



## Main

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| Range                                  | TeSys                                                                                                                                                                                                                                                                                                     |
| Product name                           | TeSys D                                                                                                                                                                                                                                                                                                   |
| Product or component type              | Reversing contactor                                                                                                                                                                                                                                                                                       |
| Device short name                      | LC2D                                                                                                                                                                                                                                                                                                      |
| Contactor application                  | Resistive load<br>Motor control                                                                                                                                                                                                                                                                           |
| Utilisation category                   | AC-1<br>AC-3                                                                                                                                                                                                                                                                                              |
| Device presentation                    | Preassembled with reversing power busbar                                                                                                                                                                                                                                                                  |
| Poles description                      | 3P                                                                                                                                                                                                                                                                                                        |
| Power pole contact composition         | 3 NO                                                                                                                                                                                                                                                                                                      |
| [Ue] rated operational voltage         | Power circuit: ≤ 1000 V AC 25...400 Hz<br>Power circuit: ≤ 300 V DC                                                                                                                                                                                                                                       |
| [Ie] rated operational current         | 125 A (at <60 °C) at ≤ 440 V AC AC-1 for power circuit<br>95 A (at <60 °C) at ≤ 440 V AC AC-3 for power circuit                                                                                                                                                                                           |
| Motor power kW                         | 45 kW at 415...440 V AC 50 Hz<br>55 kW at 500 V AC 50 Hz<br>45 kW at 660...690 V AC 50 Hz<br>45 kW at 1000 V AC 50 Hz<br>25 kW at 220...230 V AC 50 Hz<br>45 kW at 380...400 V AC 50 Hz                                                                                                                   |
| Motor power HP (UL / CSA)              | 20 hp at 200/208 V AC 60 Hz for 3 phases motors<br>7.5 hp at 115 V AC 60 Hz for 1 phase motors<br>15 hp at 230/240 V AC 60 Hz for 1 phase motors<br>25 hp at 230/240 V AC 60 Hz for 3 phases motors<br>60 hp at 460/480 V AC 60 Hz for 3 phases motors<br>60 hp at 575/600 V AC 60 Hz for 3 phases motors |
| Control circuit type                   | AC at 50/60 Hz                                                                                                                                                                                                                                                                                            |
| [Uc] control circuit voltage           | 220 V AC 50/60 Hz                                                                                                                                                                                                                                                                                         |
| Auxiliary contact composition          | 1 NO + 1 NC                                                                                                                                                                                                                                                                                               |
| [Uimp] rated impulse withstand voltage | 8 kV conforming to IEC 60947                                                                                                                                                                                                                                                                              |
| Overvoltage category                   | III                                                                                                                                                                                                                                                                                                       |

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| [I <sub>th</sub> ] conventional free air thermal current | 10 A (at 60 °C) for signalling circuit<br>125 A (at 60 °C) for power circuit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| I <sub>rms</sub> rated making capacity                   | 140 A AC for signalling circuit conforming to IEC 60947-5-1<br>250 A DC for signalling circuit conforming to IEC 60947-5-1<br>1100 A at 440 V for power circuit conforming to IEC 60947                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Rated breaking capacity                                  | 1100 A at 440 V for power circuit conforming to IEC 60947                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| [I <sub>cw</sub> ] rated short-time withstand current    | 135 A 40 °C - 10 min for power circuit<br>400 A 40 °C - 1 min for power circuit<br>800 A 40 °C - 10 s for power circuit<br>1100 A 40 °C - 1 s for power circuit<br>100 A - 1 s for signalling circuit<br>120 A - 500 ms for signalling circuit<br>140 A - 100 ms for signalling circuit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Associated fuse rating                                   | 10 A gG for signalling circuit conforming to IEC 60947-5-1<br>200 A gG at ≤ 690 V coordination type 1 for power circuit<br>160 A gG at ≤ 690 V coordination type 2 for power circuit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Average impedance                                        | 0.8 mOhm - I <sub>th</sub> 125 A 50 Hz for power circuit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| [U <sub>i</sub> ] rated insulation voltage               | Power circuit: 600 V CSA certified<br>Power circuit: 600 V UL certified<br>Signalling circuit: 690 V conforming to IEC 60947-1<br>Signalling circuit: 600 V CSA certified<br>Signalling circuit: 600 V UL certified<br>Power circuit: 1000 V conforming to IEC 60947-4-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Electrical durability                                    | 1.2 Mcycles 95 A AC-3 at U <sub>e</sub> ≤ 440 V<br>1.3 Mcycles 125 A AC-1 at U <sub>e</sub> ≤ 440 V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Power dissipation per pole                               | 12.5 W AC-1<br>7.2 W AC-3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Safety cover                                             | With                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Interlocking type                                        | Mechanical                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Mounting support                                         | Rail<br>Plate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Standards                                                | CSA C22.2 No 14<br>EN 60947-4-1<br>EN 60947-5-1<br>IEC 60947-4-1<br>IEC 60947-5-1<br>UL 508                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Product certifications                                   | DNV<br>CCC<br>LROS (Lloyds register of shipping)<br>GOST<br>BV<br>RINA<br>GL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Connections - terminals                                  | Control circuit: screw clamp terminals 1 cable(s) 1...4 mm <sup>2</sup> flexible without cable end<br>Control circuit: screw clamp terminals 2 cable(s) 1...4 mm <sup>2</sup> flexible without cable end<br>Control circuit: screw clamp terminals 2 cable(s) 1...2.5 mm <sup>2</sup> flexible with cable end<br>Control circuit: screw clamp terminals 1 cable(s) 1...4 mm <sup>2</sup> solid without cable end<br>Control circuit: screw clamp terminals 2 cable(s) 1...4 mm <sup>2</sup> solid without cable end<br>Control circuit: screw clamp terminals 1 cable(s) 1...2.5 mm <sup>2</sup> flexible with cable end<br>Power circuit: connector 1 cable(s) 4...50 mm <sup>2</sup> flexible without cable end<br>Power circuit: connector 2 cable(s) 4...25 mm <sup>2</sup> flexible without cable end<br>Power circuit: connector 1 cable(s) 4...50 mm <sup>2</sup> flexible with cable end<br>Power circuit: connector 2 cable(s) 4...16 mm <sup>2</sup> flexible with cable end<br>Power circuit: connector 1 cable(s) 4...50 mm <sup>2</sup> solid without cable end<br>Power circuit: connector 2 cable(s) 4...25 mm <sup>2</sup> solid without cable end |
| Tightening torque                                        | Control circuit: 1.2 N.m - on screw clamp terminals - with screwdriver flat Ø 6 mm<br>Control circuit: 1.2 N.m - on screw clamp terminals - with screwdriver Philips No 2<br>Power circuit: 9 N.m - on connector - with screwdriver flat Ø 6 to Ø 8 mm<br>Power circuit: 9 N.m - on connector hexagonal screw head 4 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Operating time                                           | 20...35 ms closing<br>6...20 ms opening                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Safety reliability level                                 | B10d = 1369863 cycles contactor with nominal load conforming to EN/ISO 13849-1<br>B10d = 20000000 cycles contactor with mechanical load conforming to EN/ISO 13849-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Mechanical durability                                    | 4 Mcycles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Maximum operating rate                                   | 3600 cyc/h 60 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

## Complementary

|                                 |                                                                                                                                                  |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Coil technology                 | Without built-in suppressor module                                                                                                               |
| Control circuit voltage limits  | Drop-out: 0.3...0.6 Uc AC 50/60 Hz (at 55 °C)<br>Operational: 0.8...1.1 Uc AC 50 Hz (at 55 °C)<br>Operational: 0.85...1.1 Uc AC 60 Hz (at 55 °C) |
| Inrush power in VA              | 245 VA 60 Hz cos phi 0.75 (at 20 °C)<br>245 VA 50 Hz cos phi 0.75 (at 20 °C)                                                                     |
| Hold-in power consumption in VA | 26 VA 60 Hz cos phi 0.3 (at 20 °C)<br>26 VA 50 Hz cos phi 0.3 (at 20 °C)                                                                         |
| Heat dissipation                | 6...10 W at 50/60 Hz                                                                                                                             |
| Auxiliary contacts type         | type mechanically linked 1 NO + 1 NC conforming to IEC 60947-5-1<br>type mirror contact 1 NC conforming to IEC 60947-4-1                         |
| Signalling circuit frequency    | 25...400 Hz                                                                                                                                      |
| Minimum switching current       | 5 mA for signalling circuit                                                                                                                      |
| Minimum switching voltage       | 17 V for signalling circuit                                                                                                                      |
| Non-overlap time                | 1.5 ms on de-energisation between NC and NO contact<br>1.5 ms on energisation between NC and NO contact                                          |
| Insulation resistance           | > 10 MOhm for signalling circuit                                                                                                                 |

## Environment

|                                                       |                                                                                                                                                                                   |
|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IP degree of protection                               | IP20 front face conforming to IEC 60529                                                                                                                                           |
| Protective treatment                                  | TH conforming to IEC 60068-2-30                                                                                                                                                   |
| Pollution degree                                      | 3                                                                                                                                                                                 |
| Ambient air temperature for operation                 | -5...60 °C                                                                                                                                                                        |
| Ambient air temperature for storage                   | -60...80 °C                                                                                                                                                                       |
| Permissible ambient air temperature around the device | -40...70 °C at Uc                                                                                                                                                                 |
| Operating altitude                                    | 3000 m without                                                                                                                                                                    |
| Fire resistance                                       | 850 °C conforming to IEC 60695-2-1                                                                                                                                                |
| Flame retardance                                      | V1 conforming to UL 94                                                                                                                                                            |
| Mechanical robustness                                 | Vibrations contactor open: 2 Gn, 5...300 Hz<br>Shocks contactor open: 8 Gn for 11 ms<br>Vibrations contactor closed: 3 Gn, 5...300 Hz<br>Shocks contactor closed: 10 Gn for 11 ms |
| Height                                                | 127 mm                                                                                                                                                                            |
| Width                                                 | 182 mm                                                                                                                                                                            |
| Depth                                                 | 158 mm                                                                                                                                                                            |
| Net weight                                            | 3.2 kg                                                                                                                                                                            |

## Offer Sustainability

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|----------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Sustainable offer status   | Green Premium product                                                                                                       |
| REACH Regulation           | <a href="#">REACH Declaration</a>                                                                                           |
| REACH free of SVHC         | Yes                                                                                                                         |
| EU RoHS Directive          | Compliant<br><a href="#">EU RoHS Declaration</a>                                                                            |
| Toxic heavy metal free     | Yes                                                                                                                         |
| Mercury free               | Yes                                                                                                                         |
| RoHS exemption information | <a href="#">Yes</a>                                                                                                         |
| China RoHS Regulation      | <a href="#">China RoHS declaration</a>                                                                                      |
| Environmental Disclosure   | <a href="#">Product Environmental Profile</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 |
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