

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



### Dimensions - in



**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-1 5/100 | 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-5/10    | 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          |

### 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

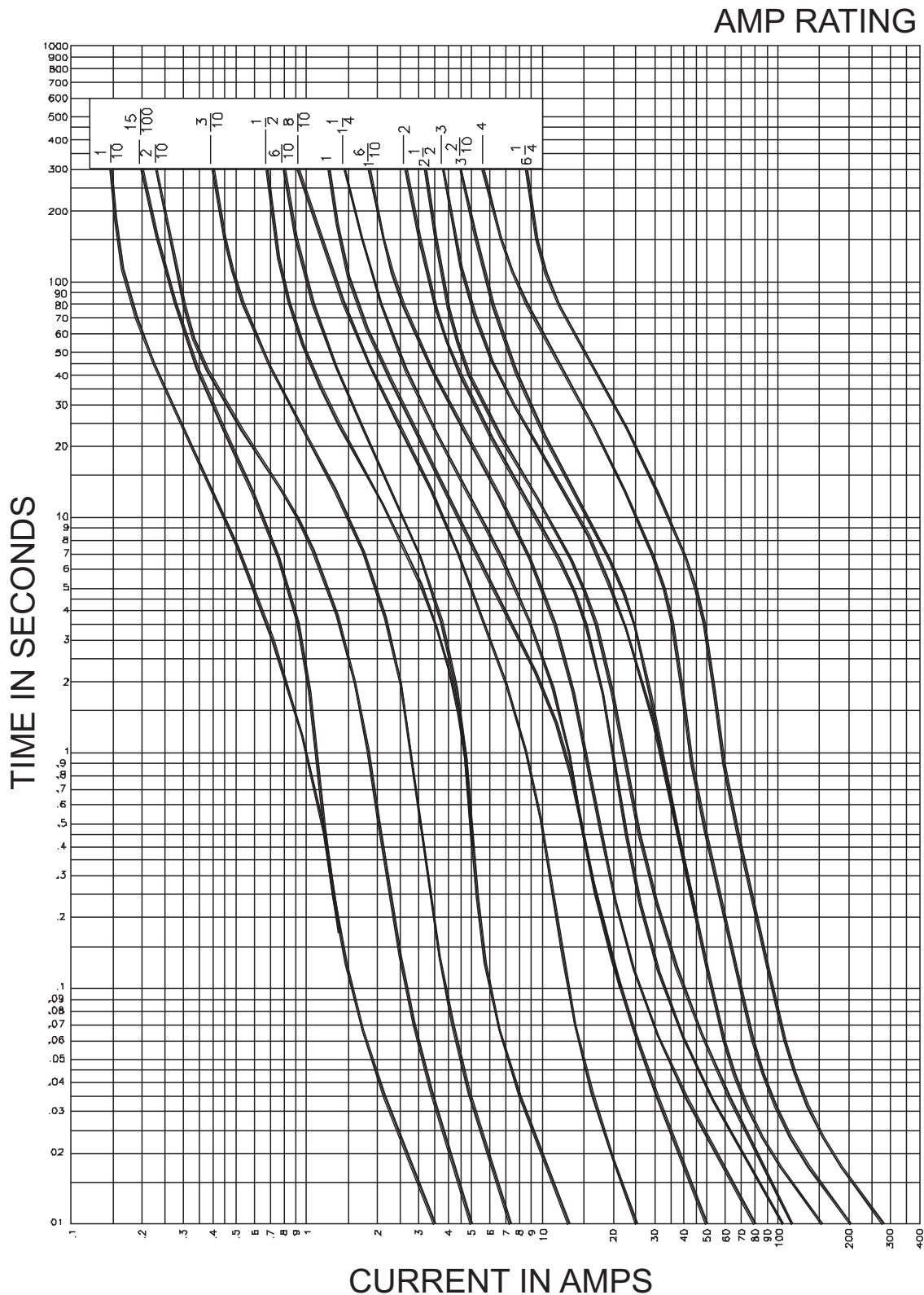
| Equipment | Desired Fuse (Case) Size | Catalog Numbers (Pairs) 250V |
|-----------|--------------------------|------------------------------|
| 60A       | 30A                      | NO.263-R                     |
| 100A      | 30A                      | NO.213-R                     |
|           |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

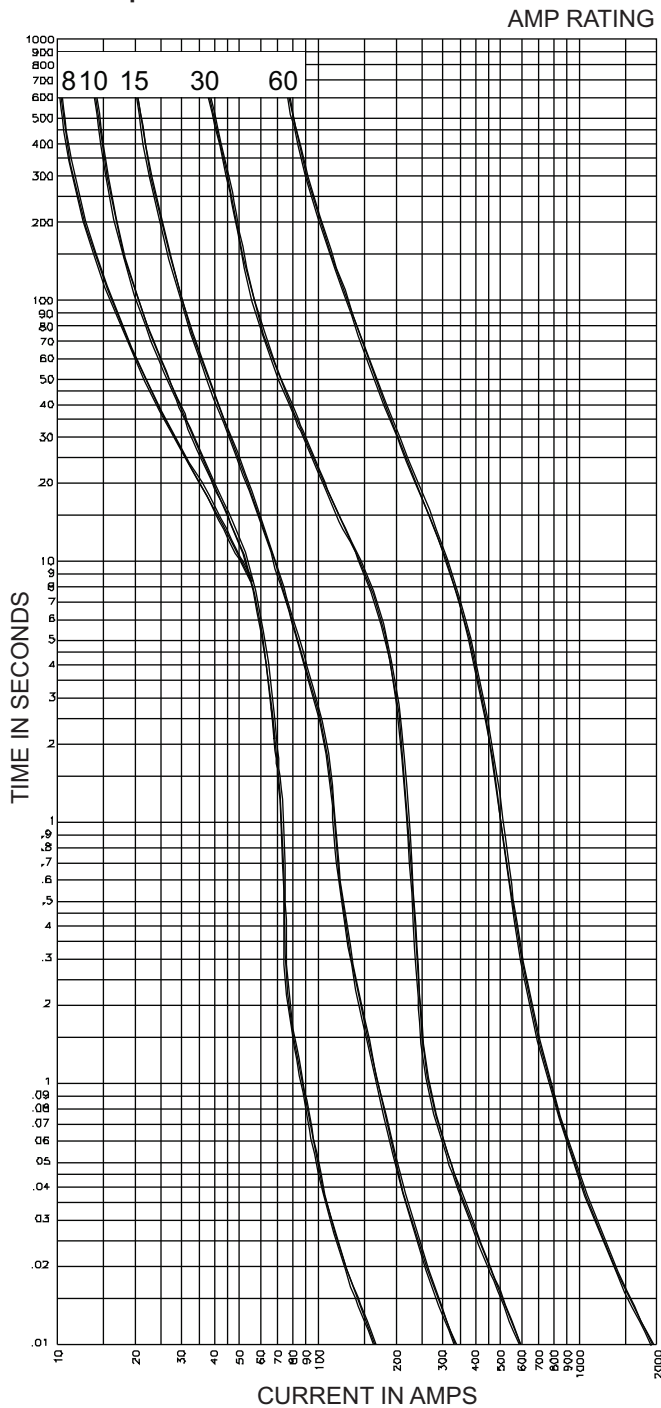
1/10 to 6 1/4 Amps



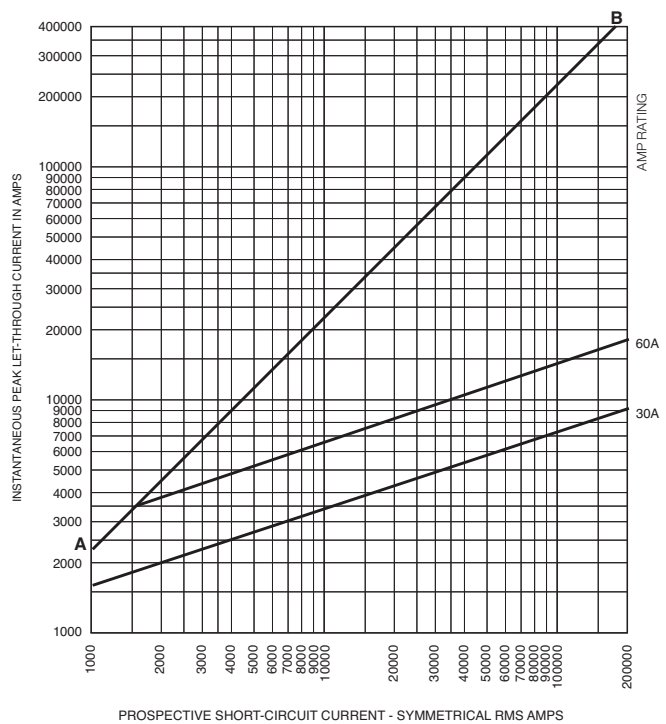
## FRN-R – 250Vac/125Vdc, 1/10-60A, Dual Element, Time-Delay Fuses

### Time-Current Curves - Average Melt

8 to 60 Amps



### Current-Limitation Curves



### Current-Limiting Effects

| Prop.<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.



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

**Телефон:** 8 (812) 309 58 32 (многоканальный)

**Факс:** 8 (812) 320-02-42

**Электронная почта:** [org@eplast1.ru](mailto:org@eplast1.ru)

**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.