WESTCODE
An IXYS Company

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Data Sheet Issue:-1

Ultra Rapid Semiconductor Protection Fuse

DIN 43653 Round Body Type Fuses 690V

German Standard DIN 43653/00C
Voltage Rating – 690V
gR and aR Characteristics
Current ratings from 12 to 100A
Size 17 x 49



Key Features:

- Extremely high interrupting rating fuses for the protection of power semiconductors in accordance with IEC Standard 269.1 and 4.
- 690V voltage rating (current rating 12-100A) complying IEC 33, according to IEC 269.4
- Non magnetic construction
- gR Characteristics for current ratings from 12 to 90A as per VDE 636-23
- aR Characteristics for current rating 100A as per VDE 636-23 and IEC 269.4

Main Characteristics:

Size	Voltage U_N (V)	Ref:		Current Rating I_N (A)	Pre-arcing I^2t @ 1 ms $I^2t_P(kA^2s)$	Total Clearing I^2t @ 1 ms $I^2t_P(kA^2s)$	Power Losses $0.8I_N$	Power Losses I_N	Tested Interrupting Rating
17 x 49	690	069FREA0012N		12	4,2	30	1,95	3,5	200kA @ 690V
		069FREA0016N		16	9,6	65	2,2	4	
		069FREA0020N		20	17,1	110	3,0	5,5	
		069FREA0025N		25	26,8	170	4,4	8	
		069FREA0032N		32	52,5	330	5,0	9	
		069FREA0035N		35	69	430	5,2	9,5	
		069FREA0040N		40	96	610	5,8	10,5	
		069FREA0045N		45	130	820	6,3	11,5	
		069FREA0050N		50	154	970	7,2	13	
		069FREA0055N		55	210	1320	7,4	13,5	
		069FREA0063N		63	310	1950	8,0	14,5	
		069FREA0075N		75	520	3250	8,8	16	
		069FREA0080N		80	620	3900	9,4	17	
		069FREA0090N		90	840	5300	11	20	
		069FREA0100N *		100	965	6150	13	23,5	

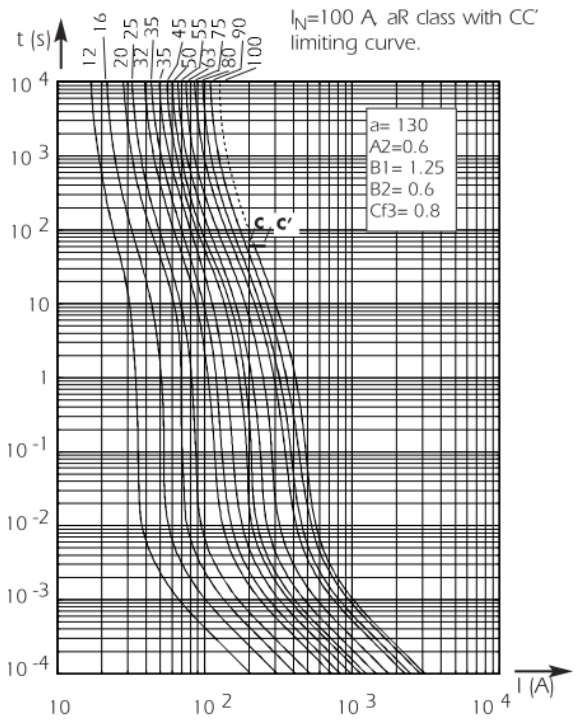
* aR Characteristics

Electrical Characteristics:

Times vs current characteristics

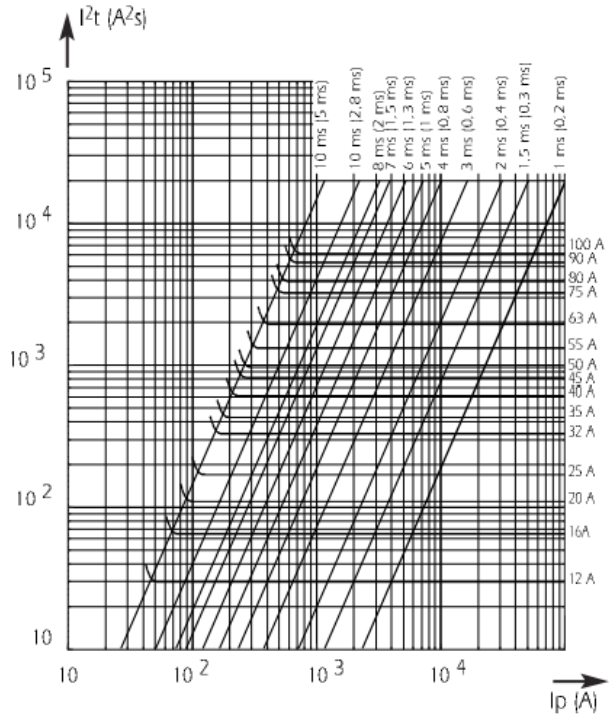
The following curves indicate, for each rated current, pre-arcing time as a function of RMS value of pre-arcing current I.

Tolerance form mean pre-arcing current ±9%



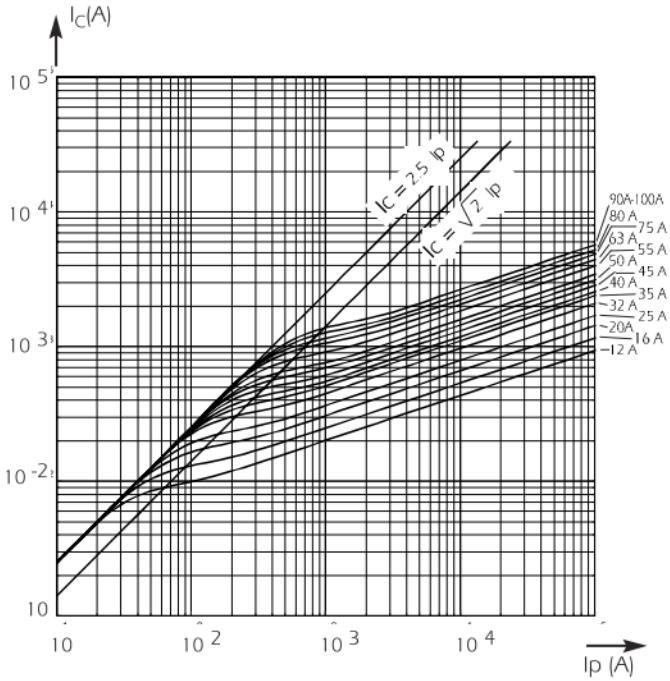
Total clearing I^2t:

Horizontal curves show maximum values of total clearing I^2t (I^2t_t) for each rated current as a function of prospective current I_P @ 690V cos=0.15. Oblique lines indicate total clearing duration Tt, with associated pre-arcing duration in brackets.

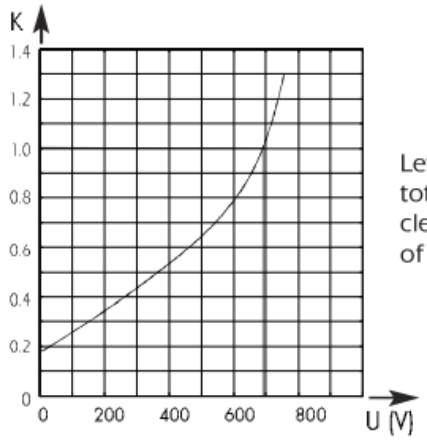


Cut off Characteristics:

The curves below show, for each rating, value of peak let-trought current I_C as a function of available falut current I_P.

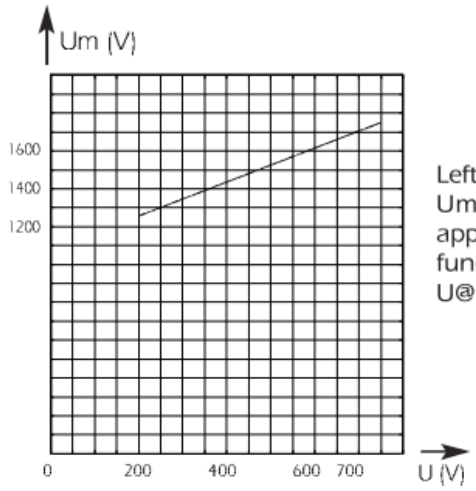


Corrective factor:



Left: Curve shows variation of total clearing time (I^2t_t) and total clearing duration T_t as a function of operating voltage U.

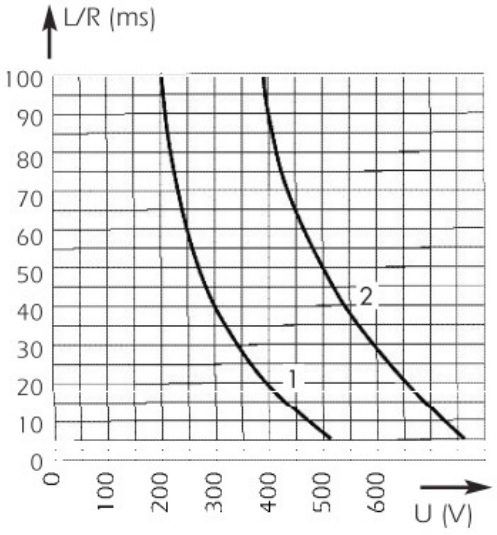
Peak Arc Voltage:



Left: Curve shows peak value Um of arc voltage which appears across fuse-link as a function of operating voltage U@ cos φ = 0.15

DC Application Data:

Above: Curves indicate permissible value of time constant L/R as a function of DC working voltage

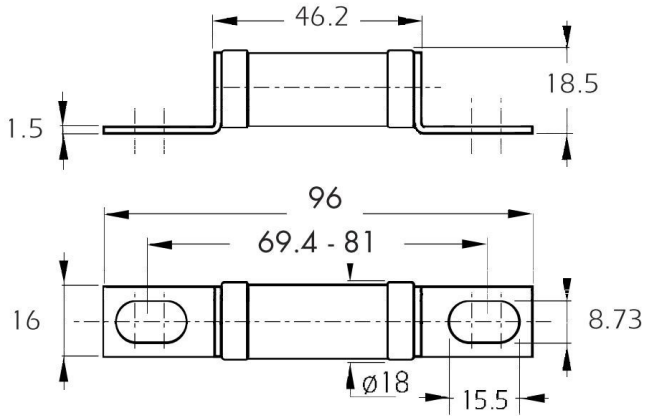


Curve 1:
I_P >= 1.6xIN only for fuses gR
(current rating from 12 to 90A)

Curve 2:
I_P >= 8xIN for fuses gR and aR.

Outline Drawing & Ordering Information

069FREAxxxxN: 42gm (10 pcs)



ORDERING INFORMATION (Please quote code as below)

Style	Voltage	Current Rating (A)	Type	Trip Indicator
17x49	690V	0012 – 0100	FREA	

Order code: e.g. 069FREA0050N = 50 Amp DIN 43653 Round Body Type Fuse

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