

# 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_

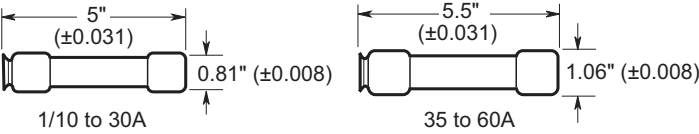
For additional information on the 600 volt fuse blocks, see data sheet no. 10489.

Fuse reducers for Class R fuses

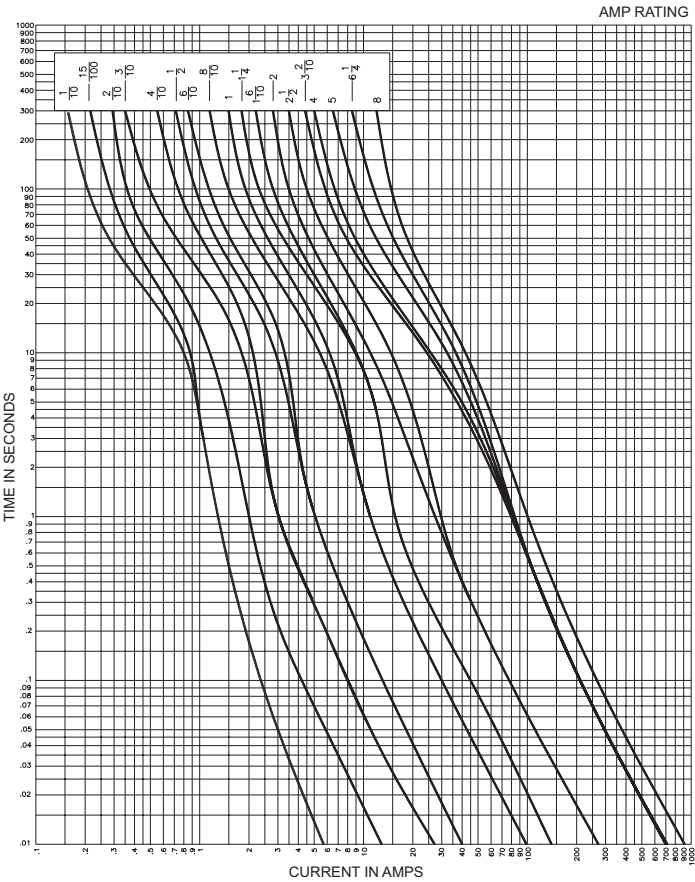
Equipment fuse clips	Desired fuse (case) size	Catalog no. (pairs) 600 V
60 A	30 A	NO.663-R
100 A	30 A	NO.216-R
	60 A	NO.616-R
200 A	60 A	NO.626-R

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

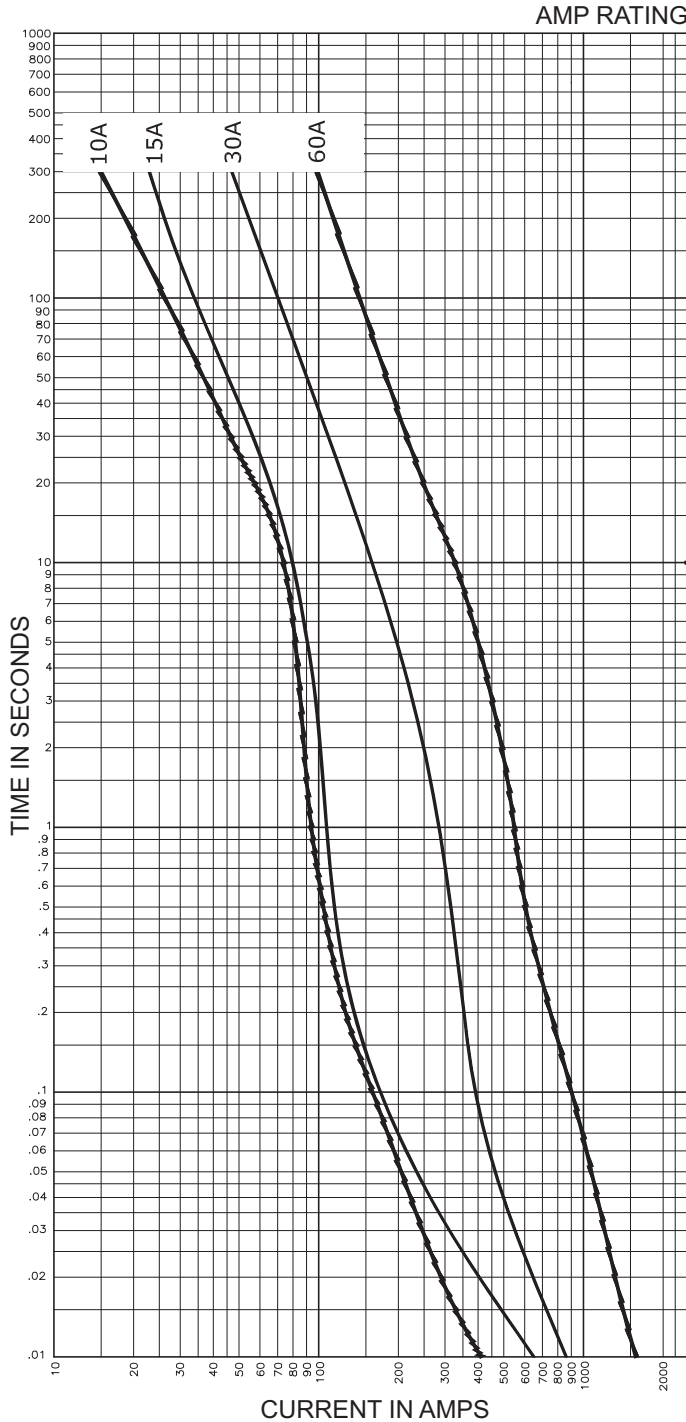
Dimensions — in



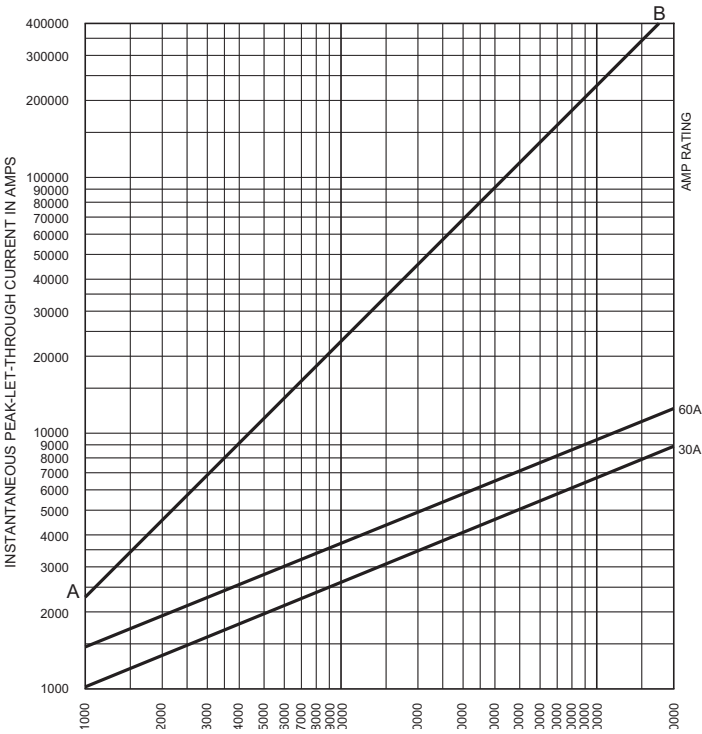
Time-current curves - average melt  
1/10 to 8 amps



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



**Current-limitation curves**



**Current-limiting effects**

Prosop. S.C.C.	Let-through current (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

The only controlled copy of this data sheet is the electronic read-only version located on the Eaton 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. Eaton reserves the right, without notice, to change design or construction of any products and to discontinue or limit distribution of any products. Eaton 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.

**Eaton**  
1000 Eaton Boulevard  
Cleveland, OH 44122  
Eaton.com

Bussmann Division  
114 Old State Road  
Ellisville, MO 63021  
United States  
Eaton.com/bussmannseries

© 2018 Eaton  
All Rights Reserved  
Printed in USA  
Publication No. 1017 — BU-MC16054  
August 2018

Eaton, Bussmann and Fusetron are valuable trademarks of Eaton in the U.S. and other countries. You are not permitted to use the Eaton trademarks without prior written consent of Eaton.

CSA is a registered trademark of the Canadian Standards Group.  
UL is a registered trademark of the Underwriters Laboratories, Inc.

For Eaton's Bussmann series  
product information,  
call **1-855-287-7626** or visit:  
**Eaton.com/bussmannseries**



Follow us on social media to get the latest product and support information.



# 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_

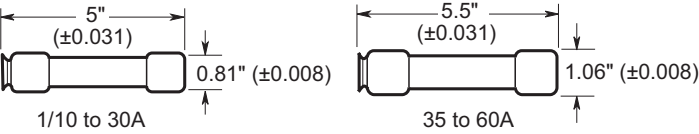
For additional information on the 600 volt fuse blocks, see data sheet no. 10489.

Fuse reducers for Class R fuses

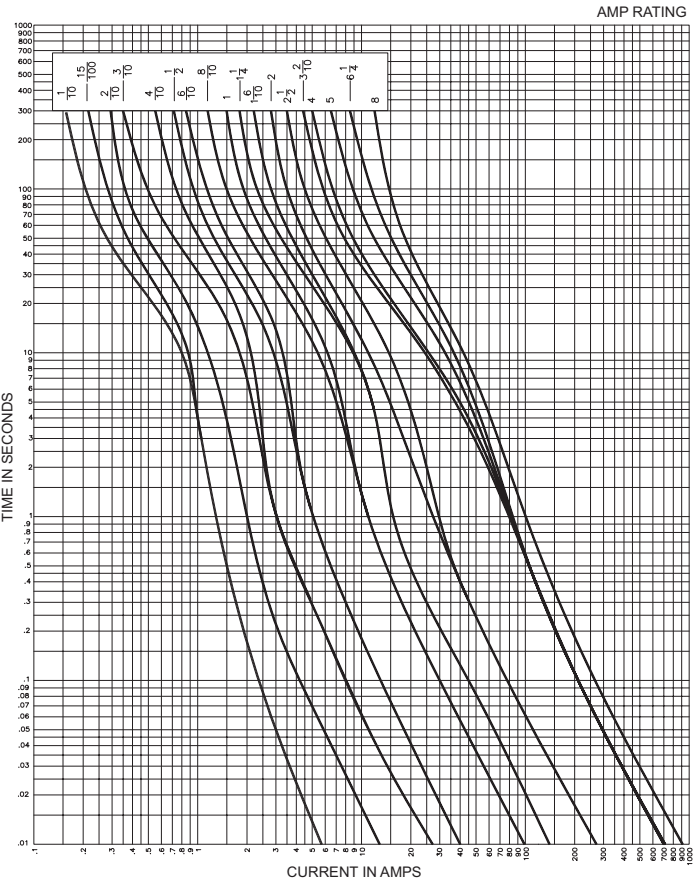
Equipment fuse clips	Desired fuse (case) size	Catalog no. (pairs) 600 V
60 A	30 A	NO.663-R
100 A	30 A	NO.216-R
	60 A	NO.616-R
200 A	60 A	NO.626-R

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

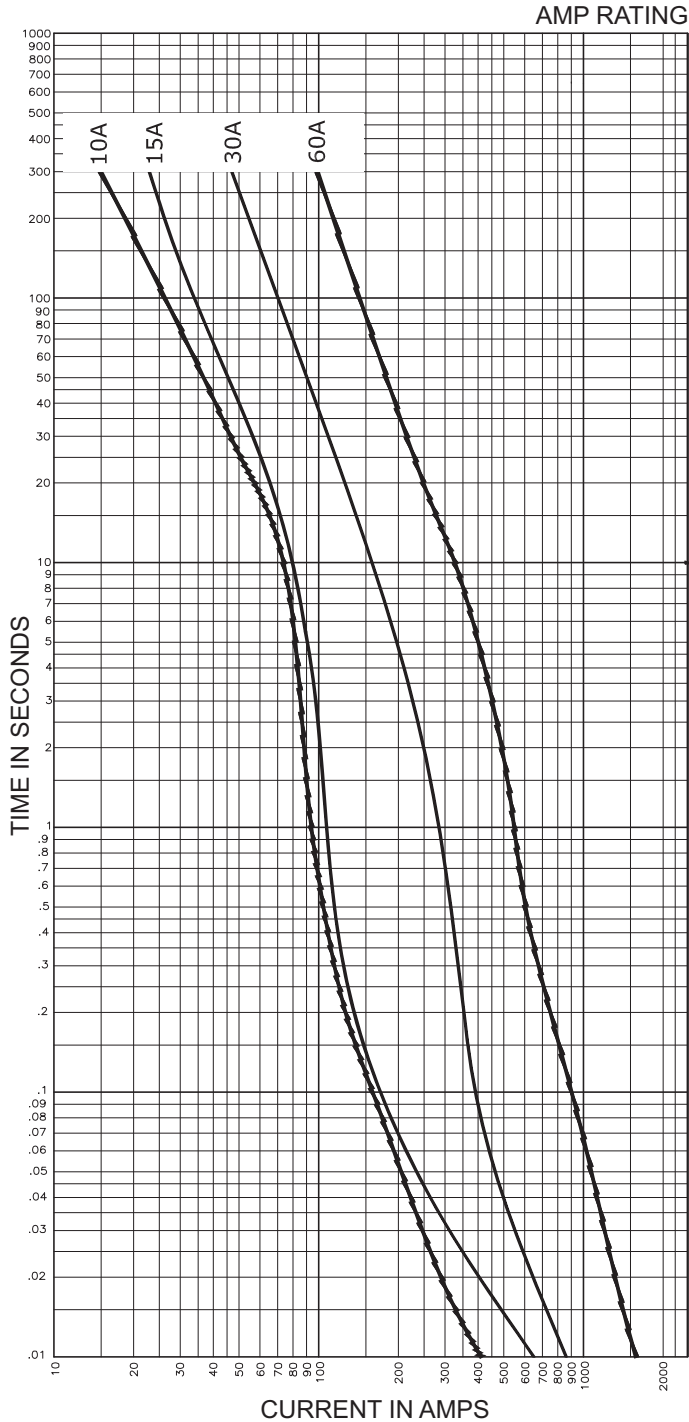
Dimensions — in



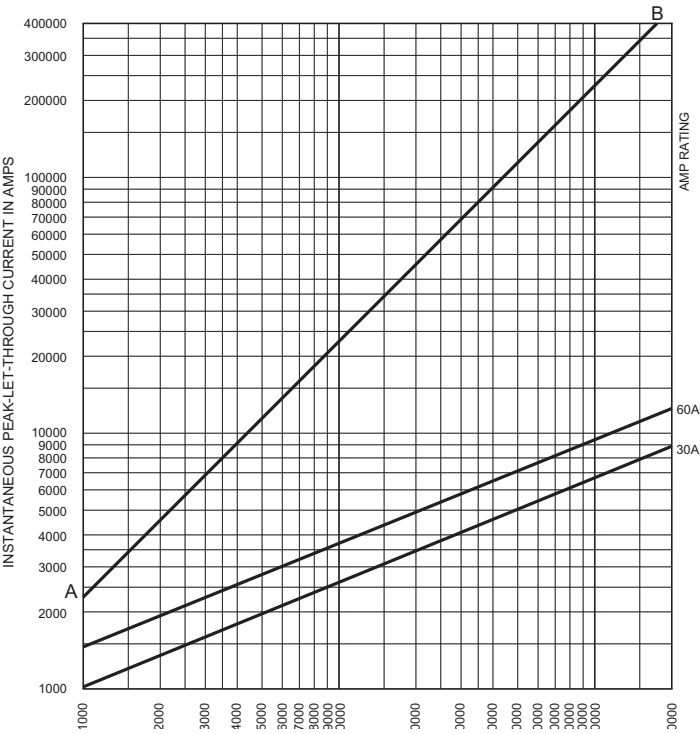
Time-current curves - average melt  
1/10 to 8 amps



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



**Current-limitation curves**



**Current-limiting effects**

Prosop. S.C.C.	Let-through current (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

The only controlled copy of this data sheet is the electronic read-only version located on the Eaton 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. Eaton reserves the right, without notice, to change design or construction of any products and to discontinue or limit distribution of any products. Eaton 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.

**Eaton**  
1000 Eaton Boulevard  
Cleveland, OH 44122  
Eaton.com

Bussmann Division  
114 Old State Road  
Ellisville, MO 63021  
United States  
Eaton.com/bussmannseries

© 2018 Eaton  
All Rights Reserved  
Printed in USA  
Publication No. 1017 — BU-MC16054  
August 2018

Eaton, Bussmann and Fusetron are valuable trademarks of Eaton in the U.S. and other countries. You are not permitted to use the Eaton trademarks without prior written consent of Eaton.

CSA is a registered trademark of the Canadian Standards Group.  
UL is a registered trademark of the Underwriters Laboratories, Inc.

For Eaton's Bussmann series  
product information,  
call **1-855-287-7626** or visit:  
**Eaton.com/bussmannseries**

Follow us on social media to get the  
latest product and support information.

