

# 6,9 gRB-URB

## SEMICONDUCTOR PROTECTION FUSES



### GERMAN STANDARD

500 - 690 V AC

gRB-URB FROM 20 TO 400A

SIZE: 000

### Features/Benefits

- **Extremely high Interrupting rating Fuses:**  
Protection of power Semiconductors according to 269.1 and 4
- **500-690V Voltage Rating** [Rating 20 to 400A]
- **gR Class** [gRB Ratings 20 to 125A] according to VDE 636-23
  - Full range protection
  - Improved safety and protection
  - Allows selective coordination
- **aR Class** [Current Rating 100A] According to VDE 636-23 and IEC 269.4
- **3 Models complying with DIN 43653-00C are:**
  - With or without blown fuse indication
  - With trip indicator
- **Model complying with DIN 43620 (00C)**
  - Standard with or without blown fuse indication
  - With trip indicator



### APPLICATIONS DATA

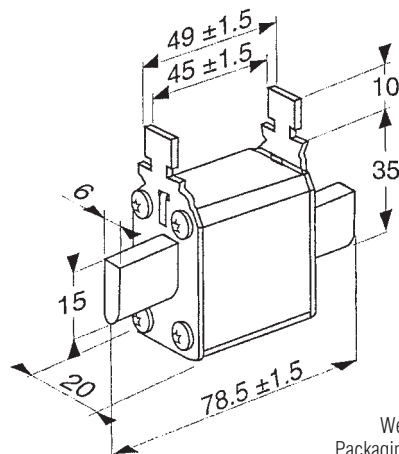
| VOLTAGE RATING<br>$U_n$ (V) | CLASS | CURRENT RATING<br>$I_n$ (A) | MELTING<br>$I^2t$ @ 1 ms<br>(A <sup>2</sup> s) | TOTAL CLEARING<br>$I^2t$ @ 660 VAC<br>(A <sup>2</sup> s) | WATT LOSSES |       | TESTED INTERRUPTING RATING | ESTIMATED INTERRUPTING RATING |
|-----------------------------|-------|-----------------------------|------------------------------------------------|----------------------------------------------------------|-------------|-------|----------------------------|-------------------------------|
|                             |       |                             |                                                |                                                          | 0.8 $I_n$   | $I_n$ |                            |                               |
| 690                         | gRB   | 20                          | 12                                             | 80                                                       | 3.8         | 7     | 200 k A<br>@ 660 V         | 300 k A<br>@ 660 V            |
|                             |       | 25                          | 20                                             | 150                                                      | 5.0         | 9     |                            |                               |
|                             |       | 32                          | 39                                             | 270                                                      | 5.5         | 10    |                            |                               |
|                             |       | 40                          | 70                                             | 460                                                      | 6.6         | 12    |                            |                               |
|                             |       | 50                          | 102                                            | 730                                                      | 7.7         | 14    |                            |                               |
|                             |       | 63                          | 210                                            | 1500                                                     | 8.8         | 16    |                            |                               |
|                             |       | 80                          | 475                                            | 2900                                                     | 9.9         | 18    |                            |                               |
|                             |       | 100                         | 970                                            | 6000                                                     | 11          | 20    |                            |                               |
|                             |       | 125                         | 1900                                           | 11800                                                    | 11.6        | 21    |                            |                               |
| 690                         | URB   | 80                          | 390                                            | 2500                                                     | 11.6        | 21    | 200 k A<br>@ 660 V         | 300 k A<br>@ 660 V            |
|                             |       | 100                         | 690                                            | 4200                                                     | 12.7        | 23    |                            |                               |
|                             |       | 125                         | 1300                                           | 8900                                                     | 14.3        | 26    |                            |                               |
|                             |       | 160                         | 2700                                           | 16000                                                    | 17.0        | 31    |                            |                               |
|                             |       | 200                         | 5250                                           | 31500                                                    | 19.8        | 36    |                            |                               |
|                             |       | 250                         | 9900                                           | 52000                                                    | 24.8        | 45    |                            |                               |
| 660<br>500                  | URB   | 315                         | 15500                                          | 82000                                                    | 31.9        | 58    | 120 k A<br>@ 500 V         |                               |
|                             |       | 350                         | 22400                                          | 110000                                                   | 31.9        | 58    |                            |                               |
|                             |       | 400                         | 33200                                          | 160000                                                   | 36.3        | 66    |                            |                               |

Minimum operating voltage for blown fuse indicator: 20 V

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### German Standard blade-type DIN 43620\*\*



Weight: 150 g  
Packaging: 3 pieces

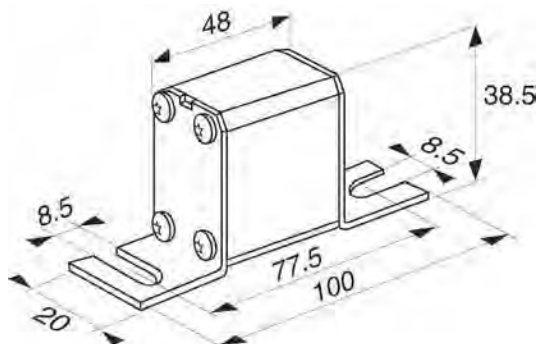
Microswitches  
MS 4L 2-5 B6 + PRES Ref. F210156  
MS 4L 2-5 B2 + PRES Ref. G210157

\* Fuse Base: 41002-G

| SIZE | CATALOG NO.**       | REF #   | I/I <sub>N</sub> |
|------|---------------------|---------|------------------|
| 16   | 6,9 GRB 000 PV 016  | Y210609 | 1                |
| 20   | 6,9 GRB 000 PV 020  | Z210610 | 1                |
| 25   | 6,9 GRB 000 PV 025  | A210611 | 1                |
| 32   | 6,9 GRB 000 PV 032  | B210612 | 1                |
| 40   | 6,9 GRB 000 PV 040  | C210613 | 1                |
| 50   | 6,9 GRB 000 PV 050  | D210614 | 1                |
| 63   | 6,9 GRB 000 PV 063  | E210615 | 1                |
| 80   | 6,9 GRB 000 PV 080  | F210616 | 1                |
| 100  | 6,9 GRB 000 PV 100  | G210617 | 1                |
| 125  | 6,9 GRB 000 PV 125  | H210618 | 1                |
| 80   | 6,9 URD 000 PV 0080 | Q320059 | 1                |
| 100  | 6,9 URD 000 PV 0100 | V320063 | 1                |
| 125  | 6,9 URD 000 PV 0125 | X320065 | 0,95             |
| 160  | 6,9 URD 000 PV 0160 | B320069 | 0,85             |
| 200  | 6,9 URD 000 PV 0200 | D320071 | 0,85             |
| 250  | 6,9 URD 000 PV 0250 | H320075 | 0,8              |
| 315  | 6,9 URD 000 PV 0315 | M320079 | 0,7              |
| 350  | 5 URB 000 PV 350    | R210626 | 0,7              |
| 400  | 5 URB 000 PV 400    | S210627 | 0,65             |

\*\* These Fuses are not UL recognized

### German Standard without blown fuse indicator



Weight: 110 g  
Packaging: 6 pieces

\* Fuse Base: SI 000 DIN 80  
Ref. Number: C 220710

c  US

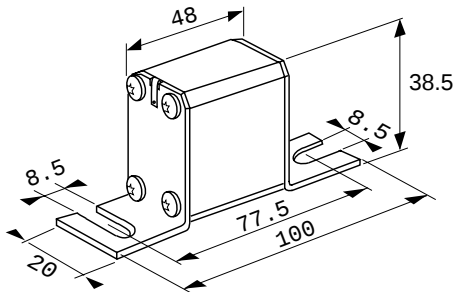
| SIZE | CATALOG NO.           | REF #   | I/I <sub>N</sub> * |
|------|-----------------------|---------|--------------------|
| 20   | 6,9 GRB 000 D08 / 020 | D330030 | 1                  |
| 25   | 6,9 GRB 000 D08 / 025 | E330031 | 1                  |
| 32   | 6,9 GRB 000 D08 / 032 | F330032 | 1                  |
| 40   | 6,9 GRB 000 D08 / 040 | G330033 | 1                  |
| 50   | 6,9 GRB 000 D08 / 050 | H330034 | 1                  |
| 63   | 6,9 GRB 000 D08 / 063 | J330035 | 1                  |
| 80   | 6,9 GRB 000 D08 / 080 | A330073 | 1                  |
| 100  | 6,9 GRB 000 D08 / 100 | S330112 | 1                  |
| 125  | 6,9 GRB 000 D08 / 125 | T330113 | 0,9                |
| 80   | 6,9 URB 000 D08 / 080 | K330036 | 1                  |
| 100  | 6,9 URB 000 D08 / 100 | L330037 | 1                  |
| 125  | 6,9 URB 000 D08 / 120 | M330038 | 0,9                |
| 160  | 6,9 URB 000 D08 / 160 | N330039 | 0,85               |
| 200  | 6,9 URB 000 D08 / 200 | P330040 | 0,85               |
| 250  | 6,9 URB 000 D08 / 250 | Q330041 | 0,8                |
| 315  | 6,9 URB 000 D08 / 315 | R330042 | 0,7                |
| 350  | 5 URB 000 D08 / 350   | V330114 | 0,7                |
| 400  | 5 URB 000 D08 / 400   | D330191 | 0,65               |

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## SEMICONDUCTOR PROTECTION FUSES



### German Standard with blown fuse indication

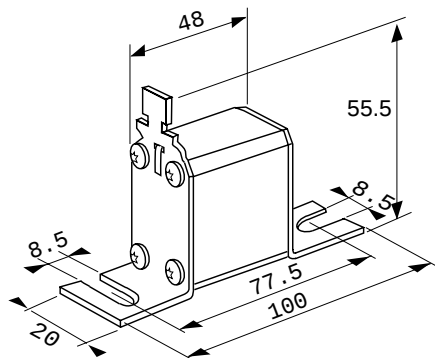


| CURRENT RATING | CATALOG NO.          | REF #   | I/N FUSE BASE* |
|----------------|----------------------|---------|----------------|
| 20             | 6,9 gRB 000 D08V/020 | P330017 | 1              |
| 25             | 6,9 gRB 000 D08V/025 | Q330018 | 1              |
| 32             | 6,9 gRB 000 D08V/032 | R330019 | 1              |
| 40             | 6,9 gRB 000 D08V/040 | S330020 | 1              |
| 50             | 6,9 gRB 000 D08V/050 | T330021 | 1              |
| 63             | 6,9 gRB 000 D08V/063 | V330022 | 1              |
| 80             | 6,9 gRB 000 D08V/080 | G330102 | 1              |
| 100            | 6,9 gRB 000 D08V/100 | Q330110 | 1              |
| 125            | 6,9 gRB 000 D08V/125 | R330111 | 0,9            |
| 80             | 6,9 URB 000 D08V/080 | W330023 | 1              |
| 100            | 6,9 URB 000 D08V/100 | X330024 | 1              |
| 125            | 6,9 URB 000 D08V/125 | Y330025 | 0,95           |
| 160            | 6,9 URB 000 D08V/160 | Z330026 | 0,85           |
| 200            | 6,9 URB 000 D08V/200 | A330027 | 0,85           |
| 250            | 6,9 URB 000 D08V/250 | B330028 | 0,8            |
| 315            | 6,9 URB 000 D08V/315 | C330029 | 0,7            |
| 350            | 5 URB 000 D08V/350   | W330115 | 0,7            |
| 400            | 5 URB 000 D08V/400   | E330192 | 0,65           |

\* Fuse Base: SI 000 DIN 80  
Ref. Number: C 220710



### German Standard with separate blown fuse trip-indicator



| CURRENT RATING | CATALOG NO.          | REF #   | I/N FUSE BASE* |
|----------------|----------------------|---------|----------------|
| 20             | 6,9 gRB 000 D08L/020 | J330173 | 1              |
| 25             | 6,9 gRB 000 D08L/025 | K330174 | 1              |
| 32             | 6,9 gRB 000 D08L/032 | L330175 | 1              |
| 40             | 6,9 gRB 000 D08L/040 | M330176 | 1              |
| 50             | 6,9 gRB 000 D08L/050 | N330177 | 1              |
| 63             | 6,9 gRB 000 D08L/063 | P330178 | 1              |
| 80             | 6,9 gRB 000 D08L/080 | Q330179 | 1              |
| 100            | 6,9 gRB 000 D08L/100 | R330180 | 1              |
| 125            | 6,9 gRB 000 D08L/125 | S330181 | 0,9            |
| 80             | 6,9 URB 000 D08L/080 | T330182 | 1              |
| 100            | 6,9 URB 000 D08L/100 | V330183 | 1              |
| 125            | 6,9 URB 000 D08L/125 | W330184 | 0,9            |
| 160            | 6,9 URB 000 D08L/160 | X330185 | 0,85           |
| 200            | 6,9 URB 000 D08L/200 | Y330186 | 0,85           |
| 250            | 6,9 URB 000 D08L/250 | Z330187 | 0,8            |
| 315            | 6,9 URB 000 D08L/315 | A330188 | 0,7            |
| 350            | 5 URB 000 D08L/350   | B330189 | 0,7            |
| 400            | 5 URB 000 D08L/400   | F330193 | 0,65           |

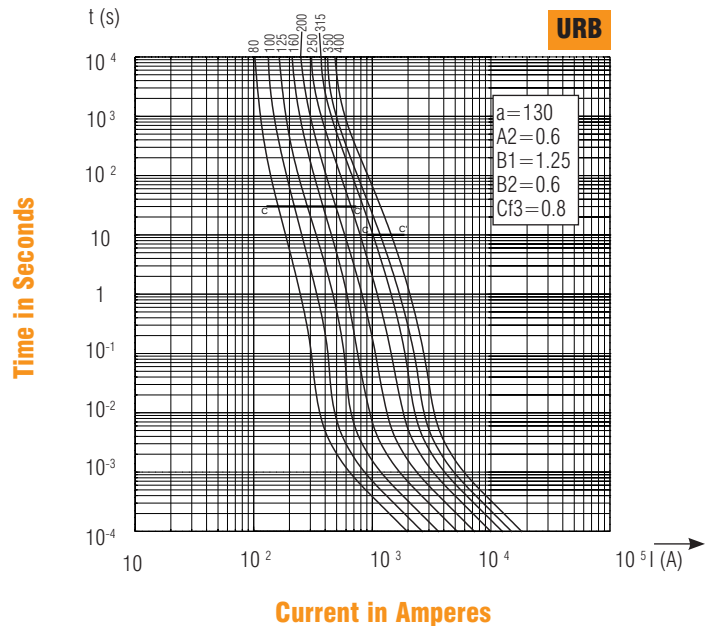
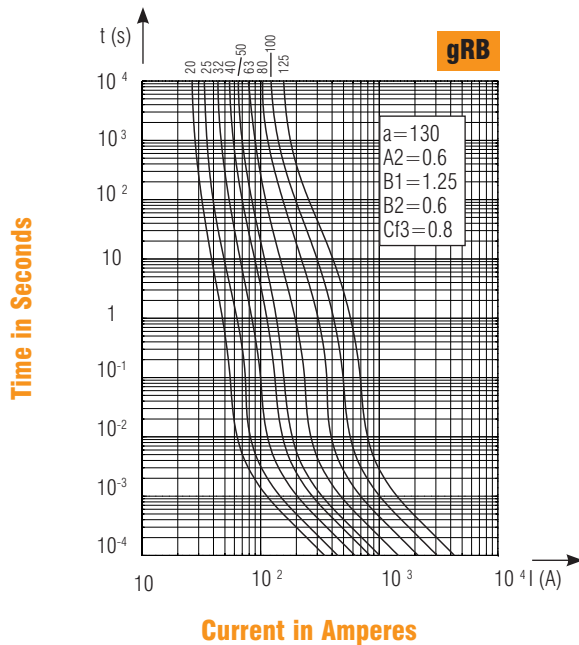
Microswitch  
MC 4L 2-5 B6 + PRES Ref. Number: F210156  
MC 4L 2-5 B2 + PRES Ref. Number: G210157  
\*Fuse Base: SI 000 DIN 80 Ref. Number: C220710



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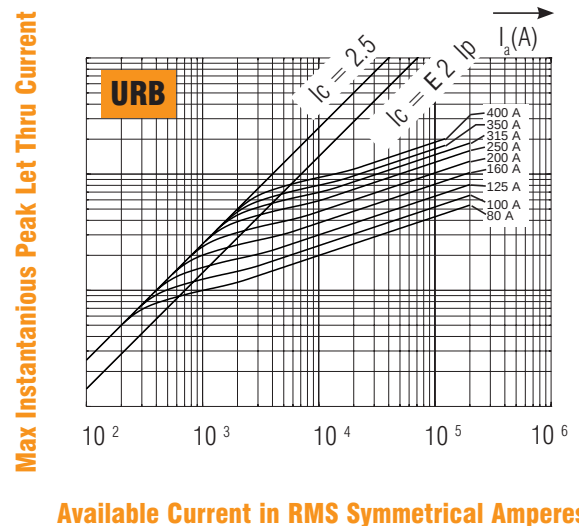
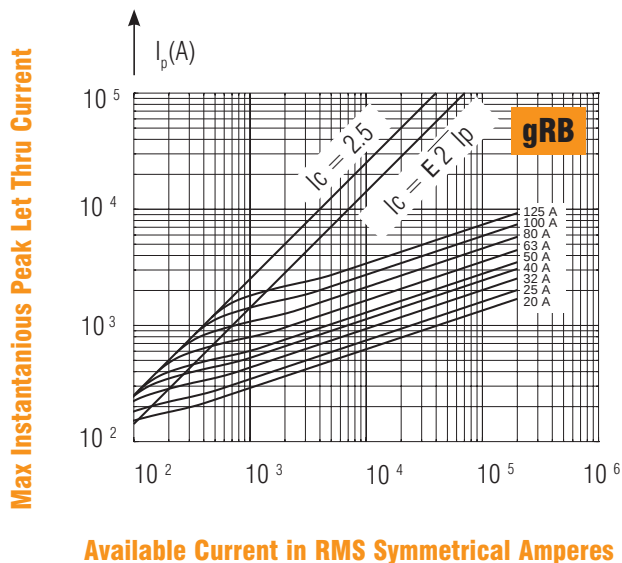
## SEMICONDUCTOR PROTECTION FUSES

### Melting Time - Current data



Curves show, for each rated current, pre-arcing (melt) time vs. R.M.S. pre-arcing current.

### Peak Let Thru Data

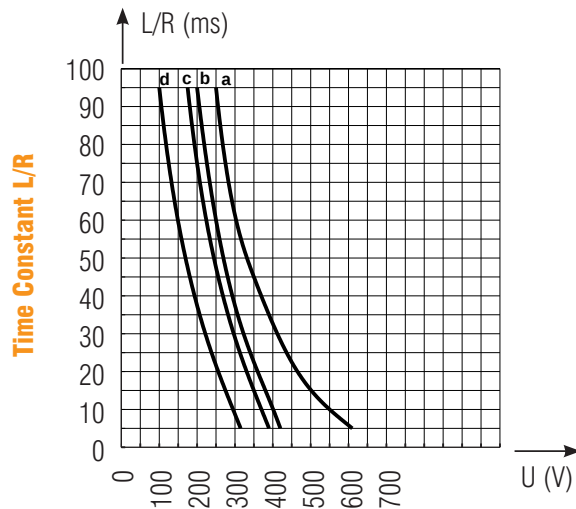


Curves show, for each rating, value of peak-let-through current  $I_c$  as a function of available fault current  $I_p$ .

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## SEMICONDUCTOR PROTECTION FUSES

## DC Voltage Capability vs. Time Constant



Provides the DC voltage capability of a fuse as a function of circuit time constant ( $L/R$  ratio).

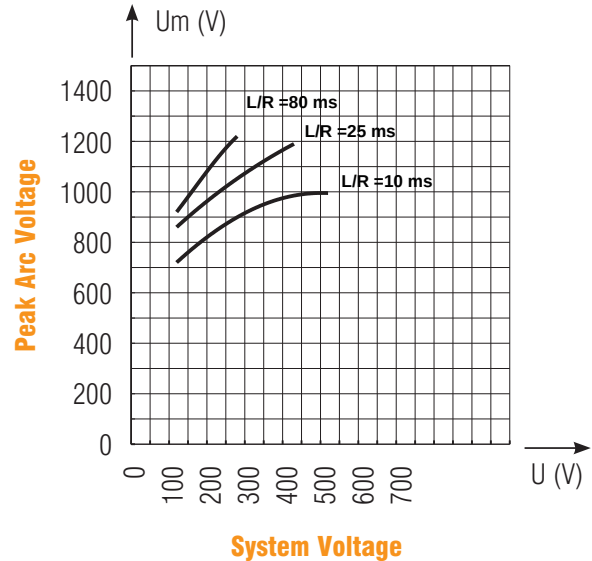
Curve a: Ratings from 20 to 160 A

Curve b: Ratings 200 A

Curve c: Ratings from 250 to 315 A

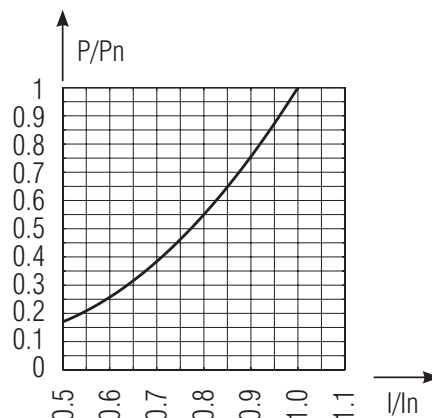
Curve d: Ratings from 350 to 400 A

## DC Peak Arc Voltage



Above: Curve indicates peak arc voltage  $U_m$  which may appear across fuse terminals at DC working voltage  $U$ .

## Watts Loss Correction Factor



Above: Correction factor to determine watts loss value for a fuse operating below its rated current.