

F-Line Contactors (115A ~ 800A)

3 & 4 Pole Contactors

| General Characteristics | | | |
|--|------------------|------|--|
| Type | | Unit | LC1FDP115A-800A, LC1FDP1154A-8004A |
| Rated Insulation Voltage (Ui) | | | |
| | IEC 60947-4-1 | V | 1500 |
| Conforming to Standards | | | NFCEN60947, VDE 0660, BSEN 60947, JEM1038, IEC60947-1 & IEC60947-4 |
| Approvals | | | UL*, CSA, IEC |
| Protective treatment | Standard Version | | "TH" |
| Ambient air temperature (around the device) | Storage | °C | -60 to +80 |
| | Operation | °C | -5 to +55 (0.8 to 1.1 U _c) |
| | Permissible | °C | -50 to +70, for operation at U _c |
| Maximum operating altitude | Without derating | Mtr. | 3000 |
| Operating position | Without derating | | ±30° possible, in relation to normal vertical mounting plane |

* 4 Pole contactor under approval

Pole Characteristics

| TYPE | LC1FDP | UNIT | 115A | 150A | 185A | 225A | 265A | 330A | 400A | 500A | 630A | 780A | 800A |
|--|---------------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----------|--------|
| Number of Poles (Power) | | | 3 or 4 | 3 or 4 | 3 or 4 | 3 or 4 | 3 or 4 | 3 or 4 | 3 or 4 | 3 or 4 | 3 or 4 | 3 or 4 | 3 or 4 |
| Rated current (Ie) in AC-3 θ _≤ 55°C | A | | 115 | 150 | 185 | 225 | 265 | 330 | 400 | 500 | 630 | 780 | 800 |
| Rated operating voltage upto | V | | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| Frequency limits of the operating current | Hz | | 25-200 | 25-200 | 25-200 | 25-200 | 25-200 | 25-200 | 25-200 | 25-200 | 25-200 | 25-200 | 25-200 |
| Rated thermal current (Ith) θ _≤ 40°C | A | | 200 | 250 | 275 | 315 | 350 | 400 | 500 | 700 | 1000 | 1600 | 1000 |
| Rated making capacity I _{rms} conforming to IEC-60947-4 | A | | 1300 | 1700 | 2100 | 2460 | 2940 | 3600 | 4500 | 5550 | 6740 | 8550 | - |
| Rated breaking capacity | 220-440V | A | 1300 | 1500 | 1800 | 2050 | 2450 | 3000 | 4000 | 5000 | 6300 | 7100 | - |
| I _{rms} conforming to IEC-60947-4 | 500V | A | 1100 | 1200 | 1600 | 1850 | 2200 | 2810 | 3500 | 4500 | 5400 | 6100 | - |
| | 690V | A | 900 | 1100 | 1200 | 1350 | 1700 | 2350 | 3050 | 3560 | 4600 | 5200 | - |
| Average impedance per pole at Ith & 50 Hz | MILLI Ω | | 0.4 | 0.4 | 0.36 | 0.36 | 0.32 | 0.28 | 0.28 | 0.18 | 0.12 | 0.1 | 0.12 |
| Power dissipation per pole for above operational current AC-3 | W | | 6 | 9 | 12 | 18 | 22 | 31 | 45 | 45 | 48 | 60 | 48 |
| Tightening Torque | Power Circuit | Nm | 10 | 18 | 18 | 35 | 35 | 35 | 35 | 35 | 58 | 58 | 58 |
| Cabling | | | | | | | | | | | | | |
| Maximum CSA | | | | | | | | | | | | | |
| No. of Bars | | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Bar | | mm | 20x3 | 25x3 | 25x3 | 32x4 | 32x4 | 30x5 | 30x5 | 40x5 | 60x5 | 100x5 | 60x5 |
| Cable with Lug | | mm | 95 | 120 | 150 | 185 | 240 | 240 | 2x150 | 2x240 | - | - | - |
| Cable with connector | | Sqmm | 95 | 120 | 150 | 185 | 240 | - | - | - | - | - | - |
| Bolt Diameter | | Sqmm | 6 | 8 | 8 | 10 | 10 | 10 | 10 | 10 | 12 | 2xDia 14 | 12 |

Control Circuit Characteristics

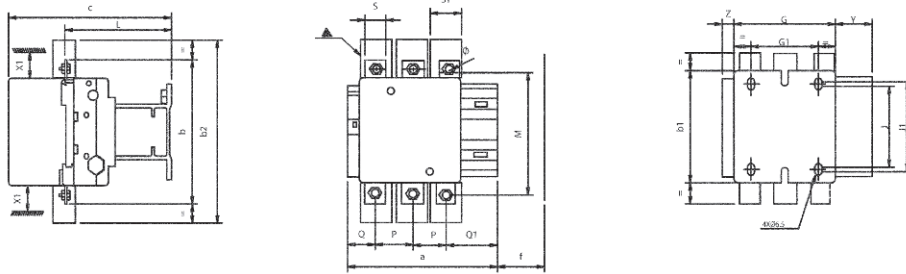
| TYPE (LC1F) | UNIT | 115A | 150A | 185A | 225A | 265A | 330A | 400A | 500A | 630A | 780A | 800A | |
|--|--------------------------|--------|-------|-------|---------------------------|-------|---------|---------|-------------------------|-------------------------|-------------------------|-------------------------|---------|
| Rated control circuit voltage (Uc) | 50 or 60 Hz | V | | | 24..600 | | | | 48..600 | 48..600 | 110..500 | 48..600 | |
| Control voltage limits | Operational | | | | 0.85 - 1.10U _c | | | | 0.85-1.10U _c | 0.85-1.10U _c | 0.85-1.10U _c | 0.85-1.10U _c | |
| Temperature θ _≤ 55°C | Drop out | | | | 0.35 - 0.55U _c | | | | 0.3-0.5U _c | 0.25-0.5U _c | 0.2-0.4U _c | 0.25-0.5U _c | |
| Average consumption at 20 °C and at U _c , 50/60 Hz coil | Operational | | | | | | | | | | | | |
| Average consumption at 20 °C and at U _c , AC 50 / 60hz | In rush 50 Hz coil | VA | 550 | 550 | 805 | 805 | 1200 | 700 | 1075 | 1100 | 1650 | 2100 | 1900 |
| | In rush 60 Hz coil | VA | 660 | 660 | 970 | 970 | 1445 | 700 | 1075 | 1100 | 1650 | 2100 | 1900 |
| | In rush 40 - 400 Hz coil | VA | - | - | - | - | 700 | 700 | 1075 | 1100 | 1650 | 2100 | 1900 |
| | In rush Cosφ | | 0.28 | 0.28 | 0.3 | 0.3 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| | Sealed 50 Hz coil | VA | 45 | 45 | 55 | 55 | 95 | 10 | 15 | 18 | 22 | 50 | 15 |
| | Sealed 60 Hz coil | VA | 55 | 55 | 66 | 66 | 110 | 10 | 15 | 18 | 22 | 50 | 15 |
| Sealed 40 - 400 Hz coil | VA | - | - | - | - | 10 | 10 | 15 | 18 | 22 | 50 | 22 | |
| Sealed Cosφ | | 0.28 | 0.28 | 0.3 | 0.3 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | |
| Average operating time at U _c | Closing time "C" | msec | 23-35 | 23-35 | 20-35 | 20-35 | 30-65 | 30-65 | 40-75 | 40-75 | 40-80 | 40-80 | 40-80 |
| | Opening time "O" | msec | 5-15 | 5-15 | 7-15 | 7-15 | 100-170 | 100-170 | 100-170 | 100-170 | 100-200 | 130-230 | 100-200 |
| Mechanical life U _c (Mechanical durability) in millions of operating cycles | 50 or 60 Hz coil | Cycles | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 5 | 5 | 5 |
| | 50/60 Hz coil | Cycles | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 5 | 5 | 5 |
| Maximum operating rate | In operating cycle/hour | | 2400 | 2400 | 2400 | 2400 | 2400 | 2400 | 2400 | 2400 | 1200 | 600 | 1200 |
| Tightening Torque | Power Circuit Connection | Nm | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| Cabling | | | | | | | | | | | | | |
| Minimum / Maximum C.S.A | | | | | | | | | | | | | |
| Flexible Cable without cable end | 1or 2 Conductors | Sqmm | 1/4 | 1/4 | 1/4 | 1/4 | 1/4 | 1/4 | 1/4 | 1/4 | 1/4 | 1/4 | 1/4 |
| Flexible Cable with end | 1 Conductor | Sqmm | 1/4 | 1/4 | 1/4 | 1/4 | 1/4 | 1/4 | 1/4 | 1/4 | 1/4 | 1/4 | 1/4 |
| Flexible Cable with end | 2 Conductors | Sqmm | 1/2.5 | 1/2.5 | 1/2.5 | 1/2.5 | 1/2.5 | 1/2.5 | 1/2.5 | 1/2.5 | 1/2.5 | 1/2.5 | 1/2.5 |
| Solid Cable without cable end | 1 or 2 Conductors | Sqmm | 1/4 | 1/4 | 1/4 | 1/4 | 1/4 | 1/4 | 1/4 | 1/4 | 1/4 | 1/4 | 1/4 |

D

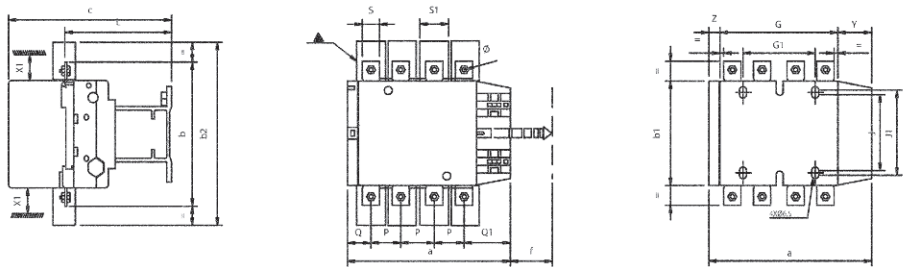
F-Line Contactors (115A ~ 800A)

Contactors' Dimensions with AC/DC operating coil

LC1-FDP115...330A

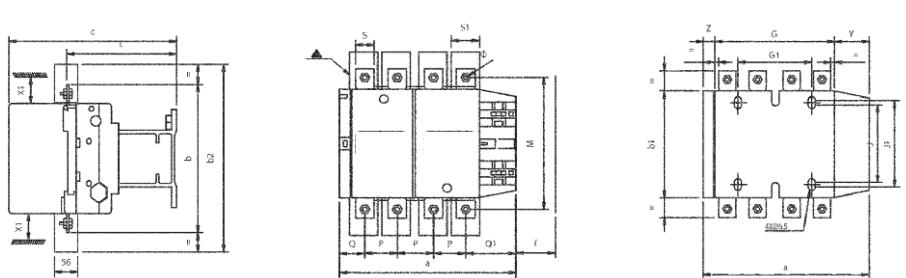


LC1-FDP1154...2654A



f:- minimum distance required for coil removal.
 ▲ Power terminal protection shroud

LC1-FDP3304A



f:- minimum distance required for coil removal.
 ▲ Power terminal protection shroud

| LC1 | a | b | b1 | b2 | c | f | G | G1 | J | J1 | L | M | P | Q | Q1 | S | S1 | Y | Z | Ø |
|----------|-------|-----|-----|-----|-----|-----|-------|----|-----|-----|-------|-----|----|------|------|----|------|----|------|-----|
| FDP115A | 163.5 | 162 | 137 | 265 | 172 | 131 | 106 | 80 | 106 | 120 | 107 | 147 | 37 | 29.5 | 60 | 15 | 27 | 44 | 13.5 | M6 |
| FDP1154A | 200.5 | 162 | 137 | 265 | 172 | 131 | 143 | 80 | 106 | 120 | 107 | 147 | 37 | 29.5 | 60 | 15 | 27 | 44 | 13.5 | M6 |
| FDP150A | 163.5 | 171 | 137 | 301 | 172 | 131 | 106 | 80 | 106 | 120 | 107 | 150 | 40 | 26.5 | 57.5 | 20 | 34 | 44 | 13.5 | M8 |
| FDP1504A | 200.5 | 171 | 137 | 301 | 172 | 131 | 143 | 80 | 106 | 120 | 107 | 150 | 40 | 25.5 | 55.5 | 20 | 34 | 44 | 13.5 | M8 |
| FDP185A | 168.5 | 174 | 137 | 305 | 181 | 130 | 111 | 80 | 106 | 120 | 113.5 | 154 | 40 | 29 | 59.5 | 20 | 34 | 44 | 13.5 | M8 |
| FDP1854A | 208.5 | 174 | 137 | 305 | 181 | 130 | 151 | 80 | 106 | 120 | 113.5 | 154 | 40 | 29 | 59.5 | 20 | 34 | 44 | 13.5 | M8 |
| FDP225A | 168.5 | 197 | 137 | 364 | 181 | 130 | 111 | 80 | 106 | 120 | 113.5 | 172 | 48 | 20 | 51.5 | 25 | 44.5 | 44 | 13.5 | M10 |
| FDP2254A | 208.5 | 197 | 137 | 364 | 181 | 130 | 151 | 80 | 106 | 120 | 113.5 | 172 | 48 | 17 | 47.5 | 25 | 44.5 | 44 | 13.5 | M10 |
| FDP265A | 201.5 | 203 | 145 | 370 | 214 | 147 | 142 | 96 | 106 | 120 | 141 | 178 | 48 | 39 | 66.5 | 25 | 44.5 | 38 | 21.5 | M10 |
| FDP2654A | 244.5 | 203 | 145 | 370 | 214 | 147 | 190 | 96 | 106 | 120 | 141 | 178 | 48 | 34 | 66.5 | 25 | 44.5 | 38 | 21.5 | M10 |
| FDP330A | 206 | 206 | 145 | 375 | 220 | 147 | 154.5 | 96 | 106 | 120 | 147 | 181 | 48 | 43 | 74 | 25 | 44.5 | 38 | 20.5 | M10 |
| FDP3304A | 254 | 206 | 145 | 375 | 220 | 147 | 202.5 | 96 | 106 | 120 | 147 | 181 | 48 | 43 | 74 | 25 | 44.5 | 38 | 20.5 | M10 |

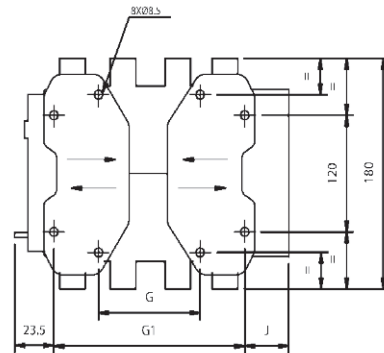
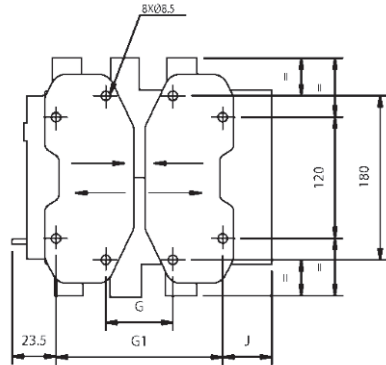
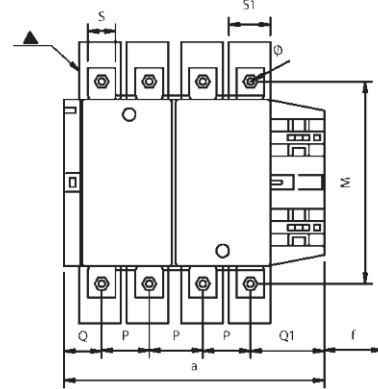
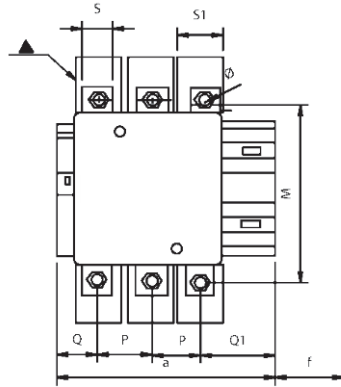
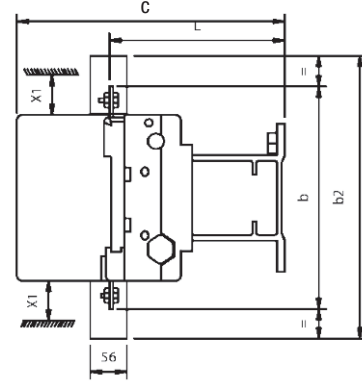
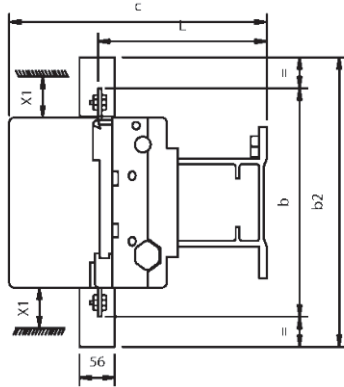
| X1(mm) = Minimum electrical clearance according to operating voltage & breaking capacity | | |
|--|-------------|--------------|
| LC1 | 200 to 500V | 600 to 1000V |
| FDP115A/1154A | 10 | 15 |
| FDP150A/1504A | 10 | 15 |
| FDP185A/1854A | 10 | 15 |
| FDP225A/2254A | 10 | 15 |
| FDP265A/2654A | 10 | 15 |
| FDP330A/3304A | 10 | 15 |

F-Line Contactors (115A ~ 800A)

Contactors' Dimensions with AC/DC operating coil

LC1FDP400A/LC1FDP500A

LC1FDP4004A



f: minimum distance required for coil removal.

▲ Power terminal protection shroud

| LC1 | a | b | b1 | b2 | c | f | G* | Gmin | Gmax | G1* | G1min | G1max | J | L | M | P | Q | Q1 | S | S1 |
|----------|-----|-----|-----|-----|-----|-----|-----|------|------|-----|-------|-------|------|-----|-----|----|----|----|----|------|
| FDP400A | 211 | 206 | 209 | 375 | 220 | 119 | 170 | 66 | 102 | 170 | 156 | 192 | 19.5 | 145 | 181 | 48 | 43 | 74 | 25 | 44.5 |
| FDP4004A | 261 | 206 | 209 | 375 | 220 | 119 | 170 | 66 | 150 | 170 | 156 | 240 | 67.5 | 145 | 181 | 48 | 43 | 74 | 25 | 44.5 |
| FDP500A | 231 | 238 | 209 | 400 | 235 | 141 | 170 | 66 | 120 | 170 | 156 | 210 | 39.5 | 146 | 205 | 55 | 46 | 77 | 30 | 44.5 |

| X1(mm) = Minimum electrical clearance according to operating voltage & breaking capacity | | |
|--|-------------|--------------|
| LC1 | 200 to 500V | 600 to 1000V |
| FDP400A | 15 | 20 |
| FDP500A | 15 | 20 |

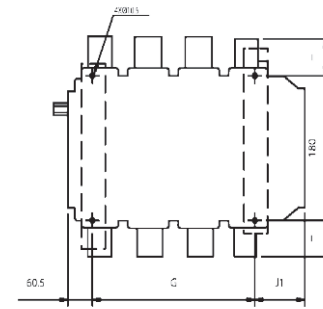
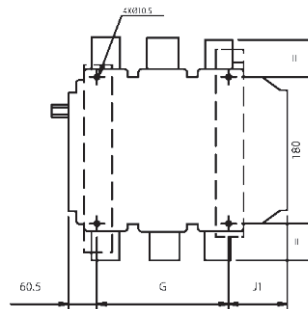
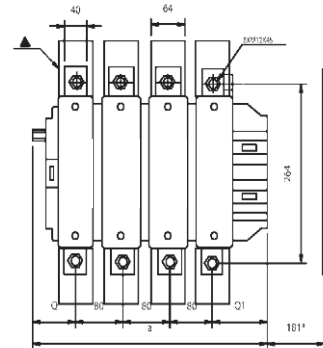
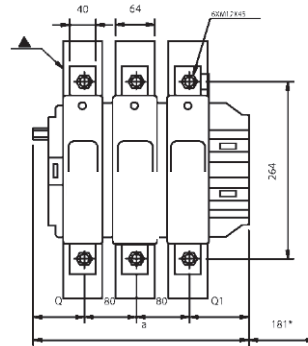
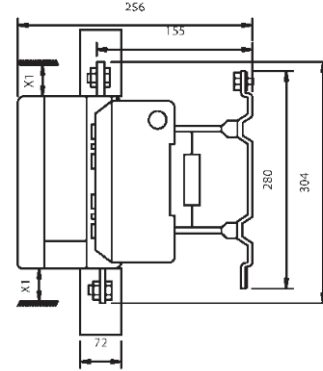
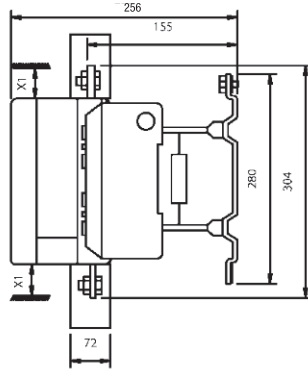


F-Line Contactors (115A ~ 800A)

Contactors' Dimensions with AC/DC operating coil

LC1FDP630A

LC1FDP5004A/LC1FDP6304A



* - minimum distance required for coil removal

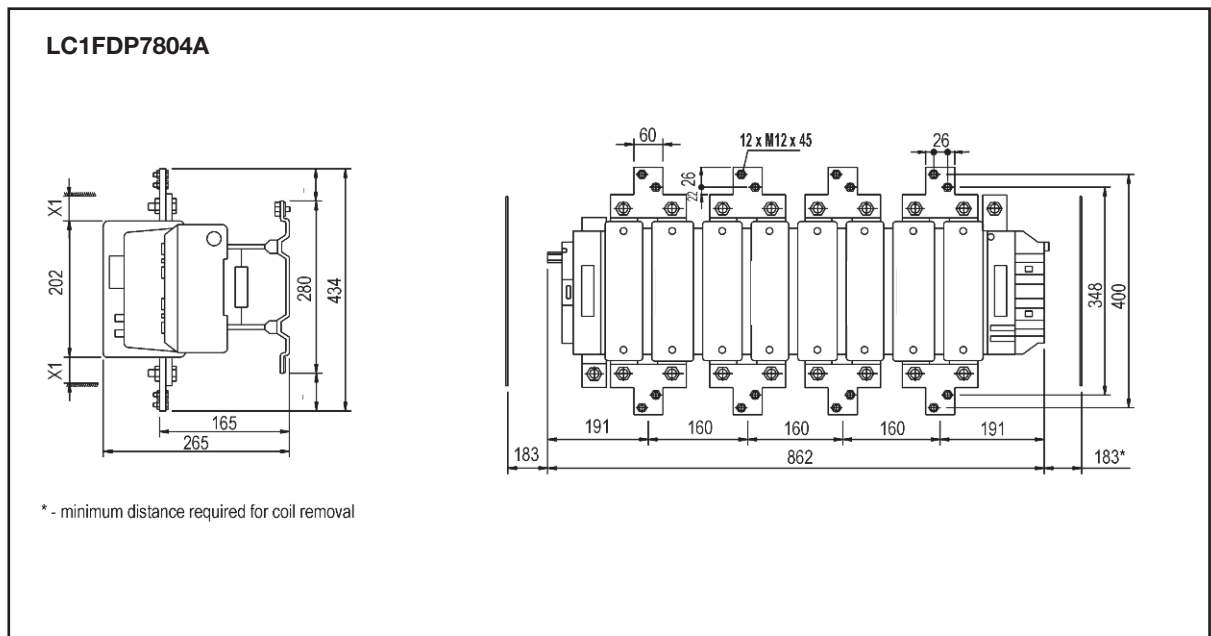
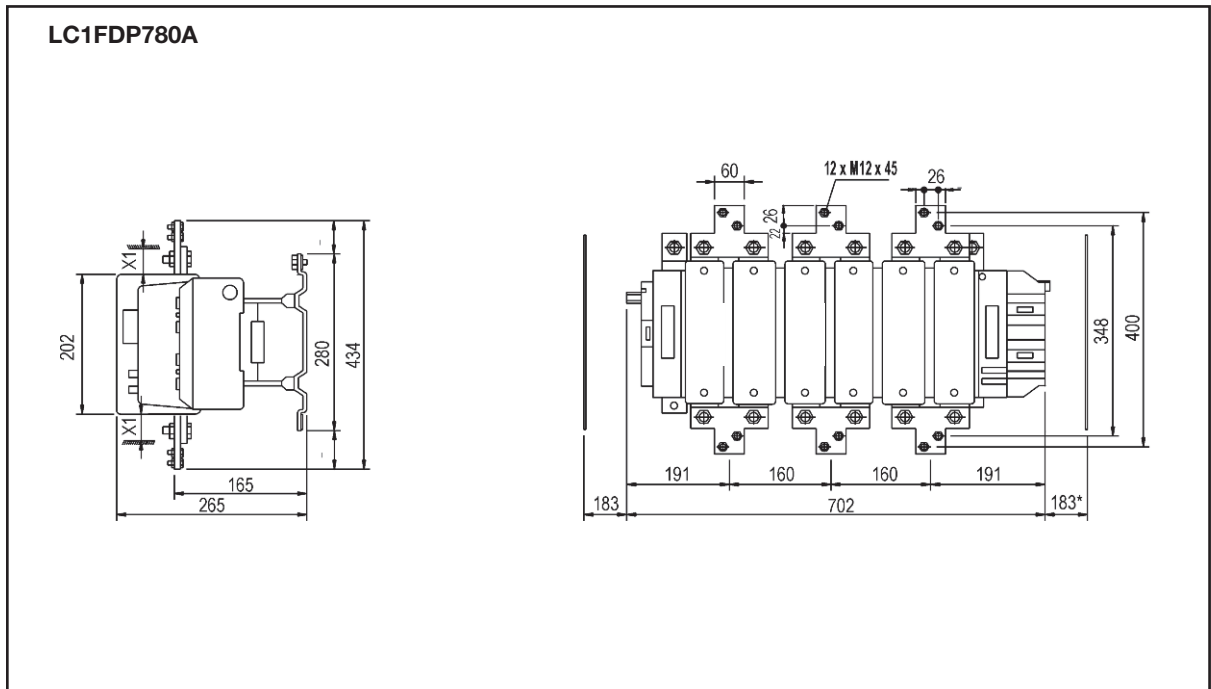
▲ Power terminal protection shroud

| LC1 | a | b2 | G* | Gmin | Gmax | J1 | Q | Q1 | S | S1 |
|----------|-----|-----|-----|------|------|------|----|----|----|----|
| FDP5004A | 389 | 464 | 240 | 150 | 275 | 68.5 | 60 | 89 | 25 | 64 |
| FDP630A | 306 | 464 | 180 | 100 | 195 | 68.5 | 60 | 89 | 25 | 64 |
| FDP6304A | 389 | 464 | 240 | 150 | 275 | 68.5 | 60 | 89 | 30 | 64 |
| FDP800A | 306 | 464 | 180 | 100 | 195 | 68.5 | 60 | 89 | 25 | 64 |
| FDP8004A | 389 | 464 | 240 | 150 | 275 | 68.5 | 60 | 89 | 30 | 64 |

| X1(mm) = Minimum electrical clearance according to operating voltage & breaking capacity | | |
|--|-------------|--------------|
| LC1 | 200 to 500V | 600 to 1000V |
| FDP630A | 20 | 30 |
| FDP5004A | 15 | 20 |

F-Line Contactors (115A ~ 800A)

Contactors' Dimensions with AC/DC operating coil



| X1(mm) = Minimum electrical clearance according to operating voltage & breaking capacity | | |
|--|-------------|--------------|
| LC1FDP780A/7804A | 200 to 500V | 600 to 1000V |
| | 30 | 35 |

