

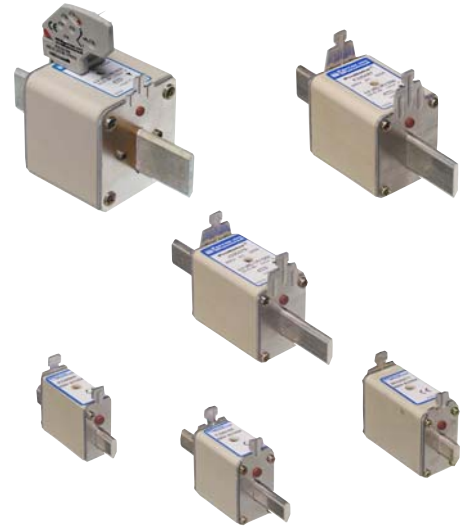


Protistor® Square-body Fuses NH Plain Blades - 690 VAC aR - 690 VAC sizes 000 to 3

Ferraz Shawmut PSC-URD 690 VAC fuse-links provide maximum flexibility in equipment design and ultimate protection for today's power conversion equipment. This range is a fast acting, engineered to provide state of the art protection for power semiconductors such as diodes, thyristors.

These square body fuse-links are available in various body sizes with a broad range of ampere ratings allowing the greatest flexibility in equipment design.

They have pure silver fuse elements embedded in solidified sand which provides optimized I^2t and high breaking capacity. All contact surfaces are plated and all hardware non-magnetic. All fuses are standard with a low voltage blown fuse indicator. This indicator can operate a microswitch which is easily mounted directly on to the fuse in service.



Features/Benefits

Broad range of ampere ratings in each body size for design flexibility

IEC 60269-4 compliance for fuses for worldwide semiconductor applications



Beige melted



Red non melted

Ratings

AC: up to 1000 A
500 - 690 VAC
80-170 kA IR

DC: Consult Factory

Approvals

AC: Tested to IEC 269.4

Features

- Ultra fast acting
- Highly current limiting.
- High breaking capacities
- Very low I^2t
- Worldwide mounting acceptance.
- Superior cycling ability.
- High withstanding in rush current and overloads

Applications

Protection of rectifiers, inverters, static switch, AC & DC drives and UPS systems.

Inovations

- Double indicator(Visual and mechanical).
- Largest range of the market
- Connexion improvement between trip indicator - Micro switch
- Cd / Pb free
- Low voltage indicator - 50V



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Voltage	Size	Type	Rating In (A)	Pre-Arcing I ² t @ 1ms (A ² s)	Total I ² t @ 690 V (A ² s)	Pn: Power losses (W) PV 43620 0,8In	Breaking capacities @ Un kA
690 V CEI 700V UL	000	URD	16	10	48	1,0	80
		URD	20	15	90	1,5	
		URD	25	22	130	2,0	
		URD	32	45	270	2,5	
		URD	40	69	400	4,0	
		URD	50	107	630	5,0	
		URD	63	220	1 300	6,0	
		URD	80	350	2 000	8,0	
		URD	100	720	4 300	9,5	
		URD	125	1 400	8 200	10,5	
		URD	160	2 100	12 200	15,0	
		URD	200	3 900	22 700	18,0	
		URD	250	7 600	44 400	22,0	
500V CEI 550V UL		URD	315	15 400	90 700	30,0	
690 V CEI 700V UL	00	URD	20	15	90	1,5	170
		URD	25	22	130	2,0	
		URD	32	45	270	2,5	
		URD	40	69	400	4,0	
		URD	50	110	630	5,0	
		URD	63	220	1 300	6,0	
		URD	80	350	2 000	8,0	
		URD	100	720	4 300	8,5	
		URD	125	1 390	8 200	10,0	
		URD	160	2 100	12 200	14,0	
		URD	200	3 900	22 700	17,0	
		URD	250	7 600	44 400	20,0	
		URD	315	15 400	90 700	29,0	
690 V CEI 700V UL	0	URD	32	32	170	9,5	170
		URD	40	53	280	10,0	
		URD	50	87	470	10,5	
		URD	63	130	700	11,5	
		URD	80	180	970	12,5	
		URD	100	390	2 080	15,0	
		URD	125	720	3 890	18,0	
		URD	160	1 550	8 320	22,0	
		URD	200	2 950	15 900	27,0	
		URD	250	5 560	29 900	33,0	
		URD	315	11 600	62 300	40,0	

Time/current characteristics
Cut off characteristics
Total I²t and total operating time
Other curves
Fuse holder derating

} See following pages



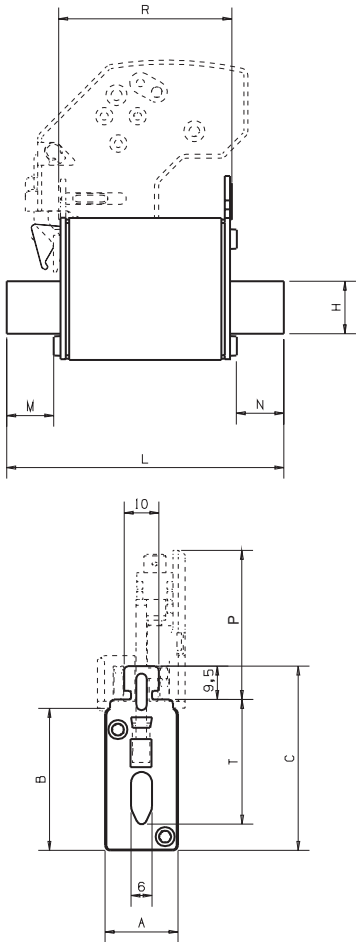
Protistor® Square-body Fuses NH Plain Blades - 690 VAC aR - 690 VAC sizes 000 to 3

Voltage	Size	Type	Rating In (A)	Pre-Arcing I ² t @ 1ms (A ² s)	Total I ² t @ 690 V (A ² s)	Pn: Power losses (W) PV 43620 0,8In	Breaking capacities @ Un kA
690 V CEI 700V UL	1	URD	63	130	700	18	170
		URD	80	220	1 170	21,5	
		URD	100	290	1 570	23,0	
		URD	125	620	3 320	26,0	
		URD	160	1 170	6 270	29,0	
		URD	200	2 470	13 300	33,0	
		URD	250	4 670	25 100	37,0	
		URD	315	9 570	51 400	42,0	
		URD	350	13 400	72 300	44,0	
690 V CEI 700V UL	2	URD	400	19 500	105 000	48,0	170
		URD	160	960	5 180	38	
		URD	200	1 710	9 220	42	
		URD	250	3 480	18 700	46,5	
		URD	315	6 860	36 900	54,0	
		URD	350	9 570	51 400	58,0	
		URD	400	13 400	72 300	62,5	
		URD	450	21 000	113 000	69,0	
		URD	500	27 400	147 000	73,0	
		URD	550	38 300	206 000	78,0	
		URD	630	58 700	315 000	85,0	
690 V CEI 700V UL	3	URD	700	78 100	420 000	87,0	170
		URD	315	5 251	28 200	57,0	
		URD	350	7 562	40 600	58,0	
		URD	400	10 500	56 500	65,5	
		URD	450	15 700	84 300	70,0	
		URD	500	22 200	119 000	75,0	
		URD	560	30 200	163 000	80,0	
		URD	630	42 000	226 000	89,0	
		URD	700	61 700	332 000	100,0	
		URD	800	88 900	478 000	112,0	
		URD	900	123 900	666 000	125,0	
		URD	1000	178 400	959 000	140,0	



Protistor® Square-body Fuses NH Plain Blades - 690 VAC aR - 690 VAC sizes 000 to 3

Size	Designation	Reference Number	Catalog Number	Weight	Pack. (g)
000	6,9 URD 000 PV 0016	P320035	NH000UD 69V 16PV	135	3
	6,9 URD 000 PV 0020	R320037	NH000UD 69V 20PV		
	6,9 URD 000 PV 0025	T320039	NH000UD 69V 25PV		
	6,9 URD 000 PV 0032	Y320043	NH000UD 69V 32PV		
	6,9 URD 000 PV 0040	C320047	NH000UD 69V 40PV		
	6,9 URD 000 PV 0050	G320051	NH000UD 69V 50PV		
	6,9 URD 000 PV 0063	L320055	NH000UD 69V 63PV		
	6,9 URD 000 PV 0080	Q320059	NH000UD 69V 80PV		
	6,9 URD 000 PV 0100	V320063	NH000UD 69V 100PV		
	6,9 URD 000 PV 0125	X320065	NH000UD 69V 125PV		
	6,9 URD 000 PV 0160	B320069	NH000UD 69V 160PV		
	6,9 URD 000 PV 0200	D320071	NH000UD 69V 200PV		
	6,9 URD 000 PV 0250	H320075	NH000UD 69V 250PV		
	5 URD 000 PV 0315	M320079	NH000UD 50V 315PV		
	Neutral	Z218269			10
00	Extraction puller	P215592	NH HANDLE	200	1
	6,9 URD 00 PV 0020	A320137	NH00UD 69V 20PV		3
	6,9 URD 00 PV 0025	C320139	NH00UD 69V 25PV		
	6,9 URD 00 PV 0032	G320143	NH00UD 69V 32PV		
	6,9 URD 00 PV 0040	L320147	NH00UD 69V 40PV		
	6,9 URD 00 PV 0050	Q320151	NH00UD 69V 50PV		
	6,9 URD 00 PV 0063	V320155	NH00UD 69V 63PV		
	6,9 URD 00 PV 0080	Z320159	NH00UD 69V 80PV		
	6,9 URD 00 PV 0100	D320163	NH00UD 69V 100PV		
	6,9 URD 00 PV 0125	F320165	NH00UD 69V 125PV		
	6,9 URD 00 PV 0160	K320169	NH00UD 69V 160PV		
	6,9 URD 00 PV 0200	M320171	NH00UD 69V 200PV		
	6,9 URD 00 PV 0250	R320175	NH00UD 69V 250PV		
	6,9 URD 00 PV 0315	W320179	NH00UD 69V 315PV		
	Neutral	Z218269			10
0	Extraction puller	P215592	NH HANDLE	250	1
	6,9 URD 0 PV 0032	Q320243	NH0UD 69V 32PV		3
	6,9 URD 0 PV 0040	V320247	NH0UD 69V 40PV		
	6,9 URD 0 PV 0050	Z320251	NH0UD 69V 50PV		
	6,9 URD 0 PV 0063	D320255	NH0UD 69V 63PV		
	6,9 URD 0 PV 0080	H320259	NH0UD 69V 80PV		
	6,9 URD 0 PV 0100	M320263	NH0UD 69V 100PV		
	6,9 URD 0 PV 0125	P320265	NH0UD 69V 125PV		
	6,9 URD 0 PV 0160	T320269	NH0UD 69V 160PV		
	6,9 URD 0 PV 0200	W320271	NH0UD 69V 200PV		
	6,9 URD 0 PV 0250	A320275	NH0UD 69V 250PV		
	6,9 URD 0 PV 0315	E320279	NH0UD 69V 315PV		
	Neutral	Z219304			10
	Extraction puller	P215592	NH HANDLE		1



Microswitches

MS 4L 2-5 B6 + PRES	F210156	(6,3mm clips)
MS 4L 2-5 B2 + PRES	G210157	(2.8 mm clips)

Automatically resettable, these microswitch systems indicate fuse presence (PRES) and proper mounting
In case of improper mounting or fuse melting, this is indicated (terminal 1-4 closed)

Microswitches supplied separately

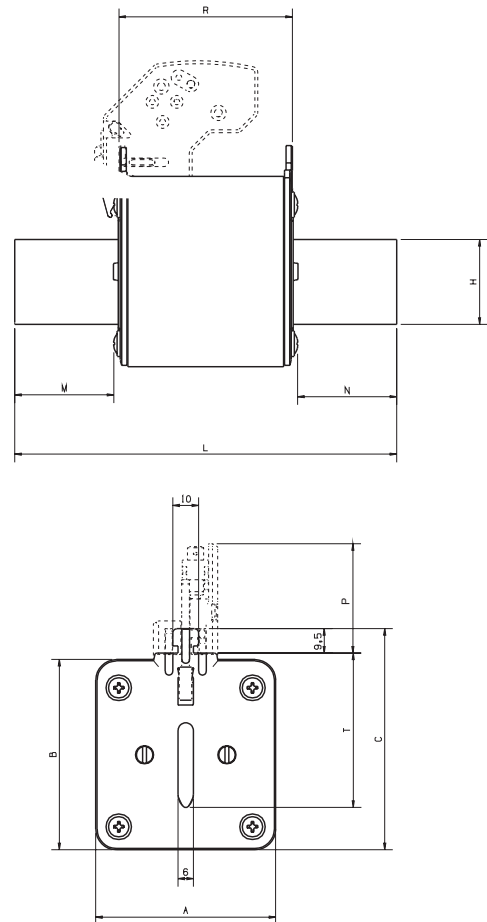
Size	A	B	C	H	L	M	N	P	R	T
000	20,8	40,5	52,5	15	79	13,5	13,5	43,4	49,5	35
	0.82"	1.59"	2.07"	0.59"	3.11"	0.53"	0.53"	1.71"	1.95"	1.38"
00	29,5	47,5	59,5	15	79	13,1	13,1	43,4	50	35
	1.16"	1.87"	2.34"	0.59"	3.11"	0.52"	0.52"	1.71"	1.97"	1.38"
0	29,5	47,5	59,5	15	125	29,1	29,1	43,4	66	35
	1.16"	1.87"	2.34"	0.59"	4.92"	1.15"	1.15"	1.71"	2.60"	1.38"

Fuse holder solution, see Gear and Fuse gear section.



Protistor® Square-body Fuses NH Plain Blades - 690 VAC aR - 690 VAC sizes 000 to 3

Size	Designation	Reference Number	Catalog Number	Weight	Pack. (g)
1	6,9 URD 1 PV 0063	M320355	NH1UD 69V 63PV	430	3
	6,9 URD 1 PV 0080	K320399	NH1UD 69V 80PV		
	6,9 URD 1 PV 0100	W320363	NH1UD 69V 100PV		
	6,9 URD 1 PV 0125	Y320365	NH1UD 69V 125PV		
	6,9 URD 1 PV 0160	C320369	NH1UD 69V 160PV		
	6,9 URD 1 PV 0200	E320371	NH1UD 69V 200PV		
	6,9 URD 1 PV 0250	J320375	NH1UD 69V 250PV		
	6,9 URD 1 PV 0315	N320379	NH1UD 69V 315PV		
	6,9 URD 1 PV 0350	P320380	NH1UD 69V 350PV		
	6,9 URD 1 PV 0400	S320383	NH1UD 69V 400PV		
	Neutral	A219834			5
	Extraction puller	P215592	NHHANDLE		1
2	6,9 URD 2 PV 0160	L320469	NH2UD 69V 160PV	600	3
	6,9 URD 2 PV 0200	N320471	NH2UD 69V 200PV		
	6,9 URD 2 PV 0250	S320475	NH2UD 69V 250PV		
	6,9 URD 2 PV 0315	X320479	NH2UD 69V 315PV		
	6,9 URD 2 PV 0350	Y320480	NH2UD 69V 350PV		
	6,9 URD 2 PV 0400	B320483	NH2UD 69V 400PV		
	6,9 URD 2 PV 0450	D320485	NH2UD 69V 450PV		
	6,9 URD 2 PV 0500	F320487	NH2UD 69V 500PV		
	6,9 URD 2 PV 0550	G320488	NH2UD 69V 550PV		
	6,9 URD 2 PV 0630	H320489	NH2UD 69V 630PV		
	6,9 URD 2 PV 0700	J320490	NH2UD 69V 700PV		
	Neutral	N222514			5
	Extraction puller	P215592	NHHANDLE		1
3	6,9 URD 3 PV 0315	F320579	NH3UD 69V 315PV	750	3
	6,9 URD 3 PV 0350	G320580	NH3UD 69V 350PV		
	6,9 URD 3 PV 0400	K320583	NH3UD 69V 400PV		
	6,9 URD 3 PV 0450	M320585	NH3UD 69V 450PV		
	6,9 URD 3 PV 0500	P320587	NH3UD 69V 500PV		
	6,9 URD 3 PV 0550	Q320588	NH3UD 69V 550PV		
	6,9 URD 3 PV 0630	R320589	NH3UD 69V 630PV		
	6,9 URD 3 PV 0700	S320590	NH3UD 69V 700PV		
	6,9 URD 3 PV 0800	T320591	NH3UD 69V 800PV		
	6,9 URD 3 PV 0900	V320592	NH3UD 69V 900PV		
	6,9 URD 3 PV 1000	W320593	NH3UD 69V 1000PV		
	Neutral	E223035			51
	Extraction puller	P215592	NHHANDLE		



Microswitches

MS 4L 2-5 B6 + PRES	F210156	(6,3mm clips)
MS 4L 2-5 B2 + PRES	G210157	(2.8 mm clips)

Automatically resetable, these microswitch systems indicate fuse presence (PRES) and proper mounting
In case of improper mounting or fuse melting, this is indicated (terminal 1-4 closed)

Microswitches supplied separately

Size	A	B	C	H	L	M	N	P	R	T
1	39,5	52,5	64,5	20	135	32,1	32,1	43,4	68	40
	1.56"	2.07"	2.54"	0.79"	5.32"	1.26"	1.26"	1.71"	2.68"	1.57"
2	51	60	72	26	150	38,85	38,85	43,4	68	48
	2.01"	2.36"	2.85"	1.02"	5.91"	1.53"	1.53"	1.71"	2.68"	1.89"
3	70	74	86	33	150	38,85	38,85	43,4	68	60
	2.76"	2.91"	3.39"	1.30"	5.91"	1.53"	1.53"	1.71"	2.68"	2.36"

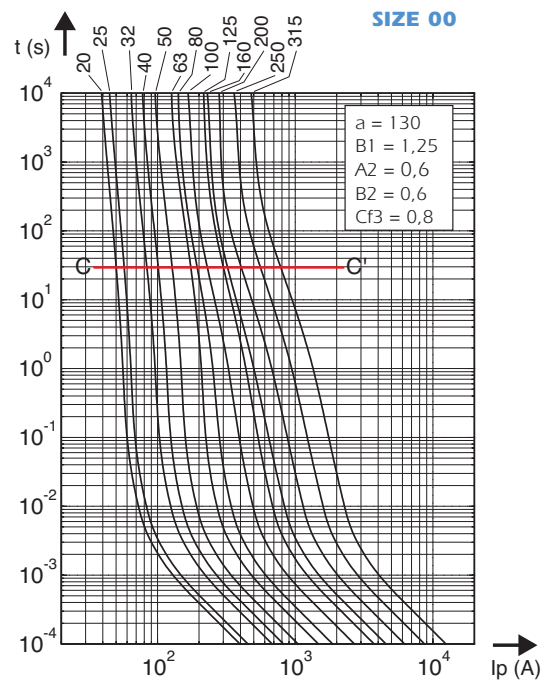
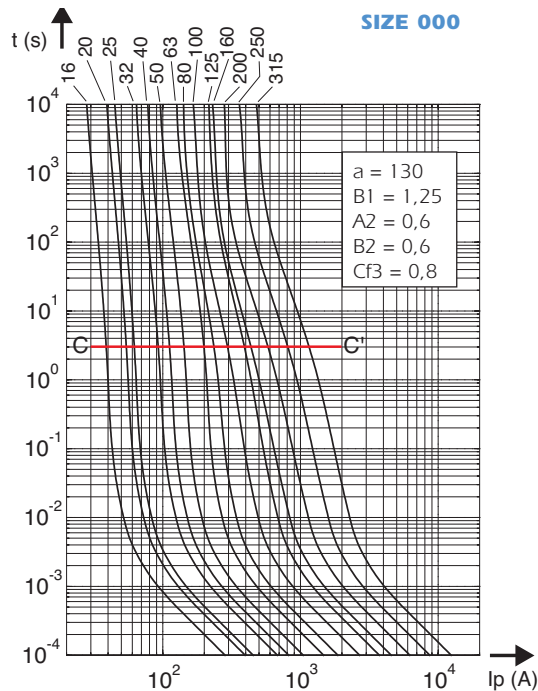
Fuse holder solution, see Gear and Fuse gear section.



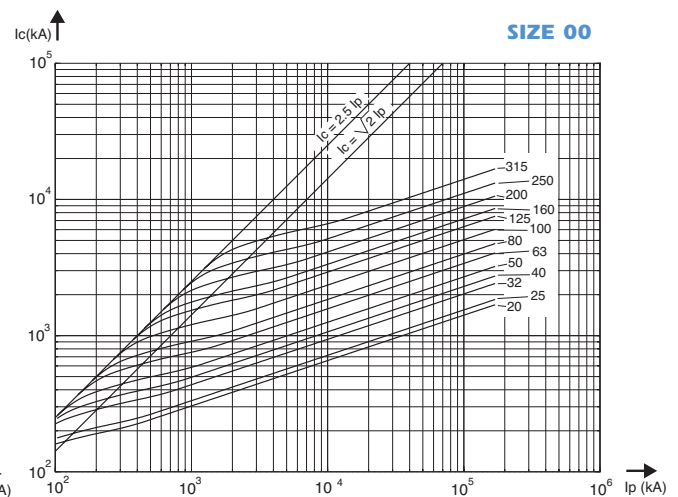
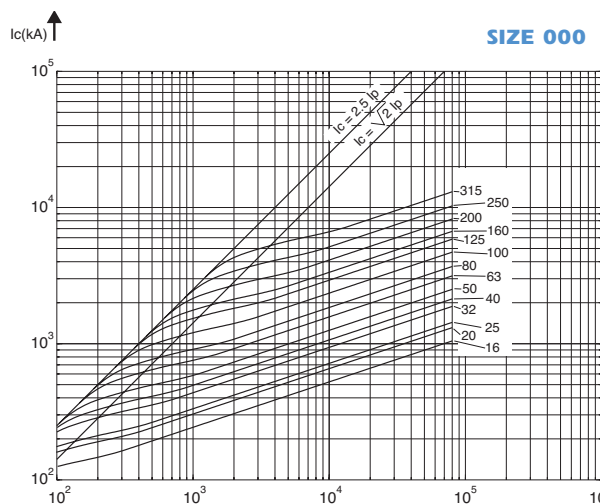
Semiconductor (AC) fuses

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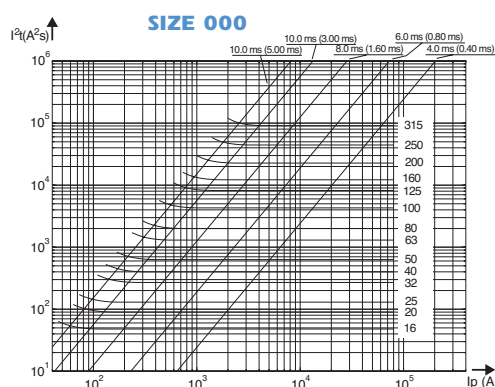
Times/Current Characteristics



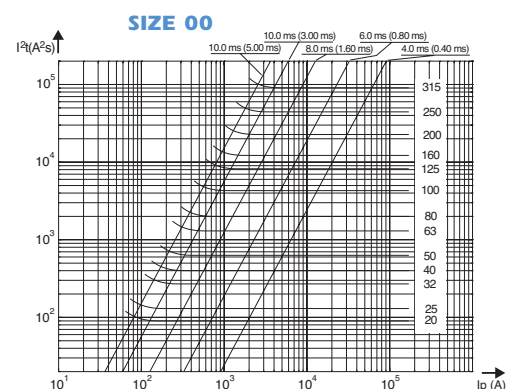
Cut off characteristics - Peak let thru current



Total I^2t and total operating time @ 690 V



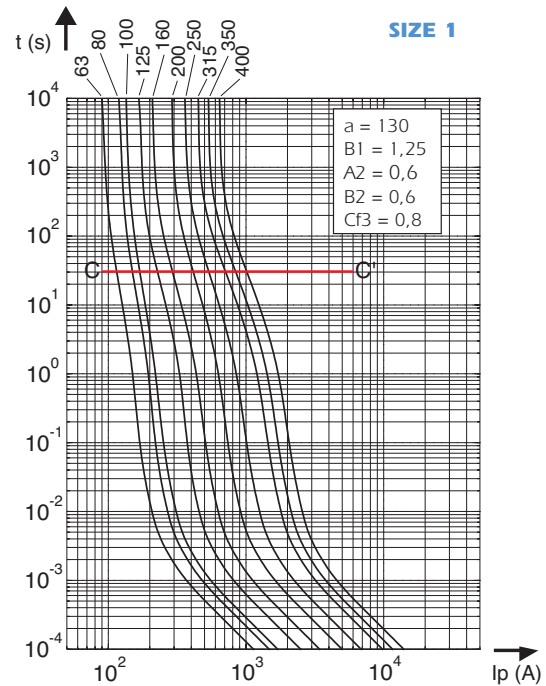
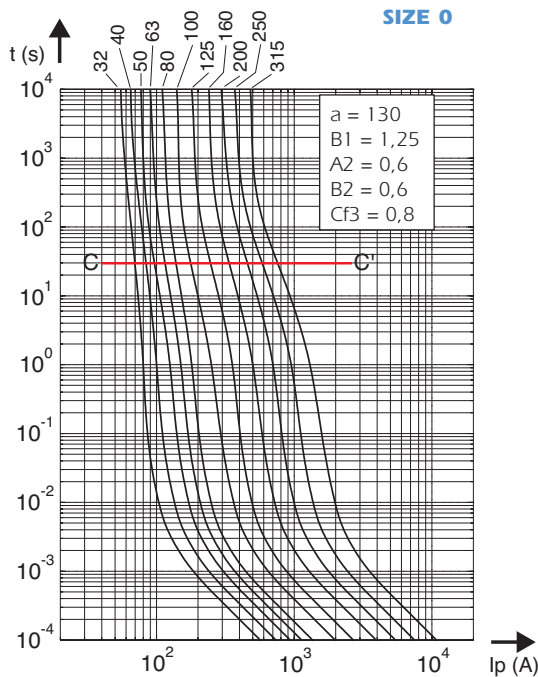
Value between parentheses pertain to prearcing I^2t



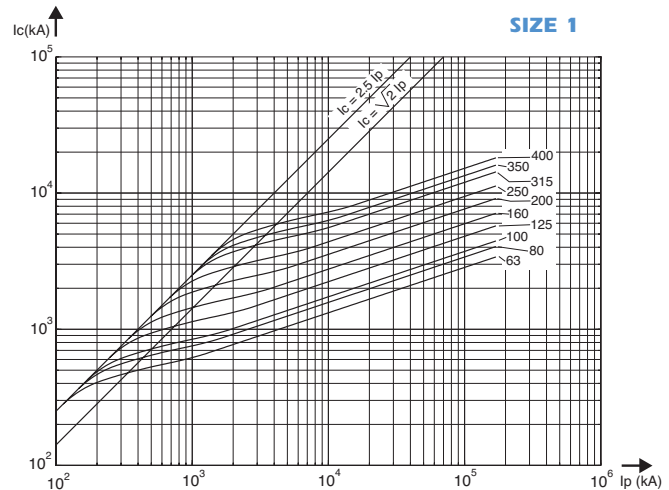
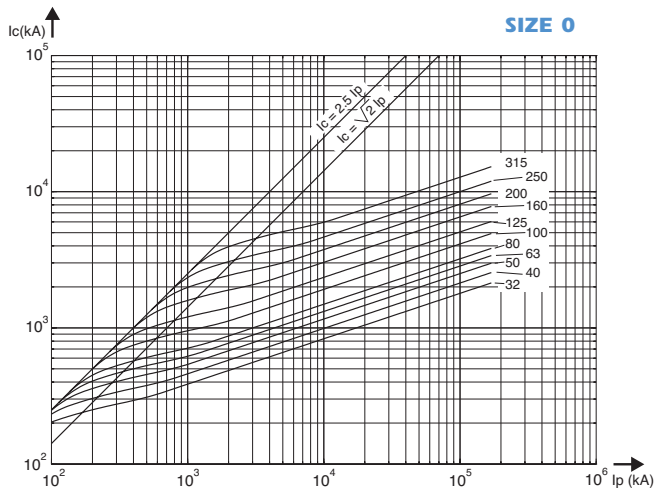


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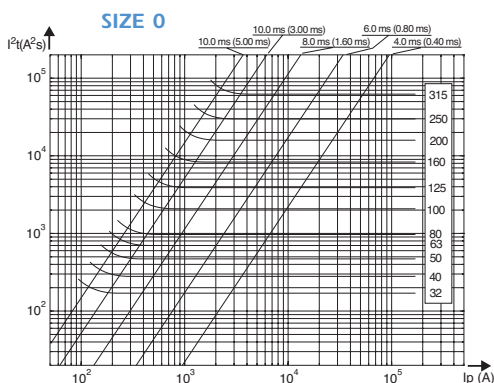
Times/Current Characteristics



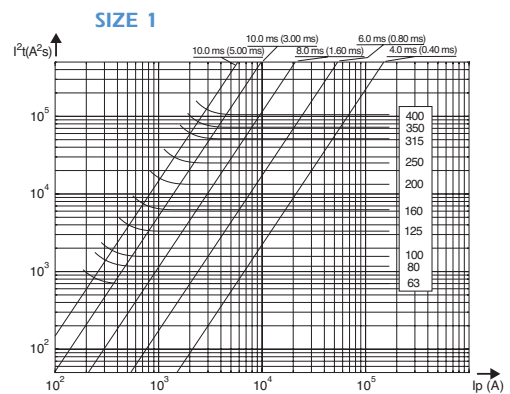
Cut off characteristics - Peak let thru current



Total I²t and total operating time @ 690 V



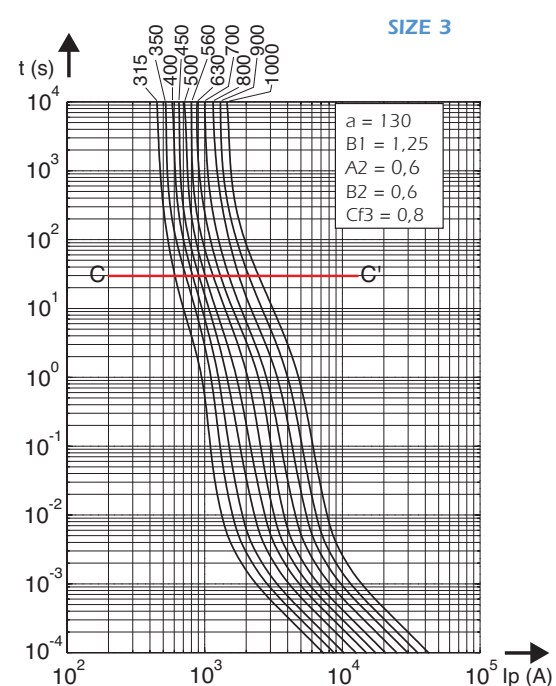
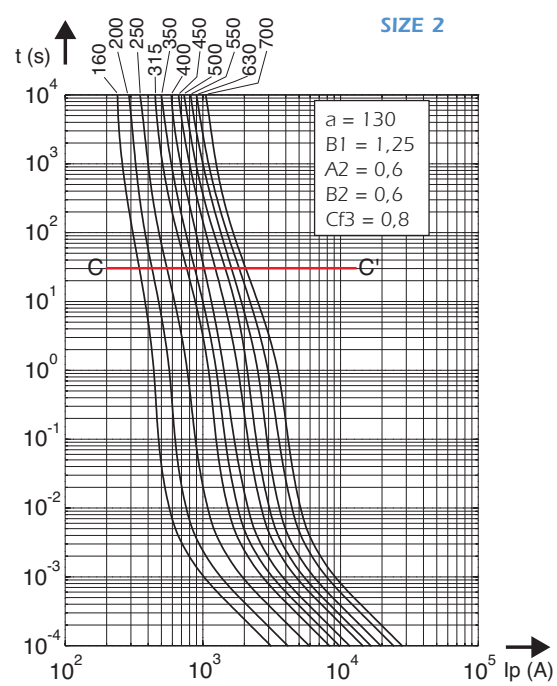
Value between
parentheses pertain
to pre-arcing I²t



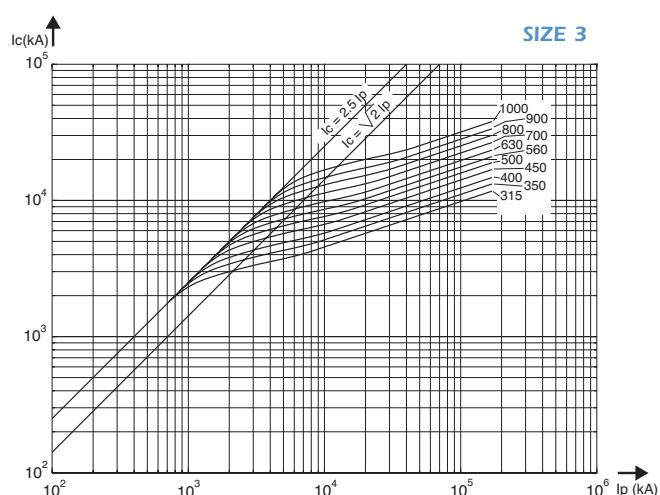
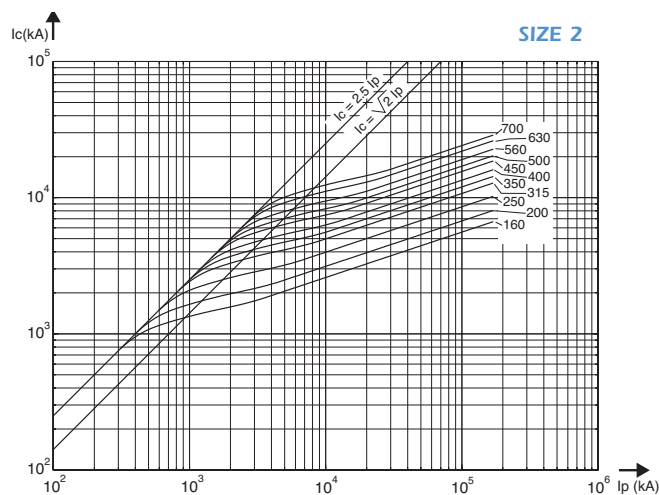


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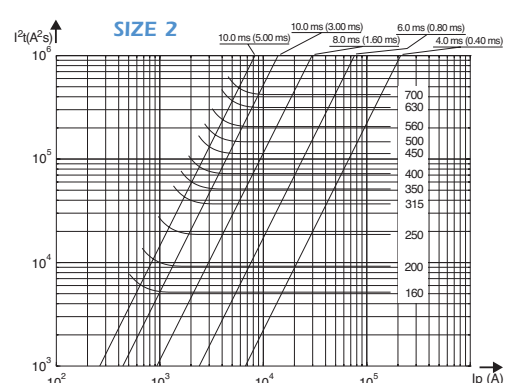
Times/Current Characteristics



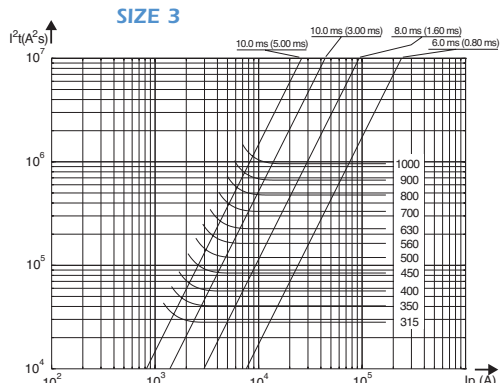
Cut off characteristics - Peak let thru current



Total I²t and total operating time @ 690 V



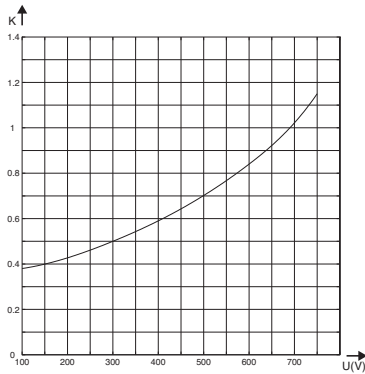
Value between parentheses pertain to prearcing I²t



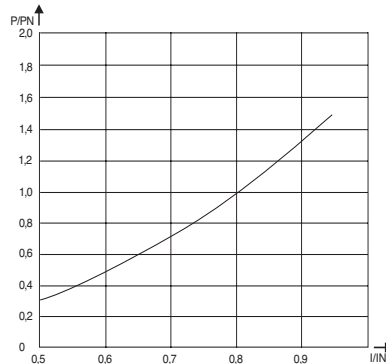


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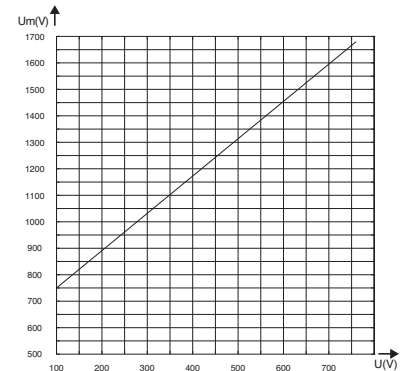
$k=f(U)$
Multiplier coefficient
to calculate total I^2t
and total operating time



P/PN
Multiplier coefficient
to calculate the power
losses at various currents



Peak arc voltage



Derating in fuse holders

- 1- Derating for fuse holder unprotected
- 2- Derating for finger safe fuseholders and switch disconnector Linocur
- 3- Derating for fused switch-disconnectors ITC
- 4- Derating for fused switch-disconnectors ITC with finger safe protection

	In	1	2	3	4
Size 000	16	1,00	1,00	1,00	1,00
	20	1,00	1,00	1,00	1,00
	25	1,00	1,00	1,00	1,00
	32	1,00	1,00	1,00	1,00
	40	1,00	1,00	1,00	1,00
	50	1,00	1,00	0,90	0,90
	63	1,00	1,00	0,90	0,90
	80	1,00	0,90	0,75	0,75
	100	1,00	0,90	0,75	0,75
	125	1,00	0,85	0,70	0,70
	160	0,90	0,75	0,60	0,60
	200	0,85	0,70	0,55	0,55
Size 00	250	0,75	0,60	0,50	0,50
	315	0,70	0,55	0,45	0,45
	20	1,00	1,00	1,00	1,00
	25	1,00	1,00	1,00	1,00
	32	1,00	1,00	1,00	1,00
	40	1,00	1,00	1,00	1,00
	50	1,00	1,00	1,00	1,00
	63	1,00	1,00	1,00	1,00
Size 0	80	1,00	0,95	0,95	0,95
	100	1,00	0,90	0,90	0,90
	125	1,00	0,85	0,85	0,85
	160	0,90	0,75	0,75	0,75
	200	0,85	0,70	0,70	0,70
	250	0,80	0,65	0,65	0,65
	315	0,70	0,55	0,55	0,55
	32	1,00			
	40	1,00			
	50	1,00			
	63	1,00			
	80	0,95			
	100	0,95			
	125	0,85			
	160	0,85			
	200	0,80			
	250	0,75			
	315	0,65			

	In	1	2	3	4
Size 1	63	1,00	0,95	1,00	1,00
	80	0,95	0,85	0,95	0,90
	100	0,85	0,75	0,85	0,80
	125	0,85	0,75	0,85	0,80
	160	0,80	0,70	0,80	0,75
	200	0,80	0,70	0,80	0,70
	250	0,75	0,70	0,75	0,70
	315	0,75	0,65	0,75	0,70
	350	0,70	0,65	0,70	0,65
	400	0,65	0,60	0,65	0,60
Size 2	160	0,90	0,80	0,90	0,85
	200	0,85	0,75	0,85	0,80
	250	0,85	0,70	0,80	0,75
	315	0,75	0,65	0,70	0,65
	350	0,70	0,65	0,70	0,65
	400	0,70	0,60	0,70	0,60
	450	0,70	0,60	0,65	0,60
	500	0,70	0,60	0,65	0,60
	550	0,65	0,60	0,65	0,60
	630	0,65	0,55	0,65	0,60
Size 3	700	0,60	0,55	0,60	0,55
	315	0,85	0,75	0,80	0,75
	350	0,85	0,75	0,80	0,75
	400	0,80	0,70	0,75	0,70
	450	0,80	0,70	0,75	0,70
	500	0,75	0,65	0,75	0,70
	550	0,75	0,65	0,75	0,70
	630	0,70	0,60	0,70	0,65
	700	0,70	0,60	0,65	0,60
	800	0,65	0,55	0,60	0,55
	900	0,60	0,50	0,60	0,55
	1000	0,60	0,50	0,55	0,50



Protistor® Square-body Fuses NH Plain Blades - 690 VAC aR - 690 VAC sizes 000 to 3

Fuse holders and switch-disconnector



Fuse holder
unprotect



Fuse holder
finger safe



Switch
Disconnecter



Fuse switch
Disconnecter
fast handle

Type	Characteristics	Poles	Size 000/00	Size 0	Size 1	Size 2	Size 3
Fuse holder	Unprotected (4) screw connection for hole and bar terminals for 35mm Din rail	1	R216192	T218241	A223008	E211075	X213644
		2	F218758	G218759	G200796	V211595	B214154
		3	V219277	W219278	Y201340	D212109	F214664
		4	Z223007	H222486	H201855	R212627	K215174
	Unprotected (4) screw connection for holes or bar terminals for panels	1	F215170	N216695	E218757	F201853	W213643
		2	A217212	B217213	F222484	S211593	D214662
		3	F217723	G217724	Y223006	B212107	H215172
		4	S219275	R218239	X201339	C213143	L215681
	Finger Safe Protected screw connection for hole and bar terminals for DIN rail	1	S218240	G226717	P226724	R226726	T226728
		3	G222485	J226719A	Q226725	S226727	V226729
Switch- disconnecter	Horizontal Linocur AC23	1	N216626 N222882				
		2	B218685 C201781				
		3	Y212035 W213574				
Fused switch- disconnecter front handle	ITCP 160 III(4)	3	F210409				
	ITC 63 III complete (5)	3	G210824				
	ITC 160 III complete (5)	3	K227824				
	ITC 250 III complete (5)	3			N210830 + Y210770 (3)		
	ITC 400 III complete(5)	3				Q210832 + Y210770 (3)	
	ITC 630 III complete(5)	3					P210831 + Y210770 (3)
	ITC 800 III complete(5)	3					W229674 + Y210770 (3)

(1) Impossible to use microswitch

(2) The axis of operation must be fragmented if the heighten (Y210770A) is not used - Internal or external control.

(3) Necessary heighten for the use of microswitch (F210156C or G210157C)

(4) Unprotected against accidental contact-not finger safe

(5) Finger safe

Warning : for all holders, please check maximum fuse and fuse holder operating limit".



Protistor® Square-body Fuses PSC gR/aR sizes 000/00 Microswitches for PSC sizes 000/00 for NH

MICROSWITCH SYSTEMS ADAPTED TO THE FOLLOWING FUSES:

- PSC sizes 000/00 (brackets) DIN43653
- NH Fuses (plain blades) see details in "General Purpose IEC Fuses" section
- NH plain blades 690 VAC Protistor square-body Fuses



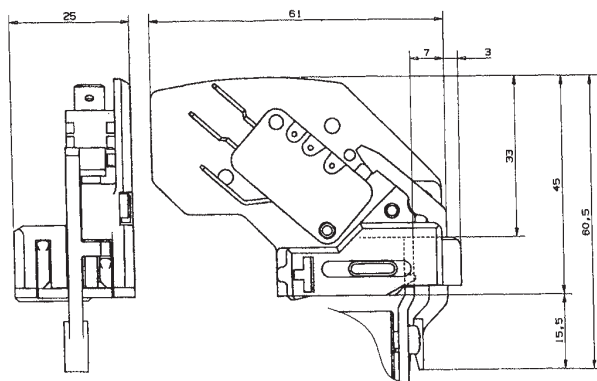
Main Characteristics

Code	AC Insulation voltage rating (***)	Positive operating voltage/current	Current rating	Current	Interrupting rating						AC voltage withstand test (*)	Impulse voltage test Uimp1.2/50 µs (**)	Fire class according to UL 94
					Non inductive circuit			Inductive circuit : L/R = 25ms					
					30V	110V	250V	30V	110V	250V			
MS 4L 2-5 B2 + Pres	1000 V	20 V 100 mA	5 A	50 Hz DC	4A -	4A -	5A -	- -	5A 2 A	5 A 0,4 A	12 kV 8 kV	16 kV 13 kV	V0
MS 4L 2-5 B6 + Pres	1000 V	20 V 50 mA	10 A	50/60 Hz DC	10 A 8 A	10 A 0,4 A	10 A 0,2 A	10 A 4 A	10 A 0,2 A	10 A 0,1 A	8 kV	10 kV	V0

* Between power circuit and microswitch terminals as per IEC 60 and 694 and NFC 64010 (50/60 Hz 1 min duration in dry air)

** Between power circuit and microswitch terminals Uimp: impulse voltage as per IEC 60947-1

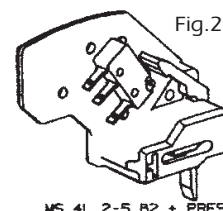
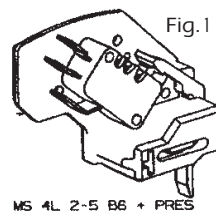
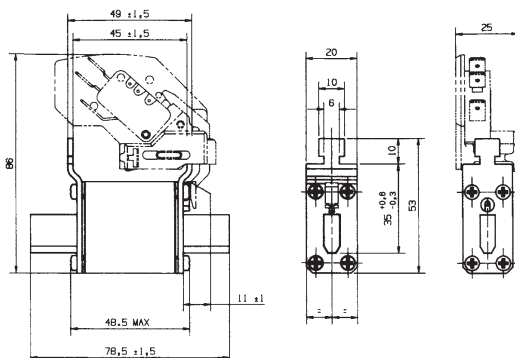
*** Between power circuit and microswitch terminals



Designation	Ref. Number	Weight (g)	Pack.	Catalog Number
MS 4L 2-5 B6 + PRES (Fig. 1) ⁽¹⁾	F210156	30	3	MS 4L2-5B6PRES
MS 4L 2-5 B2 + PRES (Fig. 2) ⁽²⁾	G210157	26	3	MS 4L2-5B2PRES

Automatically resettable, these microswitch systems indicate fuse presence (PRES) and proper mounting.

In case of improper mounting or fuse melting, this is indicated (terminal 1-4 closed)



- (1) 6.3 mm clips
(2) 2.8 mm clips