

## FRS-R — 600Vac/300Vdc, 65-600A, Dual Element, Time-Delay Fuses



**Description:** Advanced protection, energy efficient Class RK5 dual element, current-limiting, time-delay fuses. Time-delay – 10 seconds (minimum) at 500% of rated current.

**Catalog Symbol:** FRS-R-(amp)

### Ratings:

Volts — 600Vac, 300Vdc  
 Amps — 65-600A  
 IR — 200kA Vac RMS Sym.  
 — 20kA Vdc

### Agency Information:

CE, UL Listed, Std. 248-12, Class RK5, Guide JDDZ, File E4273

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

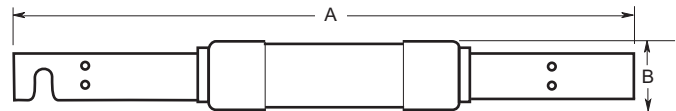
### Catalog Numbers (amps)

|           |           |           |
|-----------|-----------|-----------|
| FRS-R-65  | FRS-R-125 | FRS-R-350 |
| FRS-R-70  | FRS-R-150 | FRS-R-400 |
| FRS-R-75  | FRS-R-175 | FRS-R-450 |
| FRS-R-80  | FRS-R-200 | FRS-R-500 |
| FRS-R-90  | FRS-R-225 | FRS-R-600 |
| FRS-R-100 | FRS-R-250 |           |
| FRS-R-110 | FRS-R-300 |           |

### Carton Quantity and Weight

| Amp Rating | Carton Qty. |
|------------|-------------|
| 65-100     | 1           |
| 101-200    | 1           |
| 201-400    | 1           |
| 401-600    | 1           |

### Dimensions - in



| Amp Ratings | A               | B             |
|-------------|-----------------|---------------|
| 65-100      | 7.88 (± 0.062)  | 1.11 (± 0.02) |
| 110-200     | 9.63 (± 0.062)  | 1.61 (± 0.02) |
| 225-400     | 11.63 (± 0.094) | 2.34 (± 0.02) |
| 450-600     | 13.38 (± 0.094) | 2.88 (± 0.02) |

### Features:

- Provides motor overload, ground fault and short-circuit protection. When used in circuits subject to surge currents such as those caused by motors, transformers and other inductive components, these fuses can be sized close to full-load amps to give maximum overcurrent protection.
- The time-delay feature makes it possible to use fuse amp ratings which are much smaller than those of non-time delay fuses. Considerable cost saving occurs by permitting the use of smaller size switches, panels and fuses themselves.
- Provides a good degree of short-circuit protection (greater current-limitation) to help protect downstream components from high fault currents.
- Gives motor running back-up protection to motors without extra cost.
- Helps protect motors against burnout from overloads and single-phasing when sized properly.
- Simplifies and improves blackout prevention (selective coordination ratios).
- 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.

### Recommended Fuse Blocks

| Fuse Amps | 1-Pole      | 2-Pole      | 3-Pole      |
|-----------|-------------|-------------|-------------|
| 70-100    | RM60100-1CR | RM60100-2CR | RM60100-3CR |
| 110-200   | RM60200-1CR | RM60200-2CR | RM60200-3CR |
| 225-400   | RM60400-1CR | RM60400-2CR | RM60400-3CR |
| 450-600   | RM60600-1CR | RM60600-2CR | RM60100-3CR |

For additional information on the RM Series of 600 volt fuse blocks, see product brochure # 3192.

### Fuse Reducers For Class R Fuses

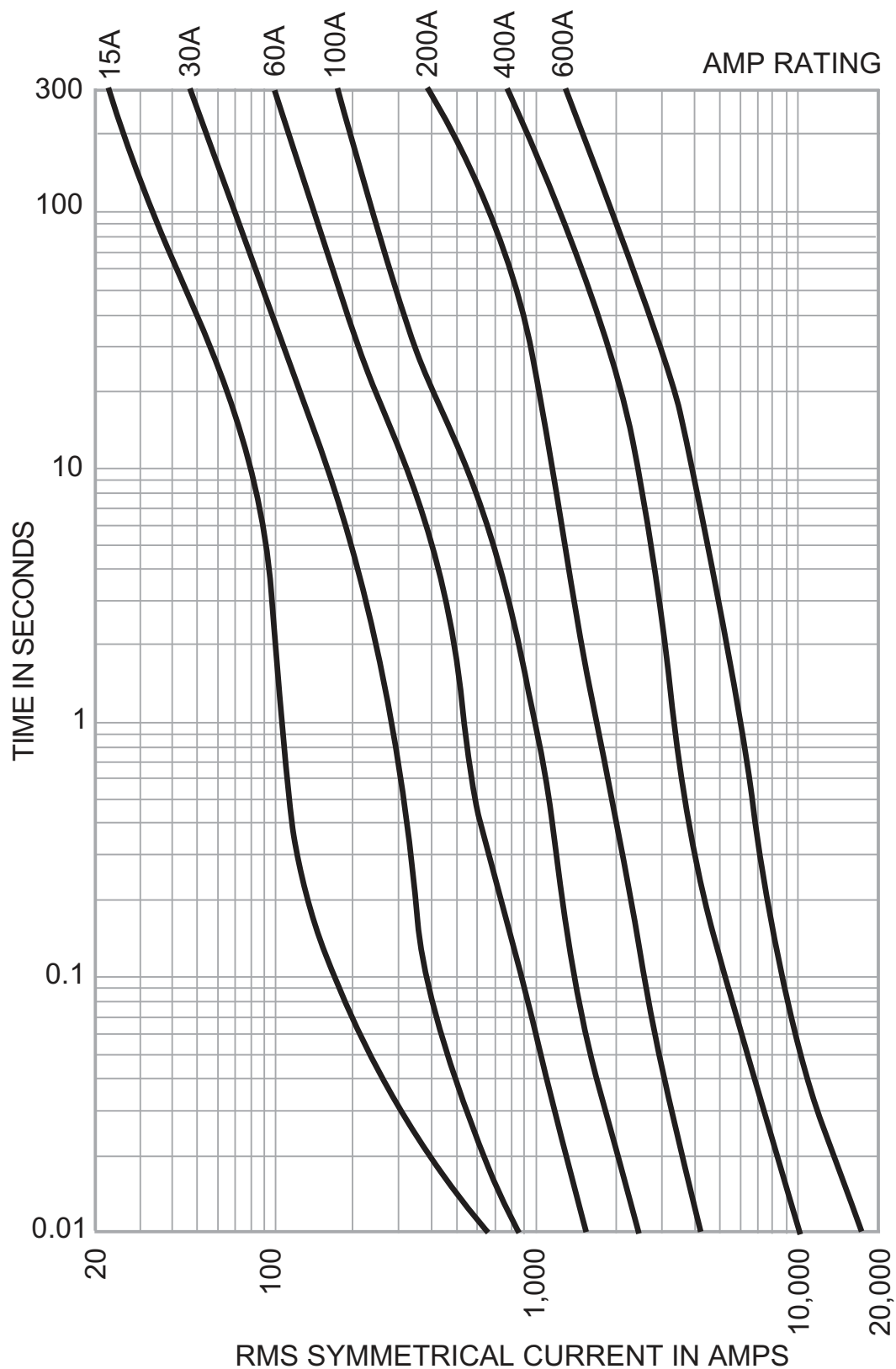
| Equipment Fuse Clips | Desired Fuse (Case) Size | Catalog Numbers (Pairs) 600V |
|----------------------|--------------------------|------------------------------|
| 200A                 | 100A                     | NO.2621-R                    |
| 400A                 | 100A                     | NO.2641-R                    |
|                      | 200A                     | NO.642-R                     |
|                      | 100A                     | NO.2661-R                    |
| 600A                 | 200A                     | NO.2662-R                    |
|                      | 400A                     | NO.2664-R†                   |

† Single reducer only (pair not required).

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

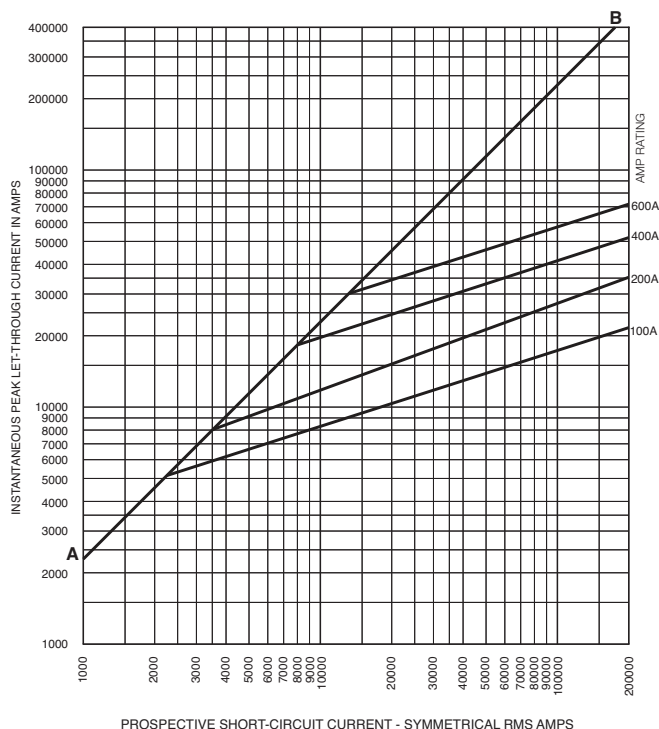
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Time-Current Curves - Average Melt



## FRS-R — 600Vac/300Vdc, 65-600A, Dual Element, Time-Delay Fuses

### Current-Limitation Curves



### Current-Limiting Effects

| Prosp.<br>S.C.C. | Let-Through Current<br>(Apparent RMS Symmetrical Vs. Fuse Rating) |        |        |        |
|------------------|-------------------------------------------------------------------|--------|--------|--------|
|                  | 100A                                                              | 200A   | 400A   | 600A   |
| 5000             | 3000                                                              | 4000   | 5000   | 5000   |
| 10,000           | 4000                                                              | 5000   | 9000   | 10,000 |
| 15,000           | 4000                                                              | 6000   | 10,000 | 14,000 |
| 20,000           | 5000                                                              | 7000   | 11,000 | 15,000 |
| 25,000           | 5000                                                              | 7000   | 12,000 | 17,000 |
| 30,000           | 5000                                                              | 8000   | 13,000 | 18,000 |
| 35,000           | 5000                                                              | 8000   | 13,000 | 18,000 |
| 40,000           | 6000                                                              | 9000   | 14,000 | 19,000 |
| 50,000           | 6000                                                              | 9000   | 14,000 | 20,000 |
| 60,000           | 6000                                                              | 10,000 | 15,000 | 22,000 |
| 70,000           | 7000                                                              | 11,000 | 17,000 | 23,000 |
| 80,000           | 7000                                                              | 12,000 | 17,000 | 23,000 |
| 90,000           | 7000                                                              | 12,000 | 17,000 | 24,000 |
| 100,000          | 8000                                                              | 13,000 | 18,000 | 25,000 |
| 150,000          | 9000                                                              | 14,000 | 21,000 | 27,000 |
| 200,000          | 9000                                                              | 16,000 | 23,000 | 32,000 |

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Тел: +7 (812) 336 43 04 (многоканальный)

Email: [org@lifeelectronics.ru](mailto:org@lifeelectronics.ru)

[www.lifeelectronics.ru](http://www.lifeelectronics.ru)