

Eaton's Bussmann series 17.5 kV Medium voltage fuse links



Product description

Eaton's Bussmann series range of 17.5 kV DIN Medium voltage fuse links are suitable for transformer protection.

These fuse links can be used even where there is no secondary LV protection, provided they are used with fuse switches fitted with instantaneous striker tripping.

Standard features

- Cool running, low watts loss and power dissipation thanks to the M-effect ensuring high levels of substation utilisation.
- Silver elements ensuring high conductivity and low power (revenue) loss.
- 100% X-ray, all our medium voltage fuse links are X-rayed ensuring the highest possible standards are maintained.

Catalogue symbol:

- 17.5AILSJ(amp)
- 17.5TDLSJ(amp)
- 17.5TFLSJ(amp)
- 17.5TDMEJ(amp)
- 17.5THMEJ(amp)
- 17.5TKMEJ(amp)

Technical data:

- Volts: 17.5 kV
- Amps: 6.3 to 125 A
- Breaking capacity: 35.5 to 50 kA
- Class of operation: Back-up as IEC 60282-1 (2005)
- Suitable for outdoor and indoor use
- RoHS compliant

Standards/Approvals:

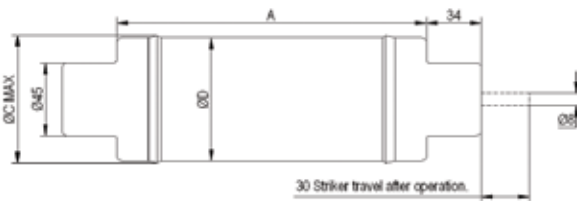
- DIN 43625
- VDE 0670 part 4 and 402
- IEC 60282-1 (2005)

Packaging:

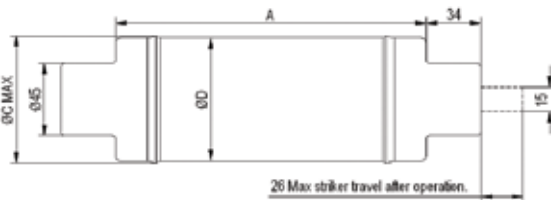
- MOQ 3

Dimensions - mm

EJ Outline



SJ Outline

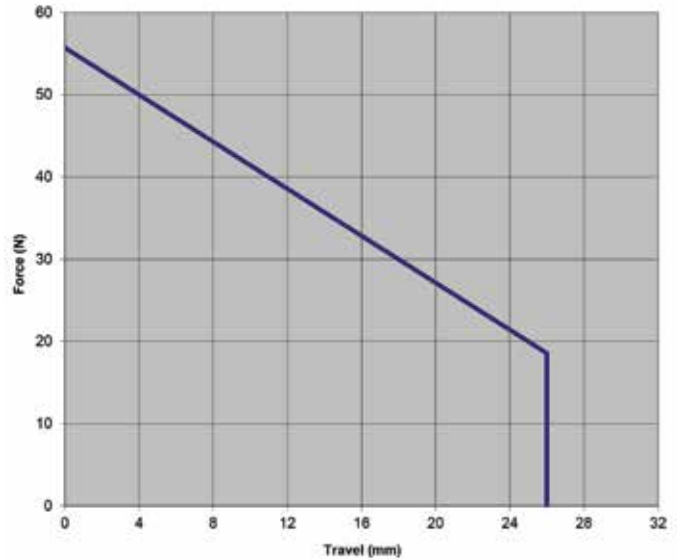


Fuse reference	A	C	D	Weight (Kg)
AILSJ	442	79	76	4.5
TDLSJ	292	54	51	1.7
TFLSJ	292	80	76	3.1
TDMEJ	442	54	51	2.5
THMEJ	442	67	64	3.7
TKMEJ	442	80	76	5.1

Striker diagrams

S = Spring diagram 50N to DIN 43625 and IEC 60282-1 designation 'medium'

Force x Travel diagram for 50N DIN striker



E = Spring striker 80N to IEC 60282-1 designation 'medium'

Force x Travel diagram for 80N DIN striker

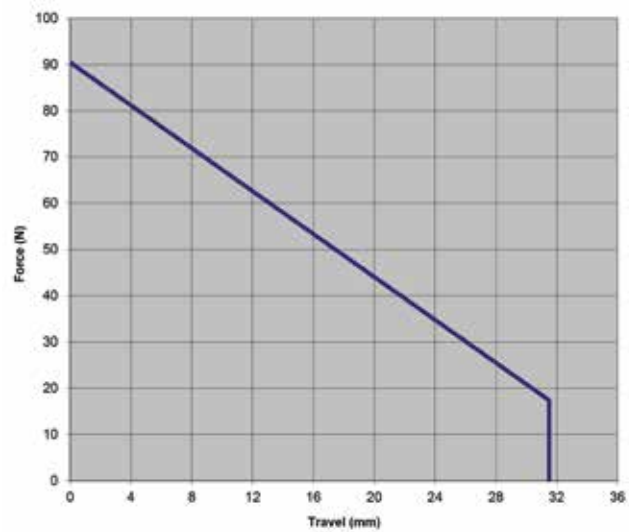


Table 1. Part numbers

Part numbers	Current I_n (A)	Breaking capacity I_b (kA)	Minimum breaking current I_3 (A)	Cold resistance & Watts loss in free air		Joule integral (I^2t)		Length mm	Diameter mm	Weight kg
				mΩ	W	Minimum Pre-arcing	Maximum operating			
17.5AJSJ40*	100	25	176	7.33	102	1.4×10^4	2×10^5	442	76	4.5
17.5AJSJ50*	50	20	137	29.5	102	1.8×10^3	2.9×10^4	442	76	4.5
17.5AJSJ63*	63	20	125	23.6	130	3.2×10^3	4.5×10^4	442	76	4.5
17.5TDL SJ6.3*	6.3	35.5	23	313	15	4.8×10^1	6.1×10^2	292	51	1.7
17.5TDL SJ10*	10	35.5	19	185	23	2.8×10^2	4×10^3	292	51	1.7
17.5TDL SJ16*	16	35.5	59	104	34	2.9×10^2	2×10^3	292	51	1.7
17.5TDL SJ20*	20	35.5	80	69.2	38	5.7×10^2	4.4×10^3	292	51	1.7
17.5TDL SJ25*	25	35.5	100	55.4	48	8.9×10^2	6.6×10^3	292	51	1.7
17.5TDL SJ31.5*	31.5	35.5	118	41.4	58	5.1×10^2	1.1×10^4	292	51	1.7
17.5TDL SJ40*	40	35.5	148	31.1	76	8×10^2	1.8×10^4	292	51	1.7
17.5TFL SJ50*	50	35.5	225	17.3	62	8.1×10^3	6×10^4	292	76	3.1
17.5TDM EJ6.3	6.3	50	25	324	14	9.8×10^1	1×10^3	442	51	2.5
17.5TDM EJ10	10	50	36	192	24	2.8×10^2	2.3×10^3	442	51	2.5
17.5TDM EJ16	16	50	55	79.6	23	2.6×10^2	3.9×10^3	442	51	2.5
17.5TDM EJ20	20	50	69	57	27	5.2×10^2	5.4×10^3	442	51	2.5
17.5TDM EJ25	25	50	87	45.5	34	8.1×10^2	8.4×10^3	442	51	2.5
17.5TDM EJ31.5	31.5	50	87	34.1	41	1.4×10^3	1.5×10^4	442	51	2.5
17.5TDM EJ40	40	50	111	25	53	2.4×10^3	2.5×10^4	442	51	2.5
17.5TDM EJ50	50	50	174	19.7	69	2.8×10^3	3.1×10^4	442	51	2.5
17.5TDM EJ63	63	50	200	15.4	89	4.3×10^3	4.7×10^4	442	51	2.5
17.5THMEJ80	80	50	270	11.5	108	7.9×10^3	9.1×10^4	442	64	3.7
17.5THMEJ100	100	50	376	8.38	127	2×10^4	1.4×10^5	442	64	3.7
17.5TKMEJ125	125	50	467	5.95	146	3.4×10^4	3.5×10^5	442	76	5.1

* Not suitable for outdoor use

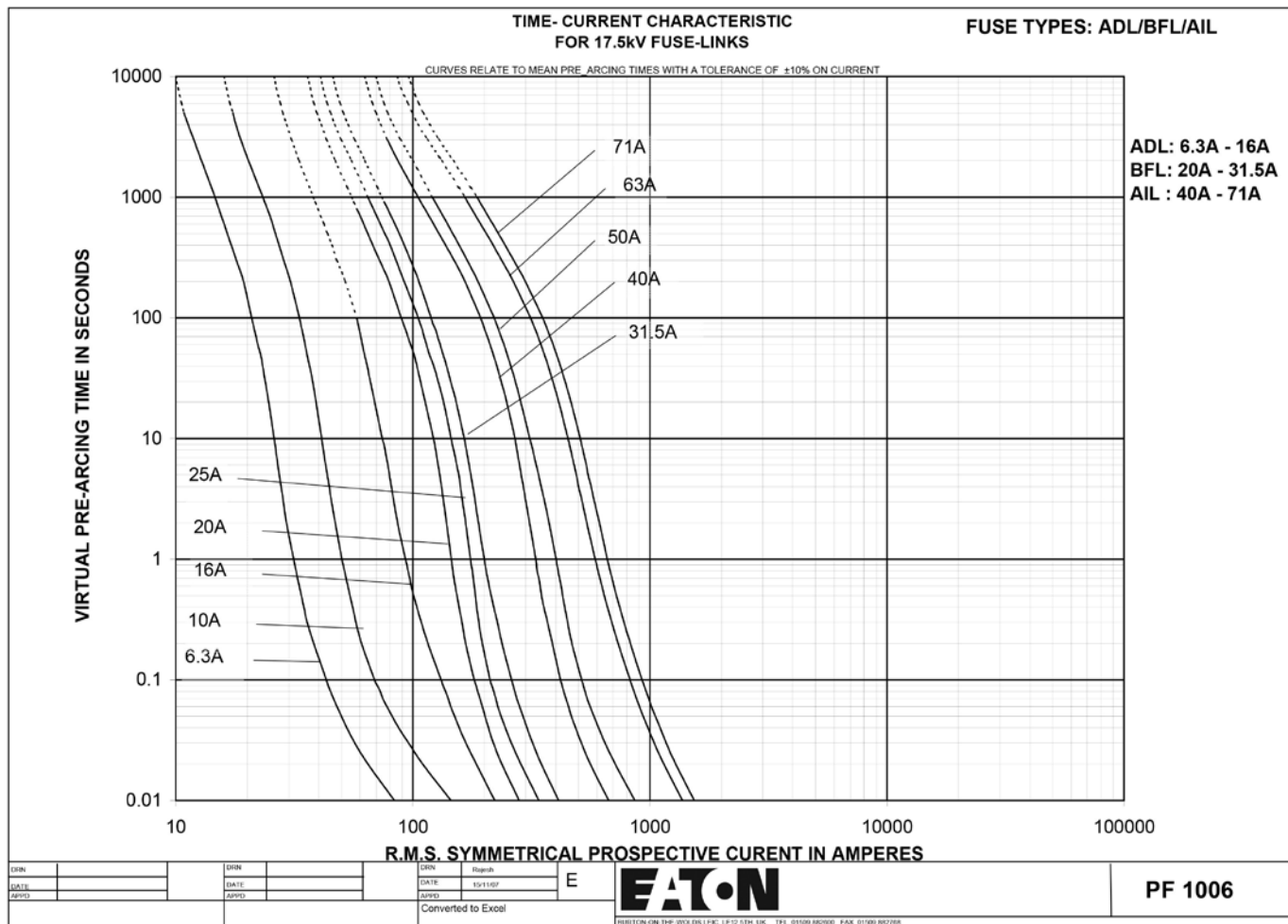
Table 2. Cross reference

Eaton's Bussmann series	SIBA	MESA	Merlin Gerin	Inael	ABB
17.5TDL SJ6.3	3025513	N/A	N/A	IB-D1	1YMB531003M0001
17.5TDL SJ10	3025513	CFR-17,5/10	51006 522 M0	IB-D1	1YMB531003M0002
17.5TDL SJ16	3025513	CFR-17,5/16	51006 523 M0	IB-D1	1YMB531003M0003
17.5TDL SJ20	3022113	N/A	N/A	IB-D1	1YMB531003M0013
17.5TDL SJ25	3022113	CFR-17,5/25	51006 524 M0	IB-D1 & IB-D2	1YMB531003M0004
17.5TDL SJ31.5	3022113	CFR-17,5/31.5	51006 525 M0	IB-D1 & IB-D2	1YMB531003M0014
17.5TDL SJ40	3022113	CFR-17,5/40	51006 526 M0	IB-D1 & IB-D2	1YMB531003M0021
17.5TFL SJ50	3022113	N/A	N/A	IB-D2	1YMB531003M0022
17.5TDM EJ6.3	3023113	N/A	N/A	IB-D1	1YMB531037M0001
17.5TDM EJ10	3023113	N/A	N/A	IB-D1	1YMB531037M0002
17.5TDM EJ16	3023113	N/A	N/A	IB-D1	1YMB531037M0003
17.5TDM EJ20	3023113	N/A	N/A	IB-D1	1YMB531037M0013
17.5TDM EJ25	3023113	N/A	N/A	IB-D1	1YMB531037M0004
17.5TDM EJ31.5	3023113	N/A	N/A	IB-D1	1YMB531037M0014
17.5TDM EJ40	3023113	N/A	N/A	IB-D1	1YMB531037M0021
17.5TDM EJ50	3023213	N/A	N/A	N/A	1YMB531037M0006
17.5TDM EJ63	3023213	N/A	N/A	IB-D2	1YMB531037M0007
17.5THMEJ80	3023213	N/A	N/A	N/A	1YMB531037M0008
17.5THMEJ100	3023313	N/A	N/A	IB-D2	1YMB531003M0009
17.5TKMEJ125	3023314	N/A	N/A	N/A	1YMB531003M0010

Table 3. Watts loss comparison

Eaton's Bussmann series	Eaton's Bussmann series	SIBA	MESA	Merlin Gerin	ABB
17.5DLSJ6.3	15	25			54
17.5DLSJ10	23	48	23	23	41
17.5DLSJ16	34	37	47	47	67
17.5DLSJ20	38	40			52.6
17.5DLSJ25	48	56	72	72	64
17.5DLSJ31.5	58	65	78	78	56.7
17.5DLSJ40	76	84	90	90	80
17.5TFLSJ50	62	101			90
17.5TDMEJ6.3	14	31			54
17.5TDMEJ10	24	48			41
17.5TDMEJ16	23	37			67
17.5TDMEJ20	27	42			52.6
17.5TDMEJ25	34	56			64
17.5TDMEJ31.5	41	69			56.7
17.5TDMEJ40	53	84			80
17.5TDMEJ50	69	101			90
17.5TDMEJ63	89	106			100
17.5THMEJ80	106	137			124
17.5THMEJ100	128	182			136
17.5TKMEJ125	146	229			175

Time current curve - Fuse type AIL



**TIME - CURRENT CHARACTERISTIC
FOR 17.5kV FUSE-LINKS**

FUSE TYPES: TDL

CURVES RELATE TO MEAN PRE-ARcing TIMES WITH A TOLERANCE OF $\pm 10\%$ ON CURRENT

VIRTUAL PRE-ARcing TIME IN SECONDS

R.M.S. SYMMETRICAL PROSPECTIVE CURRENT IN AMPERES

Curves shown for ratings: 6.3A, 10A, 16A, 20A, 25A, 31.5A, 40A.

**TIME - CURRENT CHARACTERISTIC
FOR 17.5kV FUSE-LINKS**

FUSE TYPES: TFL

CURVES RELATE TO MEAN PRE-ARcing TIMES WITH A TOLERANCE OF $\pm 10\%$ ON CURRENT

VIRTUAL PRE-ARcing TIME IN SECONDS

R.M.S. SYMMETRICAL PROSPECTIVE CURENT IN AMPERES

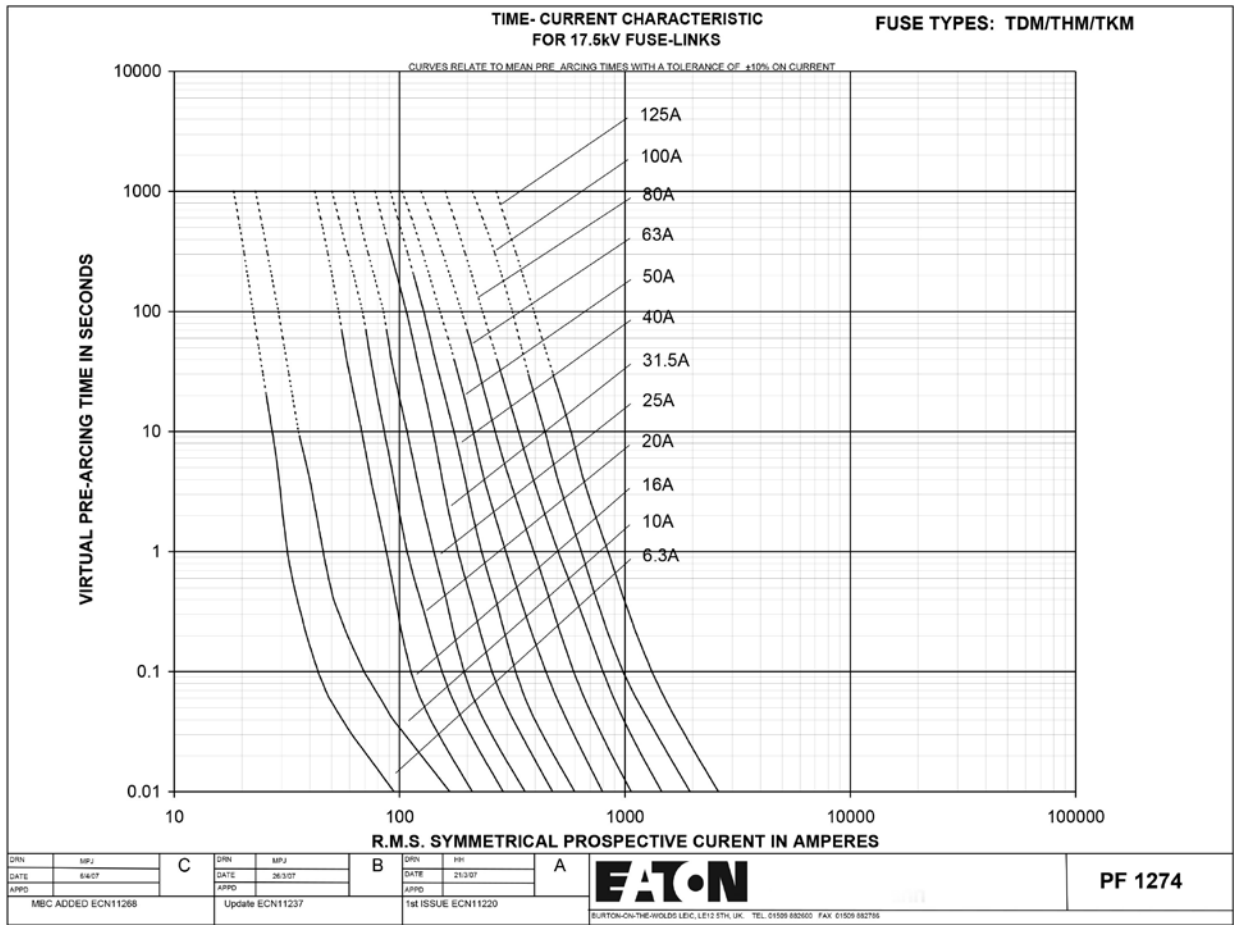
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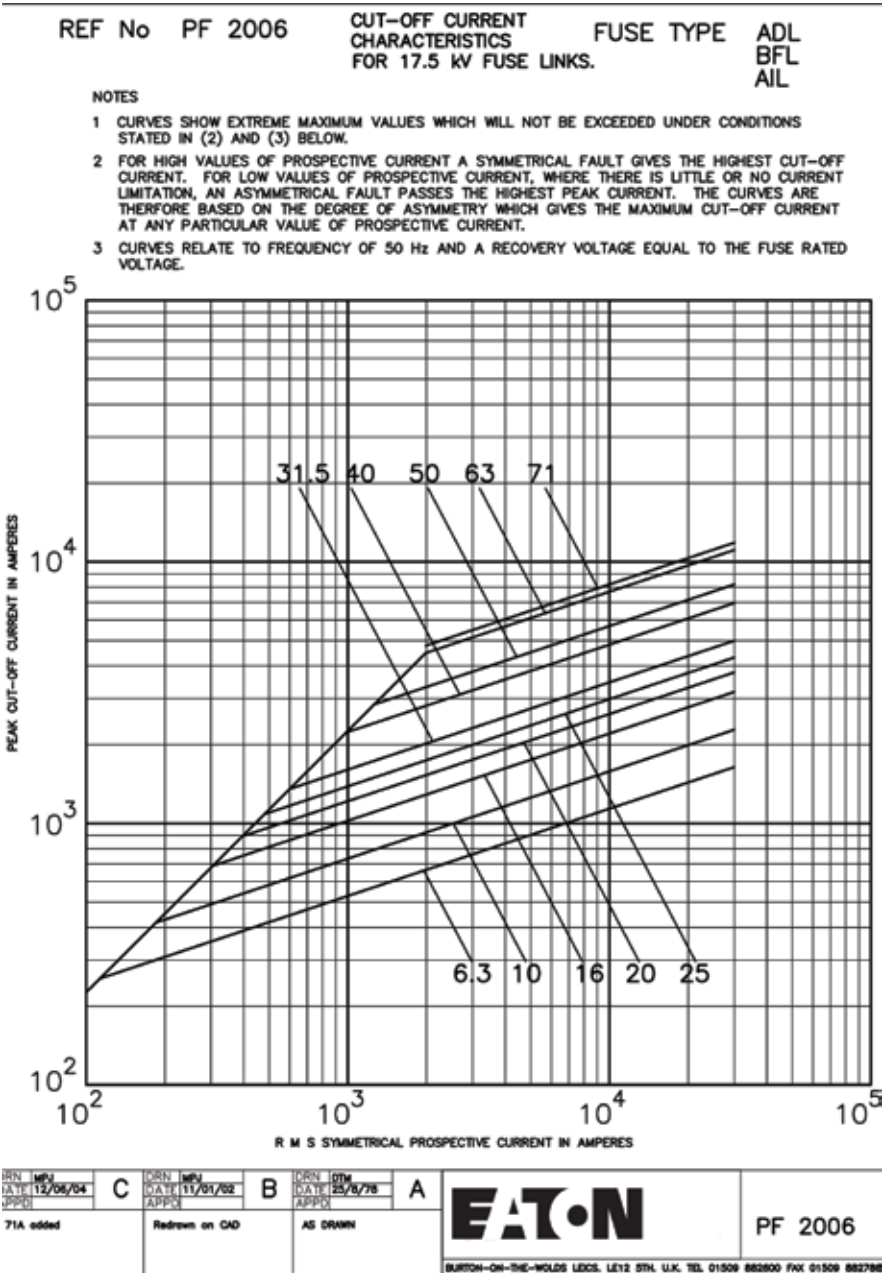
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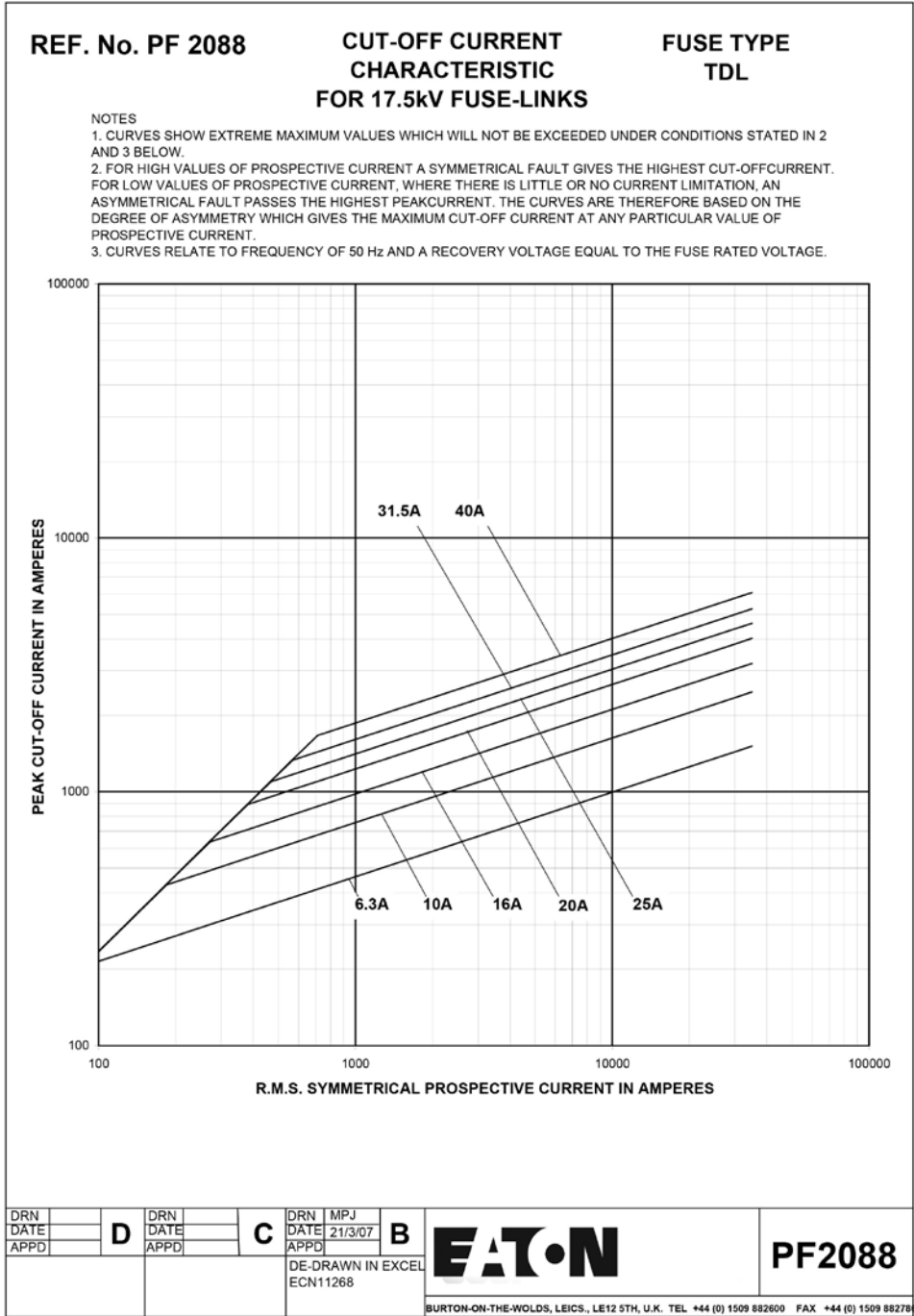
Time current curve - Fuse types TDM, THM, TKM



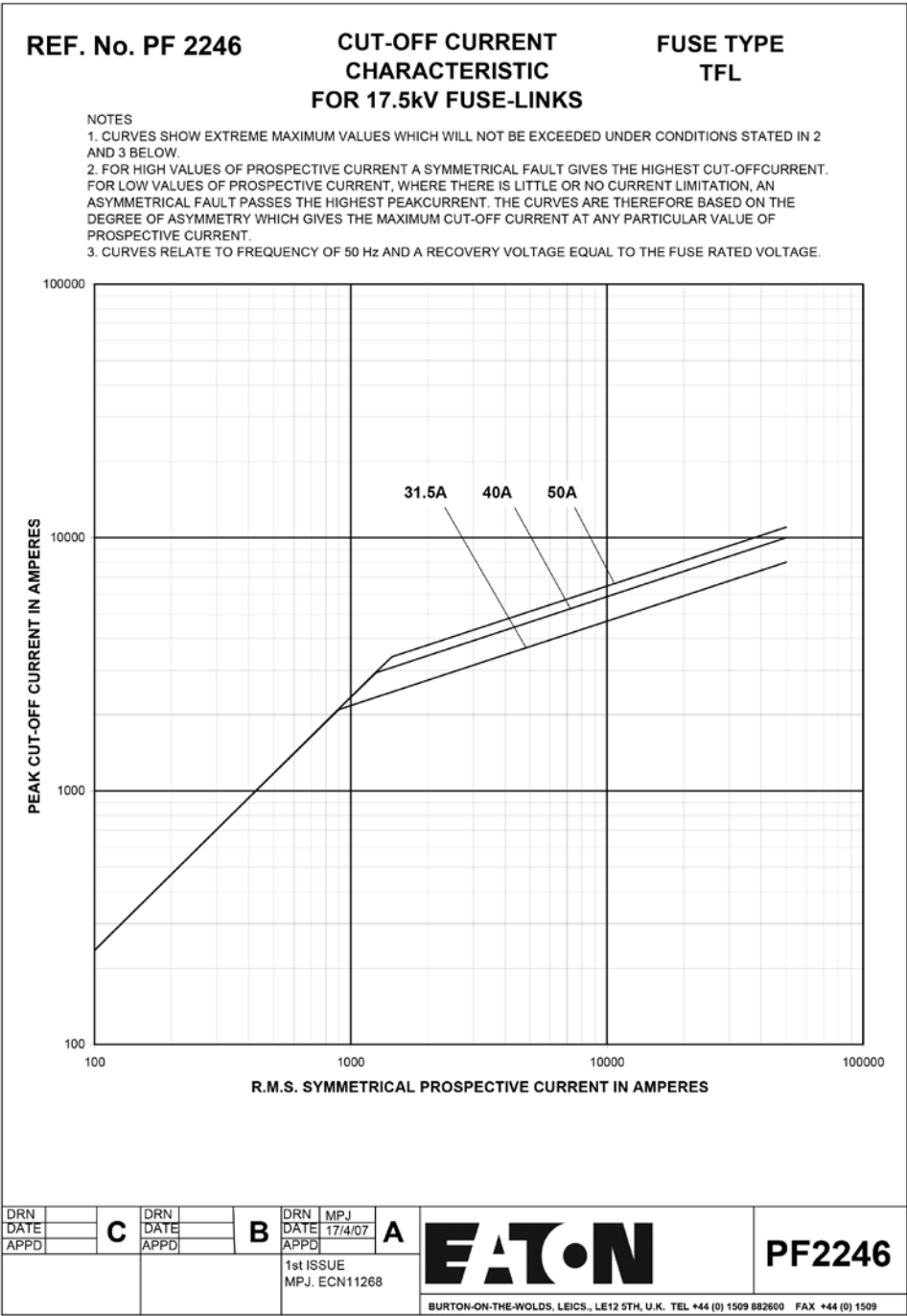
Cut-off curve - Fuse type AILS



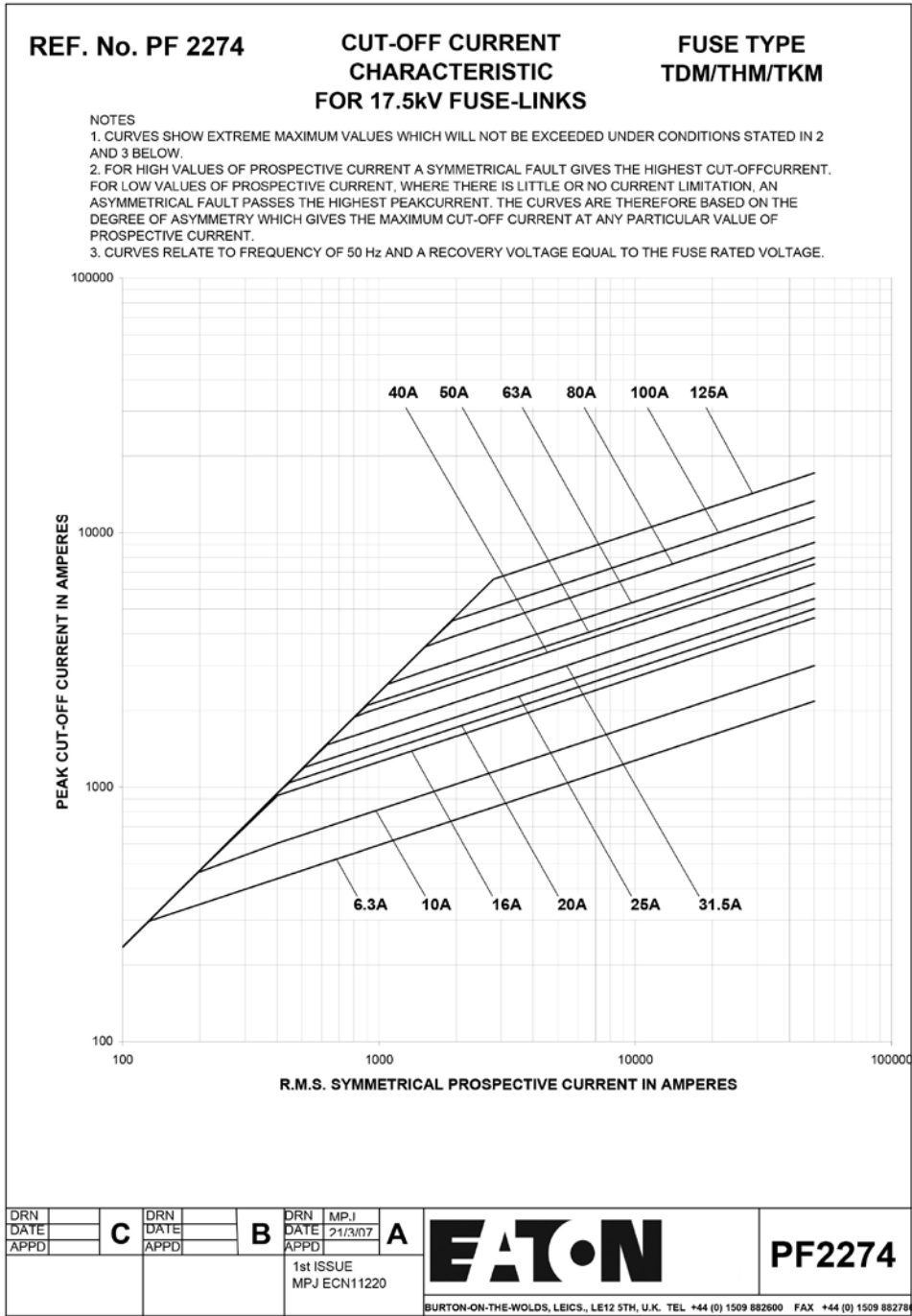
Cut-off curve - Fuse type TDL



Cut-off curve - Fuse type TFL



Cut-off curve - Fuse types TDM, THM, TKM



ASTA certificate

ASTA

CERTIFICATE OF SELECTED TYPE TESTS

Laboratory Ref. No: DHK007-02

Certificate No. 16596

APPARATUS:		Eight Homogeneous Series of Air Insulated High Voltage Current Limiting Back-up Fuses Fitted with Spring Operated Medium Striker Devices.			
Ratings ->	Series 1. Type 17.5TOMEJ63	Rated Voltage 17.5kV	Rated Current 63A	Rated Frequency 50Hz	
	Series 2. Type 17.5TOMEJ100	Rated Voltage 17.5kV	Rated Current 100A	Rated Frequency 50Hz	
	Series 3. Type 17.5TOMEJ150	Rated Voltage 17.5kV	Rated Current 150A	Rated Frequency 50Hz	
	Type 17.5TOMEJ200	Rated Voltage 17.5kV	Rated Current 200A	Rated Frequency 50Hz	
	Type 17.5TOMEJ250	Rated Voltage 17.5kV	Rated Current 250A	Rated Frequency 50Hz	
	Type 17.5TOMEJ315	Rated Voltage 17.5kV	Rated Current 315A	Rated Frequency 50Hz	
	Type 17.5TOMEJ400	Rated Voltage 17.5kV	Rated Current 400A	Rated Frequency 50Hz	
	Series 4. Type 17.5TOMEJ500	Rated Voltage 17.5kV	Rated Current 500A	Rated Frequency 50Hz	
	Series 5. Type 17.5TOMEJ630	Rated Voltage 17.5kV	Rated Current 630A	Rated Frequency 50Hz	
	Series 6. Type 17.5TOMEJ800	Rated Voltage 17.5kV	Rated Current 800A	Rated Frequency 50Hz	
	Series 7. Type 17.5TOMEJ1000	Rated Voltage 17.5kV	Rated Current 1000A	Rated Frequency 50Hz	
	Series 8. Type 17.5TOMEJ1250	Rated Voltage 17.5kV	Rated Current 1250A	Rated Frequency 50Hz	

DESIGNATION: Types 17.5TOMEJ63 to 63, 17.5TOMEJ80 to 100, 17.5TKMEJ125

MANUFACTURER: Cooper Bussmann India Private Limited, Eir Street, Sedarapet, Pondicherry - 605111, India.

TESTED BY: Dean H. Kiohr Low Power Test Facility, Burton-on-the-Wolds, Loughborough, Leicestershire, LE12 5TH, United Kingdom.

DATE OF TESTS: 12th October 2006 to 15th February 2007

The apparatus, constructed in accordance with the description, drawings and photographs incorporated in this Certificate, has been subjected to the series of proving tests in accordance with

IEC 60282-1:2005

- Sub-clause 6.5 - Temperature-rise tests and power-dissipation measurement
- Sub-clause 6.7 - Tests for time-current characteristics
- Sub-clause 6.8 - Tests of strikers
- Sub-clause 7.3 - Thermal shock tests
- Sub-clause 7.5 - Waterproof test - (ingress of moisture)
- Sub-clause 7.6.2 - Pre-arcing temperature rise tests

The results are shown in the Record of Proving Tests and the oscillograms attached hereto. The values obtained and the general performance are considered to comply with the above Standard(s) and to justify the ratings and characteristics assigned by the manufacturer as listed on page number 1.

The record of Proving Tests applies only to the apparatus tested. The responsibility for conformity of any apparatus having the same designation with that tested rests with the Manufacturer.

This Certificate comprises 55 pages, 1 diagram, 3 oscillograms, 7 photographs, 16 drawings and no other sheets as detailed in page 2

Only integral reproduction of this Certificate, or reproductions of this page accompanied by any page(s) on which are stated the assigned rated characteristics of the apparatus tested, are permitted without written permission from ASTA BEAB Certification Services, Hilton House, Corporation Street, Rugby CV21 2DN England.



010

[Signature]
20th April 2007

ASTA Observer
J. Gould
Director
C. Dick Evans
Date

KEMA certificate

KEMA 

**Type test Certificate of
breaking performance**

**Cooper Bussmann India
Private Limited**
Sedarapet, Pondicherry, India

has successfully passed the type test sequence on

Current limiting fuses

Type: 17.5TDLEJ6.3, 17.5TDMEJ6.3, 17.5TDLEJ10,
17.5TDMEJ10, 17.5TDMEJ16, 17.5TDMEJ20,
17.5TDMEJ25, 17.5TDMEJ31.5, 17.5TDMEJ40,
17.5TDMEJ50, 17.5TDMEJ63, 17.5THMEJ80,
17.5THMEJ100, 17.5TKMEJ125

Rating: 17,5 kV – 50 kA – 50 Hz

The test object passed the specification of test duties of

IEC 60282-1

The test results are recorded in Certificate No.

104-06

This Certificate is issued on 17 April 2007

KEMA Nederland B.V.



P.G.A. Bus
KEMA T&D Testing Services
Managing Director



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and sealed paper copy of the Certificate including the results of the tests of the apparatus will prevail. This
document does not imply that KEMA has certified or approved any apparatus other than the specimen tested.

Experience you can trust

KEMA certificate



104-06

TYPE TEST CERTIFICATE OF BREAKING PERFORMANCE

APPARATUSCurrent limiting fuses

Designation	Rated voltage kV	Rated breaking capacity kA	Rated current A	Minimum breaking current A	Rated frequency Hz
17.5TDLEJN.3, 17.5TDMEJN.3 (1)	17.5	50	8.3	25	50
17.5TDLEJ10, 17.5TDMEJ10 (1)	17.5	50	10	30	50
17.5TDMEJ15 (1)	17.5	50	18	55	50
17.5TDMEJ20 (1)	17.5	50	20	60	50
17.5TDMEJ25 (1)	17.5	50	25	87	50
17.5TDMEJ31.5 (1)	17.5	50	31.5	87	50
17.5TDMEJ40 (1)	17.5	50	40	111	50
17.5TDMEJ60	17.5	50	60	174	50
17.5TDMEJ80	17.5	50	80	200	50
17.5TDMEJ100	17.5	50	100	270	50
17.5TDMEJ125	17.5	50	125	370	50

(1) See notes on page 7.

MANUFACTURER

Cooper Bussmann India Private Limited,
Sedarapet, Pondicherry, India

TESTED FOR

Cooper Bussmann (UK) Limited,
Burton-on-the-Wolds, United Kingdom

TESTED BY

KEMA HIGH-POWER LABORATORY
Utrechtseweg 310 - 6812 AR Arnhem - The Netherlands

DATE(S) OF TESTS

6, 7, 8 September 2006 and 15, 16 January, 1 February 2007

The apparatus, constructed in accordance with the description, drawings and photographs incorporated in this Certificate, has been subjected to the series of proving tests in accordance with

IEC 60282-1 clause 6.6 (test duty 1, 2 and 3).

This Type Test Certificate has been issued by KEMA following exclusively the STL Guides.

The results are shown in the record of Proving Tests and the oscillograms attached hereto. The values obtained and the general performance are considered to comply with the above Standard and to justify the ratings assigned by the manufacturer as listed on page 6.

The Certificate applies only to the apparatus tested. The responsibility for conformity of any apparatus having the same designations with that tested rests with the Manufacturer.

This Certificate consists of 195 sheets in total.

This Certificate falls under the scope of the accreditation certificate L 020 of the Dutch Council for Accreditation, information sheet (page 2).

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KEMA Nederland B.V.



P.G.A. BUS
KEMA T&D Testing Services
Managing Director

Arnhem, 17 April 2007

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