



**Catalog Number ECNR (1 - 600A) 250Vac or Less  
Catalog Number ECSR (1 - 600A) 600Vac or Less**

| Amp Ratings |      |    |     |     |     |
|-------------|------|----|-----|-----|-----|
| ECNR        |      |    |     |     |     |
| 1           | 8    | 25 | 70  | 150 | 400 |
| 2           | 9    | 30 | 75  | 175 | 450 |
| 3           | 10   | 35 | 80  | 200 | 500 |
| 4           | 12   | 40 | 90  | 225 | 600 |
| 5           | 15   | 45 | 100 | 250 | —   |
| 6           | 17.5 | 50 | 110 | 300 | —   |
| 7           | 20   | 60 | 125 | 350 | —   |
| ECSR        |      |    |     |     |     |
| 1           | 8    | 25 | 70  | 150 | 400 |
| 2           | 9    | 30 | 75  | 175 | 450 |
| 3           | 10   | 35 | 80  | 200 | 500 |
| 4           | 12   | 40 | 90  | 225 | 600 |
| 5           | 15   | 45 | 100 | 250 | —   |
| 6           | 17.5 | 50 | 110 | 300 | —   |
| 7           | 20   | 60 | 125 | 350 | —   |

**ECNR/ECSR Specifications**

Dual-Element Time-Delay

**Voltage Rating:** ECNR - 250Vac  
 ECNR - (1-60A, 110-200A) 125Vdc;  
 (225-600A) 250Vdc  
 ECSR - 600Vac  
 ECSR - (1-30A, 70-600A) 300Vdc  
 (35-60A) 250Vdc

**Amp Rating:** 1 - 600A

**Interrupting Rating:** 200kA RMS Symmetrical Amps

**Current Limiting:** RK5 Fuse

**Agency Information:**

UL Listed for US and Canada, Class RK5, Guide JDDZ, File E162363

**Interrupting Rating:** ECNR/ECSR 20kA DC

**Benefits:**

- True dual-element construction allows sizing of 125% FLA for motor backup protection.
- Superior overload and cycling capabilities.
- Current limiting provides component short-circuit protection.

**Applications:**

- Recommended for AC power distribution system mains, feeders, and branch circuits.
- Protection of motors and motor branch circuits.
- Protection of transformers and other inductive loads.
- All general-purpose applications including lighting, heating and other non-inductive loads.

**Recommended Fuse Blocks:**

Refer to pages 146 in this catalog.

**Recommended Upgrade:**

Class RK1 (LENRK/LESRK) for greater degree of short-circuit protection.

| CROSS REFERENCE |        |        |            |
|-----------------|--------|--------|------------|
| VOLTS           | EDISON | MERSEN | LITTELFUSE |
| 250             | ECNR   | TR     | FLNR       |
| 600             | ECSR   | TRS    | FLSR       |

**ECNR/ECSR Dual Element Fuses**

These fuses are recommended for AC power distribution system mains, feeders and branch circuits having inductive loads (motors, transformers) or non-inductive loads (lighting, heating) where the available short-circuit current does not exceed 200,000 RMS symmetrical amps. These “dual-element, time-delay” fuses have minimum industry standard time-delay of 10 seconds at 5 times the fuse rating (8 sec. minimum for 250V, 30A and less). The time-delay

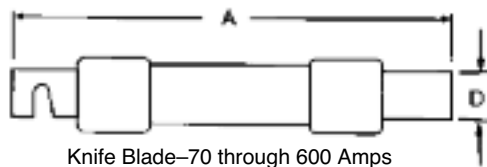
characteristics of these fuses typically allows them to be sized closer to the running ampacity of inductive loads to reduce cost and provide improved overcurrent protection. These fuses will override normal equipment current surges to reduce unnecessary fuse openings. They are the most popular fuses used in the industry and the most economical for most applications, especially motors and transformers. They have moderate current limitation.

Class R fuses will fit Class H, K and R fuse clips. Class R fuse clips will only accept Class R fuses. Fuses rated 600Vac or less may be applied at any lower voltage.

**Dimensions**



Ferrule Design—0 through 60 Amps



Knife Blade—70 through 600 Amps



| Catalog Number | Amps    | Overall Length - in | Max Diameter - in |
|----------------|---------|---------------------|-------------------|
|                |         | A                   | B                 |
| ECNR           | 0-30    | 2                   | 0.56              |
|                | 35-60   | 3                   | 0.81              |
|                | 70-100  | 5.88                | 1.06              |
|                | 110-200 | 7.13                | 1.56              |
|                | 225-400 | 8.63                | 2.38              |
|                | 450-600 | 10.38               | 2.88              |
| ECSR           | 0-30    | 5                   | 0.81              |
|                | 35-60   | 5.5                 | 1.06              |
|                | 65-100  | 7.88                | 1.11              |
|                | 110-200 | 9.63                | 1.61              |
|                | 225-400 | 11.63               | 2.34              |
|                | 450-600 | 13.38               | 2.88              |

### Average Melt Time-Current Curves Cat No. ECNR (Amp)



UL/GSA Fuses  
Current Limiting

UL/GSA Fuses  
General Purpose

Special  
Purpose Fuses

Canadian  
Fuses & Holders

Medium  
Voltage Fuses

Fuse Blocks,  
Holders & Misc.

Surge Protective  
Devices

Application  
Section

Average Melt Time-Current Curves  
Cat No. ECSR (Amp)



### Peak Let-Through Current Curves

#### ECNR



#### ECSR



### Current Limitation Tables

#### ECNR\*

| Available Fault Current<br>RMS Amps | Apparent Effective Let-Through Amps |       |       |        |        |        |
|-------------------------------------|-------------------------------------|-------|-------|--------|--------|--------|
|                                     | Fuse Amp Ratings                    |       |       |        |        |        |
|                                     | 30A                                 | 60A   | 100A  | 200A   | 400A   | 600A   |
| 5,000                               | 1,050                               | 2,070 | 2,820 | 4,300  | 5,000  | 5,000  |
| 10,000                              | 1,310                               | 2,570 | 3,630 | 5,400  | 8,700  | 10,000 |
| 15,000                              | 1,490                               | 2,920 | 4,140 | 6,200  | 9,900  | 15,000 |
| 20,000                              | 1,630                               | 3,200 | 4,500 | 6,800  | 10,700 | 16,100 |
| 25,000                              | 1,720                               | 3,420 | 4,800 | 7,200  | 11,400 | 17,200 |
| 30,000                              | 1,840                               | 3,630 | 5,100 | 7,700  | 12,100 | 18,300 |
| 35,000                              | 1,920                               | 3,810 | 5,400 | 8,100  | 12,600 | 19,200 |
| 40,000                              | 2,000                               | 3,980 | 5,600 | 8,500  | 13,100 | 19,900 |
| 50,000                              | 2,140                               | 4,200 | 6,000 | 9,100  | 14,000 | 21,400 |
| 60,000                              | 2,260                               | 4,500 | 6,400 | 9,600  | 14,900 | 22,600 |
| 80,000                              | 2,450                               | 4,900 | 7,000 | 10,600 | 16,000 | 24,600 |
| 100,000                             | 2,620                               | 5,200 | 7,500 | 11,400 | 17,100 | 26,200 |
| 150,000                             | 2,920                               | 5,800 | 8,300 | 13,000 | 19,200 | 29,200 |
| 200,000                             | 3,140                               | 6,200 | 8,900 | 14,300 | 20,800 | 31,700 |

#### ECSR\*

| Available Fault Current<br>RMS Amps | Apparent Effective Let-Through Amps |       |        |        |        |        |
|-------------------------------------|-------------------------------------|-------|--------|--------|--------|--------|
|                                     | Fuse Amp Ratings                    |       |        |        |        |        |
|                                     | 30A                                 | 60A   | 100A   | 200A   | 400A   | 600A   |
| 5,000                               | 1,290                               | 2,070 | 2,980  | 5,000  | 5,000  | 5,000  |
| 10,000                              | 1,640                               | 2,590 | 3,810  | 6,500  | 8,800  | 10,000 |
| 15,000                              | 1,890                               | 2,940 | 4,400  | 7,500  | 10,200 | 15,000 |
| 20,000                              | 2,110                               | 3,250 | 4,800  | 8,300  | 11,400 | 18,200 |
| 25,000                              | 2,260                               | 3,470 | 5,200  | 8,900  | 12,400 | 19,600 |
| 30,000                              | 2,420                               | 3,660 | 5,500  | 9,600  | 13,200 | 21,100 |
| 35,000                              | 2,570                               | 3,850 | 5,800  | 10,100 | 14,100 | 22,400 |
| 40,000                              | 2,670                               | 4,030 | 6,000  | 10,500 | 14,700 | 23,400 |
| 50,000                              | 2,890                               | 4,300 | 6,500  | 11,400 | 16,000 | 25,300 |
| 60,000                              | 3,060                               | 4,500 | 6,900  | 12,100 | 17,200 | 27,000 |
| 80,000                              | 3,360                               | 4,900 | 7,600  | 13,400 | 19,100 | 29,500 |
| 100,000                             | 3,630                               | 5,200 | 8,200  | 14,400 | 20,700 | 31,700 |
| 150,000                             | 4,100                               | 5,800 | 9,300  | 16,500 | 23,900 | 36,300 |
| 200,000                             | 4,400                               | 6,100 | 10,400 | 18,300 | 26,700 | 39,500 |

\*"Apparent Let-Through Amps" values are read from "Peak Let-Through Current Curves" and the peak current value divided by 2.3 Asymmetry Factor.



**Catalog Number ECNR (1 - 600A) 250Vac or Less**  
**Catalog Number ECSR (1 - 600A) 600Vac or Less**

| Amp Ratings |      |    |     |     |     |
|-------------|------|----|-----|-----|-----|
| ECNR        |      |    |     |     |     |
| 1           | 8    | 25 | 70  | 150 | 400 |
| 2           | 9    | 30 | 75  | 175 | 450 |
| 3           | 10   | 35 | 80  | 200 | 500 |
| 4           | 12   | 40 | 90  | 225 | 600 |
| 5           | 15   | 45 | 100 | 250 | —   |
| 6           | 17.5 | 50 | 110 | 300 | —   |
| 7           | 20   | 60 | 125 | 350 | —   |
| ECSR        |      |    |     |     |     |
| 1           | 8    | 25 | 70  | 150 | 400 |
| 2           | 9    | 30 | 75  | 175 | 450 |
| 3           | 10   | 35 | 80  | 200 | 500 |
| 4           | 12   | 40 | 90  | 225 | 600 |
| 5           | 15   | 45 | 100 | 250 | —   |
| 6           | 17.5 | 50 | 110 | 300 | —   |
| 7           | 20   | 60 | 125 | 350 | —   |

**ECNR/ECSR Specifications**

Dual-Element Time-Delay

**Voltage Rating:** ECNR - 250Vac  
 ECNR - (1-60A, 110-200A) 125Vdc;  
 (225-600A) 250Vdc  
 ECSR - 600Vac  
 ECSR - (1-30A, 70-600A) 300Vdc  
 (35-60A) 250Vdc

**Amp Rating:** 1 - 600A

**Interrupting Rating:** 200kA RMS Symmetrical Amps

**Current Limiting:** RK5 Fuse

**Agency Information:**

UL Listed for US and Canada, Class RK5, Guide JDDZ, File E162363

**Interrupting Rating:** ECNR/ECSR 20kA DC

**Benefits:**

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- Current limiting provides component short-circuit protection.

**Applications:**

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- Protection of motors and motor branch circuits.
- Protection of transformers and other inductive loads.
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**Recommended Fuse Blocks:**

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**Recommended Upgrade:**

Class RK1 (LENRK/LESRK) for greater degree of short-circuit protection.

| CROSS REFERENCE |        |        |            |
|-----------------|--------|--------|------------|
| VOLTS           | EDISON | MERSEN | LITTELFUSE |
| 250             | ECNR   | TR     | FLNR       |
| 600             | ECSR   | TRS    | FLSR       |

**ECNR/ECSR Dual Element Fuses**

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characteristics of these fuses typically allows them to be sized closer to the running ampacity of inductive loads to reduce cost and provide improved overcurrent protection. These fuses will override normal equipment current surges to reduce unnecessary fuse openings. They are the most popular fuses used in the industry and the most economical for most applications, especially motors and transformers. They have moderate current limitation.

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**Dimensions**



Ferrule Design—0 through 60 Amps



Knife Blade—70 through 600 Amps



| Catalog Number | Amps    | Overall Length - in | Max Diameter - in |
|----------------|---------|---------------------|-------------------|
|                |         | A                   | B                 |
| ECNR           | 0-30    | 2                   | 0.56              |
|                | 35-60   | 3                   | 0.81              |
|                | 70-100  | 5.88                | 1.06              |
|                | 110-200 | 7.13                | 1.56              |
|                | 225-400 | 8.63                | 2.38              |
|                | 450-600 | 10.38               | 2.88              |
| ECSR           | 0-30    | 5                   | 0.81              |
|                | 35-60   | 5.5                 | 1.06              |
|                | 65-100  | 7.88                | 1.11              |
|                | 110-200 | 9.63                | 1.61              |
|                | 225-400 | 11.63               | 2.34              |
|                | 450-600 | 13.38               | 2.88              |

### Average Melt Time-Current Curves Cat No. ECNR (Amp)



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Surge Protective  
Devices

Application  
Section



Average Melt Time-Current Curves  
Cat No. ECSR (Amp)



### Peak Let-Through Current Curves

#### ECNR



#### ECSR



### Current Limitation Tables

#### ECNR\*

| Available Fault Current<br>RMS Amperes | Apparent Effective Let-Through Amperes |       |       |        |        |        |
|--|--|-------|-------|--------|--------|--------|
|  | Fuse Amp Ratings                       |       |       |        |        |        |
|  | 30A                                    | 60A   | 100A  | 200A   | 400A   | 600A   |
| 5,000                                  | 1,050                                  | 2,070 | 2,820 | 4,300  | 5,000  | 5,000  |
| 10,000                                 | 1,310                                  | 2,570 | 3,630 | 5,400  | 8,700  | 10,000 |
| 15,000                                 | 1,490                                  | 2,920 | 4,140 | 6,200  | 9,900  | 15,000 |
| 20,000                                 | 1,630                                  | 3,200 | 4,500 | 6,800  | 10,700 | 16,100 |
| 25,000                                 | 1,720                                  | 3,420 | 4,800 | 7,200  | 11,400 | 17,200 |
| 30,000                                 | 1,840                                  | 3,630 | 5,100 | 7,700  | 12,100 | 18,300 |
| 35,000                                 | 1,920                                  | 3,810 | 5,400 | 8,100  | 12,600 | 19,200 |
| 40,000                                 | 2,000                                  | 3,980 | 5,600 | 8,500  | 13,100 | 19,900 |
| 50,000                                 | 2,140                                  | 4,200 | 6,000 | 9,100  | 14,000 | 21,400 |
| 60,000                                 | 2,260                                  | 4,500 | 6,400 | 9,600  | 14,900 | 22,600 |
| 80,000                                 | 2,450                                  | 4,900 | 7,000 | 10,600 | 16,000 | 24,600 |
| 100,000                                | 2,620                                  | 5,200 | 7,500 | 11,400 | 17,100 | 26,200 |
| 150,000                                | 2,920                                  | 5,800 | 8,300 | 13,000 | 19,200 | 29,200 |
| 200,000                                | 3,140                                  | 6,200 | 8,900 | 14,300 | 20,800 | 31,700 |

#### ECSR\*

| Available Fault Current<br>RMS Amperes | Apparent Effective Let-Through Amperes |       |        |        |        |        |
|--|--|-------|--------|--------|--------|--------|
|  | Fuse Amp Ratings                       |       |        |        |        |        |
|  | 30A                                    | 60A   | 100A   | 200A   | 400A   | 600A   |
| 5,000                                  | 1,290                                  | 2,070 | 2,980  | 5,000  | 5,000  | 5,000  |
| 10,000                                 | 1,640                                  | 2,590 | 3,810  | 6,500  | 8,800  | 10,000 |
| 15,000                                 | 1,890                                  | 2,940 | 4,400  | 7,500  | 10,200 | 15,000 |
| 20,000                                 | 2,110                                  | 3,250 | 4,800  | 8,300  | 11,400 | 18,200 |
| 25,000                                 | 2,260                                  | 3,470 | 5,200  | 8,900  | 12,400 | 19,600 |
| 30,000                                 | 2,420                                  | 3,660 | 5,500  | 9,600  | 13,200 | 21,100 |
| 35,000                                 | 2,570                                  | 3,850 | 5,800  | 10,100 | 14,100 | 22,400 |
| 40,000                                 | 2,670                                  | 4,030 | 6,000  | 10,500 | 14,700 | 23,400 |
| 50,000                                 | 2,890                                  | 4,300 | 6,500  | 11,400 | 16,000 | 25,300 |
| 60,000                                 | 3,060                                  | 4,500 | 6,900  | 12,100 | 17,200 | 27,000 |
| 80,000                                 | 3,360                                  | 4,900 | 7,600  | 13,400 | 19,100 | 29,500 |
| 100,000                                | 3,630                                  | 5,200 | 8,200  | 14,400 | 20,700 | 31,700 |
| 150,000                                | 4,100                                  | 5,800 | 9,300  | 16,500 | 23,900 | 36,300 |
| 200,000                                | 4,400                                  | 6,100 | 10,400 | 18,300 | 26,700 | 39,500 |

\*"Apparent Let-Through Amperes" values are read from "Peak Let-Through Current Curves" and the peak current value divided by 2.3 Asymmetry Factor.