

# Product data sheet

Specifications



## Contactor, TeSys Deca, 3P(3 NO), AC-3/AC-3e, 0 to 440V, 40A, 110VAC 50/60Hz coil

LC1D40AF7

### Main

|                                |   |
|--------------------------------|---|
| Range                          | TeSys<br>TeSys Deca   |
| 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: $\leq 690$ V AC 25...400 Hz<br>Power circuit: $\leq 300$ V DC  |
| [Ie] rated operational current | 60 A (at $\leq 60$ °C) at $\leq 440$ V AC AC-1 for power circuit<br>40 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-3e for power circuit |
| [Uc] control circuit voltage   | 110 V AC 50/60 Hz   |

### Complementary

|                          |   |
|--------------------------|---|
| Motor power kW           | 18.5 kW at 380...400 V AC 50/60 Hz (AC-3)<br>11 kW at 220...230 V AC 50/60 Hz (AC-3)<br>22 kW at 415...440 V AC 50/60 Hz (AC-3)<br>22 kW at 500 V AC 50/60 Hz (AC-3)<br>30 kW at 660...690 V AC 50/60 Hz (AC-3)<br>9 kW at 400 V AC 50/60 Hz (AC-4)<br>18.5 kW at 380...400 V AC 50/60 Hz (AC-3e)<br>11 kW at 220...230 V AC 50/60 Hz (AC-3e)<br>22 kW at 415...440 V AC 50/60 Hz (AC-3e)<br>22 kW at 500 V AC 50/60 Hz (AC-3e)<br>30 kW at 660...690 V AC 50/60 Hz (AC-3e) |
| Motor power hp           | 5 hp at 230/240 V AC 50/60 Hz for 1 phase motors<br>10 hp at 230/240 V AC 50/60 Hz for 3 phases motors<br>30 hp at 575/600 V AC 50/60 Hz for 3 phases motors<br>10 hp at 200/208 V AC 50/60 Hz for 3 phases motors<br>3 hp at 115 V AC 50/60 Hz for 1 phase motors<br>30 hp at 460/480 V AC 50/60 Hz for 3 phases motors  |
| Compatibility code       | LC1D  |
| Pole contact composition | 3 NO  |
| Contact compatibility    | M2  |
| Protective cover         | With  |

|  |  |
|--|--|
| <b>[Ith] conventional free air thermal current</b> | 10 A (at 60 °C) for signalling circuit<br>60 A (at 60 °C) for power circuit  |
| <b>Irms rated making capacity</b>                  | 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>800 A at 440 V for power circuit conforming to IEC 60947   |
| <b>Rated breaking capacity</b>                     | 800 A at 440 V for power circuit conforming to IEC 60947   |
| <b>[Icw] rated short-time withstand current</b>    | 320 A 40 °C - 10 s for power circuit<br>720 A 40 °C - 1 s for power circuit<br>72 A 40 °C - 10 min for power circuit<br>165 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>80 A gG at <= 690 V coordination type 1 for power circuit<br>80 A gG at <= 690 V coordination type 2 for power circuit   |
| <b>Average impedance</b>                           | 1.5 mOhm - Ith 60 A 50 Hz for power circuit  |
| <b>Power dissipation per pole</b>                  | 2.4 W AC-3<br>5.4 W AC-1<br>2.4 W AC-3e  |
| <b>[Ui] rated insulation voltage</b>               | 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<br>Power circuit: 690 V conforming to IEC 60947-4-1  |
| <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>                       | 6 Mcycles  |
| <b>Electrical durability</b>                       | 1.4 Mcycles 60 A AC-1 at $U_e \leq 440$ V<br>1.5 Mcycles 40 A AC-3 at $U_e \leq 440$ V<br>1.5 Mcycles 40 A AC-3e at $U_e \leq 440$ V   |
| <b>Control circuit type</b>                        | AC at 50/60 Hz standard  |
| <b>Coil technology</b>                             | Without built-in suppressor module   |
| <b>Control circuit voltage limits</b>              | 0.3...0.6 $U_c$ (-40...70 °C):drop-out AC 50/60 Hz<br>0.8...1.1 $U_c$ (-40...60 °C):operational AC 50 Hz<br>0.85...1.1 $U_c$ (-40...60 °C):operational AC 60 Hz<br>1...1.1 $U_c$ (60...70 °C):operational AC 50/60 Hz  |
| <b>Inrush power in VA</b>                          | 140 VA 60 Hz cos phi 0.75 (at 20 °C)<br>160 VA 50 Hz cos phi 0.75 (at 20 °C)   |
| <b>Hold-in power consumption in VA</b>             | 13 VA 60 Hz cos phi 0.3 (at 20 °C)<br>15 VA 50 Hz cos phi 0.3 (at 20 °C)   |
| <b>Heat dissipation</b>                            | 4...5 W at 50/60 Hz  |
| <b>Operating time</b>                              | 4...19 ms opening<br>12...26 ms closing  |
| <b>Maximum operating rate</b>                      | 3600 cyc/h 60 °C   |
| <b>Connections - terminals</b>                     | 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: 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 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<br>Power circuit: screw connection 1 1...35 mm <sup>2</sup> - cable stiffness: flexible without cable end<br>Power circuit: screw connection 2 1...25 mm <sup>2</sup> - cable stiffness: flexible without cable end<br>Power circuit: screw connection 1 1...35 mm <sup>2</sup> - cable stiffness: flexible with cable end<br>Power circuit: screw connection 2 1...25 mm <sup>2</sup> - cable stiffness: flexible with cable end<br>Power circuit: screw connection 1 1...35 mm <sup>2</sup> - cable stiffness: solid without cable end<br>Power circuit: screw connection 2 1...25 mm <sup>2</sup> - cable stiffness: solid without cable end |
| <b>Tightening torque</b>                           | 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: 8 N.m - on EverLink BTR screw connectors - cable 25...35 mm <sup>2</sup> hexagonal screw head 4 mm   |

Power circuit: 5 N.m - on EverLink BTR screw connectors - cable 1...25 mm<sup>2</sup> hexagonal screw head  
4 mm  
Control circuit: 1.7 N.m - on screw clamp terminals - with screwdriver pozidriv No 2  
Power circuit: 2.5 N.m - on screw clamp terminals - with screwdriver pozidriv No 2

|                                      |  |
|--------------------------------------|--|
| <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                  |
| <b>Mounting support</b>              | Rail<br>Plate  |

## Environment

|  |  |
|--|--|
| <b>Standards</b>   | 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   |
| <b>Product certifications</b>                                | CCC<br>CSA<br>GOST<br>UL   |
| <b>IP degree of protection</b>                               | IP20 front face conforming to IEC 60529  |
| <b>Protective treatment</b>                                  | TH conforming to IEC 60068-2-30  |
| <b>Climatic withstand</b>                                    | conforming to IACS E10 exposure to damp heat<br>conforming to IEC 60947-1 Annex Q category D exposure to damp heat   |
| <b>Permissible ambient air temperature around the device</b> | -40...60 °C<br>60...70 °C with derating  |
| <b>Operating altitude</b>                                    | 0...3000 m   |
| <b>Fire resistance</b>                                       | 850 °C conforming to IEC 60695-2-1   |
| <b>Flame retardance</b>                                      | V1 conforming to UL 94   |
| <b>Mechanical robustness</b>                                 | 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 (10 Gn for 11 ms) |
| <b>Height</b>  | 122 mm   |
| <b>Width</b>   | 55 mm  |
| <b>Depth</b>   | 120 mm   |
| <b>Net weight</b>  | 0.85 kg  |

## Packing Units

|                                     |         |
|-------------------------------------|---------|
| <b>Unit Type of Package 1</b>       | PCE     |
| <b>Number of Units in Package 1</b> | 1       |
| <b>Package 1 Height</b>             | 6.2 cm  |
| <b>Package 1 Width</b>              | 13.5 cm |
| <b>Package 1 Length</b>             | 15.5 cm |
| <b>Package 1 Weight</b>             | 920.0 g |
| <b>Unit Type of Package 2</b>       | P06     |
| <b>Number of Units in Package 2</b> | 160     |

|                  |           |
|------------------|-----------|
| Package 2 Height | 75.0 cm   |
| Package 2 Width  | 80.0 cm   |
| Package 2 Length | 60.0 cm   |
| Package 2 Weight | 166.34 kg |

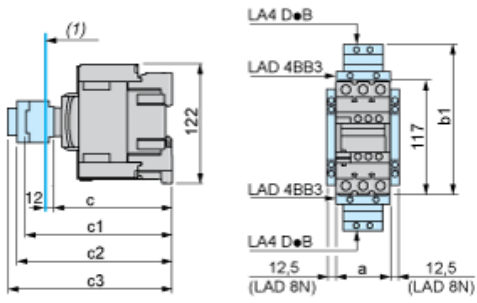
## Offer Sustainability

|                            |   |
|----------------------------|---|
| 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   |
| 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="http://www.P65Warnings.ca.gov">www.P65Warnings.ca.gov</a> |

## Contractual warranty

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

**Dimensions**

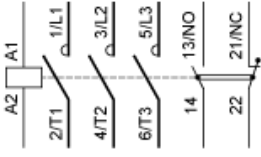


(1) Minimum electrical clearance

| LC1       |                                    | D40A...D65A |
|-----------|------------------------------------|-------------|
| <b>a</b>  |                                    | 55          |
| <b>b1</b> | with LA4 D•2                       | –           |
|           | with LA4 DB3 or LAD 4BB3           | 136         |
|           | with LA4 DF, DT                    | 157         |
|           | with LA4 DM, DW, DL                | 166         |
| <b>c</b>  | without cover or add-on blocks     | 118         |
|           | with cover, without add-on blocks  | 120         |
| <b>c1</b> | with LAD N (1 contact)             | –           |
|           | with LAD N or C (2 or 4 contacts)  | 150         |
| <b>c2</b> | with LA6 DK10, LAD 6DK             | 163         |
| <b>c3</b> | with LAD T, R, S                   | 171         |
|           | with LAD T, R, S and sealing cover | 175         |

**Wiring**

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**Recommended replacement(s)**