

Protistor® Square-body Fuses PSC aR sizes 3x - 450V to 700 VAC Main characteristics

450 TO 700VAC / 63 TO 2800A

 Recognized

- Exceptionally low I^2t , Watt losses.
- Non-magnetic construction,
- Highly reliable low voltage
- Trip-indicator system, conformity to UL, IEC, DIN and VDE standards.
- Increased technical performance
 - Higher ratings
 - Reduction in volume and weight



This fuse preselection table indicates, for each size:

- rated current (or rating) I_n
- pre-arcing I^2t (I^2t_p) at 1 ms
- total operating I^2t (I^2t_t) at 660 V, $f=50\text{Hz}$ $\cos \varphi=0.15$, and for a total operating time from 8 to 10 ms
- dissipated power P_n at the rated current I_n , and at $0.8 I_n$, in steady state
- breaking capacity at various voltages, checked by tests made in accordance with IEC and American standards.

Semiconductor (AC) fuses



Protistor® Square-body Fuses PSC aR sizes 3x - 450V to 700 VAC Main characteristics

Estimated breaking capacity: 300kA

| Size | Nominal Voltage (VAC) | | Ampere Rating (A) | Pre-arcing I ² t @ 1ms (kA ² s) | Total I ² t @ 660V (*) @ Un (kA ² s) | Power Pn (W) | | Tested Breaking capacity (kA) | |
|------|-----------------------|---------|-------------------|---|--|--------------|--------|-------------------------------|---------------------|
| | IEC | USA | | | | End contact | Blades | IEC @ 690V (*) @ Un | USA @ 700V (*) @ Un |
| 30 | 690 | 700 | 50 | 0,116 | 0,62 | 9 | 9 | 200 | 200 |
| | | | 63 | 0,2 | 1,1 | 14 | 14 | | |
| | | | 80 | 0,33 | 1,8 | 19 | 19 | | |
| | | | 100 | 0,47 | 2,5 | 26 | 26 | | |
| | | | 125 | 0,85 | 4,5 | 30 | 30 | | |
| | | | 160 | 1,6 | 8,5 | 37 | 37 | | |
| | | | 200 | 3 | 15,5 | 42 | 43 | | |
| | | | 250 | 5,8 | 30 | 48 | 50 | | |
| | | | 315 | 12 | 62 | 53 | 55 | | |
| | | | 350 | 15,5 | 80 | 57 | 60 | | |
| | | | 400 | 23 | 120 | 60 | 65 | | |
| | | | 450 | 26 | 150 | 80 | 88 | | |
| | | | 500 | 41 | 240 | 80 | 88 | | |
| | | | 550 | 52 | 300 | 80 | 90 | | |
| 31 | 690 | 700 | 630 | 84 | 450(*) | 85 | 95 | 200 | 200 |
| | | | 160 | 1,3 | 7 | 35 | 35 | | |
| | | | 200 | 2,6 | 13,5 | 45 | 45 | | |
| | | | 250 | 4,7 | 25 | 52 | 52 | | |
| | | | 315 | 7,5 | 40 | 65 | 65 | | |
| | | | 350 | 10,5 | 55 | 67 | 67 | | |
| | | | 400 | 19 | 100 | 68 | 68 | | |
| | | | 450 | 26,5 | 140 | 70 | 70 | | |
| | | | 500 | 37 | 195 | 70 | 72 | | |
| | | | 550 | 52 | 280 | 70 | 75 | | |
| | | | 630 | 75 | 390 | 75 | 85 | | |
| | | | 700 | 95 | 490 | 85 | 95 | | |
| | | | 800 | 140 | 800 | 105 | 120 | | |
| | | | 315 | 5,2 | 28,9 | 71 | 71 | | |
| 350 | 8,9 | 48,8 | 71 | 74 | | | | | |
| 400 | 15 | 80 | 72 | 75 | | | | | |
| 450 | 22 | 115 | 77 | 80 | | | | | |
| 500 | 28 | 145 | 85 | 90 | | | | | |
| 550 | 37 | 195 | 90 | 95 | | | | | |
| 630 | 54 | 280 | 95 | 105 | | | | | |
| 700 | 76 | 400 | 100 | 110 | | | | | |
| 800 | 115 | 600 | 110 | 120 | | | | | |
| 900 | 170 | 900 | 110 | 125 | | | | | |
| 1000 | 240 | 1250 | 115 | 135 | | | | | |
| 1100 | 270 | 1450(*) | 140 | 165 | | | | | |
| 1250 | 410 | 1950(*) | 150 | 180 | | | | | |
| 1400 | 555 | 2300(*) | 160 | 200 | | | | | |
| 1600 | 870 | 3600(*) | 165 | 205 | | | | | |
| 1800 | 1050 | 3700(*) | 195 | 230 | | | | | |
| 32 | 690 | 700 | 450 | 13,45 | 74,1 | 84 | 88 | 200 | 200 |
| | | | 500 | 19 | 100 | 105 | 105 | | |
| | | | 550 | 27 | 140 | 105 | 110 | | |
| | | | 630 | 40 | 210 | 110 | 120 | | |
| | | | 700 | 55 | 300 | 115 | 125 | | |
| | | | 800 | 95 | 490 | 120 | 130 | | |
| | | | 900 | 135 | 700 | 120 | 135 | | |
| | | | 1000 | 170 | 900 | 135 | 155 | | |
| | | | 1100 | 240 | 1260 | 135 | 160 | | |
| | | | 1250 | 350 | 1850 | 150 | 180 | | |
| | | | 1400 | 480 | 2500 | 160 | 200 | | |
| | | | 1500 | 500 | 2500(*) | 210 | 240 | | |
| | | | 1600 | 555 | 2900(*) | 210 | 240 | | |
| | | | 1800 | 720 | 3870(*) | 225 | 260 | | |
| 2000 | 950 | 4500(*) | 250 | 290 | | | | | |
| 2250 | 1250 | 5160(*) | 280 | 320 | | | | | |
| 2500 | 1870 | 6540(*) | 280 | 330 | | | | | |
| 33 | 690 | 700 | 800 | 60 | 320 | 144 | 144 | 200 | 200 |
| | | | 1000 | 110 | 590 | 165 | 165 | | |
| | | | 1250 | 220 | 1100 | 190 | 190 | | |
| | | | 1400 | 300 | 1600 | 200 | 200 | | |
| | | | 1600 | 450 | 2400 | 220 | 220 | | |
| | | | 1800 | 700 | 3500 | 225 | 225 | | |
| | | | 2000 | 950 | 5000 | 235 | 235 | | |
| | | | 2200 | 1100 | 5250(*) | 280 | 280 | | |
| | | | 1000 | 76 | 395 | 220 | 220 | | |
| | | | 1250 | 160 | 850 | 230 | 230 | | |
| | | | 1400 | 225 | 1200 | 240 | 240 | | |
| | | | 1600 | 375 | 1900 | 250 | 250 | | |
| | | | 1800 | 530 | 2800 | 250 | 250 | | |
| | | | 2000 | 700 | 3100(*) | 280 | 280 | | |
| 2200 | 950 | 4400(*) | 280 | 280 | | | | | |
| 2500 | 1400 | 6600(*) | 310 | 310 | | | | | |
| 2800 | 1900 | 8800(*) | 330 | 330 | | | | | |
| 2X32 | 690 | 700 | 800 | 60 | 320 | 144 | 144 | 200 | 200 |
| | | | 1000 | 110 | 590 | 165 | 165 | | |
| | | | 1250 | 220 | 1100 | 190 | 190 | | |
| | | | 1400 | 300 | 1600 | 200 | 200 | | |
| | | | 1600 | 450 | 2400 | 220 | 220 | | |
| | | | 1800 | 700 | 3500 | 225 | 225 | | |
| 2x33 | 690 | 700 | 2000 | 950 | 5000 | 235 | 235 | 170 | 170 |
| | | | 2200 | 1100 | 5250(*) | 280 | 280 | | |
| | | | 1000 | 76 | 395 | 220 | 220 | | |
| | | | 1250 | 160 | 850 | 230 | 230 | | |
| | | | 1400 | 225 | 1200 | 240 | 240 | | |
| | | | 1600 | 375 | 1900 | 250 | 250 | | |
| 2x33 | 600 | 650 | 2000 | 700 | 3100(*) | 280 | 280 | 160(*) | 160(*) |
| | | | 2200 | 950 | 4400(*) | 280 | 280 | | |
| | | | 2500 | 1400 | 6600(*) | 310 | 310 | | |
| | | | 2800 | 1900 | 8800(*) | 330 | 330 | | |

For others Ampere ratings consult us
12/04

Protistor® Square-body Fuses PSC aR sizes 3x - 450V to 700 VAC American Terminals - 30 - 33 Blades



Rated voltage as per American standard.

| Size | Designation | | | | Reference Number | Weight (g) | Pack. | Catalog Number | | |
|-------|-------------|-----------|-----------|------|------------------|---------------|-------|----------------|-----|---|
| | | | | | K | | | | | |
| 30 | A 070 | URD 30 KI | 0050 | | E301925 | 290 | 3 | A070UD30KI050 | | |
| | A 070 | URD 30 KI | 0063 | | B300128 | | | A070UD30KI63 | | |
| | A 070 | URD 30 KI | 0080 | | C300129 | | | A070UD30KI080 | | |
| | A 070 | URD 30 KI | 0100 | | D300130 | | | A070UD30KI100 | | |
| | A 070 | URD 30 KI | 0125 | | E300131 | | | A070UD30KI125 | | |
| | A 070 | URD 30 KI | 0160 | | F300132 | | | A070UD30KI160 | | |
| | A 070 | URD 30 KI | 0200 | | G300133 | | | A070UD30KI200 | | |
| | A 070 | URD 30 KI | 0250 | | H300134 | | | A070UD30KI250 | | |
| | A 070 | URD 30 KI | 0315 | | J300135 | | | A070UD30KI315 | | |
| | A 070 | URD 30 KI | 0350 | | K300136 | | | A070UD30KI350 | | |
| | A 070 | URD 30 KI | 0400 | | L300137 | | | A070UD30KI400 | | |
| | A 070 | URD 30 KI | 0450 | | T301064 | | | A070UD30KI450 | | |
| | A 070 | URD 30 KI | 0500 | | V301065 | | | A070UD30KI500 | | |
| | A 070 | URD 30 KI | 0550 | | W301066 | | | A070UD30KI550 | | |
| | A 065 | URD 30 KI | 0630 | | - | | | | | |
| | 31 | A 070 | URD 31 KI | 0160 | | | | F300385 | 430 | 3 |
| A 070 | | URD 31 KI | 0200 | | S300028 | A070UD31KI200 | | | | |
| A 070 | | URD 31 KI | 0250 | | T300029 | A070UD31KI250 | | | | |
| A 070 | | URD 31 KI | 0315 | | V300030 | A070UD31KI315 | | | | |
| A 070 | | URD 31 KI | 0350 | | R300050 | A070UD31KI350 | | | | |
| A 070 | | URD 31 KI | 0400 | | W300031 | A070UD31KI400 | | | | |
| A 070 | | URD 31 KI | 0450 | | X300032 | A070UD31KI450 | | | | |
| A 070 | | URD 31 KI | 0500 | | Y300033 | A070UD31KI500 | | | | |
| A 070 | | URD 31 KI | 0550 | | Z300034 | A070UD31KI550 | | | | |
| A 070 | | URD 31 KI | 0630 | | A300035 | A070UD31KI630 | | | | |
| A 070 | | URD 31 KI | 0700 | | B300036 | A070UD31KI700 | | | | |
| A 070 | | URD 31 KI | 0800 | | A301070 | A070UD31KI800 | | | | |
| 32 | A 070 | URD 32 KI | 0400 | | Z300195 | 590 | 3 | A070UD32KI400 | | |
| | A 070 | URD 32 KI | 0450 | | A300196 | | | A070UD32KI450 | | |
| | A 070 | URD 32 KI | 0500 | | B300197 | | | A070UD32KI500 | | |
| | A 070 | URD 32 KI | 0550 | | C300198 | | | A070UD32KI550 | | |
| | A 070 | URD 32 KI | 0630 | | D300199 | | | A070UD32KI630 | | |
| | A 070 | URD 32 KI | 0700 | | E300200 | | | A070UD32KI700 | | |
| | A 070 | URD 32 KI | 0800 | | F300201 | | | A070UD32KI800 | | |
| | A 070 | URD 32 KI | 0900 | | G300202 | | | A070UD32KI900 | | |
| | A 070 | URD 32 KI | 1000 | | H300203 | | | A070UD32KI1000 | | |
| | A 065 | URD 32 KI | 1100 | | - | | | | | |
| | A 060 | URD 32 KI | 1250 | | - | | | 660 | | |
| | A 055 | URD 32 KI | 1400 | | - | | | | | |
| | A 055 | URD 32 KI | 1600 | | - | | | | | |
| | A 050 | URD 32 KI | 1800 | | - | | | | | |
| 33 | A 070 | URD 33 KI | 0500 | | W300238 | 860 | 3 | A070UD33KI500 | | |
| | A 070 | URD 33 KI | 0550 | | X300239 | | | A070UD33KI550 | | |
| | A 070 | URD 33 KI | 0630 | | Y300240 | | | A070UD33KI630 | | |
| | A 070 | URD 33 KI | 0700 | | Z300241 | | | A070UD33KI700 | | |
| | A 070 | URD 33 KI | 0800 | | A300242 | | | A070UD33KI800 | | |
| | A 070 | URD 33 KI | 0900 | | B300243 | | | A070UD33KI900 | | |
| | A 070 | URD 33 KI | 1000 | | C300244 | | | A070UD33KI1000 | | |
| | A 070 | URD 33 KI | 1100 | | D300245 | | | A070UD33KI1100 | | |
| | A 070 | URD 33 KI | 1250 | | E300246 | | | A070UD33KI1250 | | |
| | A 070 | URD 33 KI | 1400 | | F300247 | | | A070UD33KI1400 | | |
| | A 065 | URD 33 KI | 1600 | | E302063 | | | A065UD33KI1600 | | |
| | A 065 | URD 33 KI | 1800 | | - | | | | | |
| | A 060 | URD 33 KI | 2000 | | - | | | | | |
| | A 055 | URD 33 KI | 2250 | | - | | | | | |
| | A 050 | URD 33 KI | 2500 | | - | | | | | |
| | | | | | | | | 1070 | | |



Protistor® Square-body Fuses PSC aR sizes 3x - 450V to 700 VAC American Terminals - 30 - 33 Blades



Rated voltage as per American standard.

| Size | Designation | | | | Reference Number | Weight (g) | Pack. | Catalog Number |
|-------|-------------|-----------|------|---------|------------------|------------|-------|----------------|
| | | | | | L | | | |
| 30 | A 070 | URD 30 LI | 0050 | | A301921 | 290 | 3 | A070UD30LI050 |
| | A 070 | URD 30 LI | 0063 | | M300138 | | | A070UD30LI63 |
| | A 070 | URD 30 LI | 0080 | | N300139 | | | A070UD30LI080 |
| | A 070 | URD 30 LI | 0100 | | P300140 | | | A070UD30LI100 |
| | A 070 | URD 30 LI | 0125 | | Q300141 | | | A070UD30LI125 |
| | A 070 | URD 30 LI | 0160 | | R300142 | | | A070UD30LI160 |
| | A 070 | URD 30 LI | 0200 | | S300143 | | | A070UD30LI200 |
| | A 070 | URD 30 LI | 0250 | | T300144 | | | A070UD30LI250 |
| | A 070 | URD 30 LI | 0315 | | V300145 | | | A070UD30LI315 |
| | A 070 | URD 30 LI | 0350 | | W300146 | | | A070UD30LI350 |
| | A 070 | URD 30 LI | 0400 | | X300147 | | | A070UD30LI400 |
| | A 070 | URD 30 LI | 0450 | | K300527 | | | A070UD30LI450 |
| | A 070 | URD 30 LI | 0500 | | L300528 | | | A070UD30LI500 |
| | A 070 | URD 30 LI | 0550 | | M300529 | | | A070UD30LI550 |
| | A 060 | URD 30 LI | 0630 | | P302003 | | | A060UD30LI630 |
| 31 | A 070 | URD 31 LI | 0160 | | D301924 | 430 | 3 | A070UD31LI160 |
| | A 070 | URD 31 LI | 0200 | | V300697 | | | A070UD31LI200 |
| | A 070 | URD 31 LI | 0250 | | W300698 | | | A070UD31LI250 |
| | A 070 | URD 31 LI | 0315 | | X300699 | | | A070UD31LI315 |
| | A 070 | URD 31 LI | 0350 | | Y300700 | | | A070UD31LI350 |
| | A 070 | URD 31 LI | 0400 | | Z300701 | | | A070UD31LI400 |
| | A 070 | URD 31 LI | 0450 | | A300702 | | | A070UD31LI450 |
| | A 070 | URD 31 LI | 0500 | | B300703 | | | A070UD31LI500 |
| | A 070 | URD 31 LI | 0550 | | C300704 | | | A070UD31LI550 |
| | A 070 | URD 31 LI | 0630 | | D300705 | | | A070UD31LI630 |
| | A 070 | URD 31 LI | 0700 | | E300706 | | | A070UD31LI700 |
| A 070 | URD 31 LI | 0800 | | F300707 | A070UD31LI800 | | | |
| 32 | A 070 | URD 32 LI | 0400 | | J300204 | 590 | 3 | A070UD32LI400 |
| | A 070 | URD 32 LI | 0450 | | K300205 | | | A070UD32LI450 |
| | A 070 | URD 32 LI | 0500 | | L300206 | | | A070UD32LI500 |
| | A 070 | URD 32 LI | 0550 | | M300207 | | | A070UD32LI550 |
| | A 070 | URD 32 LI | 0630 | | N300208 | | | A070UD32LI630 |
| | A 070 | URD 32 LI | 0700 | | P300209 | | | A070UD32LI700 |
| | A 070 | URD 32 LI | 0800 | | Q300210 | | | A070UD32LI800 |
| | A 070 | URD 32 LI | 0900 | | R300211 | | | A070UD32LI900 |
| | A 070 | URD 32 LI | 1000 | | S300212 | | | A070UD32LI1000 |
| | A 065 | URD 32 LI | 1100 | | B301071 | | | A065UD32LI1100 |
| | A 060 | URD 32 LI | 1250 | | C301072 | | | A060UD32LI1250 |
| | A 055 | URD 32 LI | 1400 | | D301073 | | | A055UD32LI1400 |
| | A 055 | URD 32 LI | 1600 | | E301074 | | | A055UD32LI1600 |
| | A 050 | URD 32 LI | 1800 | | F301075 | | | A050UD32LI1800 |
| 33 | A 070 | URD 33 LI | 0500 | | K300228 | 860 | 3 | A070UD33LI500 |
| | A 070 | URD 33 LI | 0550 | | L300229 | | | A070UD33LI550 |
| | A 070 | URD 33 LI | 0630 | | M300230 | | | A070UD33LI630 |
| | A 070 | URD 33 LI | 0700 | | N300231 | | | A070UD33LI700 |
| | A 070 | URD 33 LI | 0800 | | P300232 | | | A070UD33LI800 |
| | A 070 | URD 33 LI | 0900 | | Q300233 | | | A070UD33LI900 |
| | A 070 | URD 33 LI | 1000 | | R300234 | | | A070UD33LI1000 |
| | A 070 | URD 33 LI | 1100 | | S300235 | | | A070UD33LI1100 |
| | A 070 | URD 33 LI | 1250 | | T300236 | | | A070UD33LI1250 |
| | A 070 | URD 33 LI | 1400 | | V300237 | | | A070UD33LI1400 |
| | A 065 | URD 33 LI | 1600 | | G301076 | | | A065UD33LI1600 |
| | A 065 | URD 33 LI | 1800 | | H301077 | | | A065UD33LI1800 |
| | A 060 | URD 33 LI | 2000 | | J301078 | | | A060UD33LI2000 |
| | A 055 | URD 33 LI | 2250 | | K301079 | | | A055UD33LI2250 |
| | A 050 | URD 33 LI | 2500 | | L301080 | | | A050UD33LI2500 |

Protistor® Square-body Fuses PSC aR sizes 3x - 450V to 700 VAC American Terminals - 30 - 33 Blades



Rated voltage as per American standard.

| Size | Designation | Reference Number | Weight (g) | Pack. | Catalog Number |
|------|-----------------------|------------------|------------|-------|----------------|
| | | LL | | | |
| 31 | A 070 URD 31 LLI 0160 | C301923 | 290 | | A070UD31LLI160 |
| | A 070 URD 31 LLI 0200 | J300158 | | | A070UD31LLI200 |
| | A 070 URD 31 LLI 0250 | K300159 | | | A070UD31LLI250 |
| | A 070 URD 31 LLI 0315 | L300160 | | | A070UD31LLI315 |
| | A 070 URD 31 LLI 0350 | M300161 | | | A070UD31LLI350 |
| | A 070 URD 31 LLI 0400 | N300162 | | | A070UD31LLI400 |
| | A 070 URD 31 LLI 0450 | P300163 | | | A070UD31LLI450 |
| | A 070 URD 31 LLI 0500 | Q300164 | | | A070UD31LLI500 |
| | A 070 URD 31 LLI 0550 | R300165 | | | A070UD31LLI550 |
| | A 070 URD 31 LLI 0630 | S300166 | | | A070UD31LLI630 |
| | A 070 URD 31 LLI 0700 | T300167 | | | A070UD31LLI700 |
| | A 070 URD 31 LLI 0800 | J300526 | | | A070UD31LLI800 |

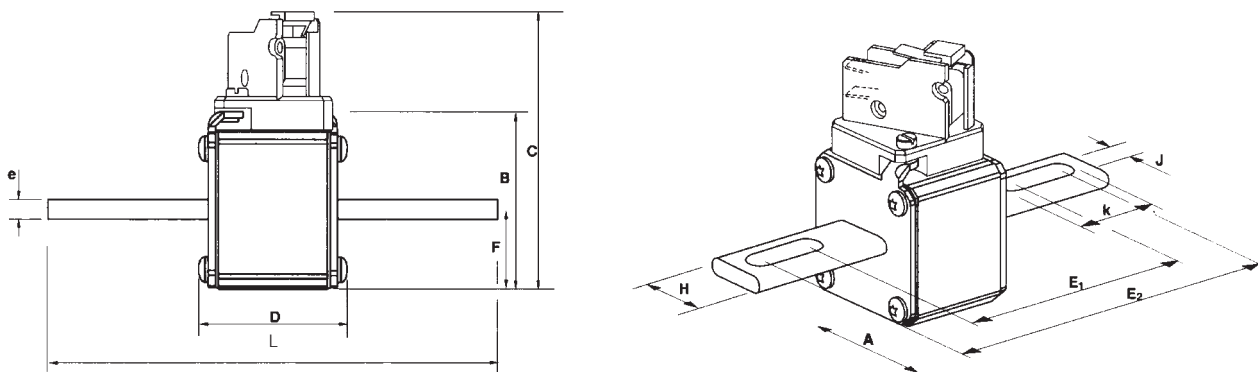


Protistor® Square-body Fuses PSC aR sizes 3x - 450V to 700 VAC American Terminals - 30 - 33 Blades

| | Size | A | B | C | D | E ₁ ^{±1,1} | E ₂ ^{±1,1} | F | H | J | K | L | e |
|----|----------|------------------|------------------|-----------------|------------------|--------------------------------|--------------------------------|------------------|---------------|----------------|---------------|-------------------|-------------|
| K | 30 | 40 1-19/32" | 46,5 1-27/32" | 82 3-7/32" | 47,5 1-7/8" | 68 2-11/16" | 107 4-7/32" | 21 53/64" | 25 1" | 10,5 13/32" | 30 1-3/16" | 129 5-5/64" | 6 15/64" |
| | 31 | 51 2" | 56,5 2-7/32" | 91 3-37/64" | 47,5 1-7/8" | 68 2-11/16" | 107 4-7/32" | 25,5 1" | 25 1" | 10,5 13/32" | 30 1-3/16" | 129 5-5/64" | 6 15/64" |
| | 32 | 60 2-3/8" | 65,5 2-37/64" | 100 3-15/16" | 47,5 1-7/8" | 74,5 2-59/64" | 109 4-9/32" | 30 1-3/16" | 32 1-1/4" | 14,6 9/16" | 32 1-1/4" | 134 5-9/32" | 6 15/64" |
| | 33 | 74,5 2-15/16" | 79,5 3-1/8" | 114 4-1/2" | 48,5 1-29/32" | 75,4 2-31/32" | 107,6 4-15/64" | 37,2 1-15/32" | 40 1-9/16" | 15,9 5/8" | 32 1-1/4" | 134 5-9/32" | 6 15/64" |
| L | 30 | 40 1-19/32" | 46,5 1-27/32" | 82 3-7/32" | 47,5 1-7/8" | 87,6 3-7/16" | 126,6 5" | 21 53/64" | 25 1" | 10,5 13/32" | 30 1-3/16" | 148,5 5-27/32" | 6 15/64" |
| | 31 | 51 2" | 56,5 2-7/32" | 91 3-37/64" | 47,5 1-7/8" | 91,6 3-19/32" | 122,4 4-13/16" | 25,5 1" | 25 1" | 14,6 9/16" | 30 1-3/16" | 148,6 5-27/32" | 6 15/64" |
| | 32 | 60 2-3/8" | 65,5 2-37/64" | 100 3-15/16" | 47,5 1-7/8" | 94,2 3-45/64" | 129 5-5/64" | 30 1-3/16" | 32 1-1/4" | 14,6 9/16" | 32 1-1/4" | 153 5-9/32" | 6 15/64" |
| | 33 | 74,5 2-15/16" | 79,5 3-1/8" | 114 4-1/2" | 48,5 1-29/32" | 94,4 3-23/32" | 126,6 5" | 37,2 1-15/32" | 40 1-9/16" | 15,9 5/8" | 32 1-1/4" | 153 6" | 6 15/64" |
| LL | 31 2" | 51 2-7/32" | 56,5 3-37/64" | 91 3-37/64" | 47,5 1-7/8" | 87,6 3-7/16" | 126,6 5" | 25,5 1" | 25 1" | 10,5 13/32" | 30 1-3/16" | 148,6 5-27/32" | 6 15/64" |

Note:

dimensions in mm
dimensions in inches



Microswitches supplied separately see microswitches for PSC 3x & 7x section

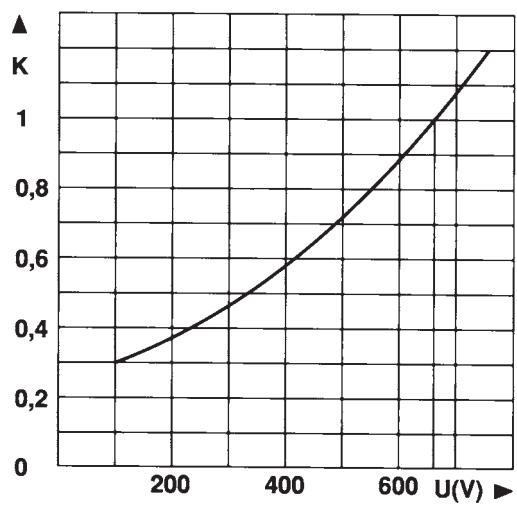


Semiconductor (AC) fuses

Protistor® Square-body Fuses PSC aR sizes 3x - 450V to 700 VAC Curves set

Sizes 30 - 31 - 32 - 33

I²t Multiplier coefficient



Mean curve indicating variation of total I²t (I²t_t) and total operating time T_t in accordance with working voltage U.

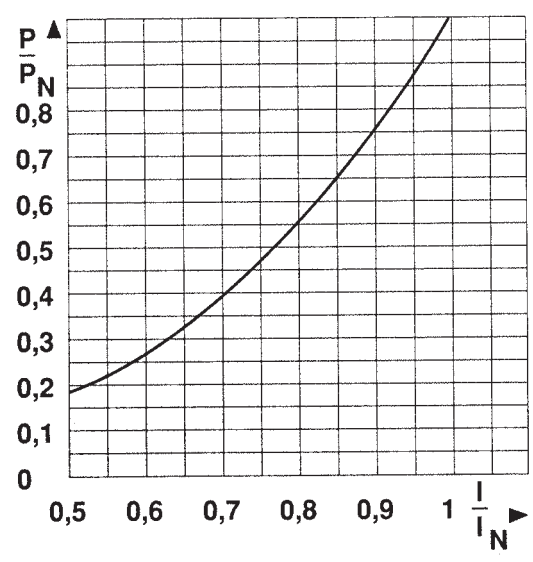
Example:

Fuse 350 A in size 30.
I_p = 10 000 A U = 500 V

At 660 V
I²t_t = 80 000 A²s T_t = 6 ms

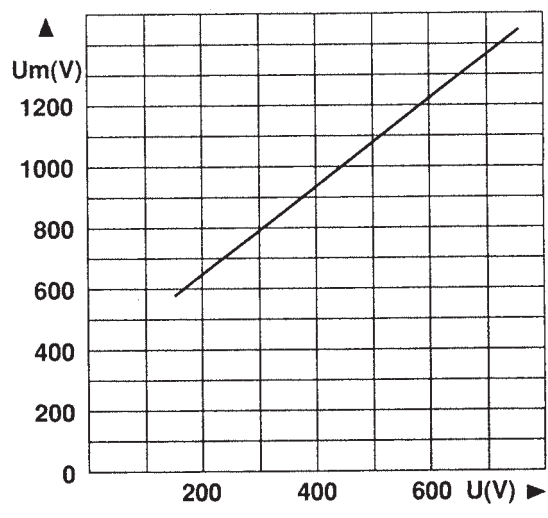
At 500 V
I²t_t = 80 000 x 0.72 = 57 600 A²s
T_t = 6 x 0.72 = 4.3 ms

Dissipated power



Curve enabling calculation of dissipated power P by a fuse rated I_N, as a function of the RMS current I, in multiples of I_N, in a steady state.

Arc voltage

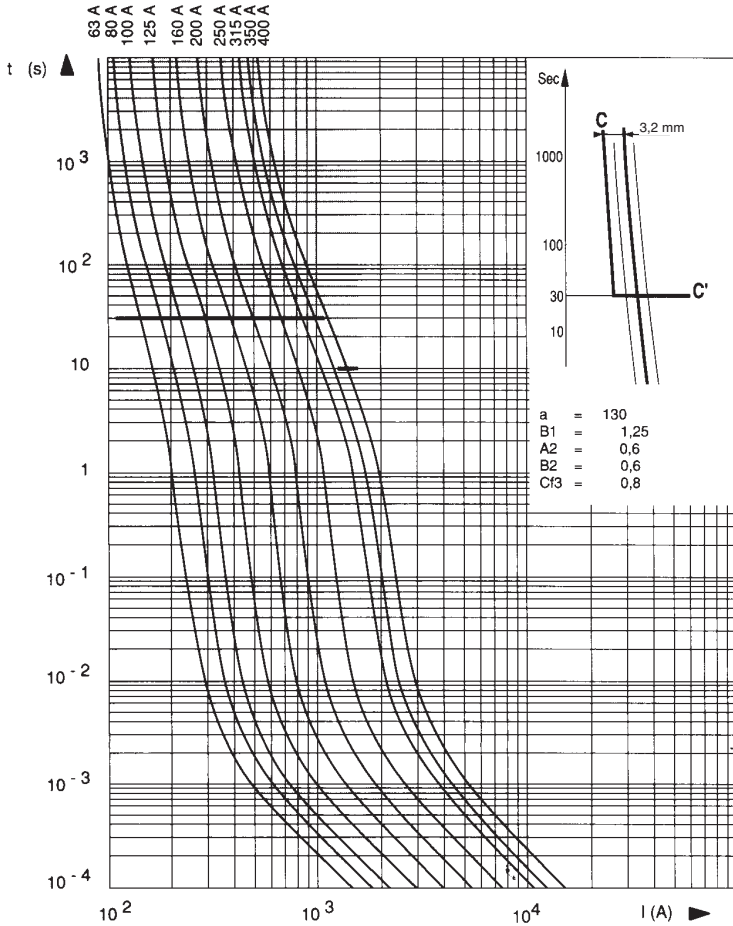


Curve indicating peak arc voltage U_m which may appear across fuse terminals as function of working voltage U at cos φ = 0.15



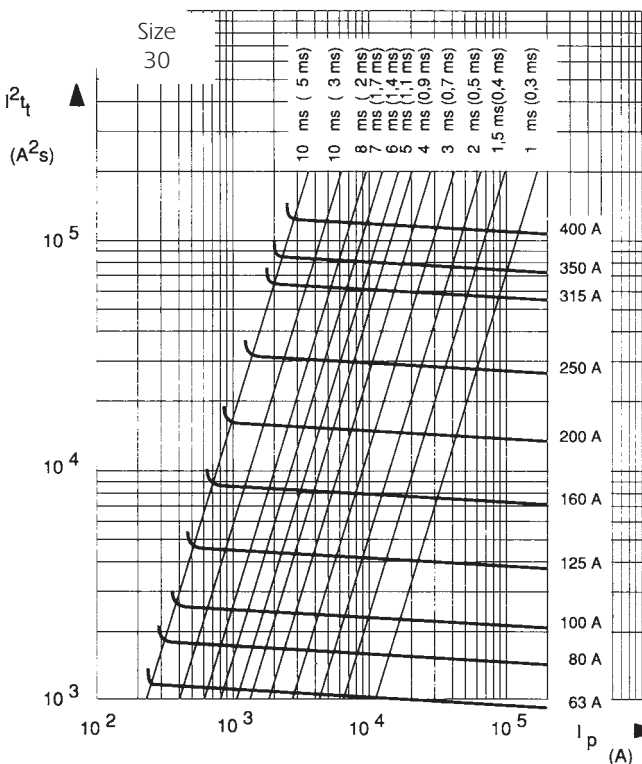
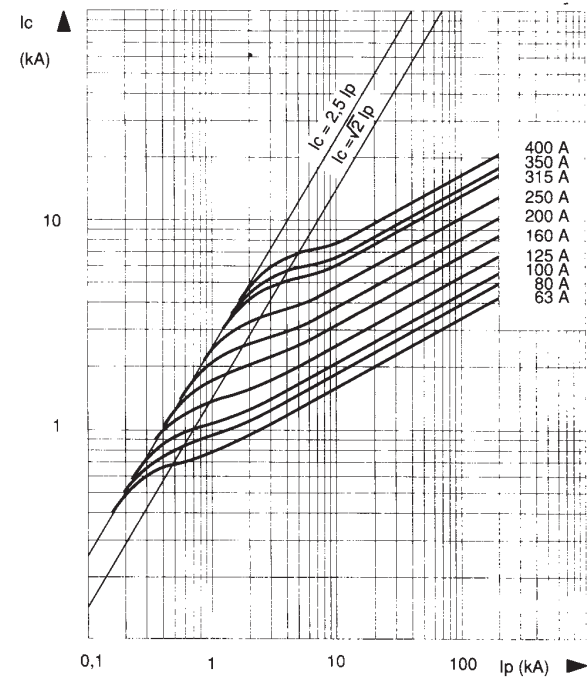
Protistor® Square-body Fuses PSC aR sizes 3x - 450V to 700 VAC Curves set

Size 30



↓ Cut-off characteristics

Below, right: Curves indicating for each rated-current the peak value I_C that the current may reach as a function of the prospective fault current I_p .



↑ Time-current characteristics

Above, left: Curves indicating pre-arcing time for each rated current as a function of RMS value of pre-arcing current I .

- Tolerances on this current $\pm 8\%$.
- Beyond 30 sec or 10 sec, small overloads must be eliminated by another device.
- Curve CC' represents the maximum times taken by the associated device to clear small overloads; only its horizontal line is represented. Its oblique line must be plotted according to sketch, top right corner.
- The intersection of the fuse and CC' curves indicates the minimum breaking current I_{pm} of the fuse.

← Maximum values of total operating I^2t and total operating times

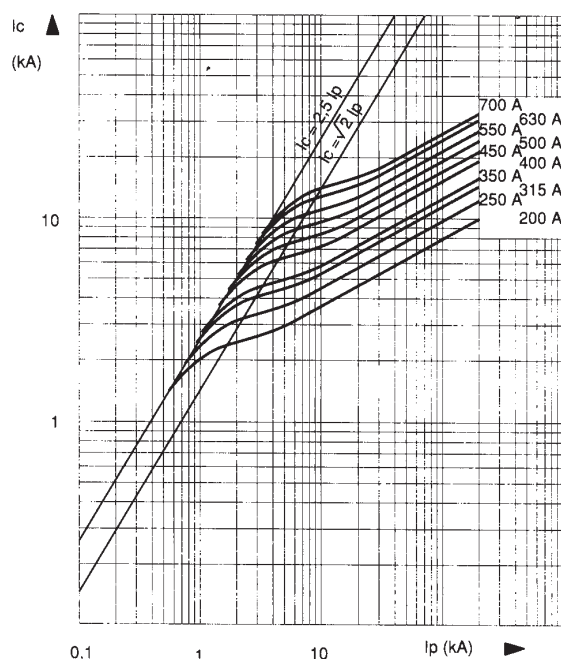
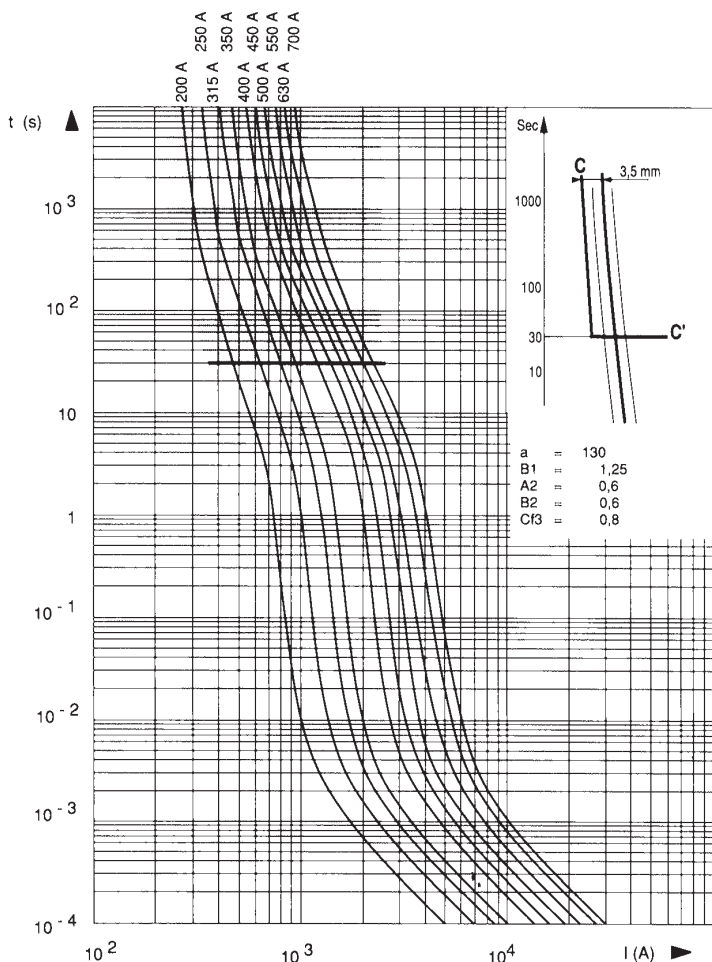
Left: Horizontal curves indicating the maximum values of total operating I^2t (I^2t_t) as function of the prospective current I_p at 660 V, $\cos \varphi = 0.15$. The oblique lines indicate the corresponding total operating time T_T , with pre-arcing time in brackets.

Protistor® Square-body Fuses PSC aR sizes 3x - 450V to 700 VAC Curves set

Size 31

↓ Cut-off characteristics

Below, right: Curves indicating for each rated current the peak value I_C that the current may reach as a function of the prospective fault current I_P .



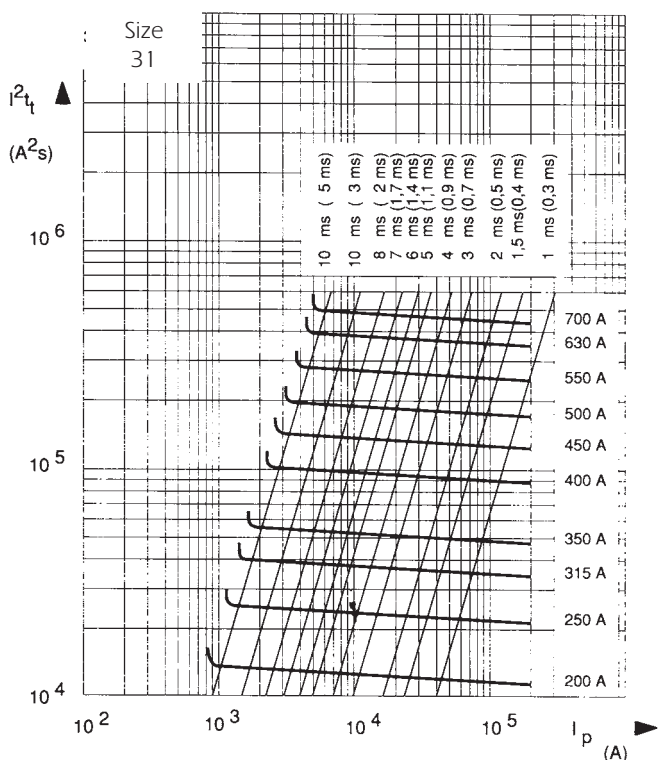
↑ Time-current characteristics

Above, left: Curves indicating pre-arcing time for each rated current as a function of RMS value of pre-arcing current I .

- Tolerances on this current $\pm 8\%$.
- Beyond 30 sec or 10 sec, small overloads must be eliminated by another device.
- Curve CC' represents the maximum times taken by the associated device to clear small overloads; only its horizontal line is represented. Its oblique line must be plotted according to sketch, top right corner.
- The intersection of the fuse and CC' curves indicates the minimum breaking current I_{pm} of the fuse.

← Maximum values of total operating I^2t and total operating times

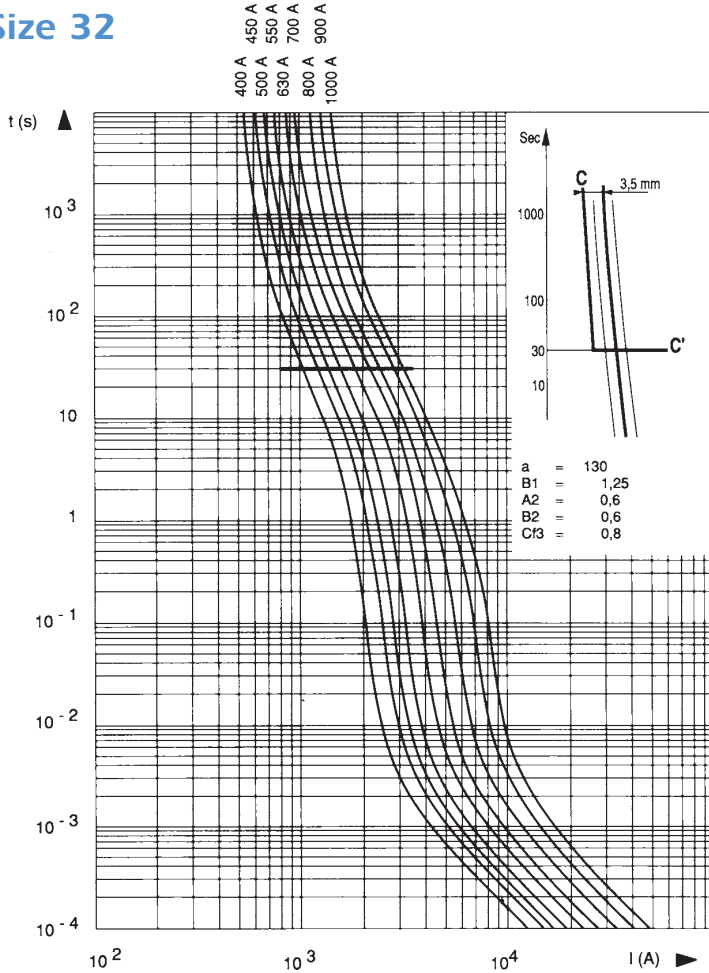
Left: Horizontal curves indicating the maximum values of total operating I^2t (I^2t_t) as function of the prospective current I_P at 660 V, $\cos \varphi = 0.15$. The oblique lines indicate the corresponding total operating time T_T , with pre-arcing time in brackets.





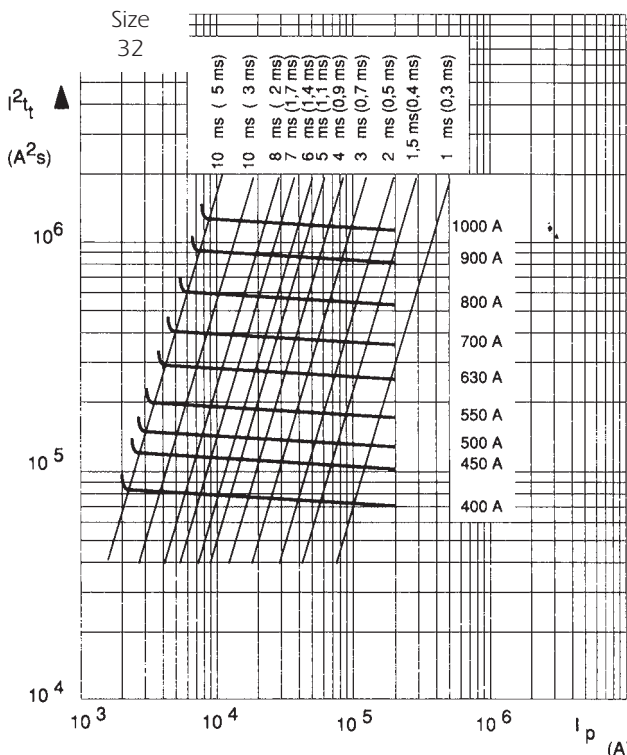
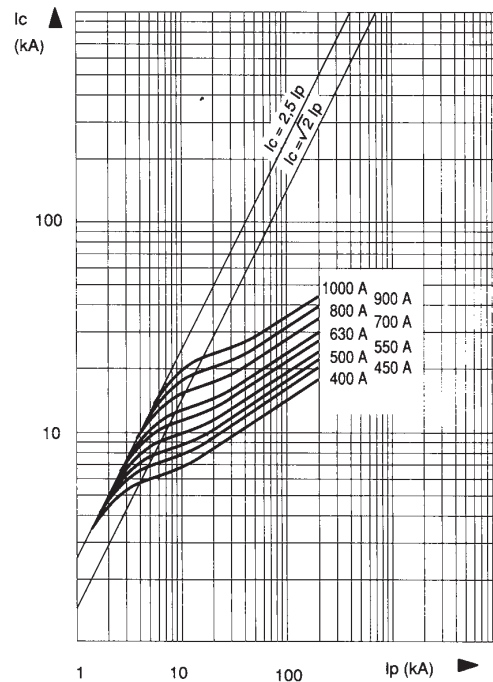
Protistor® Square-body Fuses PSC aR sizes 3x - 450V to 700 VAC Curves set

Size 32



↓ Cut-off characteristics

Below, right: Curves indicating for each rated-current the peak value I_C that the current may reach as a function of the prospective fault current I_p .



↑ Time-current characteristics

Above, left: Curves indicating pre-arcing time for each rated current as a function of RMS value of pre-arcing current I .

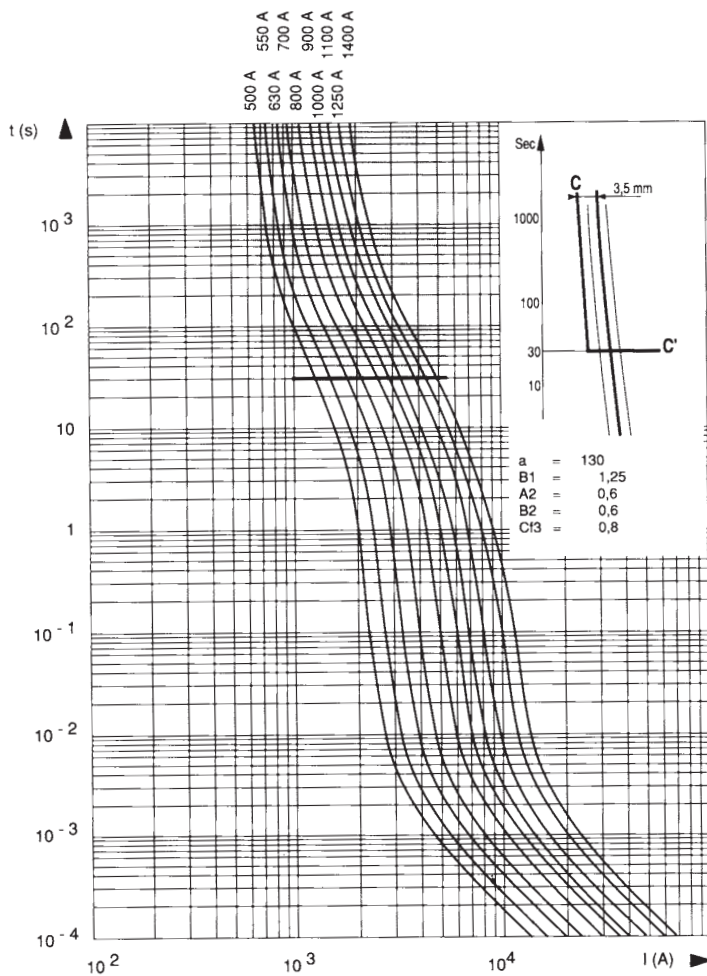
- Tolerances on this current $\pm 8\%$.
- Beyond 30 sec or 10 sec, small overloads must be eliminated by another device.
- Curve CC' represents the maximum times taken by the associated device to clear small overloads; only its horizontal line is represented. Its oblique line must be plotted according to sketch, top right corner.
- The intersection of the fuse and CC' curves indicates the minimum breaking current I_{pm} of the fuse.

← Maximum values of total operating I^2t and total operating times

Left: Horizontal curves indicating the maximum values of total operating I^2t (I^2t_t) as function of the prospective current I_p at 660 V, $\cos \varphi = 0.15$. The oblique lines indicate the corresponding total operating time T_t , with pre-arcing time in brackets.

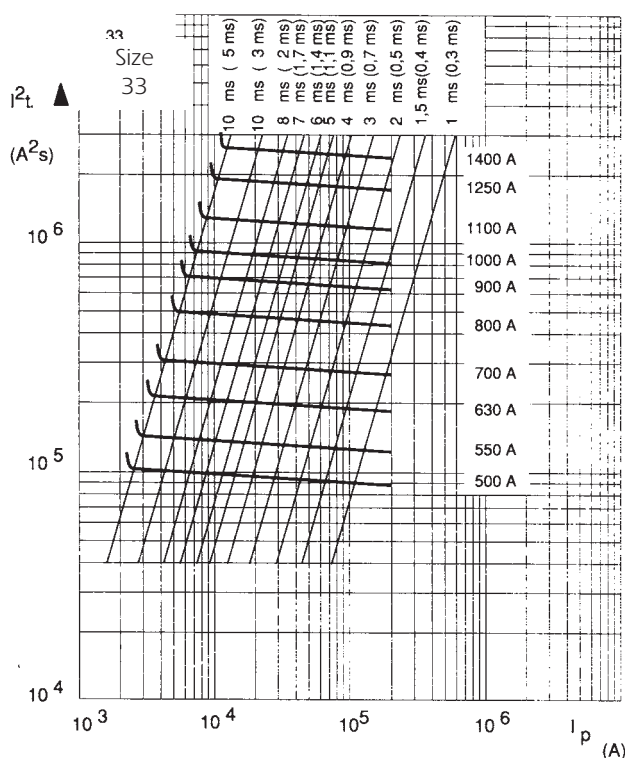
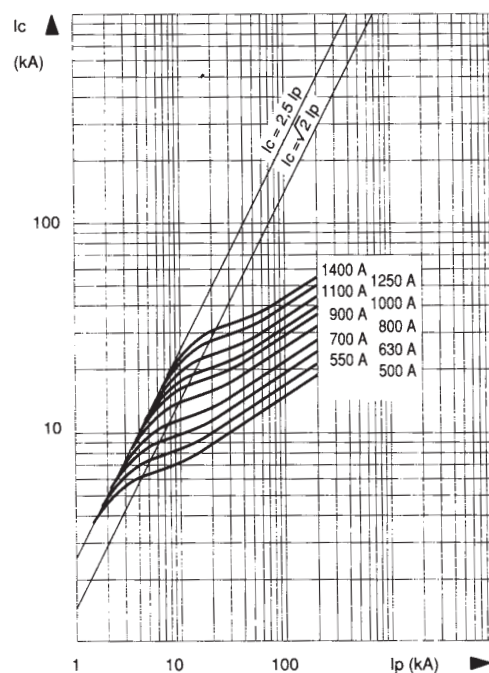
Protistor® Square-body Fuses PSC aR sizes 3x - 450V to 700 VAC Curves set

Size 33



↓ Cut-off characteristics

Below, right: Curves indicating for each rated current the peak value I_C that the current may reach as a function of the prospective fault current I_p .



↑ Time-current characteristics

Above, left: Curves indicating pre-arcing time for each rated current as a function of RMS value of pre-arcing current I .

- Tolerances on this current $\pm 8\%$.
- Beyond 30 sec or 10 sec, small overloads must be eliminated by another device.
- Curve CC' represents the maximum times taken by the associated device to clear small overloads; only its horizontal line is represented. Its oblique line must be plotted according to sketch, top right corner.
- The intersection of the fuse and CC' curves indicates the minimum breaking current I_{pm} of the fuse.

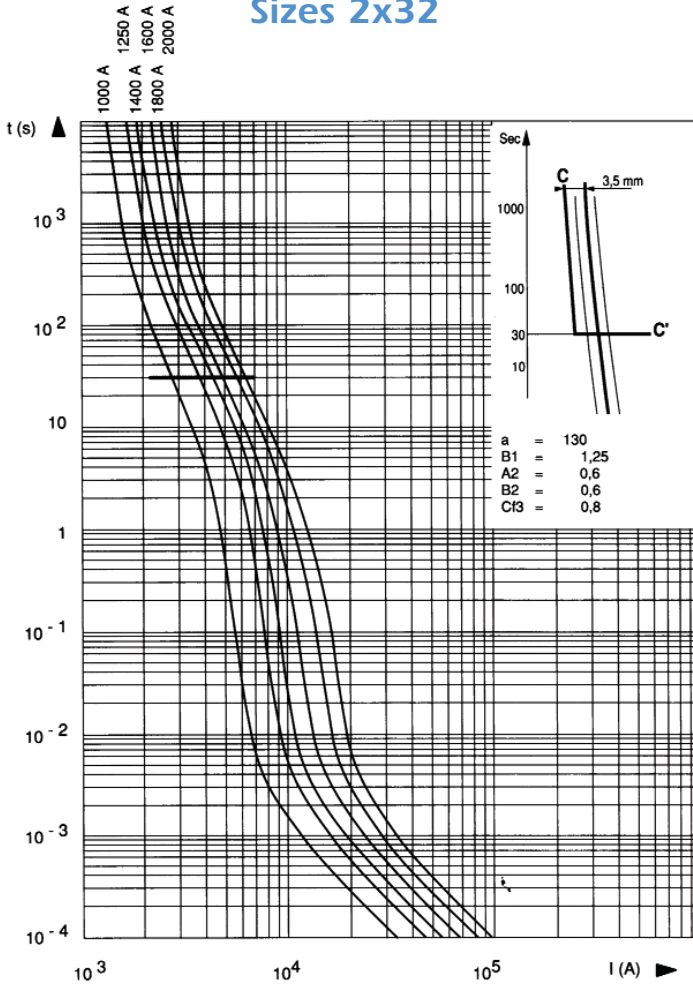
← Maximum values of total operating I^2t and total operating times

Left: Horizontal curves indicating the maximum values of total operating I^2t (I^2t_t) as function of the prospective current I_p at 660 V, $\cos \varphi = 0.15$. The oblique lines indicate the corresponding total operating time T_t , with pre-arcing time in brackets.



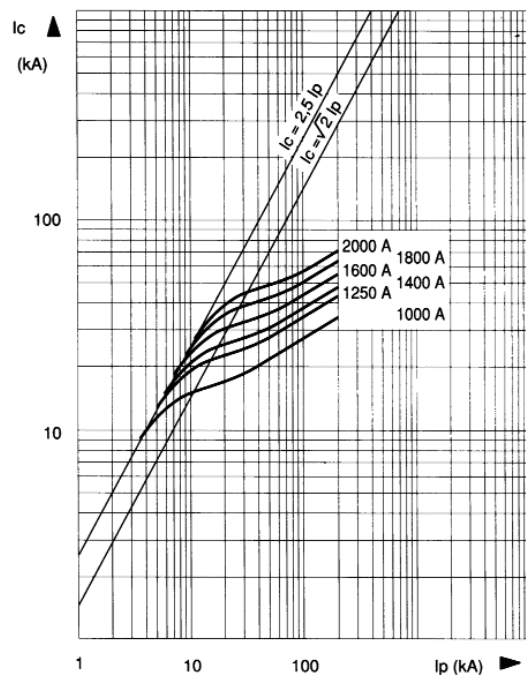
Protistor® Square-body Fuses PSC aR sizes 3x - 450V to 700 VAC Curves set

Sizes 2x32



↓ Cut-off characteristics

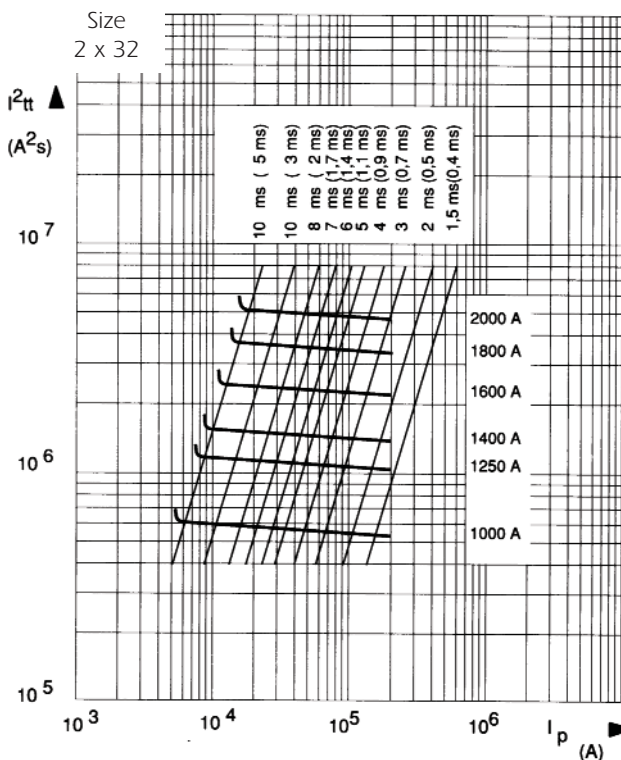
Below, right: Curves indicating for each rated-current the peak value I_C that the current may reach as a function of the prospective fault current I_p .



↑ Time-current characteristics

Above, left: Curves indicating pre-arcing time for each rated current as a function of RMS value of pre-arcing current I .

- Tolerances on this current $\pm 8\%$.
- Beyond 30 sec or 10 sec, small overloads must be eliminated by another device.
- Curve CC' represents the maximum times taken by the associated device to clear small overloads; only its horizontal line is represented. Its oblique line must be plotted according to sketch, top right corner.
- The intersection of the fuse and CC' curves indicates the minimum breaking current I_{pm} of the fuse.



← Maximum values of total operating I^2t and total operating times

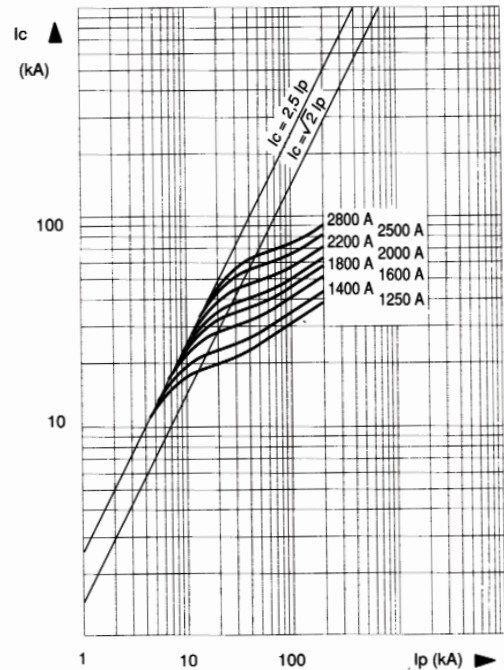
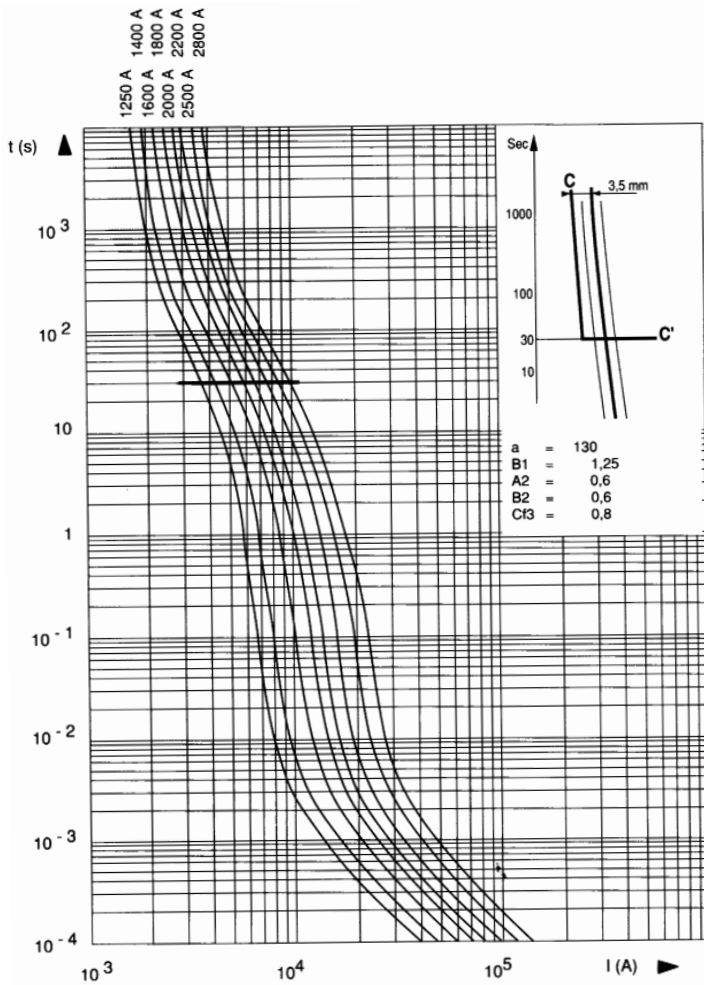
Left: Horizontal curves indicating the maximum values of total operating I^2t (I^2t_t) as function of the prospective current I_p at 660 V, $\cos \varphi = 0.15$. The oblique lines indicate the corresponding total operating time T_t , with pre-arcing time in brackets.

Protistor® Square-body Fuses PSC aR sizes 3x - 450V to 700 VAC Curves set

Size 2x33

↓ Cut-off characteristics

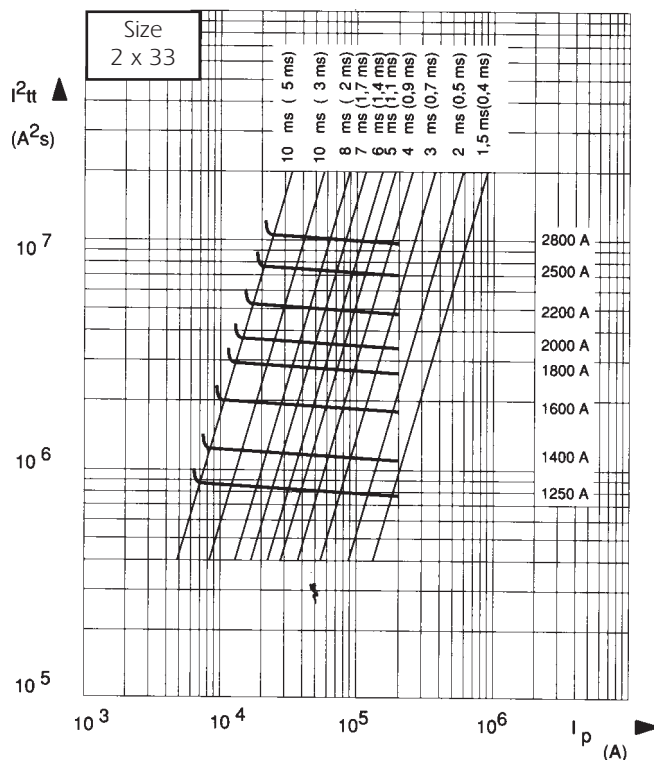
Below, right: Curves indicating for each rated current the peak value I_C that the current may reach as a function of the prospective fault current I_p .



↑ Time-current characteristics

Above, left: Curves indicating pre-arcing time for each rated current as a function of RMS value of pre-arcing current I .

- Tolerances on this current $\pm 8\%$.
- Beyond 30 sec or 10 sec, small overloads must be eliminated by another device.
- Curve CC' represents the maximum times taken by the associated device to clear small overloads; only its horizontal line is represented. Its oblique line must be plotted according to sketch, top right corner.
- The intersection of the fuse and CC' curves indicates the minimum breaking current I_{pm} of the fuse.



← Maximum values of total operating I^2t and total operating times

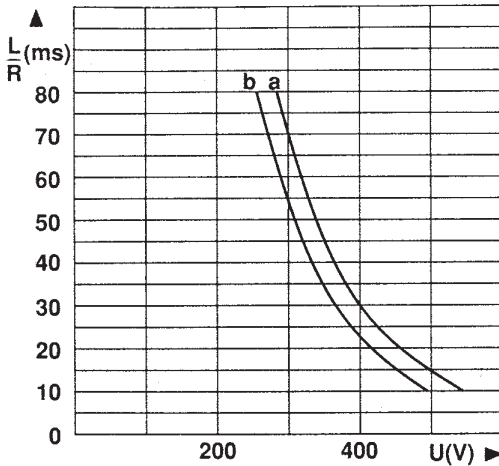
Left: Horizontal curves indicating the maximum values of total operating I^2t (I^2t_t) as function of the prospective current I_p at 660 V, $\cos \varphi = 0.15$. The oblique lines indicate the corresponding total operating time T_t , with pre-arcing time in brackets.



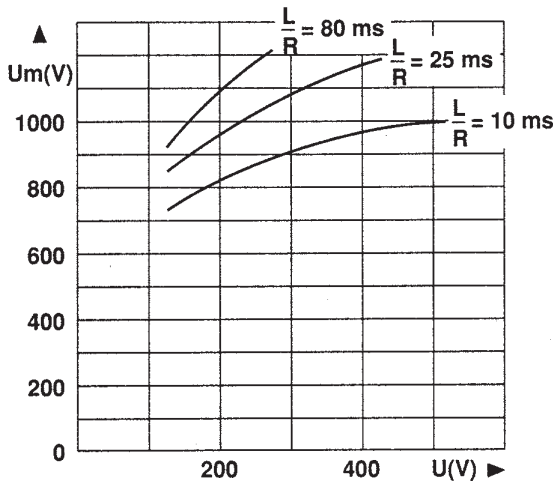
Protistor® Square-body Fuses PSC aR sizes 3x - 450V to 700 VAC Curves set

Sizes 30 - 31 - 32 - 33

DC working voltage possibilities



| Rated current In (A) | Curves (*) and Ipm (†) corresponding to the rating | | | | | |
|-------------------------|--|--------------------|--------------------|--------------------|------------------------|------------------------|
| | 30 * Ipm (A) | 31 * Ipm (A) | 32 * Ipm (A) | 33 * Ipm (A) | 2 x 32 * Ipm (A) | 2 x 33 * Ipm (A) |
| 63 | a 230 | | | | | |
| 80 | a 300 | | | | | |
| 100 | a 360 | | | | | |
| 125 | a 460 | | | | | |
| 160 | a 650 | | | | | |
| 200 | a 880 | a 850 | | | | |
| 250 | a 1300 | a 1150 | | | | |
| 315 | a 1700 | a 1450 | | | | |
| 350 | a 1900 | a 1600 | | | | |
| 400 | a 2300 | a 2200 | a 2000 | | | |
| 450 | | a 2500 | a 2300 | | | |
| 500 | | a 3000 | a 2600 | a 2300 | | |
| 550 | | a 3400 | a 3150 | a 2500 | | |
| 630 | | a 5000 | a 3700 | a 3250 | | |
| 700 | | a 5600 | a 4300 | a 3900 | | |
| 800 | | | a 5300 | a 4800 | | |
| 900 | | | a 7800 | a 5600 | | |
| 1000 | | | b 9000 | a 6600 | a 5200 | |
| 1100 | | | | a 7700 | | |
| 1250 | | | | b 11000 | a 7400 | a 6500 |
| 1400 | | | | b 12500 | a 8600 | a 7800 |
| 1600 | | | | | a 10600 | a 9600 |
| 1800 | | | | | a 15600 | a 11200 |
| 2000 | | | | | b 18000 | a 13200 |
| 2200 | | | | | | a 15400 |
| 2500 | | | | | | b 22000 |
| 2800 | | | | | | b 25000 |



Top: Curves indicating the maximum time constant L/R of the fault path as a function of the DC voltage U for the rated currents in the sizes indicated in the table.

I_{pm} (†) values indicate the minimum breaking current in Amperes (A).

Remark:

When the fault current di/dt is very large, this condition can be exceeded. This is the case for faults occurring in voltage commutated inverters.

Below: Curves indicating peak arc voltage U_m which may appear across fuse terminals as a function of the DC working voltage U , for various time constant L/R of fault path.

Protistor® Square-body Fuses PSC aR sizes 3x - 450V to 700 VAC Microswitches PSC 3x & 7x

- MICROSWITCH SYSTEMS ADAPTED

TO THE FOLLOWING FERRAZ SHAWMUT FUSES ONLY:

- PSC sizes 30, 31, 32, 33, 2x32, 2x33 / 70, 71, 72, 73, 272, 273
except plain blades

- PSC LR sizes 33, 233, 73, 273

- PERMANENT INDICATION OF FUSE STATE: CONDUCTIVE
BLOWN

- MANUAL RESETTING

- STANDARD AND LOW ELECTRICAL LEVEL WITH DIFFERENT INSULATION LEVELS

- BS TYPE FOR USE IN CORROSIVE ATMOSPHERE

- MS 3V 1-5 UR AND MS 7V 1-5 UR TYPE UL ARE RECOGNIZED



MS 7V 1-5

Main Characteristics

| Code | AC Insulation voltage rating (***) | Positive operating voltage/current | Current rating | Current | Breaking Capacity | | | | | | 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 3V 1-5 | 1000 V | 20 V 50 mA | 10 A | 50/60 Hz | 10 A | 10 A | 10 A | 10 A | 10 A | 10 A | 8,5 kV | 14 kV | H.B |
| MS 3V 1-5 UR | | | | DC | 8 A | 0,4 A | 0,2 A | 4 A | 0,2 A | 0,1 A | | | |
| MS 7V 1-5 | 1500V | 10 V 10 mA | 3 A | 50/60 Hz | 3 A | 3 A | 3 A | 2 A | 1 A | 1 A | 8,5 kV | 14 kV | |
| MS 7V 1-5 UR | | | | DC | 3 A | 0,5 A | 0,25 A | 3 A | 0,2 A | 0,1 A | | | |
| MS 3V 1-5 BS | 1000 V | 10 V 10 mA | 3 A | 50/60 Hz | 3 A | 3 A | 3 A | 2 A | 1 A | 1 A | 8,5 kV | 14 kV | |
| MS 3V 1-9 BS | | | | DC | 3 A | 0,5 A | 0,25 A | 3 A | 0,2 A | 0,1 A | | | |
| MS 7V 1-5 BS | 1500V | 10 V 10 mA | 3 A | 50/60 Hz | 3 A | 3 A | 3 A | 2 A | 1 A | 1 A | 8,5 kV | 14 kV | |
| MS 7V 1-9 BS | | | | DC | 3 A | 0,5 A | - | 2 A | 0,2 A | - | | | |
| MS 3V 1-5 ET | 1000V | 10 V | 3 A | 50/60 Hz | 3 A | 3 A | 3 A | 2 A | 1 A | 1 A | 8,5 kV | 14 kV | |
| MS 7V 1-5 ET | 1500V | 10 mA | 3 A | DC | 3 A | 0,5 A | - | 2 A | 0,2 A | - | 12 kV | 20 kV | |

* 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

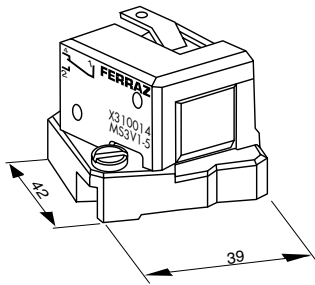
Warning: microswitch systems exclusively designed for FERRAZ SHAWMUT.
PSC Fuses fitted a patented trip-indicator, saving use of EDV



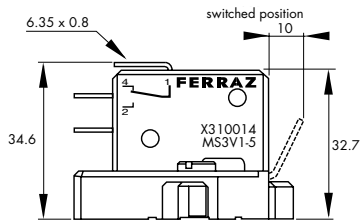
Protistor® Square-body Fuses PSC aR sizes 3x - 450V to 700 VAC Microswitches for PSC 3x & 7x

Indication systems for PSC Fuse sizes 30 to 73 MS 3V...

These patented indication systems are exclusively hand resettable.



(fig. 1)

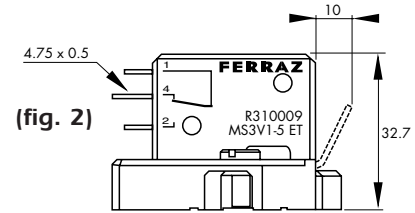


| Fuse size | Designation | Ref. Number | Indication style | Weight (g) | Pack. | Catalog Number |
|------------------|----------------------|-------------|---------------------------|------------|----------|-----------------|
| 30, 31 32, 33 | MS 3V 1-5 (fig.1) | X310014 | Standard NO-NC | 34 | 3 pieces | MS3 V1-5 |
| | MS 3V 1-5 UR | Y310038 | | | | MS3 V1-5UR |
| | MS 3V 1-5 BS (3) | K310013 | Low level NO-NC | 34 | 3 pieces | MS3-V1-5BS |
| | MS 3V 1-9 BS (4) | P310011 | Double pole Low level | 44 | 3 pieces | MS3V1-9BS |
| | MS 3V 1-5 ET (fig.2) | S310009 | Low level NO-NC IP 50 (9) | 34 | 3 pieces | MS3V1-5 ETANCHE |

(3) Same as fig.1

(4) Same dimensions as figure 1 but with 2 microswitches side by side

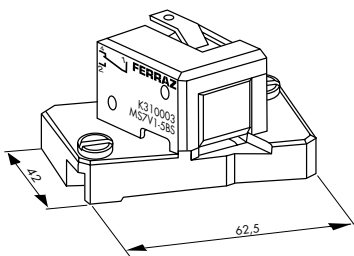
(9) Watertightness class



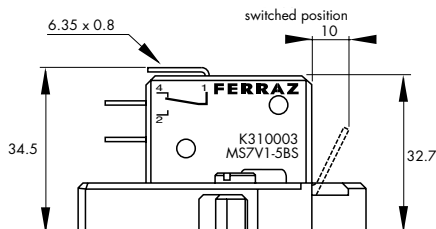
(fig. 2)

MS 7V...

| Fuse size | Designation | Ref. Number | Indication style | Weight (g) | Pack. | Catalog Number |
|------------------|----------------------|-------------|---------------------------|------------|----------|-----------------|
| 70, 71 72, 73 | MS 7V 1-5 (fig.5) | J310002 | Standard NO-NC | 45 | 3 pieces | MS7 V1-5 |
| | MS 7V 1-5 UR | Z310039 | | | | MS7 V1-5UR |
| | MS 7V 1-5 BS (3) | K310003 | Low level NO-NC | 45 | 3 pieces | MS7-V1-5BS |
| | MS 7V 1-9 BS (4) | P310007 | Double pole Low level | 55 | 3 pieces | MS7V1-9BS |
| | MS 7V 1-5 ET (fig.6) | S310010 | Low level NO-NC IP 50 (9) | 55 | 3 pieces | MS7V1-5 ETANCHE |



(fig. 5)

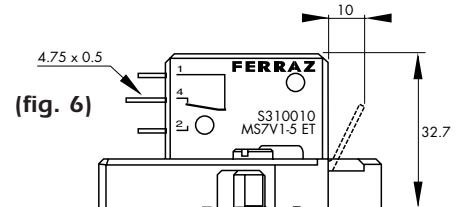


(7) Same as fig. 5

(8) Same dimensions as figure 5 but with 2 microswitches side by side

(9) Watertightness class

Warning: Microswitch systems exclusively designed for FERRAZ SHAWMUT PSC fuses fitted with a patented trip-indicator, saving use of EDV.





(fig. 6)

Protistor® Square-body Fuses PSC aR sizes 3x - 450V to 700 VAC Metric-studs

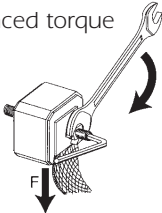
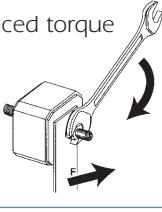
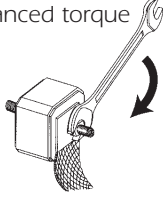
Metric studs for threaded terminal fuses



| Type and fuse size | Designation | Ref. Number | Unit weight (g) | Pack. | Catalog Number |
|--|---------------------------------|-------------|-----------------|---------|-----------------|
|  Sizes 0 and 1 Size 2 Size 3 | HC stud pair M8x30 & M8x35 | S098801 | 23 | 6 pairs | STUM8x30M8x35 |
| | HC stud pair M10x30 & M10x50 | T098802 | 40 | 6 pairs | STUM10x30M10x50 |
| | HC stud pair M12x35 & M12x50 | V098803 | 60 | 6 pairs | STUM12x35M12x50 |
|  Size 2 Size 3 | HC stud pair M10x50 | W098804 | 45 | 6 pairs | STUM10x50 |
| | HC stud pair M12x50 | X098805 | 45 | 6 pairs | STUM12x50 |

We recommend the use of studs, whose quality is suited to all FERRAZ SHAWMUT square-body fuses with terminals

Stud mounting

| Torque type | Stud type | Maximum stud tightning torque (Nm) (1) | Maximum nut tightning torque (Nm) (1) |
|--|-----------------|--|---------------------------------------|
| Balanced torque  | M8x30 & M8x35 | 10 | 13.5 |
| | M10x30 & M10x50 | 15 | 26 |
| | M12x35 & M12x50 | 15 | 46 |
| Balanced torque  | M8x30 & M8x35 | 10 | 13.5 |
| | M10x30 & M10x50 | 15 | 26 |
| | M12x35 & M12x50 | 15 | 46 |
| Unbalanced torque  | M8x30 & M8x35 | 10 | 13.5 |
| | M10x30 & M10x50 | 15 | 26 |
| | M12x35 & M12x50 | 15 | 46 |