

Mechanical Characteristics

NEMA Standard ICS 2-110

Direct-current operated contactors shall withstand 110% of their rated voltage continuously without injury to the operating coils and shall close successfully at 80% of their rated voltage.

Alternating-current operated contactors shall withstand 110% of their rated voltage continuously without injury to the operating coils and shall close successfully at 85% of their rated voltage.

Table 33-241. Mechanical Characteristics, Sizes 00 – 9

| | Sizes 00, 0, 1 | Size 2 | Size 3 | Size 4 | Size 5 | Size 6 | Size 7 | Size 8 | Size 9 |
|--|-----------------|-----------------|-----------------|-----------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Dimensions in Inches (mm) | | | | | | | | | |
| Height | 6.45 (163.8) | 7.16 (181.9) | 9.93 (252.2) | 9.93 (252.2) | 12.00 (304.8) ① | 13.50 (342.9) ① | 18.62 (472.9) ① | 19.25 (489) ① | 25.00 (635) ① |
| Width | 3.31 (84.1) | 3.31 (84.1) | 4.62 (117.3) | 4.62 (117.3) | 7.00 (177.8) ① | 7.00 (177.8) ① | 23.50 (596.9) ① | 23.50 (596.9) ① | 32.00 (812.8) ① |
| Depth | 4.61 (117.1) | 4.96 (126) | 6.75 (171.5) | 6.75 (171.5) | 7.75 (196.9) ① | 8.75 (222.3) ① | 11.00 (279.4) ① | 11.00 (279.4) ① | 13.00 (330.2) ① |
| Panel Area — Square Inches | 21.35 | 23.7 | 46.0 | 46.0 | 84.0 | 94.5 | 437.5 | 452.4 | 800 |
| Weight — Pounds | 3.5 Lbs. | 3.5 Lbs. | 11.5 Lbs. | 11.5 Lbs. | 25 Lbs. | 42 Lbs. | 215 Lbs. | 265 Lbs. | 315 Lbs. |
| Cable Connection | — | — | — | — | Front | Front | Front/Rear | Front/Rear | Front/Rear |
| Maximum Cable Size/Phase Copper (AWG/MCM) | 6 AWG | 3 AWG | 1/0 | 4/0 | 1-500 MCM | 2-500 MCM | 3-500 MCM | 4-500 MCM | 8-500 MCM |
| Auxiliary Electrical Circuits Available | 8 | 6 | 6 | 6 | 4 | 4 | 3 | 3 | 4 |
| Latched Version Available | Yes | Yes | Yes | Yes | Yes | Yes | No | No | No |
| Mechanical Interlock Combinations Available | | | | | | | | | |
| Sizes 00, 0, 1, 2, 3, 4 | Vert., Horiz. | Vert., Horiz. | Vert., Horiz. | Vert., Horiz. | Vert., Horiz. | — | — | — | — |
| 5 | — | — | — | — | Vert., Horiz. | Vert., Horiz. | — | — | — |
| 6 | — | — | — | — | Vert., Horiz. | Vert., Horiz. | Vertical | Vertical | — |
| 7, 8 | — | — | — | — | — | Vertical | Vertical | Vertical | Vertical |
| 9 | — | — | — | — | — | — | Vertical | Vertical | Vertical |

① For Sizes 5 – 9 contactors only; for starter Sizes 5 – 9, refer to factory.

Table 33-242. Data from Tables 430 — 147 Through 150 of 1996 NEC: Motor Amperes at Full Load ②, Three-Phase AC

| hp | Single-Phase AC | | Induction Type Squirrel-Cage and Wound-Rotor Amperes | | | | DC | | hp | Single-Phase AC | | Induction Type Squirrel-Cage and Wound-Rotor Amperes | | | | DC | |
|-------|-----------------|------|--|------|------|------|------|------|-----|-----------------|------|--|------|------|------|------|------|
| | 115V | 230V | 200V | 230V | 460V | 575V | 120V | 240V | | 115V | 230V | 200V | 230V | 460V | 575V | 120V | 240V |
| 1/6 | 4.4 | 2.2 | — | — | — | — | — | — | 30 | — | — | 92 | 80 | 40 | 32 | — | 106 |
| 1/4 | 5.8 | 2.9 | — | — | — | — | 3.1 | 1.6 | 40 | — | — | 120 | 104 | 52 | 41 | — | 140 |
| 1/3 | 7.2 | 3.6 | — | — | — | — | 4.1 | 2.0 | 50 | — | — | 150 | 130 | 65 | 52 | — | 173 |
| 1/2 | 9.8 | 4.9 | 2.5 | 2.2 | 1.1 | .9 | 5.4 | 2.7 | 60 | — | — | 177 | 154 | 77 | 62 | — | 206 |
| 3/4 | 13.8 | 6.9 | 3.7 | 3.2 | 1.6 | 1.3 | 7.6 | 3.8 | 75 | — | — | 221 | 192 | 96 | 77 | — | 255 |
| 1 | 16 | 8 | 4.8 | 4.2 | 2.1 | 1.7 | 9.5 | 4.7 | 100 | — | — | 285 | 248 | 124 | 99 | — | 341 |
| 1-1/2 | 20 | 10 | 6.9 | 6.0 | 3.0 | 2.4 | 13.2 | 6.6 | 125 | — | — | 359 | 312 | 156 | 125 | — | 425 |
| 2 | 24 | 12 | 7.8 | 6.8 | 3.4 | 2.7 | 17 | 8.5 | 150 | — | — | 414 | 360 | 180 | 144 | — | 506 |
| 3 | 34 | 17 | 11.0 | 9.6 | 4.8 | 3.9 | 25 | 12.2 | 200 | — | — | 552 | 480 | 240 | 192 | — | 675 |
| 5 | 56 | 28 | 17.5 | 15.2 | 7.6 | 6.1 | 40 | 20 | 250 | — | — | — | — | 302 | 242 | — | — |
| 7-1/2 | 80 | 40 | 25.3 | 22 | 11 | 9 | 58 | 29 | 300 | — | — | — | — | 361 | 289 | — | — |
| 10 | 100 | 50 | 32.2 | 28 | 14 | 11 | 76 | 38 | 350 | — | — | — | — | 414 | 336 | — | — |
| 15 | — | — | 48.3 | 42 | 21 | 17 | — | 55 | 400 | — | — | — | — | 477 | 382 | — | — |
| 20 | — | — | 62.1 | 54 | 27 | 22 | — | 72 | 450 | — | — | — | — | 515 | 412 | — | — |
| 25 | — | — | 78.2 | 68 | 34 | 27 | — | 89 | 500 | — | — | — | — | 590 | 472 | — | — |

② These current values are for motors running at usual speeds and with normal torque characteristics. Motors for special low speed or high torque may require higher current. In all cases, heaters should be selected on basis of information on motor nameplate or motor card data.

Technical Data and Specifications

Electrical Characteristics

Table 33-236. Electrical Characteristics — Sizes 00 – 4

| | Size 00 | Size 0 | Size 1 | Size 2 | Size 3 | Size 4 |
|--------------------------|---------|--------|--------|--------|--------|--------|
| Max. Voltage Rating | 600V | 600V | 600V | 600V | 600V | 600V |
| Ampere Rating (Open) | 10A | 20A | 30A | 50A | 100A | 150A |
| Ampere Rating (Enclosed) | 9A | 18A | 27A | 45A | 90A | 135A |

Squirrel Cage Motor

| Maximum Horsepower At: | | | | | | |
|------------------------|----------|------|----------|-------|-------|--------|
| 200V/60 Hz | 1-1/2 hp | 3 hp | 7-1/2 hp | 10 hp | 25 hp | 40 hp |
| 230V/60 Hz | 1-1/2 hp | 3 hp | 7-1/2 hp | 15 hp | 30 hp | 50 hp |
| 380V/50 Hz | 1-1/2 hp | 5 hp | 10 hp | 25 hp | 50 hp | 75 hp |
| 460V – 575V/60 Hz | 2 hp | 5 hp | 10 hp | 25 hp | 50 hp | 100 hp |

Resistive Heating kW ^①

| Single-Phase, 2-Pole | | | | | | |
|----------------------|---|---|-------|--------|-------|--------|
| 120V | — | — | 3 kW | 5 kW | 10 kW | 15 kW |
| 240V | — | — | 6 kW | 10 kW | 20 kW | 30 kW |
| 480V | — | — | 12 kW | 20 kW | 40 kW | 60 kW |
| 600V | — | — | 15 kW | 25 kW | 50 kW | 75 kW |
| Three-Phase, 3-Pole | | | | | | |
| 120V | — | — | 5 kW | 8.5 kW | 17 kW | 26 kW |
| 240V | — | — | 10 kW | 17 kW | 34 kW | 68 kW |
| 480V | — | — | 20 kW | 34 kW | 68 kW | 105 kW |
| 600V | — | — | 25 kW | 43 kW | 86 kW | 130 kW |

Capacitor Switching kVAR, Three-Phase

| | | | | | | |
|------|---|---|---|---------|---------|----------|
| 240V | — | — | — | 12 kVAR | 27 kVAR | 40 kVAR |
| 480V | — | — | — | 25 kVAR | 53 kVAR | 80 kVAR |
| 600V | — | — | — | 31 kVAR | 67 kVAR | 100 kVAR |

Transformer Switching kVA ^②

| Single-Phase, 2-Pole | | | | | | |
|----------------------|---|---------|---------|---------|---------|---------|
| 120V | — | .6 kVA | 1.2 kVA | 2.1 kVA | 4.1 kVA | 6.8 kVA |
| 240V | — | 1.2 kVA | 2.4 kVA | 4.1 kVA | 8.1 kVA | 14 kVA |
| 480V | — | 2.4 kVA | 4.9 kVA | 8.3 kVA | 16 kVA | 27 kVA |
| 600V | — | 3 kVA | 6.2 kVA | 10 kVA | 20 kVA | 34 kVA |
| Three-Phase, 3-Pole | | | | | | |
| 120V | — | 1.8 kVA | 3.6 kVA | 6.3 kVA | 12 kVA | 20 kVA |
| 240V | — | 2.1 kVA | 4.3 kVA | 7.2 kVA | 14 kVA | 23 kVA |
| 480V | — | 4.2 kVA | 8.5 kVA | 14 kVA | 28 kVA | 47 kVA |
| 600V | — | 5.2 kVA | 11 kVA | 18 kVA | 35 kVA | 59 kVA |

① Resistive loads having inrush currents not exceeding 1.5 times continuous rating.

② These ratings are for transformers having inrush currents not more than 20 times peak of continuous current ratings. For inrush currents greater than 20 times, refer to factory.

Table 33-237. Electrical Characteristics — Sizes 5 – 9

| | Size 5 | Size 6 | Size 7 | Size 8 | Size 9 |
|--------------------------|--------|--------|--------|--------|--------|
| Max. Voltage Rating | 600V | 600V | 600V | 600V | 600V |
| Ampere Rating (Open) | 300A | 600A | 900A | 1350A | 2500A |
| Ampere Rating (Enclosed) | 270A | 540A | 810A | 1215A | 2250A |

Squirrel Cage Motor

| Maximum Horsepower At: | | | | | |
|------------------------|--------|--------|--------|--------|---------|
| 200V/60 Hz | 75 hp | 150 hp | — | — | — |
| 230V/60 Hz | 100 hp | 200 hp | 300 hp | 450 hp | 800 hp |
| 380V/50 Hz | 150 hp | 300 hp | — | — | — |
| 460V – 575V/60 Hz | 200 hp | 400 hp | 600 hp | 900 hp | 1600 hp |

Resistive Heating kW ^④

| Single-Phase, 2-Pole | | | | | |
|----------------------|--------|--------|--------|---|---|
| 120V | 30 kW | 60 kW | 90 kW | ③ | ③ |
| 240V | 60 kW | 120 kW | 180 kW | ③ | ③ |
| 480V | 120 kW | 240 kW | 360 kW | ③ | ③ |
| 600V | 150 kW | 300 kW | 450 kW | ③ | ③ |
| Three-Phase, 3-Pole | | | | | |
| 120V | 52 kW | 105 kW | 155 kW | ③ | ③ |
| 240V | 105 kW | 210 kW | 315 kW | ③ | ③ |
| 480V | 210 kW | 415 kW | 625 kW | ③ | ③ |
| 600V | 260 kW | 515 kW | 775 kW | ③ | ③ |

Capacitor Switching kVAR, Three-Phase

| | | | | | |
|------|----------|----------|----------|----------|-----------|
| 240V | 80 kVAR | 160 kVAR | 240 kVAR | 360 kVAR | 665 kVAR |
| 480V | 160 kVAR | 320 kVAR | 480 kVAR | 720 kVAR | 1325 kVAR |
| 600V | 200 kVAR | 400 kVAR | 600 kVAR | 900 kVAR | 1670 kVAR |

Transformer Switching kVA ^⑤

| Single-Phase, 2-Pole | | | | | |
|----------------------|---------|---------|---------|---------|---------|
| 120V | 14 kVA | 27 kVA | 41 kVA | 61 kVA | 112 kVA |
| 240V | 27 kVA | 54 kVA | 81 kVA | 122 kVA | 225 kVA |
| 480V | 54 kVA | 108 kVA | 162 kVA | 244 kVA | 450 kVA |
| 600V | 68 kVA | 135 kVA | 203 kVA | 304 kVA | 562 kVA |
| Three-Phase, 3-Pole | | | | | |
| 120V | 41 kVA | 81 kVA | 122 kVA | 182 kVA | 337 kVA |
| 240V | 47 kVA | 94 kVA | 140 kVA | 210 kVA | 342 kVA |
| 480V | 94 kVA | 188 kVA | 280 kVA | 420 kVA | 783 kVA |
| 600V | 117 kVA | 234 kVA | 351 kVA | 526 kVA | 975 kVA |

③ For ratings refer to factory.

④ Resistive loads having inrush currents not exceeding 1.5 times continuous rating.

⑤ These ratings are for transformers having inrush currents not more than 20 times peak of continuous current ratings. For inrush currents greater than 20 times, refer to factory.

DC Power Pole Ratings

The following represent typical production test values and should not be interpreted as a guarantee of actual performance.

Table 33-238. DC Operated 120 and 240V Coils

| Contactor Size | DC Contact Amp Rating 2 Poles in Series ① | |
|----------------|--|------|
| | 120V | 240V |
| 0 | — | — |
| 1 | 20 | 10 |
| 2 | 45 | 30 |
| 3 | 75 | 40 |
| 4 | 90 | 70 |

① Non-inductive load.

380V, 50 Hz Starter Maximum Horsepower Ratings

Table 33-239. 380V, 50 Hz Starters — Maximum Horsepower Ratings

| NEMA Size | 00 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|--------------------|-------|---|----|----|----|----|-----|-----|-----|-----|
| Maximum Horsepower | 1-1/2 | 5 | 10 | 25 | 50 | 75 | 150 | 300 | 450 | 700 |

Operating Coil Characteristics at Rated Coil Volts, Sizes 00 – 9

The following represent typical production test values and should not be interpreted as a guarantee of actual performance.

Table 33-240. Operating Coil Characteristics

| | Sizes 00, 0, 1 | Size 2 | Size 3 | Size 4 ② | Size 5 | Size 6 | Size 7 | Size 8 | Size 9 |
|--------------------|----------------|------------|------------|------------|-----------|-----------|---------------|---------------|---------------|
| AC Coil | | | | | | | | | |
| Burden (Open VA) | 160 VA | 160 VA | 625 VA | 700 VA | 1700 VA | 2900 VA | ③ | ③ | ③ |
| (Closed VA) | 25 VA | 25 VA | 50 VA | 64 VA | 180 VA | 220 VA | ③ | ③ | ③ |
| (Closed Watts) | 7.8 W | 7.8 W | 18 W | 21 W | 32 W | 42 W | — | — | — |
| Pick-Up Volts ④ | 85% | 85% | 85% | 85% | 78% | 70% | — | — | — |
| Drop-Out Volts ④ | 40 – 60% | 40 – 60% | 40 – 60% | 40 – 60% | 65 to 75% | 60 to 70% | — | — | — |
| Pick-Up Time Hz ⑦⑧ | 1 – 1-1/2 | 1-1/2 – 2 | 2 – 2-1/2 | 1 – 1-1/2 | 1.5 | 4.0 | — | — | — |
| Drop-Out Time Hz ⑦ | 3/4 – 1 | 3/4 – 1 | 3/4 – 1 | 3/4 – 1 | .75 | .75 | — | — | — |
| DC Coil | | | | | | | | | |
| Burden (Open VA) | 17 VA | 17 VA | 35 VA | 35 VA | 600 VA | 2120 VA | 400 VA | 400 VA | 2100 VA |
| (Closed VA) | 17 VA | 17 VA | 35 VA | 35 VA | 22 VA | 21 VA | 400 VA | 400 VA | 350 VA |
| (Closed Watts) | 18 W | 18 W | 35 W | 35 W | 20 W | 20 W | 400 W | 400 W | 350 W |
| Pick-Up Volts ④ | 80% | 80% | 80% | 80% | 64% | 73% | 45% – 65% ⑤ | 45% – 65% ⑤ | 50% – 65% ⑤ |
| Drop-Out Volts ④ | 5 – 10% | 5 – 10% | 5 – 10% | 5 – 10% | 18% | 13% | 30% – 45% ⑤ | 30% – 45% ⑤ | 40% – 50% ⑤ |
| Pick-Up Time Hz ⑧ | — | 25 – 75 mS | 25 – 75 mS | 25 – 75 mS | 2.7 Hz ⑦ | 3 Hz ⑦ | 21 – 41 Hz ⑥⑦ | 17 – 29 Hz ⑥⑦ | 16 – 18 ⑥⑦ |
| Drop-Out Time Hz ⑦ | — | 16 – 25 mS | 16 – 25 mS | 16 – 25 mS | 9.3 Hz ⑦ | 17.5 Hz ⑦ | 7 – 12 Hz ⑥⑦ | 7 – 12 Hz ⑥⑦ | 18 – 20 Hz ⑥⑦ |

② AC coil data pertains to Model K, DC coil data pertains to Model J.

③ DC Operated only.

④ Percent of rated coil voltage.

⑤ Lower figure when coil is cold. Higher figure when coil is hot.

⑥ Drop-out time to clear arc. Time varies with type of load and contact wear.

⑦ At 60 Hz base.

⑧ To contact touch.

Technical Data and Specifications

Mechanical Characteristics

NEMA Standard ICS 2-110

Direct-current operated contactors shall withstand 110% of their rated voltage continuously without injury to the operating coils and shall close successfully at 80% of their rated voltage.

Alternating-current operated contactors shall withstand 110% of their rated voltage continuously without injury to the operating coils and shall close successfully at 85% of their rated voltage.

Table 33-241. Mechanical Characteristics, Sizes 00 – 9

| | Sizes 00, 0, 1 | Size 2 | Size 3 | Size 4 | Size 5 | Size 6 | Size 7 | Size 8 | Size 9 |
|--|-----------------|-----------------|-----------------|-----------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Dimensions in Inches (mm) | | | | | | | | | |
| Height | 6.45 (163.8) | 7.16 (181.9) | 9.93 (252.2) | 9.93 (252.2) | 12.00 (304.8) ① | 13.50 (342.9) ① | 18.62 (472.9) ① | 19.25 (489) ① | 25.00 (635) ① |
| Width | 3.31 (84.1) | 3.31 (84.1) | 4.62 (117.3) | 4.62 (117.3) | 7.00 (177.8) ① | 7.00 (177.8) ① | 23.50 (596.9) ① | 23.50 (596.9) ① | 32.00 (812.8) ① |
| Depth | 4.61 (117.1) | 4.96 (126) | 6.75 (171.5) | 6.75 (171.5) | 7.75 (196.9) ① | 8.75 (222.3) ① | 11.00 (279.4) ① | 11.00 (279.4) ① | 13.00 (330.2) ① |
| Panel Area — Square Inches | 21.35 | 23.7 | 46.0 | 46.0 | 84.0 | 94.5 | 437.5 | 452.4 | 800 |
| Weight — Pounds | 3.5 Lbs. | 3.5 Lbs. | 11.5 Lbs. | 11.5 Lbs. | 25 Lbs. | 42 Lbs. | 215 Lbs. | 265 Lbs. | 315 Lbs. |
| Cable Connection | — | — | — | — | Front | Front | Front/Rear | Front/Rear | Front/Rear |
| Maximum Cable Size/Phase Copper (AWG/MCM) | 6 AWG | 3 AWG | 1/0 | 4/0 | 1-500 MCM | 2-500 MCM | 3-500 MCM | 4-500 MCM | 8-500 MCM |
| Auxiliary Electrical Circuits Available | 8 | 6 | 6 | 6 | 4 | 4 | 3 | 3 | 4 |
| Latched Version Available | Yes | Yes | Yes | Yes | Yes | Yes | No | No | No |
| Mechanical Interlock Combinations Available | | | | | | | | | |
| Sizes 00, 0, 1, 2, 3, 4 | Vert., Horiz. | Vert., Horiz. | Vert., Horiz. | Vert., Horiz. | Vert., Horiz. | — | — | — | — |
| 5 | — | — | — | — | Vert., Horiz. | Vert., Horiz. | — | — | — |
| 6 | — | — | — | — | Vert., Horiz. | Vert., Horiz. | Vertical | Vertical | — |
| 7, 8 | — | — | — | — | — | Vertical | Vertical | Vertical | Vertical |
| 9 | — | — | — | — | — | — | Vertical | Vertical | Vertical |

① For Sizes 5 – 9 contactors only; for starter Sizes 5 – 9, refer to factory.

Table 33-242. Data from Tables 430 — 147 Through 150 of 1996 NEC: Motor Amperes at Full Load ②, Three-Phase AC

| hp | Single-Phase AC | | Induction Type Squirrel-Cage and Wound-Rotor Amperes | | | | DC | | hp | Single-Phase AC | | Induction Type Squirrel-Cage and Wound-Rotor Amperes | | | | DC | |
|-------|-----------------|------|--|------|------|------|------|------|-----|-----------------|------|--|------|------|------|------|------|
| | 115V | 230V | 200V | 230V | 460V | 575V | 120V | 240V | | 115V | 230V | 200V | 230V | 460V | 575V | 120V | 240V |
| 1/6 | 4.4 | 2.2 | — | — | — | — | — | — | 30 | — | — | 92 | 80 | 40 | 32 | — | 106 |
| 1/4 | 5.8 | 2.9 | — | — | — | — | 3.1 | 1.6 | 40 | — | — | 120 | 104 | 52 | 41 | — | 140 |
| 1/3 | 7.2 | 3.6 | — | — | — | — | 4.1 | 2.0 | 50 | — | — | 150 | 130 | 65 | 52 | — | 173 |
| 1/2 | 9.8 | 4.9 | 2.5 | 2.2 | 1.1 | .9 | 5.4 | 2.7 | 60 | — | — | 177 | 154 | 77 | 62 | — | 206 |
| 3/4 | 13.8 | 6.9 | 3.7 | 3.2 | 1.6 | 1.3 | 7.6 | 3.8 | 75 | — | — | 221 | 192 | 96 | 77 | — | 255 |
| 1 | 16 | 8 | 4.8 | 4.2 | 2.1 | 1.7 | 9.5 | 4.7 | 100 | — | — | 285 | 248 | 124 | 99 | — | 341 |
| 1-1/2 | 20 | 10 | 6.9 | 6.0 | 3.0 | 2.4 | 13.2 | 6.6 | 125 | — | — | 359 | 312 | 156 | 125 | — | 425 |
| 2 | 24 | 12 | 7.8 | 6.8 | 3.4 | 2.7 | 17 | 8.5 | 150 | — | — | 414 | 360 | 180 | 144 | — | 506 |
| 3 | 34 | 17 | 11.0 | 9.6 | 4.8 | 3.9 | 25 | 12.2 | 200 | — | — | 552 | 480 | 240 | 192 | — | 675 |
| 5 | 56 | 28 | 17.5 | 15.2 | 7.6 | 6.1 | 40 | 20 | 250 | — | — | — | — | 302 | 242 | — | — |
| 7-1/2 | 80 | 40 | 25.3 | 22 | 11 | 9 | 58 | 29 | 300 | — | — | — | — | 361 | 289 | — | — |
| 10 | 100 | 50 | 32.2 | 28 | 14 | 11 | 76 | 38 | 350 | — | — | — | — | 414 | 336 | — | — |
| 15 | — | — | 48.3 | 42 | 21 | 17 | — | 55 | 400 | — | — | — | — | 477 | 382 | — | — |
| 20 | — | — | 62.1 | 54 | 27 | 22 | — | 72 | 450 | — | — | — | — | 515 | 412 | — | — |
| 25 | — | — | 78.2 | 68 | 34 | 27 | — | 89 | 500 | — | — | — | — | 590 | 472 | — | — |

② These current values are for motors running at usual speeds and with normal torque characteristics. Motors for special low speed or high torque may require higher current. In all cases, heaters should be selected on basis of information on motor nameplate or motor card data.

Combination Ratings

Table 33-243. Combination Ratings — Sizes 00 – 2

| Short-Circuit Protective Device (SCPD) | Max. Rating SCPD | Circuit Breaker Interrupting Rating | Short-Circuit Withstand Capability | |
|--|------------------|-------------------------------------|------------------------------------|---------|
| | | | Current | Voltage |
| Sizes 00, 0, 1 | | | | |
| Class H Fuse | 60A | — | 5,000A | 600V |
| Class J Fuse | 60A | — | 100,000A | 600V |
| Class R Fuse | 60A | — | 100,000A | 600V |
| Class T Fuse | 60A | — | 100,000A | 600V |
| Magnetic Only ① Type CB ② | 30A | Marked HMCP | 100,000A | 480V |
| | | | 50,000A | 600V |
| Thermal/Mag. Type CB ③ | 50A | 65,000A | 65,000A | 480V |
| | | 25,000A | 25,000A | 600V |
| | | 100,000A | 100,000A | 480V |
| | | 35,000A | 35,000A | 600V |
| Magnetic Only Type CB + CL ④ | 30A | HMCP + Current Limiter | 100,000A | 600V |
| Thermal/Mag. Type CLB ⑤ | 50A | 150,000A | 100,000A | 480V |

Size 2

| | | | | |
|---------------------------------|------|---------------------------|----------|------|
| Class H Fuse | 100A | — | 5,000A | 600V |
| Class J Fuse | 100A | — | 100,000A | 600V |
| Class R Fuse | 100A | — | 100,000A | 600V |
| Class T Fuse | 100A | — | 100,000A | 600V |
| Magnetic Only ① Type CB ② | 50A | Marked HMCP | 100,000A | 480V |
| | | | 50,000A | 600V |
| Thermal/Mag. Type CB ③ | 90A | 65,000A | 65,000A | 480V |
| | | 25,000A | 25,000A | 600V |
| | | 100,000A | 100,000A | 480V |
| | | 35,000A | 35,000A | 600V |
| Magnetic Only Type CB + CL ④ | 50A | HMCP + Current Limiter | 100,000A | 600V |
| Thermal/Mag. Type CLB ⑤ | 50A | 150,000A | 100,000A | 480V |

- ① Instantaneous Adjustable Trip.
- ② Circuit Breaker.
- ③ Inverse Time Circuit Breaker.
- ④ Instantaneous Adjustable Trip with Current Limiting Attachment.
- ⑤ Inverse Time with Built-In Current Limiting Attachment.

Coil Suffix

Table 33-245. Other Available Coil Voltages — AC and DC Coils ⑦

| Coils | Catalog Number Suffix | Coil Rating (Volts/Hertz) | Catalog Number Suffix | Coil Rating (Volts/Hertz) |
|-----------|-----------------------|---------------------------------|-----------------------|---------------------------------|
| AC | A | 120/60, 110/50 | N | 110/50 |
| | B | 200-208/60 | P | 48/60 |
| | C ⑩ | 240/60 and 480/60 | Q ⑩ | AC/DC Volts Specified |
| | D | 440/50 | R ⑩ | 120/60 and 240/60 |
| | E | 600/60 Hz | U | 440-480/50 or 60 Rect. to DC |
| | G | 220/50 | V | 110/60 |
| | H | 380/50 | W | 240/60 |
| | I | 24/60 | X | 480/60 |
| | J | 110-120/50 or 60 Rect. to DC | Y | 415/50 |
| | K | 220-240/50 or 60 Rect. to DC | Z | 277/60 |
| | DC ⑬⑭⑮ | L | 24V DC | S |
| M | | 48V DC | T | 250V DC |

- ⑦ List Price Addition for dual voltage coils. See **Table 33-247**.
- ⑩ List Price Addition for DC coils. See **Table 33-247**.
- ⑬ DC coils for Size 5 and 6 contactors and starters are intermittent duty rated only. A mechanical latch is required.
- ⑭ DC coils. Use only on contactors originally supplied with a DC coil.
- ⑮ For Q suffixes "order by description" consult Technical Support Center.
- ⑯ Availability may be limited.

Table 33-244. Combination Ratings — Sizes 3 and 4

| Short-Circuit Protective Device (SCPD) | Max. Rating SCPD | Circuit Breaker Interrupting Rating | Short-Circuit Withstand Capability | |
|--|------------------|-------------------------------------|------------------------------------|---------|
| | | | Current | Voltage |
| Size 3 | | | | |
| Class H Fuse | 60A | — | 5,000A | 600V |
| Class J Fuse | 60A | — | 100,000A | 600V |
| Class R Fuse | 60A | — | 100,000A | 600V |
| Class T Fuse | 60A | — | 100,000A | 600V |
| Magnetic Only ⑥ Type CB ⑦ | 100A | Marked HMCP | 100,000A | 480V |
| | | | 50,000A | 600V |
| Thermal/Mag. Type CB ⑧ | 150A | 65,000A | 65,000A | 480V |
| | | 25,000A | 25,000A | 600V |
| | | 100,000A | 100,000A | 480V |
| | | 35,000A | 35,000A | 600V |
| Magnetic Only Type CB + CL ⑨ | 100A | HMCP + Current Limiter | 100,000A | 600V |
| Thermal/Mag. Type CLB ⑩ | 150A | 50,000A | 100,000A | 480V |

Size 4

| | | | | |
|---------------------------------|------|---------------------------|----------|------|
| Class H Fuse | 400A | — | 10,000A | 600V |
| Class J Fuse | 400A | — | 100,000A | 600V |
| Class R Fuse | 400A | — | 100,000A | 600V |
| Class T Fuse | 400A | — | 100,000A | 600V |
| Magnetic Only ⑥ Type CB ⑦ | 150A | Marked HMCP | 100,000A | 480V |
| | | | 50,000A | 600V |
| Thermal/Mag. Type CB ⑧ | 250A | 65,000A | 65,000A | 480V |
| | | 25,000A | 25,000A | 600V |
| | | 100,000A | 100,000A | 480V |
| | | 35,000A | 35,000A | 600V |
| Magnetic Only Type CB + CL ⑨ | 150A | HMCP + Current Limiter | 100,000A | 600V |
| Thermal/Mag. Type CB + CL ⑩ | 250A | 200,000A | 100,000A | 600V |
| Thermal/Mag. Type CLB ⑪ | 250A | 150,000A | 100,000A | 480V |

- ⑥ Instantaneous Adjustable Trip.
- ⑦ Circuit Breaker.
- ⑧ Inverse Time Circuit Breaker.
- ⑨ Instantaneous Adjustable Trip with Current Limiting Attachment.
- ⑩ Inverse Time with Built-In Current Limiting Attachment.
- ⑪ Inverse Time Current Limiting Breaker.

Table 33-246. Other DC Coils Available (For Q Suffix) ⑮

| Voltages | Size 0 & 1 | | Voltages | Size 2 | |
|----------|------------------------------|--------------|----------|------------------------------|--------------|
| | 1- to 4-Pole Style Number | 1- to 3-Pole | | 1- to 4-Pole Style Number | 1- to 3-Pole |
| 12 | 1268C86G07 | | 79 | 1268C86G08 | |
| 28 | 1268C86G06 | | 96 | 1268C86G15 | |
| 32 | 1268C86G09 | | 200 | 1268C86G11 | |
| 34 | 1268C86G16 | | 300 | 1268C86G14 | |
| 37.5 | 1268C86G17 | | 315 | 1268C86G12 | |
| 40 | 1268C86G13 | | 125/250 | 1268C86G03 | |
| 50 | 1268C86G10 | | | — | |

- ⑮ For Q suffixes "order by description" consult Technical Support Center. Availability may be limited.

Table 33-247. Other Available Coil Voltage Adders

| NEMA Size | Coil | |
|-----------|--|--|
| | Dual Voltage AC Coil Adder Price, U.S. \$ | DC Coil (24, 48, 125, 250V DC) Adder Price, U.S. \$ |
| 0, 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5, 6 | | |

Discount Symbol **1CD1C**