

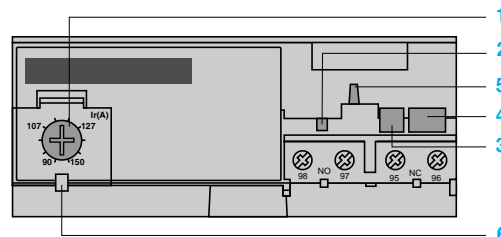
Description

LR9-D electronic thermal overload relays are designed for use with contactors LC1-D115 and D150.

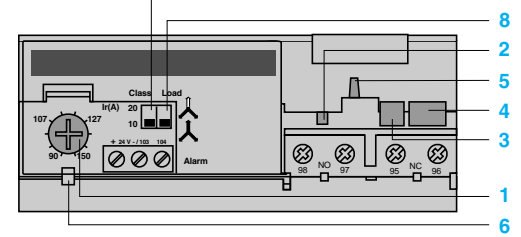
In addition to the protection provided by model d thermal overload relays (see page 2/108) they offer the following special features:

- Protection against phase imbalance.
- Choice of starting class.
- Protection of unbalanced circuits.
- Protection of single-phase circuits.
- Alarm function to avoid tripping by load shedding.

LR9-D5367...D5569



LR9-D67 and D69



- 1 Setting dial I_r
- 2 Test button
- 3 Stop button
- 4 Reset button
- 5 Trip indication
- 6 Setting locked by sealing the cover
- 7 Class 10/class 20 selector
- 8 Selector for balanced load / unbalanced load

Environment

Conforming to standards			EN 60947-4-1, 255-8, 255-17, VDE 0660
Product certifications			UL 508 , CSA 22-2
Degree of protection	Conforming to IEC 529 and VDE 0106		IP 20 on front face with protective covers LA9-D11570● or D11560●
Protective treatment	Standard version		"TH"
Ambient air temperature around the device (conforming to IEC 255-8)	Storage	°C	- 40...+ 85
	Normal operation	°C	- 20...+ 55 (1)
Maximum operating altitude	Without derating	m	2000
Operating positions without derating	In relation to normal, vertical mounting plane		Any position
Shock resistance	Permissible acceleration conforming to IEC 68-2-27		13 gn - 11 ms
Vibration resistance	Permissible acceleration conforming to IEC 68-2-6		2 gn - 5 to 300 Hz
Dielectric strength at 50 Hz	Conforming to IEC 255-5	kV	6
	Conforming to IEC 1000-4-5	kV	6
Resistance to electrostatic discharge	Conforming to IEC 1000-4-2	kV	8
Resistance to radio-frequency conducted disturbances	Conforming to IEC 1000-4-3 and NF C 46-022	V/m	10
Resistance to fast transient currents	Conforming to IEC 1000-4-4	kV	2
Electromagnetic compatibility	Draft EN 50081-1 and 2, EN 50082-2		Meets requirements

Electrical characteristics of auxiliary contacts

Conventional thermal current		A	5					
Maximum consumption of operating coils of controlled contactors (Occasional operating cycles of contact 95-96)	a.c. supply	V	24	48	110	220	380	600
		VA	100	200	400	600	600	600
Short-circuit protection	d.c. supply	V	24	48	110	220	440	—
		W	100	100	50	45	25	—
Cabling Flexible cable without cable end	By gG or BS fuse or by GB2 circuit-breaker	A	5					
	1 or 2 conductors	mm²	Minimum c.s.a.: 1/maximum c.s.a.: 2.5					
	Tightening torque	N.m	1.2					

(1) For operation at 70 °C, please call our Customer information centre on 0870 608 8 608.

Electrical characteristics of power circuit

Relay type			LR9-D
Tripping class	Conforming to UL 508, EN 60947-4-1		10 A or 20
Rated insulation voltage (Ui)	Conforming to EN 60947-4-1	V	1000
	Conforming to UL, CSA	V	600
Rated impulse withstand voltage (Uimp)		kV	8
Frequency limits	Of the operational current	Hz	50...60. For other frequencies, call our Customer information centre on 0870 608 8 608 (1)
Setting range	Depending on model	A	60...150
Power circuit connections	Width of terminal lug	mm	20
	Clamping screw		M8
	Tightening torque	N.m	18

Operating characteristics

Temperature compensation		°C	-20...+70
Tripping thresholds	To EN 60947-4-1 Alarm	A	$1.05 \pm 0.06 I_n$
	Tripping	A	$1.12 \pm 0.06 I_n$
Sensitivity to phase failure	Conforming to EN 60947-4-1		Tripping in $4 \text{ s} \pm 20 \%$ in the event of phase failure

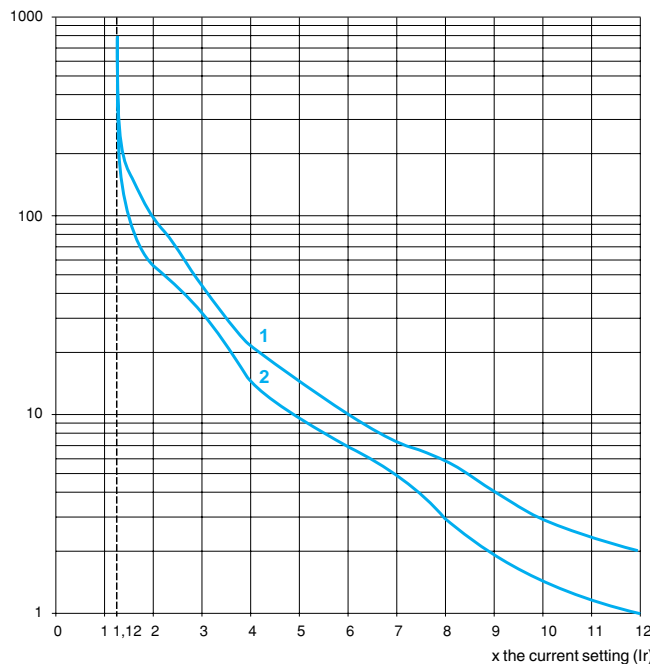
Alarm circuit characteristics

Rated supply voltage	d.c. supply	V	24
Supply voltage limits		V	17...32
Current consumption	No load	mA	≤ 5
Switching capacity		mA	0...150
Protection	Short-circuit and overload		Self-protected
Voltage drop	Closed state	V	≤ 2.5
Cabling	Flexible cable without cable end	mm²	0.5...1.5
Tightening torque		N.m	0.45

Tripping curve LR9-D

Average operating time related to multiples of the current setting

Tripping time in seconds



1 Cold state curve
2 Hot state curve

(1) For use of these relays with soft start units or variable speed controllers, please call our Customer information centre on 0870 608 8 608.