

# LC1D25ED

TeSys D contactor - 3P(3 NO) - AC-3 -  $\leq$  440 V 25 A - 48 V DC coil



## Main

Commercial Status	Commercialised
Range of product	TeSys D
Product or component type	Contacteur
Device short name	LC1D
Contacteur application	Motor control Resistive load
Utilisation category	AC-1 AC-3
Poles description	3P
Power pole contact composition	3 NO
[Ue] rated operational voltage	$\leq$ 300 V DC for power circuit $\leq$ 690 V AC 25...400 Hz for power circuit
[Ie] rated operational current	25 A ( $\leq$ 60 °C) at $\leq$ 440 V AC AC-3 for power circuit 40 A ( $\leq$ 60 °C) at $\leq$ 440 V AC AC-1 for power circuit
Motor power kW	15 kW at 660...690 V AC 50/60 Hz 15 kW at 500 V AC 50/60 Hz 11 kW at 415...440 V AC 50/60 Hz 11 kW at 380...400 V AC 50/60 Hz 5.5 kW at 220...230 V AC 50/60 Hz
Motor power HP (UL / CSA)	20 hp at 575/600 V AC 50/60 Hz for 3 phases motors 15 hp at 460/480 V AC 50/60 Hz for 3 phases motors 7.5 hp at 230/240 V AC 50/60 Hz for 3 phases motors 5 hp at 200/208 V AC 50/60 Hz for 3 phases motors 3 hp at 230/240 V AC 50/60 Hz for 1 phase motors 2 hp at 115 V AC 50/60 Hz for 1 phase motors
Control circuit type	DC standard
Control circuit voltage	48 V DC
Auxiliary contact composition	1 NO + 1 NC
[Uimp] rated impulse withstand voltage	6 kV conforming to IEC 60947
Overvoltage category	III
[I <sub>th</sub> ] conventional free air thermal current	40 A at $\leq$ 60 °C for power circuit 10 A at $\leq$ 60 °C for signalling circuit
I <sub>rm</sub> s rated making capacity	450 A at 440 V for power circuit conforming to IEC 60947 250 A DC for signalling circuit conforming to IEC 60947-5-1 140 A AC for signalling circuit conforming to IEC 60947-5-1
Rated breaking capacity	450 A at 440 V for power circuit conforming to IEC 60947
[I <sub>cw</sub> ] rated short-time withstand current	120 A $\leq$ 40 °C 1 min power circuit 50 A $\leq$ 40 °C 10 min power circuit 380 A $\leq$ 40 °C 1 s power circuit 240 A $\leq$ 40 °C 10 s power circuit 140 A 100 ms signalling circuit 120 A 500 ms signalling circuit 100 A 1 s signalling circuit

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Associated fuse rating	40 A gG at ≤ 690 V coordination type 2 for power circuit 63 A gG at ≤ 690 V coordination type 1 for power circuit 10 A gG for signalling circuit conforming to IEC 60947-5-1
Average impedance	2 mOhm at 50 Hz - Ith 40 A for power circuit
[Ui] rated insulation voltage	600 V for signalling circuit certifications UL 600 V for signalling circuit certifications CSA 690 V for signalling circuit conforming to IEC 60947-1 600 V for power circuit certifications UL 600 V for power circuit certifications CSA 690 V for power circuit conforming to IEC 60947-4-1
Electrical durability	1.4 Mcycles 40 A AC-1 at Ue ≤ 440 V 1.65 Mcycles 25 A AC-3 at Ue ≤ 440 V
Power dissipation per pole	1.25 W AC-3 3.2 W AC-1
Safety cover	With
Mounting support	Plate Rail
Standards	EN 60947-4-1 EN 60947-5-1 IEC 60947-4-1 IEC 60947-5-1 UL 508 CSA C22.2 No 14
Product certifications	BV CCC CSA DNV GL GOST RINA UL LROS
Connections - terminals	Power circuit: screw clamp terminals 2 cable(s) 2.5...10 mm <sup>2</sup> - cable stiffness: solid - without cable end Power circuit: screw clamp terminals 1 cable(s) 1.5...10 mm <sup>2</sup> - cable stiffness: solid - without cable end Power circuit: screw clamp terminals 2 cable(s) 1.5...6 mm <sup>2</sup> - cable stiffness: flexible - with cable end Power circuit: screw clamp terminals 1 cable(s) 1...10 mm <sup>2</sup> - cable stiffness: flexible - with cable end Power circuit: screw clamp terminals 2 cable(s) 2.5...10 mm <sup>2</sup> - cable stiffness: flexible - without cable end Power circuit: screw clamp terminals 1 cable(s) 2.5...10 mm <sup>2</sup> - cable stiffness: flexible - without cable end Control circuit: screw clamp terminals 2 cable(s) 1...4 mm <sup>2</sup> - cable stiffness: solid - without cable end Control circuit: screw clamp terminals 1 cable(s) 1...4 mm <sup>2</sup> - cable stiffness: solid - without cable end Control circuit: screw clamp terminals 2 cable(s) 1...2.5 mm <sup>2</sup> - cable stiffness: flexible - with cable end Control circuit: screw clamp terminals 1 cable(s) 1...4 mm <sup>2</sup> - cable stiffness: flexible - with cable end Control circuit: screw clamp terminals 2 cable(s) 1...4 mm <sup>2</sup> - cable stiffness: flexible - without cable end Control circuit: screw clamp terminals 1 cable(s) 1...4 mm <sup>2</sup> - cable stiffness: flexible - without cable end
Tightening torque	Power circuit: 2.5 N.m - on screw clamp terminals - with screwdriver Philips No 2 Power circuit: 2.5 N.m - on screw clamp terminals - with screwdriver flat Ø 6 mm Control circuit: 1.7 N.m - on screw clamp terminals - with screwdriver Philips No 2 Control circuit: 1.7 N.m - on screw clamp terminals - with screwdriver flat Ø 6 mm
Operating time	16...24 ms opening 53.55...72.45 ms closing

Safety reliability level	B10d = 2000000 cycles contactor with mechanical load conforming to EN/ISO 13849-1 B10d = 1369863 cycles contactor with nominal load conforming to EN/ISO 13849-1
Mechanical durability	30 Mcycles
Operating rate	3600 cyc/h at $\leq 60\text{ }^{\circ}\text{C}$

### Complementary

Coil technology	Built-in bidirectional peak limiting diode suppressor
Control circuit voltage limits	0.7...1.25 Uc at $60\text{ }^{\circ}\text{C}$ operational 0.1...0.25 Uc at $60\text{ }^{\circ}\text{C}$ drop-out
Time constant	28 ms
Inrush power in W	5.4 W at $20\text{ }^{\circ}\text{C}$
Hold-in power consumption in W	5.4 W at $20\text{ }^{\circ}\text{C}$
Auxiliary contacts type	Type mirror contact (1 NC) conforming to IEC 60947-4-1 Type mechanically linked (1 NO + 1 NC) conforming to IEC 60947-5-1
Signalling circuit frequency	25...400 Hz
Minimum switching current	5 mA for signalling circuit
Minimum switching voltage	17 V for signalling circuit
Non-overlap time	1.5 ms on energisation (between NC and NO contact) 1.5 ms on de-energisation (between NC and NO contact)
Insulation resistance	> 10 MOhm for signalling circuit

### Environment

IP degree of protection	IP2x front face conforming to IEC 60529
Protective treatment	TH conforming to IEC 60068-2-30
Pollution degree	3
Ambient air temperature for operation	$-5\text{...}60\text{ }^{\circ}\text{C}$
Ambient air temperature for storage	$-60\text{...}80\text{ }^{\circ}\text{C}$
Permissible ambient air temperature around the device	$-40\text{...}70\text{ }^{\circ}\text{C}$ at Uc
Operating altitude	3000 m without derating in temperature
Fire resistance	$850\text{ }^{\circ}\text{C}$ conforming to IEC 60695-2-1
Flame retardance	V1 conforming to UL 94
Mechanical robustness	Shocks contactor open 8 Gn for 11 ms Shocks contactor closed 15 Gn for 11 ms Vibrations contactor closed 4 Gn, 5...300 Hz Vibrations contactor open 2 Gn, 5...300 Hz
Height	85 mm
Width	45 mm
Depth	101 mm
Product weight	0.53 kg

### RoHS compliance

RoHS EUR status	Compliant
RoHS EUR conformity date(YYWW)	0627

### Contractual warranty

Period	18 months
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