



## Main

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|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Range                                  | TeSys                                                                                                                                                                                                                                                                                                                      |
| Product name                           | TeSys D                                                                                                                                                                                                                                                                                                                    |
| Product or component type              | Contactor                                                                                                                                                                                                                                                                                                                  |
| Device short name                      | LC1D                                                                                                                                                                                                                                                                                                                       |
| Contactor application                  | Resistive load<br>Motor control                                                                                                                                                                                                                                                                                            |
| Utilisation category                   | AC-1<br>AC-4<br>AC-3                                                                                                                                                                                                                                                                                                       |
| Poles description                      | 3P                                                                                                                                                                                                                                                                                                                         |
| Power pole contact composition         | 3 NO                                                                                                                                                                                                                                                                                                                       |
| [Ue] rated operational voltage         | Power circuit: $\leq 690$ V AC 25...400 Hz<br>Power circuit: $\leq 300$ V DC                                                                                                                                                                                                                                               |
| [Ie] rated operational current         | 25 A (at $\leq 60$ °C) at $\leq 440$ V AC AC-3 for power circuit<br>40 A (at $\leq 60$ °C) at $\leq 440$ V AC AC-1 for power circuit                                                                                                                                                                                       |
| Motor power kW                         | 5.5 kW at 220...230 V AC 50/60 Hz (AC-3)<br>11 kW at 380...400 V AC 50/60 Hz (AC-3)<br>11 kW at 415...440 V AC 50/60 Hz (AC-3)<br>15 kW at 500 V AC 50/60 Hz (AC-3)<br>15 kW at 660...690 V AC 50/60 Hz (AC-3)<br>5.5 kW at 400 V AC 50/60 Hz (AC-4)                                                                       |
| Motor power HP (UL / CSA)              | 3 hp at 230/240 V AC 50/60 Hz for 1 phase motors<br>2 hp at 115 V AC 50/60 Hz for 1 phase motors<br>7.5 hp at 230/240 V AC 50/60 Hz for 3 phases motors<br>15 hp at 460/480 V AC 50/60 Hz for 3 phases motors<br>20 hp at 575/600 V AC 50/60 Hz for 3 phases motors<br>7.5 hp at 200/208 V AC 50/60 Hz for 3 phases motors |
| Control circuit type                   | AC at 50/60 Hz                                                                                                                                                                                                                                                                                                             |
| [Uc] control circuit voltage           | 48 V AC 50/60 Hz                                                                                                                                                                                                                                                                                                           |
| Auxiliary contact composition          | 1 NO + 1 NC                                                                                                                                                                                                                                                                                                                |
| [Uimp] rated impulse withstand voltage | 6 kV conforming to IEC 60947                                                                                                                                                                                                                                                                                               |

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| Overvoltage category                        | III                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| [Ith] conventional free air thermal current | 10 A (at 60 °C) for signalling circuit<br>40 A (at 60 °C) for power circuit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Irms 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>450 A at 440 V for power circuit conforming to IEC 60947                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Rated breaking capacity                     | 450 A at 440 V for power circuit conforming to IEC 60947                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| [Icw] rated short-time withstand current    | 240 A 40 °C - 10 s for power circuit<br>380 A 40 °C - 1 s for power circuit<br>50 A 40 °C - 10 min for power circuit<br>120 A 40 °C - 1 min 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>63 A gG at <= 690 V coordination type 1 for power circuit<br>40 A gG at <= 690 V coordination type 2 for power circuit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Average impedance                           | 2 mOhm - Ith 40 A 50 Hz for power circuit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| [Ui] 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                       | 1.65 Mcycles 25 A AC-3 at Ue <= 440 V<br>1.4 Mcycles 40 A AC-1 at Ue <= 440 V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Power dissipation per pole                  | 3.2 W AC-1<br>1.25 W AC-3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Front cover                                 | With                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 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>GOST<br>BV<br>CCC<br>DNV<br>UL<br>GL<br>CSA<br>LROS (Lloyds register of shipping)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 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 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<br>Power circuit: screw clamp terminals 1 cable(s) 2.5...10 mm <sup>2</sup> flexible without cable end<br>Power circuit: screw clamp terminals 2 cable(s) 2.5...10 mm <sup>2</sup> flexible without cable end<br>Power circuit: screw clamp terminals 1 cable(s) 1...10 mm <sup>2</sup> flexible with cable end<br>Power circuit: screw clamp terminals 2 cable(s) 1.5...6 mm <sup>2</sup> flexible with cable end<br>Power circuit: screw clamp terminals 1 cable(s) 1.5...10 mm <sup>2</sup> solid without cable end<br>Power circuit: screw clamp terminals 2 cable(s) 2.5...10 mm <sup>2</sup> solid without cable end |
| Tightening torque                           | 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<br>Power circuit: 2.5 N.m - on screw clamp terminals - with screwdriver flat Ø 6 mm<br>Power circuit: 2.5 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

|                        |                  |
|------------------------|------------------|
| Maximum operating rate | 3600 cyc/h 60 °C |
|------------------------|------------------|

## Complementary

|                                 |                                                                                                                                                                                                           |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Coil technology                 | Without built-in suppressor module                                                                                                                                                                        |
| Control circuit voltage limits  | 0.3...0.6 Uc (-40...70 °C):drop-out AC 50/60 Hz<br>0.8...1.1 Uc (-40...60 °C):operational AC 50 Hz<br>0.85...1.1 Uc (-40...60 °C):operational AC 60 Hz<br>1...1.1 Uc (60...70 °C):operational AC 50/60 Hz |
| 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                                                                                                                                                                          |
| Contact compatibility           | M2                                                                                                                                                                                                        |
| Compatibility code              | LC1D                                                                                                                                                                                                      |
| Motor power range               | 4...6 kW at 200...240 V 3 phases<br>7...11 kW at 380...440 V 3 phases<br>7...11 kW at 480...500 V 3 phases                                                                                                |
| Motor starter type              | Direct on-line contactor                                                                                                                                                                                  |
| Contactor coil voltage          | 48 V AC standard                                                                                                                                                                                          |

## 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 | -40...60 °C<br>60...70 °C with derating                                                                                                                                           |
| Ambient air temperature for storage   | -60...80 °C                                                                                                                                                                       |
| Operating altitude                    | 0...3000 m                                                                                                                                                                        |
| 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 closed: 15 Gn for 11 ms<br>Shocks contactor open: 8 Gn for 11 ms |
| Height                                | 85 mm                                                                                                                                                                             |
| Width                                 | 45 mm                                                                                                                                                                             |
| Depth                                 | 92 mm                                                                                                                                                                             |
| Net weight                            | 0.37 kg                                                                                                                                                                           |

## Packing Units

|                              |         |
|------------------------------|---------|
| Unit Type of Package 1       | PCE     |
| Number of Units in Package 1 | 1       |
| Package 1 Weight             | 418 g   |
| Package 1 Height             | 5 cm    |
| Package 1 width              | 9.2 cm  |
| Package 1 Length             | 11.2 cm |
| Unit Type of Package 2       | S02     |

|                              |           |
|------------------------------|-----------|
| Number of Units in Package 2 | 20        |
| Package 2 Weight             | 8.678 kg  |
| Package 2 Height             | 15 cm     |
| Package 2 width              | 30 cm     |
| Package 2 Length             | 40 cm     |
| Unit Type of Package 3       | P06       |
| Number of Units in Package 3 | 320       |
| Package 3 Weight             | 146.98 kg |
| Package 3 Height             | 80 cm     |
| Package 3 width              | 80 cm     |
| Package 3 Length             | 60 cm     |

### Offer Sustainability

|                            |                                                                                                                             |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| 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><br>Pro-active China RoHS declaration (out of China RoHS legal scope)                 |
| 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 |
| PVC free                   | Yes                                                                                                                         |

### Contractual warranty

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