

TeSys

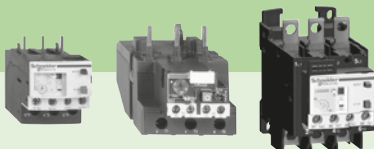
Overload relays



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
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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
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Single pole magnetic over current relays

Latching or non latching overload relays TeSys RM1	From 1.15 to 630 A		B11/15
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Thermistor-type protection units – For use detection of motor overheating

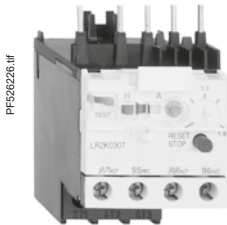
Protection units and PTC probes, with or without fault memory TeSys LT3	From 90 to 170 °C		B11/17
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Electronic over current relays - For machine protection

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

Overload relays

Thermal overload relays for TeSys K contactors - adjustable from 0.11 to 16 A Class 10 A



LR2K0307

3-pole relays with screw clamp terminals

These overload relays are designed for the protection of motors. They are compensated and phase failure sensitive. Resetting can either be manual or automatic.

Direct mounting: under the contactor for versions with screw clamp terminals only; pre-wired terminals, see pages B11/28 and B11/30.

Separate mounting: using terminal block LA7K0064 (see below).

On the front face of the overload relay:

- selection of reset mode: Manual (marked H) or Automatic (marked A),
- red pushbutton: Trip Test function,
- blue pushbutton: Stop and manual Reset,
- yellow trip flag indicator: overload relay tripped.

Protection by magnetic circuit breaker GV2LE, see pages A6/11 and A6/20.

Class 10 A (the standard specifies a tripping time of between 2 and 10 seconds at 7.2 In)

Relay setting range	Fuses to be used with selected relay			Reference
	Maximum rating	Type		
A	aM	gG	BS88	
0.11...0.16	0.25	0.5	–	LR2K0301
0.16...0.23	0.25	0.5	–	LR2K0302
0.23...0.36	0.5	1	–	LR2K0303
0.36...0.54	1	1.6	–	LR2K0304
0.54...0.8	1	2	–	LR2K0305
0.8...1.2	2	4	6	LR2K0306
1.2...1.8	2	6	6	LR2K0307
1.8...2.6	4	8	10	LR2K0308
2.6...3.7	4	10	16	LR2K0310
3.7...5.5	6	16	16	LR2K0312
5.5...8	8	20	20	LR2K0314
8...11.5	10	25	20	LR2K0316
10...14	16	32	25	LR2K0321
12...16	20	40	32	LR2K0322

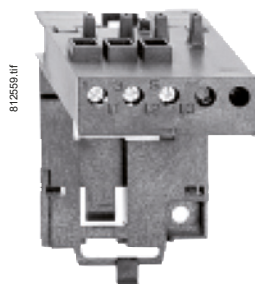
Overload relays for unbalanced loads

Class 10 A: to order, replace the prefix **LR2** by **LR7** in the references selected from above (only applicable to overload relays **LR2K0305** to **LR2K0322**).

Example: **LR7K0308**.

Overload relays

Thermal overload relays for TeSys K contactors - adjustable from 0.11 to 16 A Class 10 A



LA7K0064

Accessory

Description	Type of connection	Reference
Terminal block for separate clip-on mounting of the overload relay on 35 mm rail	Screw clamp	LA7K0064

Overload relays

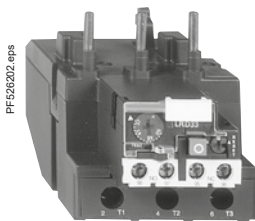
Thermal overload relays for TeSys D contactors - Class 10 A



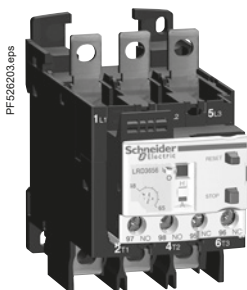
LRD01



LRD30



LRD300



LRD3006

3-pole differential thermal overload relays for screw clamp connectors and lugs 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 ⁽³⁾						
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 ⁽⁴⁾	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	(2)	LRD33656	1.000
95...120	125	200	200	(2)	LRD33676	1.000
110...140	160	250	200	(2)	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 ⁽⁴⁾.

- A66 for relays LRD3322 to LRD3363.

Relays LRD4300 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 LRD4300) 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.

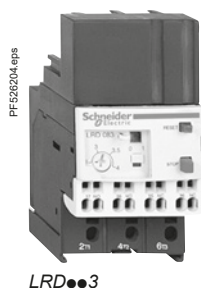
(2) Independent mounting of the contactor.

(3) 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 B8/29).

(4) LRD380 available end 2017

Overload relays

Thermal overload relays for TeSys D contactors - Class 10 A



3-pole differential thermal overload relays for spring terminals 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 ⁽³⁾

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_n : 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 B8/29).

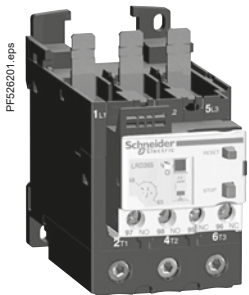
⁽³⁾ LRD3803 available end 2017.

Overload relays

Thermal overload relay for TeSys D contactors - Class 20



LRD04L...LRD32L



LRD300L



LR2D3500

3-pole differential thermal overload relays for screw clamp connectors and lugs 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 B8/29).

Overload relays

Thermal overload relay for TeSys D contactors - Class 20

3-pole differential thermal overload relays for screw clamp connectors and springs 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

3-pole differential thermal overload relays for bars and connectors for use with fuses or magnetic circuit breakers NSX

- Compensated relays, with relay trip indicator
- for a.c.
- for direct mounting on contactor or independent mounting ⁽³⁾.

Relay setting range (A)	Fuses to be used with selected relay		For mounting beneath contactor LC1	Reference
	aM (A)	gG (A)		
Classes 10 or 10A ⁽¹⁾ for connection using bars or connectors				
60...100	100	160	D115 and D150	LR9D5367
90...150	160	250	D115 and D150	LR9D5369
Classes 20 ⁽¹⁾ for connection using bars or connectors				
60...100	125	160	D115 and D150	LR9D5567
90...150	200	250	D115 and D150	LR9D5569

⁽¹⁾ Standard IEC 60947-4-1 specifies a tripping time for 7.2 times the setting current I_R :

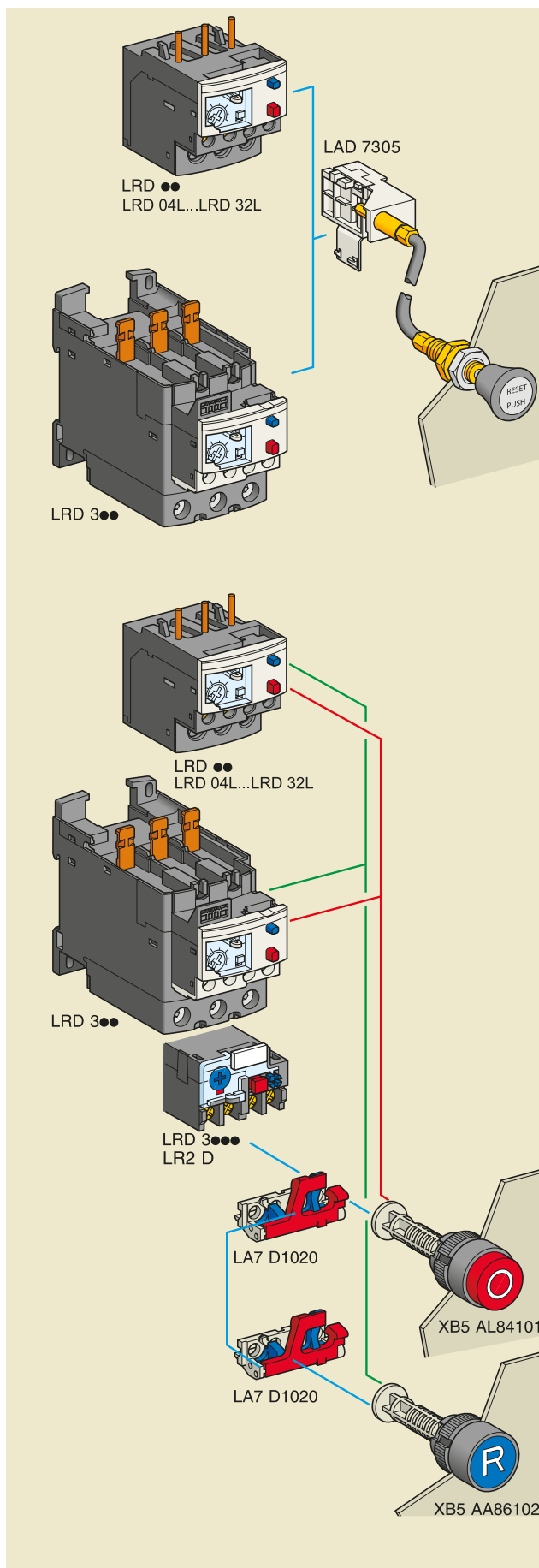
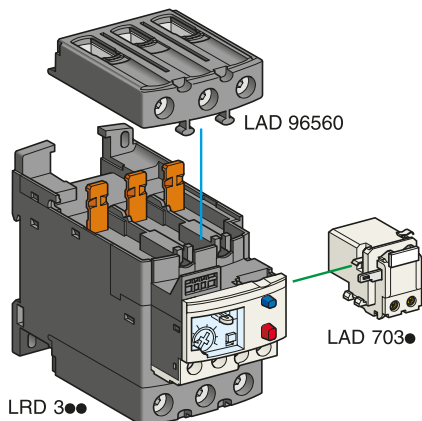
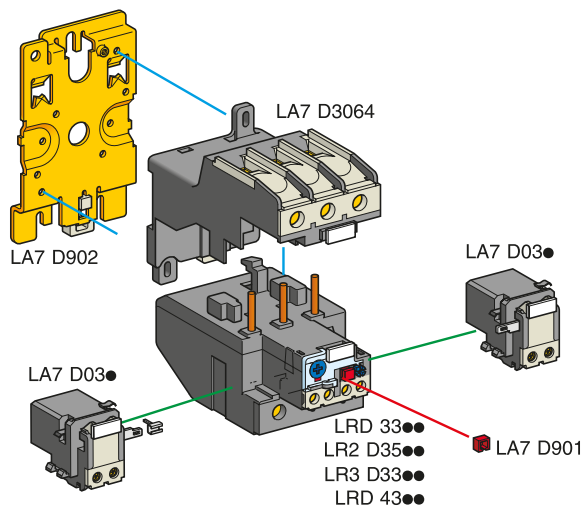
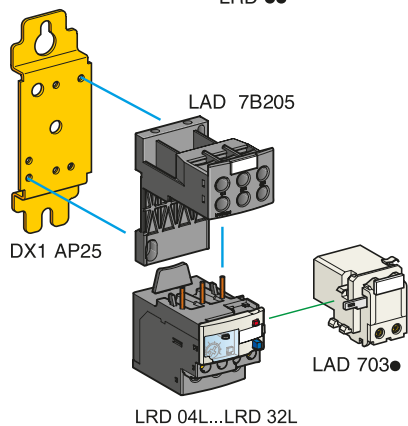
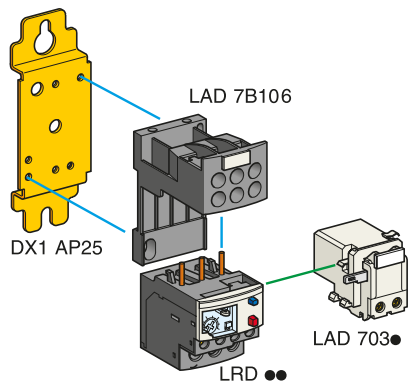
class 10: between 4 and 10 seconds,
class 10 A: between 2 and 10 seconds,
class 20: between 6 and 20 seconds

⁽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 B8/29).

⁽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 B8/28).

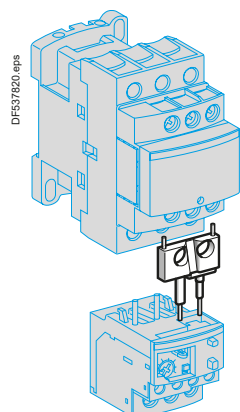
Other versions

Thermal overload relays for resistive circuits in category AC-1.
Please consult your Regional Sales Office.

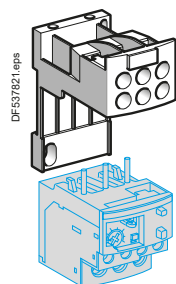


Overload relays

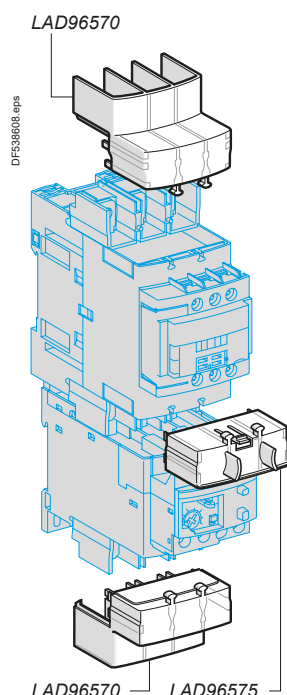
Thermal overload relays for TeSys D contactors - Accessories



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 LC1D25...D38	10 10	LAD7C1 ⁽¹⁾ 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 LRD04L...LRD32L, LR3D04L...LR3D32L LRD43●●, LR3D33●●, LR3D33●●L, LR2D35●●	1 1 1	LAD7B106 LAD7B205 LA7D3064 ⁽³⁾
EverLink® terminal block for independent mounting	LRD3●●, LR3D33●●L and LR3D33●●	1	LAD96560
Size 4 Allen key, insulated, 1000 V	LRD3●●, LR3D33●●L and LR3D33●●	5	LADALLEN4
Terminal block adapter for mounting a relay beneath an LC1D115 or D150 contactor	LRD33●●, LR3D33●●, LR3D35●●	1	LA7D3058 ⁽³⁾
Mounting plates ⁽⁴⁾ for screw fixing on 110 mm centres	LRD01...35, LR3D01...D35, LRD04L...LRD32L, LR3D04L...LR3D32L LRD33●●, LR3D33●●, LR2D35●●	10 1	DX1AP25 LA7D902
Marker holders, snap-in 8 x 18 mm	LRD3●● All relays except LRD01...35, LRD04L...32L, LR3D04L...D32L, LR3D01...D35, LRD33●●, LR3D33●●L and LR3D33●●	100 100	LAD90 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 LRD313...LRD380 ⁽⁹⁾	10	LA7D901
Remote Stop or electrical reset device ⁽⁵⁾	LRD01...35, LR3D01...D35, LRD04L...32L, LR3D04L...D32L and LRD313...LRD380 ⁽⁹⁾	1	LAD703● ^{(6) (7)}
Remote tripping or electrical reset device ⁽⁵⁾	All relays except LRD01...35, LRD04L...32L, LR3D04L...D32L, LR3D01...D35, LRD33●●, LR3D33●●L and LR3D33●●	1	LA7D03● ⁽⁶⁾
Block of insulated terminals	LR9 D	2	LA9F103 ⁽⁷⁾
IP 20 cover for lug type terminals for independent mounting	LRD3136...3806 ⁽⁹⁾	1	LAD96570
IP 20 cover for lug type terminals for mounting with contactor LC1D40A6...D65A6	LRD3136...3806 ⁽⁹⁾	1	LAD96575
Terminal block for lug type terminals for independent mounting	LRD3136...3806 ⁽⁹⁾	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 LRD313...LRD380 ⁽⁹⁾ , LRD04L...LRD32L All relays except LRD01...35, LR3D01...D35, LRD33●●, LRD04L...32L, LR3D04L...D32L, LRD33●●L and LR3D33●●	1 1	LAD7305 ⁽⁸⁾ 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 LA7D30646.

(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.	—	—	—	—	—	—	—	—

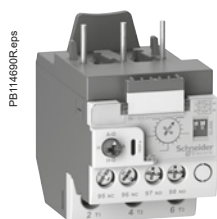
(7) Only one terminal block can be mounted below LR9D.

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

(9) LRD380, LRD3806 available end 2017.

Overload relays

Electronic thermal overload relays for TeSys D contactors



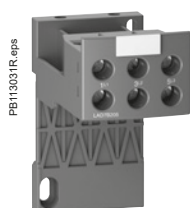
LR9D01 and LR9D32



LR9D110S



LR9D5597



LAD7B205

LAD7B205 mounted
on LR9D01

LR9D67

Electronic thermal overload relays

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
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⁾ For clips-on mounting on 35 mm rails (AM1DP200) or screws fixing; for fixing centres, see pages B11/35 to B11/37	LR9D01, LR9D02, LR9D08, LR9D32	1	LAD7B205

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).

Overload relays

Electronic thermal overload relays for TeSys F contactors



LR9F53●●



LR9F73●●

Compensated and differential overload relays

Thermal overload relays:

- compensated and differential,
- 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	Weight
	aM	gG			
A	A	A			kg
Class 10 ⁽²⁾					
30...50	50	80	F115...F185	LR9F5357	0.885
48...80	80	125	F115...F185	LR9F5363	0.900
60...100	100	200	F115...F185	LR9F5367	0.900
90...150	160	250	F115...F185	LR9F5369	0.885
132...220	250	315	F185...F265	LR9F5371	0.950
200...330	400	500	F225...F500	LR9F7375	2.320
300...500	500	800	F225...F500	LR9F7379	2.320
380...630	630	800	F400...F630 and F800	LR9F7381	4.160
Class 20 ⁽²⁾					
30...50	50	80	F115...F185	LR9F5557	0.885
48...80	80	125	F115...F185	LR9F5563	0.900
60...100	100	200	F115...F185	LR9F5567	0.900
90...150	160	250	F115...F185	LR9F5569	0.885
132...220	250	315	F185...F400	LR9F5571	0.950
200...330	400	500	F225...F500	LR9F7575	2.320
300...500	500	800	F225...F500	LR9F7579	2.320
380...630	630	800	F400...F630 and F800	LR9F7581	4.160

⁽¹⁾ When mounting overload relays **LR9F5●57...LR9F5●71** directly beneath the contactor, supporting the relays with a mounting plate is recommended (see page B11/14).
With overload relays **LR9F7●75...LR9F7●81**, use of a support mounting plate is mandatory (see page B11/14).

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 B11/14).

Interconnection kit **LA7F407** is required for mounting an **LR9F5●71** thermal overload relay together with an **LC1F185** contactor.

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

Overload relays

Electronic thermal overload relays for TeSys F contactors

Compensated overload relays, class 10 or 20 with alarm

Thermal overload relays:

- compensated,
- with relay trip indicator,
- for a.c.,
- for direct mounting on contactor or independent mounting ⁽¹⁾,
- class 10 or 20 by selector switch,
- protection of 3-phase or single-phase circuits by selector switch,
- with alarm function that enables tripping to be forestalled.



Relay setting range	Fuses to be used with selected relay		For direct mounting beneath contactor LC1	Reference	Weight
	aM	gG			
A	A	A			kg
30...50	50	80	F115...F185	LR9F57	0.885
48...80	80	125	F115...F185	LR9F63	0.900
60...100	100	200	F115...F185	LR9F67	0.900
90...150	160	250	F115...F185	LR9F69	0.885
132...220	250	315	F185...F265	LR9F71	0.950
200...330	400	500	F225...F500	LR9F75	2.320
300...500	500	800	F225...F500	LR9F79	2.320
380...630	630	800	F400...F630 and F800	LR9F81	4.160

⁽¹⁾ When mounting overload relays **LR9F57...LR9F71** directly beneath the contactor, supporting the relays with a mounting plate is recommended (see page B11/14).

With overload relays **LR9F75...LR9F81**, use of a support mounting plate is mandatory (see page B11/14).

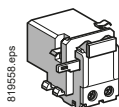
Power terminals can be protected against direct finger contact by the addition of shrouds and/or insulated terminal blocks, to be ordered separately (see page B11/14).

Interconnection kit **LA7F407** is required for mounting an **LR9F71** thermal overload relay together with an **LC1F185** contactor.

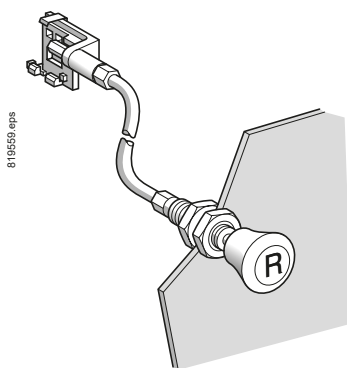
Overload relays

Electronic thermal overload relays for TeSys F contactors

Accessories (to be ordered separately)



LA7D03●



LA7D305

Control accessories

Description	Sold in lots of	Unit reference
Remote electrical reset device ⁽¹⁾	1	LA7D03● ⁽²⁾
Remote Reset function control by flexible cable (length = 0.5 m)	1	LA7D305
Remote Stop and/or Reset function control	Adapter for door mounted operator	1 LA7D1020
	Rod (snap-off end to obtain required length, between 17 and 120 mm)	10 ZA2BZ13
	Operating head for spring return pushbutton	1 ZA2B●●● ⁽³⁾

Connection accessories

For mounting an LR9F5●71 thermal overload relay together with an LC1 F185 contactor

Description	Reference
Set of 3 busbars	LA7F407

For mounting a thermal overload relay beneath a reversing contactor or star-delta contactors

Application	Width of terminal lug	Set of 3 busbars Reference
For relay	For contactor	
	mm	
LR9F5●57, F5●63, F5●67, F5●69, LR9F57, F63, F67, F69	LC1 F115	15 LA7F401
LR9F5●57, F5●63, F5●67, F5●69, LR9F57, F63, F67, F69	LC1 F150, F185	20 LA7F402
LR9F5●71, LR9F71	LC1 F185	25 LA7F407
LR9F5●71, LR9F71	LC1 F225, F265	25 LA7F403
LR9F7●75, F7●79, LR9F75, F79	LC1 F225...F400	25 LA7F404
LR9F7●81, LR9F81	LC1 F400	25 LA7F404
LR9F7●75, F7●79, F7●81, LR9F75, F79, F81	LC1 F500	30 LA7F405
LR9F7●81, LR9F81	LC1 F630, F800	40 LA7F406

⁽¹⁾ The time for which the coil of remote electrical reset device **LA7D03** 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 of 20 s with rest time of 300 s. Minimum pulse time: 200 ms.

⁽²⁾ Reference to be completed by adding the coil voltage code.
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	—	—

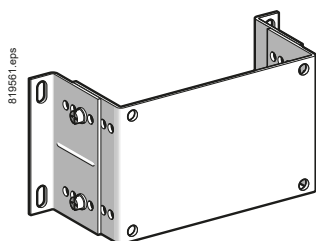
Consumption, inrush and sealed: < 100 W.

⁽³⁾ Stop: **ZA2BL432** and Reset: **ZA2BL639**.

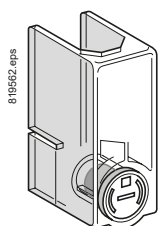
Overload relays

Electronic thermal overload relays for TeSys F contactors

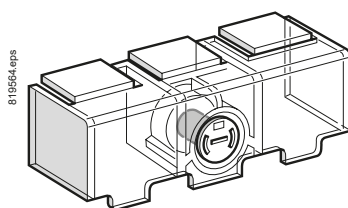
Accessories (to be ordered separately)



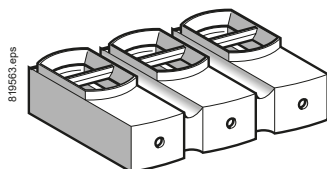
LA7F90●



LA9F70●



LA7F70●



LA9F103

Mounting plates for overload relay

For use with relays	Reference
---------------------	-----------

LR9F5●57, F5●63, F5●67, F5●69, F5●71, LR9F57, F63, F67, F69, F71	LA7F901
--	---------

LR9F7●75, F7●79, F7●81, LR9F75, F79, F81	LA7F902
--	---------

Sets of power terminal protection shrouds, single-pole

For use with relays	Number of shrouds per set	Set reference
---------------------	---------------------------	---------------

LR9F5●57, LR9F57	6	LA9F701
------------------	---	---------

LR9F5●63, F5●67, F5●69, LR9F63, F67, F69	6	LA9F702
--	---	---------

LR9F5●71, LR9F71	6	LA9F705
------------------	---	---------

LR9F7●75, F7●79, F7●81, LR9F75, F79, F81	6	LA9F703
--	---	---------

Power terminal protection shrouds, 3-pole

For use with relays	Reference
---------------------	-----------

LR9F5●57, F5●63, F5●67, F5●69, LR9F57, F63, F67, F69	LA7F701
--	---------

LR9F5●71, LR9F71	LA7F702
------------------	---------

LR9F7●75, F7●79, F7●81, LR9F75, F79, F81	LA7F703
--	---------

Insulated terminal blocks

For use with relays	Set of 2 blocks Reference
---------------------	---------------------------

LR9F5●57, F5●63, F5●67, F5●69, LR9F57, F63, F67, F69	LA9F103
--	---------

Marking accessories

Description	Sold in lots of	Unit reference
-------------	-----------------	----------------

Clip-in marker holder	100	LA7D903
-----------------------	-----	---------

Bag of 400 blank self-adhesive legends 7 x 16 mm	1	LA9D91
--	---	--------

Overload relays

Single-pole magnetic over current relays



RM1XA001

Non-latching

With 1 C/O contact block, non-latching

Recommended operating range (motor In)	Setting range (trip current)	Maximum continuous current ~ or ≡	Reference
A	A	A	
~ or ≡ 0.7...1.15	1.25...4	1.6	RM1XA001
1.16...1.8	2...6.3	2.5	RM1XA002
1.9...2.9	3.2...10	4	RM1XA004
3...4.6	5...16	6.3	RM1XA006
4.7...7.2	8...25	10	RM1XA010
7.3...11.5	12.5...40	16	RM1XA016
11.6...18	20...63	25	RM1XA025
18.1...29	32...100	40	RM1XA040
29.1...46	50...160	63	RM1XA063
46.1...72	80...250	100	RM1XA100
73...115	125...400	160	RM1XA160
116...145	160...500	200	RM1XA200
146...230	250...800	315	RM1XA315
231...360	400...1250	500	RM1XA500
~ 361...630	630...2200	1000	RM1XA101
≡ 361...570	630...2000	1000	RM1XA101

Accessory (to be ordered separately)

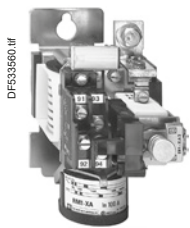
Description	Reference
1 C/O contact block, non-latching	RM1ZG21

Overload relays

Single-pole magnetic over current relays



RM1XA0011

RM1XA1001
+
ER1XA2●RM1XA0011
+
RM1ZH21

Latching with manual reset

With 1 C/O contact block, latching with manual reset

Recommended operating range (motor In)	Setting range (trip current)	Maximum continuous current ~ or ---	Reference
A	A	A	
~ or --- 0.7...1.15	1.25...4	1.6	RM1XA0011
1.16...1.8	2...6.3	2.5	RM1XA0021
1.9...2.9	3.2...10	4	RM1XA0041
3...4.6	5...16	6.3	RM1XA0061
4.7...7.2	8...25	10	RM1XA0101
7.3...11.5	12.5...40	16	RM1XA0161
11.6...18	20...63	25	RM1XA0251
18.1...29	32...100	40	RM1XA0401
29.1...46	50...160	63	RM1XA0631
46.1...72	80...250	100	RM1XA1001
73...115	125...400	160	RM1XA1601
116...145	160...500	200	RM1XA2001
146...230	250...800	315	RM1XA3151
231...360	400...1250	500	RM1XA5001
~ 361...630	630...2200	1000	RM1XA1011
--- 361...570	630...2000	1000	RM1XA1011

Accessories (to be ordered separately)

Description	Reference
1 C/O contact block, latching	RM1ZH21
Electrical reset ⁽¹⁾ (consumption: inrush, sealed: 500 VA) (fitted to the relay together with a latching contact block) Basic reference. Complete with code indicating control circuit voltage ⁽²⁾	ER1XA2●

⁽¹⁾ The impulse duration must not exceed 2 seconds within 10 minute intervals.⁽²⁾ Standard coil voltages for electrical reset:

Volts	24	48	110	220	380
50 Hz	B	E	F	M	Q

Overload relays

Thermistor protection units for use with PTC thermistor probes ⁽¹⁾



LT3SE00M



LT3SA00M



LT3SM00M

Protection units (without fault memory)

Units with automatic reset with thermistor short-circuit detection

Connection	Voltage	Output contact	Reference
Cage connectors	~ 50/60 Hz	115 V	N/C
		230 V	N/C
	---	24 V	N/C

Units with automatic reset with thermistor short-circuit detection

On front panel: fault and voltage signalling indicator.

Connection	Voltage	Output contact	Reference
Cage connectors	~ 50/60 Hz	115/230 V	N/C + N/O
	---	24/48 V	N/C + N/O
	~ 50/60 Hz or ---	24...230 V	2 C/O

Protection units (with fault memory)

Units with manual reset with thermistor short-circuit detection

On front panel:

- fault and voltage signalling indicator,
- Test and Reset button.

Connection	Voltage	Output contact	Reference
Cage connectors	~ 50/60 Hz	400 V	N/C + N/O
		24/48 V	N/C + N/O
		115/230 V	N/C + N/O
	---	24/48 V	N/C + N/O
	~ 50/60 Hz or ---	24...230 V	2 C/O

⁽¹⁾ PTC: Positive Temperature Coefficient.

Overload relays

Thermistor protection units for use with PTC thermistor probes ⁽¹⁾



DA1TT●●●



DA1TS●●●

PTC thermistor probes ⁽¹⁾				
Description	Nominal Operating Temperature (NOT) °C	Colour	Sold in lots of	Unit reference
Integrated triple probes	90	Green/green	10	DA1TT090
	110	Brown/brown	10	DA1TT110
	120	Grey/grey	10	DA1TT120
	130	Blue/blue	10	DA1TT130
	140	White/blue	10	DA1TT140
	150	Black/black	10	DA1TT150
	160	Blue/red	10	DA1TT160
	170	White/green	10	DA1TT170
Surface probes	60	White/grey	10	DA1TS060
	70	White/brown	10	DA1TS070
	80	White/white	10	DA1TS080
	90	Green/green	10	DA1TS090
	100	Red/red	10	DA1TS100
Accessories (to be ordered separately)				
Mounting accessories				
Description	Applicationi		Sold in lots of	Unit reference
Adapter	For fixing on C rail DZ5 MB		10	RHZ66
Marking accessories				
Clip-in markers (maximum of 5 per unit)	Strips of 10 identical numbers (0 to 9)		25	AB1R● ⁽²⁾
	Strips of 10 identical capital letters (A to Z)		25	AB1G● ⁽²⁾

⁽¹⁾ PTC: Positive Temperature Coefficient.
⁽²⁾ When ordering, replace the ● in the reference with the number or letter required.

Overload relays

Electronic over current relays



LR97D07●●



LT4730●●●

LR97D electronic over current relays

Relay setting range	Usable range (1)	For use with contactor (2)	Relay supply voltage	Reference (3)
A	A			
0.3...1.5	0.3...1.3	LC1 D09...D38	~ 200...240 V	LR97D015M7
			~ 100...120 V	LR97D015F7
			~/~ 24 V	LR97D015B
			~/~ 48 V	LR97D015E
1.2...7	1.2...6	LC1 D09...D38	~ 200...240 V	LR97D07M7
			~ 100...120 V	LR97D07F7
			~/~ 24 V	LR97D07B
			~/~ 48 V	LR97D07E
5...25	5...21	LC1 D09...D38	~ 200...240 V	LR97D25M7
			~ 100...120 V	LR97D25F7
			~/~ 24 V	LR97D25B
			~/~ 48 V	LR97D25E
20...38	20...34	LC1 D25...D38	~ 200...240 V	LR97D38M7
			~ 100...120 V	LR97D38F7
			~/~ 24 V	LR97D38B
			~/~ 48 V	LR97D38E

LT47 electronic over current relays

Relay setting range	Usable range (1)	Relay supply voltage	Reference
A	A		
LT47 relay with manual/electric reset			
0.5...6	0.5...5	~ 200...240 V	LT4706M7S
		~ 100...120 V	LT4706F7S
		---/~ 24 V	LT4706BS
		---/~ 48 V	LT4706ES
3...30	3...25	~ 200...240 V	LT4730M7S
		~ 100...120 V	LT4730F7S
		---/~ 24 V	LT4730BS
		---/~ 48 V	LT4730ES
5...60	5...50	~ 200...240 V	LT4760M7S
		~ 100...120 V	LT4760F7S
		---/~ 24 V	LT4760BS
		---/~ 48 V	LT4760ES
LT47 relay with automatic reset			
0.5...6	0.5...5	~ 200...240 V	LT4706M7A
		~ 100...120 V	LT4706F7A
		---/~ 24 V	LT4706BA
		---/~ 48 V	LT4706EA
3...30	3...25	~ 200...240 V	LT4730M7A
		~ 100...120 V	LT4730F7A
		---/~ 24 V	LT4730BA
		---/~ 48 V	LT4730EA
5...60	5...50	~ 200...240 V	LT4760M7A
		~ 100...120 V	LT4760F7A
		---/~ 24 V	LT4760BA
		---/~ 48 V	LT4760EA

Accessories (to be ordered separately)

Description	For use with	Sold in lots of	Unit reference
Pre-wiring kits allowing connection of the LR97D relay N/C contact directly to the contactor	LC1 D09...D18	10	LAD7C1
	LC1 D25...D38	10	LAD7C2
Terminal block for clip-on mounting on 35 mm rail (AM1 DP200)	LR97D	1	LAD7B106

(1) To allow adjustment of the tripping sensitivity, see adjustment method (page B11/58).

(2) Please see chapter B8.

(3) If a pre-wiring kit is used, it is no longer possible to electrically wire signalling of tripped status.

