

# 10x38mm photovoltaic fuses 1000Vdc, 1-30A

RoHS



## Catalog symbols / mounting style:

- 1-20A\*
  - PV-(amp)A10F (cylindrical)
  - PV-(amp)A10-T (bolt mounting)
  - PV-(amp)A10-1P (single PCB tab)
  - PV-(amp)A10-2P (dual PCB tab)
  - PV-(amp)10F-CT (in-line with crimp terminals)
- 25-30A\*\* PV10M-(amp) (cylindrical)

\* Ceramic tube construction.

\*\* Melamine tube construction.

## Description:

Eaton's Bussmann® series of 10x38mm, 1000Vdc PV fuses are for protecting and isolating photovoltaic strings. The fuses are specifically designed for use in PV systems with extreme ambient temperature, high cycling and low fault current conditions (reverse current, multi-array fault) string arrays.

Four styles available for application flexibility.

## Specifications:

### Basic fuse size

- 10x38mm

### Ratings

- Volts 1000Vdc
- Amps 1-30A
- Interrupting Rating
  - 50kA (1-20A)
  - 20kA (25-30A)
- Time Constant:- 1-3ms

## Operating class

- gPV and UL PV fuse links

## PV fuse coordination

- With thin film cells and 4", 5" and 6" crystalline silicon cells

## Agency information

- UL® Listed to 2579\*, Guide JFGA, File E335324
- IEC® 60269-6 (gPV)
- CSA® File 53787, Class 1422-30 (1-15A), 20-30A pending
- CCC® (1-20A) (25-30A pending)
- RoHS compliant

\* Except crimp terminal version that is UL Recognized to UL 2579, Guide JFGA2, File E335324.

## Packaging (carton quantity)

- PV-(amp)A10F, PV-(amp)A10T, PV-(amp)A10-\_P and PV10M-(amp): 10
- PV-(amp)10F-CT & PV10M-(amp)-CT in-line: 180

## Features:

- Meets UL and IEC photovoltaic standards for global acceptance
- Low watts loss performance for energy efficiency
- Low temperature rise performance for more precise sizing
- In-line crimp terminal version is easy to apply in wire harness construction

## Typical applications:

- Combiner boxes
- PV wire harnesses



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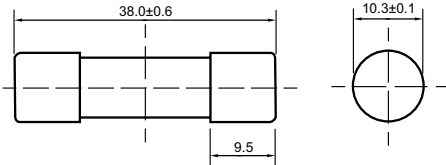
## Specifications:

| Catalog numbers / configurations |             |              |              |                             | Current rating (amps) | Voltage rating (Vdc) | Energy integrals I²t (A²s) |               | Watts loss (W)    |                |
|----------------------------------|-------------|--------------|--------------|-----------------------------|-----------------------|----------------------|----------------------------|---------------|-------------------|----------------|
| Cylindrical ferrule              | PCB fixing  |              |              | In-line with crimp terminal |                       |                      | Pre-arcing                 | Total @ 1000V | 0.8I <sub>n</sub> | I <sub>n</sub> |
|                                  | Bolt fixing | Single pin   | Double pin   |                             |                       |                      |                            |               |                   |                |
| PV-1A10F                         | PV-1A10-T   | PV-1A10-1P   | PV-1A10-2P   | PV-1A10F-CT                 | 1                     | 1000                 | 0.15                       | 0.4           | 0.8               | 1.5            |
| PV-2A10F                         | PV-2A10-T   | PV-2A10-1P   | PV-2A10-2P   | PV-2A10F-CT                 | 2                     | 1000                 | 1.2                        | 3.4           | 0.6               | 1.0            |
| PV-3A10F                         | PV-3A10-T   | PV-3A10-1P   | PV-3A10-2P   | PV-3A10F-CT                 | 3                     | 1000                 | 4                          | 11            | 0.8               | 1.3            |
| PV-3-5A10F                       | PV-3-5A10-T | PV-3-5A10-1P | PV-3-5A10-2P | PV-3-5A10F-CT               | 3.5                   | 1000                 | 6.6                        | 18            | 0.9               | 1.4            |
| PV-4A10F                         | PV-4A10-T   | PV-4A10-1P   | PV-4A10-2P   | PV-4A10F-CT                 | 4                     | 1000                 | 9.5                        | 26            | 1.0               | 1.5            |
| PV-5A10F                         | PV-5A10-T   | PV-5A10-1P   | PV-5A10-2P   | PV-5A10F-CT                 | 5                     | 1000                 | 19                         | 50            | 1.0               | 1.6            |
| PV-6A10F                         | PV-6A10-T   | PV-6A10-1P   | PV-6A10-2P   | PV-6A10F-CT                 | 6                     | 1000                 | 30                         | 90            | 1.1               | 1.8            |
| PV-8A10F                         | PV-8A10-T   | PV-8A10-1P   | PV-8A10-2P   | PV-8A10F-CT                 | 8                     | 1000                 | 3                          | 32            | 1.2               | 2.1            |
| PV-10A10F                        | PV-10A10-T  | PV-10A10-1P  | PV-10A10-2P  | PV-10A10F-CT                | 10                    | 1000                 | 7                          | 70            | 1.2               | 2.3            |
| PV-12A10F                        | PV-12A10-T  | PV-12A10-1P  | PV-12A10-2P  | PV-12A10F-CT                | 12                    | 1000                 | 12                         | 120           | 1.5               | 2.7            |
| PV-15A10F                        | PV-15A10-T  | PV-15A10-1P  | PV-15A10-2P  | PV-15A10F-CT                | 15                    | 1000                 | 22                         | 220           | 1.7               | 2.9            |
| PV-20A10F                        | PV-20A10-T  | PV-20A10-1P  | PV-20A10-2P  | PV-20A10F-CT                | 20                    | 1000                 | 34                         | 350           | 2.1               | 3.6            |
| PV10M-25                         | —           | —            | —            | —                           | 25                    | 1000                 | 325                        | 1860*         | 1.65              | 2.91           |
| PV10M-30                         | —           | —            | —            | —                           | 30                    | 1000                 | 536                        | 3360*         | 1.65              | 3.31           |

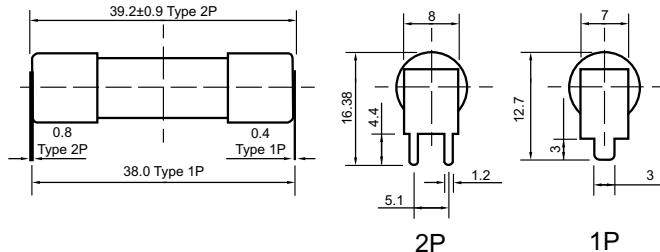
\* Total I<sup>2</sup>t @ 20kA IR.

## Dimensions/configurations - mm:

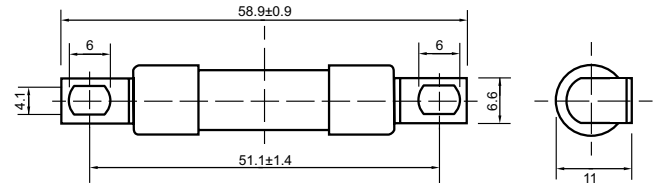
### Cylindrical PV-(amp)A10F, PV10M-(amp)



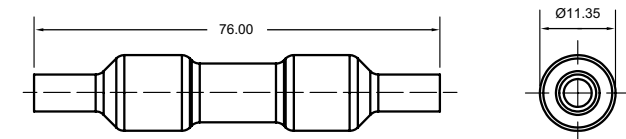
### Cylindrical with PCB tabs PV-(amp)A10-1P (single pin), PV-(amp)A10-2P (double pin)



### Cylindrical with bolt fixings PV-(amp)A10-T



### In-line with crimp terminals PV-(amp)A10F-CT (1-20A)



The in-line crimp terminal version can be electrically insulated with customer supplied overmolding or approved heat-shrink.

### Operating temperature range

- -40°C to 90°C

### Wire range and type

- Single conductor, 12-10AWG 75°C/90°C Cu stranded PV

### Overmolding temperature parameters

- 233°C for 180 sec Max

### Terminals

- Crimp terminal for 12-10AWG PV copper conductors

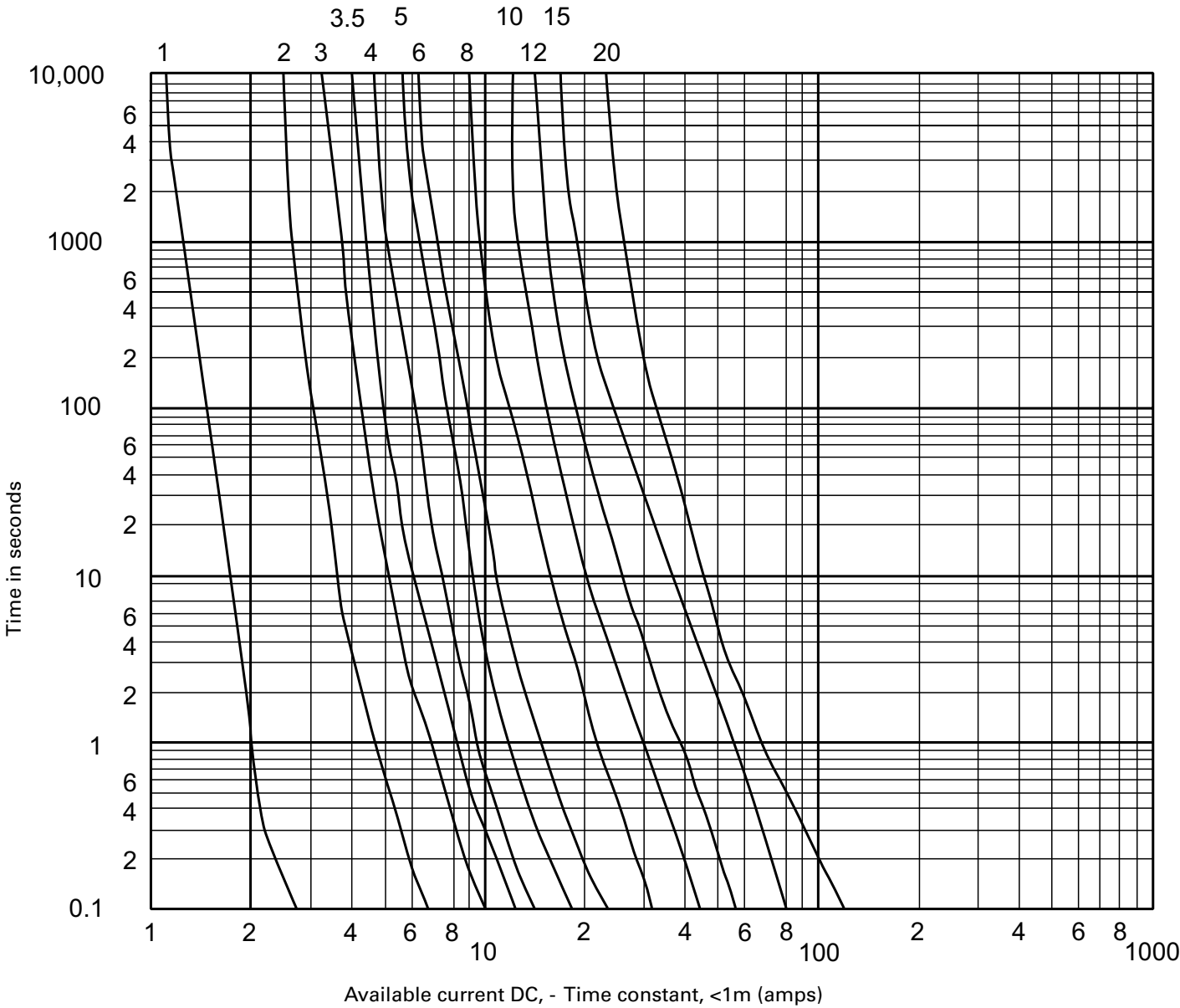
### Recommended tools

- Sta-Kon® terminal crimping tool, catalog # ERG4002

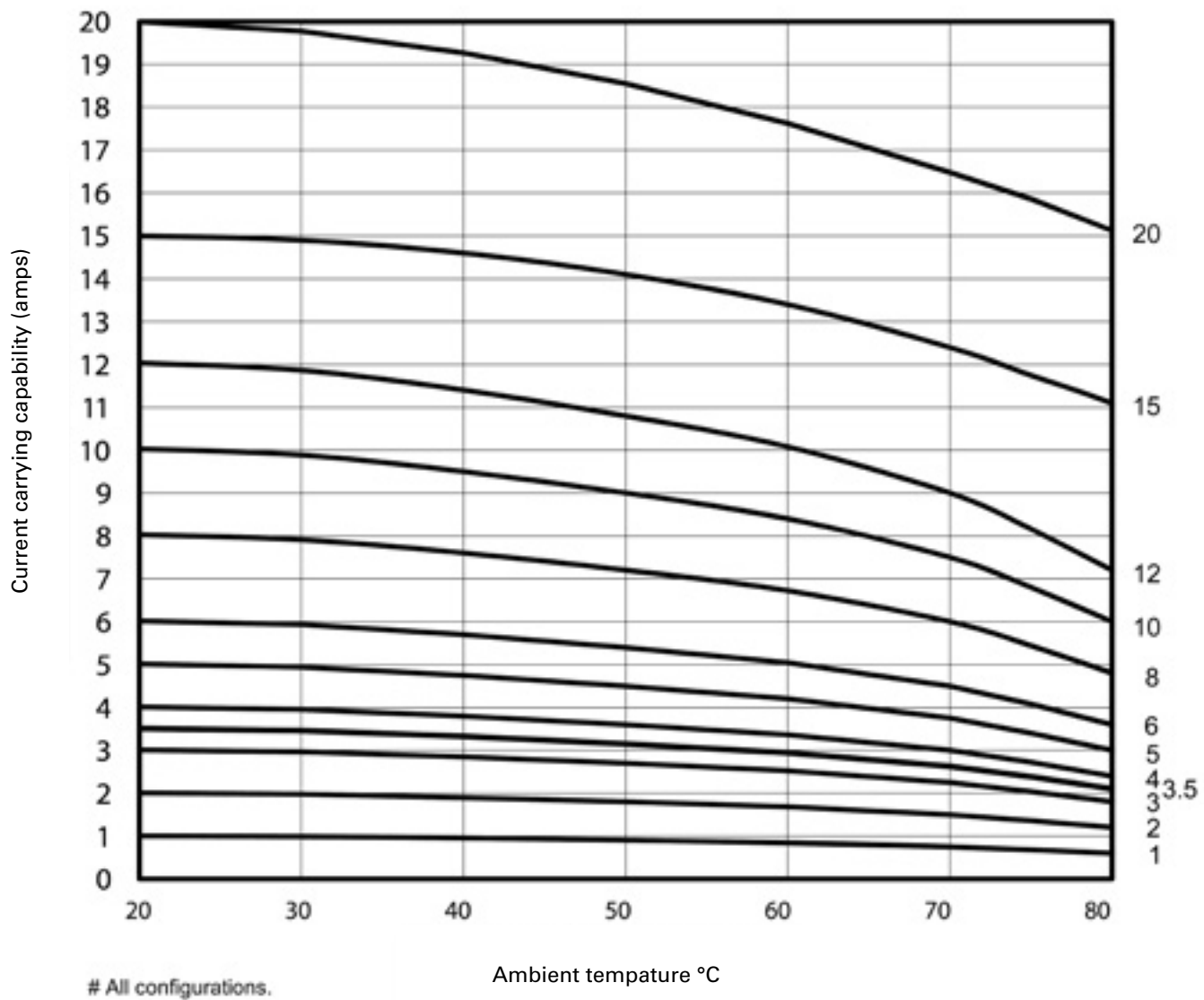
## Recommended fuse holders and fuseclips:

| Part number | Description and date sheet/brochure No.            |
|-------------|----------------------------------------------------|
| CHPV1IU     | 1-Pole modular fuse holder with indication 3185    |
| CHPV1U      | 1-Pole modular fuse holder without indication 3185 |
| CHPV2IU     | 2-Pole modular fuse holder with indication 3185    |
| CHPV2U      | 2-Pole modular fuse holder without indication 3185 |
| 1A3400_     | PCB Fuseclips 2131                                 |
| HPV-DV_A    | In-line fuse holder assembly 2157                  |

Time-current characteristics — 1-20A:

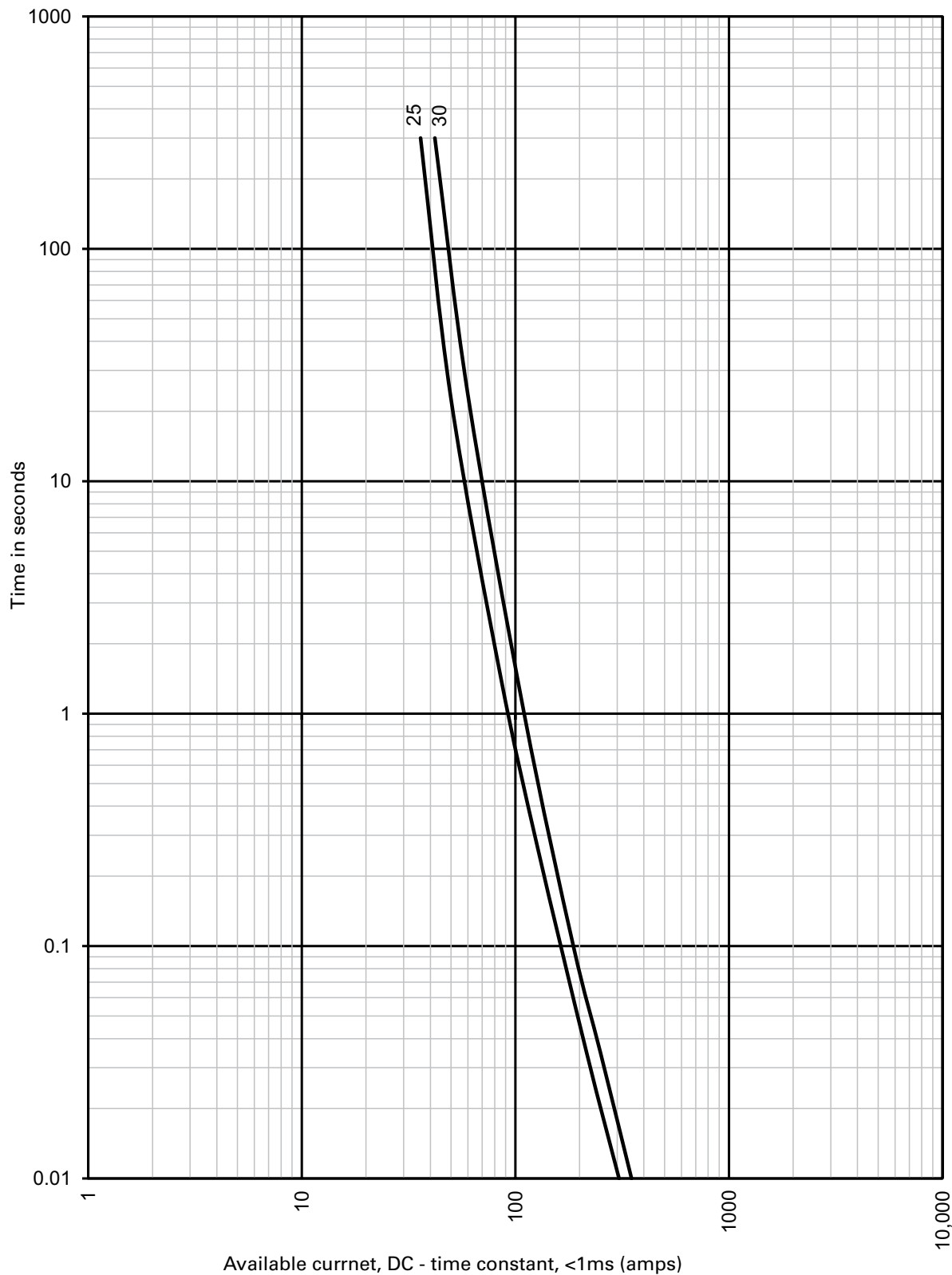


**Temperature derating curves — 1-20A:**

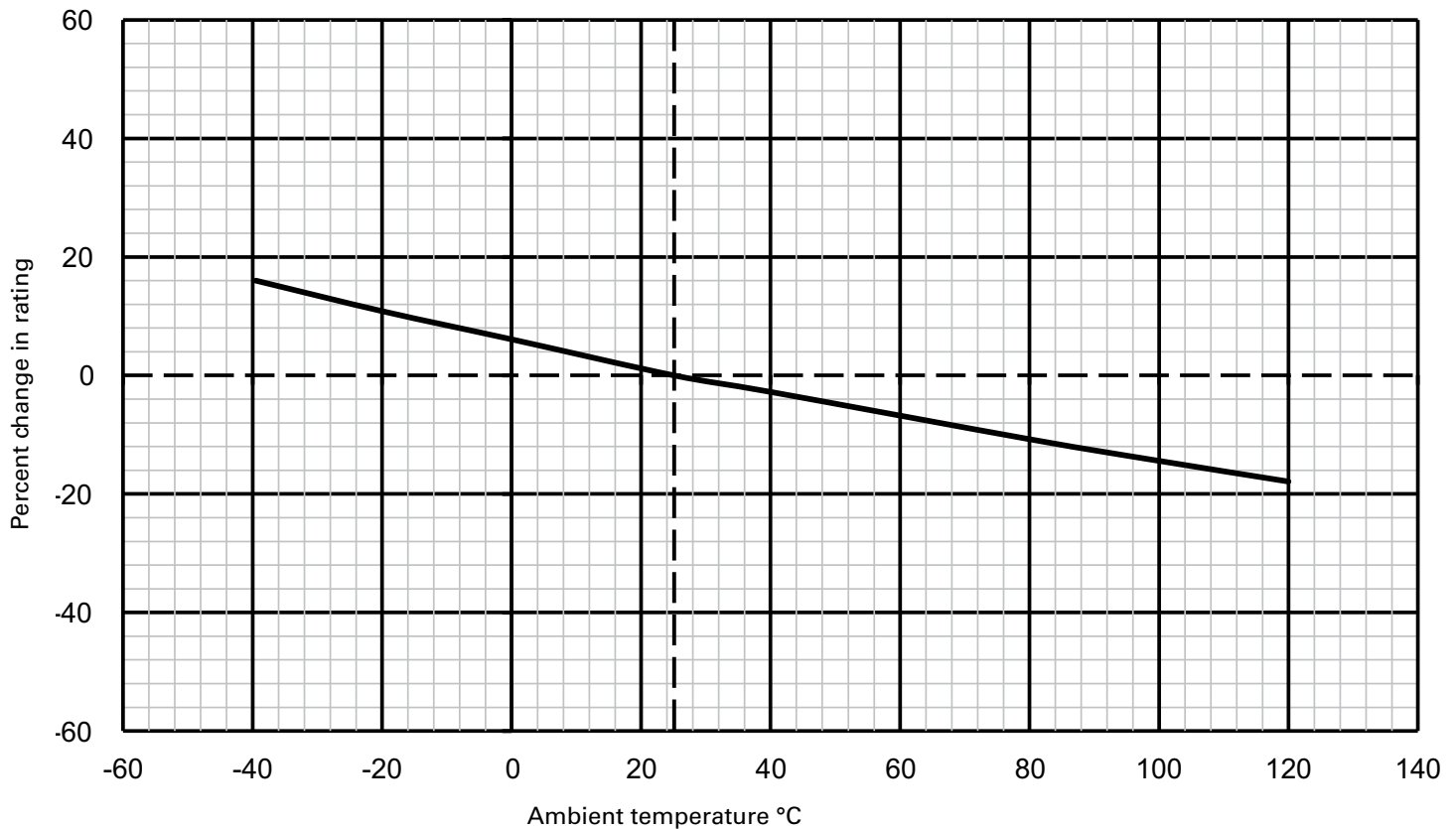


No additional derating is required for PV fuse links installed in ganged modular fuse holders without spacing between units, provided that the rating used is  $>1.56 \times I_{sc}$ .

Time-current characteristics — 25-30A:



# Temperature derating curves — 25-30A:



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