

# Fusetron™ 600 V Class RK5 FRS-R — 600 Vac/300 Vdc, 1/10-60 A, dual element, time-delay fuses



## Catalog symbols:

- FRS-R-(amp) (non-indicating)
- FRS-R-(amp)ID (indicating)

## 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 second (minimum) at 500% of rated current.

## Specifications:

### Ratings

- Volts
  - 600 Vac, 300 Vdc (1/10-30 A)
  - 600 Vac, 250 Vdc\* (35-60 A)
- Amps — 1/10-60 A
- Interrupting rating
  - 200 kA Vac RMS Sym
  - 20 kA Vdc

\* Indicating versions not Vdc rated.

### Agency Information

- UL® Listed, Std. 248-12, Class RK5, Guide JDDZ, File E4273
- CSA® Certified, C22.2 No. 248.12, Class 1422-02, File 53787
- CE

### Catalog numbers (amps)

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

\* Open fuse indication available by inserting the suffix "ID." E.g., FRS-R-15ID. 35 to 60 amp indicating fuses are not Vdc rated.

### Carton quantity

- 10

### Features and benefits

- Dual-element feature provides the best time-delay performance, allowing closer sizing and superior protection of motors and transformers
- Closer sizing allows for smaller fuses and less costly switches
- Class RK5 fuses with a 200 kA interrupting rating for use in a broad range of applications
- Provides motor overload, ground fault, and short-circuit protection
- Helps protect motors against burnout from overloads and single-phasing when sized properly
- 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
- Offers a 10-second time delay at 5 times the rated current
- The time-delay feature makes it possible to use fuse amp ratings that are much smaller than those of non-time delay fuses. Considerable cost savings occur by permitting the use of smaller size switches, panels, and fuses themselves.
- Provides current limitation to help protect downstream components from high fault currents.
- Gives motor running back-up protection to motors without extra costs.

Recommended fuse blocks

| Amps | Catalog no. |            |            |
|------|-------------|------------|------------|
|      | 1-Pole      | 2-Pole     | 3-Pole     |
| 30   | RM60030-1_  | RM60030-2_ | RM60030-3_ |
| 60   | RM60060-1_  | RM60060-2_ | RM60060-3_ |

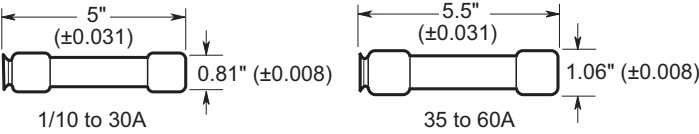
For additional information on the 600 volt fuse blocks, see data sheet no. 10489.

Fuse reducers for Class R fuses

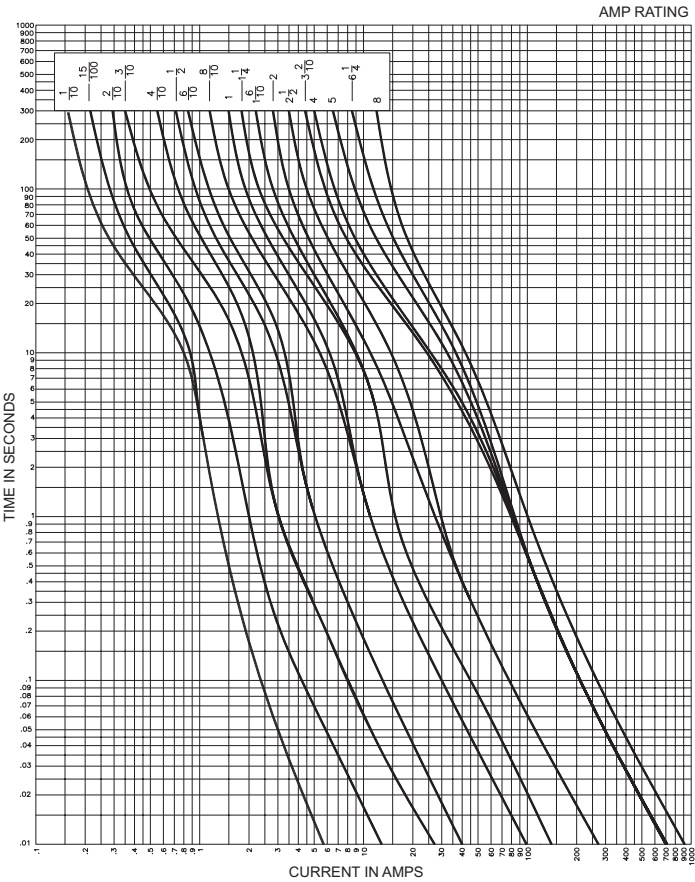
| Equipment fuse clips | Desired fuse (case) size | Catalog no. (pairs) 600 V |
|----------------------|--------------------------|---------------------------|
| 60 A                 | 30 A                     | NO.663-R                  |
| 100 A                | 30 A                     | NO.216-R                  |
|                      | 60 A                     | NO.616-R                  |
| 200 A                | 60 A                     | NO.626-R                  |

For additional information on Class R fuse reducers, see data sheet no. 1118.

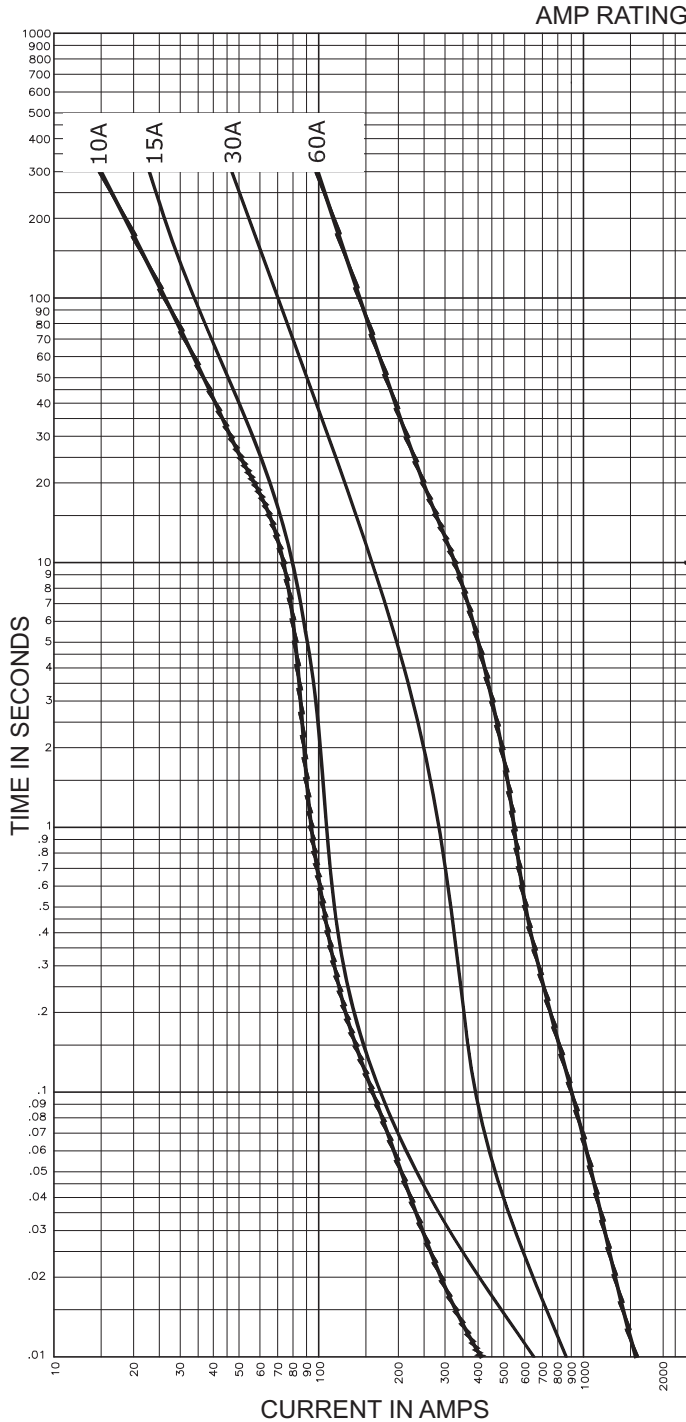
Dimensions — in



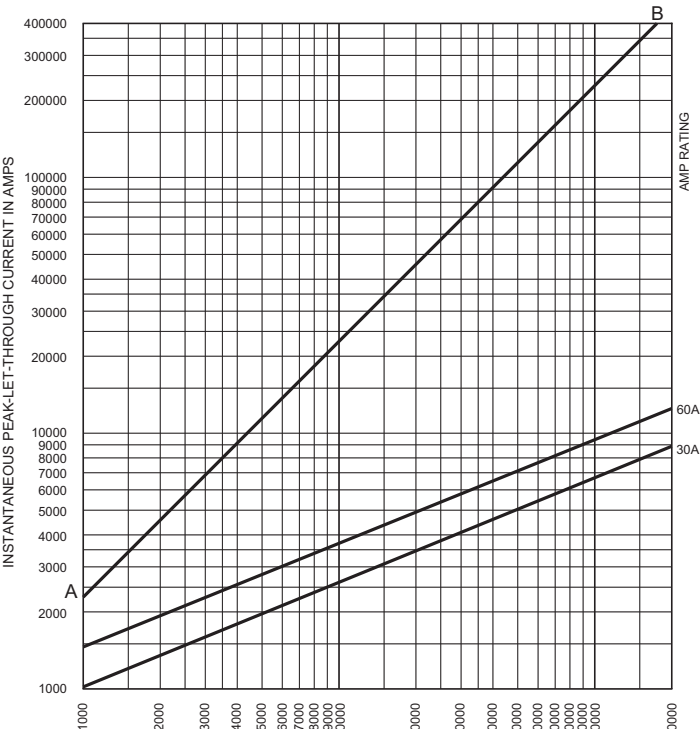
Time-current curves - average melt  
1/10 to 8 amps



**Time-current curves - average melt**  
**10 to 60 amps**



**Current-limitation curves**



**Current-limiting effects**

| Prosop. S.C.C. | Let-through current<br>(apparent RMS symmetrical vs. fuse rating) |      |
|----------------|-------------------------------------------------------------------|------|
|                | 30 A                                                              | 60 A |
| —              |                                                                   |      |
| 5000           | 1000                                                              | 1000 |
| 10,000         | 1000                                                              | 2000 |
| 15,000         | 1000                                                              | 2000 |
| 20,000         | 2000                                                              | 2000 |
| 25,000         | 2000                                                              | 2000 |
| 30,000         | 2000                                                              | 3000 |
| 35,000         | 2000                                                              | 3000 |
| 40,000         | 2000                                                              | 3000 |
| 50,000         | 2000                                                              | 3000 |
| 60,000         | 2000                                                              | 3000 |
| 70,000         | 3000                                                              | 4000 |
| 80,000         | 3000                                                              | 4000 |
| 90,000         | 3000                                                              | 4000 |
| 100,000        | 3000                                                              | 4000 |
| 150,000        | 3000                                                              | 5000 |
| 200,000        | 4000                                                              | 6000 |

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