Telemecanique

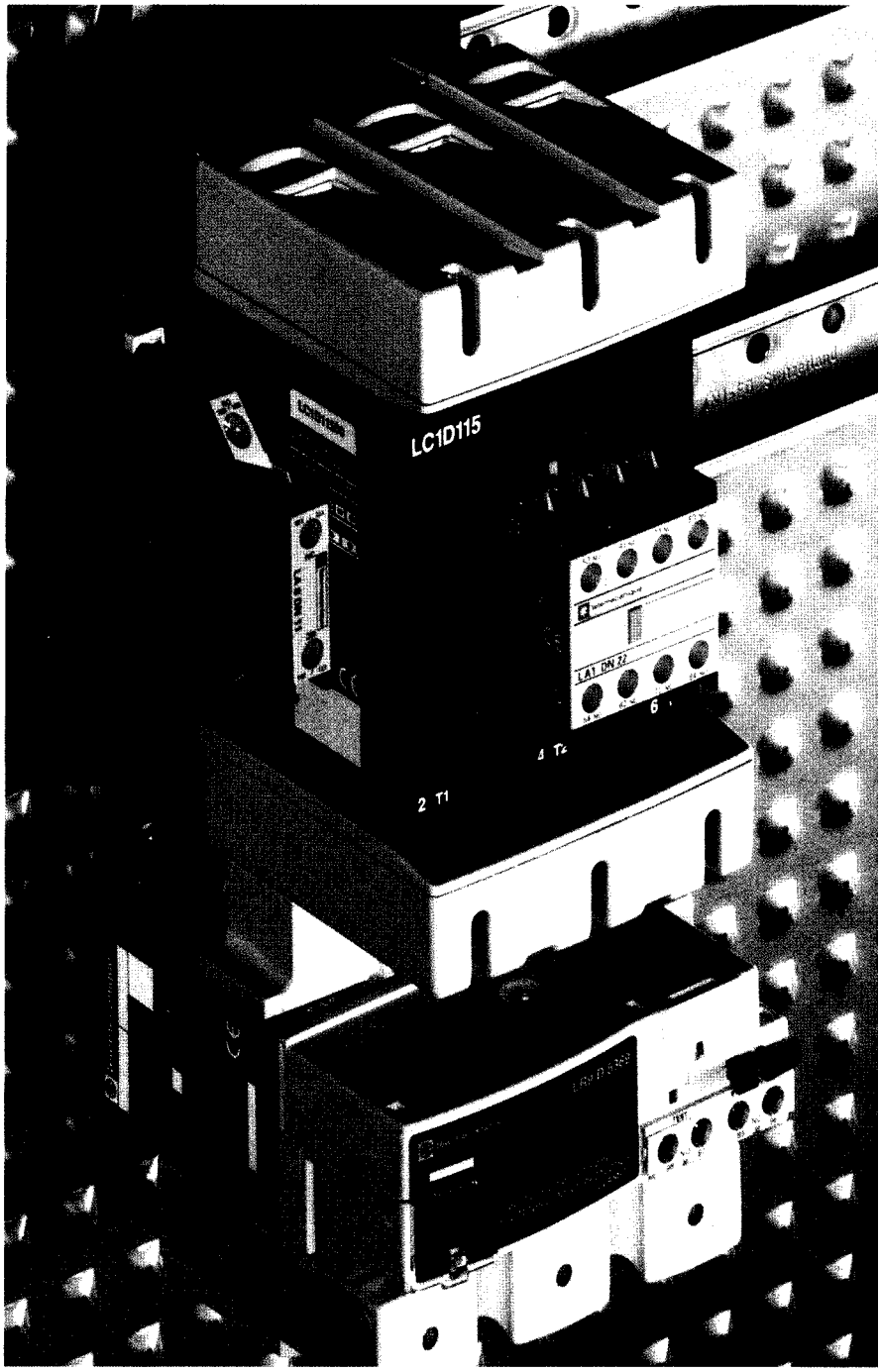
D contactors and overload relays

New D115-59kw AC3

New D150-80kw AC3

May

98



Telemecanique

GROUPE SCHNEIDER

■ Merlin Gerin ■ Modicon ■ Square D ■ Telemecanique

Telemecaniques' D range is the world's number one in contactors.

Two new D range contactors are now available, expanding the range to 80kw AC3 for motor control and 200A AC1 for distribution applications.

The new D115 and D150 incorporate all the attributes of D range which have helped to make it number 1 in contactors:

- unsurpassed ruggedness and reliability
- assured safety of equipment, with full type 2 co-ordination
- comprehensive range of accessories, for maximum control circuit flexibility
- front or side mounted auxiliary contacts throughout the range
- coil suppressor and interface modules for easy integration with electronic equipment.

Available in 3-pole and 4-pole variants, D range is the complete answer for all power switching applications:

- **starters** – direct on-line, reversing, Star/Delta, Autotransformer or Dahlander
- **non motor switching** – heating, lighting, distribution, transformers, capacitors
- **standby applications** – generators, power supplies.

Developed and manufactured in ISO9001 and ISO14001 production facilities, D contactors conform to all international standards.

Compact motor control solutions

The **D contactor** range is now enhanced by 2 new ratings to provide you with compact solutions for power switching:

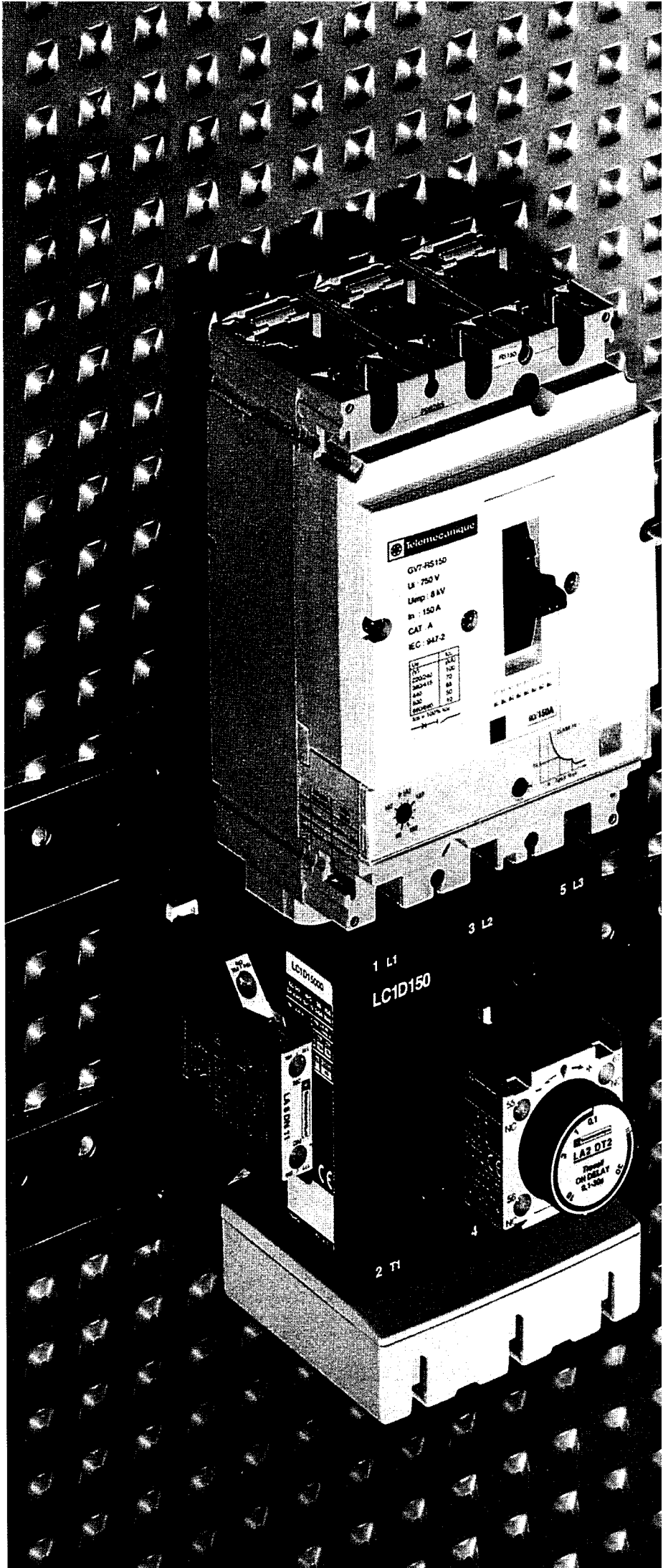
- LC1 D115 59kw AC3 200A AC1
- LC1 D150 80kw AC3 200A AC1.

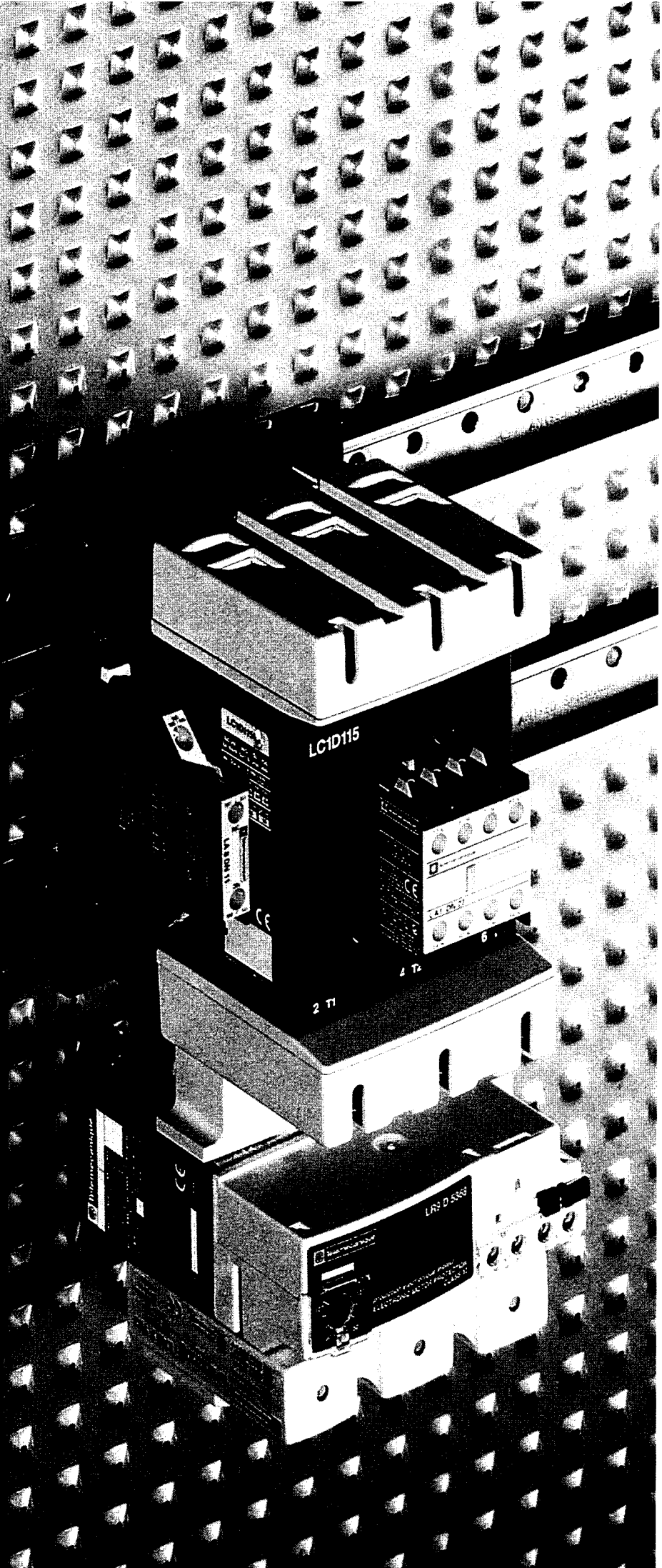
Both ratings are compatible with the existing D range attachments:

- side mounted auxiliary contacts – no increase in overall dimensions of contactor
- top mounted auxiliary contacts, timers, mechanical latch for flexible control circuits.

Contactors may be simply combined with Telemecanique protection components:

- D115/150 with GV7-R motor protection circuit breaker for a compact, 2 component motor starter
- D115/150 with LR9-D electronic motor protection relay for sophisticated motor protection, rapid identification of faults and simplified maintenance
- type 2 co-ordination conforming to IEC 947-4 using D115/150, LR9-D and recommended fuses.





Flexible wiring and installation

LC1 D115 and LC1 D150 contactors are easy to wire and install:

- coil wiring connection top or bottom
- contact carrier locked when arc chamber removed during contact inspection or replacement.

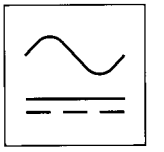
Differing power connection requirements are catered for by two variants:

- shrouded clamp/box terminals for direct cable connection
- bare lug terminals for direct connection of busbar or cable with fitted cable lug. Connection kits enable fast modification of existing cable arrangements.

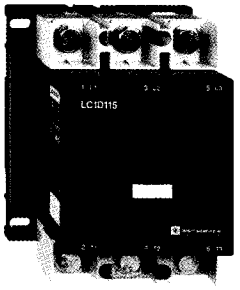
New

Contactors

Contactors for connection by cables with lugs or busbars
Control circuit: a.c. or d.c.



References



LC1-D115006••

Standard power ratings of 3- phase motors 50/60 Hz in category AC-3							Rated operat. current in AC-3 440V up to	Basic reference. Complete with code indicating control circuit voltage (2) Fixing (1)	Usual voltages	Weight
220V 230V	380V 400V	**415V**	440V	500V	660V 690V	1000V				
kW	**kW**	**kW**	**kW**	**kW**	**kW**	**kW**	**A**			**kg**
Contactors for motor control, 115 and 150 A, in category AC-3										
Control circuit: a.c.										
30	55	**59**	59	75	80	70	115	**LC1-D115006••**	**B5 E5 F5 U5 N5**	2.110
40	75	**80**	80	90	100	90	150	**LC1-D150006••**	**B7 E7 F7 U7 N7**	2.130
Contactors for motor control, 115 and 150 A, in category AC-3										
Control circuit: d.c.										
30	55	**59**	59	75	80	75	115	**LC1-D115006••**	**BD ED FD**	2.130
40	75	**80**	80	90	100	90	150	**LC1-D150006••**	**BD ED FD**	2.130
Reversing contactors for motor control, 115 and 150A category AC-3, pre-assembled, horizontally mounted.										
Control circuit: a.c.										
30	55	**59**	59	75	80	75	115	**LC2-D115006••**	**B5 E5 F5 U5 N5**	5.950
40	75	**80**	80	90	100	90	150	**LC2-D150006••**	**B7 E7 F7 U7 N7**	6.000
Changeover contactor pairs for control in category AC-1, 200A, pre-assembled, horizontally mounted										
Control circuit: a.c. or d.c.										
200 Amperes			4-pole					**LC2-D1150046••**	**B5 E5 F5 U5 N5**	6.450
Contactors for control in utilisation category AC-1, 200A										
Control circuit: a.c.										
AC1 rating										
200 Amperes			3-pole					**LC1-D115006••**	**B5 E5 F5 U5 N5**	2.110
								or **LC1-D150006••**	**B7 E7 F7 U7 N7**	2.130
			4-pole					**LC1-D1150046••**	**B5 E5 F5 U5 N5**	2.450

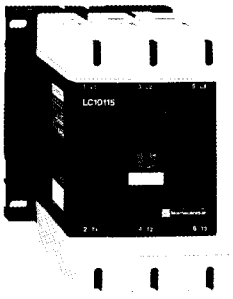
Note: 3-pole contactors without auxiliary contacts conform to standard EN 50012.
For auxiliary contact blocks and modules: see the Power Control and Protection catalogue
(1) LC1-D115 and D150: clip-on mounting on 2 x 35 mm ⌙⌐ rails AM1-DP or screw fixing.

(2) Standard control circuit voltages:

Volts	**24**	**42**	**48**	**110**	**115**	**220**	**230**	**240**	**380**	**400**	**415**	**440**	**500**	**660**
LC1-D115														
50Hz	B5	D5	E5	F5	—	M5	P5	U5	Q5	V5	N5	R5	S5	Y5
60Hz	B6	D6	E6	F6	—	M6	—	U6	Q6	—	—	R6	—	—
LC1-D150	(Coils D115 and D150 with integral suppression device fitted as standard)													
50/60 Hz	B7	D7	E7	F7	FE7	M7	P7	U7	Q7	V7	N7	R7	—	—

Other voltages available from 24 to 660 V.

Contactors for connection by cables with or without cable ends
Control circuit: a.c. and d.c.
References



LC1-D11500•

Standard power ratings of 3- phase motors 50/60 Hz in category AC-3							Rated operat. current in AC-3 440V up to	Basic reference. Complete with code indicating control circuit voltage (2) Fixing (1)	Usual voltages	Weight
220V 380V 230V 400V **415V**			440V 500V		660V 690V 1000V					
kW	**kW**	**kW**	**kW**	**kW**	**kW**	**kW**	**A**			**kg**
Contactors for motor control, 115 and 150 A, in category AC-3 Control circuit: a.c.										
30	55	**59**	59	75	80	70	115	**LC1-D11500••**	**B5 E5 F5 U5 N5**	2.420
40	75	**80**	80	90	100	90	150	**LC1-D15000••**	**B7 E7 F7 U7 N7**	2.440
Contactors for motor control, 115 and 150, in category AC-3 Control circuit: d.c.										
30	55	**59**	59	75	80	75	115	**LC1-D11500••**	**BD ED FD**	2.440
40	75	**80**	80	90	100	90	150	**LC1-D15000••**	**BD ED FD**	2.440
Reversing contactors for motor control, 115 and 150 A category AC-3, pre-assembled, horizontally mounted Control circuit: a.c.										
30	55	**59**	59	75	80	75	115	**LC2-D11500••**	**B5 E5 F5 U5 N5**	6.500
40	75	**80**	80	90	100	90	150	**LC2-D15000••**	**B7 E7 F7 U7 N7**	6.600
Changeover contactor pairs for control in category AC-1, 200A, pre-assembled, horizontally mounted Control circuit: a.c.										
200 Amperes AC1							4 -pole	**LC2-D115004••**	**B5 E5 F5 U5 N5**	7.250
Contactors for control in utilisation category AC-1 200A Control circuit: a.c. or d.c.										
200 Amperes AC1							3-pole	**LC1-D11500••**	**B5 E5 F5 U5 N5**	2.420
								or LC1-D15000••	**B7 E7 F7 U7 N7**	2.440
							4-pole	**LC1-D115004••**	**B5 E5 F5 U5 N5**	2.860

Note: 3-pole contactors without auxiliary contacts conform to standard EN 50012.
For auxiliary contact blocks and modules: see the Power Control and Protection catalogue
(1) LC1-D115 and D150: clip-on mounting on 2 x 35 mm ⊔ rails AM1-DP or screw fixing.

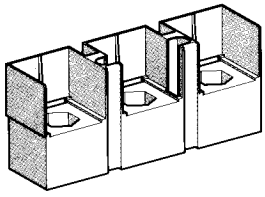
(2) Standard control circuit voltages:

Volts	**24**	**42**	**48**	**110**	**115**	**220**	**230**	**240**	**380**	**400**	**415**	**440**	**500**	**660**
LC1-D115														
50Hz	B5	D5	E5	F5	—	M5	P5	U5	Q5	V5	N5	R5	S5	Y5
60Hz	B6	D6	E6	F6	—	M6	—	U6	Q6	—	—	R6	—	—
LC1-D150	(Coils with integral suppression device fitted as standard)													
50/60 Hz	B7	D7	E7	F7	FE7	M7	P7	U7	Q7	V7	N7	R7	—	—

Other voltages available from 24 to 660 V.

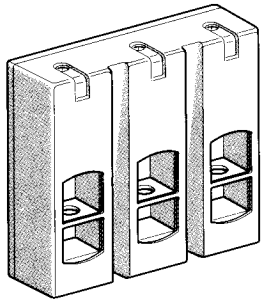
Accessories and replacement parts

Accessories for main pole and control connections



LA9-D11550•

Description		For use on contactors ~	For use on contactors ⎓	Sold in lots of	Unit reference	Weight kg
Connectors for cable sizes	3-pole < =120mm²	D115, D150	D115, D150	1	**LA9-D115603**	0.540
	4-pole < =120mm²	D115	D115	1	**LA9-D115604**	0.730
Connectors for lug type terminals	3-pole	D115, D150	D115, D150	1	**LA9-D115503**	0.230
	4-pole	D115	D115	1	**LA9-D115504**	0.320
Spreaders for increasing the pole pitch to 45mm		D11500 D15000	D11500 D15000	3	**GV7-AC03**	0.100



LA9-D11560•

Sets of replacement contacts

	For use on contactors	Reference	Weight kg
3-pole	LC1-D11500, D15000	**LA5-D115803**	0.220
4-pole	LC1-D115004	**LA5-D115804**	0.280

Replacement arc chamber

3-pole	LC1-D11500	**LA5-D11550**	0.360
	LC1-D15000	**LA5-D15050**	0.360
4-pole	LC1-D115004	**LA5-D115450**	0.460

Component parts for assembling reversing and changeover contractor pairs

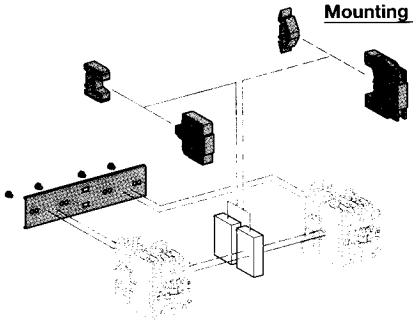
For use with 2 identical contactors	Set of power connections Reference	Weight kg	Mechanical interlock Kit reference (1)	Weight kg
For assembly of 3-pole reversing contactors for motor control				
LC1-D115/D150	**LA9-D11569**	1.450	**LA9-D11502**	0.290
For assembly of 3-pole changeover contactor pairs				
LC1-D115/D150	**LA9-D11571**	0.960	**LA9-D11502**	0.290
LC1-D115004	**LA9-D11570**	1.260	**LA9-D11502**	0.290

LC1-D115
LC1-D150

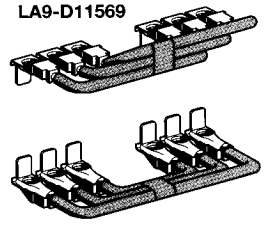
LA9-D11502

Mounting accessories

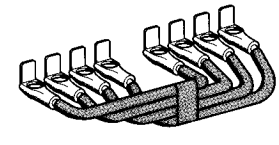
Mounting plate	To replace F115/F150 by D115/D150	1	**LA9-D730**	0.360



LA9-D11569



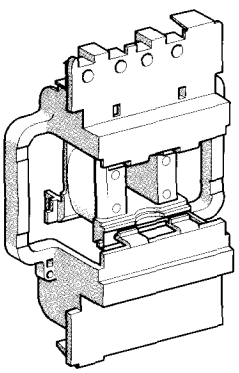
LA9-D11571 (3P)
LA9-D11570 (4P) (D115 only)



(1) Mechanical interlock has integral electrical interlocking

Contactors type LC1-D
Coils a.c. ... d.c.

References



LX1-D8••

a.c. coils for contactors LC1-D115

Specifications
Average consumption at 20°C
- sealed (cos j = 0.3) - 50 or 60 Hz: 22 VA.=
- inrush (cos j = 0.8) - 50 or 60 Hz: 300 VA.
Operating range (q≤55°C): 0.85...1.1 Uc.

Control Circuit voltage Uc	Av. resistance at 20°C ±10%	Inductance of closed circuit	Reference (1)	Average resistance at 20°C ±10%	Inductance of closed circuit	Reference (1)	Weight
V	Ω	H		Ω	H		kg
			50 Hz			**60 Hz**	
24	1.24	0.09	**LX1-D8B5**	0.87	0.07	**LX1-D8B6**	0.280
32	2.14	0.17	**LX1-D8C5**	-	-	-	0.280
42	3.91	0.28	**LX1-D8D5**	-	-	-	0.280
48	4.51	0.36	**LX1-D8E5**	3.91	0.28	**LX1-D8E6**	0.280
110	26.53	2.00	**LX1-D8F5**	19.97	1.45	**LX1-D8F6**	0.280
115	26.53	2.00	**LX1-D8FE5**	-	-	-	0.280
120	-	-	-	24.02	1.70	**LX1-D8G6**	0.280
127	32.75	2.44	**LX1-D8FC5**	-	-	-	0.280
208	-	-	-	67.92	5.06	**LX1-D8L6**	0.280
220	104.77	7.65	**LX1-D8M5**	79.61	5.69	**LX1-D8M6**	0.280
230	104.77	8.29	**LX1-D8P5**	-	-	-	0.280
240	125.25	8.89	**LX1-D8U5**	97.04	6.75	**LX1-D8U6**	0.280
277	-	-	-	125.75	8.89	**LX1-D8W6**	0.280
380	338.51	22.26	**LX1-D8Q5**	243.07	17.04	**LX1-D8Q6**	0.280
400	368.43	25.55	**LX1-D8V5**	-	-	-	0.280
415	368.43	27.65	**LX1-D8N5**	-	-	-	0.280
440	441.56	30.34	**LX1-D8R5**	338.51	22.26	**LX1-D8R6**	0.280
480	-	-	-	368.43	25.55	**LX1-D8T6**	0.280
500	566.62	38.12	**LX1-D8S5**	-	-	-	0.280

a.c. coils for contactors LC1-D115, D150

Specifications
Average consumption at 20°C - inrush cos j = 0.9 - 450 VA. - sealed cos j = 0.9 - 6 VA.
Operating range (q≤55°C): 0.8...1.15 Uc. Coils with integral suppression device fitted as standard, class B

						50/60 Hz	
24	-	-	-	147	3.03	**LX1-D8B7**	0.300
32	-	-	-	301	8.28	**LX1-D8C7**	0.300
42	-	-	-	498	13.32	**LX1-D8D7**	0.300
48	-	-	-	1061	24.19	**LX1-D8E7**	0.300
110	-	-	-	4377	109.69	**LX1-D8F7**	0.300
115	-	-	-	4377	109.69	**LX1-D8FE7**	0.300
120	-	-	-	4377	109.69	**LX1-D8G7**	0.300
127	-	-	-	6586	152.65	**LX1-D8FC7**	0.300
208	-	-	-	10 895	260.15	**LX1-D8L7**	0.300
220	-	-	-	9895	210.72	**LX1-D8M7**	0.300
230	-	-	-	9895	210.72	**LX1-D8P7**	0.300
240	-	-	-	9895	210.72	**LX1-D8U7**	0.300
277	-	-	-	21 988	533.17	**LX1-D8UE7**	0.300
380	-	-	-	21 011	482.42	**LX1-D8Q7**	0.300
400	-	-	-	21 011	482.42	**LX1-D8V7**	0.300
415	-	-	-	21 011	482.42	**LX1-D8N7**	0.300
440	-	-	-	21501	507.47	**LX1-D8R7**	0.300
480	-	-	-	32 249	938.41	**LX1-D8T7**	0.300
500	-	-	-	32 249	938.41	**LX1-D8S7**	0.300

(1) The last 2 digits of the reference represent the voltage code.

d.c. coils for contactors LC1-D115, D150

Specifications
Average consumption: 6W. Operating range: 0.7...1.2 Uc. Coils with integral suppression device fitted as standard, class B

4	147	3.03	**LX4-D8BD**	0.300
48	1061	24.19	**LX4-D8ED**	0.300
60	1673	38.44	**LX4-D8ND**	0.300
72	2500	56.27	**LX4-D8SD**	0.300
110	4377	109/69	**LX4-D8FD**	0.300
125	6586	152.65	**LX4-D8GD**	0.300
220	9895	210.72	**LX4-D8MD**	0.300
250	18 022	345.40	**LX4-D8UD**	0.300
440	21 501	694.66	**LX4-D8RD**	0.300

Overload relays for D115/150

Thermal overload relays LR2-D4

Thermal overload relays: -compensated with manual or automatic reset
-relay trip indicator
-for a.c. or d.c. motors

Relay setting *range*	Fuses to be used with selected relay *Type* aM	gG	BS88	For direct mounting *beneath* LC1		Reference	Weight
A	**A**	**A**	**A**				**kg**
Class 10 A (1)							
80...104	125	200	160	D115 and D150	-	**LR2-D4365**	0.900
95...120	125	224	200	D115 AND D150	-	**LR2-D4367**	0.900
110...140	160	250	200	D150	-	**LR2-D4369**	0.900

(1) Standard IEC 947-4 specifies a tripping time for 7.2 times the setting current IR:
class 10 A: between 2 and 10 seconds.

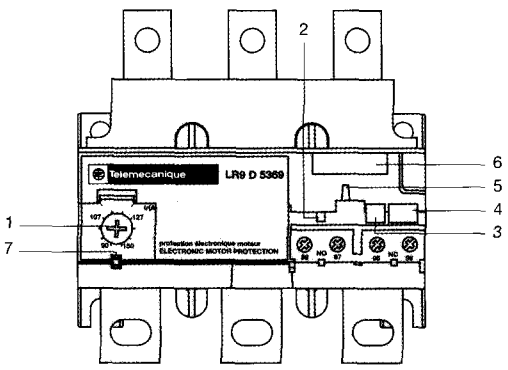
Electronic overload relays LR9-D

Thermal overload relays: - compensated and differential protected
- relay trip indicator
- for a.c. motors
- for direct mounting below contactor or independent mounting (2).

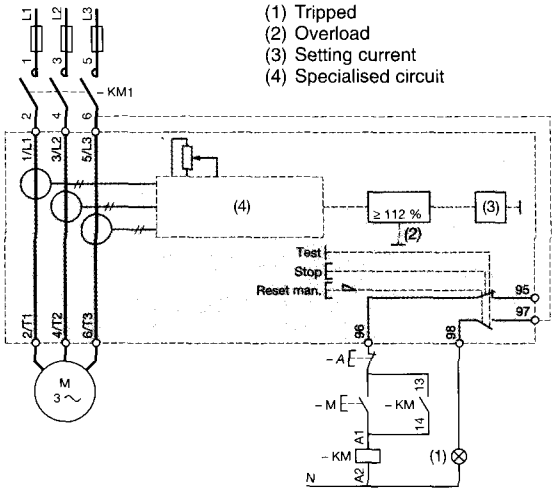
Relay setting range	*fuses to be used* with selected relay aM	gG	*For direct mounting* beneath contactor LC1	Reference	Weight
A	**A**	**A**			**kg**
Class 10 or 10A (3)					
90...150	160	250	D115 and D150	**LR9 D5369**	0.885
Class 20 (3)					
90...150	200	250	D115 and D150	**LR9-D5569**	0.885

(2) Power terminals can be protected against direct finger contact by the addition of shrouds and/or insulated terminal blocks, to be ordered separately
(3) Standard IEC 947-4 specifies a tripping time for 7.2 times the setting current IR:
Class 10: between 4 and 10 seconds
Class 20: between 8 and 20 seconds

Layout LR9-D



Scheme LR9-D



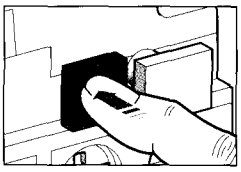
(1) Tripped
(2) Overload
(3) Setting current
(4) Specialised circuit

Setting up the LR9-D thermal overload relay

General

- Lift the transparent cover 7 to gain access to the various settings and controls.
- Adjustment is achieved by turning dial 1 which is graduated directly in amperes.
- The setting can be locked by sealing cover 7.
- The stop function is obtained by pressing the red STOP button.

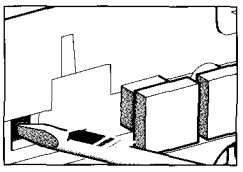
Stop function



Stop button

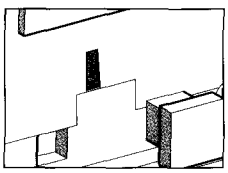
- Pressing the STOP button: 3
  -actuates the N/C contact,
  - does not affect the N/O contact.
- The Stop button can be locked by fitting a "U" clip (ref.: **LA7-D901**).

Test function



Test

- The Test function is obtained by pressing the red TEST button 2 with a screwdriver.
- Operation of the TEST button simulates tripping the relay and:
  - actuates both the N/O and N/C contacts,
  - actuates the trip indicator 5.

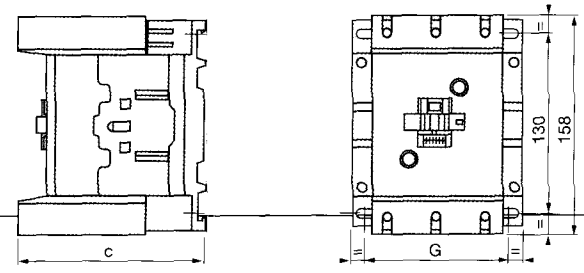


Trip indicator

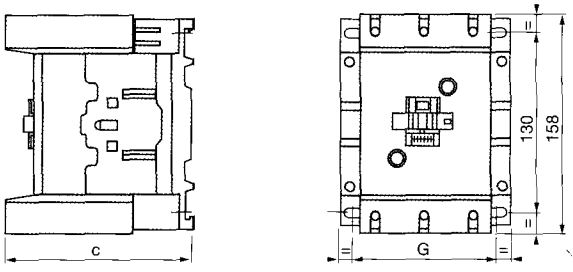
Dimensions

LC1-D115, D150
On mounting rail AM1-DP200 or AM1-DE200

LC1-	D11500	D115006	D15000	D150006
c (AM1-DP200 or DR200)	134.5	117.5	134.5	117.5
c (AM1-DE••• or ED•••)	142.5	125.5	142.5	125.5



LC1-D115, D150
Panel mounted

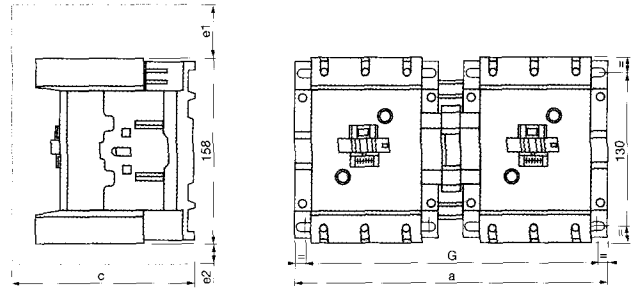


LC1-	D11500	D115006	D15000	D150006
c (AM1-DP200 or DR200)	134.5	117.5	134.5	117.5
c (AM1-DE••• or ED•••)	142.5	125.5	142.5	125.5

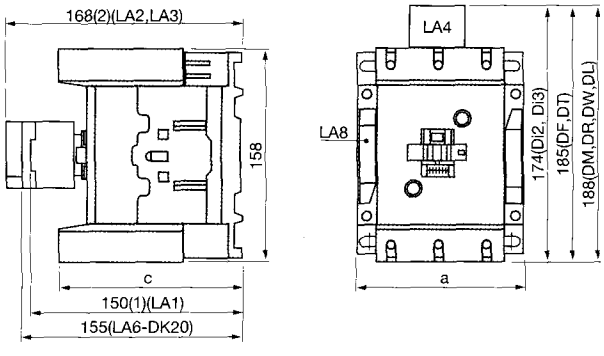
LC2-D115 and D150

2- or 2 x **LC1**- (3-pole)	a	c	e1	e2	G
5, **D150**	266	148	56	18	242/256
2- or 2 x **LC1**- (4-pole)	a	c	e1	e2	G
5	334	148	-	60	310/324

e1 and e2 including cabling



LC1-D115 and 150 with attachments

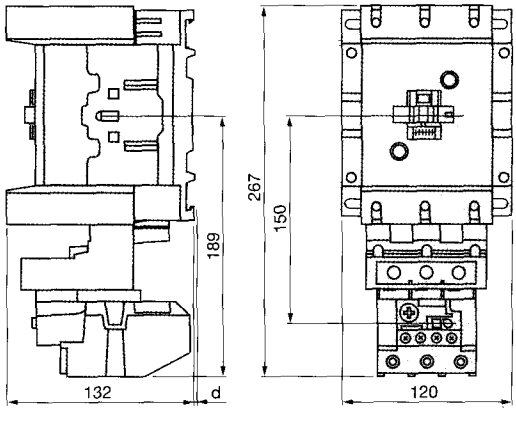


LC1-	c	a
D11500,D15000	132	120
D115004	132	155
D115006, D150006	115	120
D1150046	115	155

(1) With 2 or 4 contacts.
(2) +4 mm with sealing cover.

LC1-D115 and 150 with overload relay fitted

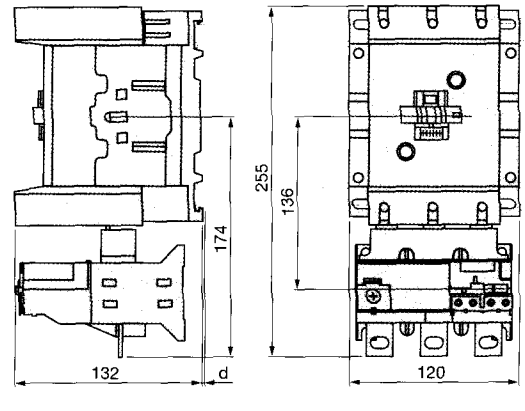
AM1-DP200 and DR200	AM1-DE••• and ED•••
d 2.5	10.5



LR2-D4
Direct mounting beneath contactors LC1-D115 and 123

AM1-DP200 and DR200	AM1-DE••• and ED•••
d 2.5	10.5

LR9-D
Direct mounting beneath contactors LC1-D115 and D150



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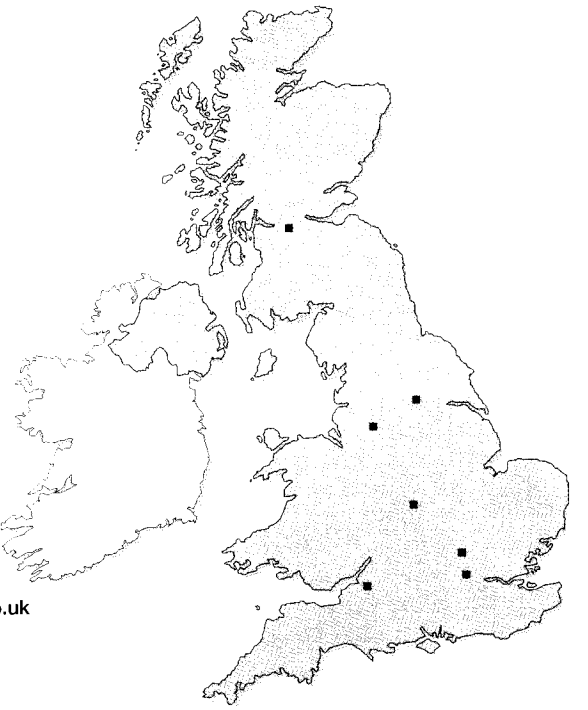

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