

# Product datasheet

Specifications



## TeSys F contactor - 3P (3 NO) - AC-3 - <= 440 V 185 A - coil 220 V DC

LC1F185MD

⚠ Discontinued on: Jul 4, 2022 AD

⚠ Discontinued

### Main

|                                |                                                                          |
|--------------------------------|--------------------------------------------------------------------------|
| Range                          | TeSys                                                                    |
| Range of product               | TeSys F                                                                  |
| Product or component type      | Contactor                                                                |
| Device short name              | LC1F                                                                     |
| Contactor application          | Resistive load<br>Motor control                                          |
| Utilisation category           | AC-1<br>AC-4<br>AC-3                                                     |
| Poles description              | 3P                                                                       |
| [Ue] rated operational voltage | <= 460 V DC<br><= 690 V AC 50/60 Hz                                      |
| [Uc] control circuit voltage   | 220 V DC                                                                 |
| [Ie] rated operational current | 275 A (at <40 °C) at <= 440 V AC-1<br>185 A (at <55 °C) at <= 440 V AC-3 |

### Complementary

|                                             |                                                                                                                 |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| [Uimp] rated impulse withstand voltage      | 8 kV                                                                                                            |
| [Ith] conventional free air thermal current | 275 A (at 40 °C)                                                                                                |
| Rated breaking capacity                     | 1480 A conforming to IEC 60947-4-1                                                                              |
| [Icw] rated short-time withstand current    | 1500 A 40 °C - 10 s<br>920 A 40 °C - 30 s<br>740 A 40 °C - 1 min<br>500 A 40 °C - 3 min<br>400 A 40 °C - 10 min |
| Associated fuse rating                      | 200 A aM at <= 440 V<br>315 A gG at <= 440 V                                                                    |
| Average impedance                           | 0.33 mOhm - Ith 275 A 50 Hz                                                                                     |
| [Ui] rated insulation voltage               | 1000 V conforming to IEC 60947-4-1<br>1500 V conforming to VDE 0110 group C                                     |
| Power dissipation per pole                  | 12 W AC-3<br>25 W AC-1                                                                                          |
| Overvoltage category                        | III                                                                                                             |
| power pole contact composition              | 3 NO                                                                                                            |

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

|                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Motor power kW                 | 90 kW at 380...400 V AC 50/60 Hz (AC-3)<br>100 kW at 415 V AC 50/60 Hz (AC-3)<br>100 kW at 440 V AC 50/60 Hz (AC-3)<br>110 kW at 500 V AC 50/60 Hz (AC-3)<br>110 kW at 660...690 V AC 50/60 Hz (AC-3)<br>55 kW at 220...230 V AC 50/60 Hz (AC-3)<br>33 kW at 400 V AC 50/60 Hz (AC-4)                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Control circuit voltage limits | Operational: 0.85...1.1 Uc (at 55 °C)<br>Drop-out: 0.15...0.2 Uc (at 55 °C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Mechanical durability          | 10 Mcycles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Inrush power in W              | 800 W (at 20 °C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Hold-in power consumption in W | 5 W at 20 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Maximum operating rate         | 2400 cyc/h 55 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Operating time                 | 30...40 ms closing<br>30...50 ms opening                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Connections - terminals        | Control circuit: screw clamp terminals 1 cable(s) 1...4 mm²flexible without cable end<br>Control circuit: screw clamp terminals 2 cable(s) 1...4 mm²flexible without cable end<br>Control circuit: screw clamp terminals 1 cable(s) 1...4 mm²flexible with cable end<br>Control circuit: screw clamp terminals 2 cable(s) 1...2.5 mm²flexible with cable end<br>Control circuit: screw clamp terminals 1 cable(s) 1...4 mm²solid without cable end<br>Control circuit: screw clamp terminals 2 cable(s) 1...4 mm²solid without cable end<br>Power circuit: bar 2 cable(s) - busbar cross section: 25 x 3 mm<br>Power circuit: lugs-ring terminals 1 cable(s) 150 mm²<br>Power circuit: connector 1 cable(s) 150 mm²<br>Power circuit: bolted connection |
| Tightening torque              | Control circuit: 1.2 N.m<br>Power circuit: 18 N.m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Mounting support               | Plate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Heat dissipation               | 5 W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| motor power range              | 30...50 kW at 200...240 V 3 phases<br>55...100 kW at 200...240 V 3 phases<br>55...100 kW at 380...440 V 3 phases<br>55...100 kW at 480...500 V 3 phases<br>110...220 kW at 480...500 V 3 phases                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Motor starter type             | Direct on-line contactor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Contactor coil voltage         | 220 V DC standard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Standards                      | EN 60947-1<br>EN 60947-4-1<br>IEC 60947-1<br>IEC 60947-4-1<br>JIS C8201-4-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Product certifications         | UL<br>RINA<br>BV<br>ABS<br>RMRoS<br>CB<br>CSA<br>LROS (Lloyds register of shipping)<br>DNV<br>UKCA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Compatibility code             | LC1F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Control circuit type           | DC standard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

## Environment

|                         |                                                                                                             |
|-------------------------|-------------------------------------------------------------------------------------------------------------|
| IP degree of protection | IP2X front face with shrouds conforming to IEC 60529<br>IP2X front face with shrouds conforming to VDE 0106 |
| Protective treatment    | TH                                                                                                          |

|                                                       |                         |
|-------------------------------------------------------|-------------------------|
| Ambient air temperature for operation                 | -5...55 °C              |
| Ambient air temperature for storage                   | -60...80 °C             |
| Permissible ambient air temperature around the device | -40...70 °C             |
| Height                                                | 174 mm                  |
| Width                                                 | 168.5 mm                |
| Depth                                                 | 181 mm                  |
| Operating altitude                                    | 3000 m without derating |
| Net weight                                            | 4.65 kg                 |

## Packing Units

|                              |          |
|------------------------------|----------|
| Unit Type of Package 1       | PCE      |
| Number of Units in Package 1 | 1        |
| Package 1 Height             | 21.8 cm  |
| Package 1 Width              | 22.0 cm  |
| Package 1 Length             | 23.3 cm  |
| Package 1 Weight             | 4.884 kg |

## Contractual warranty

|                      |    |
|----------------------|----|
| Warranty (in months) | 18 |
|----------------------|----|

Environmental Data

Schneider Electric aims to achieve Net Zero status by 2050 through supply chain partnerships, lower impact materials, and circularity via our ongoing “Use Better, Use Longer, Use Again” campaign to extend product lifetimes and recyclability.

[Environmental Data explained >](#)

[How we assess product sustainability >](#)

|  Environmental footprint |                                               |
|-----------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| Total lifecycle Carbon footprint                                                                          | 606 kg CO2 eq.                                |
| Environmental Disclosure                                                                                  | <a href="#">Product Environmental Profile</a> |
| Carbon footprint of the manufacturing phase [A1 to A3]                                                    | 94 kg CO2 eq.                                 |
| Carbon footprint of the distribution phase [A4]                                                           | 0.9 kg CO2 eq.                                |
| Carbon footprint of the installation phase [A5]                                                           | 0.4 kg CO2 eq.                                |
| Carbon footprint of the use phase [B2, B3, B4, B6]                                                        | 503 kg CO2 eq.                                |
| Carbon footprint of the end-of-life phase [C1 to C4]                                                      | 9 kg CO2 eq.                                  |

Use Better

|  Materials and Substances |                                      |
|-------------------------------------------------------------------------------------------------------------|--------------------------------------|
| SCIP Number                                                                                                 | B2d4179a-eb65-40a3-a1ef-d9a33060486f |
| PVC free                                                                                                    | Yes                                  |

Use Longer

|  Lifetime extension |    |
|--------------------------------------------------------------------------------------------------------|----|
| Repair                                                                                                 | No |

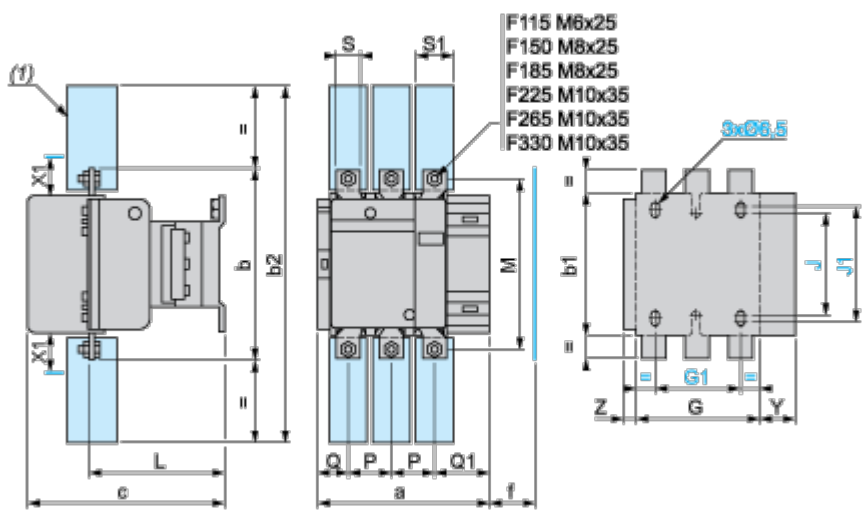
Use Again

|  Repack and remanufacture |                                                                                                                                                                                                                 |
|--------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Recyclability potential, in %                                                                                | 91                                                                                                                                                                                                              |
| Take-back                                                                                                    | No                                                                                                                                                                                                              |
| WEEE Label                                                                                                   |  The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins |

Dimensions Drawings

Dimensions and Drawings

LC1 F115 to F330



(1) Power terminal protection shroud

X1 (mm) = Minimum electrical clearance according to operating voltage and breaking capacity.

| LC1        | 200...500 V | 600...1000 V |
|------------|-------------|--------------|
| F115, F150 | 10          | 15           |
| F185       | 10          | 15           |
| F225, F265 | 10          | 15           |
| F330       | 10          | 15           |

| LC1  |    | a     | b   | b1  | b2  | c   | f   | G   | G1 | J   | J1  | L     | M   | P  | Q    | Q1   | S  | S1   | Y  |
|------|----|-------|-----|-----|-----|-----|-----|-----|----|-----|-----|-------|-----|----|------|------|----|------|----|
| F115 | 3P | 163.5 | 162 | 137 | 265 | 171 | 131 | 106 | 80 | 106 | 120 | 107   | 147 | 37 | 29.5 | 60   | 20 | 26   | 44 |
|      | 4P | 200.5 | 162 | 137 | 265 | 171 | 131 | 143 | 80 | 106 | 120 | 107   | 147 | 37 | 29.5 | 60   | 20 | 26   | 44 |
| F150 | 3P | 163.5 | 170 | 137 | 301 | 171 | 131 | 106 | 80 | 106 | 120 | 107   | 150 | 40 | 26   | 57.5 | 20 | 34   | 44 |
|      | 4P | 200.5 | 170 | 137 | 301 | 171 | 131 | 143 | 80 | 106 | 120 | 107   | 150 | 40 | 26   | 55.5 | 20 | 34   | 44 |
| F185 | 3P | 168.5 | 174 | 137 | 305 | 181 | 130 | 111 | 80 | 106 | 120 | 113.5 | 154 | 40 | 29   | 59.5 | 20 | 34   | 44 |
|      | 4P | 208.5 | 174 | 137 | 305 | 181 | 130 | 151 | 80 | 106 | 120 | 113.5 | 154 | 40 | 29   | 59.5 | 20 | 34   | 44 |
| F225 | 3P | 168.5 | 197 | 137 | 364 | 181 | 130 | 111 | 80 | 106 | 120 | 113.5 | 172 | 48 | 21   | 51.5 | 25 | 44.5 | 44 |
|      | 4P | 208.5 | 197 | 137 | 364 | 181 | 130 | 151 | 80 | 106 | 120 | 113.5 | 172 | 48 | 17   | 47.5 | 25 | 44.5 | 44 |
| F265 | 3P | 201.5 | 203 | 145 | 375 | 213 | 147 | 142 | 96 | 106 | 120 | 141   | 178 | 48 | 39   | 66.5 | 25 | 44.5 | 38 |

Product datasheet

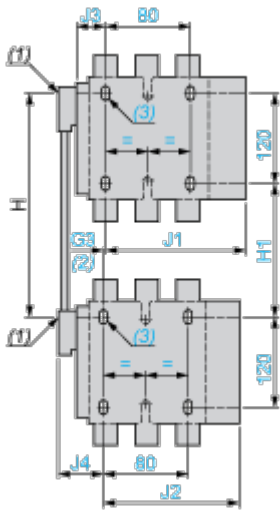
LC1F185MD

| LC1  |    | a     | b   | b1  | b2  | c   | f   | G     | G1 | J   | J1  | L   | M   | P  | Q  | Q1   | S  | S1   | Y  |
|------|----|-------|-----|-----|-----|-----|-----|-------|----|-----|-----|-----|-----|----|----|------|----|------|----|
|      | 4P | 244.5 | 203 | 145 | 375 | 213 | 147 | 190   | 96 | 106 | 120 | 141 | 178 | 48 | 34 | 66.5 | 25 | 44.5 | 38 |
| F330 | 3P | 213   | 206 | 145 | 375 | 219 | 147 | 154.5 | 96 | 106 | 120 | 145 | 181 | 48 | 43 | 74   | 25 | 44.5 | 38 |
|      | 4P | 261   | 206 | 145 | 375 | 219 | 147 | 202.5 | 96 | 106 | 120 | 145 | 181 | 48 | 43 | 74   | 25 | 44.5 | 38 |

TeSys F reversing contactors and changeover contactor pairs, vertically mounted

**NOTE:** For customer assembly, with mechanical interlock (MI) LA9 F, fixing recommended on AM1 EC uprights (please consult your Regional Sales Office). 2 x LC1 identical or different ratings (LC1 F115 to F630 and F800).

Assembly A



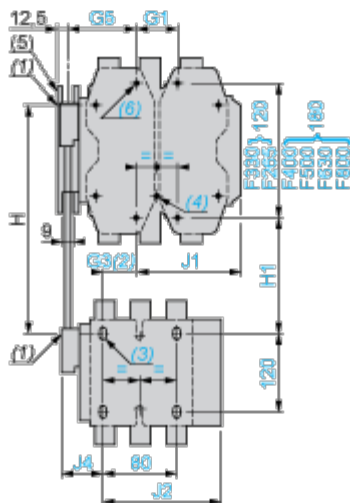
- (1) Mechanical interlock shaft.
- (2) For assembly of contactors of different ratings only.
- (3) 4 x Ø6.5 for LC1 F115 to F225.

Assembly A<sup>(7)</sup> - Mechanical interlock reference

|          | G3 3P | G3 4P | H min. | H max. | H1 min. | H1 max. | J1 3P | J1 4P |
|----------|-------|-------|--------|--------|---------|---------|-------|-------|
| LA9 FF4F | 0     | 0     | 200    | 310    | 80      | 190     | 137   | 155.5 |
| LA9 FG4F | 3     | 4     | 210    | 300    | 90      | 180     | 139.5 | 159.5 |
| LA9 FG4G | 0     | 0     | 220    | 310    | 100     | 190     | 139.5 | 159.5 |

|          | J2 3P | J2 4P | J3 3P | J3 4P | J4 3P | J4 4P |
|----------|-------|-------|-------|-------|-------|-------|
| LA9 FF4F | 137   | 155.5 | 48.5  | 67    | 48.5  | 67    |
| LA9 FG4F | 137   | 155.5 | 53    | 73    | 54    | 69    |
| LA9 FG4G | 139.5 | 159.5 | 53    | 73    | 53    | 73    |

Assembly B



- (4) 4 x Ø6.5 for LC1 F265.
- (5) Mechanical interlock guide bracket.

### Assembly B<sup>(7)</sup> - Mechanical interlock reference

| Assembly        | Mechanical Interlock Performance |       |       |       |       |       | H min. | H max. |
|-----------------|----------------------------------|-------|-------|-------|-------|-------|--------|--------|
|                 | G1 3P                            | G1 4P | G3 3P | G3 4P | G5 3P | G5 4P |        |        |
| <b>LA9 FH4F</b> | 96                               | 96    | 21    | 27    | 60    | 83    | 240    | 380    |
| <b>LA9 FJ4F</b> | 80                               | 80    | 45    | 26    | 83    | 83    | 250    | 380    |
| <b>LA9 FK4F</b> | 80                               | 140   | 45    | 26    | 83    | 83    | 270    | 380    |
| <b>LA9 FL4F</b> | 180                              | 240   | 35    | 17    | 74    | 74    | 310    | 380    |
| <b>LA9 FH4G</b> | 96                               | 96    | 19    | 23    | 60    | 83    | 250    | 380    |
| <b>LA9 FJ4G</b> | 80                               | 80    | 42    | 22    | 83    | 83    | 250    | 380    |
| <b>LA9 FK4G</b> | 80                               | 140   | 42    | 22    | 83    | 83    | 270    | 380    |
| <b>LA9 FL4G</b> | 180                              | 240   | 33    | 13    | 74    | 74    | 310    | 380    |

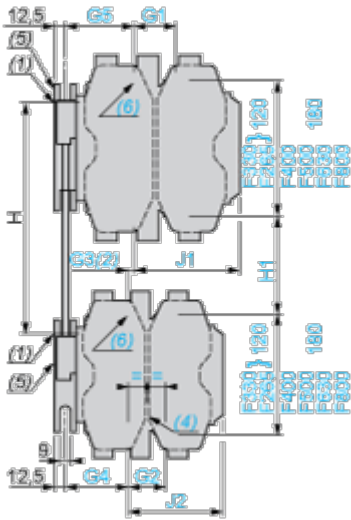
|          | H1 min. | H1 max. | J1 3P | J1 4P | J2 3P | J2 4P | J4 3P | J4 4P |
|----------|---------|---------|-------|-------|-------|-------|-------|-------|
| LA9 FH4F | 110     | 250     | 157.5 | 181.5 | 137   | 155.5 | 48.5  | 67    |
| LA9 FJ4F | 80      | 210     | 144.5 | 192.5 | 137   | 155.5 | 48.5  | 67    |
| LA9 FK4F | 100     | 210     | 164.5 | 219.5 | 137   | 155.5 | 48.5  | 67    |
| LA9 FL4F | 140     | 210     | 248.5 | 328.5 | 137   | 155.5 | 48.5  | 67    |
| LA9 FH4G | 120     | 250     | 157.5 | 181.5 | 139.5 | 159.5 | 53    | 73    |
| LA9 FJ4G | 90      | 220     | 144.5 | 192.5 | 139.5 | 159.5 | 53    | 73    |
| LA9 FK4G | 110     | 220     | 164.5 | 219.5 | 139.5 | 159.5 | 53    | 73    |

Product datasheet

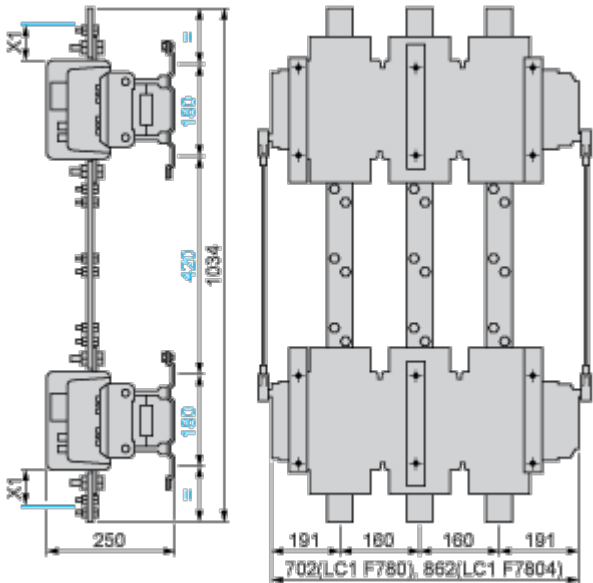
LC1F185MD

|          | H1 min. | H1 max. | J1 3P | J1 4P | J2 3P | J2 4P | J4 3P | J4 4P |
|----------|---------|---------|-------|-------|-------|-------|-------|-------|
| LA9 FL4G | 150     | 220     | 248.5 | 328.5 | 139.5 | 159.5 | 53    | 73    |

Assembly C



(6) 4 x Ø8.5 for LC1 F400, F500 or 4 x Ø10.5 for LC1 F630 and F800.



- (7) Only 3P for F800.
- (8) In this case, G4 is greater than G5.

Assembly C<sup>(7)</sup>

|          | G1 3P | G1 4P | G2 3P | G2 4P | G3 3P | G3 4P | G4 3P | G4 4P | G5 3P | G5 4P |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| LA9 FH4H | 96    | 96    | 96    | 96    | 0     | 0     | 60    | 83    | 60    | 83    |
| LA9 FJ4H | 80    | 80    | 96    | 96    | 23    | 0     | 60    | 83    | 83    | 83    |
| LA9 FK4H | 80    | 140   | 96    | 96    | 23    | 0     | 60    | 83    | 83    | 83    |

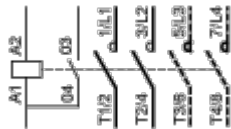
|          | G1 3P | G1 4P | G2 3P | G2 4P | G3 3P            | G3 4P            | G4 3P | G4 4P | G5 3P | G5 4P |
|----------|-------|-------|-------|-------|------------------|------------------|-------|-------|-------|-------|
| LA9 FL4H | 180   | 240   | 96    | 96    | 14               | 9 <sup>(8)</sup> | 60    | 83    | 74    | 74    |
| LA9 FJ4J | 80    | 80    | 80    | 80    | 0                | 0                | 83    | 83    | 83    | 83    |
| LA9 FK4J | 80    | 140   | 80    | 80    | 0                | 0                | 83    | 83    | 83    | 83    |
| LA9 FL4J | 180   | 240   | 80    | 80    | 9 <sup>(8)</sup> | 9 <sup>(8)</sup> | 83    | 83    | 74    | 74    |
| LA9 FK4K | 80    | 140   | 80    | 140   | 0                | 0                | 83    | 83    | 83    | 83    |
| LA9 FL4K | 180   | 240   | 80    | 140   | 9 <sup>(8)</sup> | 9 <sup>(8)</sup> | 83    | 83    | 74    | 74    |
| LA9 FL4L | 180   | 240   | 180   | 240   | 0                | 0                | 74    | 74    | 74    | 74    |

|          | H min. | H max. | H1 min. | H1 max. | J1 3P | J1 4P | J2 3P | J2 4P |
|----------|--------|--------|---------|---------|-------|-------|-------|-------|
| LA9 FH4H | 250    | 380    | 130     | 260     | 157.5 | 181.5 | 157.5 | 181.5 |
| LA9 FJ4H | 260    | 380    | 110     | 230     | 144.5 | 192.5 | 157.5 | 181.5 |
| LA9 FK4H | 280    | 380    | 130     | 230     | 164.5 | 219.5 | 157.5 | 181.5 |
| LA9 FL4H | 330    | 380    | 170     | 220     | 248.5 | 328.5 | 157.5 | 181.5 |
| LA9 FJ4J | 260    | 380    | 60      | 200     | 144.5 | 192.5 | 144.5 | 192.5 |
| LA9 FK4J | 280    | 380    | 100     | 200     | 164.5 | 219.5 | 144.5 | 192.5 |
| LA9 FL4J | 325    | 380    | 140     | 195     | 248.5 | 329.5 | 144.5 | 192.5 |
| LA9 FK4K | 300    | 380    | 120     | 200     | 164.5 | 329.5 | 164.5 | 219.5 |
| LA9 FL4K | 345    | 380    | 160     | 195     | 248.5 | 328.5 | 164.5 | 219.5 |
| LA9 FL4L | 380    | 380    | 200     | 200     | 248.5 | 328.5 | 248.5 | 328.5 |

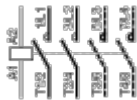
Connections and Schema

Connections and Schema

2, 3, and 4-pole Contactors



LC1 F115 to F630, F1250(coil LX1 F  )



LC1 F115 to F630 , F1250 (coil LX4 F  )

LC1 F115 to F265 (coil LX9 F  )

LC1 F800 (coil LX8 F  /  )