

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Disconnect all power before servicing equipment.

Failure to follow these instructions will result in death or serious injury.

PLEASE NOTE:

- Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel.
- No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.
- This document is also available in French, Spanish, Italian, German, and Chinese for download on our website at www.schneider-electric.com.

A

Operating and Function

- LR97D, solid state overload relay, compares motor current with preset load current threshold (LOAD).
- Three phase motor currents are monitored through three internal current transformers.
- D-Time counts down and is only available for motor starting.

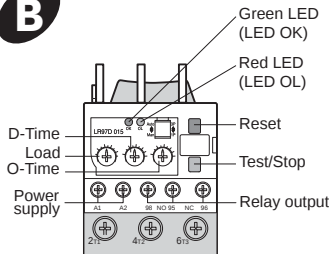
During steady state, if motor current is greater than the current setting (overloaded), LR97D switches its contacts after O-Time.

In case of phase failure and locked rotor, trip delay time is 3 s and 0.5 s respectively.

- For shear-pin (mechanical shock) protection, set O-Time knob to its minimum in order to trip in 0.2-0.3 s.

Type	Relay setting range
LR97D015	0.3 - 1.5 A
LR97D07	1.2 - 7 A
LR97D25	5 - 25 A
LR97D38	20 - 38 A

B



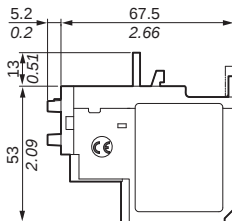
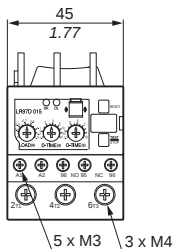
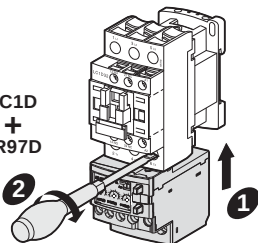
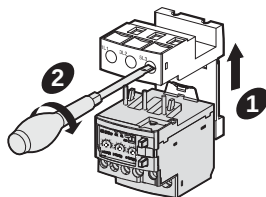
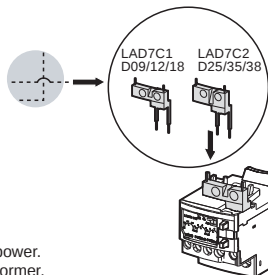
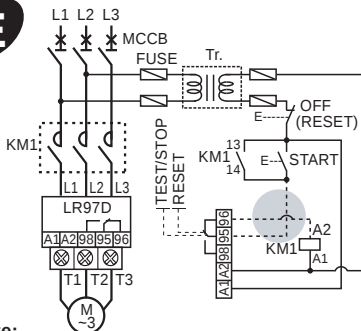
(1) Select function by dip switch:

- dip switch 1: 1 phase / 3 phase
- dip switch 2: Manual / Auto reset

Combined signals from red and green LEDs indicate motor status including trip causes.

Condition	LED Signal (Pulse Chart)	
	Green LED	Red LED
Power on	On [Pulse]	Off [Blank]
Starting	On [Pulse]	Off [Blank]
Steady state	On [Pulse]	Off [Blank]
Overloading	On [Pulse]	Off [Blank]
Trip	Overcurrent	Off [Blank] / On [Pulse]
	Locked rotor	Off [Blank] / On [Pulse]
	Phase Loss L1	Off [Blank] / On [Pulse]
	Phase Loss L2	Off [Blank] / On [Pulse]
Phase Loss	L3	Off [Blank] / On [Pulse]

→ Available for 3 phase utilisation only (Dip SW on "3P" position)

Cmm
in.**D**LC1D
+
LR97DLR97D
+
LAD7B106**E****Note:**

- LR97D may be influenced by the harmonics on the control power.
- The control power should be supplied via the isolated transformer.
- Output : Normally energized.
- In case of LAD7C1 and LAD7C2 utilisation, it is impossible to wire electrically a trip status signalling.

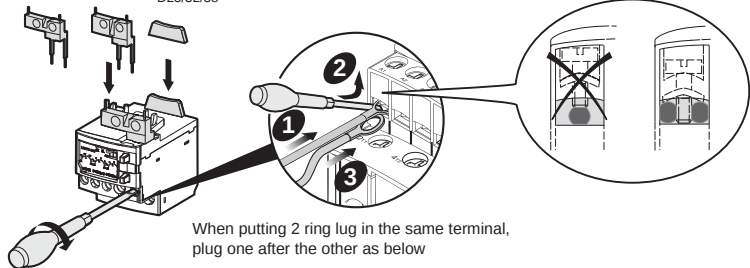
F

Extension leg shall be added in association with Tesys Contactor from LC1D25 to LC1D38

LAD7C1
D09/12/18

LAD7C2
D25/35/38

Extension leg
D25/32/38

**G**

Protective Item	Operating Characteristics	Trip Delay Time
Overcurrent	$I_{max} > I_s$	O-Time
Phase Loss	$I_{min} < 10 \% \text{ of } I_{max}$	< 3 s
Locked Rotor	$I_{max} > 3 \times I_s$	Starting: D-Time Running: < 0.5 s

I_{max} : Maximum phase current

I_{min} : Minimum phase current

I_s : Overload setting current

Setting Guide

■ In case machine operates its full load.

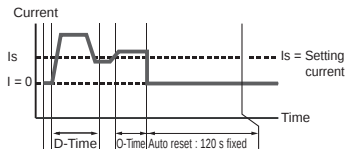
1. Adjust Load, D-Time and O-Time knobs to their maximum value. Then start motor.
2. Adjust D-Time knob to the known motor start-up time. If start-up time is unknown, use clamp current meter to find its value.
3. When motor reaches steady state, adjust Load knob counterclockwise until the red LED start to flicker. Then slowly adjust the Load knob clockwise until red LED stops flickering.
4. Adjust O-Time knob to the desired trip delay time.

■ In case load of machine is unknown or load with high fluctuation.

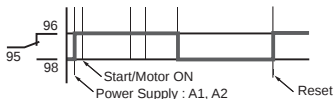
1. Adjust Load knob to motor's nominal current or just upper value.
2. Adjust D-Time to the calculated time which take into account the machine feature (Torque, Inertia)
3. Adjust O-Time to desired trip relay time.

■ As shock relay utilisation, set O-Time at the minimum scale (tripping time: 0.2-0.3 s)

Adjustable load current



Output Relay

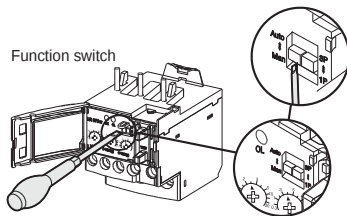


H

Reset

- Manual: Immediate reset by RESET button
- Electrical: Immediate reset by interrupting control power (minimum 0.1 s).
- Auto: 120 s fixed, selectable by dip switch (Over current trip only).

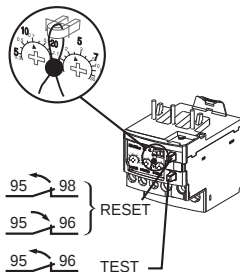
Function switch



I

TEST Function available at no load

- When LR97D is powered, keep Test button pushed for D-Time plus O-Time till internal relay switches its contact.
- Periodic test is recommended.



J

Stop Function while motor is running.

- Must be associated with 3-wire control circuit.
- The motor will be stopped immediately by pressing the TEST/STOP button. In this case, LR97D is automatically reset.