

Technical data

UL Overcurrent protection

Primary & secondary



Overcurrent protection on both the primary and secondary sides of transformers are specified in UL508 and the National Electrical Code. The maximum acceptable ratings are shown below. Due to the high inrush currents present when a transformer is initially energized, it is recommended that the primary fuse be time delay, to prevent nuisance trips during startup.

Maximum acceptable rating of primary overcurrent protection

| Primary voltage | VA Rating | | | | | | | | | | |
|-----------------|------------------|-----------------|--------------------|-------------------|--------------------|-------------------|--------------------|--------------------|--------------------|--------------------|------------------|
| | 25 | 50 | 75 | 100 | 150 | 200 | 250 | 300 | 350 | 500 | 750 |
| 115 | 6/10 (1) | 1-1/4 (2) | 1-8/10 (3-2/10) | 2-1/2 (4) | 3-1/2 (6-1/4) | 5 (8) | 5 | 6-1/4 | 7-1/2 | 10 | 15 |
| 120 | 6/10 (1) | 1-1/4 (2) | 1-8/10 (3) | 2-1/4 (4) | 3-1/2 (6-1/4) | 5 (8) | 5 | 6-1/4 | 7 | 10 | 15 |
| 200 | 3/10 (6/10) | 3/4 (1-1/4) | 1-1/8 (1-8/10) | 1-1/2 (2-1/2) | 2-1/4 (3-1/2) | 3 (5) | 3-1/2 (6-1/4) | 4-1/2 (7-1/2) | 5 (8) | 6-1/4 | 9 |
| 208 | 3/10 (6/10) | 6/10 (1-1/8) | 1 (1-8/10) | 1-4/10 (2-1/4) | 2 (3-1/2) | 2-8/10 (4-1/2) | 3-1/2 (6) | 4 (7) | 5 (8) | 6 | 9 |
| 220 | 3/10 (1/2) | 6/10 (1-1/8) | 1 (1-6/10) | 1-1/4 (2-1/4) | 2 (3-2/10) | 2-1/2 (4-1/2) | 3-2/10 (5-6/10) | 4 (6-1/4) | 4-1/2 (7-1/2) | 5-6/10 | 8 |
| 230 | 3/10 (1/2) | 6/10 (1) | 8/10 (1-6/10) | 1-1/4 (2) | 1-8/10 (3-2/10) | 2-1/2 (4) | 3-2/10 (5) | 3-1/2 (6-1/4) | 4-1/2 (7-1/2) | 5 | 8 |
| 240 | 3/10 (1/2) | 6/10 (1) | 8/10 (1-1/2) | 1-1/4 (2) | 1-8/10 (3) | 2-1/4 (4) | 3 (5) | 3-1/2 (6-1/4) | 4 (7) | 5 | 7-1/2 |
| 277 | 1/4 (4/10) | 1/2 (8/10) | 8/10 (1-1/4) | 1 (1-8/10) | 1-6/10 (2-1/2) | 2 (3-1/2) | 2-1/2 (4-1/2) | 3-2/10 (5) | 3-1/2 (6-1/4) | 5 (9) | 6-1/4 |
| 380 | 3/16 (3/10) | 3/10 (6/10) | 1/2 (8/10) | 3/4 (1-1/4) | 1-1/8 (1-8/10) | 1-1/2 (2-1/2) | 1-8/10 (3-2/10) | 2-1/4 (3-1/2) | 2-1/2 (4-1/2) | 3-1/2 (6-1/4) | 5-6/10 (9) |
| 400 | 3/16 (3/10) | 3/10 (6/10) | 1/2 (8/10) | 3/4 (1-1/4) | 1-1/8 (1-8/10) | 1-1/2 (2-1/2) | 1-8/10 (3) | 2-1/4 (3-1/2) | 2-1/2 (4) | 3-1/2 (6-1/4) | 5-6/10 (9) |
| 415 | 15/100 (3/10) | 3/10 (6/10) | 1/2 (8/10) | 6/10 (1-1/8) | 1 (1-8/10) | 1-4/10 (2-1/4) | 1-8/10 (3) | 2 (3-1/2) | 2-1/2 (4) | 3-1/2 (6) | 5 (9) |
| 440 | 15/100 (1/4) | 3/10 (1/2) | 1/2 (8/10) | 6/10 (1-1/8) | 1 (1-6/10) | 1-1/4 (2-1/4) | 1-6/10 (2-8/10) | 2 (3-2/10) | 2-1/4 (3-1/2) | 3-2/10 (5-6/10) | 5 (8) |
| 460 | 15/100 (1/4) | 3/10 (1/2) | 4/10 (8/10) | 6/10 (1) | 8/10 (1-6/10) | 1-1/4 (2) | 1-6/10 (2-1/2) | 1-8/10 (3-2/10) | 2-1/4 (3-1/2) | 3-2/10 (5) | 4-1/2 (8) |
| 480 | 15/100 (1/4) | 3/10 (1/2) | 4/10 (3/4) | 6/10 (1) | 8/10 (1-1/2) | 1-1/4 (2) | 1-1/2 (2-1/2) | 1-8/10 (3) | 2 (3-1/2) | 3 (5) | 4-1/2 (7-1/2) |
| 550 | 1/8 (2/10) | 1/4 (4/10) | 4/10 (6/10) | 1/2 (8/10) | 8/10 (1-1/4) | 1 (1-8/10) | 1-1/4 (2-1/4) | 1-6/10 (2-1/2) | 1-8/10 (3) | 2-1/2 (4-1/2) | 4 (6-1/4) |
| 575 | 1/8 (2/10) | 1/4 (4/10) | 3/10 (6/10) | 1/2 (8/10) | 3/4 (1-1/4) | 1 (1-6/10) | 1-1/4 (2) | 1-1/2 (2-1/2) | 1-8/10 (3) | 2-1/2 (4) | 3-1/2 (6-1/4) |
| 600 | 1/8 (2/10) | 2/10 (4/10) | 3/10 (6/10) | 1/2 (8/10) | 3/4 (1-1/4) | 8/10 (1-6/10) | 1-1/4 (2) | 1-1/2 (2-1/2) | 1-6/10 (2-8/10) | 2-1/4 (4) | 3-1/2 (6-1/4) |

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If the rated primary current is less than 2 amps, the maximum rating of the overcurrent device is 300% for power circuits, shown above, or 500% for control circuits, shown above in (brackets). If the rated primary current is 2 amps or more, the maximum rating of the overcurrent device is 250%.

All figures assume secondary overcurrent protection per UL/NEC.

Reference: NEC 430 - 72(c) exception #2, 450-3(b) 1 & 2, UL508 32.7, UL845 11.16 & 11.17.

Maximum acceptable rating of secondary overcurrent protection

| Secondary voltage | VA Rating | | | | | | | | | | |
|-------------------|-----------|--------|-------|--------|-------|--------|--------|-------|--------|--------|--------|
| | 25 | 50 | 75 | 100 | 150 | 200 | 250 | 300 | 350 | 500 | 750 |
| 23 | 1-8/10 | 3-1/2 | 5 | 7 | 10 | 12 | 15 | 20 | 20 | 30 | 45 |
| 24 | 1-6/10 | 3-2/10 | 5 | 6-1/4 | 10 | 12 | 15 | 20 | 20 | 30 | 40 |
| 25 | 1-6/10 | 3-2/10 | 5 | 6-1/4 | 10 | 12 | 15 | 15 | 20 | 25 | 40 |
| 90 | 4/10 | 8/10 | 1-1/4 | 1-8/10 | 2-1/2 | 3-1/2 | 4-1/2 | 5 | 6-1/4 | 9 | 12 |
| 95 | 4/10 | 8/10 | 1-1/4 | 1-6/10 | 2-1/2 | 3-1/2 | 4 | 5 | 6 | 8 | 12 |
| 100 | 4/10 | 8/10 | 1-1/4 | 1-6/10 | 2-1/2 | 3-2/10 | 4 | 5 | 5-6/10 | 8 | 12 |
| 110 | 3/10 | 3/4 | 1-1/8 | 1-1/2 | 2-1/4 | 3 | 3-1/2 | 4-1/2 | 5 | 7-1/2 | 10 |
| 115 | 3/10 | 6/10 | 1 | 1-4/10 | 2 | 2-8/10 | 3-1/2 | 4 | 5 | 7 | 10 |
| 120 | 3/10 | 6/10 | 1 | 1-1/4 | 2 | 2-1/2 | 3-2/10 | 4 | 4-1/2 | 6-1/4 | 10 |
| 220 | 15/100 | 3/10 | 1/2 | 3/4 | 1-1/8 | 1-1/2 | 1-8/10 | 2-1/4 | 2-1/2 | 3-1/2 | 5-6/10 |
| 230 | 15/100 | 3/10 | 1/2 | 6/10 | 1 | 1-4/10 | 1-8/10 | 2 | 2-1/2 | 3-1/2 | 5 |
| 240 | 15/100 | 3/10 | 1/2 | 6/10 | 1 | 1-1/4 | 1-6/10 | 2 | 2-1/4 | 3-2/10 | 5 |

If the rated secondary current is less than 9 amps, the maximum rating of the overcurrent device is 167%; 9 amps or more, the maximum rating of the overcurrent device is 125%. If 125% does not correspond to a standard fuse rating, the next highest standard rating may be used.

Reference: NEC 430 - 72(c) exception #2, 450-3(b) 1 & 2, UL508 32.7, UL845 11.16 & 11.17.