

# PV10 FUSE LINK (Photovoltaic Application)

Cylindrical fuse links with the PV10 Series designed & developed for the protection of Photovoltaic application of 1500V DC systems.

This PV10 fuse link provides protection against thermal overload & short circuit.

Recommendable with TT15PVFH32 fuse holders

### Approvals

- UL 248-19 (File no E513606)
- IEC 60269-6
- RoHS



### Technical Specification

|                     |                                         |
|---------------------|-----------------------------------------|
| Rated Current       | 1 - 32A DC                              |
| Rated Voltage       | 1500V DC                                |
| Interrupting Rating | 20 kA (UL248-19)<br>50 kA (IEC 60269-6) |
| Class of Operation  | gPV                                     |
| Size                | 10 x 85                                 |

### Features / Benefits

- Low overloading protection capacity of 1.35 times the fuse link rated current.
- Excellent electric performance, quick protection for PV system, cut down the fault current of the system.
- Fuse link tube material: Melamine, withstand high internal pressure & thermal shock hence high breaking capacity

### Application

- PV combiner boxes / Array Junction boxes
- PV string / Array level protection
- Inverters
- Battery Charge Controllers

### Type Interpretation

PV 10 - □□A - 85B

① ② ③ ④

① PV (Fuses for solar photovoltaic array protection)

② Diameter: 10 (Fusion tube diameter  $\phi$ 10.3)

③ Rated Current: 1 - 32 A

④ length of the Fuse: 85

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## Rated current basic selection

- Normal usage condition for fuses

Amp density for connecting busbar : 1.3amp/mm<sup>2</sup>

Continuous operation ambient temperature : 20°C ±5°C

Air Cooling rate: 0m/sec

- Correction under abnormal operation condition for fuses

$$I_b = I_n \times K_t \times K_e \times K_v \times K_f \times K_b$$

$I_b$  : The max permissible continuous RMS load current

$I_n$  : Rated current of a given fuse

$K_t$  : Ambient temp. correction factor acc. to fig 1

$K_e$  : Thermal connection factor acc. to fig 2

$K_v$  : Cooling air correction factor acc. to fig 3

$K_f$  : Frequency correction factor acc. to fig 4

fig. 1

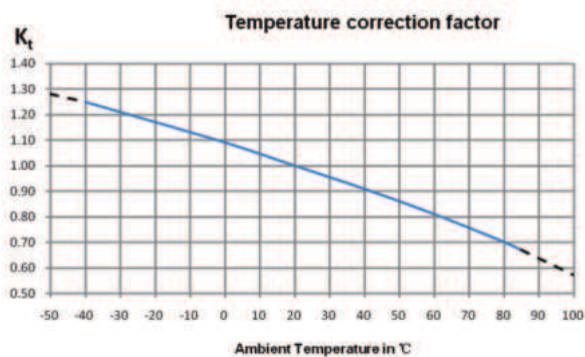


fig. 2

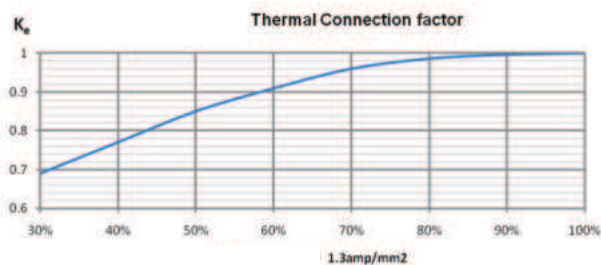


fig. 3

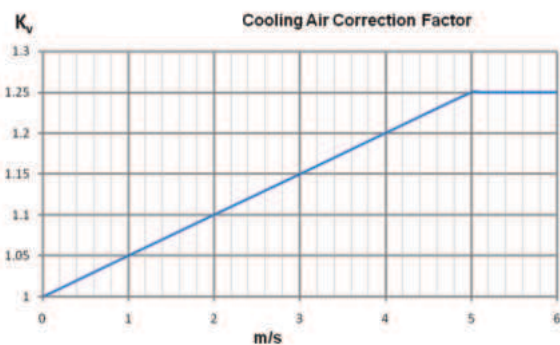
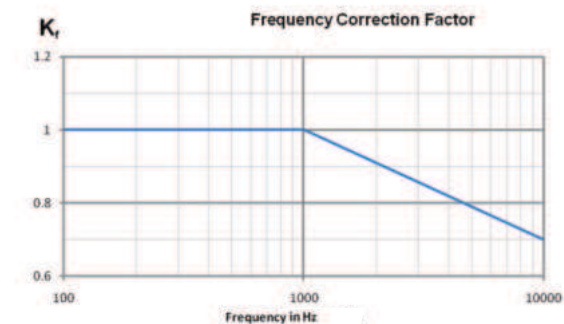


fig. 4

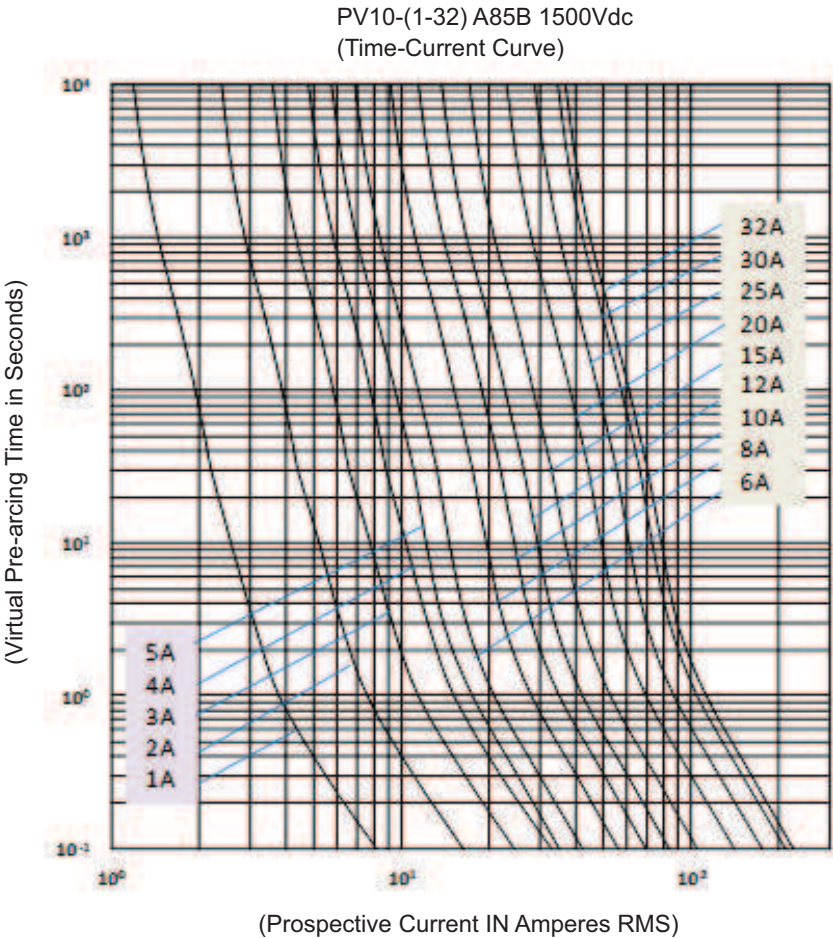


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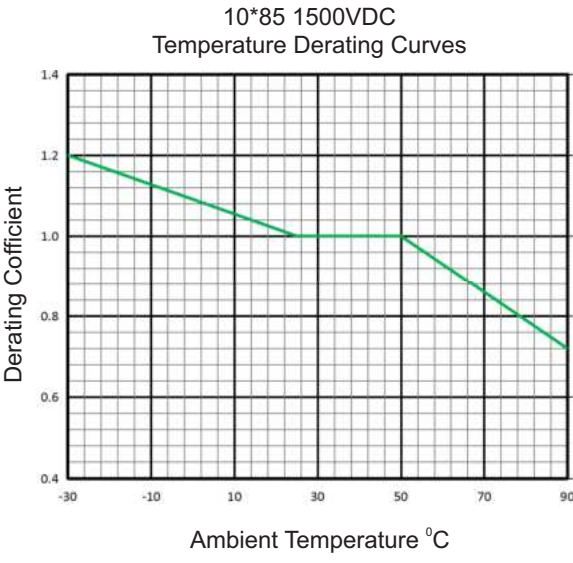
## Selection and ordering Data

| Catalogue Type | Article No | Rated Current (A) | Voltage (V) | Watts Loss @ 70% x In (W) | Watts Loss @ 80% x In (W) | Watts Loss @ 100% x In (W) | Pre Arcing I <sup>2</sup> t (A <sup>2</sup> S) | Total I <sup>2</sup> t @1500V (A <sup>2</sup> S) |
|----------------|------------|-------------------|-------------|---------------------------|---------------------------|----------------------------|------------------------------------------------|--------------------------------------------------|
| PV10-1A-85B    | 039916315  | 1                 | 1500        | 0.83                      | 1.02                      | 1.7                        | 0.5                                            | 1.2                                              |
| PV10-2A-85B    | 039916316  | 2                 | 1500        | 0.78                      | 0.96                      | 1.6                        | 1.3                                            | 4.1                                              |
| PV10-3A-85B    | 039916317  | 3                 | 1500        | 0.88                      | 1.08                      | 1.8                        | 4.2                                            | 13                                               |
| PV10-4A-85B    | 039916318  | 4                 | 1500        | 1.02                      | 1.26                      | 2.1                        | 10                                             | 27                                               |
| PV10-5A-85B    | 039916319  | 5                 | 1500        | 1.17                      | 1.44                      | 2.4                        | 2.5                                            | 35                                               |
| PV10-6A-85B    | 039916320  | 6                 | 1500        | 1.17                      | 1.44                      | 2.4                        | 3                                              | 40                                               |
| PV10-8A-85B    | 039916321  | 8                 | 1500        | 1.3                       | 1.6                       | 2.65                       | 4                                              | 51                                               |
| PV10-10A-85B   | 039916322  | 10                | 1500        | 1.39                      | 1.71                      | 2.85                       | 9                                              | 106                                              |
| PV10-12A-85B   | 039916323  | 12                | 1500        | 1.56                      | 1.92                      | 3.2                        | 16                                             | 180                                              |
| PV10-15A-85B   | 039916324  | 15                | 1500        | 1.75                      | 2.2                       | 3.6                        | 29                                             | 330                                              |
| PV10-16A-85B   | 039916325  | 16                | 1500        | 1.75                      | 2.2                       | 3.6                        | 29                                             | 330                                              |
| PV10-20A-85B   | 039916326  | 20                | 1500        | 2.2                       | 2.7                       | 4.5                        | 41                                             | 560                                              |
| PV10-25A-85B   | 039916327  | 25                | 1500        | 2.7                       | 3.3                       | 5.5                        | 54                                             | 860                                              |
| PV10-30A-85B   | 039916328  | 30                | 1500        | 3.5                       | 4                         | 7                          | 62                                             | 1020                                             |
| PV10-32A-85B   | 039916329  | 32                | 1500        | 3.65                      | 4.5                       | 7.5                        | 70                                             | 4460                                             |

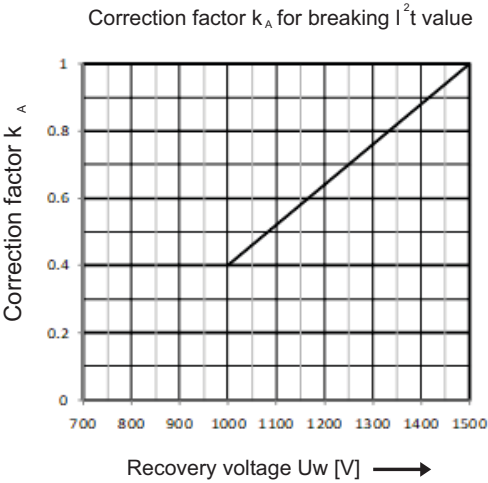
## Time- Current Characteristic Graph



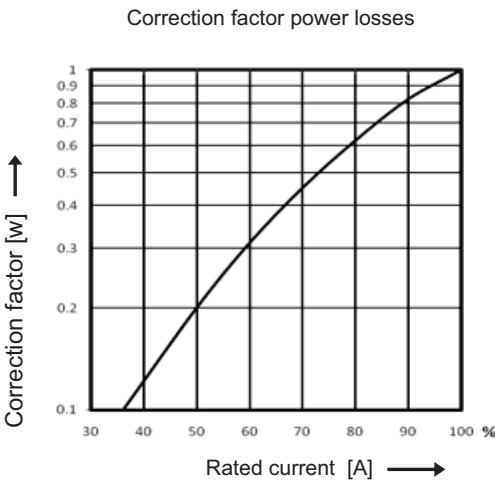
# PV10 FUSE LINK (Photovoltaic Application)



Correction factor  $k_A$  for breaking  $I^2t$  value



Correction factor power losses



Dimensions

