EVK Series/系列 (1000 Vdc, 15-600A)

# Electric Vehicle Fuses
# 新能源车用熔断器

Powering Business Worldwide

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# Electric Vehicle Fuses — EVK series (1000 Vdc, 15-600A)

## 新能源车用熔断器 — EVK 系列 (1000 Vdc, 15-600A)

Eaton's Bussmann series Electric Vehicle (EV) full range fuses for the protection of high power and auxiliary electrical systems up to 1000 Vdc in ratings from 15 to 600 amps.

伊顿Bussmann系列EV级车用熔断器可提供主回路及辅助支路系统的全范围保护，电压达到1000V直流，电流可以从15A到600A.

### Specifications /参数:

- Volts / 电压: 1000 Vdc
- Amps / 电流: 15-600 A
- Interrupting rating / 分断能力: Max / 最大25kA
- Time constant / 时间常数: 2 ± 0.5ms
- Ambient temperature / 环境温度: -40 ~ 125°C

## Catalog symbol / 型号 :

| | |
|---|---|
| EVK10-(amp)-T | bolt-on / 螺栓固定 |
| EVK14-(amp)-T | bolt-on / 螺栓固定 |
| EVK22-(amp)-T | bolt-on / 螺栓固定 |
| EVK25-(amp) | bolt-on / 螺栓固定 |
| EVK30-(amp) | bolt-on / 螺栓固定 |
| EVK40-(amp) | bolt-on / 螺栓固定 |
| EVK50-(amp) | bolt-on / 螺栓固定 |
| EVK60-(amp) | bolt-on / 螺栓固定 |

## Agency information /相关标准信息:

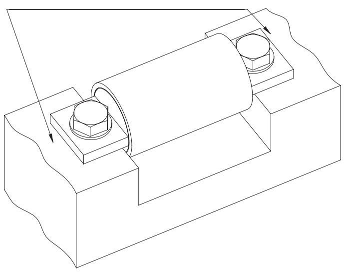
- Designed to / 符合标准: UL248-20 / ISO8820-8 / JASO D622
- Manufactured under ITAF16949/VDA6.3 quality system for compliance with automotive requirements
  在 ITAF16949/VDA6.3 质量系统下制造，符合汽车标准要求
- RoHS compliant
  符合RoHS要求
- REACH declaration available upon request
  根据需要可提供REACH声明

## Packaging and installation suggestion / 包装和安装建议:

Installation method diagram
安装方式图

See below table
and right diagram /
见下表及右图

The installation surface should be flat and clean without oil stain, etc
安装表面应平整、洁净、无油污等



## Features /性能:

- Excellent design and application experiences with EV for decades, to serve the customers globally
  在EV行业内，优秀的产品设计能力和长期的应用经验，服务于世界范围内众多用户
- Comply with various international and field EV application standards worldwide
  符合世界范围及行业内多项EV熔断器产品标准
- Higher voltage rating provides overall system with more efficient and economical solution while meeting the needs of higher voltage battery packs
  在满足高压直流电池系统应用的同时，提供给系统更有效且经济的产品方案
- Higher interrupting rating projects high capacity battery packs needed for vehicle long mileage and fast acceleration requirements
  具有更高的分断能力，适合大容量电池系统的应用，满足车辆长续航和急加速的使用要求
- To help project the life of the fuse in the application, unique driving profiles and conditions can be simulated to verify proper fuse size and performance under a wide range of driving behaviors
  提升了熔断器在使用过程中的寿命，在各种驾驶工况条件下，根据工况条件进行模拟和计算得出合理的参数规格
- Operation as low as 135% for 15A to 200A and 200% for 225A to 600A overload provides back up protection to the battery management system
  能够对电池系统提供135%（15A到200A）或200%（225A到600A）的低电流过载保护
- More wider protection range with lower MBC and higher IR, much faster opening with low temperature rise under high fault current conditions helps assure reliable protection of circuits and components
  更低的最小熔断电流值MBC和更高的最大分断电流值IR，使得产品具有更广的电流保护范围；更快的熔断速度和较低的产品温升，使得产品在线路发生故障时能提供可靠的保护

## Basic information /基本信息:

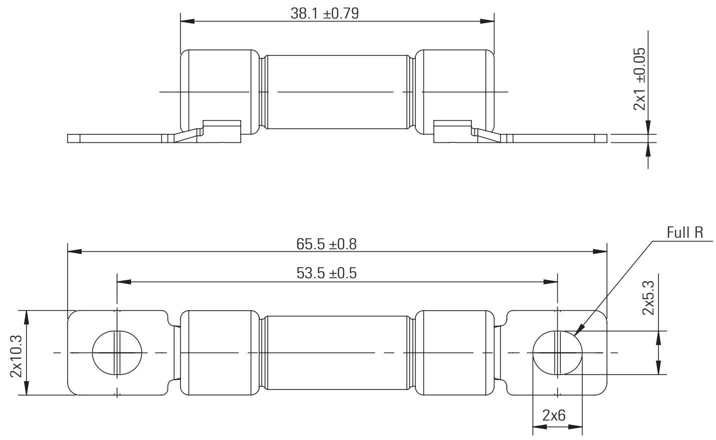
| P/N / 型号 | Current / 电流 (A) | | | | Packing quantity/ 包装数量 (per container/每包装) | Screw / 螺栓 | Recommended tightening torque / 推荐扭矩 (N.m) |
|---|---|---|---|---|---|---|---|
| EVK10-XXX-T | 15 | 20 | 25 | 30 | 270 | M5 | 4.5 ± 1 |
| EVK14-XXX-T | | 35 | 40 | 50 | 75 | M5 | 4.5 ± 1 |
| EVK22-XXX-T | | 60 | 70 | 80 | 100 | M6 | 9 ± 1 |
| EVK25-XXX | 70 | 80 | 90 | 100 | 195 | M8 | 12 ± 1 |
| EVK30-XXX | 125 | 150 | 175 | 200 | 75 | M8 | 12 ± 1 |
| EVK40-XXX | 225 | 250 | 275 | 300 | 85 | M10 | 20 ± 1 |
| EVK50-XXX | | | 350 | 400 | 28 | M10 | 20 ± 1 |
| EVK60-XXX | 450 | 500 | 550 | 600 | 18 | M10 | 20 ± 1 |

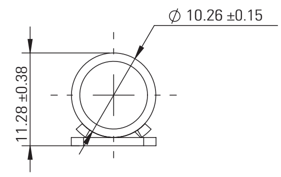
# Electric Vehicle Fuses — EVK series (1000 Vdc, 15-600A)

新能源车用熔断器 — EVK 系列 (1000 Vdc, 15-600A)

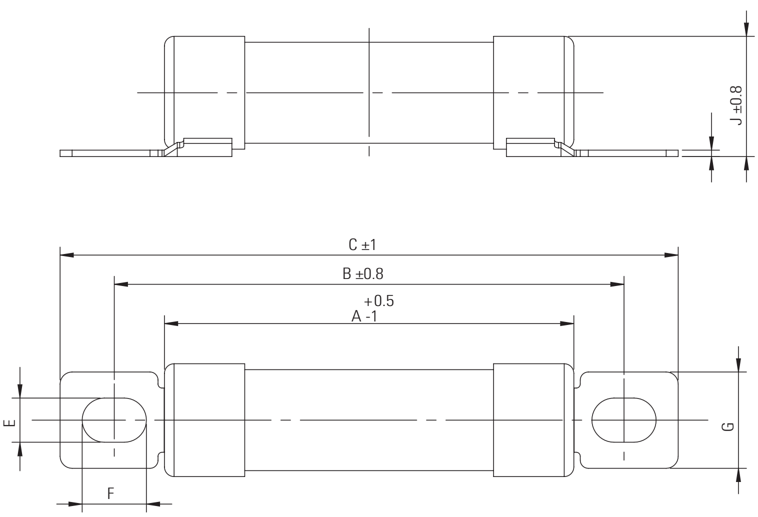
## Dimensions / 尺寸 : mm

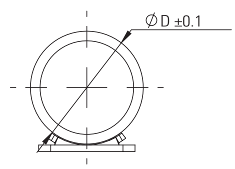
### EVK10



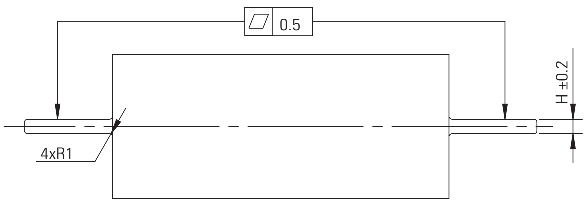

### EVK14 / EVK22

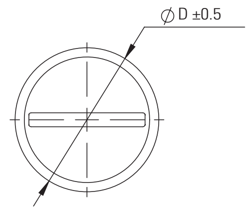


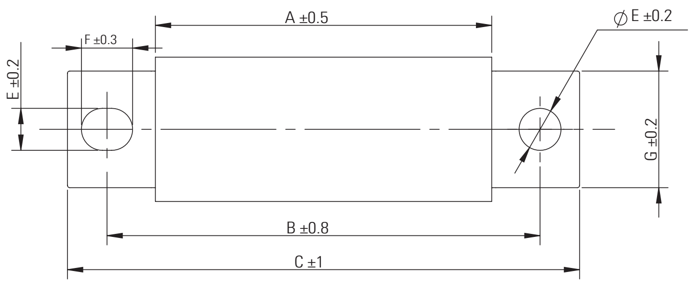




| Size<br>系列 | Current Rating<br>额定电流 (A) | A | B | C | D | E | F | G | H | J |
|---|---|---|---|---|---|---|---|---|---|---|
| EVK14 | 35 ~ 50 | 51 | 63.5 | 77 | 14.3 | 5.5 | 8 | 12 | 0.8 | 15.1 |
| EVK22 | 60 ~ 80 | 58 | 75 | 90 | 22.2 | 6.5 | 9 | 16 | 1 | 23.2 |

**EVK25 / EVK30 / EVK40 / EVK50 / EVK60**



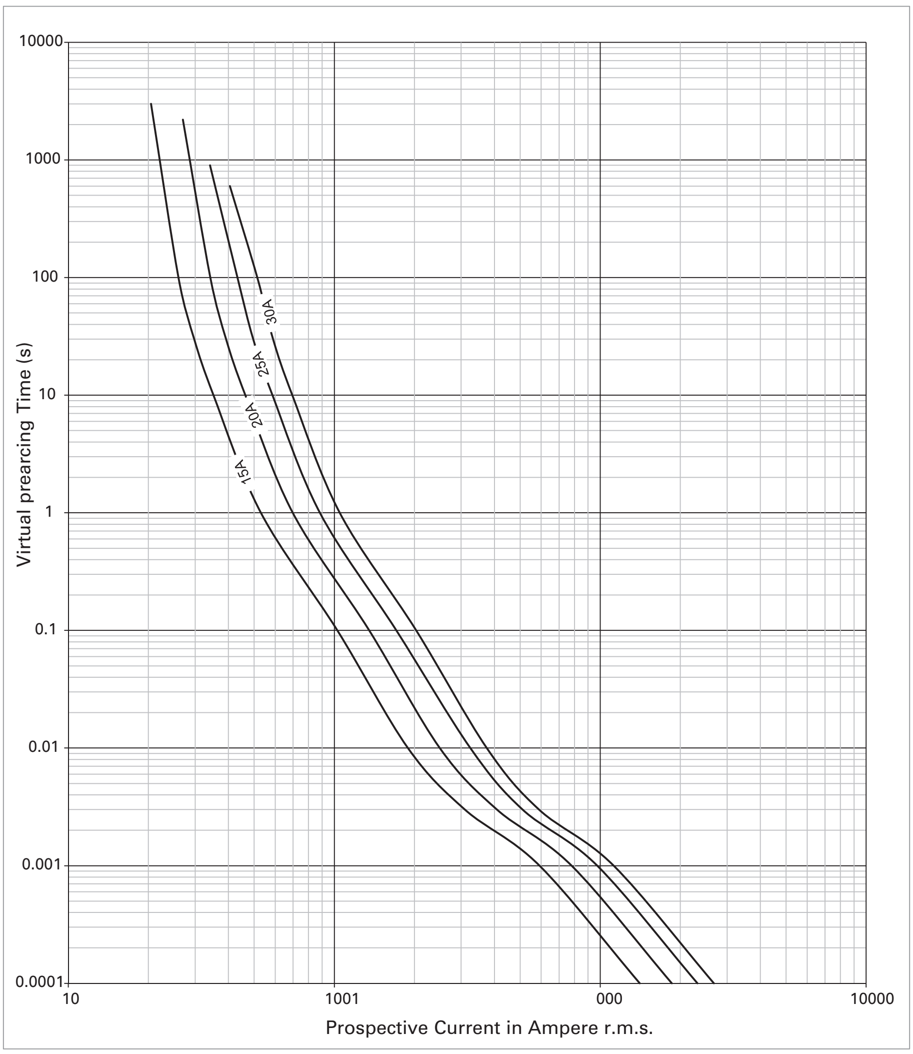




| Size<br>系列 | Current Rating<br>额定电流 (A) | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|---|
| EVK25 | 70 ~ 100 | 72.2 | 93 | 110 | 25.4 | 9 | 11 | 19 | 2.2 |
| EVK30 | 125 ~ 200 | 72.2 | 93 | 110 | 31 | 9 | 11 | 25 | 3 |
| EVK40 | 225 ~ 300 | 72.2 | 100 | 122 | 38.1 | 11 | 13 | 28 | 3.5 |
| EVK50 | 350 ~ 400 | 72.2 | 100 | 122 | 50.8 | 11 | 13 | 28 | 5 |
| EVK60 | 450 ~ 600 | 72.2 | 100 | 122 | 63.5 | 11 | 13 | 40 | 6 |

## Electric vehicle auxiliary fuses / 新能源车用辅助支路熔断器 — EVK10-XXX-T (1000 Vdc, 15-30A)

| Voltage rating 电压 (V) | Current rating 额定电流 In (A) | Pre-arcing $I^2t$ 弧前 $I^2t$ 值 ($A^2s$) | Total $I^2t$ 总 $I^2t$ 值 ($A^2s$) | Power dissipation at 1.0 $I_n$ 1.0 $I_n$ (W) 时功率损耗 | Power dissipation at 0.5 $I_n$ 0.5 $I_n$ (W) 时功率损耗 |
|---|---|---|---|---|---|
| 1000Vdc | 15 | 120 | 700 | 2.8 | 0.6 |
| | 20 | 227 | 1,200 | 3.7 | 0.7 |
| | 25 | 480 | 2,200 | 4 | 0.8 |
| | 30 | 677 | 3,400 | 4.9 | 1 |

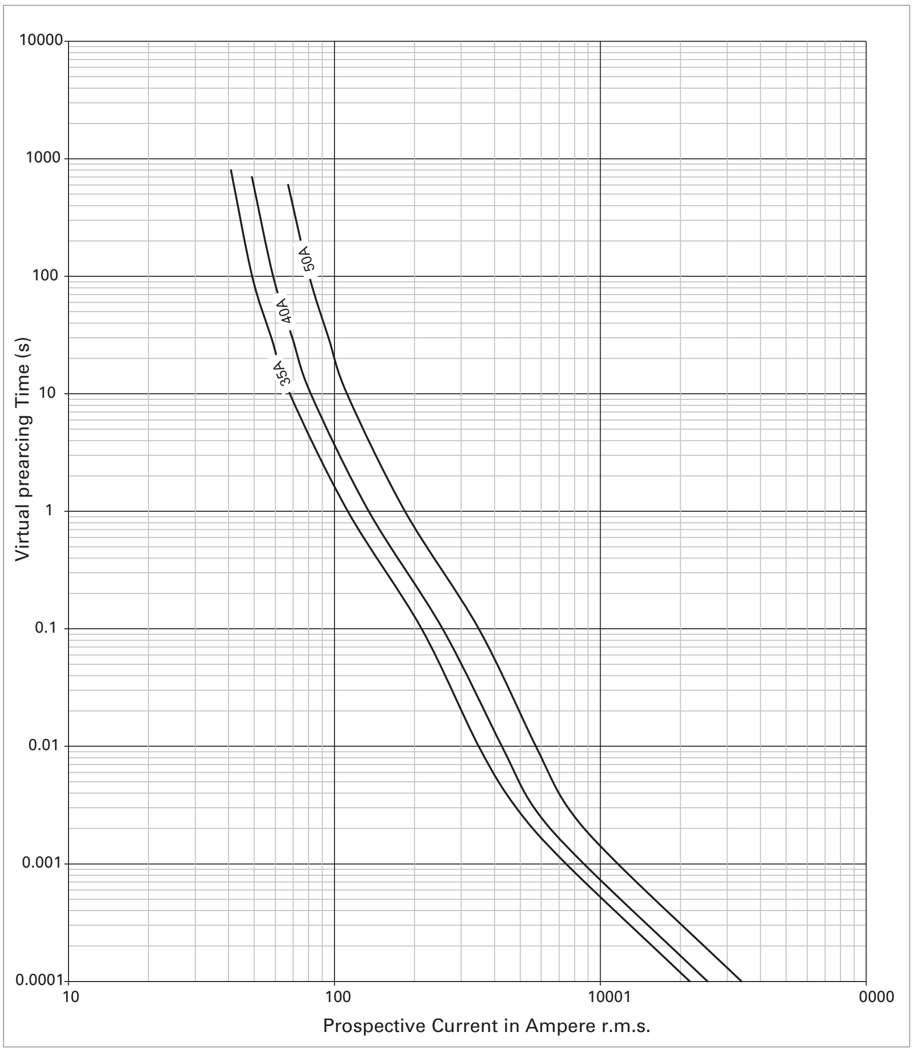
### T-C curve / 曲线



## Electric vehicle auxiliary fuses / 新能源车用辅助支路熔断器 — EVK14-XXX-T (1000 Vdc, 35-50A)

| Voltage rating 电压 (V) | Current rating 额定电流 In (A) | Pre-arcing $I^2t$ 弧前 $I^2t$ 值 ($A^2s$) | Total $I^2t$ 总 $I^2t$ 值 ($A^2s$) | Power dissipation at 1.0 $I_n$ 1.0 $I_n$ (W) 时功率损耗 | Power dissipation at 0.5 $I_n$ 0.5 $I_n$ (W) 时功率损耗 |
|---|---|---|---|---|---|
| 1000Vdc | 35 | 415 | 2,100 | 7.5 | 1.9 |
| | 40 | 620 | 3,000 | 8.2 | 2 |
| | 50 | 1,230 | 5,500 | 9.2 | 2.3 |

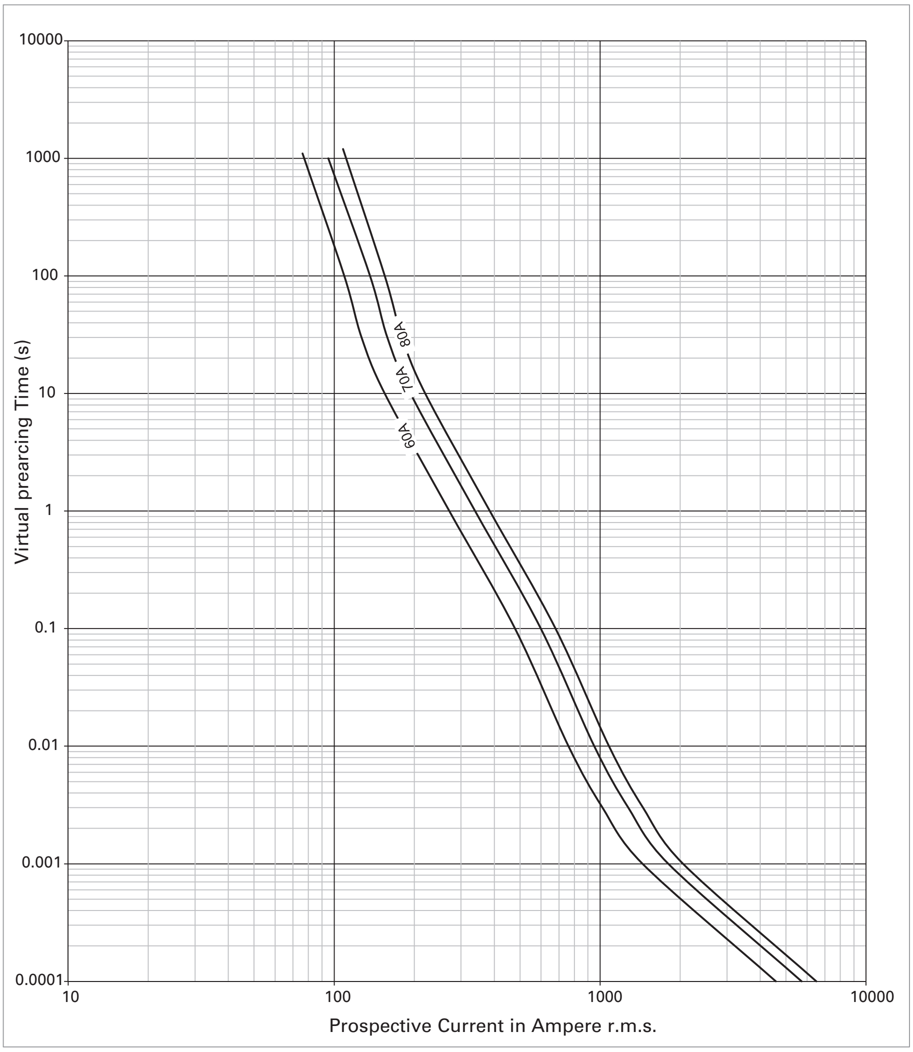
### T-C curve / 曲线



## Electric vehicle power fuses / 新能源车用主回路熔断器 — EVK22-XXX-T (1000 Vdc, 60-80A)

| Voltage rating 电压 (V) | Current rating 额定电流 In (A) | Pre-arcing $I^2t$ 弧前 $I^2t$ 值 ($A^2s$) | Total $I^2t$ 总 $I^2t$ 值 ($A^2s$) | Power dissipation at 1.0 $I_n$ 1.0 $I_n$ (W) 时功率损耗 | Power dissipation at 0.5 $I_n$ 0.5 $I_n$ (W) 时功率损耗 |
|---|---|---|---|---|---|
| 1000Vdc | 60 | 3,000 | 9,600 | 12.2 | 2.4 |
| | 70 | 4,688 | 15,000 | 13.4 | 2.7 |
| | 80 | 6,050 | 19,400 | 15.9 | 3.2 |

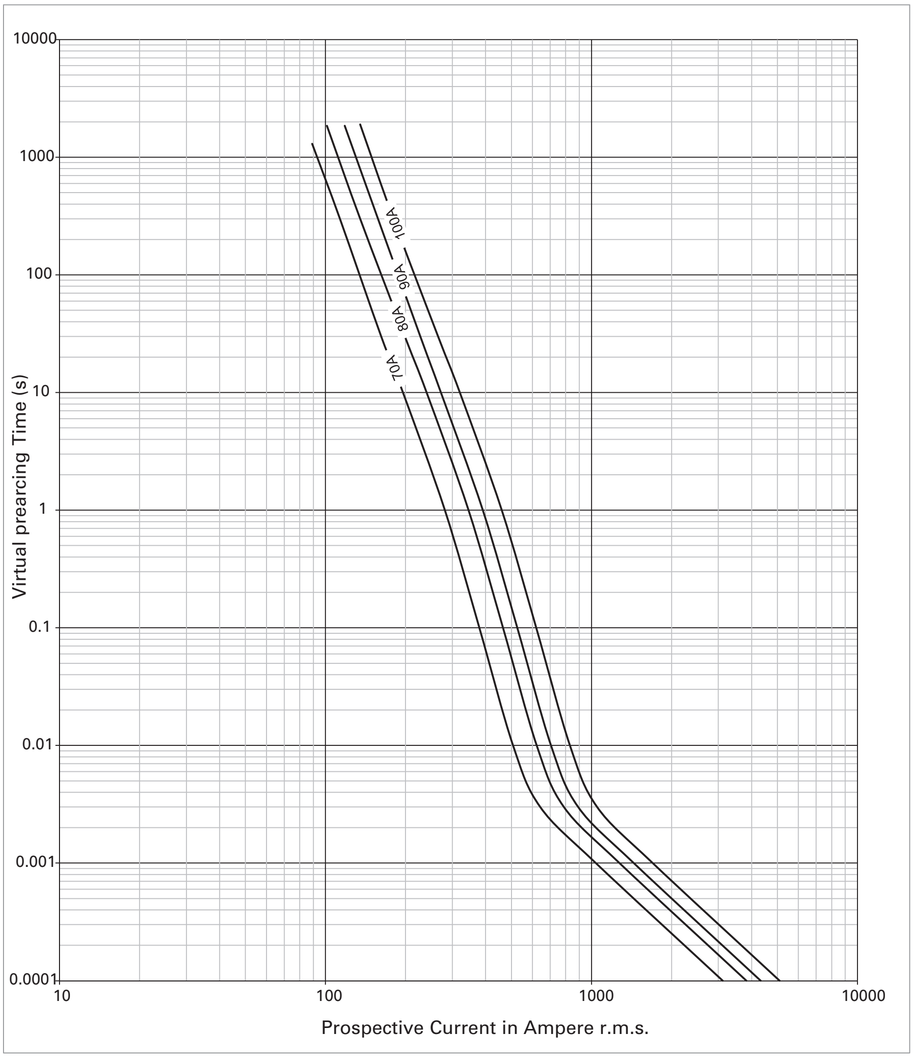
### T-C curve / 曲线



## Electric vehicle power fuses / 新能源车用主回路熔断器 — EVK25-XXX (1000 Vdc, 70-100A)

| Voltage rating 电压 (V) | Current rating 额定电流 In (A) | Pre-arcing $I^2t$ 弧前 $I^2t$ 值 ($A^2s$) | Total $I^2t$ 总 $I^2t$ 值 ($A^2s$) | Power dissipation at 1.0 $I_n$ 1.0 $I_n$ (W) 时功率损耗 | Power dissipation at 0.5 $I_n$ 0.5 $I_n$ (W) 时功率损耗 |
|---|---|---|---|---|---|
| 1000Vdc | 70 | 908 | 3,400 | 21.3 | 4.3 |
| | 80 | 1,367 | 4,900 | 24 | 4.8 |
| | 90 | 1,861 | 6,300 | 26.7 | 5.3 |
| | 100 | 2,430 | 8,300 | 29.6 | 5.9 |

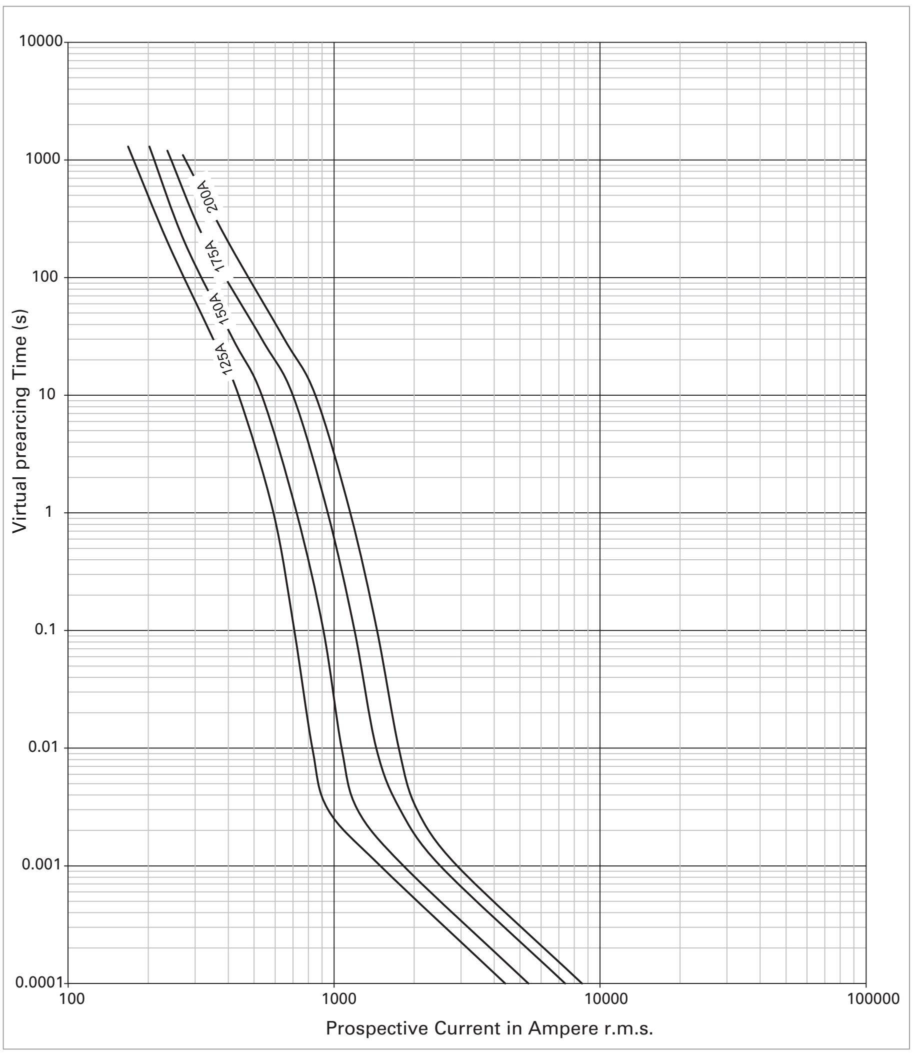
### T-C curve / 曲线



## Electric vehicle power fuses / 新能源车用主回路熔断器 — EVK30-XXX (1000 Vdc, 125-200A)

| Voltage rating 电压 (V) | Current rating 额定电流 In (A) | Pre-arcing $I^2t$ 弧前 $I^2t$ 值 ($A^2s$) | Total $I^2t$ 总 $I^2t$ 值 ($A^2s$) | Power dissipation at 1.0 $I_n$ 1.0 $I_n$ (W) 时功率损耗 | Power dissipation at 0.5 $I_n$ 0.5 $I_n$ (W) 时功率损耗 |
|---|---|---|---|---|---|
| 1000Vdc | 125 | 1,659 | 6,000 | 33.6 | 8.4 |
| | 150 | 2.478 | 9,000 | 40.3 | 10.1 |
| | 175 | 4,427 | 14,000 | 42.4 | 10.6 |
| | 200 | 6,272 | 21,000 | 46.9 | 11.7 |

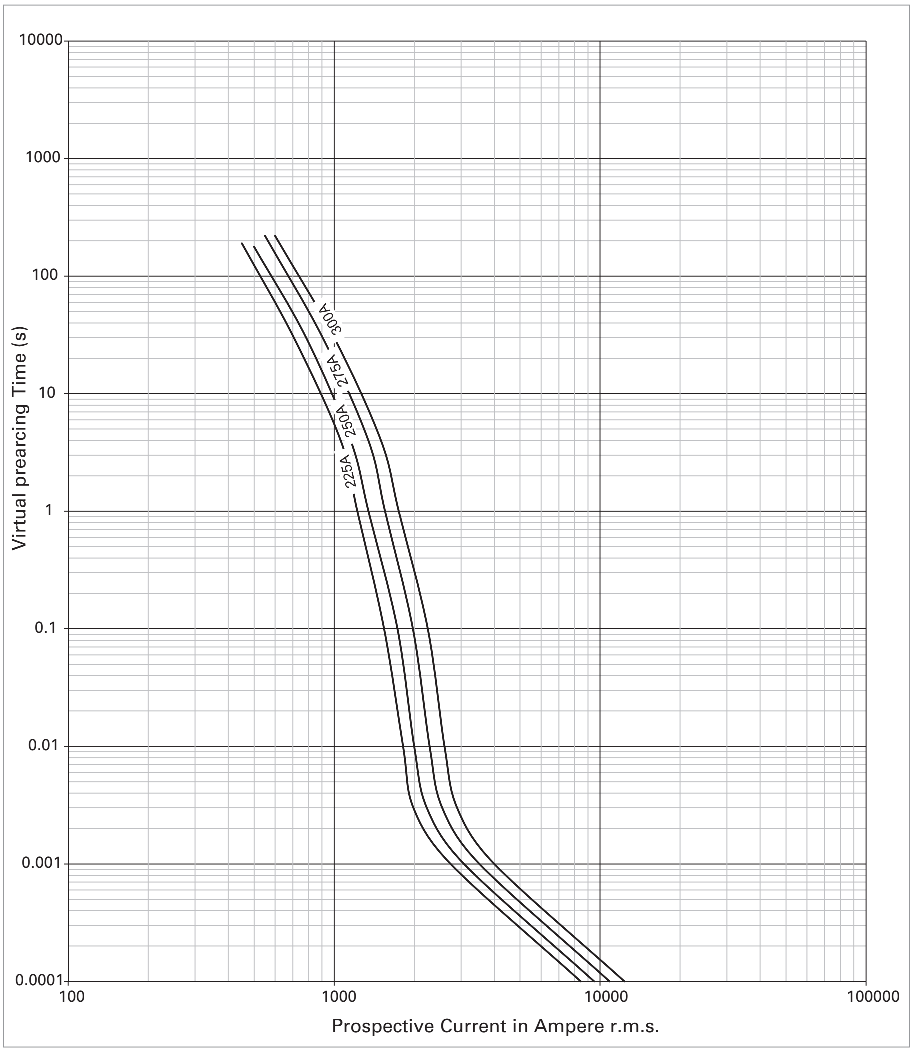
### T-C curve / 曲线



## Electric vehicle power fuses / 新能源车用主回路熔断器 — EVK40-XXX (1000 Vdc, 225-300A)

| Voltage rating 电压 (V) | Current rating 额定电流 In (A) | Pre-arcing $I^2t$ 弧前 $I^2t$ 值 ($A^2s$) | Total $I^2t$ 总 $I^2t$ 值 ($A^2s$) | Power dissipation at 1.0 $I_n$ 1.0 $I_n$ (W) 时功率损耗 | Power dissipation at 0.5 $I_n$ 0.5 $I_n$ (W) 时功率损耗 |
|---|---|---|---|---|---|
| 1000Vdc | 225 | 7,162 | 24,000 | 68.7 | 13.7 |
| | 250 | 9,032 | 29,000 | 78.7 | 15.7 |
| | 275 | 11,796 | 35,000 | 83.3 | 16.7 |
| | 300 | 15,264 | 43,000 | 87.1 | 17.4 |

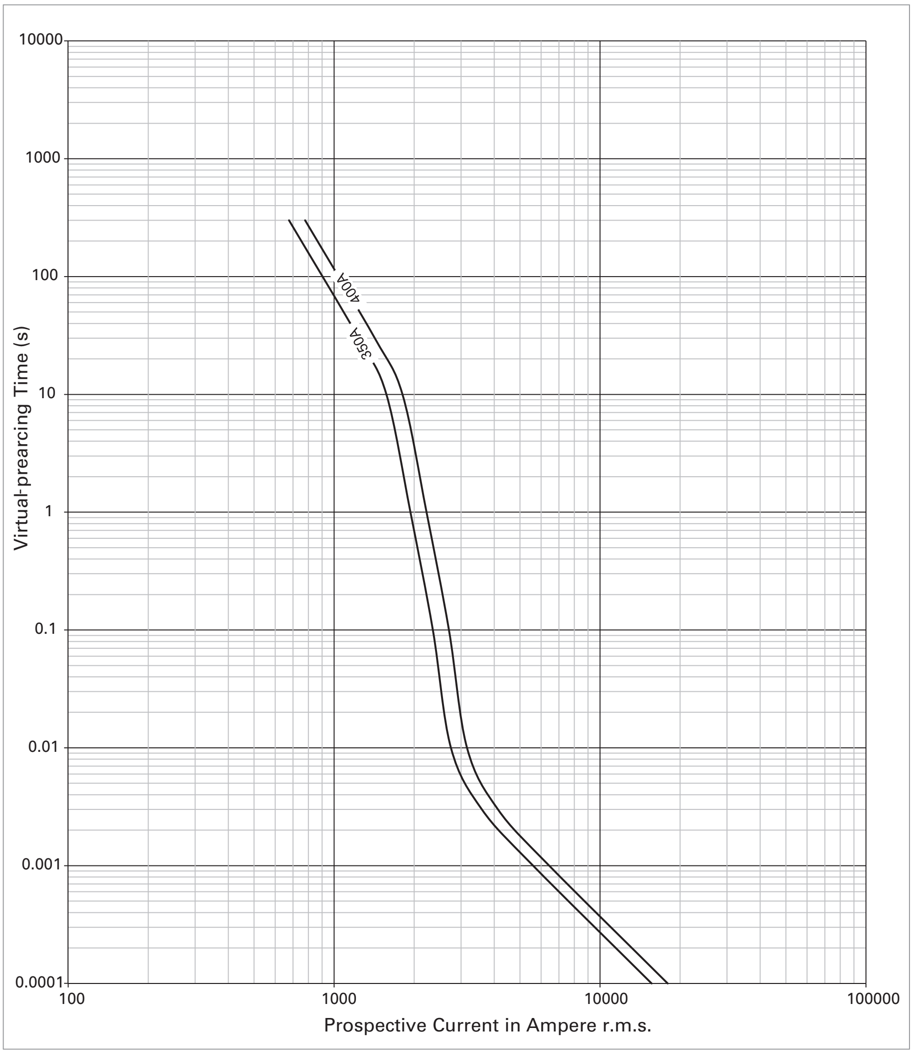
### T-C curve / 曲线



## Electric vehicle power fuses / 新能源车用主回路熔断器 — EVK50-XXX (1000 Vdc, 350-400A)

| Voltage rating 电压 (V) | Current rating 额定电流 In (A) | Pre-arcing $I^2t$ 弧前 $I^2t$ 值 ($A^2s$) | Total $I^2t$ 总 $I^2t$ 值 ($A^2s$) | Power dissipation at 1.0 $I_n$ 1.0 $I_n$ (W) 时功率损耗 | Power dissipation at 0.5 $I_n$ 0.5 $I_n$ (W) 时功率损耗 |
|---|---|---|---|---|---|
| 1000Vdc | 350 | 19,117 | 69,000 | 89.3 | 17.9 |
| | 400 | 28,647 | 97,000 | 96.2 | 19.2 |

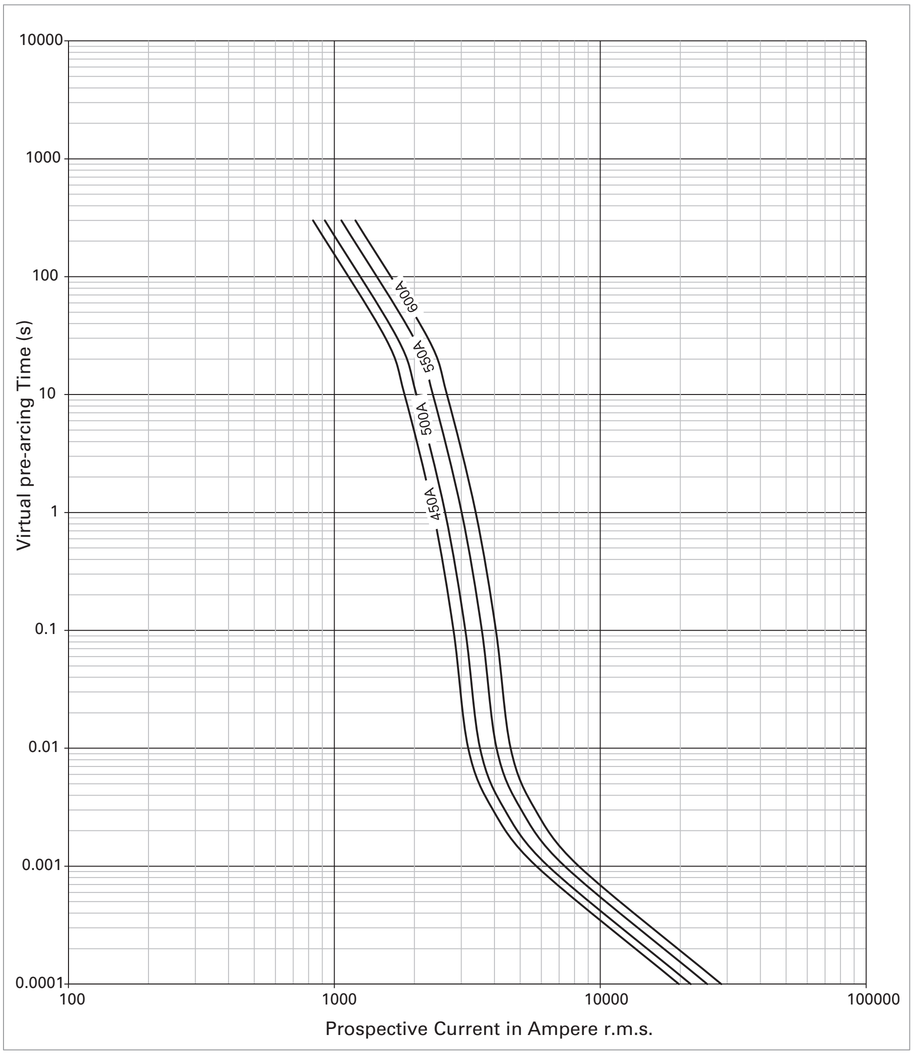
### T-C curve / 曲线



## Electric vehicle power fuses / 新能源车用主回路熔断器 — EVK60-XXX (1000 Vdc, 450-600A)

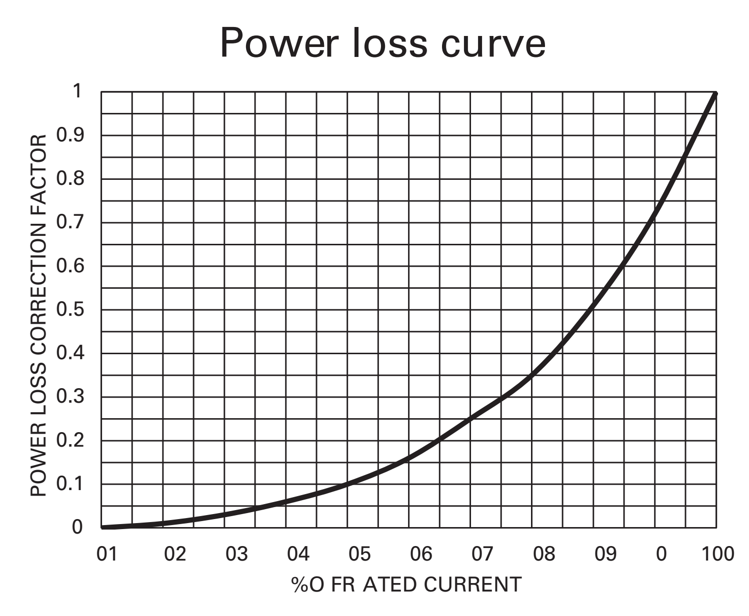
| Voltage rating 电压 (V) | Current rating 额定电流 In (A) | Pre-arcing $I^2t$ 弧前 $I^2t$ 值 ($A^2s$) | Total $I^2t$ 总 $I^2t$ 值 ($A^2s$) | Power dissipation at 1.0 $I_n$ 1.0 $I_n$ (W) 时功率损耗 | Power dissipation at 0.5 $I_n$ 0.5 $I_n$ (W) 时功率损耗 |
|---|---|---|---|---|---|
| 1000Vdc | 450 | 32,604 | 104,000 | 113.1 | 28.3 |
| | 500 | 40,011 | 120,000 | 129.6 | 32.4 |
| | 550 | 53,268 | 149,000 | 139.6 | 34.9 |
| | 600 | 67,948 | 177,000 | 154.8 | 38.7 |

### T-C curve / 曲线



## Electric vehicle power fuses / 新能源车用主回路熔断器 — EVK series (1000 Vdc, 15-600A)

### Power loss curve / 功率损耗曲线




### Temperature derating curve / 温度降容曲线