

## FRN-R — 250Vac/125Vdc, 1/10-60A, Dual Element, Time-Delay Fuses



**Description:** Advanced protection, energy efficient Class RK5 dual element, current-limiting, time-delay fuses with optional open fuse indication on select ratings.

Time-delay – 10 seconds (minimum) at 500% of rated current (8 seconds for 1/10-30A sizes).

**Catalog Symbol:** FRN-R-(amp) (non-indicating)  
FRN-R-(amp)ID (indicating)

### Ratings:

Volts — 250Vac, 125Vdc  
Amps — 1/10-60 Amps  
IR — 200kA Vac RMS Sym.  
— 20kA Vdc

### Agency Information:

CE, UL Listed, Std. 248-12, Class RK-5, Guide JDDZ, File E4273

CSA Certified, C22.2 No. 248.12, Class 1422-02, File 53787

### Catalog Numbers (amps) — Non-indicating fuses

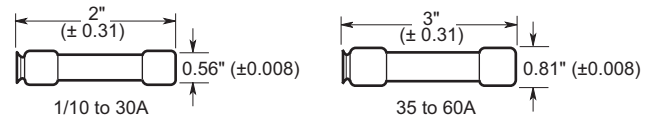
|              |              |               |
|--------------|--------------|---------------|
| FRN-R-1/10   | FRN-R-1 1/10 | FRN-R-8*      |
| FRN-R-1/8    | FRN-R-2      | FRN-R-9*      |
| FRN-R-15/100 | FRN-R-2 1/4  | FRN-R-10*     |
| FRN-R-3/10   | FRN-R-2 1/2  | FRN-R-12*     |
| FRN-R-1/4    | FRN-R-2 3/10 | FRN-R-15*     |
| FRN-R-3/10   | FRN-R-3      | FRN-R-17 1/2* |
| FRN-R-1/2    | FRN-R-3 3/10 | FRN-R-20*     |
| FRN-R-1/2    | FRN-R-3 1/2  | FRN-R-25*     |
| FRN-R-3/10   | FRN-R-4      | FRN-R-30*     |
| FRN-R-3/10   | FRN-R-4 1/2  | FRN-R-35*     |
| FRN-R-1      | FRN-R-5      | FRN-R-40*     |
| FRN-R-1 1/8  | FRN-R-5 1/10 | FRN-R-45*     |
| FRN-R-1 1/4  | FRN-R-6      | FRN-R-50*     |
| FRN-R-1 1/10 | FRN-R-6 1/4  | FRN-R-60*     |
| FRN-R-1 1/2  | FRN-R-7      |               |
| FRN-R-1 3/10 | FRN-R-7 1/2  |               |

\* Open fuse indication available by inserting the suffix "ID." E.g., FRN-R-15ID.

### Carton Quantity and Weight

| Amp Rating | Carton Qty. |
|------------|-------------|
| 1/10-15    | 10          |
| 17 1/2-30  | 10          |
| 35-60      | 10          |

### Dimensions - in



### Features:

- Provides motor overload, ground fault and short-circuit protection
- Helps protect motors against burnout from overloads
- Helps protect motors against burnout from single-phasing on three-phase systems
- Simplifies and improves blackout prevention (selective coordination)
- Dual-element fuses can be applied in circuits subject to temporary motor overloads and surge currents to provide both high performance short-circuit and overload protection
- The overload element provides protection against low level overcurrent of overloads and will hold an overload which is five times greater than the ampere rating of the fuse for a minimum of ten seconds.

### Recommended Fuse Blocks

| Fuse Amps | 1-Pole   | 2-Pole   | 3-Pole   |
|-----------|----------|----------|----------|
| 0-30      | H25030-1 | H25030-2 | H25030-3 |
|           | R25030-1 | R25030-2 | R25030-3 |
| 35-60     | H25060-1 | H25060-2 | H25060-3 |
|           | R25060-1 | R25060-2 | R25060-3 |

For additional information on the 250 volt fuse blocks, see Data Sheets # 1110 (R250), # 1112 (H250).

### Fuse Reducers For Class R Fuses

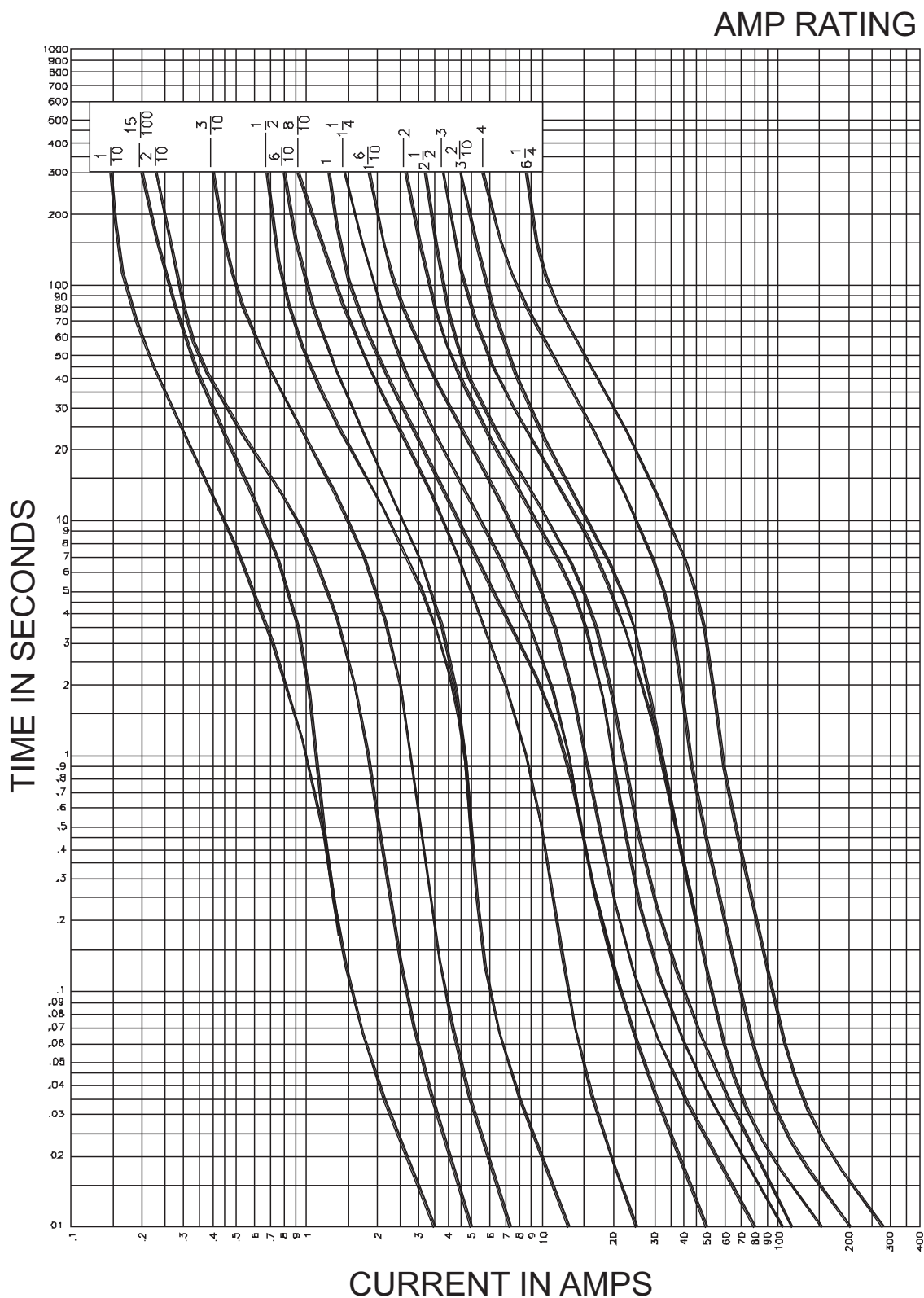
| Equipment  | Desired Fuse | Catalog Numbers |
|------------|--------------|-----------------|
| Fuse Clips | (Case) Size  | (Pairs) 250V    |
| 60A        | 30A          | NO.263-R        |
| 100A       | 30A          | NO.213-R        |
|            | 60A          | NO.216-R        |
| 200A       | 60A          | NO.226-R        |

For additional information on Class R fuse reducers, see Data Sheet # 1118.

## FRN-R — 250Vac/125Vdc, 1/10-60A, Dual Element, Time-Delay Fuses

### Time-Current Curves - Average Melt

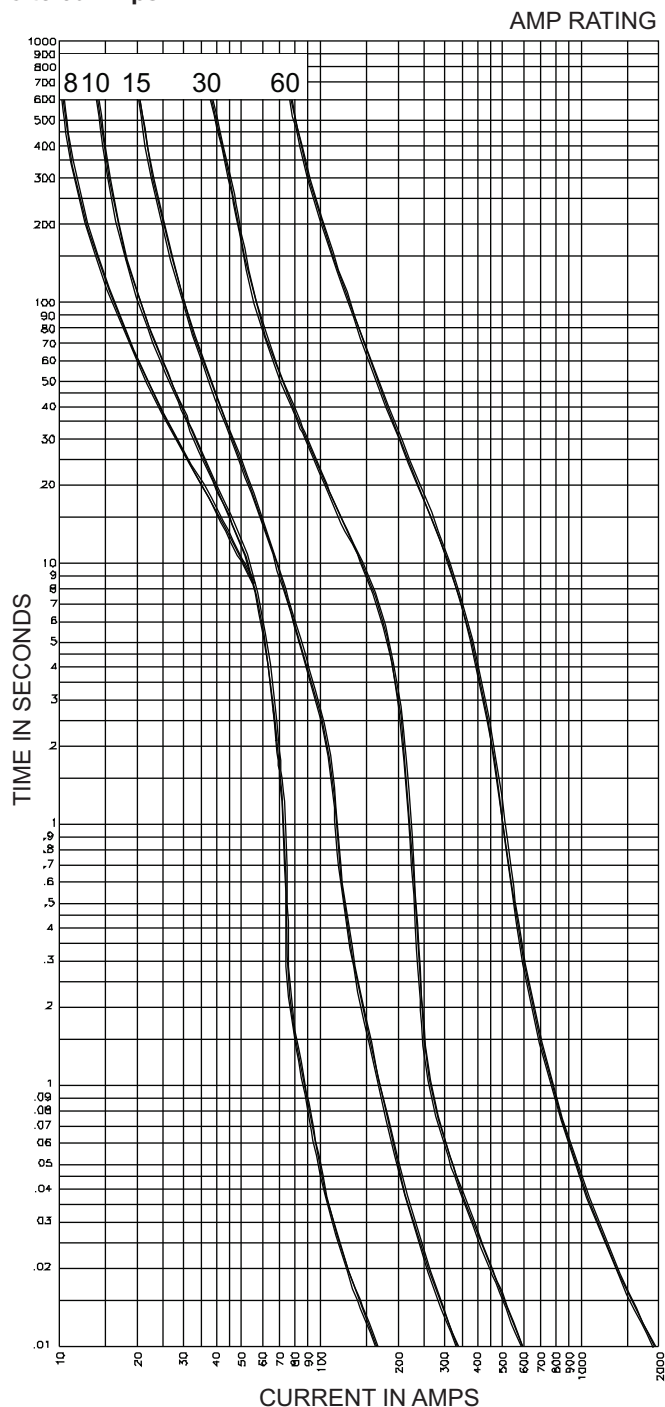
1/10 to 6 1/4 Amps



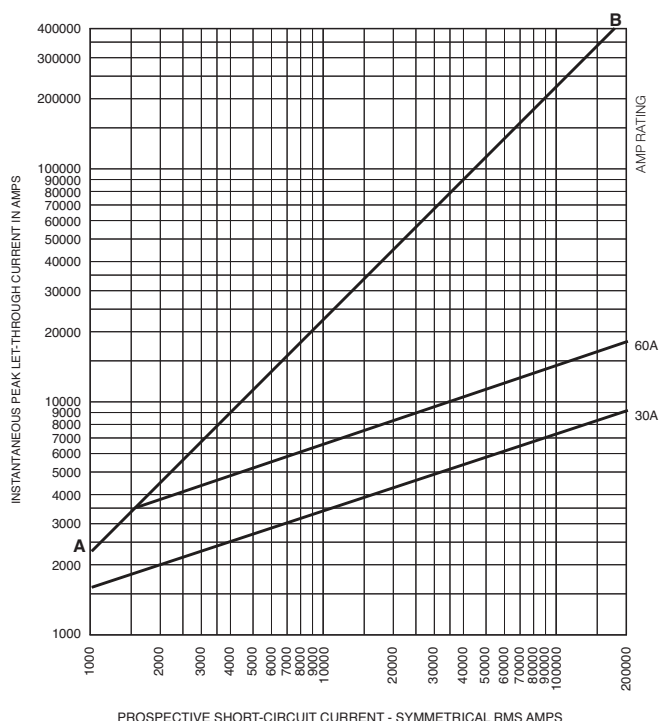
## FRN-R — 250Vac/125Vdc, 1/10-60A, Dual Element, Time-Delay Fuses

### Time-Current Curves - Average Melt

8 to 60 Amps



### Current-Limitation Curves



### Current-Limiting Effects

| Prosp.<br>S.C.C. | Let-Through Current<br>(Apparent RMS Symmetrical Vs. Fuse Rating) |      |
|------------------|-------------------------------------------------------------------|------|
|                  | 30A                                                               | 60A  |
| 5000             | 1000                                                              | 2000 |
| 10,000           | 2000                                                              | 3000 |
| 15,000           | 2000                                                              | 3000 |
| 20,000           | 2000                                                              | 4000 |
| 25,000           | 2000                                                              | 4000 |
| 30,000           | 2000                                                              | 4000 |
| 35,000           | 2000                                                              | 4000 |
| 40,000           | 2000                                                              | 5000 |
| 50,000           | 3000                                                              | 5000 |
| 60,000           | 3000                                                              | 5000 |
| 70,000           | 3000                                                              | 6000 |
| 80,000           | 3000                                                              | 6000 |
| 90,000           | 3000                                                              | 6000 |
| 100,000          | 3000                                                              | 6000 |
| 150,000          | 4000                                                              | 7000 |
| 200,000          | 4000                                                              | 8000 |

The only controlled copy of this Data Sheet is the electronic read-only version located on the Cooper Bussmann Network Drive. All other copies of this document are by definition uncontrolled. This bulletin is intended to clearly present comprehensive product data and provide technical information that will help the end user with design applications. Cooper Bussmann reserves the right, without notice, to change design or construction of any products and to discontinue or limit distribution of any products. Cooper Bussmann also reserves the right to change or update, without notice, any technical information contained in this bulletin. Once a product has been selected, it should be tested by the user in all possible applications.

## Данный компонент на территории Российской Федерации

**Вы можете приобрести в компании MosChip.**

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

### Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: [info@moschip.ru](mailto:info@moschip.ru)

Skype отдела продаж:

moschip.ru

moschip.ru\_4

moschip.ru\_6

moschip.ru\_9