

# Product datasheet

Specifications



## TeSys D contactor - 3P(3 NO) - AC-3 - <= 440 V 9 A - 24 V DC coil

LC1D093BD

### 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-1<br>AC-4<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 | 9 A (at <60 °C) at <= 440 V AC AC-3 for power circuit<br>20 A (at <60 °C) at <= 440 V AC AC-1 for power circuit<br>9 A (at <60 °C) at <= 440 V AC AC-3e for power circuit |
| [Uc] control circuit voltage   | 24 V DC   |

### Complementary

|   |  |
|---|--|
| Motor power kW                              | 2.2 kW at 220...230 V AC 50/60 Hz (AC-3)<br>4 kW at 380...400 V AC 50/60 Hz (AC-3)<br>4 kW at 415 V AC 50/60 Hz (AC-3)<br>4 kW at 440 V AC 50/60 Hz (AC-3)<br>5.5 kW at 500 V AC 50/60 Hz (AC-3)<br>5.5 kW at 660...690 V AC 50/60 Hz (AC-3)<br>2.2 kW at 220...230 V AC 50/60 Hz (AC-3e)<br>4 kW at 380...400 V AC 50/60 Hz (AC-3e)<br>4 kW at 415 V AC 50/60 Hz (AC-3e)<br>4 kW at 440 V AC 50/60 Hz (AC-3e)<br>5.5 kW at 500 V AC 50/60 Hz (AC-3e)<br>5.5 kW at 660...690 V AC 50/60 Hz (AC-3e)<br>2.2 kW at 400 V AC 50/60 Hz (AC-4) |
| Motor power hp                              | 1 hp at 230/240 V AC 50/60 Hz for 1 phase motors<br>2 hp at 200/208 V AC 50/60 Hz for 3 phases motors<br>2 hp at 230/240 V AC 50/60 Hz for 3 phases motors<br>5 hp at 460/480 V AC 50/60 Hz for 3 phases motors<br>7.5 hp at 575/600 V AC 50/60 Hz for 3 phases motors<br>0.33 hp at 115 V AC 50/60 Hz for 1 phase 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>16 A (at 60 °C) for power circuit  |

|   |  |
|---|--|
| <b>Irms rated making capacity</b>               | 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   |
| <b>Rated breaking capacity</b>                  | 250 A at 440 V for power circuit conforming to IEC 60947   |
| <b>[Icw] rated short-time withstand current</b> | 105 A 40 °C - 10 s for power circuit<br>210 A 40 °C - 1 s for power circuit<br>30 A 40 °C - 10 min for power circuit<br>61 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   |
| <b>Associated fuse rating</b>                   | 10 A gG for signalling circuit conforming to IEC 60947-5-1<br>25 A gG at <= 690 V coordination type 1 for power circuit<br>20 A gG at <= 690 V coordination type 2 for power circuit   |
| <b>Average impedance</b>                        | 2.5 mOhm - Ith 16 A 50 Hz for power circuit  |
| <b>Power dissipation per pole</b>               | 1.56 W AC-1<br>0.2 W AC-3<br>0.2 W AC-3e   |
| <b>[Ui] rated insulation voltage</b>            | 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  |
| <b>Overvoltage category</b>                     | III  |
| <b>Pollution degree</b>                         | 3  |
| <b>[Uimp] rated impulse withstand voltage</b>   | 6 kV conforming to IEC 60947   |
| <b>Safety reliability level</b>                 | 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   |
| <b>Mechanical durability</b>                    | 30 Mcycles   |
| <b>Electrical durability</b>                    | 0.6 Mcycles 25 A AC-1 at Ue <= 440 V<br>2 Mcycles 9 A AC-3 at Ue <= 440 V<br>2 Mcycles 9 A AC-3e at Ue <= 440 V  |
| <b>Control circuit type</b>                     | DC standard  |
| <b>Coil technology</b>                          | Built-in bidirectional peak limiting diode suppressor  |
| <b>Control circuit voltage limits</b>           | 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   |
| <b>Inrush power in W</b>                        | 5.4 W (at 20 °C)   |
| <b>Hold-in power consumption in W</b>           | 5.4 W at 20 °C   |
| <b>Operating time</b>                           | 53.55...72.45 ms closing<br>16...24 ms opening   |
| <b>Time constant</b>                            | 28 ms  |
| <b>Maximum operating rate</b>                   | 3600 cyc/h 60 °C   |
| <b>Connections - terminals</b>                  | Power circuit: spring terminals 1 2.5 mm² - cable stiffness: flexible without cable end<br>Power circuit: spring terminals 2 2.5 mm² - cable stiffness: flexible without cable end<br>Control circuit: spring terminals 1 2.5 mm² - cable stiffness: flexible without cable end<br>Control circuit: spring terminals 2 2.5 mm² - cable stiffness: flexible without cable end |
| <b>Auxiliary contact composition</b>            | 1 NO + 1 NC  |
| <b>Auxiliary contacts type</b>                  | 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   |
| <b>Signalling circuit frequency</b>             | 25...400 Hz  |
| <b>Minimum switching voltage</b>                | 17 V for signalling circuit  |
| <b>Minimum switching current</b>                | 5 mA for signalling circuit  |
| <b>Insulation resistance</b>                    | > 10 MOhm for signalling circuit   |
| <b>Non-overlap time</b>                         | 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>GL<br>BV<br>LROS (Lloyds register of shipping)<br>CSA<br>RINA<br>DNV<br>UL<br>GOST<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 open (10 Gn for 11 ms)<br>Shocks contactor closed (15 Gn for 11 ms) |
| Height  | 99 mm  |
| Width   | 45 mm  |
| Depth   | 95 mm  |
| Net weight  | 0.48 kg  |

### Packing Units

|                              |           |
|------------------------------|-----------|
| Unit Type of Package 1       | PCE       |
| Number of Units in Package 1 | 1         |
| Package 1 Height             | 5.500 cm  |
| Package 1 Width              | 10.500 cm |
| Package 1 Length             | 12.200 cm |
| Package 1 Weight             | 544.000 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             | 8.690 kg  |
| Unit Type of Package 3       | P06       |
| Number of Units in Package 3 | 240       |
| Package 3 Height             | 75.000 cm |

|                  |            |
|------------------|------------|
| Package 3 Width  | 60.000 cm  |
| Package 3 Length | 80.000 cm  |
| Package 3 Weight | 148.950 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   |

Contractual warranty

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

Recommended replacement(s)