

WESTCODE

An IXYS Company

Date:- 18 Mar, 2005

Data Sheet Issue:- 1

Ultra Rapid Semiconductor Protection Fuse

European Square Body Type Fuses
German Standard DIN 80 Knife Blade
Voltage Ratings - 660 to 690V+6%
Current Ratings from 80A to 400A
gR / aR Characteristics
Size 000












Key Features:

- ❖ Extremely high interrupting rating fuses for the protection of power semiconductors according to 60269.1 and 4
- ❖ 500V – 690V voltage rating complying with IEC 33
- ❖ Non Magnetic construction
- ❖ gR Characteristics with current ratings from 20A to 125A according to VDE 636-23
 - clearing all overloads
 - improving safety and protection
 - enabling selective co-ordination with all fuses
- ❖ aR Characteristics with current ratings from 80A to 400A in accordance with VDE 636-23 and IEC 60269.4 standards
- ❖ All models comply with DIN80 standard with blown fuse indication, with trip indicator.
- ❖ Microswitch reference MS 4L 2-5 B6










Main Characteristics:

German Standard DIN80, gR, Size 000 with indicator, silicated.










Voltage Rating U_N (V)	Ref:	Micro Switch		Current rating I_N (A)	Pre-arcing $I^2t @ 1 \text{ ms}$ I^2t_p (A ² s)	Total Clearing $I^2t @ U_N$ I^2t_t (A ² s)	Power Losses		Tested Interrupting rating
							$0.8I_N$	I_N	
690V	070GGCA0020F	N		20	12	80	3.8	7	200kA @690V
	070GGCA0025F	N		25	20	150	5	9	
	070GGCA0032F	N		32	39	270	5.5	10	
	070GGCA0040F	N		40	70	460	6.6	12	
	070GGCA0050F	N		50	102	730	7.7	14	
	070GGCA0063F	N		63	210	1500	8.8	16	
	070GGCA0080F	N		80	475	2900	9.9	18	
	070GGCA0100F	N		100	970	6000	11	20	
070GGCA0125F	N		125	1900	11800	11.6	21		

Note: Minimum operating voltage for integrated trip indicator = 20V

German Standard DIN80, gR, Size 000 without indicator, silicated.

Voltage Rating U_N (V)	Ref:	Micro Switch		Current rating I_N (A)	Pre-arcing $I^2t @ 1 \text{ ms}$ I^2t_p (A ² s)	Total Clearing $I^2t @ U_N$ I^2t_t (A ² s)	Power Losses		Tested Interrupting rating
							$0.8I_N$	I_N	
690V	070GGCA0020N	N		20	12	80	3.8	7	200kA @ 690V
	070GGCA0025N	N		25	20	150	5	9	
	070GGCA0032N	N		32	39	270	5.5	10	
	070GGCA0040N	N		40	70	460	6.6	12	
	070GGCA0050N	N		50	102	730	7.7	14	
	070GGCA0063N	N		63	210	1500	8.8	16	
	070GGCA0080N	N		80	475	2900	9.9	18	
	070GGCA0100N	N		100	970	6000	11	20	
070GGCA0125N	N		125	1900	11800	11.6	21		

German Standard DIN80, gR, Size 000 with trip (Tag) indicator, micro switch capable, non-silicated.

Voltage Rating U_N (V)	Ref:	Micro Switch		Current rating I_N (A)	Pre-arcing $I^2t @ 1 \text{ ms}$ I^2t_p (A ² s)	Total Clearing $I^2t @ U_N$ I^2t_t (A ² s)	Power Losses		Tested Interrupting rating
							$0.8I_N$	I_N	
660V 690+6%	070GSCA0020F	Y		20	12	80	3.8	7	200kA @ 660V
	070GSCA0025F	Y		25	20	150	5.0	9	
	070GSCA0032F	Y		32	39	270	5.5	10	
	070GSCA0040F	Y		40	70	460	6.6	12	
	070GSCA0050F	Y		50	102	730	7.7	14	
	070GSCA0063F	Y		63	210	1500	8.8	16	
	070GSCA0080F	Y		80	475	2900	9.9	18	
	070GSCA0100F	Y		100	970	6000	11.0	20	
	070GSCA0125F	Y		125	1900	11800	11.6	21	

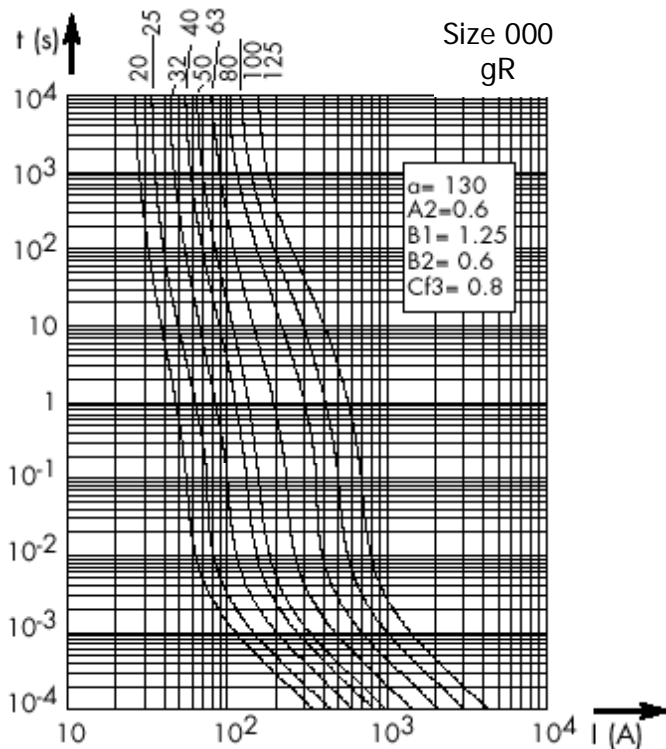
Note: Minimum operating voltage for integrated trip indicator = 20V
 070GSCAxxxxF: DIN80 gR Size 000 with blow fuse trip indicator may be adapted to use Microswitch ref: MS 4L 2-5 B6



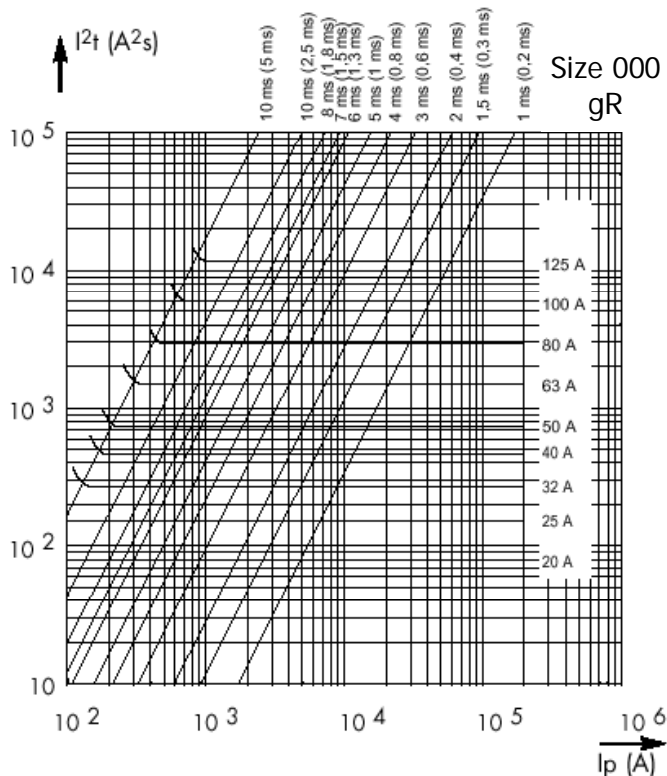
Electrical Characteristics:

Times vs Current Characteristics:

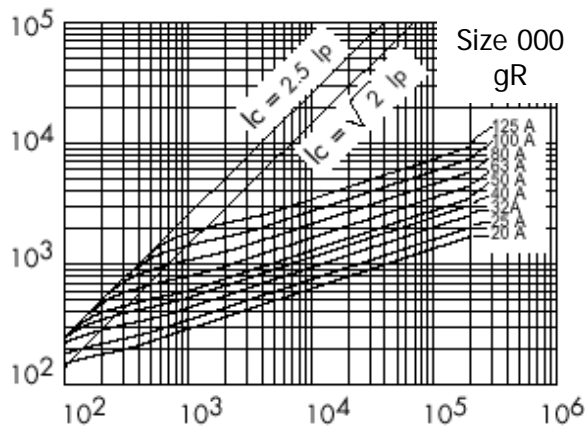
The curve below shows, for each rating, value of peak let-through current I_c as a function of available fault current I_p . Tolerance for mean pre-arcing current $\pm 8\%$.



Total clearing I^2t : horizontal curves show, for each rated current, values of total clearing $I^2t(I^2t_t)$ as a function of prospective current $I_p @ U_N$ with $\cos\phi = 0.15$. Oblique lines indicate total clearing duration T_t , with associated pre-arcing duration in brackets.

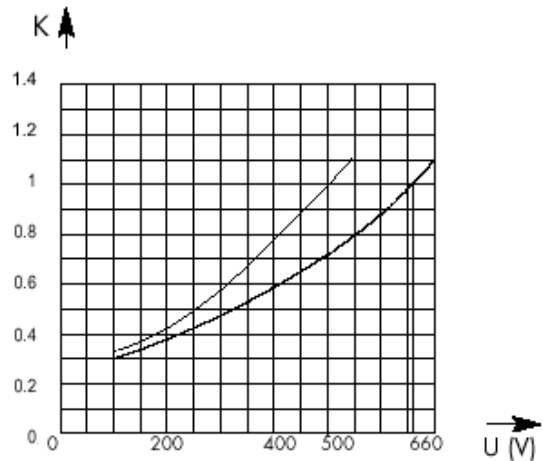


Current Limitation Curves:



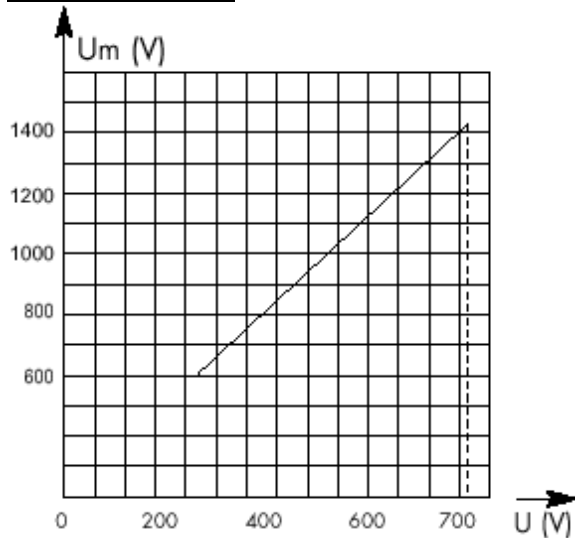
The curve below shows, for each rating, value of peak let-through current I_c as a function of available fault current I_p .

I^2t Corrective Factor:



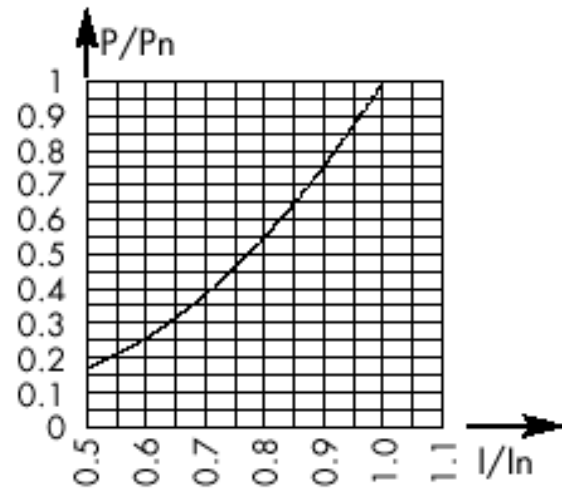
Mean curves show variation of total clearing time (I^2t_t) and total clearing duration T_t as a function of operating voltage U .

Peak Arc Voltage:



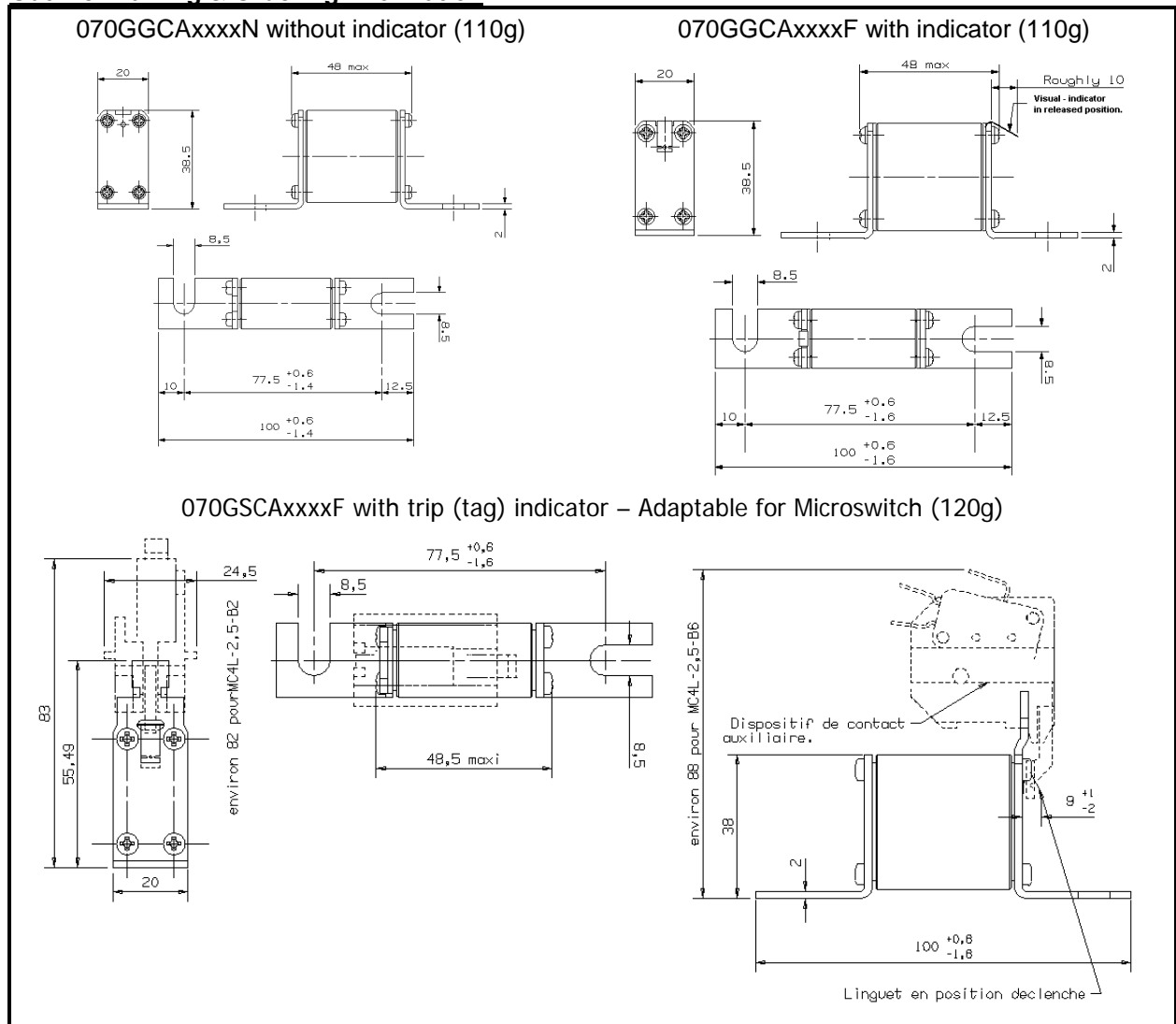
Curve shows peak value U_m of arc voltage which appears across fuse link as a function of the operating voltage $U @ \cos \phi = 0.15$

Power Loss:



Curve enables computation of power losses P for a I_N -rated fuse as a function of RMS current I (as a multiple of I_N for steady state operation).

Outline Drawing & Ordering Information



ORDERING INFORMATION (Please quote code as below)

Voltage Rating (V)	Type	Size 000	80mm Fixing	Current Rating (A)	Indicator
700	GG / GS	C	A	0020 - 0125	F / N

Order code: e.g. **070GSCA0020F** = 700V, German Standard, size 000, DIN 80, 20A knife blade fuse with trip (tag) indicator.

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<p>IXYS Corporation 3540 Bassett Street Santa Clara CA 95054 USA Tel: +1 (408) 982 0700 Fax: +1 (408) 496 0670 E-mail: sales@ixys.com</p>	<p>www.westcode.com</p> <p>www.ixys.com</p>	<p>Westcode Semiconductors Inc 3270 Cherry Avenue Long Beach CA 90807 USA Tel: +1 (562) 595 6971 Fax: +1 (562) 595 8182 E-mail: WSI.sales@westcode.com</p>

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Ultra Rapid Semiconductor Protection Fuse

European Square Body Type Fuses – 700V

German Standard DIN 80
Voltage Rating from 500V to 700V
Current Rating from 80A to 400A
aR Characteristics
Size 000



Key Features:

- ❖ Extremely high interrupting rating fuses for the protection of power semiconductors according to 60269.1 and 4
- ❖ 690V voltage rating for currents ratings of 20A to 400A
- ❖ Non Magnetic construction
- ❖ aR Characteristics with ratings from 80 to 400A according to VDE 636-23 and IEC 60269.4
- ❖ All models comply with DIN80 standard with blown fuse indication, available with or without trip indicator.
- ❖ Microswitch system reference : MS 4L 2-5 B6+PRES

Main Characteristics:

German Standard DIN 80, aR, Size 000 with indicator, silicated.

Voltage Rating U _N (V)	Ref:	Micro Switch		Current rating I _N (A)	Pre-arcing I ² t @ 1 ms I ² t _p (A ² s)	Total Clearing I ² t @ U _N I ² t _t (A ² s)	Power Losses		Tested Interrupting rating
							0.8I _N	I _N	
690V	070GQCA0080F	N		80	390	2500	11.6	21	200kA @ 690V
	070GQCA0100F	N		100	690	4200	12.7	23	
	070GQCA0125F	N		125	1300	8900	14.3	26	
	070GQCA0160F	N		160	2700	16000	17	31	
	070GQCA0200F	N		200	5250	31500	19.8	36	
	070GQCA0250F	N		250	9900	52000	24.8	45	
690V +6%	070GQCA0315F	N		315	15500	82000	31.9	58	
500V	050GQCA0350F	N		350	22400	110000	31.9	58	120Ka @ 500V
	050GQCA0400F	N		400	33200	160000	36.3	66	

Note: Minimum operating voltage for integrated trip indicator = 20V

German Standard DIN 80, aR, Size 000 without indicator, silicated.

Voltage Rating U _N (V)	Ref:	MC		Current rating I _N (A)	Pre-arcing I ² t @ 1 ms I ² t _p (A ² s)	Total Clearing I ² t @ U _N I ² t _t (A ² s)	Power Losses		Tested Interrupting rating
							0.8I _N	I _N	
690V	070GQCA0080N	N		80	390	2500	11.6	21	200kA @ 690V
	070GQCA0100N	N		100	690	4200	12.7	23	
	070GQCA0125N	N		125	1300	8900	14.3	26	
	070GQCA0160N	N		160	2700	16000	17.0	31	
	070GQCA0200N	N		200	5250	31500	19.8	36	
	070GQCA0250N	N		250	9900	52000	24.8	45	
690V +6%	070GQCA0315N	N		315	15500	82000	31.9	58	
500V	050GQCA0350N	N		350	22400	110000	31.9	58	120Ka @ 500V
	050GQCA0400N	N		400	33200	160000	36.3	66	

German Standard DIN 80, aR, Size 000 Trip (Tag) Indicator, micro switch capable, non-silicated.

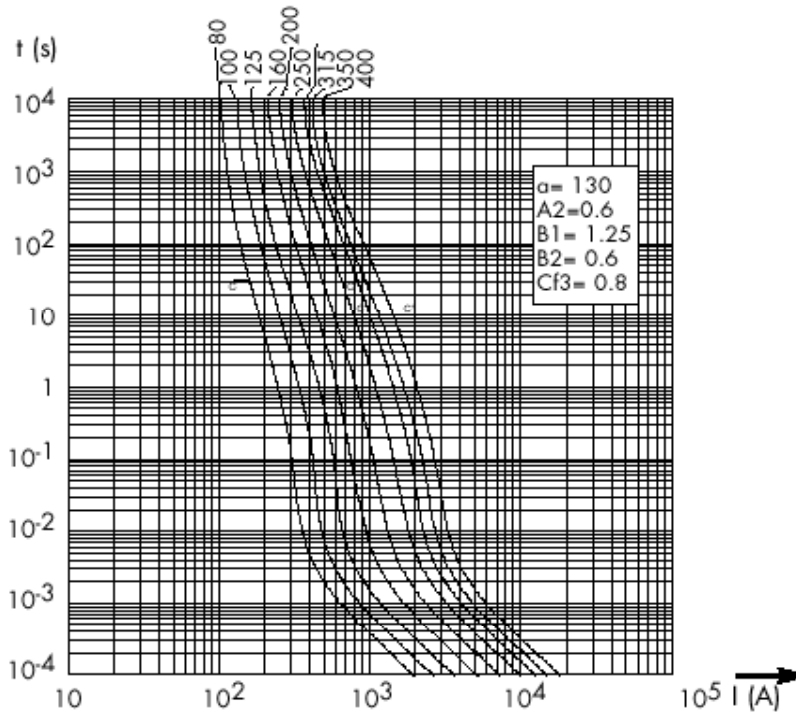
Voltage Rating U _N (V)	Ref:	MC		Current rating I _N (A)	Pre-arcing I ² t @ 1 ms I ² t _p (A ² s)	Total Clearing I ² t @ U _N I ² t _t (A ² s)	Watt Losses		Tested Interrupting rating
							0.8I _N	I _N	
690V	070GTCA0080F	Y		80	390	2500	11.6	21	200kA @ 660V
	070GTCA0100F	Y		100	690	4200	12.7	23	
	070GTCA0125F	Y		125	1300	8900	14.3	26	
	070GTCA0160F	Y		160	2700	16000	17	31	
	070GTCA0200F	Y		200	5250	31500	19.8	36	
	070GTCA0250F	Y		250	9900	52000	24.8	45	
690V +6%	070GTCA0315F	Y		315	15500	82000	31.9	58	
500V	050GTCA0350F	Y		350	22400	110000	31.9	58	120Ka @ 500V
	050GTCA0400F	Y		400	33200	160000	36.3	66	

Notes: Minimum operating voltage for integrated trip indicator = 20V
 DIN80 aR Size 000 - 070GTCAxxxxF with blow fuse trip indicator may be adapted to use Micro switch ref: MS 4L 2-5 B6

Electrical Characteristics:

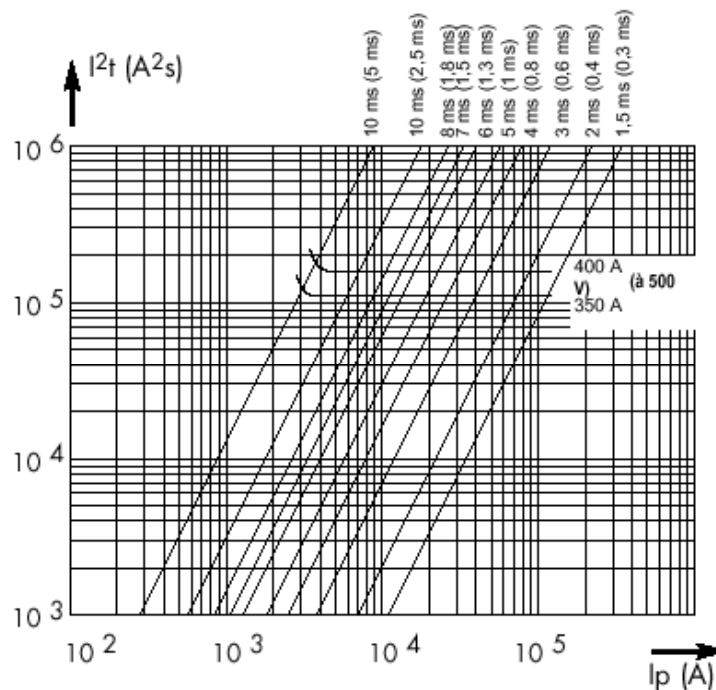
Times vs current characteristics:

The curve below shows, for each rating, value of peak let-through current I_c as a function of available fault current I_p . Tolerance for mean pre-arcing current $\pm 8\%$.

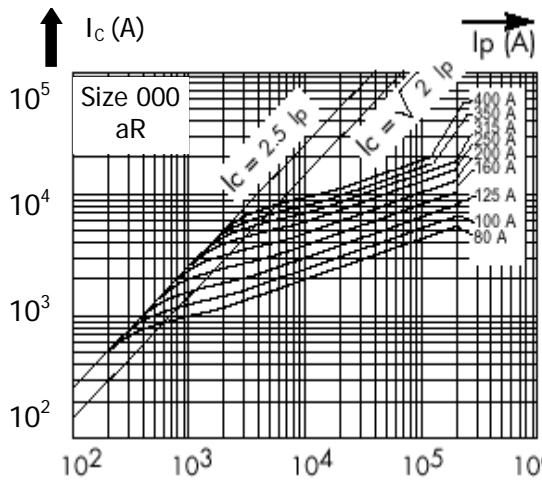


Total Clearing I^2t

The horizontal curves show, for each rated current, values of total clearing $I^2t(I^2t_c)$ as a function of prospective current I_p @ U_N with $\cos\phi = 0.15$. Oblique lines indicate total clearing duration T_t , with associated pre-arcing duration in brackets.

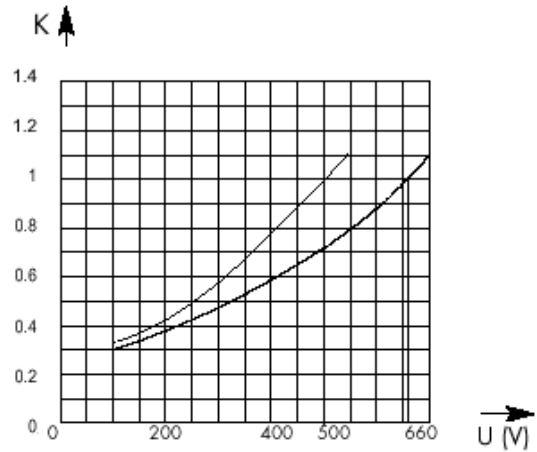


Current Limitation Curve



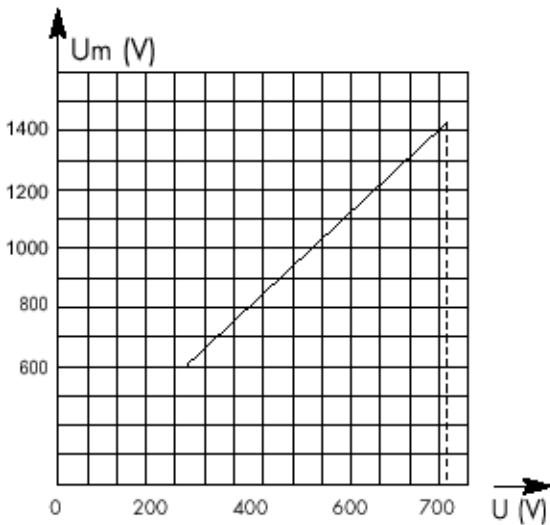
Curves show for each current rating value of peak let-through current I_c as a function of available fault current I_p

I^2t Corrective Factor



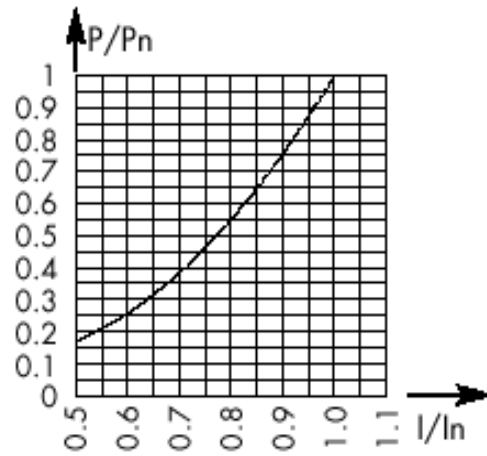
Mean curves show variation of total clearing time (I^2t_t) and total clearing duration T_t as a function of operating voltage U .

Peak Arc Voltage



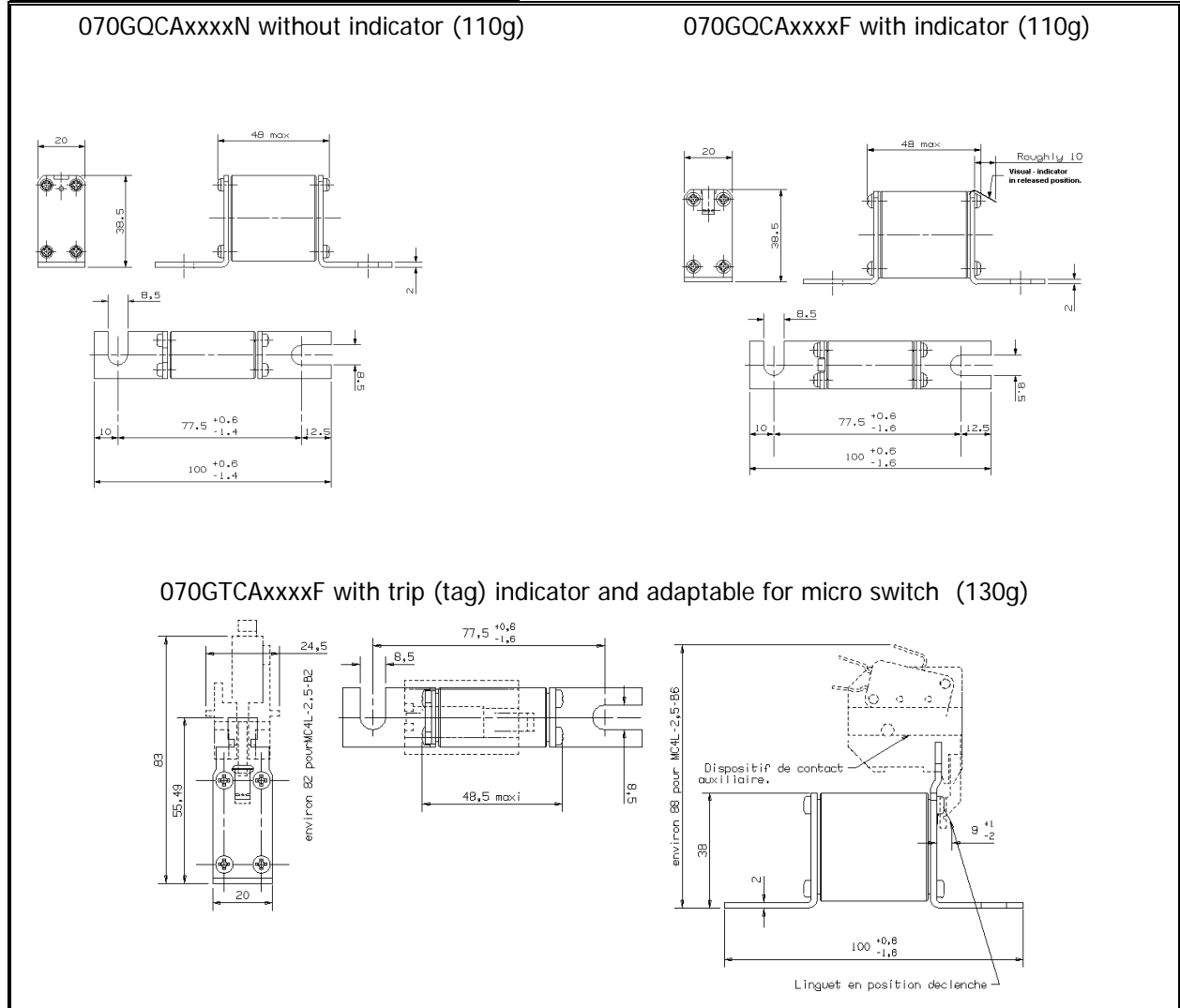
Curve shows peak value U_m of arc voltage which appears across fuse link as a function of the operating voltage $U @ \cos \varphi = 0.15$

Power Loss



Curve enables computation of power losses P for a I_N -rated fuse as a function of RMS current I (as a multiple of I_N for steady state operation).

Outline Drawing & Ordering Information:



ORDERING INFORMATION

(Please quote code as below)

Voltage Rating (V)	Type	Size	80mm Fixing	Current Rating (A)	Indicator
500 – 700	GQ / GT	C	A	0080 - 0400	F / N

Order code: e.g. 070GTCA0080F = 700V, German Standard, DIN 80, 80A with trip (tag) indicator.

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Ultra Rapid Semiconductor Protection Fuse European Square Body Fuses - 690V

German Standard Din 80
Voltage Rating - 690V
Current Ratings from 16A to 160A
gRB Characteristics
Size 00



Key Features:

- ❖ Extremely high breaking capacity fuses for the protection of power semiconductors as per IEC Standard 60269.1 and 4.
- ❖ 690V voltage rating complying with IEC 33
- ❖ Non Magnetic construction
- ❖ gRB Characteristics with ratings from 16 to 125A in accordance with VDE 636-23
 - Clearing all overloads
 - Improving safety and protection
 - Enabling selective co-ordination with all fuses
- ❖ All models available with or without integrated trip indicator
- ❖ Microswitch MS 4L 2-5 B
- ❖ Fuse holder SI 00 DIN80

Main Characteristics:

Size	Voltage U _N (V)	Ref:	Micro Switch		Current rating I _N (A)	Pre-arcing I ² t @ 1 ms I ² t _p (A ² s)	Total Clearing I ² t @ U _N (A ² s)	Power Losses		Tested Interrupting rating
								0.8I _N	I _N	
00	690	069GSDA0016F	Y		16	8	61	2.7	5	200kA @ 690V
		069GSDA0020F	Y		20	12	86	3.3	6	
		069GSDA0025F	Y		25	18	140	4.4	8	
		069GSDA0032F	Y		32	39	250	6	11	
		069GSDA0040F	Y		40	68	450	7.1	13	
		069GSDA0050F	Y		50	116	750	8.8	16	
		069GSDA0063F	Y		63	210	1400	9.9	18	
		069GSDA0080F	Y		80	525	3000	10.5	19	
		069GSDA0100F	Y		100	970	5400	10.7	19.5	
		069GSDA0125F	Y		125	1710	9600	13.2	24	
		069GSDA0160F	Y		160	4270	22400	13.7	25	

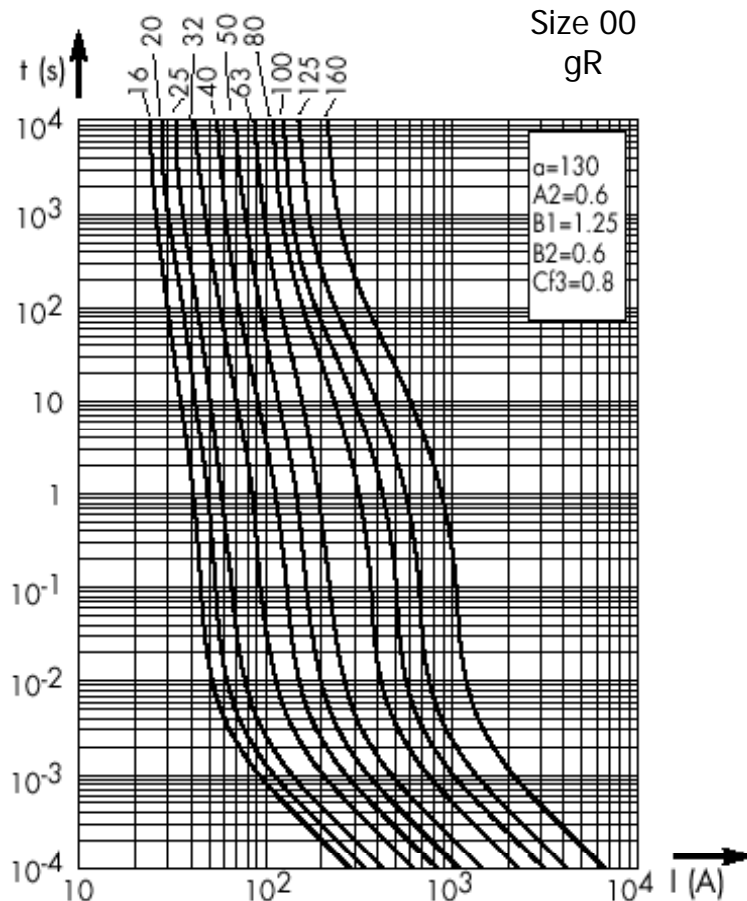
Notes: Minimum operating voltage for integrated trip indicator = 20V

Micro switch reference: MS 4L 2-5 B6

Electrical Characteristics:

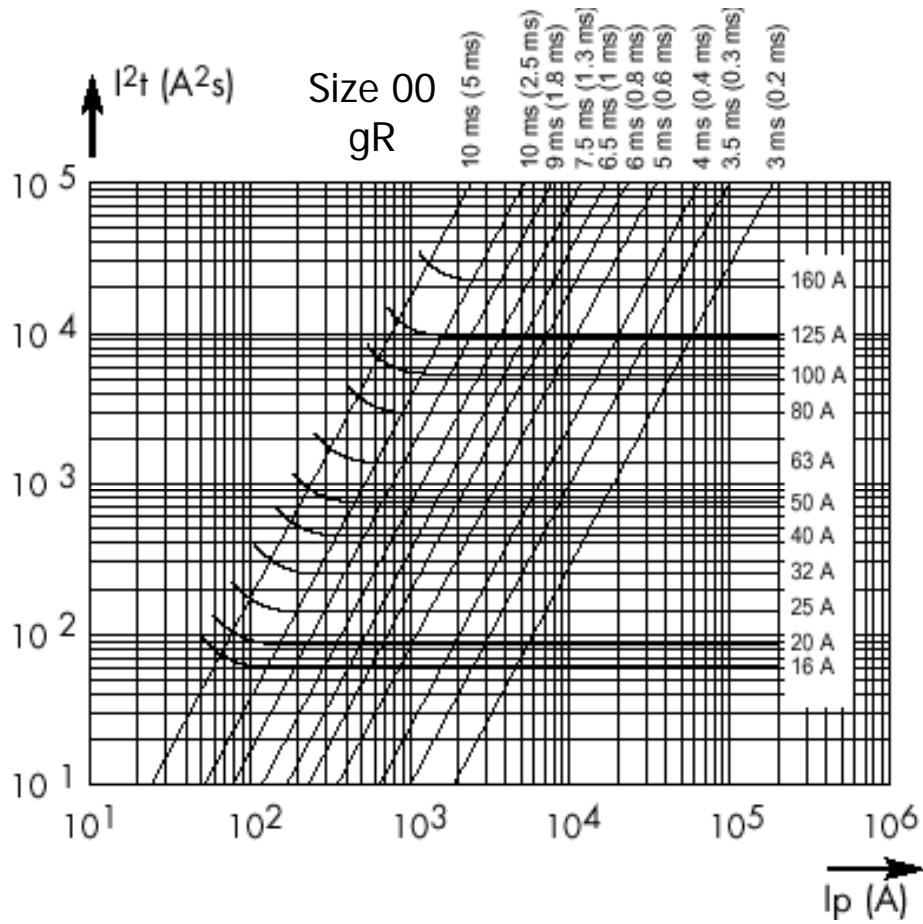
Times vs Current Characteristics:

These curves indicate, for each rated current, the pre-arcing time vs. the RMS pre-arcing current. Tolerance for the mean pre-arcing current ± 8%

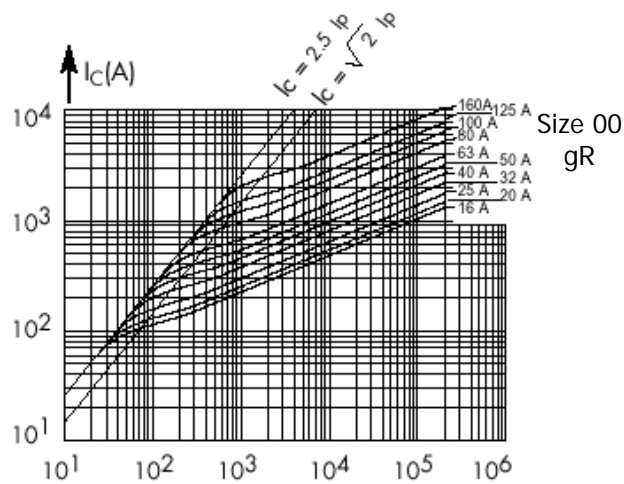


Total Clearing I^2t :

The horizontal curves show, for each rated current, values of total clearing $I^2t(I^2t_t)$ as a function of prospective current I_p @ U_N with $\cos\phi = 0.15$. Oblique lines indicate total clearing duration T_t , with associated pre-arcing duration in brackets.

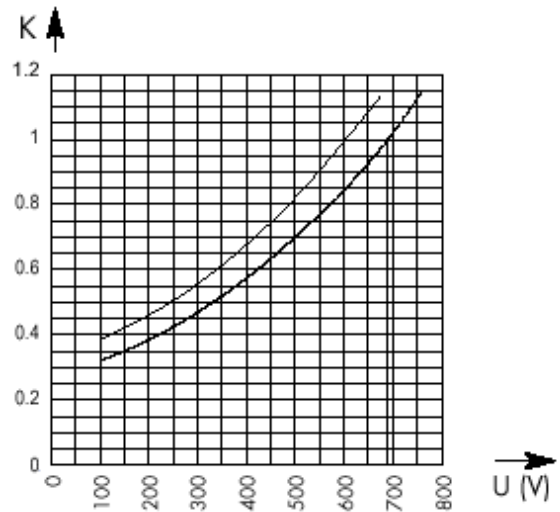


Cut off Characteristics:



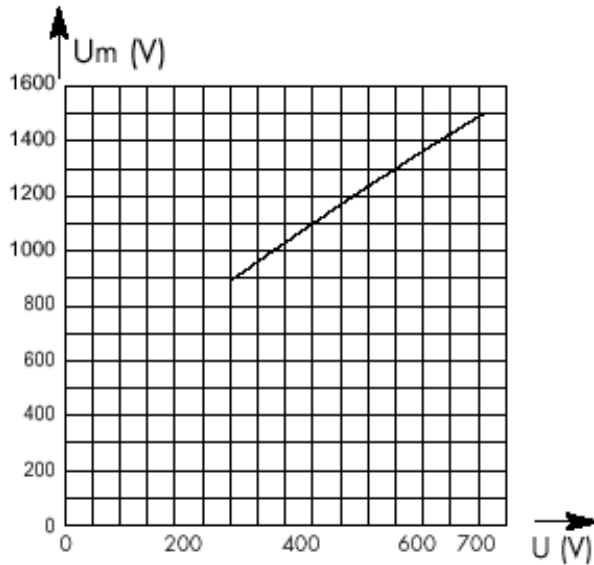
Curves show for each current rating value of peak let-through current I_c as a function of available fault current I_p .

Corrective Factor:



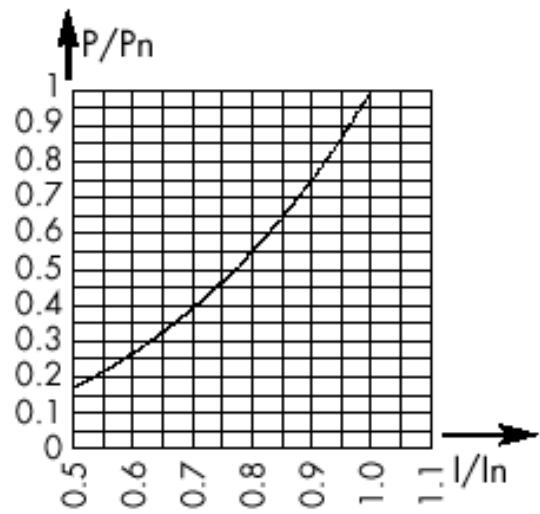
Mean curves show variation of total clearing time ($I^2 t$) and total clearing duration T_t as a function of operating voltage U .

Peak Arc Voltage:



Curve shows peak value U_m of arc voltage which appears across fuse link as a function of the operating voltage $U @ \cos \varphi = 0.15$

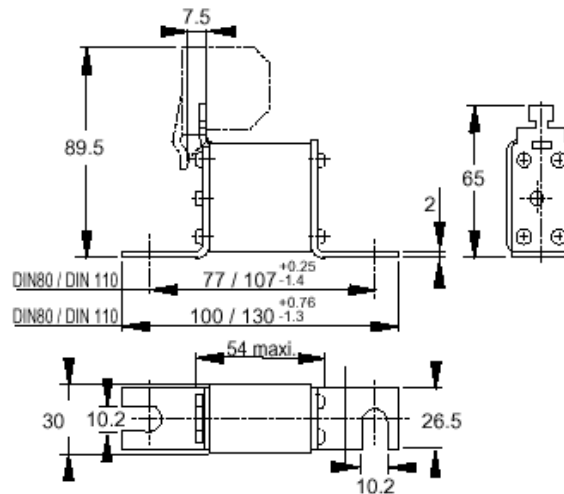
Dissipated Power:



Curve enables computation of power losses P for a I_N -rated fuse as a function of RMS current I (as a multiple of I_N for steady state operation).

Outline Drawing & Ordering Information:

DIN 80 = GSDAxxxxN without trip indicator (140g)
 GSDAxxxxF with trip indicator (190g)



ORDERING INFORMATION

(Please quote code as below)

Voltage Rating (V)	Type	Size	Fixing	Current Rating (A)	Trip Indicator
690	GS	D	A	16 to 160	F

Order code: e.g. **690GSDA0063F** = 690V, German Standard Square Body, Size 00, 80mm, 63amp fuse with trip indicator switch

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In the interest of product improvement, Westcode reserves the right to change specifications at any time without prior notice.

Ultra Rapid Semiconductor Protection Fuse

European Square Body Fuses 690V


















German Standard DIN 80
Voltage Rating - 690V
Current Ratings from 16A to 450A
aR Characteristics
Size 00




Key Features:

- ❖ Extremely high breaking capacity fuses for the protection of power semiconductors as per IEC Standard 60269.1 and 4.
- ❖ 690V voltage rating complying with IEC 33
- ❖ Non Magnetic construction
- ❖ gRB Characteristics with ratings from 16 to 125A in accordance with VDE 636-23
 - Clearing all overloads
 - Improving safety and protection
 - Enabling selective co-ordination with all fuses
- ❖ All models available with or without integrated trip indicator
- ❖ Microswitch MS 4L 2-5 B6
- ❖ Fuse holder SI 00 DIN80

Main Characteristics:

Size	Voltage U _N (V)	Ref:	Micro Switch		Current rating I _N (A)	Pre-arcing I ² t @ 1 ms I ² t _p (A ² s)	Total Clearing I ² t @ U _N (A ² s)	Power Losses 0.8I _N I _N		Tested Interrupting rating
00	690V	069GUDA0016F	Y		16	7	52	3.8	7	200kA @ 690V
		069GUDA0020F	Y		20	10	75	5	9	
		069GUDA0025F	Y		25	15	120	6	11	
		069GUDA0032F	Y		32	32	210	8.2	15	
		069GUDA0040F	Y		40	61	400	9.9	18	
		069GUDA0050F	Y		50	102	700	11.5	21	
		069GUDA0063F	Y		63	177	1200	12.6	23	
		069GUDA0080F	Y		80	390	2200	13.8	25	
		069GUDA0100F	Y		100	692	3900	15.4	28	
		069GUDA0125F	Y		125	1170	6600	18.1	33	
		069GUDA0160F	Y		160	2680	14000	19.8	36	
		069GUDA0200F	Y		200	4690	24000	23.1	42	
		069GUDA0250F	Y		250	8300	42500	27.5	50	
		069GUDA0315F	Y		315	17520	81000	31.9	58	
		069GUDA0350F	Y		350	25450	118000	33	60	
		069GUDA0400F	Y		400	33200	150000	38.5	70	
600V	060GUDA0450F	Y		450	19600	225000	40.7	74	200kA @ 600V	

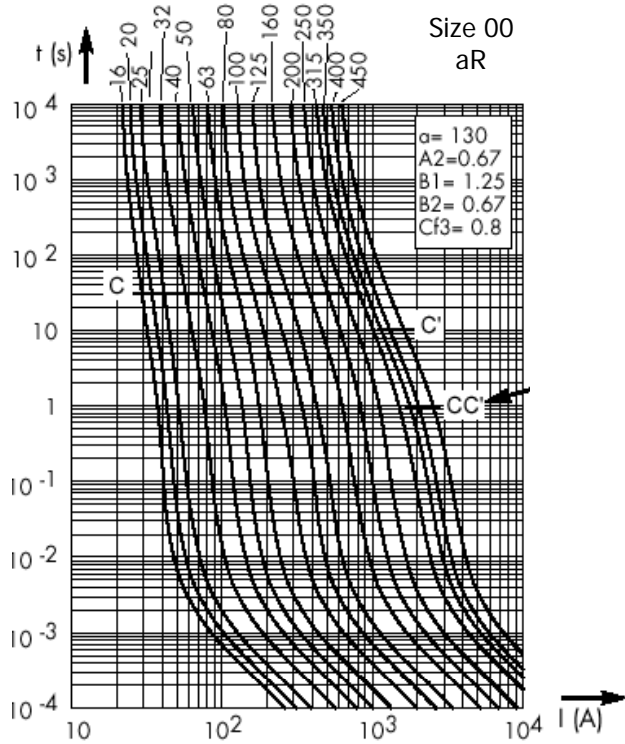
Notes: Minimum operating voltage for integrated trip indicator = 20V

Micro switch reference : MS 4L 2-5 B6 

Electrical Characteristics:

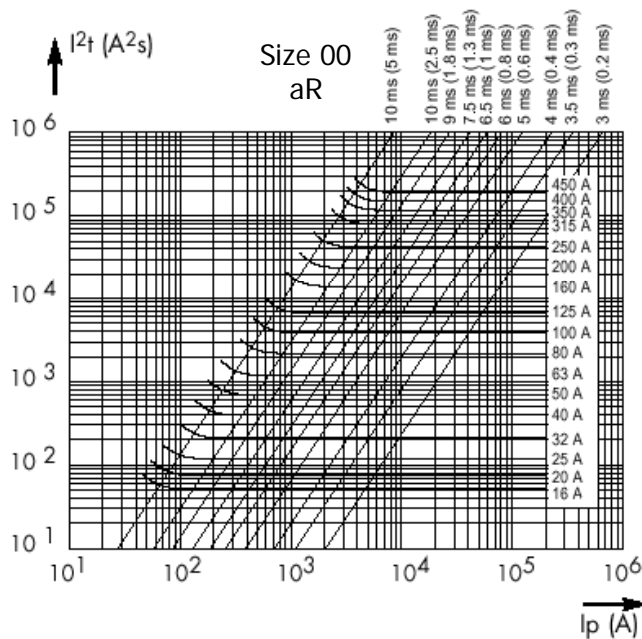
Times vs Current Characteristics:

These curves indicate, for each rated current, the pre-arcing time vs. the RMS pre-arcing current. Tolerance for the mean pre-arcing current $\pm 8\%$

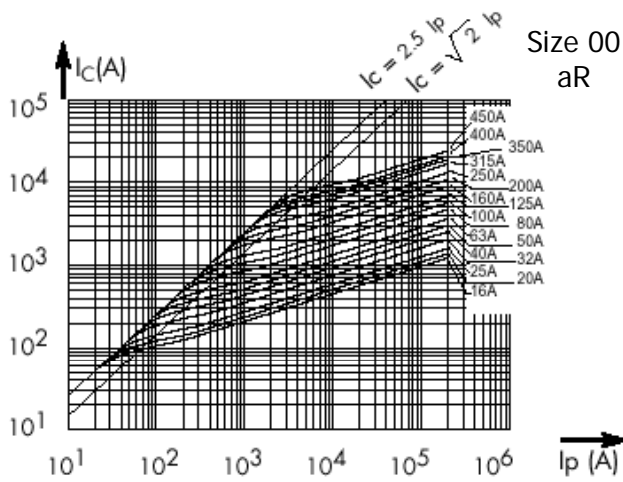


Total Clearing I^2t :

The horizontal curves show, for each rated current, values of total clearing $I^2t (I^2t_t)$ as a function of prospective current $I_p @ U_N$ with $\cos\phi = 0.15$. Oblique lines indicate total clearing duration Tt , with associated pre-arcing duration in brackets.

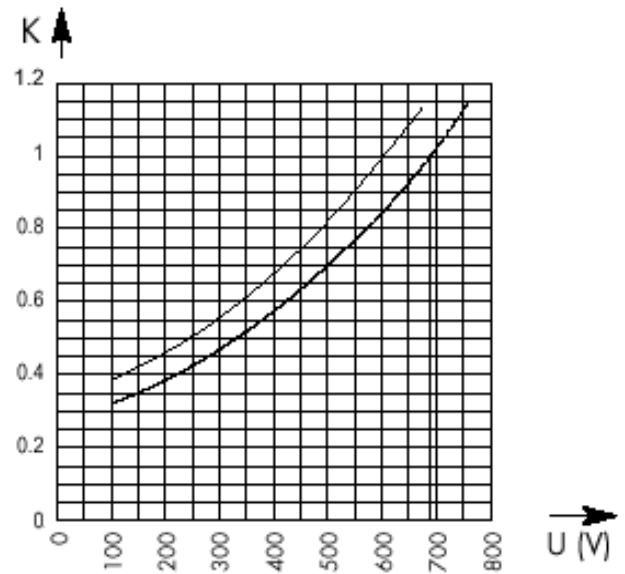


Cut off Characteristics:



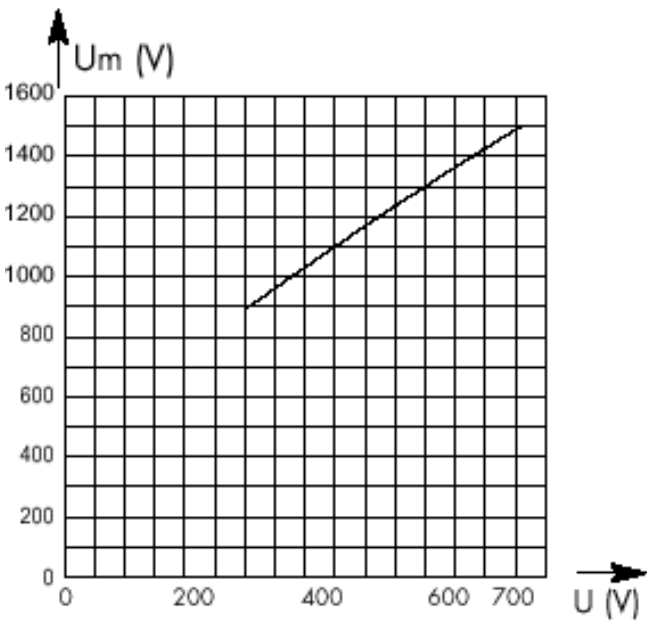
Curves show for each current rating value of peak let-through current I_c as a function of available fault current I_p

Corrective Factor:



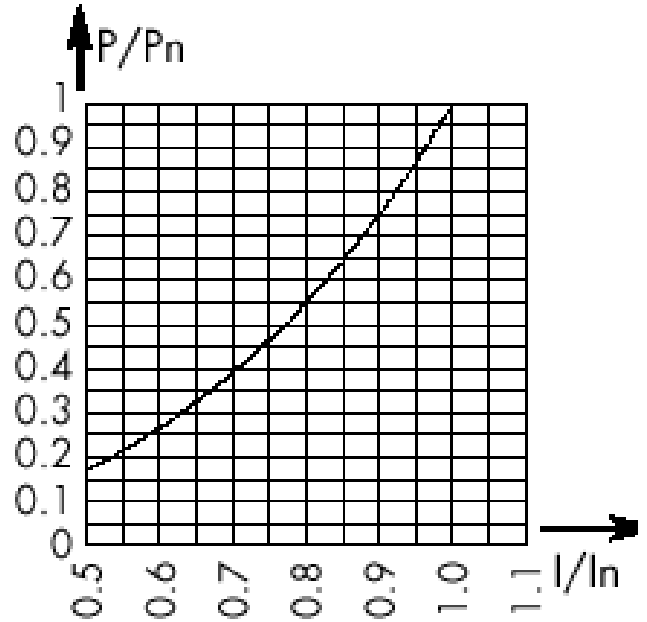
Mean curves show variation of total clearing time ($I^2 t_t$) and total clearing duration T_t as a function of operating voltage U .

Peak Arc Voltage:



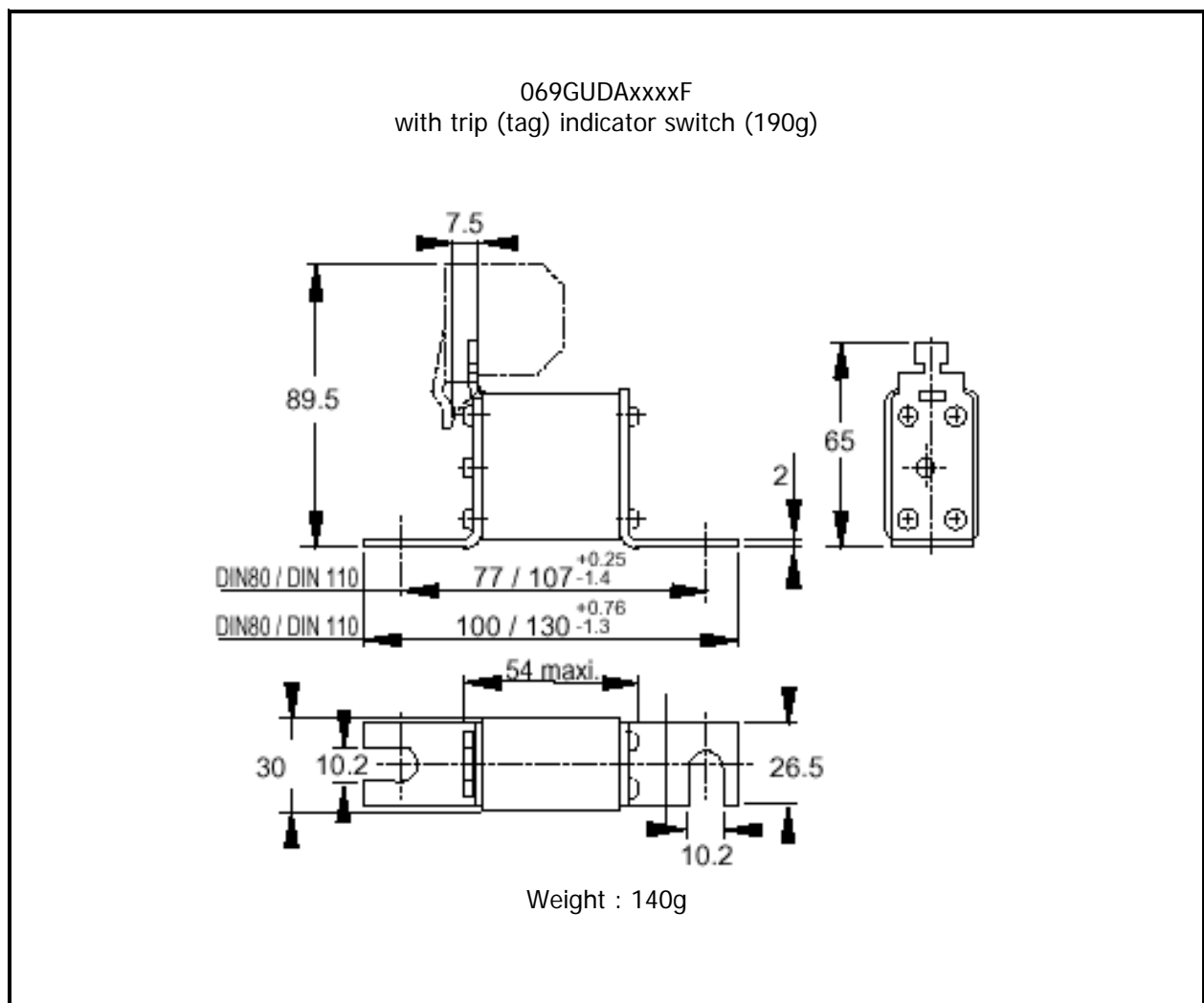
Curve shows peak value U_m of arc voltage which appears across fuse link as a function of the operating voltage $U @ \cos \varphi = 0.15$

Dissipated Power:



Curve enables computation of power losses P for a I_N -rated fuse as a function of RMS current I (as a multiple of I_N for steady state operation).

Outline Drawing & Ordering Information:



ORDERING INFORMATION

(Please quote code as below)

Voltage Rating (V)	Type	Size	Fixing	Current Rating (A)	Trip Indicator
690	GU	D	A	16 to 450	F

Order code: e.g. **069GUDA0050F** = 690V German Standard, Size 00, 80mm fixing, 50amp fuse with trip (tag) indicator switch

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