

# Product data sheet

Specifications



contactor, TeSys F, 3P(3NO), AC-3, <=440V 780A, coil 230V AC

LC1F780P7

## 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 | <= 1000 V AC 50/60 Hz<br><= 460 V DC                                            |
| [Uc] control circuit voltage   | 230 V AC 40...400 Hz                                                            |
| [Ie] rated operational current | 1600 A (at <40 °C) at <= 440 V AC AC-1<br>780 A (at <55 °C) at <= 440 V AC AC-3 |

## Complementary

|                                             |                                                                                                                     |
|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| [Uimp] rated impulse withstand voltage      | 8 kV                                                                                                                |
| [Ith] conventional free air thermal current | 1600 A (at 40 °C)                                                                                                   |
| Rated breaking capacity                     | 6240 A conforming to IEC 60947-4-1                                                                                  |
| [Icw] rated short-time withstand current    | 3000 A 40 °C - 3 min<br>6250 A 40 °C - 10 s<br>5600 A 40 °C - 30 s<br>4600 A 40 °C - 1 min<br>2200 A 40 °C - 10 min |
| Associated fuse rating                      | 1600 A gG at <= 440 V<br>800 A aM at <= 440 V                                                                       |
| Average impedance                           | 0.1 mOhm - Ith 1600 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                  | 250 W AC-1<br>60 W AC-3                                                                                             |
| Overvoltage category                        | III                                                                                                                 |
| Power pole contact composition              | 3 NO                                                                                                                |
| Motor power kW                              | 450 kW at 1000 V AC 50/60 Hz (AC-3)<br>400 kW at 380...400 V AC 50/60 Hz (AC-3)                                     |

|                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                 | 425 kW at 415 V AC 50/60 Hz (AC-3)<br>425 kW at 440 V AC 50/60 Hz (AC-3)<br>450 kW at 500 V AC 50/60 Hz (AC-3)<br>475 kW at 660...690 V AC 50/60 Hz (AC-3)<br>220 kW at 220...230 V AC 50/60 Hz (AC-3)<br>110 kW at 400 V AC 50/60 Hz (AC-4)                                                                                                                                                                                                                                                                                                                                                                                                     |
| Control circuit voltage limits  | Operational: 0.85...1.1 Uc 40...400 Hz (at 55 °C)<br>Drop-out: 0.2...0.4 Uc 40...400 Hz (at 55 °C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Mechanical durability           | 5 Mcycles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Inrush power in VA              | 2100 VA, 40...400 Hz cos phi 0.9 (at 20 °C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Hold-in power consumption in VA | 50 VA, 40...400 Hz cos phi 0.9 (at 20 °C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Maximum operating rate          | 600 cyc/h 55 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Operating time                  | 40...80 ms closing<br>130...230 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: 100 x 5 mm<br>Power circuit: bolted connection |
| Tightening torque               | Control circuit: 1.2 N.m<br>Power circuit: 58 N.m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Mounting support                | Plate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Heat dissipation                | 44 W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Motor power range               | 250...500 kW at 380...440 V 3 phases<br>110...220 kW at 200...240 V 3 phases<br>250...500 kW at 480...500 V 3 phases                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Motor starter type              | Direct on-line contactor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Contactor coil voltage          | 230 V AC standard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Standards                       | JIS C8201-4-1<br>EN 60947-1<br>IEC 60947-1<br>IEC 60947-4-1<br>EN 60947-4-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Product certifications          | CSA<br>RMRoS<br>BV<br>UL<br>DNV<br>LROS (Lloyds register of shipping)<br>CB<br>RINA<br>ABS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Compatibility code              | LC1F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Control circuit type            | AC at 40...400 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

## Environment

|                                                       |                                                                                                             |
|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| IP degree of protection                               | IP20 front face with shrouds conforming to IEC 60529<br>IP20 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                                                | 434 mm                                                                                                      |
| Width                                                 | 702 mm                                                                                                      |
| Depth                                                 | 255 mm                                                                                                      |

|                    |                         |
|--------------------|-------------------------|
| Operating altitude | 3000 m without derating |
| Net weight         | 39.5 kg                 |

Packing Units

|                              |          |
|------------------------------|----------|
| Unit Type of Package 1       | PCE      |
| Number of Units in Package 1 | 1        |
| Package 1 Height             | 42.0 cm  |
| Package 1 Width              | 44.0 cm  |
| Package 1 Length             | 97.0 cm  |
| Package 1 Weight             | 43.0 kg  |
| Unit Type of Package 2       | PAL      |
| Number of Units in Package 2 | 2        |
| Package 2 Height             | 85.0 cm  |
| Package 2 Width              | 120.0 cm |
| Package 2 Length             | 80.0 cm  |
| Package 2 Weight             | 113.0 kg |

Offer Sustainability

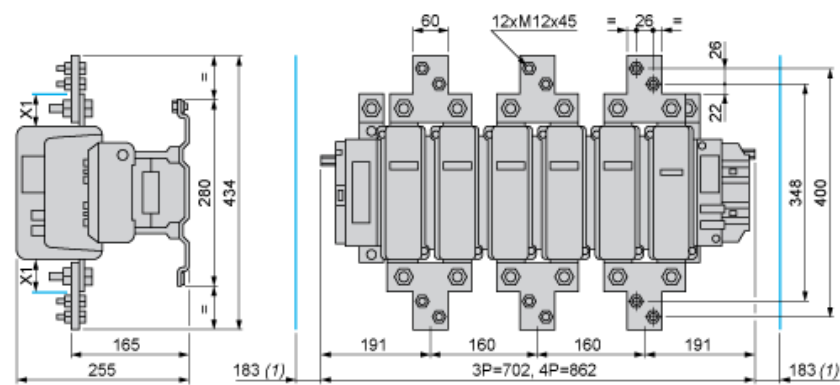
|                            |                                                                                                                             |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Sustainable offer status   | Green Premium product                                                                                                       |
| REACH Regulation           | <a href="#">REACH Declaration</a>                                                                                           |
| EU RoHS Directive          | Compliant<br><a href="#">EU RoHS Declaration</a>                                                                            |
| Mercury free               | Yes                                                                                                                         |
| China RoHS Regulation      | <a href="#">China RoHS declaration</a><br>Product out of China RoHS scope. Substance declaration for your information       |
| RoHS exemption information | <a href="#">Yes</a>                                                                                                         |
| Environmental Disclosure   | <a href="#">Product Environmental Profile</a>                                                                               |
| Circularity Profile        | <a href="#">End of Life Information</a>                                                                                     |
| WEEE                       | The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins |

Contractual warranty

|          |           |
|----------|-----------|
| Warranty | 18 months |
|----------|-----------|

Dimensions and Drawings

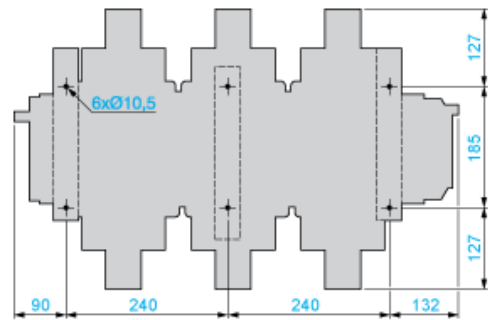
LC1 F780



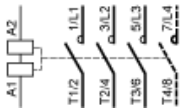
(1) Minimum distance required for coil removal.  
**NOTE:** X1 (mm) = Minimum electrical clearance according to operating voltage and breaking capacity.

|         |             |              |
|---------|-------------|--------------|
| Voltage | 200...500 V | 690...1000 V |
| X1 (mm) | 30          | 35           |

Fixing centers of LC1 F780



Connections and Schema



LC1 F780 ~ or ==

Recommended replacement(s)