WESTCODE
An IXYS Company

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**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 ms $I^2t_p$($A^2s$) | Total Clearing $I^2t$ @ $U_N$ $I^2t_t$ ($A^2s$) | Power Losses $0.8I_N$ | $I_N$ | Tested Interrupting rating |
|---|---|---|---|---|---|---|---|---|---|
| 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 ms $I^2t_p$($A^2s$) | Total Clearing $I^2t$ @ $U_N$ $I^2t_t$ ($A^2s$) | Power Losses $0.8I_N$ | $I_N$ | Tested Interrupting rating |
|---|---|---|---|---|---|---|---|---|---|
| 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.**

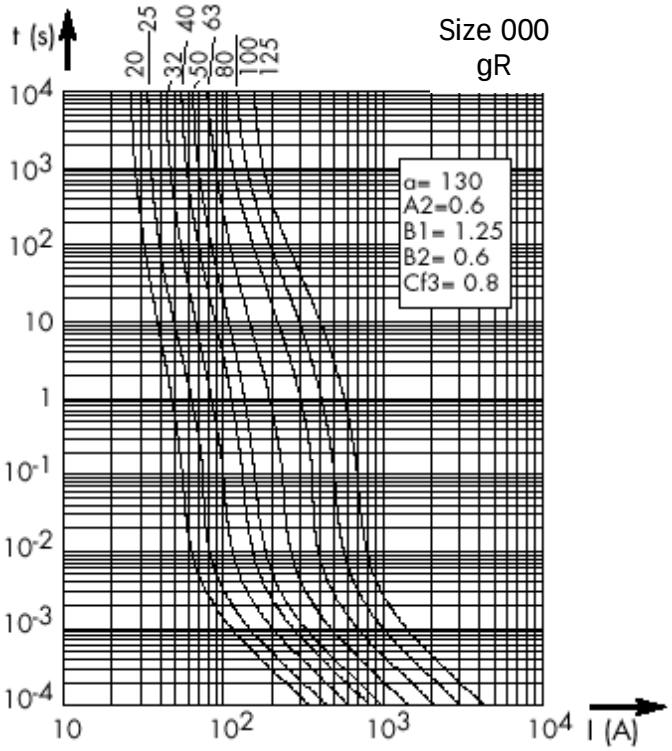
| Voltage Rating $U_N$ (V) | Ref: | Micro Switch | | Current rating $I_N$(A) | Pre-arcing $I^2t$ @ 1 ms $I^2t_p$($A^2s$) | Total Clearing $I^2t$ @ $U_N$ $I^2t_t$ ($A^2s$) | Power Losses $0.8I_N$ | $I_N$ | Tested Interrupting rating |
|---|---|---|---|---|---|---|---|---|---|
| 660V 690+6% | 070GSCA0020F | 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

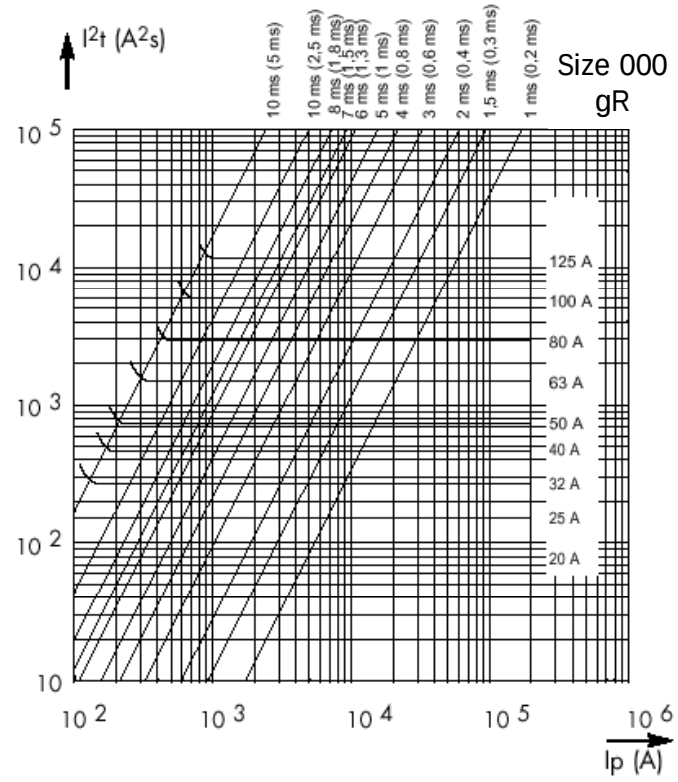
## Electrical Characteristics:

### Times vs Current Characteristics:

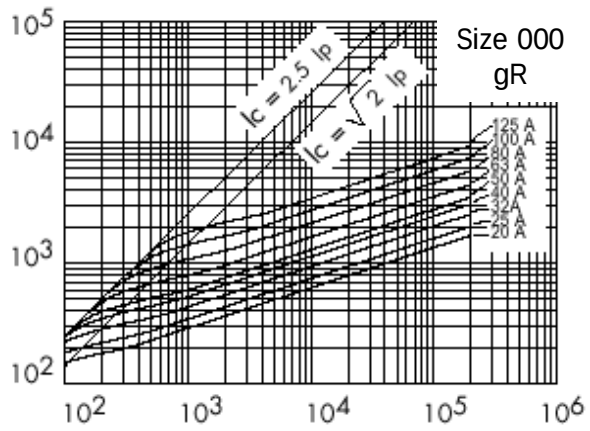
The curve below shows, for each rating, value of peak let-through current Ic as a function of available fault current Ip. Tolerance for mean pre-arcing current ±8%.




**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 Ip @ $U_N$ with cosφ = 0.15. Oblique lines indicate total clearing duration Tt, with associated pre-arcing duration in brackets.

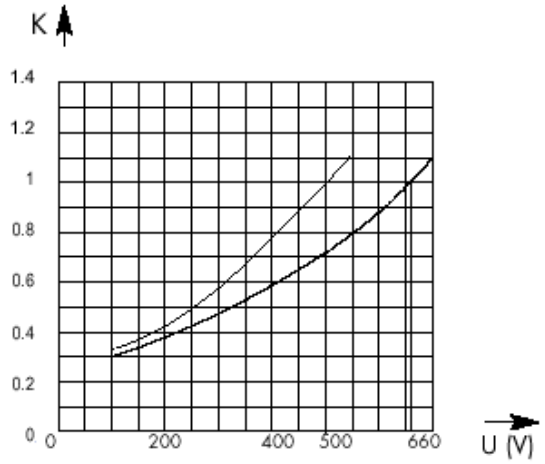


## Current Limitation Curves:



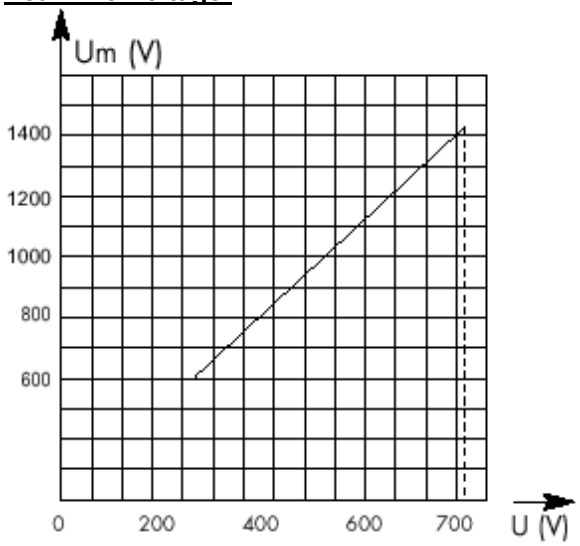

The curve below shows, for each rating, value of peak let-through current $I_C$ as a function of available fault current Ip.

## $I^2t$ Corrective Factor:



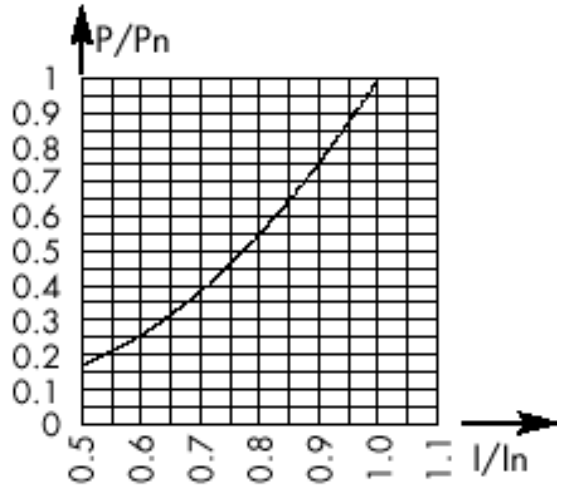

Mean curves show variation of total clearing time ($I^2t_t$) and total clearing duration $T_t$ as a function of operating voltage U.

## Peak Arc Voltage:




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

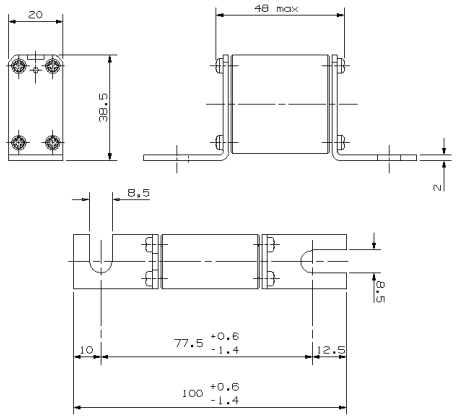
## Power Loss:



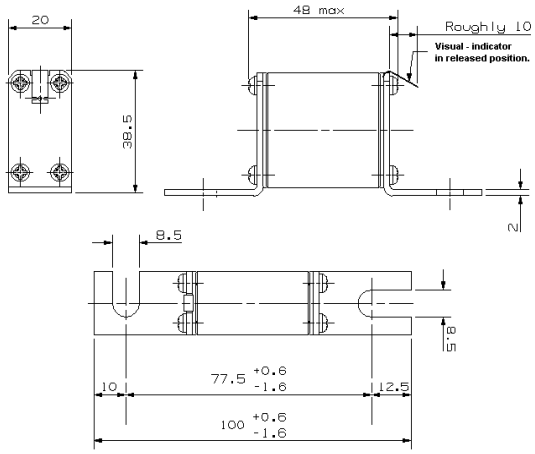

Curve enables computation of power losses P for a $I_N$-rated fuse as a function of RMS current I (as a multiple of $I_N$ for steady state operation).

## Outline Drawing & Ordering Information

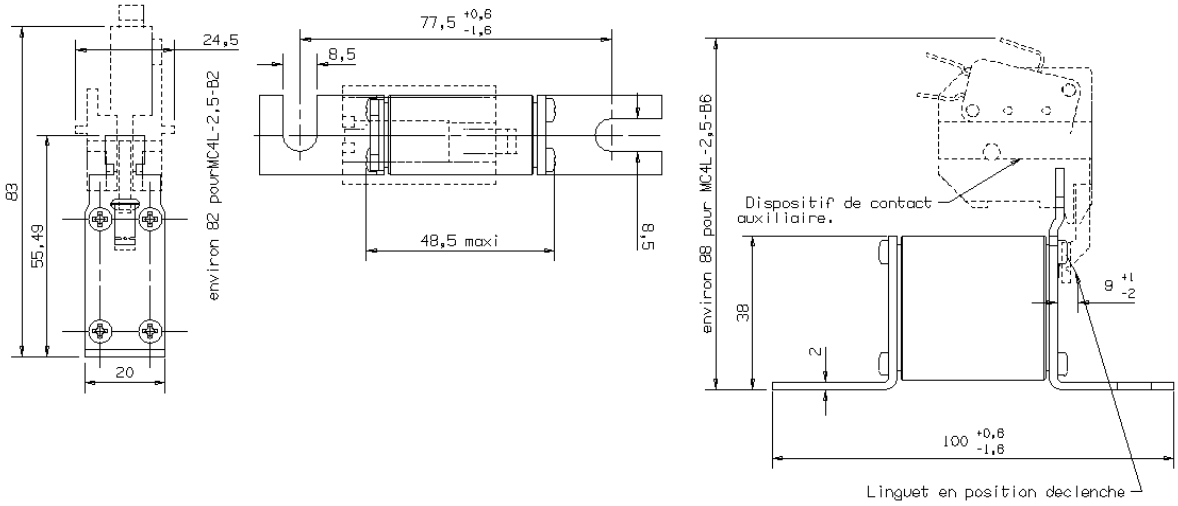
070GGCAxxxxN without indicator (110g)




070GGCAxxxxF with indicator (110g)




070GSCAxxxxF with trip (tag) indicator – Adaptable for Microswitch (120g)




## 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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