

# Product datasheet

Specifications



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

LC1D09B7

### 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 | 9 A (at <60 °C) at <= 440 V AC AC-3 for power circuit<br>25 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 AC 50/60 Hz  |

### 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...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 400 V AC 50/60 Hz (AC-4)<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...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) |
| 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                       | M2  |
| Protective cover                            | With  |
| [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  |

|  |  |
|--|--|
|  | 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 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   |
| Associated fuse rating                   | 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   |
| Average impedance                        | 2.5 mOhm - Ith 25 A 50 Hz for power circuit  |
| Power dissipation per pole               | 1.56 W AC-1<br>0.2 W AC-3<br>0.2 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                    | 15 Mcycles   |
| Electrical durability                    | 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  |
| Control circuit type                     | AC at 50/60 Hz standard  |
| 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  |
| Operating time                           | 12...22 ms closing<br>4...19 ms opening  |
| Maximum operating rate                   | 3600 cyc/h 60 °C   |
| Connections - terminals                  | Power circuit: screw clamp terminals 1 1...4 mm <sup>2</sup> - cable stiffness: flexible without cable end<br>Power circuit: screw clamp terminals 2 1...4 mm <sup>2</sup> - cable stiffness: flexible without cable end<br>Power circuit: screw clamp terminals 1 1...4 mm <sup>2</sup> - cable stiffness: flexible with cable end<br>Power circuit: screw clamp terminals 2 1...2.5 mm <sup>2</sup> - cable stiffness: flexible with cable end<br>Power circuit: screw clamp terminals 1 1...4 mm <sup>2</sup> - cable stiffness: solid without cable end<br>Power circuit: screw clamp terminals 2 1...4 mm <sup>2</sup> - cable stiffness: solid without cable end<br>Control circuit: screw clamp terminals 1 1...4 mm <sup>2</sup> - cable stiffness: flexible without cable end<br>Control circuit: screw clamp terminals 2 1...4 mm <sup>2</sup> - cable stiffness: flexible without cable end<br>Control circuit: screw clamp terminals 1 1...4 mm <sup>2</sup> - cable stiffness: flexible with cable end<br>Control circuit: screw clamp terminals 2 1...2.5 mm <sup>2</sup> - cable stiffness: flexible with cable end<br>Control circuit: screw clamp terminals 1 1...4 mm <sup>2</sup> - cable stiffness: solid without cable end<br>Control circuit: screw clamp terminals 2 1...4 mm <sup>2</sup> - 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<br>Control circuit: 1.7 N.m - on screw clamp terminals - with screwdriver pozidriv No 2<br>Power circuit: 1.7 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<br>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             | Rail<br>Plate  |

## 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                                | GL<br>CSA<br>GOST<br>RINA<br>LROS (Lloyds register of shipping)<br>UL<br>DNV<br>BV<br>CCC<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  | 77 mm  |
| Width   | 45 mm  |
| Depth   | 86 mm  |
| Net weight  | 0.32 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              | 9.200 cm  |
| Package 1 Length             | 11.200 cm |
| Package 1 Weight             | 353.000 g |
| Unit Type of Package 2       | S02       |
| Number of Units in Package 2 | 20        |

|                              |            |
|------------------------------|------------|
| Package 2 Height             | 15.000 cm  |
| Package 2 Width              | 30.000 cm  |
| Package 2 Length             | 40.000 cm  |
| Package 2 Weight             | 7.346 kg   |
| Unit Type of Package 3       | P06        |
| Number of Units in Package 3 | 320        |
| Package 3 Height             | 75.000 cm  |
| Package 3 Width              | 60.000 cm  |
| Package 3 Length             | 80.000 cm  |
| Package 3 Weight             | 126.688 kg |

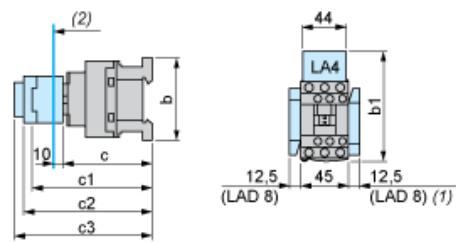
### Offer Sustainability

|                            |   |
|----------------------------|---|
| 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   |
| China RoHS Regulation      | <a href="#">China RoHS declaration</a><br>Pro-active China RoHS declaration (out of China RoHS legal scope)                 |
| RoHS exemption information | <a href="#">Yes</a>   |
| Environmental Disclosure   | <a href="#">Product Environmental Profile</a>   |
| Circularity Profile        | <a href="#">End of Life Information</a>   |
| WEEE                       | The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins |
| PVC free                   | Yes   |

### Contractual warranty

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

Dimensions



- (1) Including LAD 4BB
- (2) Minimum electrical clearance

| LC1 |                                    | D09...D18          | D093...D123        | D099...D129          |
|-----|------------------------------------|--------------------|--------------------|----------------------|
| b   | without add-on blocks              | 77                 | 99                 | 80                   |
| b1  | with LAD 4BB                       | 94                 | 107                | 95.5                 |
|     | with LA4 D•2                       | 110 <sup>(1)</sup> | 123 <sup>(1)</sup> | 111.5 <sup>(1)</sup> |
|     | with LA4 DF, DT                    | 119 <sup>(1)</sup> | 132 <sup>(1)</sup> | 120.5 <sup>(1)</sup> |
|     | with LA4 DW, DL                    | 126 <sup>(1)</sup> | 139 <sup>(1)</sup> | 127.5 <sup>(1)</sup> |
| c   | without cover or add-on blocks     | 84                 | 84                 | 84                   |
|     | with cover, without add-on blocks  | 86                 | 86                 | 86                   |
| c1  | with LAD N or C (2 or 4 contacts)  | 117                | 117                | 117                  |
| c2  | with LA6 DK10, LAD 6K10            | 129                | 129                | 129                  |
| c3  | with LAD T, R, S                   | 137                | 137                | 137                  |
|     | with LAD T, R, S and sealing cover | 141                | 141                | 141                  |
| (1) | Including LAD 4BB.                 |                    |                    |                      |

Wiring



Recommended replacement(s)