

# Product data sheet

Specifications



## Contactor, TeSys Deca, 3P(3 NO), AC-3/AC-3e, 0 to 440V, 25A, 48VDC coil

LC1D25ED

### Main

|                                |   |
|--------------------------------|---|
| Range of product               | TeSys Deca  |
| Product or component type      | Contactor   |
| Device short name              | LC1D  |
| Contactor application          | Resistive load<br>Motor control   |
| Utilisation category           | AC-4<br>AC-1<br>AC-3<br>AC-3e   |
| Poles description              | 3P  |
| [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-3 for power circuit<br>40 A (at <60 °C) at <= 440 V AC AC-1 for power circuit<br>25 A (at <60 °C) at <= 440 V AC AC-3e for power circuit |
| [Uc] control circuit voltage   | 48 V DC   |

### Complementary

|   |   |
|---|---|
| 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)<br>5.5 kW at 220...230 V AC 50/60 Hz (AC-3e)<br>11 kW at 380...400 V AC 50/60 Hz (AC-3e)<br>11 kW at 415...440 V AC 50/60 Hz (AC-3e)<br>15 kW at 500 V AC 50/60 Hz (AC-3e)<br>15 kW at 660...690 V AC 50/60 Hz (AC-3e) |
| Motor power hp                              | 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  |
| Compatibility code                          | LC1D  |
| Pole contact composition                    | 3 NO  |
| Contact compatibility                       | M4  |
| Protective cover                            | With  |
| [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   |

|  |   |
|--|---|
|  | 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   |
| Power dissipation per pole               | 3.2 W AC-1<br>1.25 W AC-3<br>1.25 W AC-3e   |
| [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   |
| Overvoltage category                     | III   |
| Pollution degree                         | 3   |
| [Uimp] rated impulse withstand voltage   | 6 kV conforming to IEC 60947  |
| 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                    | 30 Mcycles  |
| 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<br>1.65 Mcycles 25 A AC-3e at Ue <= 440 V   |
| Control circuit type                     | DC standard   |
| Coil technology                          | Built-in bidirectional peak limiting diode suppressor   |
| Control circuit voltage limits           | 0.1...0.25 Uc (-40...70 °C):drop-out DC<br>0.7...1.25 Uc (-40...60 °C):operational DC<br>1...1.25 Uc (60...70 °C):operational DC  |
| Inrush power in W                        | 5.4 W (at 20 °C)  |
| Hold-in power consumption in W           | 5.4 W at 20 °C  |
| Operating time                           | 53.55...72.45 ms closing<br>16...24 ms opening  |
| Time constant                            | 28 ms   |
| Maximum operating rate                   | 3600 cyc/h 60 °C  |
| Connections - terminals                  | Control circuit: screw clamp terminals 1 1...4 mm² - cable stiffness: flexible without cable end<br>Control circuit: screw clamp terminals 2 1...4 mm² - cable stiffness: flexible without cable end<br>Control circuit: screw clamp terminals 1 1...4 mm² - cable stiffness: flexible with cable end<br>Control circuit: screw clamp terminals 2 1...2.5 mm² - cable stiffness: flexible with cable end<br>Control circuit: screw clamp terminals 1 1...4 mm² - cable stiffness: solid without cable end<br>Control circuit: screw clamp terminals 2 1...4 mm² - cable stiffness: solid without cable end<br>Power circuit: screw clamp terminals 1 2.5...10 mm² - cable stiffness: flexible without cable end<br>Power circuit: screw clamp terminals 2 2.5...10 mm² - cable stiffness: flexible without cable end<br>Power circuit: screw clamp terminals 1 1...10 mm² - cable stiffness: flexible with cable end<br>Power circuit: screw clamp terminals 2 1.5...6 mm² - cable stiffness: flexible with cable end<br>Power circuit: screw clamp terminals 1 1.5...10 mm² - cable stiffness: solid without cable end<br>Power circuit: screw clamp terminals 2 2.5...10 mm² - cable stiffness: 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<br>Control circuit: 1.7 N.m - on screw clamp terminals - with screwdriver pozidriv No 2<br>Power circuit: 2.5 N.m - on screw clamp terminals - with screwdriver pozidriv No 2  |
| Auxiliary contact composition            | 1 NO + 1 NC   |
| Auxiliary contacts type                  | type mechanically linked 1 NO + 1 NC conforming to IEC 60947-5-1  |

|                              |   |
|------------------------------|---|
|                              | type mirror contact 1 NC conforming to IEC 60947-4-1  |
| Signalling circuit frequency | 25...400 Hz   |
| Minimum switching voltage    | 17 V for signalling circuit   |
| Minimum switching current    | 5 mA for signalling circuit   |
| Insulation resistance        | > 10 MOhm 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 |
| Mounting support             | Plate<br>Rail   |

## Environment

|   |   |
|---|---|
| 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<br>IEC 60335-1  |
| Product certifications                                | CCC<br>BV<br>RINA<br>GL<br>LROS (Lloyds register of shipping)<br>GOST<br>DNV<br>UL<br>CSA<br>UKCA   |
| IP degree of protection                               | IP20 front face conforming to IEC 60529   |
| Protective treatment                                  | TH conforming to IEC 60068-2-30   |
| Climatic withstand                                    | conforming to IACS E10 exposure to damp heat<br>conforming to IEC 60947-1 Annex Q category D exposure to damp heat  |
| Permissible ambient air temperature around the device | -40...60 °C<br>60...70 °C with derating   |
| 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   | 101 mm  |
| Net weight  | 0.53 kg   |

## Packing Units

|                              |           |
|------------------------------|-----------|
| Unit Type of Package 1       | PCE       |
| Number of Units in Package 1 | 1         |
| Package 1 Height             | 5.000 cm  |
| Package 1 Width              | 9.000 cm  |
| Package 1 Length             | 11.500 cm |
| Package 1 Weight             | 580.000 g |
| Unit Type of Package 2       | S02       |
| Number of Units in Package 2 | 15        |
| Package 2 Height             | 15.000 cm |

|                              |            |
|------------------------------|------------|
| Package 2 Width              | 30.000 cm  |
| Package 2 Length             | 40.000 cm  |
| Package 2 Weight             | 8.951 kg   |
| Unit Type of Package 3       | P06        |
| Number of Units in Package 3 | 240        |
| Package 3 Height             | 75.000 cm  |
| Package 3 Width              | 80.000 cm  |
| Package 3 Length             | 60.000 cm  |
| Package 3 Weight             | 151.216 kg |

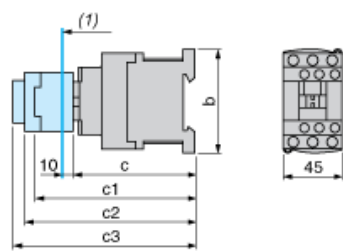
Offer Sustainability

|                            |   |
|----------------------------|---|
| Sustainable offer status   | Green Premium product   |
| REACH Regulation           | <a href="#">REACH Declaration</a>   |
| EU RoHS Directive          | Compliant<br><a href="#">EU RoHS Declaration</a>  |
| Mercury free               | Yes   |
| China RoHS Regulation      | <a href="#">China RoHS declaration</a><br>Product out of China RoHS scope. Substance declaration for your information   |
| RoHS exemption information | <a href="#">Yes</a>   |
| Environmental Disclosure   | <a href="#">Product Environmental Profile</a>   |
| Circularity Profile        | <a href="#">End of Life Information</a>   |
| PVC free                   | Yes   |
| California proposition 65  | WARNING: This product can expose you to chemicals including: Antimony oxide & Antimony trioxide, which is known to the State of California to cause cancer. For more information go to <a href="#">www.P65Warnings.ca.gov</a> |

Contractual warranty

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

Dimensions



(1) Minimum electrical clearance

| LC1 |                                    | D25...D38 | D183...D323 |
|-----|------------------------------------|-----------|-------------|
| b   |                                    | 85        | 99          |
| c   | without cover or add-on blocks     | 99        | 99          |
|     | with cover, without add-on blocks  | 101       | 101         |
| c1  | with LAD N or C (2 or 4 contacts)  | 132       | 132         |
| c2  | with LA6 DK10                      | 144       | 144         |
| c3  | with LAD T, R, S                   | 152       | 152         |
|     | with LAD T, R, S and sealing cover | 156       | 156         |

Wiring



Recommended replacement(s)