



## 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                    | Preamsembled with reversing power busbar                                                                                                                                                                                                                                                              |
| Poles description                      | 3P                                                                                                                                                                                                                                                                                                    |
| Power pole contact composition         | 3 NO                                                                                                                                                                                                                                                                                                  |
| [Ue] rated operational voltage         | Power circuit: ≤ 690 V AC 25...400 Hz<br>Power circuit: ≤ 300 V DC                                                                                                                                                                                                                                    |
| [Ie] rated operational current         | 25 A (at <60 °C) at ≤ 440 V AC AC-1 for power circuit<br>12 A (at <60 °C) at ≤ 440 V AC AC-3 for power circuit                                                                                                                                                                                        |
| Motor power kW                         | 3 kW at 220...230 V AC 50 Hz<br>5.5 kW at 380...400 V AC 50 Hz<br>5.5 kW at 415...440 V AC 50 Hz<br>7.5 kW at 500 V AC 50 Hz<br>7.5 kW at 660...690 V AC 50 Hz                                                                                                                                        |
| Motor power HP (UL / CSA)              | 1 hp at 115 V AC 60 Hz for 1 phase motors<br>2 hp at 230/240 V AC 60 Hz for 1 phase motors<br>3 hp at 200/208 V AC 60 Hz for 3 phases motors<br>3 hp at 230/240 V AC 60 Hz for 3 phases motors<br>7.5 hp at 460/480 V AC 60 Hz for 3 phases motors<br>10 hp at 575/600 V AC 60 Hz for 3 phases motors |
| Control circuit type                   | AC at 50/60 Hz                                                                                                                                                                                                                                                                                        |
| [Uc] control circuit voltage           | 42 V AC 50/60 Hz                                                                                                                                                                                                                                                                                      |
| Auxiliary contact composition          | 1 NO + 1 NC                                                                                                                                                                                                                                                                                           |
| [Uimp] rated impulse withstand voltage | 6 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>25 A (at 60 °C) for power circuit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| I <sub>rms</sub> rated making capacity                   | 250 A at 440 V for power circuit conforming to IEC 60947<br>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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Rated breaking capacity                                  | 250 A at 440 V for power circuit conforming to IEC 60947                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| [I <sub>cw</sub> ] rated short-time withstand current    | 30 A 40 °C - 10 min for power circuit<br>61 A 40 °C - 1 min for power circuit<br>105 A 40 °C - 10 s for power circuit<br>210 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>40 A gG at ≤ 690 V coordination type 1 for power circuit<br>25 A gG at ≤ 690 V coordination type 2 for power circuit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Average impedance                                        | 2.5 mOhm - I <sub>th</sub> 25 A 50 Hz for power circuit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| [U <sub>i</sub> ] rated insulation voltage               | Power circuit: 690 V conforming to IEC 60947-4-1<br>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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Electrical durability                                    | 2 Mcycles 12 A AC-3 at U <sub>e</sub> ≤ 440 V<br>0.8 Mcycles 25 A AC-1 at U <sub>e</sub> ≤ 440 V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Power dissipation per pole                               | 1.56 W AC-1<br>0.36 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                                   | RINA<br>LROS (Lloyds register of shipping)<br>BV<br>CCC<br>UL<br>GOST<br>GL<br>CSA<br>DNV                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Connections - terminals                                  | Power circuit: screw clamp terminals 1 cable(s) 1...4 mm <sup>2</sup> flexible without cable end<br>Power circuit: screw clamp terminals 2 cable(s) 1...4 mm <sup>2</sup> flexible without cable end<br>Power circuit: screw clamp terminals 1 cable(s) 1...4 mm <sup>2</sup> flexible with cable end<br>Power circuit: screw clamp terminals 2 cable(s) 1...2.5 mm <sup>2</sup> flexible with cable end<br>Power circuit: screw clamp terminals 1 cable(s) 1...4 mm <sup>2</sup> solid without cable end<br>Power 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...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 1 cable(s) 1...4 mm <sup>2</sup> flexible with 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 |
| Tightening torque                                        | Power circuit: 1.7 N.m - on screw clamp terminals - with screwdriver flat Ø 6 mm<br>Power circuit: 1.7 N.m - on screw clamp terminals - with screwdriver Philips No 2<br>Control circuit: 1.7 N.m - on screw clamp terminals - with screwdriver flat Ø 6 mm<br>Control circuit: 1.7 N.m - on screw clamp terminals - with screwdriver Philips No 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Operating time                                           | 12...22 ms closing<br>4...19 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                                    | 15 Mcycles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

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| Maximum operating rate | 3600 cyc/h 60 °C |
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## Complementary

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| Coil technology                 | Without built-in suppressor module                                                                                                               |
| Control circuit voltage limits  | Drop-out: 0.3...0.6 Uc AC 50/60 Hz (at 60 °C)<br>Operational: 0.8...1.1 Uc AC 50 Hz (at 60 °C)<br>Operational: 0.85...1.1 Uc AC 60 Hz (at 60 °C) |
| Inrush power in VA              | 70 VA 60 Hz cos phi 0.75 (at 20 °C)<br>70 VA 50 Hz cos phi 0.75 (at 20 °C)                                                                       |
| Hold-in power consumption in VA | 7.5 VA 60 Hz cos phi 0.3 (at 20 °C)<br>7 VA 50 Hz cos phi 0.3 (at 20 °C)                                                                         |
| Heat dissipation                | 2...3 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

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|-------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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                 | -20...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>Vibrations contactor closed: 4 Gn, 5...300 Hz<br>Shocks contactor open: 10 Gn for 11 ms<br>Shocks contactor closed: 15 Gn for 11 ms |
| Height                                                | 77 mm                                                                                                                                                                              |
| Width                                                 | 90 mm                                                                                                                                                                              |
| Depth                                                 | 86 mm                                                                                                                                                                              |
| Net weight                                            | 0.697 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>                                                                               |
| 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

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| Warranty | 18 months |
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