T' Industrial (Including Motor Circuit Protection) Fuse-Links

Issue: 5 Date: 16.7.2021 Approved TH

MAXIMUM FULL LOAD CURRENT STARTING CAPABILITY

MOTOR RATING	DIRECT-ON-LINE START (7xFLC FOR 10 SEC)		ASSISTED START (3.5xFLC FOR 20 SEC)		MAXIMUM MOTOR FLC
	FUSE-LINK RATING (AMPERES)		FUSE-LINK RATING (AMPERES)		
	"gG"	"gM"	"gG"	"gM"	
0.75	2	-	2	-	1.3
1.1	2.5	-	4	-	2.4
1.5	3.5	-	6	-	4.3
2.2	5	-	10	-	6.4
3	6.5	-	16	-	11
4	8	-	20	-	14
5.5	11	20M25	25	20M25	19
7.5	14	20M32	32	32	24
10	19	32M40	40	32M40	31
11	21	32M50	50	-	46
15	28	32M63	63	-	51
18.5	35	63M80	80	-	69
22	41	63M100	100	-	94
26	48	63M100	125	-	110
30	55	100M125	160	-	150
33	62	100M160	200	-	180
37	69	100M160	250	-	220
45	83	100M200	315	-	250
53	97	100M200	355*	-	310
55	100	100M200	400	-	340
60	110	200M250	450*	400M500*	380
67	120	200M250	500	-	430
75	135	200M250	560*	-	460
90	160	200M315	630	-	500
93	170	315M400*	670*	-	530
110	200	315M400*	710*	-	550
130	230	315M400*	750*	-	570
150	260	400M500*	800	-	600
160	280	400M500*	-	-	-
170	290	400M500*	-	-	-
180	320	560*	-	-	-
200	350	630	-	-	-
220	380	670*	-	-	-
250	420	710*	-	-	-
260	450	750*	-	-	-
300	500	800	-	-	-

MOTOR RATING	DIRECT-ON-LINE START (7xFLC FOR 10 SEC)		ASSISTED START (3.5xFLC FOR 20 SEC)		MAXIMUM MOTOR FLC
	FUSE-LINK RATING (AMPERES)		FUSE-LINK RATING (AMPERES)		
	"gG"	"gM"	"gG"	"gM"	
0.75	2	-	2	-	0.6
1.1	4	-	4	-	1.3
1.5	6	-	6	-	2.3
2.2	10	-	10	-	4.1
3	16	-	16	-	6.0
4	20	-	20	-	7.9
5.5	25	20M25	25	20M25	10
7.5	32	20M32	32	20M32	13
10	40	32M40	40	32M40	18
11	50	32M50	50	-	26
15	63	32M63	63	-	30
18.5	80	63M80	80	-	40
22	100	63M100	100	-	54
26	125	63M100	125	-	61
30	160	100M125	160	-	82
33	200	100M160	200	-	110
37	250	100M160	250	200M250	150
45	315	100M200	315	200M315	170
53	355*	100M200	355*	315M400*	200
55	400	100M200	400	315M400*	240
60	450*	200M250	450*	400M500*	280
67	500	200M250	500	400M500*	310
75	560*	200M250	560*	-	350
90	630	200M315	630	-	380
93	670*	315M400*	670*	-	420
110	710*	315M400*	710*	-	450
130	750*	315M400*	750*	-	480
150	800	400M500*	800	-	510
160	-	400M500*	-	-	-
170	-	400M500*	-	-	-
180	-	560*	-	-	-
200	-	630	-	-	-
220	-	670*	-	-	-
250	-	710*	-	-	-
260	-	750*	-	-	-
300	-	800	-	-	-

FUSE-LINK SELECTION FOR 3 PHASE 415V a.c. INDUCTION MOTOR CIRCUITS

MOTOR RATING	DIRECT-ON-LINE START (7xFLC FOR 10 SEC)		ASSISTED START (3.5xFLC FOR 20 SEC)		MAXIMUM MOTOR FLC
	FUSE-LINK RATING (AMPERES)		FUSE-LINK RATING (AMPERES)		
	"gG"	"gM"	"gG"	"gM"	
0.75	2	-	4	-	1.3
1.1	2.5	-	6	-	2.4
1.5	3.5	-	6	-	4.3
2.2	5	-	10	-	6.4
3	6.5	-	16	-	11
4	8	-	16	-	14
5.5	11	20M25	16	-	19
7.5	14	20M32	20	-	24
10	19	32M40	25	20M25	31
11	21	32M50	32	20M32	46
15	28	32M50	32	-	51
18.5	35	32M63	40	32M40	69
22	41	63M80	50	-	94
26	48	63M100	50	-	110
30	55	63M100	63	-	150
33	62	100M125	80	63M80	180
37	69	100M160	80	63M80	220
45	83	100M160	100	-	250
53	97	100M200	100	-	310
55	100	100M200	125	100M125	340
60	110	100M200	125	100M125	380
67	120	200M250	160	-	430
75	135	200M250	160	-	460
90	160	200M250	160	-	500
93	170	200M315	200	-	530
110	200	315M400*	200	-	550
130	230	315M400*	250	200M250	570
150	260	315M400*	315	-	600
160	280	400M500*	315	-	-
170	290	400M500*	355*	315M400*	-
180	320	400M500*	355*	315M400*	-
200	350	560*	400	-	-
220	380	630	400	-	-
250	420	670*	450	400M500*	-
260	450	710*	500	-	-
300	500	750*	560*	-	-
	500	800	630	-	-

This data is based upon normal conditions and average efficiencies and power factors. Conditions such as long run-up times, large numbers of starts in succession, high ambient temperatures or abnormal transients during star/delta switching may necessitate adjustments to fuse-link selection.

IEC 60269-2:2013 / BS HD 60269-2:2013 / BS 88-2:2013 (Fuse System E)

Rated Voltage 415V a.c. 250V d.c. Breaking Range and Utilisation Category "gG"

Rated Breaking Capacity - 80 kA at 415V a.c.

ASTA  Certified