


Thermal overload relays - For use with TeSys K contactors		
Type of product	Range	Pages
Adjustable thermal overload relays For motors TeSys LRK	From 0.16 to 16 A	 B11/2
Adjustable thermal overload relays For unbalanced loads TeSys LRK	From 0.8 to 16 A	B11/3
Thermal overload relays Class 10 A - For use with TeSys D contactors		
Adjustable thermal overload relays For motors TeSys LRD	From 0.16 to 140 A	 B11/4
Adjustable thermal overload relays For unbalanced loads TeSys LRD	From 0.16 to 140 A	B11/4
Thermal overload relays Class 20 - For use with TeSys D contactors		
Adjustable thermal overload relays For motors TeSys LRD	From 0.63 to 80 A	 B11/6
Adjustable thermal overload relays For unbalanced loads TeSys LRD	From 0.63 to 32 A	B11/6
Electronic thermal overload relays - For use with TeSys D contactors		
Adjustable electronic overload relay, Multi-class, multi-scale TeSys LR9D	From 0.1 to 150 A	 B11/10
Electronic thermal overload relays - For use with TeSys F contactors		
Compensated and differential overload relays, with or without alarm TeSys LR9F	From 50 to 630 A	 B11/11
Single pole magnetic over current relays		
Latching or non latching overload relays TeSys RM1	From 1.15 to 630 A	 B11/15
Thermistor-type protection units – For use detection of motor overheating		
Protection units and PTC probes, with or without fault memory TeSys LT3	From 90 to 170 °C	 B11/17
Electronic over current relays - For machine protection		
Predefined or adjustable starting times, Manual reset	From 1.5 to 34 A	 B11/19
Automatic, electric or manual reset	From 0.5 to 50 A	 B11/19

TeSys

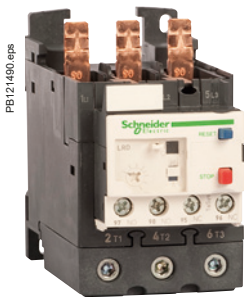
TeSys LRD Thermal overload relays

Product references



PB121460.eps

LRD01



PB121480.eps

LRD35



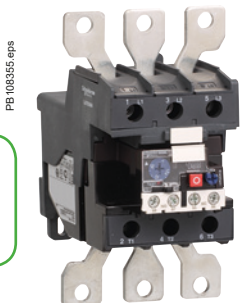
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LRD33



PB121492.eps

LRD43



PB108355.eps

LRD36

3-pole differential thermal overload relays for TeSys D contactors - Class 10

- for use with fuses or magnetic circuit breakers GV2L and GV3L
- compensated relays with manual or automatic reset
- with relay trip indicator
- for a.c. or d.c.

Relay setting range (A)	Fuses to be used with selected relay			For use with contactor LC1	Reference	Weight kg
	aM (A)	gG (A)	BS88 (A)			
Class 10 A ⁽¹⁾ for connection by screw clamp terminals or connectors						
0.10...0.16	0.25	2	–	D09...D38	LRD01	0.124
0.16...0.25	0.5	2	–	D09...D38	LRD02	0.124
0.25...0.40	1	2	–	D09...D38	LRD03	0.124
0.40...0.63	1	2	–	D09...D38	LRD04	0.124
0.63...1	2	4	–	D09...D38	LRD05	0.124
1...1.6	2	4	6	D09...D38	LRD06	0.124
1.6...2.5	4	6	10	D09...D38	LRD07	0.124
2.5...4	6	10	16	D09...D38	LRD08	0.124
4...6	8	16	16	D09...D38	LRD10	0.124
5.5...8	12	20	20	D09...D38	LRD12	0.124
7...10	12	20	20	D09...D38	LRD14	0.124
9...13	16	25	25	D12...D38	LRD16	0.124
12...18	20	35	32	D18...D38	LRD21	0.124
16...24	25	50	50	D25...D38	LRD22	0.124
23...32	40	63	63	D25...D38	LRD32	0.124
30...38	40	80	80	D32 and D38	LRD35	0.124
Class 10 A ⁽¹⁾ for connection by EverLink[®] BTR screw connectors ⁽²⁾						
9...13	16	25	25	D40A...D65A	LRD313	0.375
12...18	20	32	35	D40A...D65A	LRD318	0.375
17...25	25	50	50	D40A...D65A	LRD325	0.375
23...32	40	63	63	D40A...D65A	LRD332	0.375
30...40	40	80	80	D40A...D65A	LRD340	0.375
37...50	63	100	100	D40A...D65A	LRD350	0.375
48...65	63	100	100	D50A and D65A	LRD365	0.375
62...80	80	125	125	D80A	LRD380	0.375
Class 10 A ⁽¹⁾ for connection by screw clamp terminals or connectors						
17...25	25	50	50	D80 and D95	LRD3322	0.510
23...32	40	63	63	D80 and D95	LRD3353	0.510
30...40	40	100	80	D80 and D95	LRD3355	0.510
37...50	63	100	100	D80 and D95	LRD3357	0.510
48...65	63	100	100	D80 and D95	LRD3359	0.510
55...70	80	125	125	D80 and D95	LRD3361	0.510
63...80	80	125	125	D80 and D95	LRD3363	0.510
80...104	100	160	160	D80 and D95	LRD3365	0.510
80...104	125	200	160	D115 and D150	LRD4365	0.900
95...120	125	200	200	D115 and D150	LRD4367	0.900
110...140	160	250	200	D150	LRD4369	0.900
80...104	100	160	160	⁽³⁾	LRD33656	1.000
95...120	125	200	200	⁽³⁾	LRD33676	1.000
110...140	160	250	200	⁽³⁾	LRD33696	1.000

Class 10 A ⁽¹⁾ for connection by lugs

Select the appropriate overload relay with screw clamp terminals or connectors from the table above and add one of the following suffixes:

- figure 6 for relays LRD01 to LRD35 and relays LRD313 to LRD380.
- A66 for relays LRD3322 to LRD3363.

Relays LRD43 are suitable, as standard, for use with lug-clamps.

Thermal overload relays for use with unbalanced loads

Class 10 A ⁽¹⁾ for connection by screw clamp terminals or lugs

In the references selected above, change the prefix LRD (except LRD43) to LR3D.

Example: LRD01 becomes LR3D01.

Example with EverLink[®] connectors: LRD340 becomes LR3D340.

Example with lugs: LRD3406 becomes LR3D3406.

⁽¹⁾ Standard IEC 60947-4-1 specifies a tripping time for 7.2 times the setting current I_{Rt} : class 10 A: between 2 and 10 seconds.

⁽²⁾ BTR screws: hexagon socket head. In accordance with local electrical wiring regulations, a size 4 insulated Allen key must be used (reference LADALLEN4, see page B8/28).

⁽³⁾ Independent mounting of the contactor.



LRD003

3-pole differential thermal overload relays for TeSys D contactors - Class 10 A

- for use with fuses or magnetic circuit breakers GV2L and GV3L
- compensated relays with manual or automatic reset
- with relay trip indicator
- for a.c. or d.c.

Relay setting range (A)	Fuses to be used with selected relay			For use with contactor LC1	Reference
	aM (A)	gG (A)	BS88 (A)		
Classes 10 A ⁽¹⁾ for connection by spring terminals (only for direct mounting beneath the contactor)					
0.10...0.16	0.25	2	–	D09...D38	LRD013
0.16...0.25	0.5	2	–	D09...D38	LRD023
0.25...0.40	1	2	–	D09...D38	LRD033
0.40...0.63	1	2	–	D09...D38	LRD043
0.63...1	2	4	–	D09...D38	LRD053
1...1.6	2	4	6	D09...D38	LRD063
1.6...2.5	4	6	10	D09...D38	LRD073
2.5...4	6	10	16	D09...D38	LRD083
4...6	8	16	16	D09...D38	LRD103
5.5...8	12	20	20	D09...D38	LRD123
7...10	12	20	20	D09...D38	LRD143
9...13	16	25	25	D12...D38	LRD163
12...18	20	35	32	D18...D38	LRD213
16...24	25	50	50	D25...D38	LRD223

Class 10 A with connection by EverLink® BTR screw connectors ⁽²⁾ and control by spring terminals

9...13	16	25	25	D40A...D65A	LRD3133
12...18	20	32	35	D40A...D65A	LRD3183
17...25	25	50	50	D40A...D65A	LRD3253
23...32	40	63	63	D40A...D65A	LRD3323
30...40	40	80	80	D40A...D65A	LRD3403
37...50	63	100	100	D40A...D65A	LRD3503
48...65	63	100	100	D50A and D65A	LRD3653
62...80	80	125	125	D80A	LRD3803

Thermal overload relays for use with unbalanced loads

Classes 10 A ⁽¹⁾ for connection by BTR screw connectors ⁽²⁾ and control by spring terminals

In the references selected above, replace **LRD3** with **LR3D3**.
Example: **LRD3653** becomes **LR3D3653**.

Thermal overload relays for use on 1000 V supplies

Classes 10 A ⁽¹⁾ for connection by screw clamp terminals

For relays LRD06 to LRD35 only, for an operating voltage of 1000 V, and only for independent mounting, the reference becomes **LRD33●●A66**.
Order an **LA7D3064** terminal block separately, see page B11/9.

Standard relay	Relay for 1000 V network
LRD06	LRD3306A66
LRD07	LRD3307A66
LRD08	LRD3308A66
LRD10	LRD3310A66
LRD12	LRD3312A66
LRD14	LRD3314A66
LRD16	LRD3316A66
LRD21	LRD3321A66
LRD22	LRD3322A66
LRD32	LRD3353A66
LRD35	LRD3355A66

- ⁽¹⁾ Standard IEC 60947-4-1 specifies a tripping time for 7.2 times the setting current I_R : class 10 A: between 2 and 10 seconds.
⁽²⁾ BTR screws: hexagon socket head. In accordance with local electrical wiring regulations, a size 4 insulated Allen key must be used (reference **LADALLEN4**, see page B8/28).

TeSys

TeSys LRD Thermal overload relays

Product references



LRD04L...LRD32L



LRD300L



LR2D3500

3-pole differential thermal overload relays for TeSys D contactors - Class 20

- for use with fuses or magnetic circuit breakers GV2L and GV3L
- compensated relays with manual or automatic reset
- with relay trip indicator
- for a.c. or d.c.

Relay setting range (A)	Fuses to be used with selected relay			For use with contactor LC1	Reference
	aM (A)	gG (A)	BS88 (A)		
Classes 20⁽¹⁾ for connection by screw clamp terminals					
0.4...0.63	1	2	-	D09...D38	LRD04L
0.63...1	2	4	-	D09...D38	LRD05L
1...1.6	2	4	6	D09...D38	LRD06L
1.6...2.5	4	6	10	D09...D38	LRD07L
2.5...4	6	10	16	D09...D38	LRD08L
4...6	8	16	16	D09...D38	LRD10L
5.5...8	12	20	20	D09...D38	LRD12L
7...10	12	20	20	D09...D38	LRD14L
9...13	16	25	25	D12...D38	LRD16L
12...18	20	35	32	D18...D38	LRD21L
17...24	25	50	50	D25...D38	LRD22L
23...32	40	63	63	D25...D38	LRD32L

Class 20⁽¹⁾ for connection by EverLink® BTR screw connectors⁽²⁾					
9...13	20	32	35	D40A...D65A	LRD313L
12...18	25	40	40	D40A...D65A	LRD318L
17...25	32	50	50	D40A...D65A	LRD325L
23...32	40	63	63	D40A...D65A	LRD332L
30...40	50	80	80	D40A...D65A	LRD340L
37...50	63	100	100	D40A...D65A	LRD350L
48...65	80	125	125	D50A and D65A	LRD365L

Classes 20⁽¹⁾ for connection by screw clamp terminals					
17...25	32	50	50	D80 and D95	LR2D3522
23...32	40	63	63	D80 and D95	LR2D3553
30...40	40	100	80	D80 and D95	LR2D3555
37...50	63	100	100	D80 and D95	LR2D3557
48...65	80	125	100	D80 and D95	LR2D3559
55...70	100	125	125	D80 and D95	LR2D3561
63...80	100	160	125	D80 and D95	LR2D3563

Class 20⁽¹⁾ for connection by lugs

For relays LRD04L to LRD32L and relays LRD313L to LRD365L, select the appropriate overload relay with screw clamp terminals or connectors from the table above and add the suffix **6**.

Example: **LRD04L** becomes **LRD04L6**.

Thermal overload relays for use with unbalanced loads

Class 20⁽¹⁾ for connection by screw clamp terminals or lugs

For relays LRD04L to LRD32L and relays LR2D3522 to LR2D3563, select the appropriate overload relay with screw clamp terminals or connectors from the table above and change the prefix LRD or LR2D to **LR3D**.

Example: **LRD04L** becomes **LR3D04L**.

(1) Standard IEC 60947-4-1 specifies a tripping time for 7.2 times the setting current I_R : class 20: between 6 and 20 seconds

(2) BTR screws: hexagon socket head. In accordance with local electrical wiring regulations, a size 4 insulated Allen key must be used (reference **LADALLEN4**, see page B8/28).

Overload relays

3-pole differential thermal overload relays for TeSys D contactors - Class 20

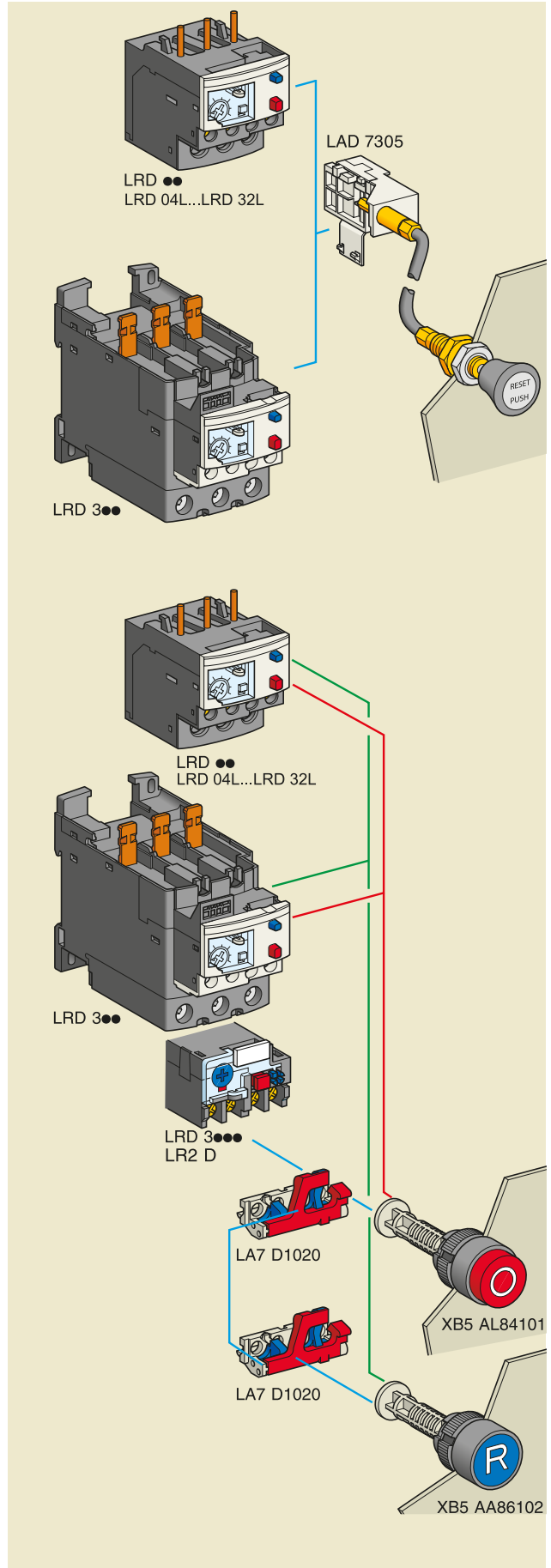
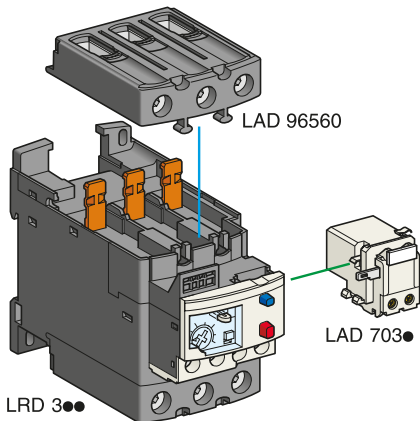
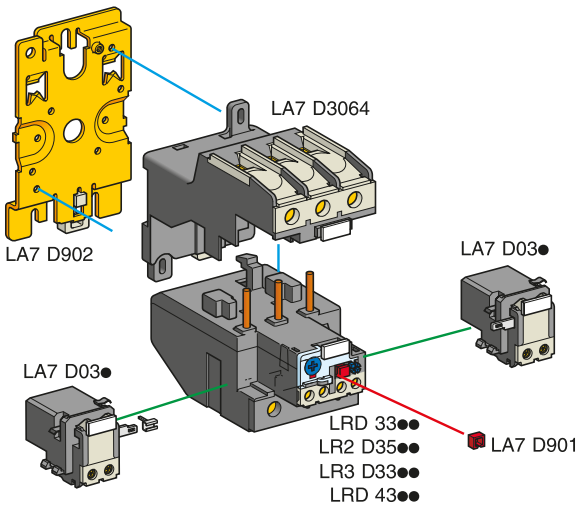
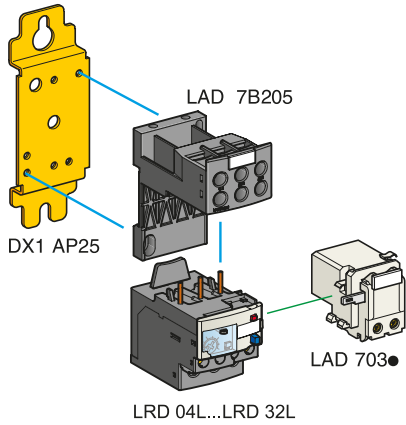
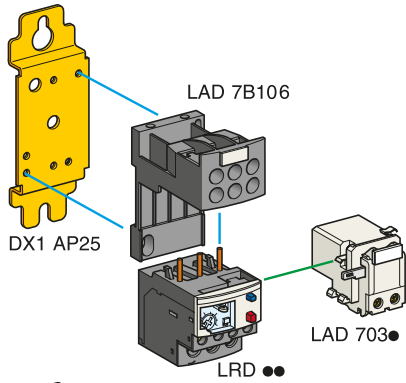
- for use with fuses or magnetic circuit breakers GV2L and GV3L
- compensated relays with manual or automatic reset
- with relay trip indicator
- for a.c. or d.c.

Relay setting range (A)	Fuses to be used with selected relay			For mounting beneath contactor LC1	Reference
	aM (A)	gG (A)	BS88 (A)		
Class 20 ⁽¹⁾ with connection by EverLink[®] BTR screw connectors ⁽²⁾ and control by spring terminals					
9...13	20	32	35	D40A...D65A	LRD313L3
12...18	25	40	40	D40A...D65A	LRD318L3
17...25	32	50	50	D40A...D65A	LRD325L3
23...32	40	63	63	D40A...D65A	LRD332L3
30...40	50	80	80	D40A...D65A	LRD340L3
37...50	63	100	100	D40A...D65A	LRD350L3
48...65	80	125	125	D50A and D65A	LRD365L3

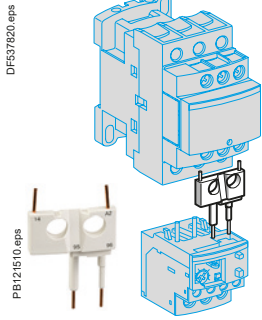
(1) Standard IEC 60947-4-1 specifies a tripping time for 7.2 times the setting current I_R :
class 10: between 4 and 10 seconds,
class 10 A: between 2 and 10 seconds,
class 20: between 6 and 20 seconds.

(2) BTR screws: hexagon socket head. In accordance with local electrical wiring regulations, a size 4 insulated Allen key must be used (reference **LADALLEN4**, see page B8/28).

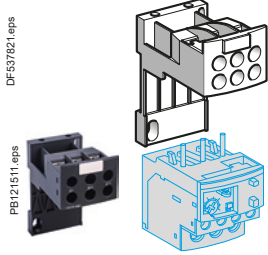




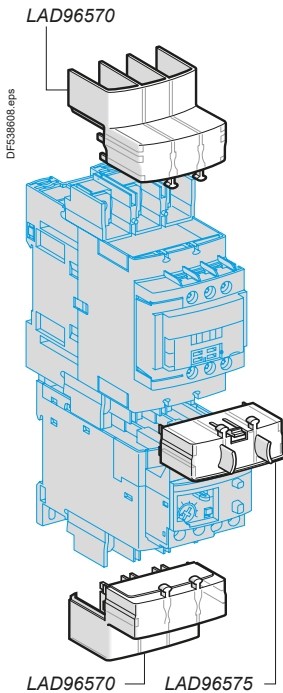
Overload relays



LAD7C



LAD7B106



LAD96570 LAD96575



Separate components for relays

Description	For use with	Sold in lots of	Unit reference
Pre-wiring kit allowing direct connection of the N/C contact of relay LRD01...35 or LR3D01...D35 to the contactor	LC1D09...D18	10	LAD7C1 ⁽¹⁾
	LC1D25...D38	10	LAD7C2 ⁽¹⁾
Terminal block ⁽²⁾ for clip-on mounting on 35 mm rail (AM1DP200) or screw fixing; for fixing centres, see pages B11/35 to B11/37	LRD01...35 and LR3D01...D35	1	LAD7B106
	LRD04L...LRD32L, LR3D04L...LR3D32L	1	LAD7B205
	LRD33●●, LR3D33●●, LR2D35●●, LR3D35●●	1	LA7D3064 ⁽³⁾
	LRD3●●, LR3D3●● and LR3D3●●	1	LAD96560
EverLink® terminal block for independent mounting	LRD3●●, LR3D3●● and LR3D3●●	5	LADALLEN4
Size 4 Allen key, insulated, 1000 V	LRD3●●, LR3D3●● and LR3D3●●	1	LA7D3058 ⁽⁵⁾
Terminal block adapter for mounting a relay beneath an LC1D115 or D150 contactor	LRD3●●, LR3D33●●, LR3D35●●	1	LA7D3058 ⁽⁵⁾
Mounting plates ⁽⁴⁾ for screw fixing on 110 mm centres	LRD01...35, LR3D01...D35, LRD04L...LRD32L, LR3D04L...LR3D32L	10	DX1AP25
	LRD3●●●, LR3D3●●●, LR2D35●●	1	LA7D902
Marker holders, snap-in 8 x 18 mm	LRD3●●	100	LAD90
	All relays except LRD01...35, LRD04L...32L, LR3D04L...D32L, LR3D01...D35, LRD3●●, LRD3●●L and LR3D3●●	100	LA7D903
Bag of 400 blank legends (self-adhesive, 7 x 16 mm)	All relays	1	LA9D91
Stop button locking device	All relays except LRD01...35, LRD04L...32L, LR3D04L...D32L, LR3D01...D35, LR9 D and LR3D13...LR3D380	10	LA7D901
Remote Stop or electrical reset device ⁽⁵⁾	LRD01...35, LR3D01...D35, LRD04L...32L, LR3D04L...D32L and LR3D13...LR3D380	1	LAD703● ^{(6) (7)}
Remote tripping or electrical reset device ⁽⁵⁾	All relays except LRD01...35, LR9D01...32, LRD04L...32L, LR3D04L...D32L, LR3D01...D35, LR9D01...32, LRD3●●, LRD3●●L and LR3D3●●	1	LA7D03● ⁽⁶⁾
Block of insulated terminals	LR9D	2	LA9F103 ⁽⁷⁾
IP 20 cover for lug type terminals for independent mounting	LRD3136...3806	1	LAD96570
IP 20 cover for lug type terminals for mounting with contactor LC1D40A6...D65A6	LRD3136...3806	1	LAD96575
Terminal block for lug type terminals for independent mounting	LRD3136...3806	1	LAD96566

Remote control

"Reset" function

Description	For use with	Sold in lots of	Unit reference
By flexible cable (length = 0.5 m)	LRD01...35, LR3D01...D35, LR3D04L...D32L and LR3D13...LR3D380, LRD04L...LRD32L	1	LAD7305 ⁽⁸⁾
	All relays except LRD01...35, LR3D01...D35, LRD3●●, LRD04L...32L, LR3D04L...D32L, LRD3●●L, LR3D3●●, LR9D01, LR9D110S	1	LA7D305

"Stop" and/or "Reset" functions

The terminal protection shroud must be removed and the following 3 products must be ordered separately:

Adapter for door mounting	LRD33●●, LR2D	1	LA7D1020	
Operating heads for spring return pushbutton	Stop	All relays	1	XB5AL84101
	Reset	All relays	1	XB5AA86102

- ⁽¹⁾ These pre-wiring kits cannot be used with reversing contactors.
- ⁽²⁾ Terminal blocks are supplied with terminals protected against direct finger contact and screws in the open, "ready-to-tighten" position.
- ⁽³⁾ To order a terminal block for connection by lugs, the reference becomes LA7D3064.
- ⁽⁴⁾ Remember to order the terminal block corresponding to the type of relay.
- ⁽⁵⁾ The time for which the coil of remote tripping or electrical resetting device LA7D03 or LAD703 can remain energised depends on its rest time: 1 s pulse duration with 9 s rest time; 5 s pulse duration with 30 s rest time; 10 s pulse duration with 90 s rest time; maximum pulse duration 20 s with a rest time of 300 s. Minimum pulse time: 200 ms.
- ⁽⁶⁾ Reference to be completed by adding the code indicating the control circuit voltage.
Standard control circuit voltages (for other voltages, please consult your Regional Sales Office):

Volts	12	24	48	96	110	220/230	380/400	415/440
50/60 Hz	—	B	E	—	F	M	Q	N
Consumption, inrush and sealed: < 100 VA	—	—	—	—	—	—	—	—
—	J	B	E	DD	F	M	—	—
Consumption, inrush and sealed: < 100 W.	—	—	—	—	—	—	—	—

⁽⁷⁾ Only one terminal block can be mounted below LR9D.

⁽⁸⁾ Not compatible with 3-pole relays fitted with spring terminals.

TeSys

TeSys LR9D Electronic thermal overload relays

Product references



LR9D01 and LR9D32



LR9D110S



LR9D5567



LAD7B205



LAD7B205 mounted on LR9D01



LR9D67

Electronic thermal overload relays for TeSys D contactors

- for use with fuses or magnetic circuit breakers
- compensated relays, with relay trip indicator,
- for a.c.,
- for direct mounting on contactor or independent mounting ⁽¹⁾.

Relay setting range	Fuses to be used with selected relay		For direct mounting beneath contactor LC1	Reference
	aM	gG		

A A A

Classes 5.10.20.30 ⁽¹⁾ selectable for direct connection on TeSys D contactors or connection using connectors

0.1...0.5			D09...D38	LR9D01
0.4...2			D09...D38	LR9D02
1.6...8			D09...D38	LR9D08
6.4...32			D09...D38	LR9D32

Classes 5.10.20.30 ⁽¹⁾ selectable for connection using connectors

22...110				LR9D110S
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Classes 10 or 10 A ⁽¹⁾ for connection using bars or connectors

60...100	100	160	D115...D150	LR9D5367
90...150	160	250	D115...D150	LR9D5369

Classes 20 ⁽¹⁾ for connection using bars or connectors

60...100	125	160	D115...D150	LR9D5567
90...150	200	250	D115...D150	LR9D5569

Separate components for relays

Description	For use with	Sold in lots of	Unit reference
Terminal block ⁽²⁾	LR9D01, LR9D02, (AM1DP200) or screws fixing;	1	LAD7B205
	LR9D08, LR9D32		

Electronic overload relays for balanced or unbalanced loads

Relay setting range	Fuses to be used with selected relay		For direct mounting beneath contactor LC1	Reference
	aM	gG		

A A A

Classes 10 or 20 ⁽¹⁾ selectable for direct connection using bars or connectors

60...100	100	160	D115...D150	LR9D67
90...150	160	250	D115...D150	LR9D69

⁽¹⁾ Standard IEC 60947-4-1 specifies a tripping time for 7.2 times the setting current I_{R^*} :
class 5: between 0.5 and 5 seconds
class 10: between 4 and 10 seconds
class 10 A: between 2 and 10 seconds
class 20: between 6 and 20 seconds
class 30: between 9 and 30 seconds.

⁽²⁾ Terminal blocks are supplied with terminals protected against direct finger contact and screws in the open, "ready-to-tighten" position.

⁽³⁾ Power terminals can be protected against direct finger contact by the addition of shrouds and/or insulated terminal blocks, to be ordered separately (see page B8/20).

TeSys

TeSys LRD Thermal overload relays

Characteristics



PB121502.eps

LRD10



PB113073.eps

LRD04L...32L



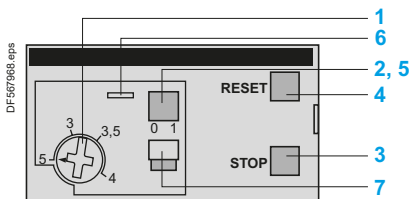
PB121505.eps

LRD365



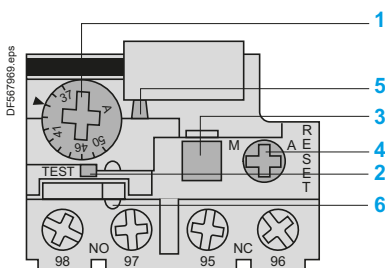
PB121506.eps

LRD33



DF567969.eps

LRD01...35, LRD04L...32L
LRD313...LRD365



DF567969.eps

LRD3361...4369, LR2 D3561...3563

Introduction

3-pole TeSys D thermal overload relays are designed to protect a.c. circuits and motors against:

- overloads
- phase failure
- excessively long starting times
- prolonged stalled rotor condition.

Power connection

LRD01 to LRD35

LRD01 to 35 relays are designed for connection by screw clamp terminals. They can be supplied for connection by spring terminals or by lugs ⁽¹⁾.

LRD04 to LRD32L

These relays are designed for connection by screw clamp terminals. They can be supplied for connection by lugs ⁽¹⁾.

LRD313 to LRD380

These relays are for connection by BTR screw connectors (hexagon socket head). The screws are tightened by means of a size 4, insulated Allen key.

This type of connection uses the **EverLink**[®] system with creep compensation ⁽²⁾ (Schneider Electric patent).

This technique makes it possible to achieve accurate and durable tightening torque.

These relays are also available for connection by lugs ⁽¹⁾.

LRD3361 to 4369, LR2D3561 to D3563

LRD3361 to 4369 and LR2D3561 to D3563 relays are designed for connection by screw clamp terminals. They can be supplied for connection by lugs ⁽¹⁾.

Description

TeSys D 3-pole thermal overload relays are designed to protect a.c. circuits and motors against overloads, phase failure, long starting times and prolonged stalling of the motor.

- 1 Adjustment dial Ir.
- 2 Test button.
Operation of the Test button allows:
 - checking of control circuit wiring,
 - simulation of relay tripping (actuates both the N/O and N/C contacts).
- 3 Stop button. Actuates the N/C contact; does not affect the N/O contact.
- 4 Reset button.
- 5 Trip indicator.
- 6 Setting locked by sealing the cover.
- 7 Selector for manual or automatic reset.

LRD01 to 35, LRD04L to 32L and LRD313 to LRD380 relays are supplied with the selector in the manual position, protected by a cover. Deliberate action is required to move it to the automatic position.

⁽¹⁾ Connection by lugs meets the requirements of certain Asian markets and is suitable for applications subject to strong vibration, such as railway transport.

⁽²⁾ Creep: normal crushing phenomenon of copper conductors, that is accentuated over time.



Overload relays

Environment			
Conforming to standards			IEC/EN 60947-4-1, IEC/EN 60947-5-1, UL 60947-4-1, CSA C22.2 n° 60947-4-1, UL 60947-5-1, CSA C22.2 n° 60947-5-1, EN 50495 ⁽¹⁾ , GB/T 14048.4, GB/T 14048.5
Product certifications			UL ⁽²⁾ , CSA ⁽²⁾ , IEC, CCC ⁽³⁾ , EAC, ATEX ⁽¹⁾ , ABS, BV ⁽⁴⁾ , DNV-GL ⁽⁵⁾ , LRoS ⁽⁶⁾ , RINA ⁽⁷⁾ , RMRS ⁽⁸⁾ , EU RO Mutual recognition ⁽⁹⁾
Degree of protection (front face)	Conforming to IEC 60529		Protection against direct finger contact IP20
Climatic withstand			Conforming to IACS E10
Ambient air temperature around the device	Storage	°C	-60...+70
	Normal operation, without derating (IEC 60947-4-1)	°C	-20...+60
	Minimum /maximum operating temperatures (with derating)	°C	-20...+70
Operating positions without derating	In relation to normal vertical mounting plane		Any position. When mounting on a vertical rail, use a stop.
Flame resistance	Conforming to 60695-2-11	°C	850
Shock resistance	Permissible acceleration conforming to IEC 60068-2-7		15 gn - 11 ms
Vibration resistance ⁽¹⁰⁾	Permissible acceleration conforming to IEC 60068-2-6		6 gn except LRD04L...LRD32L: 3 gn
Dielectric strength at 50 Hz	Conforming to IEC 60947-1	kV	1.89 (product Ui 690 V), 2.2 (product Ui 1000 V)
Impulse withstand voltage	Conforming to IEC 60947-1	kV	6

Electrical characteristics of power circuit										
Relay type		LRD01 ...16, LR3D01 ...16	LRD04L ...32L	LRD21 ...35, LR3D21 ...35	LRD313 ...365 LR3D 313 ...38	LRD313L ...365L	LRD3322 ...33696 LR3D3322 ... 33696	LR2D 3522 ... 3563	LRD 4365 ... 4369	
Tripping class	Conforming to UL 60947-4-1, IEC 60947-4-1	10 A	20	10 A	10 A	20	10 A	20	10 A	
Rated insulation voltage (Ui)	Conforming to IEC 60947-4-1	V						690		1000 ⁽¹¹⁾
	Conforming to UL, CSA	V						600		600 except LRD 4369
Rated impulse withstand voltage (Uimp)		kV						6		
Rated operational voltage (Ue)		V						690		
Frequency limits	Of the operating current	Hz						0...400		
Setting range	Depending on model	A	0.1...13	0.63...32	12...38	9...80	9...65	17...140	17...80	80...140

Auxiliary contact characteristics										
Conventional thermal current		A	5							
Max. sealed consumption of the operating coils of controlled contactors (Occasional operating cycles of contact 95-96)	a.c. supply, AC-15	V	120	240	380	480	500	600		
		A	3	1.5	0.95	0.75	0.72	0.12		
	d.c. supply, DC-13	V	125	250	440					
		A	0.22	0.1	0.06					
Protection against short-circuits	By gG, BS fuses. Maximum rating or by GB2	A	4							

⁽¹⁾ For relays LRD01 to LRD380, LRD3322 to LRD3365, LRD04L to LRD32L, LRD4365 to LRD4369, LRD33656 to LRD33696.

⁽²⁾ Except for relays LRD4369.

⁽³⁾ CCC: Except for LRD/LR3D04L to LRD/LR3D32L, LR2D3522 to LR2D3563.

⁽⁴⁾ BV: except for LRD/LR3D04L to LRD/LR3D32L, LRD/LR3D313 to LRD/LR3D380.

⁽⁵⁾ DNV-GL: except for LRD04L to LRD32L.

⁽⁶⁾ LRoS: except for LRD/LR3D04L to LRD/LR3D32L, LRD/LR3D380.

⁽⁷⁾ RINA: for LRD/LR3D01 to LRD/LR3D35.

⁽⁸⁾ RMRS: for LRD/LR3D313 to LRD/LR3D380.

⁽⁹⁾ EU RO Mutual Recognition: for LRD/LR3D313 to LRD/LR3D380, LRD313L to LRD365L.

⁽¹⁰⁾ In case of vibration above 3gn on TeSys D Green contactor directly mounted with LRD, it is recommended do mount the devices separately by screws on metal plate.

⁽¹¹⁾ 750 V for LRD33656, LRD33676, LRD33696.

TeSys

TeSys LRD Thermal overload relays

Characteristics

Power circuit connection characteristics				LRD01 ...16, LR3D01 ...16	LRD04L ...21L	LRD22L ...32L	LRD21 ...35, LR3D21 ...35	LRD 313 ...365 LR3D 313 ...380	LRD 313L ...365L	LRD 3322 ...33696 LR3D 3322 ... 33696	LR2D 35223563	LRD 4365 ...4369
Connection to screw clamp terminals												
Flexible cable without cable end	1 conductor	mm ²	1.5...10			1.5...10	1...35	1...35	4...35			4...50
Flexible cable with cable end	1 conductor	mm ²	1...4			1...6 except LRD21: 1...4	1...35	1...35	4...35			4...35
Solid cable without cable end	1 conductor	mm ²	1...6			1.5/10 except LRD21: 1/6	1...35	1...35	4...35			4...50
Tightening torque		N.m	1.7			2.5	1...25: 5 35: 8	1...25: 5 35: 8	9	9		9
Connection to spring terminals (Min/max c.s.a.) (except LRD04L...LRD32L)												
Flexible cable without cable end	1 conductor	mm ²	1.5...4	-	-	1.5...4	-	-	-	-	-	-
Flexible cable with cable end	1 conductor	mm ²	1.5...4	-	-	1.5...4	-	-	-	-	-	-
Connection by bars or lugs												
Relay type			LRD016...166 LRD04L6 ... 16L6	LRD216...356 LRD21L6 ... 32L6	LRD3136 ... 3806	LRD313L6 ... 365L6	LRD3322A66 ... 3365A66					
Pitch	Without spreaders	mm	14.5	17.5	17.5	17.5	21.5					
Bars or cables with lugs	e	mm	≤ 6	≤ 6	≤ 6	≤ 6	≤ 6					
	L	mm	≤ 8	≤ 8	≤ 13.5	≤ 13.5	≤ 16					
	L'	mm	≤ 9.5	≤ 9.5	≤ 16.5	≤ 16.5	≤ 16					
	d		≤ 7	≤ 7	≤ 10	≤ 10	≤ 12					
Screws			M4	M4	M6	M6	M10					
	Tightening torque		N.m	1.7	2.5	6	6	11.3				

Control circuit connection characteristics												
Connection to screw clamp terminals or spring terminals												
Bare cables												
Relay type			LRD01 ...16, LR3D01 ...16	LRD04L ...21L	LRD22L ...32L	LRD21 ...35, LR3D21 ...35	LRD 313 ...365 LR3D 313 ...380	LRD 313L ...365L	LRD3322 ...33696 LR3D 3322 ... 33696	LR2D 3522 ... 3563	LRD 4365 ...4369	
Connection to screw clamp terminals ⁽¹⁾	Solid cable without cable end	mm ²	2 x 1...2.5									
	Flexible cable without cable end	mm ²	2 x 1...2.5									
	Flexible cable with cable end	mm ²	2 x 1...2.5									
Tightening torque		N.m	1.7									
Connection to spring terminals (Min/max c.s.a.) (except LRD04L...LRD32L)	Solid cable	mm ²	1...2.5	-		1...2.5			-			
	Flexible cable without cable end	mm ²	1...2.5	-		1...2.5			-			

(1) For relays **LRD313 to 380**: BTR hexagon socket head screws, **EverLink®** system. In accordance with local electrical wiring regulations, a size 4 insulated Allen key must be used (reference **LADALLEN4**, see page B8/28).



Overload relays

TeSys

TeSys LRD Thermal overload relays

Characteristics

Operating characteristics

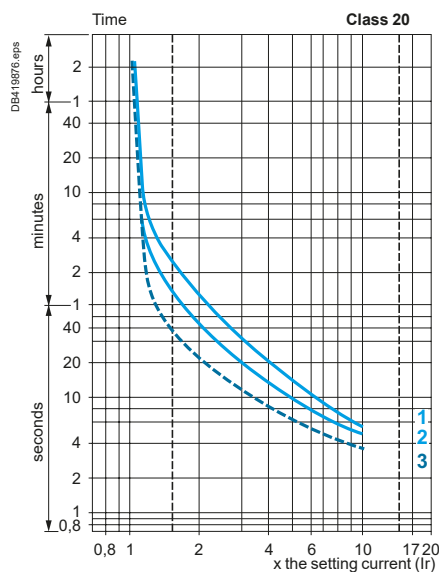
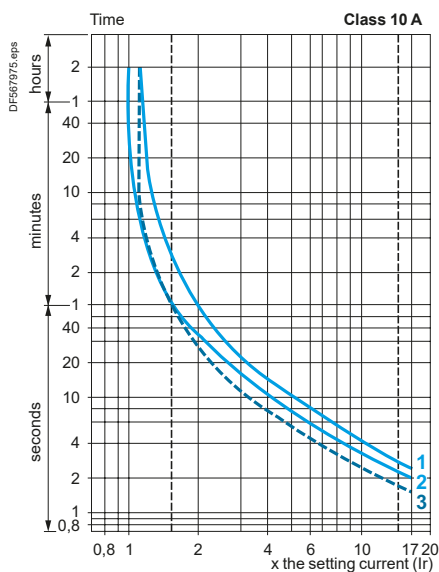
Relay type	LRD01 ...16, LR3D01 ...16	LRD04L... LRD32L	LRD21 ...35, LR3D21 ...35	LRD313 ...365 LR3D 313 ...380	LRD313L ...365L	LRD3322 ...33696 LR3D3322 ... 33696	LR2D 3522 ... 3563	LRD 4365 ...4369
Temperature compensation	°C		-20...+60					
Tripping threshold	Conforming to IEC 60947-4-1		A		1.14 ±0.06 I _r			
Sensitivity to phase failure	Tripping current 130 % of I _r on two phases, the third phase at 0.							

Tripping curves

Average operating time related to multiples of the setting current

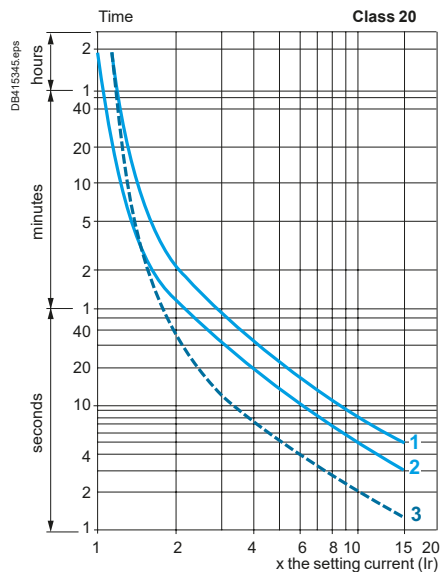
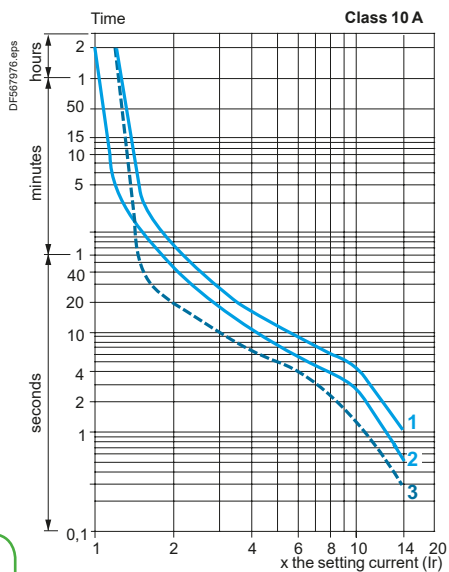
LRD01 to LRD35, LR2D and LRD3322 to LRD4369

LRD04L to LRD32L and LR2D3522 to LR2D3563



LRD313 to LRD380

LRD313L to LRD365L



- 1 Balanced operation, 3-phase, without prior current flow (cold state).
- 2 2-phase operation, without prior current flow (cold state).
- 3 Balanced operation, 3-phase, after a long period at the set current (hot state).

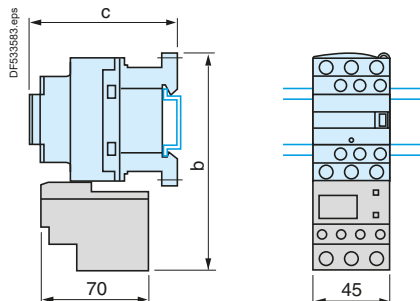
TeSys

TeSys LRD Thermal overload relays

Dimensions, mounting

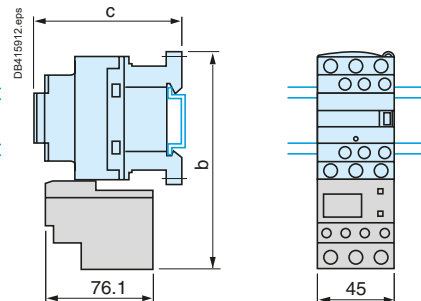
LRD01...35 ⁽¹⁾

Direct mounting beneath contactors with screw clamp connections



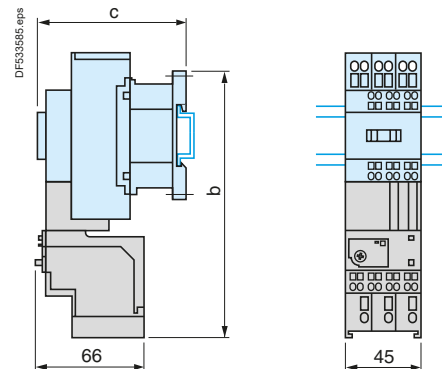
LRD04...32L ⁽¹⁾

Direct mounting beneath contactors with screw clamp connections



LRD013...223

Direct mounting beneath contactors with spring terminal connections



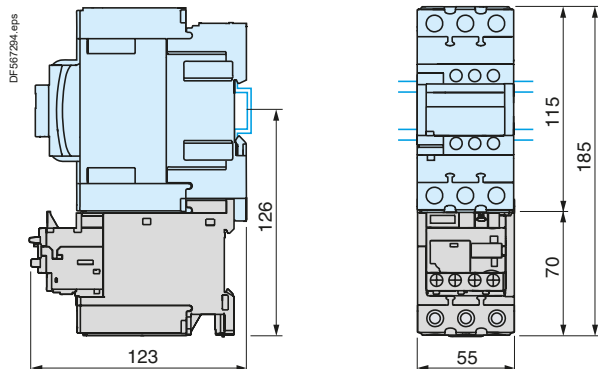
LC1	D09...D18	D25...D38
b	123	137
c	See pages B11/32 and B8/73	

LC1	D09...D18	D25...D38
b	123	137
c	See pages B11/32 and B8/73	

LC1	D093...D253
b	168
c	See pages B11/32 and B8/73

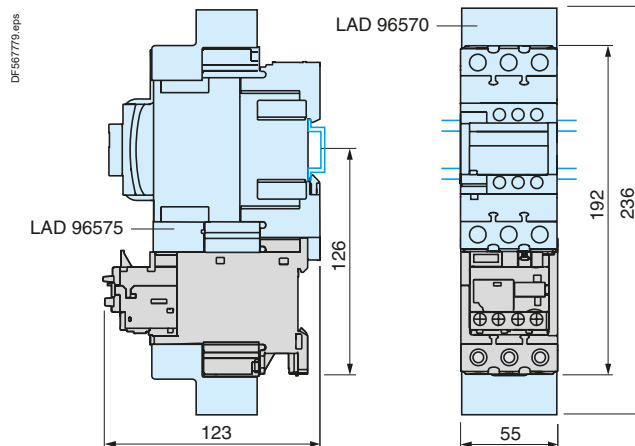
LRD313 ...380 ⁽¹⁾

Direct mounting beneath contactors LC1D40A...D80A with screw clamp connections or EverLink® connectors



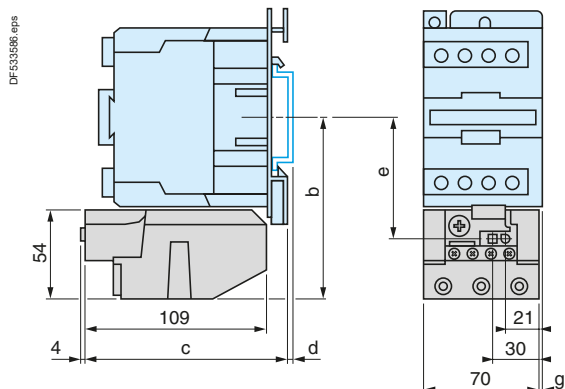
LRD3136 ...3806 ⁽¹⁾

Direct mounting beneath contactors LC1D40A6...D80A6 with lugs



LRD33●●●

Direct mounting beneath contactors LC1D80...D95



AM1	DL201	DL200
d	7	17

	Control circuit AC				
	b	c	e	g (tri)	g (tetra)
LC1D80	115.5	124	76.9	9.5	22
LC1D95	115.5	124	76.9	9.5	-
	Control circuit DC				
	b	c	e	g (tri)	g (tetra)
LC1D80, D95	115.5	179.4	76.9	9.5	22

⁽¹⁾ In case of vibration above 3 gn on TeSys D Green contactor directly mounted with LRD, it is recommended do mount the devices separately by screws on metal plate.

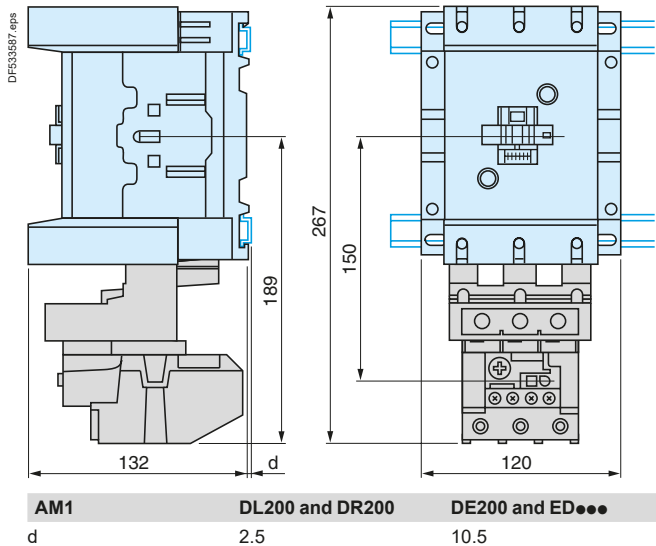
TeSys

TeSys LRD Thermal overload relays

Dimensions, mounting

LRD4●●●

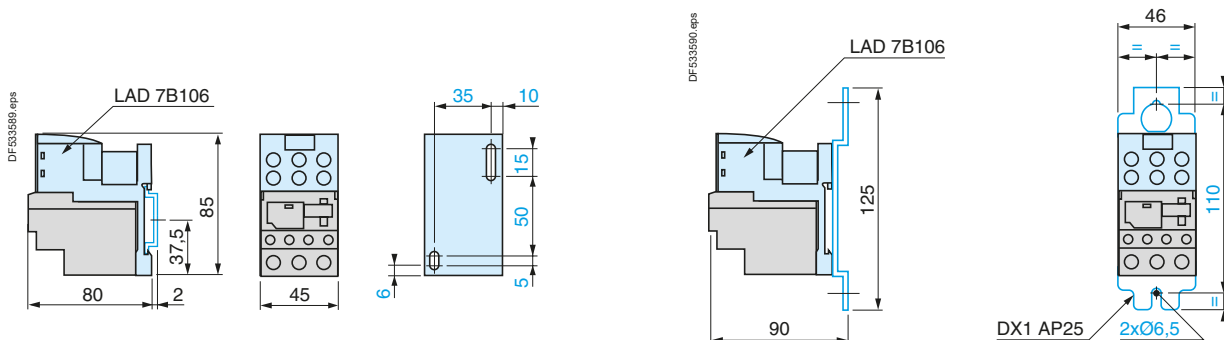
Direct mounting beneath contactors LC1D115 and D150



LRD01...35

Independent mounting on 50 mm centres or on rail AM1DP200 or DE200

Independent mounting on 110 mm centres



LRD313...380

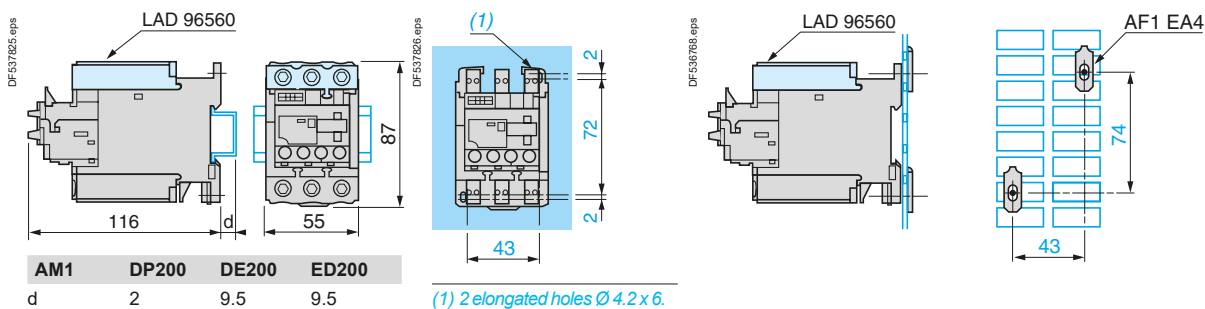
Mounting on rail AM1D●200 or ED200

Panel mounting

Mounted on plate AM1P

With terminal block LAD96560

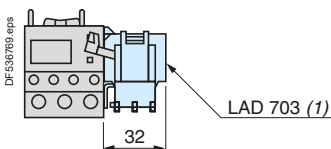
Outgoing terminal block not shown



LRD01...35 and LRD313...380

Remote tripping or electrical reset

Overload relays



(1) Can only be mounted on RH side of relay LRD01...35 and LRD313...380.

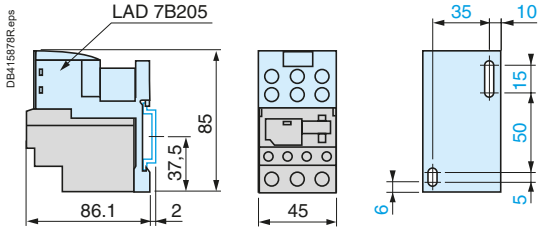
TeSys

TeSys LRD Thermal overload relays

Dimensions, mounting and schemes

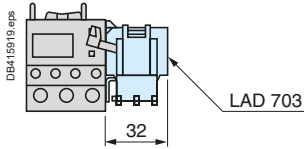
LRD04L...32L

Independent mounting on 50 mm centres or on rail AM1DP200 or DE200



AM1	DP200	DE200
d	2	9.5

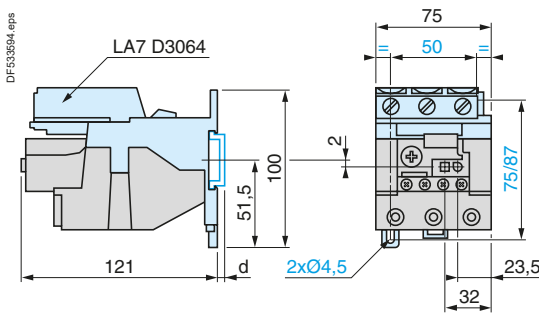
Remote tripping or electrical reset



(1) Can be mounted on RH or LH side of relay LR2D15.

LRD3... and LR2D35...

Independent mounting on 50 mm centres or on rail AM1DP200 or DE200



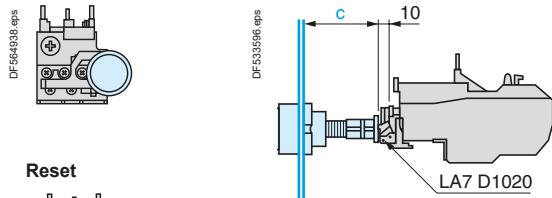
AM1	DP200	DE200
d	2	9.5

LRD3...

Adapter for door mounted operator

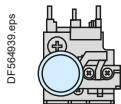
LA7D1020

Stop

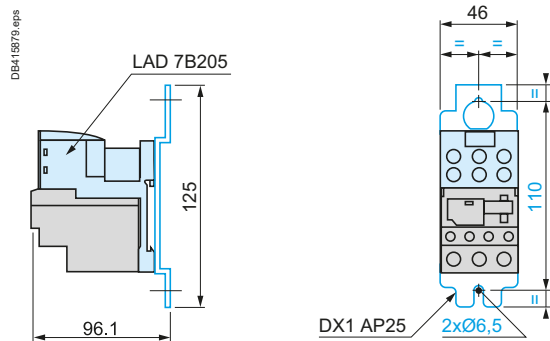


c: adjustable from 17 to 120 mm

Reset

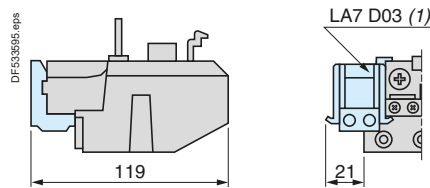


Independent mounting on 110 mm centres



LRD3..., LR2D35... and LR9D

Remote tripping or electrical reset



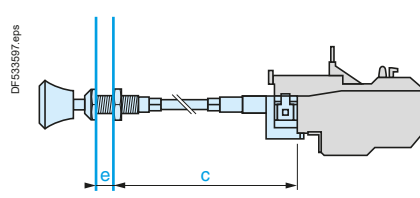
(1) Can be mounted on RH or LH side of relay LRD3..., LR2D35... or LR9D.

LRD, LRD313...380, LRD04...32L

"Reset" by flexible cable

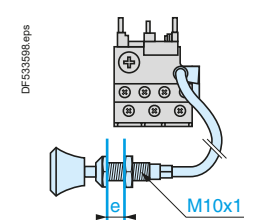
LA7D305 and LAD7305

Mounting with cable straight

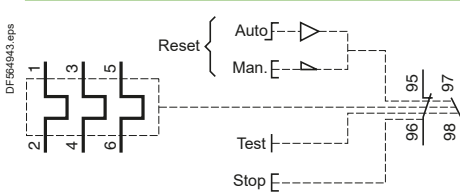


e: up to 20 mm / c: up to 550 mm

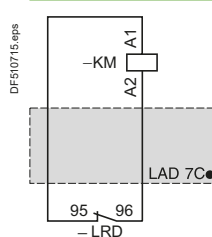
Mounting with cable bent



LRD..., LRD3... and LR2D...



Pre-wiring kit LAD7C1, LAD7C2



Characteristics:
pages B11/31 to B11/34

References:
pages B11/4 to B11/7



Ref.

Overload relays