

# Product data sheet

Specifications



## Contactors, TeSys Deca, 3P(3 NO), AC-3/AC-3e, 0 to 440V, 50A, 48VAC 50/60Hz coil

LC1D50AE7

### Main

Range	TeSys TeSys Deca
Range of product	TeSys Deca
Product or component type	Contactors
Device short name	LC1D
Contactors application	Motor control Resistive load
Utilisation category	AC-4 AC-1 AC-3 AC-3e
Poles description	3P
[Ue] rated operational voltage	Power circuit: <= 690 V AC 25...400 Hz Power circuit: <= 300 V DC
[Ie] rated operational current	50 A (at <60 °C) at <= 440 V AC AC-3 for power circuit 80 A (at <60 °C) at <= 440 V AC AC-1 for power circuit 50 A (at <60 °C) at <= 440 V AC AC-3e for power circuit
[Uc] control circuit voltage	48 V AC 50/60 Hz

### Complementary

Motor power kW	15 kW at 220...230 V AC 50/60 Hz (AC-3) 22 kW at 380...400 V AC 50/60 Hz (AC-3) 30 kW at 500 V AC 50/60 Hz (AC-3) 33 kW at 660...690 V AC 50/60 Hz (AC-3) 25 kW at 415 V AC 50/60 Hz (AC-3) 30 kW at 440 V AC 50/60 Hz (AC-3) 11 kW at 400 V AC 50/60 Hz (AC-4) 15 kW at 220...230 V AC 50/60 Hz (AC-3e) 22 kW at 380...400 V AC 50/60 Hz (AC-3e) 30 kW at 500 V AC 50/60 Hz (AC-3e) 33 kW at 660...690 V AC 50/60 Hz (AC-3e) 25 kW at 415 V AC 50/60 Hz (AC-3e) 30 kW at 440 V AC 50/60 Hz (AC-3e)
Motor power hp	3 hp at 115 V AC 50/60 Hz for 1 phase motors 7.5 hp at 230/240 V AC 50/60 Hz for 1 phase motors 15 hp at 200/208 V AC 50/60 Hz for 3 phases motors 15 hp at 230/240 V AC 50/60 Hz for 3 phases motors 40 hp at 460/480 V AC 50/60 Hz for 3 phases motors 40 hp at 575/600 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 80 A (at 60 °C) for power circuit
<b>Irms rated making capacity</b>	140 A AC for signalling circuit conforming to IEC 60947-5-1 250 A DC for signalling circuit conforming to IEC 60947-5-1 900 A at 440 V for power circuit conforming to IEC 60947
<b>Rated breaking capacity</b>	900 A at 440 V for power circuit conforming to IEC 60947
<b>[Icw] rated short-time withstand current</b>	400 A 40 °C - 10 s for power circuit 810 A 40 °C - 1 s for power circuit 84 A 40 °C - 10 min for power circuit 208 A 40 °C - 1 min for power circuit 100 A - 1 s for signalling circuit 120 A - 500 ms for signalling circuit 140 A - 100 ms for signalling circuit
<b>Associated fuse rating</b>	10 A gG for signalling circuit conforming to IEC 60947-5-1 100 A gG at ≤ 690 V coordination type 1 for power circuit 100 A gG at ≤ 690 V coordination type 2 for power circuit
<b>Average impedance</b>	1.5 mOhm - Ith 80 A 50 Hz for power circuit
<b>Power dissipation per pole</b>	3.7 W AC-3 9.6 W AC-1 3.7 W AC-3e
<b>[Ui] rated insulation voltage</b>	Power circuit: 600 V CSA certified Power circuit: 600 V UL certified Signalling circuit: 690 V conforming to IEC 60947-1 Signalling circuit: 600 V CSA certified Signalling circuit: 600 V UL certified 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 B10d = 20000000 cycles contactor with mechanical load conforming to EN/ISO 13849-1
<b>Mechanical durability</b>	6 Mcycles
<b>Electrical durability</b>	1.45 Mcycles 50 A AC-3 at Ue ≤ 440 V 1.1 Mcycles 80 A AC-1 at Ue ≤ 440 V 1.45 Mcycles 50 A AC-3e at Ue ≤ 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 Uc (-40...70 °C):drop-out AC 50/60 Hz 0.8...1.1 Uc (-40...60 °C):operational AC 50 Hz 0.85...1.1 Uc (-40...60 °C):operational AC 60 Hz 1...1.1 Uc (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) 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) 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 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 Control circuit: screw clamp terminals 1 1...4 mm <sup>2</sup> - cable stiffness: flexible without cable end Control circuit: screw clamp terminals 2 1...4 mm <sup>2</sup> - cable stiffness: flexible without cable end Control circuit: screw clamp terminals 1 1...4 mm <sup>2</sup> - cable stiffness: flexible with cable end Control circuit: screw clamp terminals 1 1...4 mm <sup>2</sup> - cable stiffness: solid without cable end Control circuit: screw clamp terminals 2 1...4 mm <sup>2</sup> - cable stiffness: solid without cable end Power circuit: screw connection 1 1...35 mm <sup>2</sup> - cable stiffness: flexible without cable end Power circuit: screw connection 2 1...25 mm <sup>2</sup> - cable stiffness: flexible without cable end Power circuit: screw connection 1 1...35 mm <sup>2</sup> - cable stiffness: flexible with cable end Power circuit: screw connection 2 1...25 mm <sup>2</sup> - cable stiffness: flexible with cable end Power circuit: screw connection 1 1...35 mm <sup>2</sup> - cable stiffness: solid without cable end 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 EverLink BTR screw connectors - with screwdriver flat Ø 6 mm Control circuit: 1.7 N.m - on EverLink BTR screw connectors - with screwdriver Philips No 2 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 EverLink BTR screw connectors - with screwdriver pozidriv No 2  
Power circuit: 2.5 N.m - on EverLink BTR screw connectors - 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 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 1.5 ms on energisation between NC and NO contact
<b>Mounting support</b>	Plate Rail

## Environment

<b>Standards</b>	CSA C22.2 No 14 EN 60947-4-1 EN 60947-5-1 IEC 60947-4-1 IEC 60947-5-1 UL 508 IEC 60335-1
<b>Product certifications</b>	RINA CCC BV GL UL LROS (Lloyds register of shipping) CSA DNV GOST
<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 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 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) Vibrations contactor closed (4 Gn, 5...300 Hz) Shocks contactor closed (15 Gn for 11 ms) 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>	0.855 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

Package 1 Weight	924.0 g
Unit Type of Package 2	S02
Number of Units in Package 2	10
Package 2 Height	15.0 cm
Package 2 Width	30.0 cm
Package 2 Length	40.0 cm
Package 2 Weight	9.973 kg
Unit Type of Package 3	P06
Number of Units in Package 3	160
Package 3 Height	77.0 cm
Package 3 Width	80.0 cm
Package 3 Length	60.0 cm
Package 3 Weight	168.068 kg

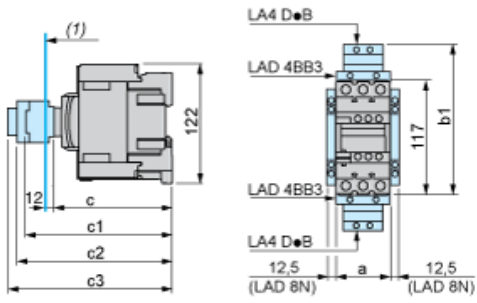
## Offer Sustainability

Sustainable offer status	Green Premium product
REACH Regulation	<a href="#">REACH Declaration</a>
REACH free of SVHC	Yes
EU RoHS Directive	Compliant <a href="#">EU RoHS Declaration</a>
Toxic heavy metal free	Yes
Mercury free	Yes
China RoHS Regulation	<a href="#">China RoHS declaration</a> 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
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**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)**