

# Class CC/CD Fuses

## CCMR Series

**POWR-PRO**® 600 V ac • Dual Element • Time-Delay • 1/16"–60 A



### Description

The CCMR Series dual-element, time-delay fuses carry the Littelfuse POWR-PRO® advanced technology designation. These fuses are ideal for space-saving protection of motor circuits up to 40 hp\* and are specifically designed to withstand sustained starting currents of small motors. Their superior time-delay capability eliminates needless downtime caused by power surges or equipment demands. They provide Type 2 “No Damage” protection for both NEMA- and IEC-type motor circuit components. Rating for rating, CCMR Series fuses are the most current-limiting fuses available.

POWR-PRO performance brand products offer advanced technology protection features such as high-interrupt capabilities up to 300 kA, low energy losses, and superior current limitation. 300 kA short-circuit testing for POWR-PRO products is self-certified and conducted at a nationally recognized testing laboratory.

### Features & Benefits

| FEATURES                                   | BENEFITS   |
|--|--|
| <b>POWR-PRO® technology</b>                | Superior protection against electrical system damage   |
| <b>Dual-element, time-delay protection</b> | Provides reliable time-delay characteristics to avoid unwanted fuse opening from surge currents in small horsepower motors |
| <b>Extremely current-limiting</b>          | Reduces damage caused by heating and magnetic effects of short-circuit currents  |
| <b>Available up to 60 A</b>                | Smallest footprint 600 V UL listed branch circuit fuse   |
| <b>Type 2 “No Damage” protection</b>       | Easy to coordinate and offer protection for both NEMA- and IEC-type motor circuit components                               |

### Applications

- Motor and motor branch circuit protection
- Contactor protection
- Heating and general industrial protection

\*Consult Motor Protection Tables on [www.littelfuse.com](http://www.littelfuse.com) or call 800-TEC-FUSE for specific motor sizing information.

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### Specifications

|                             |   |
|-----------------------------|---|
| <b>Voltage Rating</b>       | Ac: 600 V<br>Dc: 250 V (CCMR 35–60 A)<br>300 V (CCMR 3/10–10 A)<br>500 V (CCMR 12–30 A)               |
| <b>Ampere Range</b>         | 3/10 – 60 A   |
| <b>Interrupting Ratings</b> | Ac: 200 kA rms symmetrical<br>300 kA Littelfuse self-certified<br>Dc: 20 kA Littelfuse self-certified |
| <b>Applicable Standards</b> | UL 248-4; Class CC (CCMR 3/10–30 A)<br>UL 248-18; Class CD (CCMR 35–60 A)                             |
| <b>Environmental</b>        | RoHS Compliant (CCMR 3/10–30 A)   |
| <b>Country of Origin</b>    | Mexico  |

### Certification & Compliance

|             |   |
|-------------|---|
| <b>UL</b>   | UL Listed (File: E81895)  |
| <b>CSA</b>  | CSA Certified (File: LR29862)                                   |
| <b>CE</b>   | Declaration of Conformity: CCMR_P_210701_1 (3/10–30A)           |
| <b>RoHS</b> | RoHS 2 Directive 2011/65/EU; Directive (EU) 2015/863 (3/10–30A) |

### Accessories

- LFC600 series fuse blocks (35–60 A Only)
- L60030C series fuse blocks (3/10–30 A Only)
- LPSC & LFPSC series dead-front fuse holders (3/10–30 A Only)
- 571 & 572 series panel-mount fuse holders (3/10–30 A Only)

### Ordering Information

| AMPERE | CATALOG NUMBER | PRODUCT MARKING | PACK QUANTITY | ORDERING NUMBER | UPC         | AGENCY APPROVALS |     |      |
|--------|----------------|-----------------|---------------|-----------------|-------------|------------------|-----|------|
|        |                |                 |               |                 |             | UL               | CSA | ROHS |
| 0.2    | CCMR.200       | CCMR 3/10 A     | 10            | CCMR.200TXP     | 07945896805 | •                | •   | •    |
|        |                |                 | 100           | CCMR.200HXP     | 07945896841 | •                | •   | •    |
| 0.25   | CCMR.250       | CCMR 1/4 A      | 10            | CCMR.250TXP     | 07945896806 | •                | •   | •    |
|        |                |                 | 100           | CCMR.250HXP     | 07945896842 | •                | •   | •    |
| 0.3    | CCMR.300       | CCMR 3/10 A     | 10            | CCMR.300TXP     | 07945896807 | •                | •   | •    |
|        |                |                 | 100           | CCMR.300HXP     | 07945896843 | •                | •   | •    |
| 0.5    | CCMR.500       | CCMR 1/2 A      | 10            | CCMR.500TXP     | 07945896808 | •                | •   | •    |
|        |                |                 | 100           | CCMR.500HXP     | 07945896844 | •                | •   | •    |
| 0.6    | CCMR.600       | CCMR 3/10 A     | 10            | CCMR.600TXP     | 07945896809 | •                | •   | •    |
|        |                |                 | 100           | CCMR.600HXP     | 07945896845 | •                | •   | •    |
| 0.8    | CCMR.800       | CCMR 3/10 A     | 10            | CCMR.800TXP     | 07945896810 | •                | •   | •    |
|        |                |                 | 100           | CCMR.800HXP     | 07945896846 | •                | •   | •    |
| 1      | CCMR001        | CCMR 1 A        | 10            | CCMR001.TXP     | 07945896811 | •                | •   | •    |
|        |                |                 | 100           | CCMR001.HXP     | 07945896847 | •                | •   | •    |
| 1.25   | CCMR1.25       | CCMR 1 1/4 A    | 10            | CCMR1.25TXP     | 07945896812 | •                | •   | •    |
|        |                |                 | 100           | CCMR1.25HXP     | 07945896848 | •                | •   | •    |
| 1.4    | CCMR01.4       | CCMR 1 3/10 A   | 10            | CCMR01.4TXP     | 07945896813 | •                | •   | •    |
|        |                |                 | 100           | CCMR01.4HXP     | 07945896849 | •                | •   | •    |

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|--------|----------------|-----------------|---------------|-----------------|-------------|------------------|-----|------|
|        |                |                 |               |                 |             | UL               | CSA | ROHS |
| 1.5    | CCMR01.5       | CCMR 1 1/2 A    | 10            | CCMR01.5TXP     | 07945896814 | •                | •   | •    |
|        |                |                 | 100           | CCMR01.5HXP     | 07945896850 | •                | •   | •    |
| 1.6    | CCMR01.6       | CCMR 1 5/10 A   | 10            | CCMR01.6TXP     | 07945896815 | •                | •   | •    |
|        |                |                 | 100           | CCMR01.6HXP     | 07945896851 | •                | •   | •    |
| 1.8    | CCMR01.8       | CCMR 1 5/10 A   | 10            | CCMR01.8TXP     | 07945896816 | •                | •   | •    |
|        |                |                 | 100           | CCMR01.8HXP     | 07945896852 | •                | •   | •    |
| 2      | CCMR002        | CCMR 2A         | 10            | CCMR002.TXP     | 07945896817 | •                | •   | •    |
|        |                |                 | 100           | CCMR002.HXP     | 07945896853 | •                | •   | •    |
| 2.25   | CCMR2.25       | CCMR 2 1/4 A    | 10            | CCMR2.25TXP     | 07945896818 | •                | •   | •    |
|        |                |                 | 100           | CCMR2.25HXP     | 07945896854 | •                | •   | •    |
| 2.5    | CCMR02.5       | CCMR 2 1/2 A    | 10            | CCMR02.5TXP     | 07945896819 | •                | •   | •    |
|        |                |                 | 100           | CCMR02.5HXP     | 07945896855 | •                | •   | •    |
| 2.8    | CCMR02.8       | CCMR 2 5/10 A   | 10            | CCMR02.8TXP     | 07945896820 | •                | •   | •    |
|        |                |                 | 100           | CCMR02.8HXP     | 07945896856 | •                | •   | •    |
| 3      | CCMR003        | CCMR 3A         | 10            | CCMR003.TXP     | 07945896821 | •                | •   | •    |
|        |                |                 | 100           | CCMR003.HXP     | 07945896857 | •                | •   | •    |
| 3.2    | CCMR03.2       | CCMR 3 2/10 A   | 10            | CCMR03.2TXP     | 07945896822 | •                | •   | •    |
|        |                |                 | 100           | CCMR03.2HXP     | 07945896858 | •                | •   | •    |
| 3.5    | CCMR03.5       | CCMR 3 1/2 A    | 10            | CCMR03.5TXP     | 07945896823 | •                | •   | •    |
|        |                |                 | 100           | CCMR03.5HXP     | 07945896859 | •                | •   | •    |
| 4      | CCMR004        | CCMR 4A         | 10            | CCMR004.TXP     | 07945896824 | •                | •   | •    |
|        |                |                 | 100           | CCMR004.HXP     | 07945896860 | •                | •   | •    |
| 4.5    | CCMR04.5       | CCMR 4 1/2 A    | 10            | CCMR04.5TXP     | 07945896825 | •                | •   | •    |
|        |                |                 | 100           | CCMR04.5HXP     | 07945896861 | •                | •   | •    |
| 5      | CCMR005        | CCMR 5A         | 10            | CCMR005.TXP     | 07945896826 | •                | •   | •    |
|        |                |                 | 100           | CCMR005.HXP     | 07945896862 | •                | •   | •    |
| 5.6    | CCMR05.6       | CCMR 5 5/10 A   | 10            | CCMR05.6TXP     | 07945896827 | •                | •   | •    |
|        |                |                 | 100           | CCMR05.6HXP     | 07945896863 | •                | •   | •    |
| 6      | CCMR006        | CCMR 6A         | 10            | CCMR006.TXP     | 07945896828 | •                | •   | •    |
|        |                |                 | 100           | CCMR006.HXP     | 07945896864 | •                | •   | •    |
| 6.25   | CCMR6.25       | CCMR 6 1/4 A    | 10            | CCMR6.25TXP     | 07945896829 | •                | •   | •    |
|        |                |                 | 100           | CCMR6.25HXP     | 07945896865 | •                | •   | •    |
| 7      | CCMR007        | CCMR 7A         | 10            | CCMR007.TXP     | 07945896830 | •                | •   | •    |
|        |                |                 | 100           | CCMR007.HXP     | 07945896866 | •                | •   | •    |
| 7.5    | CCMR07.5       | CCMR 7 1/2 A    | 10            | CCMR07.5TXP     | 07945896831 | •                | •   | •    |
|        |                |                 | 100           | CCMR07.5HXP     | 07945896867 | •                | •   | •    |
| 8      | CCMR008        | CCMR 8A         | 10            | CCMR008.TXP     | 07945896832 | •                | •   | •    |
|        |                |                 | 100           | CCMR008.HXP     | 07945896868 | •                | •   | •    |
| 9      | CCMR009        | CCMR 9A         | 10            | CCMR009.TXP     | 07945896833 | •                | •   | •    |
|        |                |                 | 100           | CCMR009.HXP     | 07945896869 | •                | •   | •    |
| 10     | CCMR010        | CCMR 10A        | 10            | CCMR010.TXP     | 07945896834 | •                | •   | •    |
|        |                |                 | 100           | CCMR010.HXP     | 07945896870 | •                | •   | •    |
| 12     | CCMR012        | CCMR 12A        | 10            | CCMR012.TXP     | 07945896835 | •                | •   | •    |
|        |                |                 | 100           | CCMR012.HXP     | 07945896871 | •                | •   | •    |
| 15     | CCMR015        | CCMR 15A        | 10            | CCMR015.TXP     | 07945896836 | •                | •   | •    |
|        |                |                 | 100           | CCMR015.HXP     | 07945896872 | •                | •   | •    |
| 17.5   | CCMR17.5       | CCMR 17 1/2 A   | 10            | CCMR17.5TXP     | 07945896837 | •                | •   | •    |
|        |                |                 | 100           | CCMR17.5HXP     | 07945896873 | •                | •   | •    |

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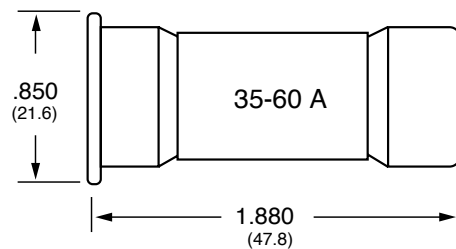
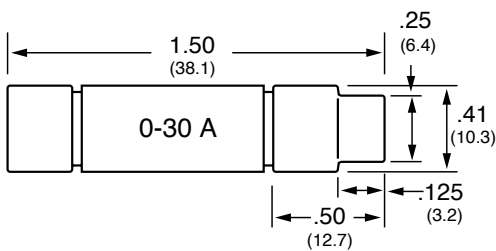
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| AMPERE | CATALOG NUMBER | PRODUCT MARKING | PACK QUANTITY | ORDERING NUMBER | UPC         | AGENCY APPROVALS |     |      |
|--------|----------------|-----------------|---------------|-----------------|-------------|------------------|-----|------|
|        |                |                 |               |                 |             | UL               | CSA | ROHS |
| 20     | CCMR020        | CCMR 20A        | 10            | CCMR020.TXP     | 07945896838 | •                | •   | •    |
|        |                |                 | 100           | CCMR020.HXP     | 07945896874 | •                | •   | •    |
| 25     | CCMR025        | CCMR 25A        | 10            | CCMR025.TXP     | 07945896839 | •                | •   | •    |
|        |                |                 | 100           | CCMR025.HXP     | 07945896875 | •                | •   | •    |
| 30     | CCMR030        | CCMR 30A        | 10            | CCMR030.TXP     | 07945896840 | •                | •   | •    |
|        |                |                 | 100           | CCMR030.HXP     | 07945896876 | •                | •   | •    |
| 35     | CCMR035        | CCMR 35         | 10            | CCMR035.T       | 07945801706 | •                | •   |      |
| 40     | CCMR040        | CCMR 40         | 10            | CCMR040.T       | 07945801707 | •                | •   |      |
| 45     | CCMR045        | CCMR 45         | 10            | CCMR045.T       | 07945801708 | •                | •   |      |
| 50     | CCMR050        | CCMR 50         | 10            | CCMR050.T       | 07945801709 | •                | •   |      |
| 60     | CCMR060        | CCMR 60         | 10            | CCMR060.T       | 07945801710 | •                | •   |      |

### Electrical Specifications

| AMPERAGE RATING | VOLTAGE RATING |     | INTERRUPTING RATING |       | WATTS LOSS AT 100 % RATED CURRENT (W) | WATTS LOSS AT 80 % RATED CURRENT (W) | TOTAL CLEARING I <sup>2</sup> T (A <sup>2</sup> SEC) 200 KA |
|-----------------|----------------|-----|---------------------|-------|---------------------------------------|--------------------------------------|---|
|                 | AC             | DC  | AC                  | DC    |                                       |                                      |   |
| 2¼              | 600            | 300 | 200 kA              | 20 kA | 1.55                                  | 0.99                                 | 351   |
| 2½              | 600            | 300 | 200 kA              | 20 kA | 1.99                                  | 1.26                                 | 192   |
| 3               | 600            | 300 | 200 kA              | 20 kA | 1.55                                  | 1.02                                 | 286   |
| 4               | 600            | 300 | 200 kA              | 20 kA | 1.62                                  | 1.04                                 | 1870  |
| 5               | 600            | 300 | 200 kA              | 20 kA | 1.89                                  | 1.20                                 | 1060  |
| 6¼              | 600            | 300 | 200 kA              | 20 kA | 1.72                                  | 1.08                                 | 797   |
| 7½              | 600            | 300 | 200 kA              | 20 kA | 1.72                                  | 1.09                                 | 983   |
| 8               | 600            | 300 | 200 kA              | 20 kA | 1.39                                  | 0.83                                 | 431   |
| 10              | 600            | 300 | 200 kA              | 20 kA | 1.49                                  | 0.90                                 | 1250  |
| 15              | 600            | 500 | 200 kA              | 20 kA | 1.77                                  | 1.03                                 | 1120  |
| 20              | 600            | 500 | 200 kA              | 20 kA | 2.3                                   | 1.39                                 | 918   |
| 30              | 600            | 500 | 200 kA              | 20 kA | 2.75                                  | 1.62                                 | 1790  |

### Dimensions Inches (mm)

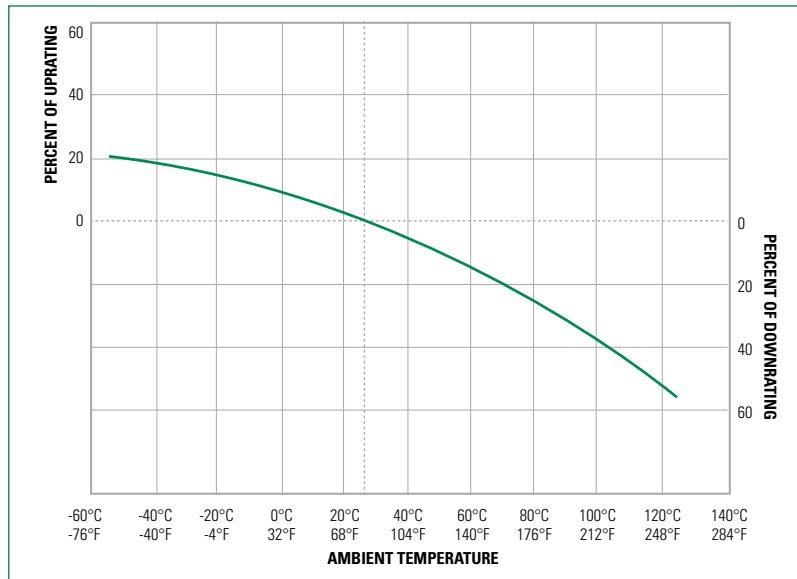


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### Temperature Derating Curve

Ambient temperature: temperature of air immediately surrounding fuse



### Current-Limiting Effects

| SHORT CIRCUIT CURRENT* | APPARENT RMS SYMMETRICAL CURRENT FOR VARIOUS FUSE RATINGS |      |     |     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|------------------------|---|------|-----|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                        | 2.25A   | 2.5A | 3A  | 4A  | 5A    | 6.25A | 7.5A  | 8A    | 10A   | 12A   | 15A   | 20A   | 30A   | 35A   | 40A   | 45A   | 50A   | 60A   |
| 5,000                  | 203   | 224  | 287 | 289 | 460   | 472   | 442   | 437   | 359   | 369   | 435   | 355   | 621   | 1,170 | 1,240 | 1,320 | 1,070 | 1,525 |
| 10,000                 | 256   | 282  | 361 | 364 | 580   | 595   | 557   | 551   | 452   | 465   | 548   | 447   | 783   | 1,480 | 1,565 | 1,670 | 1,355 | 1,930 |
| 15,000                 | 293   | 323  | 413 | 416 | 664   | 681   | 637   | 631   | 517   | 532   | 627   | 512   | 896   | 1,695 | 1,795 | 1,915 | 1,555 | 2,200 |
| 20,000                 | 323   | 356  | 455 | 458 | 730   | 750   | 702   | 694   | 569   | 585   | 690   | 563   | 987   | 1,870 | 1,980 | 2,110 | 1,710 | 2,430 |
| 25,000                 | 348   | 383  | 490 | 493 | 787   | 808   | 756   | 748   | 613   | 630   | 743   | 607   | 1,063 | 2,015 | 2,135 | 2,275 | 1,845 | 2,620 |
| 30,000                 | 370   | 407  | 521 | 524 | 836   | 858   | 803   | 795   | 651   | 670   | 790   | 645   | 1,129 | 2,145 | 2,270 | 2,420 | 1,965 | 2,780 |
| 35,000                 | 389   | 429  | 548 | 552 | 880   | 903   | 845   | 837   | 686   | 705   | 832   | 679   | 1,189 | 2,260 | 2,390 | 2,550 | 2,070 | 2,885 |
| 40,000                 | 407   | 448  | 573 | 577 | 920   | 944   | 884   | 875   | 717   | 737   | 870   | 709   | 1,243 | 2,360 | 2,500 | 2,665 | 2,165 | 3,025 |
| 50,000                 | 438   | 483  | 617 | 622 | 991   | 1,017 | 952   | 942   | 772   | 794   | 937   | 764   | 1,339 | 2,545 | 2,695 | 2,875 | 2,330 | 3,200 |
| 60,000                 | 466   | 513  | 656 | 661 | 1,053 | 1,081 | 1,012 | 1,001 | 821   | 844   | 995   | 812   | 1,423 | 2,705 | 2,865 | 3,055 | 2,480 | 3,350 |
| 80,000                 | 513   | 564  | 722 | 727 | 1,159 | 1,190 | 1,114 | 1,102 | 903   | 929   | 1,096 | 894   | 1,566 | 2,985 | 3,160 | 3,365 | 2,730 | 3,540 |
| 100,000                | 552   | 608  | 778 | 783 | 1,249 | 1,282 | 1,200 | 1,187 | 973   | 1,001 | 1,180 | 963   | 1,687 | 3,215 | 3,405 | 3,630 | 2,945 | 3,685 |
| 150,000                | 632   | 696  | 890 | 897 | 1,430 | 1,467 | 1,373 | 1,359 | 1,114 | 1,146 | 1,351 | 1,102 | 1,931 | 3,685 | 3,905 | 4,160 | 3,375 | 4,030 |
| 200,000                | 696   | 766  | 980 | 987 | 1,574 | 1,615 | 1,511 | 1,496 | 1,226 | 1,261 | 1,487 | 1,213 | 2,125 | 4,060 | 4,300 | 4,580 | 3,720 | 4,230 |

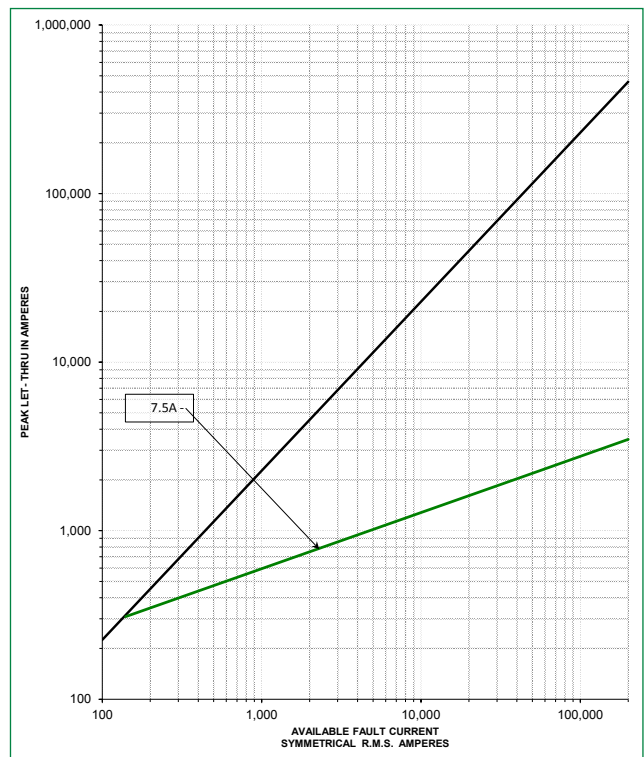
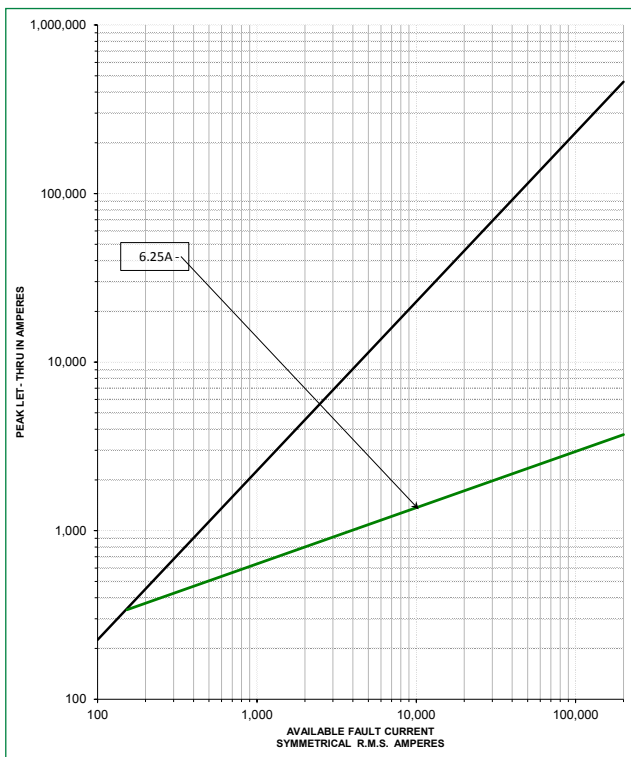
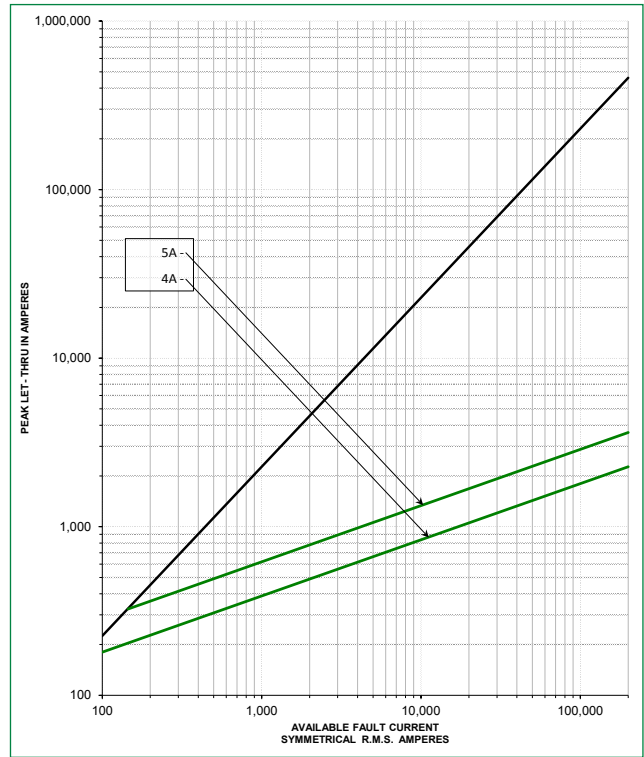
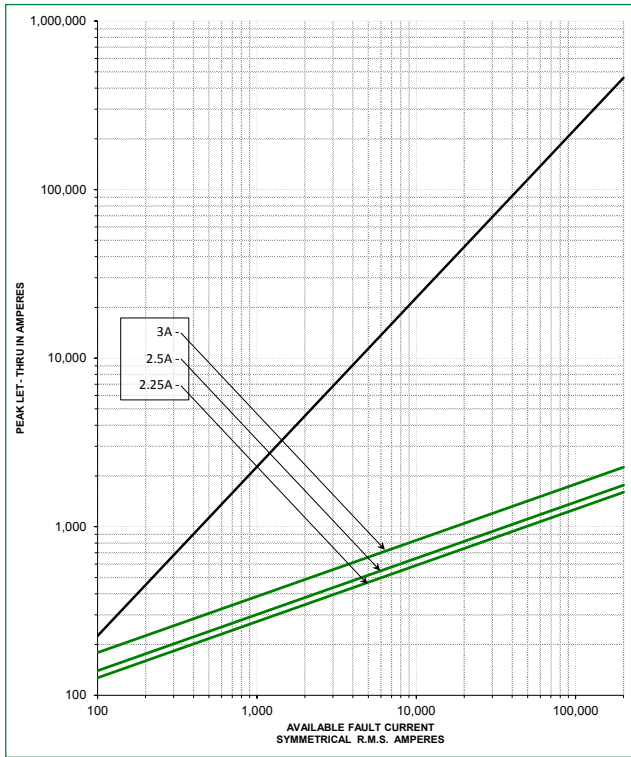
\*Prospective RMS Symmetrical Amperes Short-Circuit Current

Note: Data Derived from Peak Let-Thru Curve

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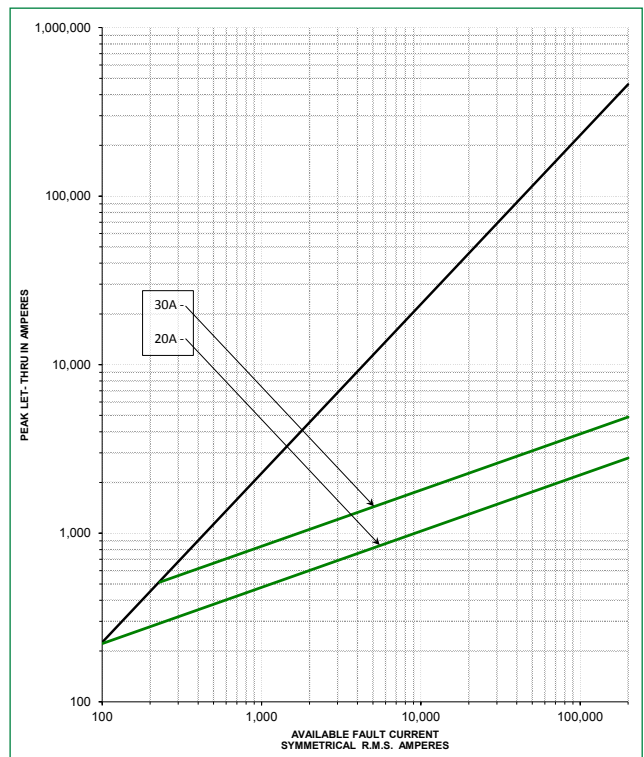
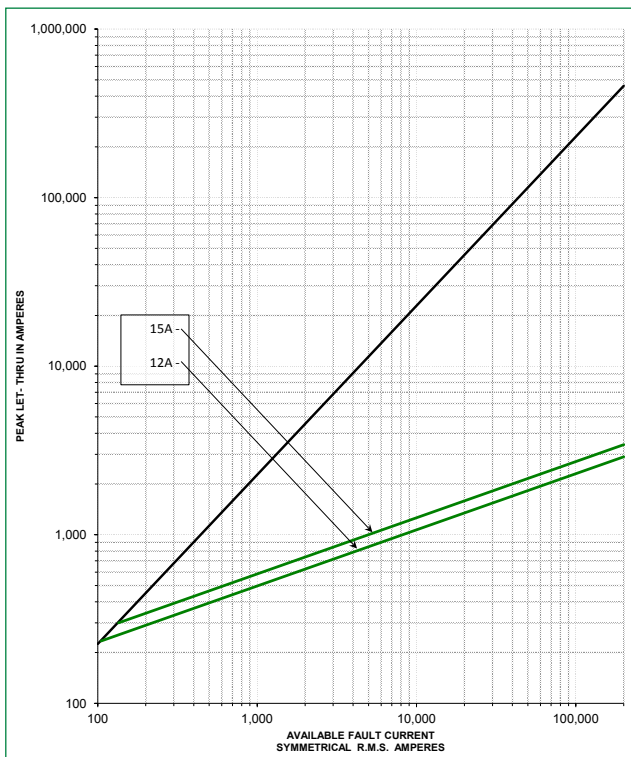
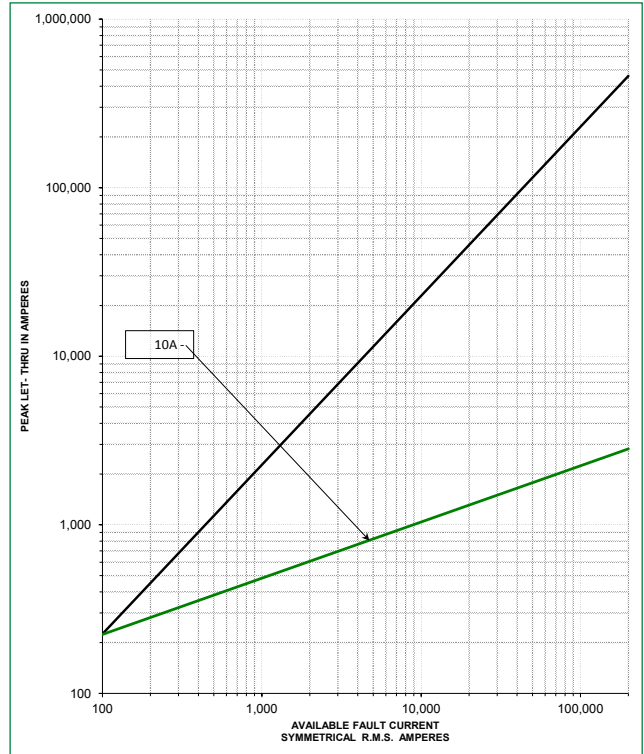
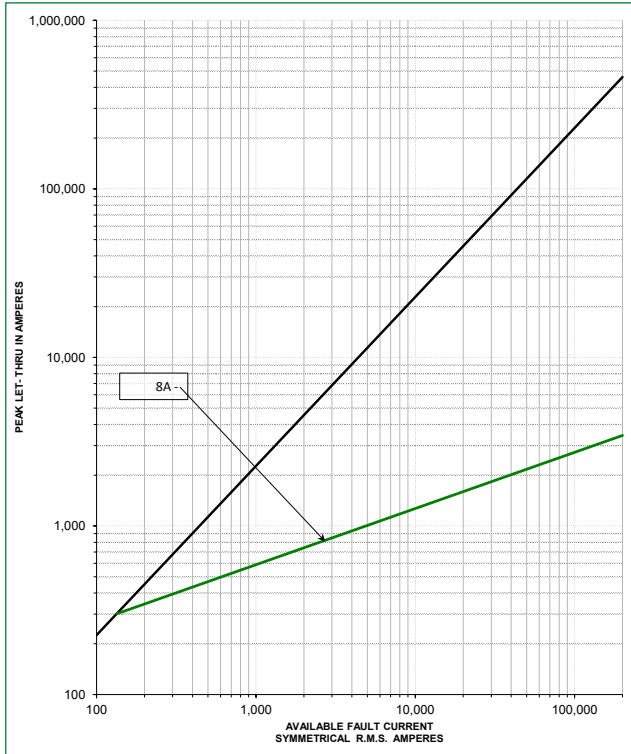
### Peak Let-Thru Curves



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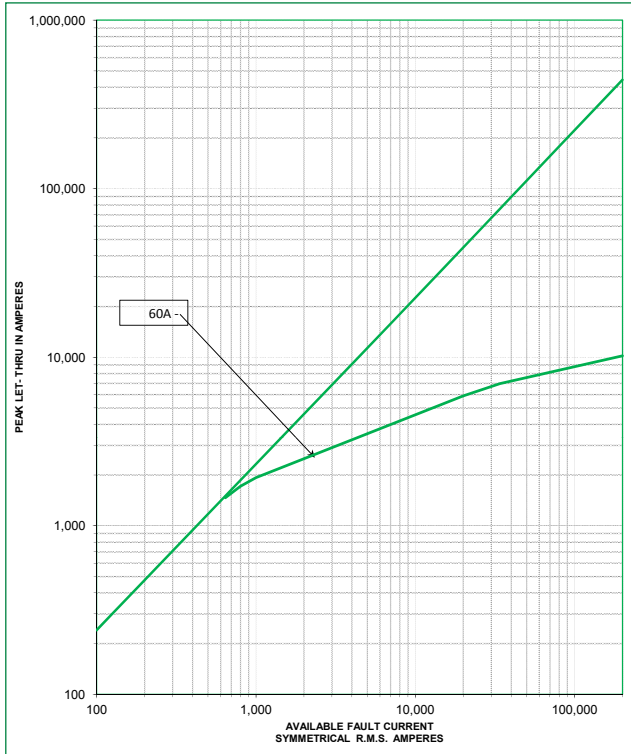
### Peak Let-Thru Curves



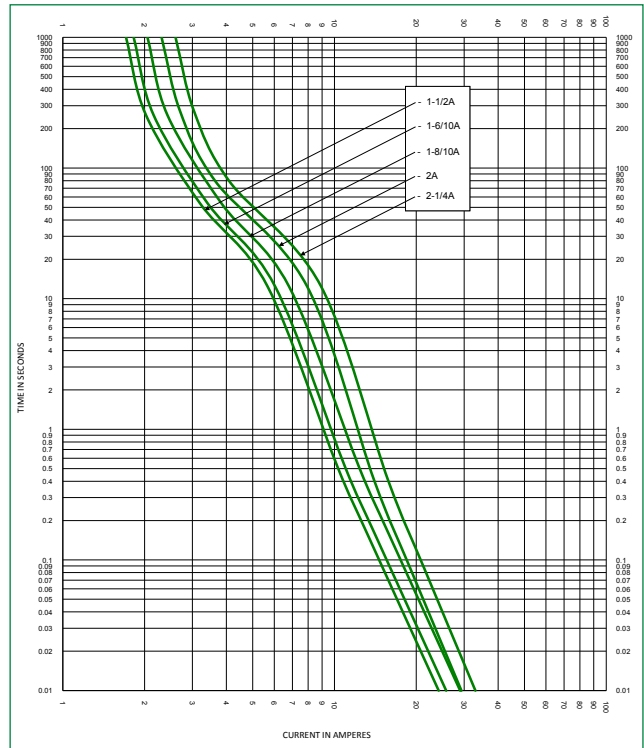
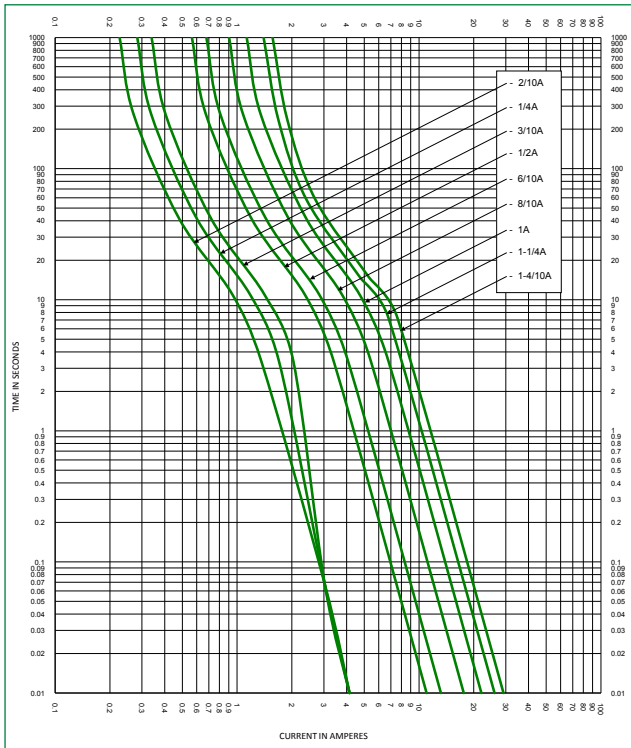
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### Peak Let-Thru Curves



### Time Current Curves

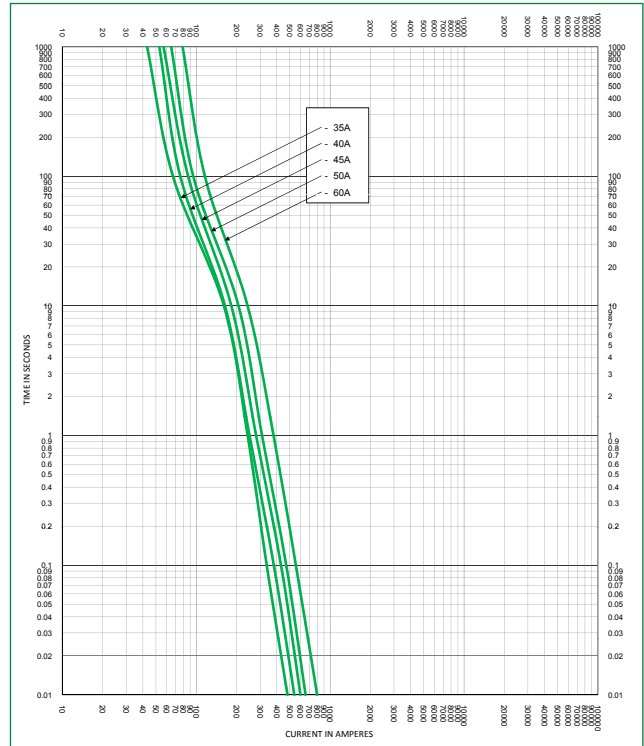
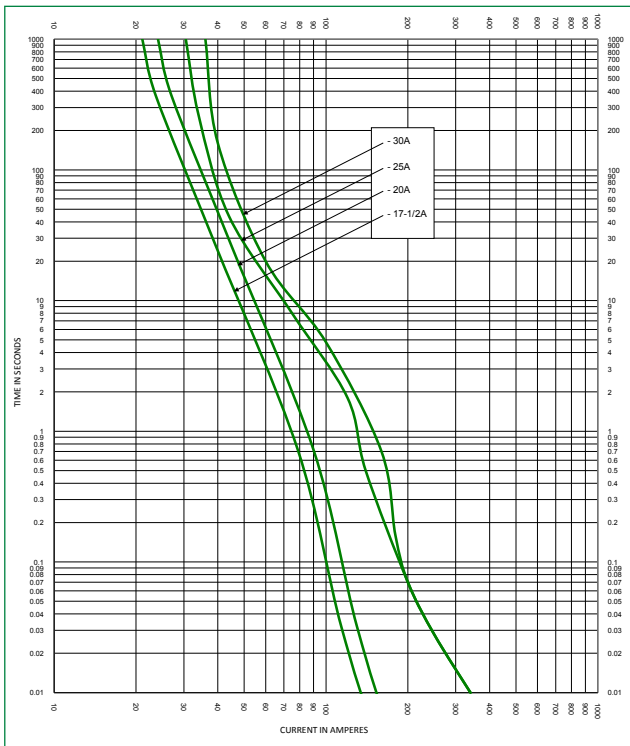
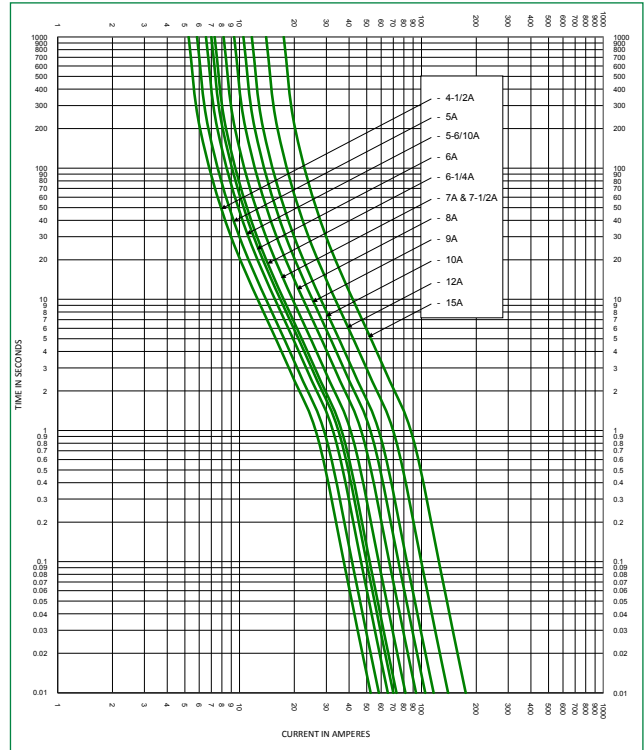
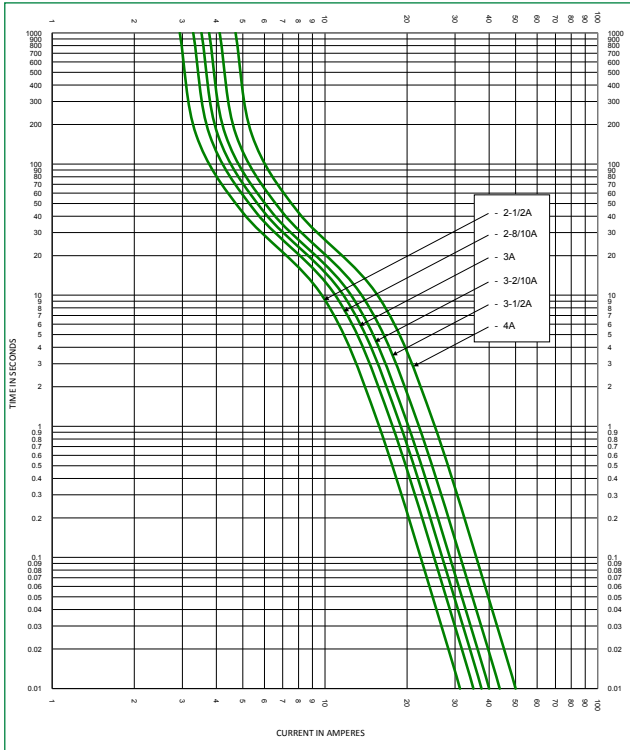




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## CCMR Series

### Time Current Curves



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