

# LC1D12GD

TeSys D contactor - 3P(3 NO) - AC-3 - ≤ 440 V 12 A - 125 V DC coil



## Main

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|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Range of product                            | TeSys D                                                                                                                                                                                                                                                                                                                 |
| Product or component type                   | Contactor                                                                                                                                                                                                                                                                                                               |
| Device short name                           | LC1D                                                                                                                                                                                                                                                                                                                    |
| Contactor application                       | Motor control<br>Resistive load                                                                                                                                                                                                                                                                                         |
| Utilisation category                        | AC-1<br>AC-3                                                                                                                                                                                                                                                                                                            |
| Poles description                           | 3P                                                                                                                                                                                                                                                                                                                      |
| Power pole contact composition              | 3 NO                                                                                                                                                                                                                                                                                                                    |
| [Ue] rated operational voltage              | ≤ 690 V AC 25...400 Hz for power circuit<br>≤ 690 V DC for power circuit                                                                                                                                                                                                                                                |
| [Ie] rated operational current              | 12 A (≤ 60 °C) at ≤ 440 V AC AC-3 for power circuit<br>25 A (≤ 60 °C) at ≤ 440 V AC AC-1 for power circuit                                                                                                                                                                                                              |
| Motor power kW                              | 3 kW at 220...230 V AC 50/60 Hz<br>5.5 kW at 380...400 V AC 50/60 Hz<br>5.5 kW at 415...440 V AC 50/60 Hz<br>7.5 kW at 500 V AC 50/60 Hz<br>7.5 kW at 660...690 V AC 50/60 Hz                                                                                                                                           |
| Motor power HP (according to UL / CSA)      | 1 hp at 115 V AC 50/60 Hz for 1 phase motors<br>2 hp at 230/240 V AC 50/60 Hz for 1 phase motors<br>3 hp at 200/208 V AC 50/60 Hz for 3 phases motors<br>3 hp at 230/240 V AC 50/60 Hz for 3 phases motors<br>7.5 hp at 460/480 V AC 50/60 Hz for 3 phases motors<br>10 hp at 575/600 V AC 50/60 Hz for 3 phases motors |
| Control circuit type                        | DC standard                                                                                                                                                                                                                                                                                                             |
| Control circuit voltage                     | 125 V DC                                                                                                                                                                                                                                                                                                                |
| Auxiliary contact composition               | 1 NO + 1 NC                                                                                                                                                                                                                                                                                                             |
| [Uimp] rated impulse withstand voltage      | 6 kV conforming to IEC 60947                                                                                                                                                                                                                                                                                            |
| Overvoltage category                        | III                                                                                                                                                                                                                                                                                                                     |
| [Ith] conventional free air thermal current | 25 A at ≤ 60 °C for power circuit<br>10 A at ≤ 60 °C for signalling circuit                                                                                                                                                                                                                                             |
| Irms 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                                                                                                                                                                                                                                                                |
| [Icw] rated short-time withstand current    | 105 A ≤ 40 °C 10 s power circuit<br>210 A ≤ 40 °C 1 s power circuit<br>100 A 1 s signalling circuit<br>120 A 500 ms signalling circuit<br>140 A 100 ms signalling circuit<br>30 A ≤ 40 °C 10 min power circuit<br>61 A ≤ 40 °C 1 min power circuit                                                                      |

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| Associated fuse rating        | 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<br>10 A gG for signalling circuit conforming to IEC 60947-5-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Average impedance             | 2.5 mOhm at 50 Hz - Ith 25 A for power circuit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| [Ui] rated insulation voltage | 690 V for power circuit conforming to IEC 60947-4-1<br>600 V for power circuit certifications CSA<br>600 V for power circuit certifications UL<br>690 V for signalling circuit conforming to IEC 60947-1<br>600 V for signalling circuit certifications CSA<br>600 V for signalling circuit certifications UL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Power dissipation per pole    | 0.36 W AC-3<br>1.56 W AC-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Safety cover                  | With                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Mounting support              | Plate<br>Rail                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Standards                     | EN 60947-4-1<br>EN 60947-5-1<br>IEC 60947-4-1<br>IEC 60947-5-1<br>UL 508<br>CSA C22.2 n°14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Product certifications        | BV<br>CCC<br>CSA<br>DNV<br>GL<br>GOST<br>RINA<br>UL<br>LROS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Connections - terminals       | Power circuit: screw clamp terminals 1 cable(s) 1...4 mm² - cable stiffness: flexible - without cable end<br>Power circuit: screw clamp terminals 2 cable(s) 1...4 mm² - cable stiffness: flexible - without cable end<br>Power circuit: screw clamp terminals 1 cable(s) 1...4 mm² - cable stiffness: flexible - with cable end<br>Power circuit: screw clamp terminals 2 cable(s) 1...2.5 mm² - cable stiffness: flexible - with cable end<br>Power circuit: screw clamp terminals 1 cable(s) 1...4 mm² - cable stiffness: solid - without cable end<br>Power circuit: screw clamp terminals 2 cable(s) 1...4 mm² - cable stiffness: solid - without cable end<br>Control circuit: screw clamp terminals 1 cable(s) 1...4 mm² - cable stiffness: flexible - without cable end<br>Control circuit: screw clamp terminals 2 cable(s) 1...4 mm² - cable stiffness: flexible - without cable end<br>Control circuit: screw clamp terminals 1 cable(s) 1...4 mm² - cable stiffness: flexible - with cable end<br>Control circuit: screw clamp terminals 2 cable(s) 1...2.5 mm² - cable stiffness: flexible - with cable end<br>Control circuit: screw clamp terminals 1 cable(s) 1...4 mm² - cable stiffness: solid - without cable end<br>Control circuit: screw clamp terminals 2 cable(s) 1...4 mm² - cable stiffness: 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                | 53.55...72.45 ms closing<br>16...24 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 (millions) | 30 Mcycles                                      |
| Operating rate                   | 3600 cyc/h at $\leq 60\text{ }^{\circ}\text{C}$ |

## Complementary

|                                |                                                                                                                              |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| Coil technology                | Built-in bidirectional peak limiting diode suppressor                                                                        |
| Control circuit voltage limits | 0.1...0.25 $U_c$ at $60\text{ }^{\circ}\text{C}$ drop-out<br>0.7...1.25 $U_c$ at $60\text{ }^{\circ}\text{C}$ operational    |
| Time constant                  | 28 ms                                                                                                                        |
| Inrush power in W              | 5.4 W at $20\text{ }^{\circ}\text{C}$                                                                                        |
| Hold-in power consumption in W | 5.4 W at $20\text{ }^{\circ}\text{C}$                                                                                        |
| 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                               | IP2x front face conforming to IEC 60529                                                                                                                                        |
| Protective treatment                                  | TH conforming to IEC 60068-2-30                                                                                                                                                |
| Pollution degree                                      | 3                                                                                                                                                                              |
| Ambient air temperature for operation                 | -5... $60\text{ }^{\circ}\text{C}$                                                                                                                                             |
| Ambient air temperature for storage                   | -60... $80\text{ }^{\circ}\text{C}$                                                                                                                                            |
| Permissible ambient air temperature around the device | -40... $70\text{ }^{\circ}\text{C}$ at $U_c$                                                                                                                                   |
| Operating altitude                                    | 3000 m without derating in temperature                                                                                                                                         |
| Fire resistance                                       | $850\text{ }^{\circ}\text{C}$ 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                                                 | 45 mm                                                                                                                                                                          |
| Depth                                                 | 95 mm                                                                                                                                                                          |
| Product weight                                        | 0.485 kg                                                                                                                                                                       |