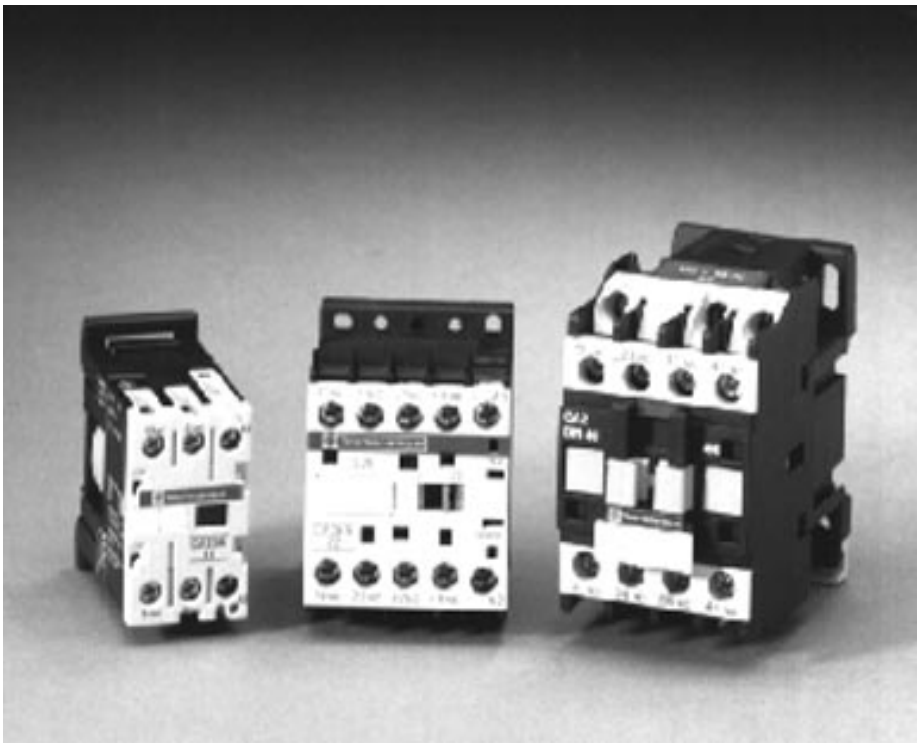
File 8501
February 1996



IEC INDUSTTRIAL CONTROL RELAYS
Catalog

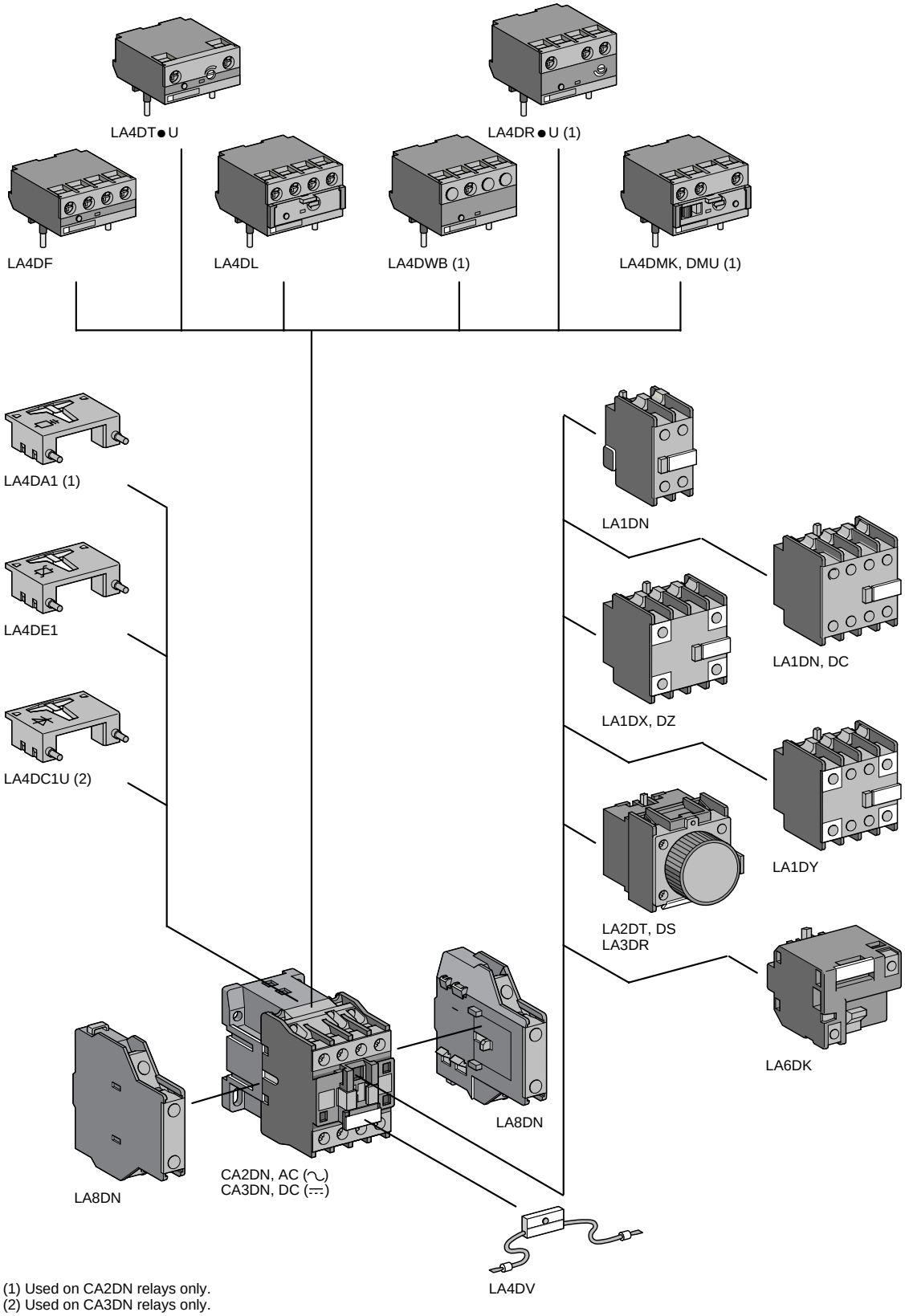
CONTENTS

SQUARE D
GROUPE SCHNEIDER

Telemecanique

Family	Description
D-Line Relays 	These 600 volt relays are approved for use around the world. D-Line relays are usually mounted on 35 mm DIN 3 track, but can also be mounted directly to a panel. The fixed contacts in these relays have a NEMA A600 and Q600 ratings, in addition to the standard IEC ratings, making them suitable for use in most any control circuit. Adder decks can be added to a basic four pole relay to make it up to a 12 pole relay. The serrated silver-nickel contacts with wiping action provide excellent reliability in 12 or 24 volt control circuits. Special contacts are available for switching low power down to 5 volts at 10 mA. Timer and mechanical latch attachments are available. For more information on these relays, see pages 4 through 19.
D-Line Low Power Consumption Relays 	These special D-Line relays are designed with coils that can be energized by a low level DC signal from a computer or PLC. Their low consumption provides a perfect working combination between power and electronic components. A bi-directional peak limiting diode provides built-in transient suppression. Like the standard D-Line relays, these relays can be mounted on 35mm DIN 3 track or mounted directly to a panel. For more information on these relays, see pages 20 through 25.
K-Line Relays 	These 600 volt relays are approved for use around the world. K-Line relays are usually mounted on 35mm DIN 3 track, but can also be mounted directly to a panel. One version of this relay can be printed circuit board mounted. A low power consumption version of this relay is available for use with low level DC signals from a computer or a PLC. The fixed contacts in these relays have a NEMA A600 and Q600 ratings, in addition to the standard IEC ratings, making them suitable for use in most any control circuit. Adder decks can be added to a basic four pole relay to make it up to a 8 pole relay. The serrated silver-nickel contacts with wiping action provide excellent reliability in 12 or 24 volt control circuits. An electronic timer attachment is available for this relay. For more information on these relays, see pages 26 through 31.
SK-Line Relavs 	This two pole relay is the smallest IEC Type relay on the market. It is approved for use around the world. Type P relays are usually mounted on 35mm DIN 3 track. The fixed contacts in this relay have a NEMA A600 rating and a limited DC rating, in addition to the standard IEC ratings, making it suitable for use in most any AC control circuit and some DC control circuits. An adder deck can be added to the basic two pole AC relay to make it a 4 pole relay. For more information on these relays, see pages 32 and 33.

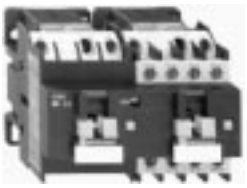
Telemecanique



(1) Used on CA2DN relays only.
(2) Used on CA3DN relays only.

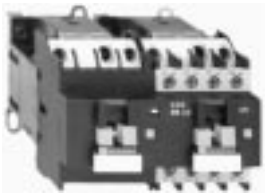
Telemecanique

CA2DN31▲



CA2DK22▲

CA3DN31◆



CA3DK22◆

AC Control Relays

Type	Number of contacts	Composition		Catalog Number	Weight lb/kg
Instantaneous	4	4	–	**CA2DN40▲**	.71/0.320
		3	1	**CA2DN31▲**	.71/0.320
		2	2	**CA2DN22▲**	.71/0.320
		2	2	**CA2DC22▲**	.71/0.320
		inc. 1 N/O and 1 N/C make before break			
Latching	4	2	2	**CA2DK22▲**	1.28/0.580

DC Control Relays

Type	Number of contacts	Composition		Catalog Number	Weight lb/kg
Instantaneous	4	4	–	**CA3DN40◆**	1.28/0.580
		3	1	**CA3DN31◆**	1.28/0.580
		2	2	**CA3DN22◆**	1.28/0.580
		2	2	**CA3DC22◆**	1.28/0.580
		inc. 1 N/O and 1 N/C make before break			
Latching	4	2	2	**CA3DK22◆**	2.43/1.100

Specifications – Marking and contact positions conforming to CENELEC EN 50005, EN 50011.

Mounting	35 mm DIN 3 track or direct mount
Termination	Screw clamp terminals
Terminals	Protected against direct finger contact with ready-to-tighten captive screws. Telemecanique patented system which prevents screws from tightening themselves (eg due to vibrations during transport).
Protective treatment	"TH" as standard (Tropical Finish) See page 36.

▲ AC coil voltage codes (voltage range 80 to 110% Uc)

Volts	**21**	**24**	**42**	**48**	**110**	**120**	**208**	**220/ 230**	**230**	**240**	**277**	**380/ 400**	**400**	**415**	**440**	**480**	**500**	**575**	**600**	**660**
50 Hz	Z5	B5	D5	E5	F5	–	–	M5	P5	U5	–	Q5	V5	N5	R5	–	S5	–	–	Y5
60 Hz	Z6	B6	–	E6	F6	G6	L6	M6	–	U6	W6	Q6	–	N6	R6	T6	–	S6	X6	–
50/60 Hz	Z7	B7	D7		F7	–	–	M7	P7	U7	–	Q7	V7	N7	R7	–	–	–	–	–

◆ DC coil voltage codes

Volts	**12**	**24**	**36**	**48**	**60**	**72**	**110**	**125**	**220**	**250**	**440**
U (from 80 to 110% Uc)	JD	BD	CD	ED	ND	SD	FD	GD	MD	UD	RD
U (from 70 to 125% Uc)	JW	BW	CW	EW	–	SW	FW	–	MW	–	–

Application Data: pages 13 and 14
Dimensions: page 12
Terminal Configurations: page 11
Accessories: pages 6, 7, 8, 34 and 35
Replacement coils: pages 9 and 11

Instantaneous auxiliary contact blocks for standard applications

Number of contacts	Maximum number per relay ◆ Front mounting	Maximum number per relay ◆ Side Mounting	Composition		Catalog Number	Weight lb/kg
2	1	–	1	1	**LA1DN11**	.07/0.030
	–	2	1	1	**LA8DN11**	.07/0.030
	1	–	2	–	**LA1DN20**	.07/0.030
	–	2	2	–	**LA8DN20**	.07/0.030
	1	–	–	2	**LA1DN02**	.07/0.030
4	1	–	2	2	**LA1DN22**	.11/0.050
			1	3	**LA1DN13**	.11/0.050
			4	–	**LA1DN40**	.11/0.050
			–	4	**LA1DN04**	.11/0.050
			3	1	**LA1DN31**	.11/0.050
			2	2	**LA1DC22**	.11/0.050

Including 1 N/O and 1 N/C make before break.

Instantaneous auxiliary contact blocks (with dust and damp protected contacts)

For use in particularly harsh industrial environments

Number of contacts	Maximum number per relay ◆ Front mounting	Composition protected ▲				Catalog Number	Weight lb/kg
2	1	2	–	–	–	**LA1DX20**	.09/0.040
		2	2	–	–	**LA1DY20**	.09/0.040
4	1	2	–	2	–	**LA1DZ40**	.11/0.050
		2	–	1	1	**LA1DZ31**	.11/0.050

Pneumatic Timer Attachment

Number and type of contacts	Maximum number per relay ◆ Front mounting	Time delay Type	Timing Range	Catalog Number	Weight lb/kg
1 N/C + 1 N/O	1	On-delay	0.1 to 3 s †	**LA2DT0**	.13/0.060
			0.1 to 30 s	**LA2DT2**	.13/0.060
			10 to 180 s	**LA2DT4**	.13/0.060
			1 to 30 s ◗	**LA2DS2**	.13/0.060
		Off-delay	0.1 to 3 s †	**LA3DR0**	.13/0.060
			0.1 to 30 s	**LA3DR2**	.13/0.060
			10 to 180 s	**LA3DR4**	.13/0.060

(Timer lockout cover: see page 8)

Mechanical latch blocks

Tripping control	Maximum number per relay ◆ Front mounting	Coil clearing contact	Catalog Number	Weight lb/kg
Manual or electric	1	Without	**LA6DK1●◆**	.15/0.070
		With	**LA6DK2●✻**	.20/0.090

◆ Mounting restrictions

Type of device	Type of coil	For guaranteed operation from	Maximum number of add-on blocks Clip-on mounting front		side
CA2-D	AC 50 or 60 Hz	80 to 110% Uc	1	+	2
	AC 50/60 Hz	80 to 110% Uc	1	or	2
		85 to 110% Uc	1	+	2
CA3-D	DC	80 to 110% Uc	1	or	2
	DC (wide range)	70 to 125% Uc	1	or	2

✻ Coil voltage codes

AC Voltages 50/60 Hz	**24**	**32**	–	**48**	–	–	–	**110/115**	**120/127**	**208**	**220**
DC Voltages	**24**	–	**36**	**48**	**60**	**72**	**100**	**110**	**125**	**200**	**220**
Code letters	B	C	CD	E	ND	SD	K	F	G	L	M
AC Voltages 50/60 Hz	**230/240**	**256**	**277**	**380**	**400**	**415**	**440**	**480**	**500**	**575/600**	**660**
Code letters	U	W5	W6	Q	V	N	R	T	S	X	Y

◗ With switching time of 40 ms ± 15 ms between opening of the N/C contact and closing of the N/O contact.
▲ Device fitted with 4 screening continuity terminals.
† With extended scale from 0.1 to 0.6 s.

Application data: pages 15 and 16
Dimensions: page 12
Terminal configurations: page 11
Clip-in markers: page 35

Telemecanique

LA4DR0U

LA4DFE

LA4DLE

LA4DMU

LA4DVM

LA9Z90F

Electronic serial timer modules

For use on control relays with 24 to 250 V supply ◗.

Type	Mounted at top on	Time delay	Catalog Number	Weight lb/kg
On-delay	CA2D, CA3D	0.1 to 2 s	**LA4DT0U**	.09/0.040
		1.5 to 30 s	**LA4DT2U**	.09/0.040
		25 to 500 s	**LA4DT4U**	.09/0.040
Off-delay	CA2D	0.1 to 2 s	**LA4DR0U**	.11/0.050
		1.5 to 30 s	**LA4DR2U**	.11/0.050
		25 to 500 s	**LA4DR4U**	.11/0.050

Interface modules

Type	Mounted at top on	Input voltage	Catalog Number	Weight lb/kg
Relay interface	CA2D, CA3D	24 VAC or VDC	**LA4DFB**	.11/0.050
		48 VAC or VDC	**LA4DFE**	.11/0.050
Relay interface with manual override switch (output forced "ON")	CA2D, CA3D	24 VAC or VDC	**LA4DLB**	.10/0.045
		48 VAC or VDC	**LA4DLE**	.10/0.045
Solid state	CA2D	24 VAC or VDC	**LA4DWB**	.10/0.045

"Auto-Manual-Stop" control modules

For local override operation tests with 2-position "Auto-Man" switch and "Off-On" switch

Description	Mounted at top on	Control relay voltage	Catalog Number	Weight lb/kg
With "Off-On" switch and 2-position "Auto-Man" switch	CA2D, CA3D	24-100 AC/DC	**LA4DMK**	.09/0.040
	CA2D, CA3D	100-250 AC/DC	**LA4DMU**	.09/0.040

Indicators

Type	Clips into legend plate location on	Relay coil voltage	Sold in lots of	Catalog Number	Weight lb/kg
Red LED	CA2D, CA3D	12-72 AC/DC	5	**LA4DVE**	.02/0.010
		72-250 AC/DC	5	**LA4DVM**	.02/0.010
		250-440 AC/DC	5	**LA4DVR**	.02/0.010

Delayed capacitive opening devices

For use on control relays CA3-D to prevent inadvertent opening in the event of a brief volt drop or momentary supply failure

Supply voltage 50/60 Hz	Control relay catalog number ▲	Replacement coil catalog number	Corresponding delayed opening device: Delay time (Tr) Non adjustable	Catalog Number	Weight lb/kg
110-115 V	CA3DN●●PD	LX4D2PD	1 to 3 s	**LA9Z90F**	.47/0.215
120-127 V	CA3DN●●QD	LX4D2QD	1.5 to 3 s	**LA9Z90F**	.47/0.215
220 V	CA3DN●●TD	LX4D2TD	2.5 to 5 s	**LA9Z90M**	.47/0.215
240 V	CA3DN●●VD	LX4D2VD	3 to 6 s	**LA9Z90M**	.47/0.215
380 V	CA3DN●●WD	LX4D2WD	2.5 to 5 s	**LA9Z90Q**	.47/0.215
415-440 V	CA3DN●●XD	LX4D2XD	3.5 to 8 s	**LA9Z90Q**	.47/0.215

Accessories (to be ordered separately)

Description	Catalog Number	Weight lb/kg
Add-on block for doubling the time delay Example : LA9Z90F = 1 to 3 s LA9Z90F + LA9Z91F = 1 to 6 s	**LA9Z91● ◆**	.47/0.215

◗ For 24 V, the control relay must be fitted with a 21 V coil.
▲ Replace the ●● with the desired contact arrangement from page 5.
◆ Replace the ● in catalog number with appropriate voltage code (F, M, or Q); this will be the same as the code for the delayed opening device.

Application data: pages 17 to 19
Dimensions: page 12
Terminal configurations: page 11

Coil suppressor modules

LA4DA1●

LA4DE1●

LA4DC1U

These modules clip onto the top of the control relay and the electrical connection is instantly made.
Fitting of an input module is still possible

RC circuits (Resistor-Capacitor) ▲

For mounting on	Operational voltage	Catalog Number	Weight lb/kg
CA2DN ◆	24-48 VAC	**LA4DA1E**	.03/0.012
	50-127 VAC	**LA4DA1G**	.03/0.012
	110-240 VAC	**LA4DA1U**	.03/0.012

Varistors (peak limiting) ✻

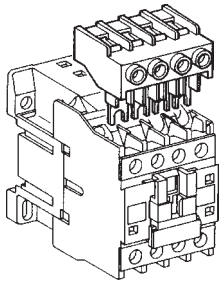
CA2DN, CA3DN ◆	24-48 VAC or VDC	**LA4DE1E**	.03/0.012
	50-127 VAC or VDC	**LA4DE1G**	.03/0.012
	110-250 VAC or VDC	**LA4DE1U**	.03/0.012

Diode ●

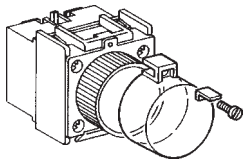
CA3DN ◆	24-250 VDC	**LA4DC1U**	.03/0.012

▲ An RC circuit provides effective protection for circuits highly sensitive to high frequency interference. Voltage limited to 3 Uc maximum, oscillating frequency limited to 400 Hz maximum.
Slight increase in drop-out time (1.2 to 2 times the usual time).
◆ For satisfactory protection, a suppressor module must be fitted across the coil of each control relay.
✻ Protection is provided by limiting the transient voltage value to 2 Uc maximum. Maximum reduction of transient voltage peaks.
Slight increase in drop-out time (1.1 to 1.5 times the usual time).
● Protection is provided by a polarized component; no overvoltage or oscillating frequency. Slight increase in drop-out time (6 to 10 times the usual time).

Accessories (to be ordered separately)



LA9D1260



LA9D901

For connection

Description	For mounting on	Catalog Number	Weight lb/kg
4-pole connector for connection of 8 AWG or 10 mm² wire	CA2DN, CA3DN	**LA9D1260**	.07/0.030

For marking

For mounting on	Description	Sold in lots of	Catalog Number	Weight lb/kg
CA2DN, CA3DN and add-on blocks except LA1DN (2 contacts)	Clip-in marker holder .315 x .866 in (8 × 22 mm)	100	**LA9D92**	.002/0.001
	Bag of 300 blank self-adhesive labels .276 x .827 in (7 × 21 mm)	1	**LA9D93**	.002/0.001
LA1DN (2 contacts)	Clip-in marker holder .315 x .669 in (8 × 17 mm)	100	**LA9D90**	.002/0.001
	Bag of 400 blank self-adhesive labels .276 x .630 in (7 × 16 mm)	1	**LA9D91**	.002/0.001

For additional markers, see page 35.

Timer Lockout Cover

Description	For mounting on	Catalog Number	Weight lb/kg
Timer Lockout Cover	LA2D, LA3D	**LA9D901**	.011/0.005

Application data: page 19
Dimensions: page 12

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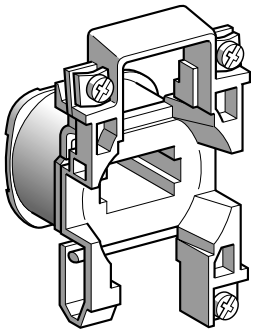


LX1D2●●

Replacement coils

Coil voltage Uc	Average resistance at 68°F (20°C) ± 10%	Inductance of closed circuit	Catalog Number ▲	Average resistance at 68°F (20°C) ± 10%	Inductance of closed circuit	Catalog Number ▲	Weight
V	Ω	**H**		Ω	**H**		lb/kg
			50 Hz			**60 Hz**	
21 ✻	6.3	0.26	**LX1D2Z5**	4.98	0.21	**LX1D2Z6**	.15/0.070
24	6.82	0.3	**LX1D2B5**	5.45	0.25	**LX1D2B6**	.15/0.070
32	12.26	0.48	**LX1D2C5**	–	–	–	.15/0.070
42	21.32	0.93	**LX1D2D5**	–	–	–	.15/0.070
48	28.05	1.22	**LX1D2E5**	22.09	1.02	**LX1D2E6**	.15/0.070
110	148.2	5.7	**LX1D2F5**	116.6	4.5	**LX1D2F6**	.15/0.070
120	–	–	–	139.2	5.1	**LX1D2G6**	.15/0.070
127	192.5	7.5	**LX1D2G5**	–	–	–	.15/0.070
208	–	–	–	417.8	16.6	**LX1D2L6**	.15/0.070
220	–	–	–	490.2	18.5	**LX1D2M6**	.15/0.070
220/230	613.3	23	**LX1D2M5**	–	–	–	.15/0.070
230	649.7	25	**LX1D2P5**	–	–	–	.15/0.070
240	726.6	25	**LX1D2U5**	587.4	21	**LX1D2U6**	.15/0.070
256	816	31	**LX1D2W5**	–	–	–	.15/0.070
277	–	–	–	781.5	30	**LX1D2W6**	.15/0.070
380	–	–	–	1486	55	**LX1D2Q6**	.15/0.070
380/400	1848	67	**LX1D2Q5**	–	–	–	.15/0.070
400	2069	68	**LX1D2V5**	–	–	–	.15/0.070
415	2219	78	**LX1D2N5**	1826	69	**LX1D2N6**	.15/0.070
440	2549	82	**LX1D2R5**	1892	71	**LX1D2R6**	.15/0.070
480	–	–	–	2304	85	**LX1D2T6**	.15/0.070
500	3285	107	**LX1D2S5**	–	–	–	.15/0.070
575	–	–	–	3482	119	**LX1D2S6**	.15/0.070
600	–	–	–	3678	135	**LX1D2X6**	.15/0.070
660	5631	190	**LX1D2Y5**	–	–	–	.15/0.070

Specifications

Average consumption at 68°F (20°C):
- inrush (cos φ = 0.75) 70 VA for 60 Hz coils; 60 VA for 50 Hz coils.
- sealed (cos φ = 0.3) 7.5 VA for 60 Hz coils; 7 VA for 50 Hz coils.

Operating range (θ ≤ 55 °C): 80 to 110% of Uc

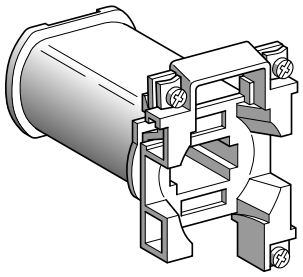
						50/60 Hz	
21 ✻	–	–	–	5.6	0.24	**LX1D2Z7**	.15/0.070
24	–	–	–	6.19	0.26	**LX1D2B7**	.15/0.070
42	–	–	–	19.15	0.77	**LX1D2D7**	.15/0.070
48	–	–	–	25	1	**LX1D2E7**	.15/0.070
110	–	–	–	130	5.5	**LX1D2F7**	.15/0.070
120	–	–	–	159	6.7	**LX1D2G7**	.15/0.070
220/230	–	–	–	539	22	**LX1D2M7** ◗	.15/0.070
230	–	–	–	595	21	**LX1D2P7**	.15/0.070
230/240	–	–	–	645	25	**LX1D2U7** ◆	.15/0.070
380/400	–	–	–	1580	60	**LX1D2Q7**	.15/0.070
400	–	–	–	1810	64	**LX1D2V7**	.15/0.070
415	–	–	–	1938	74	**LX1D2N7**	.15/0.070
440	–	–	–	2242	79	**LX1D2R7**	.15/0.070

Specifications

Average consumption at 68°F (20°C):
- inrush (cos φ = 0.75) 50/60 Hz: 60 VA at 60 Hz; 70 VA at 50 Hz.
- sealed (cos φ = 0.3) 50/60 Hz: 7 VA at 60 Hz; 8 VA at 50 Hz.

Operating range (θ ≤ 55 °C): 85 to 110% of Uc

▲ The last two digits in the catalog number represent the voltage code.
✻ Voltage for special coils fitted in relays with serial timer modules, with 24 V supply.
◗ This coil can be used on 240 V at 60 Hz.
◆ This coil can be used on 230/240 V at 50 Hz and on 240 V only at 60 Hz.



LX4D2●●

Replacement coils

Control circuit voltage Uc	Average resistance at 68°F (20°C) ± 10 %	Inductance of closed circuit	Catalog Number ▲	Weight
V	Ω	**H**		lb/kg

Standard coils

12	17	0.79	**LX4D2JD**	.39/0.175
21 ✻	45.4	2.16	**LX4D2ZD**	.39/0.175
24	71	3.1	**LX4D2BD**	.39/0.175
36	149.7	7.1	**LX4D2CD**	.39/0.175
48	267	11.9	**LX4D2ED**	.39/0.175
60	422	19	**LX4D2ND**	.39/0.175
72	609	26	**LX4D2SD**	.39/0.175
96	1049	46	**LX4D2DD**	.39/0.175
100	1105	49.6	**LX4D2KD**	.39/0.175
110	1411	61.8	**LX4D2FD**	.39/0.175
125	1781	77.8	**LX4D2GD**	.39/0.175
155	2763	119	**LX4D2PD**	.39/0.175
174	3480	152	**LX4D2QD**	.39/0.175
200	4280	184	**LX4D2LD**	.39/0.175
220	5235	221	**LX4D2MD**	.39/0.175
250	6433	271	**LX4D2UD**	.39/0.175
305	9778	401	**LX4D2TD**	.39/0.175
348	12 479	512	**LX4D2VD**	.39/0.175
440	19 785	793	**LX4D2RD**	.39/0.175
543	31 785	1261	**LX4D2WD**	.39/0.175
600	38 982	1393	**LX4D2XD**	.39/0.175

Specifications

Average consumption at 68°F (20°C): 9 W
Operating range (θ ≤ 55 °C): 80 to 110% at Uc

Wide range coils

12	15.6	0.71	**LX4D2JW**	.39/0.175
24	58.7	2.49	**LX4D2BW**	.39/0.175
36	122.6	5.3	**LX4D2CW**	.39/0.175
48	234	9.9	**LX4D2EW**	.39/0.175
72	530	21.4	**LX4D2SW**	.39/0.175
96	886	36.6	**LX4D2DW**	.39/0.175
110	1105	44.4	**LX4D2FW**	.39/0.175
220	4593	185	**LX4D2MW**	.39/0.175

Specifications

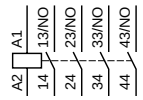
Average consumption at 68°F (20°C): 11 W
Operating range (θ ≤ 55 °C): 70 to 125% of Uc

▲ The last two digits in the catalog number represent the voltage code.
✻ Voltage for special coils fitted in relays with serial timer modules, with 24 V supply

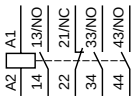
Telemecanique

Control relays instantaneous

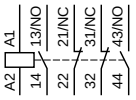
4 N/O
CA2DN40●●
CA3DN40●●



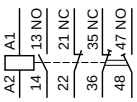
3 N/O + 1 N/C
CA2DN31●●
CA3DN31●●



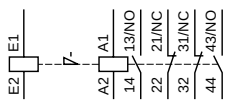
2 N/O + 2 N/C
CA2DN22●●
CA3DN22●●



2 N/O + 2 N/C including 1 N/O + 1 N/C make before break
CA2DC22●●
CA3DC22●●



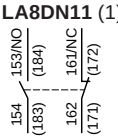
Latching Relays
2 N/O + 2 N/C
CA2DK22●●
CA3DK22●●



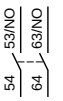
Instantaneous auxiliary contact blocks

1 N/O + 1 N/C
LA1DN11

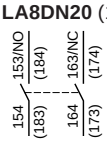
LA8DN11 (1)



2 N/O
LA1DN20



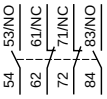
LA8DN20 (1)



2 N/C
LA1DN02

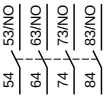
(1) The figures in brackets are for the device mounted on the RH side of the relays.

2 N/O + 2 N/C
LA1DN22

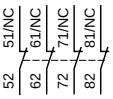


1 N/O + 3 N/C
LA1DN13

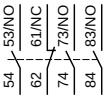
4 N/O
LA1DN40



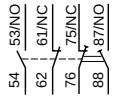
4 N/C
LA1DN04



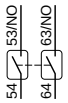
3 N/O + 1 N/C
LA1DN31



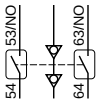
2 N/O + 2 N/C including 1 N/O + 1 N/C make before break
LA1DC22



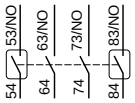
With protected contacts
2 N/O protected
LA1DX20



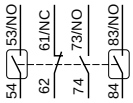
2 N/O protected (2)
with earth connection
LA1-DY20



2 N/O protected +
2 N/O non protected
LA1DZ40

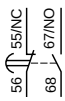


2 N/O protected +
1 N/O + 1 N/C non protected
LA1DZ31

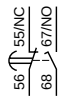


(2) Device fitted with 4 screening continuity terminals.

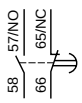
Pneumatic timer attachment
On-delay 1 N/O + 1 N/C
LA2DT●



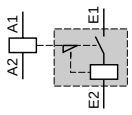
LA2DS2



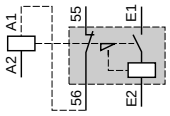
Mechanical latch attachment
Off-delay 1 N/O + 1 N/C
LA3DR●



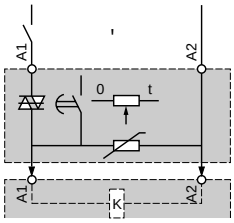
LA6DK1●



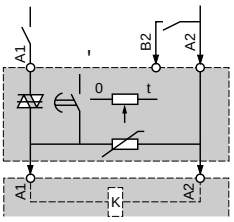
LA6DK2●



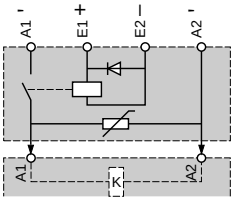
Electronic serial timer modules
On-delay
LA4DT●U



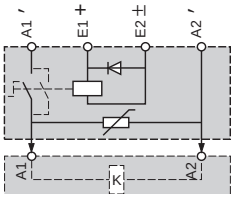
Off-delay
LA4DR●U



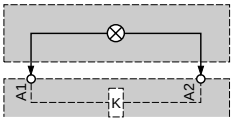
Interface modules
Relay interface
LA4DF●



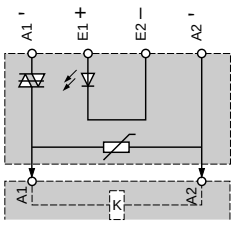
Relay interface and manual override switch "Auto-On"
LA4DL●



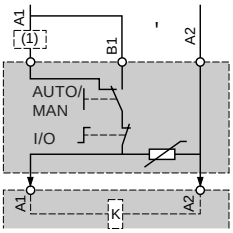
Indicator
LA4DV●



Solid state interface module
LA4DWB

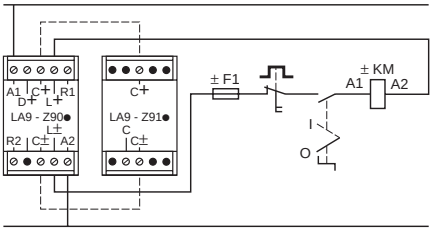


"Auto-Stop-Man" control module
LA4DM●



(1) Programmable controller

Delayed capacitive opening devices
LA9Z90●

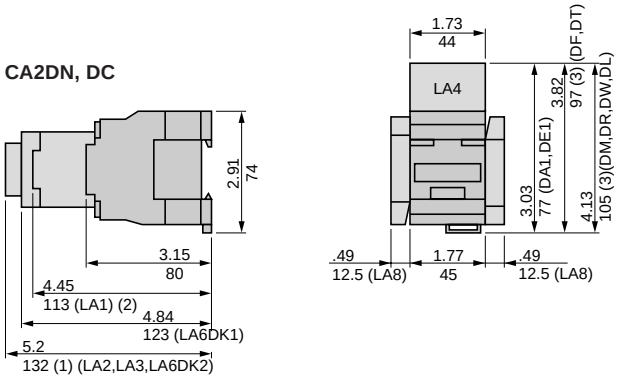


Terminal C +: ≥ 380 V
Terminal C - : < 380 V

IEC Type Industrial Control Relays
Control Relays CA2D and CA3D
Approximate Mounting Dimensions

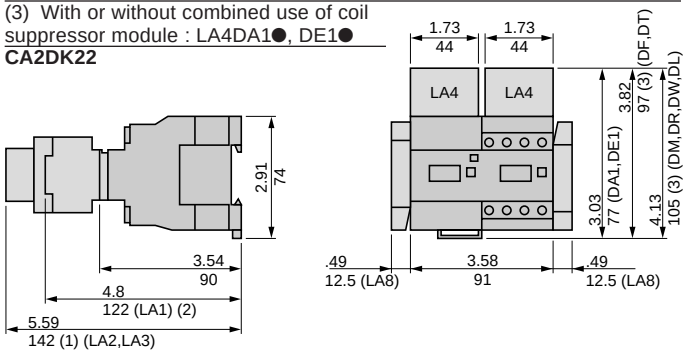
Telemecanique

CA2DN, DC



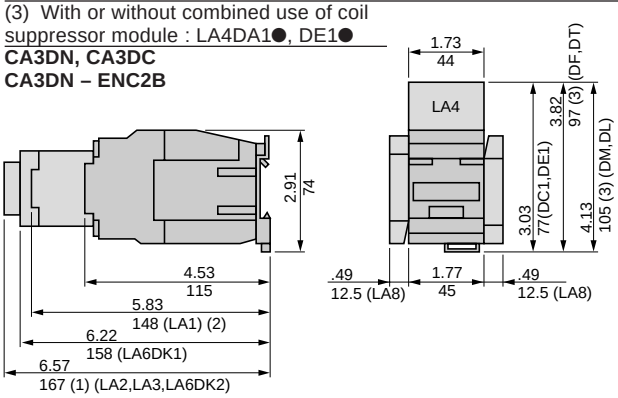
(1) + 4 mm with lead sealing kit LA9D901
(2) With 2 or 4 contacts
(3) With or without combined use of coil suppressor module : LA4DA1●, DE1●

CA2DK22



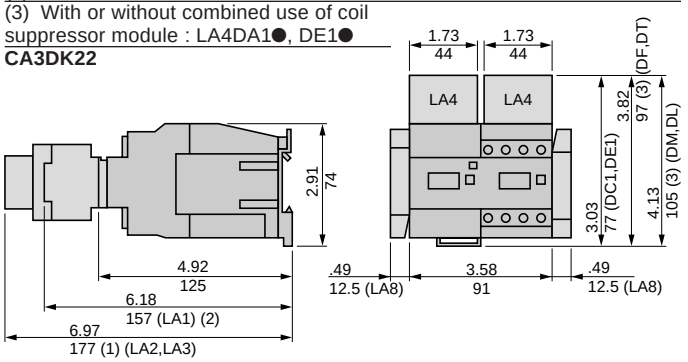
(1) + 4 mm with lead sealing kit LA9D901
(2) With 2 or 4 contacts
(3) With or without combined use of coil suppressor module : LA4DA1●, DE1●

CA3DN, CA3DC
CA3DN – ENC2B



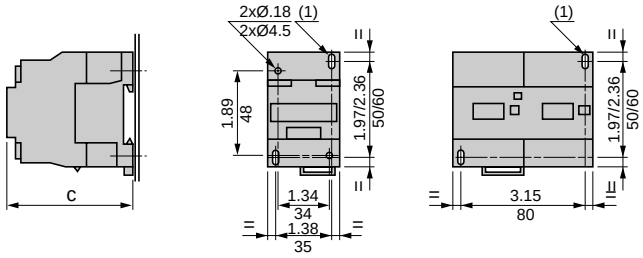
(1) + 4 mm with lead sealing kit LA9D901
(2) With 2 or 4 contacts
(3) With or without combined use of coil suppressor module : LA4DA1●, DE1●

CA3DK22



(1) + 4 mm with lead sealing kit LA9D901
(2) With 2 or 4 contacts
(3) With or without combined use of coil suppressor module : LA4DA1●, DE1●

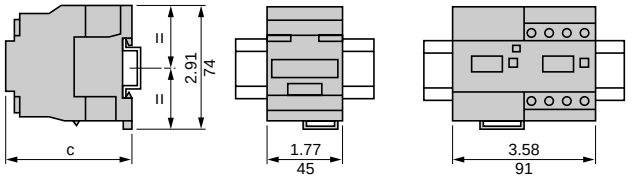
CA2, CA3DN, DC, DK
Panel mounting



	CA2			CA3		
	DN	DC	DK	DN	DC	DK
c	3.15/80	3.15/80	3.54/90	4.53/115	4.53/115	4.92/125

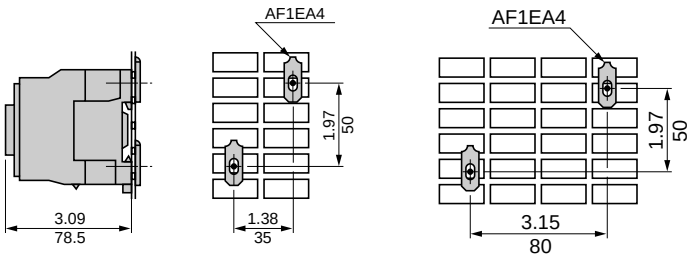
(1) 2 elongated holes 4.5 × 9

CA2, CA3DN, DC, DK
Mounting on AM1DP200 or DE200 track



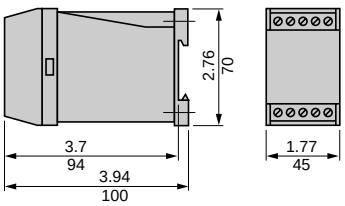
	CA2			CA3		
	DN	DC	DK	DN	DC	DK
c (AM1-DP200)	3.23/82	3.23/82	3.58/91	4.61/117	4.61/117	5/127
c (AM1-DE200)	3.5/89	3.5/89	3.86/98	4.88/124	4.88/124	5.28/134

CA2, CA3DN, DC, DK
Mounting on pre-slotted plate AM1P



	CA2			CA3		
	DN	DC	DK	DN	DC	DK
c (AM1P)	3.15/80	3.15/80	3.54/90	4.53/115	4.53/115	4.92/125

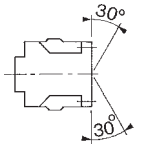
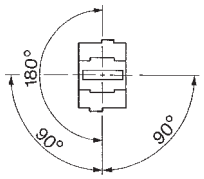
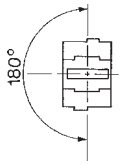
Delayed capacitive opening devices
LA9Z90●



Dual Dimensions
inches
mm

Telemecanique

Environment

Type			CA2DN, DK, DC	CA3DN, DK, DC
Conforming to standards			IEC 337-1, 947-1, 947-5, NF C 63-140, VDE 0660, BS 4794	
Approvals			UL Listed File E39281, CCN NKCR CSA Approved, File LR43364, Class 3211 03 ASE, DEMKO, NEMKO, SEMKO, FI,▲ **CA3-DN** has SNCF approval.	
Protective treatment			"TH" (Tropical Finish) See page 36.	
Degree of protection	Protection against direct finger contact		Conforming to VDE 0106	Conforming to VDE 0106
Ambient air temperature around the device	Storage	**°F(°C)**	-76 to 176 (-60 to 80)	-76 to 176 (-60 to 80)
	Operation, Conforming to IEC 255 (80 to 110% of Uc)	**°F(°C)**	23 to 131 (-5 to 55)	23 to 131 (-5 to 55)
	For operation at Uc	**°F(°C)**	-40 to 158 (-40 to 70)	-40 to 158 (-40 to 70)
Maximum operating altitude	Without derating	**ft/m**	9,843/3,000	9,843/3,000
Operating positions	Operation without derating in the following positions 			
Shock resistance ◆ 1/2 sine wave for 11 ms	Control relay open		10 g	8 g
	Control relay closed		15 g	11 g
Vibration resistance ◆ 5 to 300 Hz	Control relay open		2 g	2 g
	Control relay closed		4 g	3 g
Wire range	Stranded or solid wire with or without cable end	**AWG (mm²)**	Min: one #18 (1) Max: two #14 (2.5) or one #8 (10)	Min: one #18 (1) Max: two #14 (2.5) or one #8 (10)

▲ Conforming to INRS requirements in association with auxiliary contacts LA1D.
◆ In the least favorable direction, without change of contact state, with coil supplied at Uc.

Control circuit characteristics

Rated insulation voltage (Ui)	Conforming to UL508	**V**	600	600
	Conforming to CSA C22-2 n° 14	**V**	600	600
	Conforming to IEC 337-1, 158-1 and BS 4794	**V**	660	660
	Conforming to IEC 947-1 and 947-5	**V**	690	690
	Conforming to VDE 0110 group C	**V**	750	750
Rated coil voltage (Uc)		**V**	12 to 660 AC	12 to 600 DC
Permissible voltage variation	Operational		With 50 or 60 Hz coil: 80 to 110% Uc With 50/60 Hz coil: 85 to 110% Uc	With standard coil: 80 to 110% Uc With wide range coil: 70 to 125% Uc
Voltage limits	Drop-out		30 to 60% Uc	10 to 65% Uc
Average consumption at 68°F(20 °C)	60 Hz VAC	**VA**	Inrush: 70; Sealed: 7.5	–
	50/60 Hz (at 60 Hz) VAC	**VA**	Inrush: 60; Sealed: 7	–
	50 Hz VAC	**VA**	Inrush: 60; Sealed: 7	–
	50/60 Hz (at 50 Hz) VAC	**VA**	Inrush: 70; Sealed: 8	–
	With standard DC coil	**W**	–	Inrush or Sealed: 9
Operating time at rated control circuit voltage and at 68°F (20 °C)	Between coil energization and - opening of the N/C contacts	**ms**	6 to 20	35 to 43
	- closing of the N/O contacts	**ms**	12 to 22	40 to 48
	Between coil de-energization and - opening of the N/O contacts	**ms**	4 to 12	6 to 14
	- closing of the N/C contacts	**ms**	6 to 17	11 to 19
Minimum pulse time	For latching or unlatching of the **CA●DK**	**ms**	40	100
Short supply failures	Max. duration without affecting hold-in of device	**ms**	2	2
Maximum operating rate	In operating cycles per second		3	3

Mechanical life at Uc (mechanical durability)	In millions of operating cycles	**CA2DN, DC**	**CA2DK**	**CA3DN, DC**	**CA3DK**
	With: 50 or 60 Hz AC coil	20	10	–	–
	50/60 Hz AC coil (at 60 Hz)	30	10	–	–
	50/60 Hz AC coil (at 50 Hz)	30	10	–	–
	standard DC coil	–	–	30	10
	wide range DC coil	–	–	30	10

Instantaneous contact characteristics

Number of contacts	On **CA●D**		4
Rated operational voltage (Ue)	Up to	**V**	660
Rated insulation voltage (Ui)	Conforming to UL 508	**V**	600
	Conforming to IEC 337-1, 158-1 and BS 4794	**V**	660
	Conforming to IEC 947-1 and 947-5	**V**	690
	Conforming to VDE 0110 group C	**V**	750
	Conforming to CSA C22-2 n° 14	**V**	600
Rated thermal current (Ith)	For ambient temperature ≤ 40 °C	**A**	10
Frequency of operational current		**Hz**	25 to 400
Minimum switching capacity	Voltage	**V**	17
	Current	**mA**	5
Short-circuit protection	Conforming to IEC 337-1 and VDE 0660, gI fuse	**A**	10
Rated making capacity	Conforming to IEC 337-1, I rms	**A**	AC: 140, DC: 250
Short time rating	Permissible for 1 s	**A**	100
	500 ms	**A**	120
	100 ms	**A**	140
Insulation resistance		**MΩ**	> 10
Non-overlap time	Guaranteed between N/C and N/O contacts	**ms**	1.5 (on energization and on de-energization)
Tightening torques		**lb/ft**	10.6
		N.m	1.2

Contact ratings

AC ratings								**DC ratings**			
	Inductive 35% power factor						**Resistive 75% power factor**		**Inductive**		
		Make		**Break**							
Volts	**NEMA rating**	**Amps**	**VA**	**Amps**	**VA**	**Cont. amps**	**Make, break & cont. amps**	**Volts**	**Nema rating**	**Make & ▲ break amps**	**Cont. amps**
120		60	7200	6	720	10	10	125		0.55	2.5
240	A600	30	7200	3	720	10	10	250	Q600	0.27	2.5
480		15	7200	1.5	720	10	10	600		0.10	2.5
600		12	7200	1.2	720	10	10				

▲ 69 VA maximum up to 300 volts.

Rated operating power of contacts
Conforming to IEC 947-5

AC supply, categories AC-14 and AC-15
Electrical life (up to 3600 operating cycles/hour) on an inductive load such as the coil of an electromagnet: making power (cos φ 0.7) = 10 times the power broken (cos φ 0.4).

V	**24**	**48**	**110/ 127**	**220/ 230**	**380/ 400**	**440**	**600**
1 million operating cycles	**VA**	150	300	400	480	500	500	500
3 million operating cycles	**VA**	80	170	250	290	320	320	320
10 million operating cycles	**VA**	30	65	90	120	130	130	130
Occasional making capacity	**VA**	1200	2600	7000	13000	15000	13000	9000

DC supply, category DC-13
Electrical life (up to 1200 operating cycles/hour) on an inductive load such as the coil of an electromagnet, without economy resistor, the time constant increasing with the power.

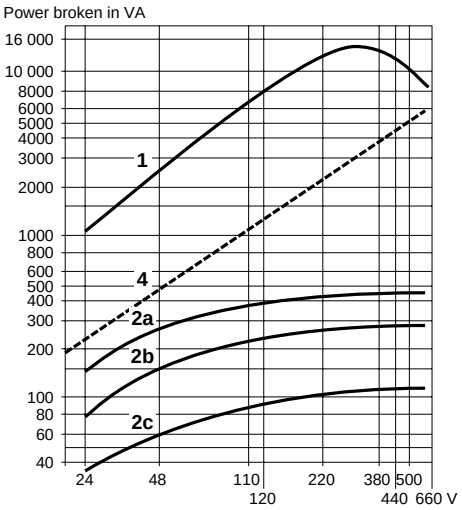
V	**24**	**48**	**110**	**220**	**440**	**600**
W	120	90	75	68	61	58
W	70	50	38	33	28	27
W	25	18	14	12	10	9
W	1000	700	400	260	220	170

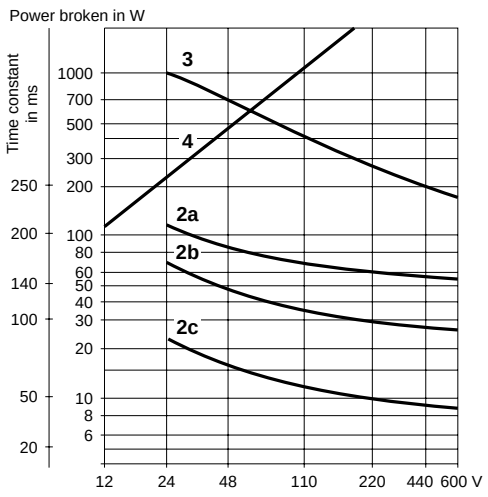
1 Breaking limit of contacts valid for:
– maximum of 50 operating cycles at 10 s intervals (breaking power = making power x cos φ 0.7).

2 Electrical life of contacts for:
– 1 million operating cycles (2a)
– 3 million operating cycles (2b)
– 10 million operating cycles (2c).

3 Breaking limit of contacts valid for:
– maximum of 20 operating cycles at 10 s intervals and with current passing for 0.5 s per operating cycle.

4 Thermal limit.





Telemecanique

Environment (standard industrial environments)

Conforming to standards			IEC 337-1. 947-1. 947-5. NF C 63-140. VDE 0660. BS 4794
Approvals			ASE. UL. CSA. DEMKO. NEMKO. SEMKO. FI ▲
Protective treatment			"TH" (Tropical Finish) See page 34.
Degree of protection	Conforming to VDE 0106		Protection against direct finger contact
Ambient air temperature around the device	Storage	°**F**(°**C**)	-76 to 176 (-60 to 80)
	Operation. Conforming to IEC 255 (80 to 110% Uc)	°**F**(°**C**)	23 to 131 (-5 to 55)
	Permissible for operation at Uc	°**F**(°**C**)	-40 to 158 (-40 to 70)
Maximum operating altitude	Without derating	**ft(m)**	9843 (3000)
Wire range	Stranded or solid wire, with or without cable end	**AWG(mm²)**	Min: one #18 (1), Max: two #14 (2.5) or one #8 (10)
Tightening torque		**ft/lb (N.m)**	10.6 (1.2)

Instantaneous and time delay contact block characteristics

Types			**LA1D**	**LA2D**	**LA3D**	**LA8D**
Number of contacts			2 or 4	2	2	2
Rated operational voltage (Ue)	Up to	**V**	660			
Rated insulation voltage (Ui)	Conforming to UL508	**V**	600			
	Conforming to IEC 337-1. 158-1 and BS 4794	**V**	660			
	Conforming to IEC 947-1 and 947-5	**V**	690			
	Conforming to VDE 0110 group C	**V**	750			
	Conforming to CSA C22-2 n° 14	**V**	600			
Rated thermal current (Ith)	Ambient temperature ≤ 104°F (40 °C)	**A**	10			
Frequency of operational current		**Hz**	25 to 400			
Minimum switching capacity	Voltage	**V**	17			
	Current	**mA**	5			
Short-circuit protection	Conforming to IEC 337-1 and VDE 0660, gI fuse	**A**	10			
Rated making capacity	Conforming to IEC 337-, I rms	**A**	AC: 140; DC: 250			
Short time rating	Permissible for 1 s	**A**	100			
	500 ms	**A**	120			
	100 ms	**A**	140			
Insulation resistance		**MΩ**	>10			
Non-overlap time	Guaranteed between N/C and N/O contacts	**ms**	1.5 (on energization and on de-energization)			
Overlap time	Guaranteed between N/C and N/O contacts on **LA1DC22**	**ms**	1.5	–	–	–
Time delay	Ambient air temperature for operation	°**F** (°**C**)	–	-40 to 158 (-40 to 70)	-40 to 158 (-40 to 70)	–
(LA2D and LA3D contact blocks)	Repeat accuracy		–	± 2 %	± 2 %	–
Accuracy only valid for setting	Drift up to 0.5 million operating cycles		–	+ 15 %	+ 15 %	–
range indicated on front face	Drift depending on ambient air temperature		–	0.25 % per °C	0.25 % per °C	–
Mechanical life	In millions of operating cycles		30	5	5	30
Operational power of contacts	The same as that of the control relay: see page 12.					

Mechanical latch block characteristics

Types			**LA6DK1** 50-60 Hz	**LA6DK1** VDC	**LA6DK2** 50-60 Hz	**LA6DK2** VDC
Rated insulation voltage (Ui)	Conforming to IEC 158-1	**V**	660	660	660	660
Rated control circuit voltage (Uc)		**V**	12 to 660	12 to 220	12 to 660	12 to 220
Power required for unlatching		**VA**	160	–	275	–
		W	–	190	–	330
Maximum operating rate	In operating cycles/hour		1200	1200	1000	1000
Mechanical life (at Uc)	In millions of operating cycles		1	1	1	1
Unlatching control	Pulsed or maintained		Manual or electrical			
Operating precautions			**LA6DK** and **CA●D** must not be energized simultaneously			

Auto cut-out of the coil after 15 ms. Duration of control signal > 10 ms.
Block **LA6DK2** and **DK3** also have 1 N/C contact which automatically cuts the supply to the relay coil, if wired in circuit.
Signal duration = contactor operating time + 20 ms.

▲ LA1-D conforms to INRS requirements in association with a control relay CA●D.

Type	(with dust and damp protected contacts)		**LA1DX**	**LA1DZ**	**LA1DY**
Conforming to standards			IEC 387-1, NF C 63-140, VDE 0660		
Approvals			UL, CSA		
Protective treatment			"TH" (Tropical Finish) See page 36.		
Degree of protection	Conforming to VDE 0106		Protection against direct finger contact		
Ambient air temperature	Storage	**°F (°C)**	-13 to 158 (-25 to 70)	-13 to 158 (-25 to 70)	-13 to 158 (-25 to 70)
around the device	Operation	**°F (°C)**	-13 to 158 (-25 to 70)	-13 to 158 (-25 to 70)	-13 to 158 (-25 to 70)
Wire range	Flexible or solid wire with or without cable end	**AWG (mm^2)**	Min: one #18 (1) Max: two #14 (2.5) or one #8 (10)	Min: one #18 (1) Max: two #14 (2.5) or one #8 (10)	Min: one #18 (1) Max: two #14 (2.5) or one #8 (10)
Number of contacts			2	4 (2 not dust & damp protected)	2

Characteristics of dust and damp protected contacts

Rated operational voltage (Ue)	Up to	**V**	50	50	24
Rated insulation voltage (Ui)	To UL508, IEC 337-1 and 255, BS 4794, VDE 0110 gr C	**V**	250	250	250
Maximum operational current (Ie)		**mA**	500	500	50
Minimum switching capacity	Voltage	**V**	17	17	3
	Current	**mA**	4	4	0.3
Insulation resistance		**MΩ**	>10	>10	>10
Mechanical life	In millions of operating cycles		5	5	5
Materials and technology used for dust and damp protected contacts			Silver Single break	Silver Single break	Gold Single break with crossed bars

Characteristics of non dust and damp protected contacts

Rated operational voltage (Ue)	Up to	**V**	–	660	–
Rated insulation voltage (Ui)	Conforming to UL508	**V**	–	600	–
	Conforming to IEC 337-1, 158-1 and BS 4794	**V**	–	660	–
	Conforming to IEC 947-1	**V**	–	690	–
	Conforming to VDE 0110, group C	**V**	–	750	–
	Conforming to CSA C22-2, n° 14	**V**	–	600	–
Rated thermal current (Ith)	Ambient temperature ≤ 40 °C	**A**	–	10	–
Frequency of operational current		**Hz**	–	25 to 400	–
Minimum switching capacity	Voltage	**V**	–	17	–
	Current	**mA**	–	5	–
Short-circuit protection	Conforming to IEC 337-1 and VDE 0660. gI fuse	**A**	–	10	–
Rated making capacity	Conforming to IEC 337-1, I rms	**A**	–	AC: 140, DC: 250	–
Short time rating	Permissible for 1 s	**A**	–	100	–
	500 ms	**A**	–	120	–
	100 ms	**A**	–	140	–
Insulation resistance		**MΩ**	–	>10	–
Operating power of contacts	The same as those of control relay contacts: see page 12.				

Telemecanique

Type			LA4DT (On-delay)	LA4DR (Off-delay)

Environment

Conforming to standards			IEC 255-5	
Approvals			UL, CSA	
Protective treatment			"TH" (Tropical Finish) See Page 36.	
Degree of protection	Conforming to VDE 0106		Protection against direct finger contact	
Ambient air temperature around the device	Storage	°F(°C)	-40 to 176 (-40 to 80)	
	Operation	°F(°C)	-13 to 131 (-25 to 55)	
	For operation at Uc	°F(°C)	-13 to 158 (-25 to 70)	
Rated insulation voltage (Ui)	Conforming to UL508, IEC 158-1 and VDE 0110 (group C)	**V**	250	
Wire range	Stranded or solid cable with or without cable end	**AWG** (**mm²**)	Min: one #18 (1) Max: two #14 (2.5) or one #8 (10)	

Control circuit characteristics

Built-in protection	On input		By varistor	By varistor
	Suppression		By varistor	By bidirectional peak limiting diode
Rated control circuit voltage (Uc)		**V**	24 to 250 VAC or VDC	24 to 250 VAC
Permissible variation			80 to 110% Uc	80 to 110% Uc
Type of control			By mechanical contact only	By mechanical contact only, connecting cable < 10 m

Time delay characteristics

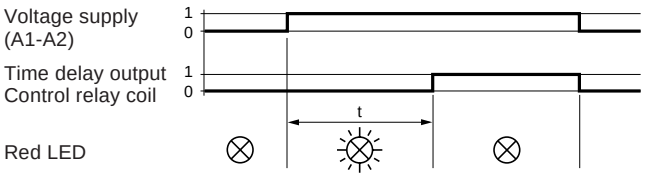
Timing ranges		**s**	0.1 to 2 – 1.5 to 30 – 25 to 500	0.1 to 2 – 1.5 to 30 – 25 to 500
Repeat accuracy	0 to 40 °C		± 3 % (10 ms minimum)	± 3 % (10 ms minimum)
Reset time	During the time delay	**ms**	100	225
	After the time delay	**ms**	50	–
Immunity to micro-breaks	During the time delay	**ms**	10	20
	After the time delay	**ms**	2	–
Minimum control pulse duration		**ms**	–	40
Indication of time delay	By LED		Illuminates during the time delay	Illuminates during the time delay

Switching characteristics (solid state type)

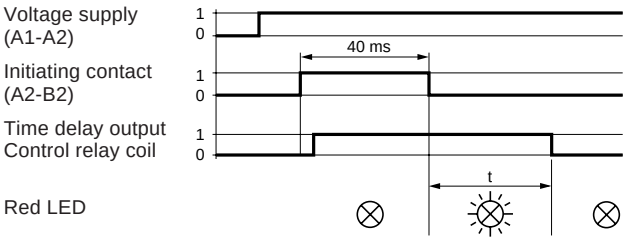
Maximum power dissipated		**W**	2	3.5
Leakage current		**mA**	< 5	< 5
Residual voltage		**V**	3.3	3.3
Overvoltage protection			3 kV; 0.5 joule	3 kV; 0.5 joule
Electrical life	In millions of operating cycles		30	30

Operating diagrams

LA4DT "on-delay" electronic timers



LA4DR "off-delay" electronic timers



Telemecanique

Type			LA4DFB	LA4DFE	LA4DLB	LA4DLE	LA4DWB

Environment

Conforming to standards			IEC 255-5
Approvals			UL, CSA
Protective treatment	Standard version		"TH" (Tropical Finish) See page 36.
Degree of protection	Conforming to VDE 0106		Protection against direct finger contact
Ambient air temperature around the device	Storage	**°F(°C)**	-40 to 176 (-40 to 80)
	Operation	**°F(°C)**	-13 to 131 (-25 to 55)
	For operation at Uc	**°F(°C)**	-13 to 158 (-25 to 70)
Rated insulation voltage	Conforming to UL508, IEC 158-1 and VDE 0110 group C	**V**	250
Wire range	Stranded or solid wire with or without cable end	**AWG (mm^2)**	Min: one #18 (1) Max: two #14 (25) or one #8 (10)

Control circuit characteristics

Type			With relay		With relay + override		Solid state
Built-in protection	Of the input		By diode				
	Against reversed polarity		By diode				
Display of input state	By integral LED which illuminates when the control relay coil is energized						
Input signals	Rated control circuit voltage (E1-E2)	**V**	24 DC	48 DC	24 DC	48 DC	24 DC
	Permissible variation	**V**	17 to 30	33 to 60	17 to 30	33 to 60	5 to 30 ◆
	Current consumption at 68 °F (20 °C)	**mA**	25	15	25	15	8.5 for 5 V 15 for 24 V
	State "1" guaranteed for voltage State "0" guaranteed for current	**V** **mA**	< 2.4 < 2	< 4.8 < 1.3	< 2.4 < 2	< 4.8 < 1.3	< 2.4 < 2
	State "1" guaranteed for voltage	**V**	17	33	17	33	5
Association with control relay	**CA2-D** (24 to 250 VAC)		●	●	●	●	●
● possible combination	**CA3-D** (24 to 250 VDC)		●	●	●	●	–

Operational characteristics

Electrical life at 220/230 V (electrical durability)	In millions of operating cycles			10	10	3	3	20
Load factor				100 %	100 %	100 %	100 %	100 %
Immunity	To micro-breaks (E1-E2)		**ms**	4	4	4	4	1
Power dissipated	At 68 °F (20 °C)		**W**	0.6	0.6	0.6	0.6	0.4
Total operating time at Uc ▲	**CA2-D**	N/O	**ms**	20 to 30	20 to 30	20 to 30	20 to 30	12 to 22
		N/C	**ms**	16 to 24	16 to 24	16 to 24	16 to 24	4 to 12
	CA3-D	N/O	**ms**	48 to 56	48 to 56	48 to 56	48 to 56	–
		N/C	**ms**	18 to 26	18 to 26	18 to 26	18 to 26	–

◆ For use with digital control signal.

▲ Operating times depend on the type of electromagnet in the relay and its control mode. The closing time "C" is measured from the moment the coil supply circuit is switched on to the moment the main contacts first make contact. The opening time "O" is measured from the moment the coil supply is switched off to the moment the main contacts separate.

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Environment

Conforming to standards			IEC 337-1
Approvals			UL, CSA
Protective treatment			"TH" (Tropical Finish) See page 36.
Degree of protection	Conforming to VDE 0106		Protection against direct finger contact
Ambient air temperature around the device	Storage	°**F**(°**C**)	-40 to 176 (-40 to 80)
	Operation	°**F**(°**C**)	-13 to 131 (-25 to 55)
	For operation at Uc	°**F**(°**C**)	-13 to 158 (-25 to 70)

Control modules "Auto-Man-Stop"

Type			**LA4DM**
Protection	Against electric shocks	**kV**	2
Built-in protection	Contactor coil suppression		By varistor
Indication	By integral LED		Illuminates when the contactor is energised
Electrical life	In operating cycles		20 000
Contact block characteristics	Rated insulation voltage (Ui) (To UL508, IEC 158-1 and VDE 0110 group C)	**V**	250
	Rated operational voltage (Ue)	**V**	250
Wire range	Stranded or solid wire with or without cable end	**AWG** (**mm²**)	Min: one #18 (1) Max: two #14 (2.5) or one #8 (10)
Recommendation	The "Auto-Man" selector switch must only be operated with the Start-Stop switch in position "O"		

Coil suppressor modules

Type			**LA4DA1●**			**LA4DE1●**	**LA4DC1U**
Type of protection			RC circuit			Varistor	Diode
Rated operational voltage (Ue)		**V**	24 to 250 AC			24 to 250 AC or DC	24 to 250 DC
Maximum peak voltage			3 Uc			2 Uc	No overvoltage
Natural RC frequency		**V**	24/ 48	50/ 127	110/ 240	–	–
		Hz	400	200	150	–	–
Rated insulation voltage	Conforming to UL508, IEC 158-1 and VDE 0110 group C	**V**	250			250	250

Indicators

Type			**LA4DVE**	**LA4DVM**	**LA4DVR**
Indication			Red LED		
Operating range	VAC or VDC	**V**	12 to 72	72 to 250	250 to 440
Wire	Color		White	Blue	Red
Type of connection			By pre-stripped flexible conductor		

Telemecanique

CA4D control relays operate on DC supply and require no interface. Their low consumption allows direct control from solid state outputs.

They are available in 4 versions :

- Control relays with standard coil (consumption 1.2 W).
- Control relays with built-in suppression as standard (consumption 1.2 W) via bi-directional peak limiting diode. This version provides a perfect working combination between power and electronic components.
- Control relays with wide range coils (consumption 1.6 W), allowing correct operation between 70 and 125% of the control voltage Uc. These are essential where solid state components are connected in series with the control circuit or on machines based on dedicated electronic cards.
- Control relays with wide range coils (consumption 1.6 W) with built-in suppression as standard via bi-directional peak limiting diode, allowing correct operation between 70 and 125% of the control voltage Uc.

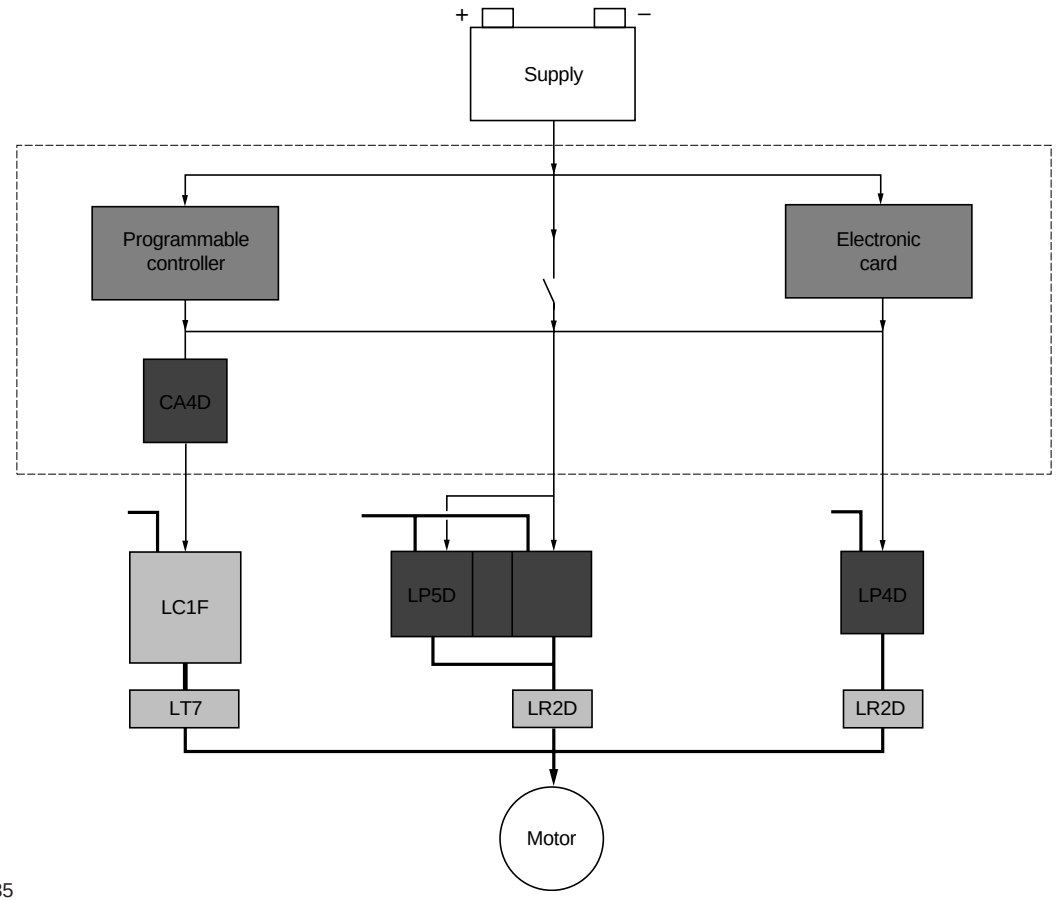
CA4DN31

Advantages

Low heat dissipation: allowing higher component density in control panels.

Use on battery supplies: for on-board equipment, use on battery supplies allows ease of integrity and an independent supply shared with programmable controllers.

Variable composition: low consumption control relays can be fitted with a special front-mounting auxiliary block. CA4D control relays can also be fitted with electronic serial timer modules LA4DT and Auto-Man-Stop interface modules LA4DM.



Application data: pages 24 and 25
Catalog numbers: page 21
Dimensions: page 23
Contact configurations: page 23
Accessories: pages 21, 22, 34 and 35

Instantaneous control relays

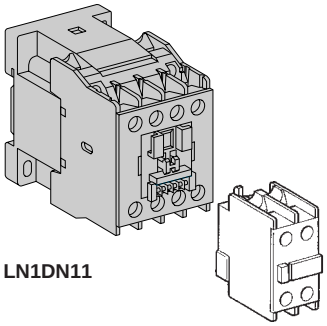
CA4-DN31●●

Number of contacts	Contact arrangement		Catalog number	Weight (2) lb/kg
4	4	–	**CA4DN40▲**	.69/0.315
	3	1	**CA4DN31▲**	.69/0.315
	2	2	**CA4DN22▲**	.69/0.315

Specifications

Protective treatment	"TH" as standard (Tropical Finish) See page 36.
Mounting	On 35 mm DIN3 track or direct mount
Termination	Screw clamp terminals
Terminals	Protected against direct finger contact; supplied with ready-to tighten captive screws. Telemecanique patented system which prevents screws from tightening themselves (eg due to vibration during transport).
Consumption of standard coil	1.2 W
Consumption of wide range coil	1.6 W

Instantaneous auxiliary contact blocks (front-mounted, clip-on)



LN1DN11

Number of contacts	Contact arrangement		Catalog number	Weight lb/kg
2	1	1	**LN1DN11**	.07/0.030

Specifications

Protective treatment	"TH" as standard (Tropical Finish) See page 36.
Termination	Screw clamp terminals
Terminals	Protected against direct finger contact; supplied with ready-to tighten captive screws. Telemecanique patented system which prevents screws from tightening themselves due to vibration during transport.
▲ Coil voltages	**COILS ARE NOT REPLACEABLE**.

Standard coil (80 to 110% Uc)

Volts DC	**5**	**12**	**24**	**48**	**72**
Code letters	AD	JD	BD	ED	SD

Coil with built-in interference suppression diode (80 to 110% Uc)

Volts DC	**5**	**12**	**24**	**48**	**72**
Code letters	AD3	JD3	BD3	ED3	SD3

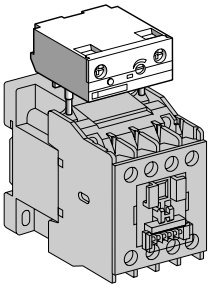
Wide range coil (70 to 125% Uc)

Volts DC	–	–	**24**	**48**	**72**
Code letters	–	–	BW	EW	SW

Wide range coil with built-in interference suppression diode (70 to 125% Uc)

Volts DC	–	–	**24**	**48**	**72**
Code letters	–	–	BW3	EW3	SW3

Application data: pages 24 and 25
Dimensions: page 23
Contact configurations: page 23
Accessories: pages 22, 34 and 35



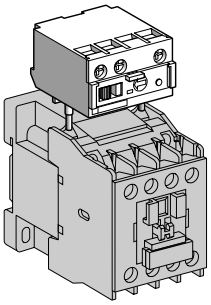
LA4DT●U

Electronic serial timer modules

For use on low consumption control relays with coils from 24 to 72 V ◆.

Type	Mounting	Time delay	Catalog number	Weight lb/kg
On-delay	At top of CA4D	0.1 to 2 s	**LA4DT0U**	.09/0.040
		1.5 to 30 s	**LA4DT2U**	.09/0.040
		25 to 500 s	**LA4DT4U**	.09/0.040

◆ When used with a 24 V supply, the control relay must be fitted with a 24 V wide range coil (code BW).

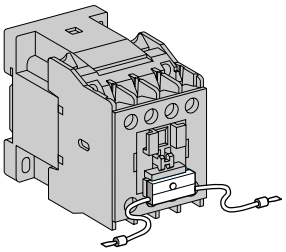


LA4DMK

"Automatic-Manual-Stop" module

For use on low consumption control relays with coils from 24 to 72 V.

Description	Mounting	Catalog number	Weight lb/kg
With "Off-On" switch and 2-position "Auto-Man" knob	At top of CA4D	**LA4DMK**	.09/0.040



LA4DVE

Control relay state indicator

For use on low consumption control relays with coils from 12 to 72 V.

Type	Mounting	Sold in lots of	Catalog number	Weight lb/kg
Red LED	Clips into legend plate location	5	**LA4DVE**	.02/0.010

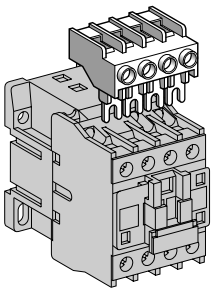
Accessories (to be ordered separately)

For cabling

Description	Catalog number	Weight lb/kg
4-pole connector For connecting 8 AWG (10 mm^2) wires	**LA9D1260**	.07/0.030

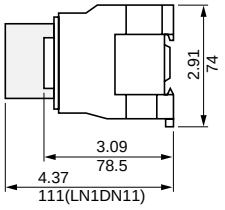
For marking

Mounting on	Description	Sold in lots of	Catalog number	Weight lb/kg
CA4DN	Clip-in marker holder .315 x .866in (8 x 22mm)	100	**LA9D92**	.002/0.001
	Bag of 300 blank self-adhesive labels .276 x .827in (7 x 21mm)	1	**LA9D93**	.002/0.001
LN1DN11	Clip-in marker holder 315 x .669in (8 x 17mm)	100	**LA9D90**	.002/0.001
	Bag of 400 blank self-adhesive labels .276 x .630in (7 x 16mm)	1	**LA9D91**	.002/0.001

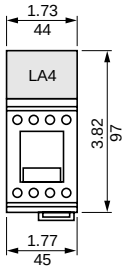


LA9D1260

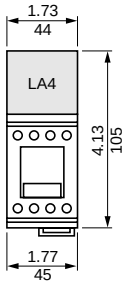
CA4DN●●●●



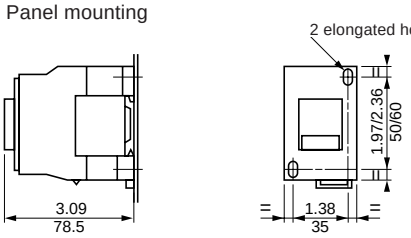
With LA4DT●U



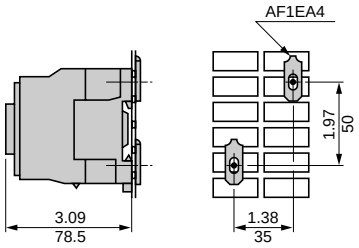
With LA4DMK



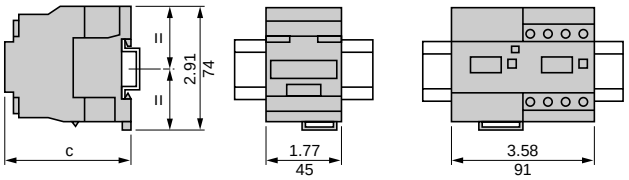
Panel mounting



Mounting on pre-slotted plate AM1P



Mounting on AM1DP200 or DE200 track

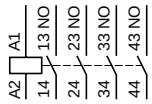


	AM1DP200	AM1DE200
c	3.17/80.5	3.46/88

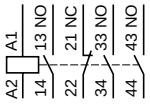
Dual Dimensions
inches
mm

Contact Configurations
Instantaneous control relays

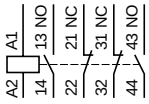
4 N/O
CA4DN40●●



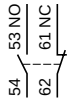
3 N/O + 1 N/C
CA4DN31●●



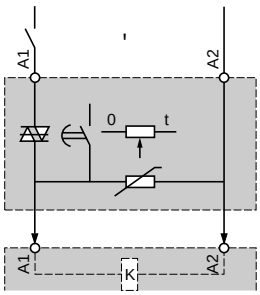
2 N/O + 2 N/C
CA4DN22●●



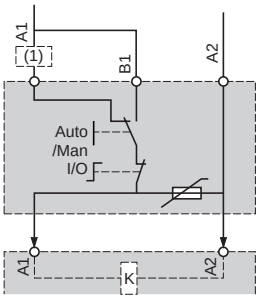
Instantaneous auxiliary contact blocks
1 N/O + 1 N/C
LN1DN11



Input modules
Electronic serial timer modules
LA4DT●U

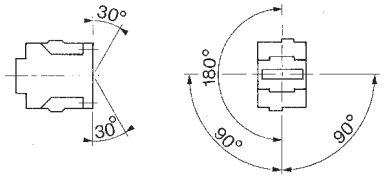


"Automatic-Manual-Stop" module
LA4DMK



(1) Programmable controller

Environment

Conforming to standards				IEC 158-1, IEC 255-1, IEC 337-1, IEC 947-1 and 947-5, VDE 0660, NF C 63-110 and 45-250, BS 5424, JIS C 8325, JEM 1038
Approvals				ASE, UL, CSA, DEMKO, NEMKO, SEMKO, FI
Protective treatment				"TH" (Tropical Finish) See page 36.
Degree of protection	Conforming to VDE 0106			Protection against direct finger contact
Ambient air temperature around the device	Storage		°**F(°C)**	-40 to 176 (-40 to 80)
	Operation, conforming to IEC 255 (80 to 100% Uc)		°**F(°C)**	23 to 131 (-5 to 55)
	For operation at Uc		°**F(°C)**	-13 to 158 (-25 to 70)
Maximum operating altitude	Without derating		**ft(m)**	9,843 (3000)
Operating positions ambient temperature ≤ 113°F (45°C)	Without derating, in the following positions			
Shock resistance ◆	Control relay open			10 g
1/2 sine wave for 11 ms	Control relay closed			12 g
Vibration resistance ◆	Control relay open			5 g
5 to 300 Hz	Control relay closed			10 g
Wire range	Stranded wire	without cable end	**AWG**	One #18 (1) to #12 (4)
			(mm²)	Two #18 (1) to #12 (4)
		with cable end	**AWG**	One #18 (1) to #12 (4)
			(mm²)	Two #18 (1) to #14 (2.5)
	Solid wire	without cable end	**AWG**	One #18 (1) to #12 (4)
			(mm²)	Two #18 (1) to #12 (4)
Tightening torque			**lb/ft** **(N.m)**	10.6 (1.2)

Control circuit characteristics

Rated insulation voltage (Ui)	Conforming to UL508		**V**	250
	Conforming to VDE 0110 (group C)		**V**	250
	Conforming to IEC 158-1, BS 5424		**V**	250
	Conforming to CSA C22-2 n° 14		**V**	300
Rated control circuit voltage (Uc)			**V**	5 to 72 VDC
Permissible voltage variation	Operating	with standard coil		80 to 110% Uc
		with wide range coil		70 to 125% Uc
Voltage limits	Drop-out			10 to 30% Uc
Average consumption		with standard coil	**W**	Inrush: 1.2
				Sealed: 1.2
		with wide range coil	**W**	Inrush: 1.5
				Sealed: 1.5
Operating time at rated voltage and at 68 °F (20 °C)	Between coil energization and opening of the N/C contacts		**ms**	55
	Between coil energization and closing of the N/O contacts		**ms**	60
	Between coil de-energization and opening of the N/O contacts		**ms**	15
	Between coil de-energization and closing of the N/C contacts		**ms**	20
Time constant L/R			**ms**	10
Maximum operating rate	In operating cycles/hour ambient temperature ≤ 131 °F (55 °C)			3600
Mechanical life (at Uc)	In millions of operating cycles			30

◆ In the least favorable direction without change of contact state, with coil supplied at Uc.

Telemecanique

Type			CA4DN	LN1DN11

Instantaneous auxiliary contact characteristics (add-on or integral)

Number of contacts			4	2
Rated operational voltage	Conforming to UL508	**V**	600	600
	Conforming to IEC 947-5; up to	**V**	690	690
Rated insulation voltage (Ui)	Conforming to UL508	**V**	600	600
	Conforming to IEC 947-5	**V**	690	690
	Conforming to VDE 0110 C	**V**	660	660
	Conforming to CSA 22-2 n° 14 and UL 508	**V**	600	600
Rated thermal current (Ith)	Ambient temperature ≤ 104°F (40°C)	**A**	10	6
Minimum switching capacity	Voltage	**V**	17	17
	Current	**mA**	5	5
Short-circuit protection	Conforming to IEC 337-1 and VDE 0660. gI fuse	**A**	10	10
Rated making capacity	I rms conforming to IEC 337-1	**A**	140	80
Permissible short time rating	For 1 s	**A**	100	40
	500 ms		120	60
	100 ms		140	80
Insulation resistance		**MΩ**	> 10	> 10
Non-overlap time	Guaranteed between N/C and N/O contacts	**ms**	2	1.5
Mechanical life	In millions of operation cycles		30	30
UL508 contact rating	See page 12 for details.		A600, Q600	A600, Q600

Control relay CA4DN

AC supply, categories AC-14 and AC-15

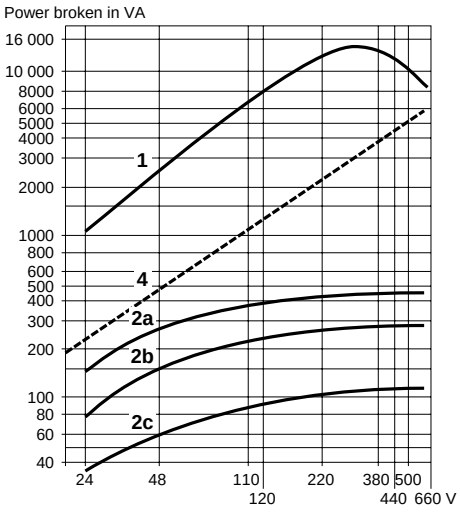
DC supply, category DC-13

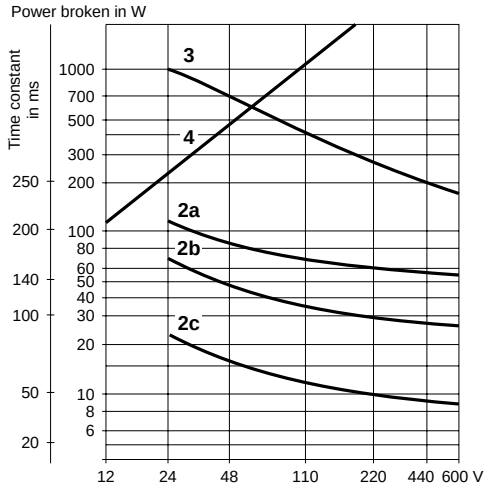
1 Breaking limit of contacts valid for: Maximum of 50 operating cycles at 10 s intervals (breaking power = making power x cos φ 0.7)

2 Electrical life of contacts
- for 1 million operating cycles (2a)
- for 3 million operating cycles (2b)
- for 10 million operating cycles (2c)

3 Breaking limit of contacts valid for : Maximum of 20 operating cycles at 10 s intervals and with current passing for 0.5 s per operating cycle.

4 Thermal limit





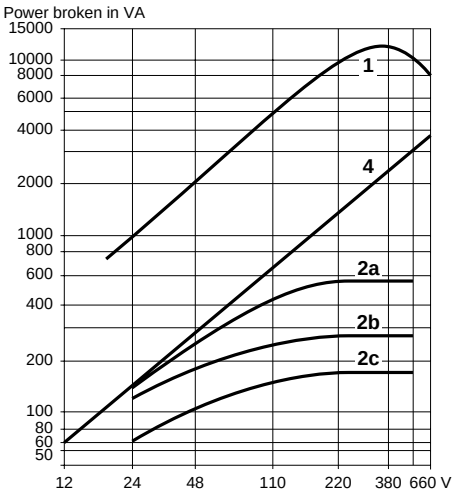
Auxiliary contact LN1DN11

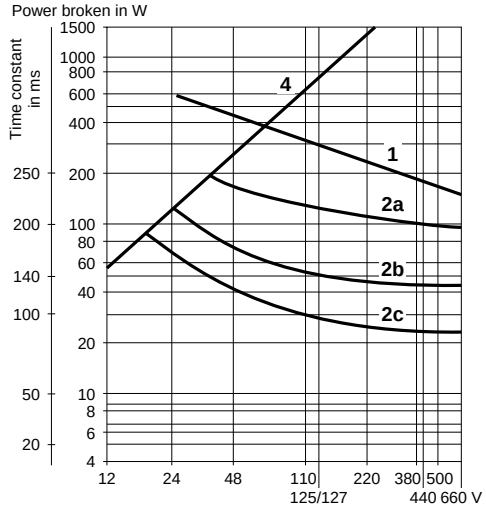
1 Breaking limit of contacts valid for: Maximum of 50 operating cycles at 10 s intervals (breaking power = making power ≈ cos φ 0.7)

2 Electrical life of contacts
- for 1 million operating cycles (2a)
- for 3 million operating cycles (2b)
- for 10 million operating cycles (2c)

3 Breaking limit of contacts valid for : Maximum of 20 operating cycles at 10 s intervals and with current passing for 0.5 s per operating cycle.

4 Thermal limit





Control relays

CA2KN40●●

- Mounting on 35 mm DIN3 track or 4 screw direct mounting.
- Screws in open “ready-to-tighten” position.

Control circuit		Type of termination	Contact configuration		Catalog number ◆	Weight
Supply	Consumption		N/O	N/C		lb/kg
AC	4.5 VA	Screw clamp	4	–	**CA2KN40●●**	.40/0.180
			3	1	**CA2KN31●●**	.40/0.180
			2	2	**CA2KN22●●**	.40/0.180
		Faston 1 x 6.35 or 2 x 2.8	4	–	**CA2KN407●●**	.40/0.180
			3	1	**CA2KN317●●**	.40/0.180
			2	2	**CA2KN227●●**	.40/0.180
		Solder pins for printed circuit board	4	–	**CA2KN405●●**	.46/0.210
			3	1	**CA2KN315●●**	.46/0.210
			2	2	**CA2KN225●●**	.46/0.210
DC	2.4 W	Screw clamp	4	–	**CA3KN40●●**	.50/0.225
			3	1	**CA3KN31●●**	.50/0.225
			2	2	**CA3KN22●●**	.50/0.225
		Faston 1 x 6.35 or 2 x 2.8	4	–	**CA3KN407●●**	.50/0.225
			3	1	**CA3KN317●●**	.50/0.225
			2	2	**CA3KN227●●**	.50/0.225
		Solder pins for printed circuit board	4	–	**CA3KN405●●**	.56/0.255
			3	1	**CA3KN315●●**	.56/0.255
			2	2	**CA3KN225●●**	.56/0.255

CA3KN407●●

Low consumption control relays

CA4KN405●●●

- Compatible with programmable controller outputs.
- LED indicator incorporated.
- Wide range coil (70 to 130% Uc), suppressor fitted as standard.
- Mounting on 35 mm DIN3 track or 4 screw direct mounting.
- Screws in open “ready-to-tighten” position.

DC	1.5 W	Screw clamp	4	–	**CA4KN40●●●**	.52/0.235
			3	1	**CA4KN31●●●**	.52/0.235
			2	2	**CA4KN22●●●**	.52/0.235
		Faston 1 x 6.35 or 2 x 2.8	4	–	**CA4KN407●●●**	.52/0.235
			3	1	**CA4KN317●●●**	.52/0.235
			2	2	**CA4KN227●●●**	.52/0.235
		Solder pins for printed circuit board	4	–	**CA4KN405●●●**	.58/0.265
			3	1	**CA4KN315●●●**	.58/0.265
			2	2	**CA4KN225●●●**	.58/0.265

◆ Complete catalog number by adding proper voltage code from page 27.

Application data: pages 30 and 31
Dimensions: page 29
Contact configurations: page 29
Accessories: pages 27, 28, 34 and 35

Instantaneous auxiliary contact blocks

LA1KN20

Clip-on front mounting, 1 block per control relay

Type of connection	Contact configuration N/O	N/C	Catalog number	Weight lb/kg
Screw clamp	2	–	**LA1KN20**	.10/0.045
	–	2	**LA1KN02**	.10/0.045
	1	1	**LA1KN11**	.10/0.045
	4	–	**LA1KN40** ▲	.10/0.045
	3	1	**LA1KN31** ▲	.10/0.045
	2	2	**LA1KN22** ▲	.10/0.045
	1	3	**LA1KN13** ▲	.10/0.045
	–	4	**LA1KN04** ▲	.10/0.045

LA1KN40

Faston 1 x 6.35 or 2 x 2.8	2	–	**LA1KN207**	.10/0.045
	–	2	**LA1KN027**	.10/0.045
	1	1	**LA1KN117**	.10/0.045
	4	–	**LA1KN407** ▲	.10/0.045
	3	1	**LA1KN317** ▲	.10/0.045
	2	2	**LA1KN227** ▲	.10/0.045
	1	3	**LA1KN137** ▲	.10/0.045
	–	4	**LA1KN047** ▲	.10/0.045

▲ Not to be used on CA4KN relays

Electronic time delay attachment

LA1KN407

- Relay output with common point changeover contact, 240 VAC or VDC, 2 A maximum.
- Control voltage: 85 to 110% Uc.
- Maximum switching capacity: 250 VA or 150 W.
- Operating temperature: 14 to 140°F (-10 to 60°C).
- Reset time: 1.5 s during the time delay period, 0.5 s after the time delay period.

Clip-on front mounting, 1 block per control relay

Voltage V	Type	Timing range s	Contact configuration	Catalog number	Weight lb/kg
24 to 48 VAC or VDC	On-delay	1 to 30	1 NO and 1 NC with a common	**LA2KT2E**	.09/0.040
110 to 240 VAC	On-delay	1 to 30	1 NO and 1 NC with a common	**LA2KT2U**	.09/0.040

Coil Voltages

CA2K control relays (80 to 115% Uc) *(85 to 110% Uc)*

Volts AC 50/60 Hz	**12**	**24**	**36**	**42**	**48**	**110**	**127**	***220/ 230***	**230**	***230/ 240***	***380/ 400***	**400**	***400/ 415***	**440**	**500**	***660/ 690***
Code	J7	B7	C7	D7	E7	F7	FC7	*M7*	P7	*U7*	*Q7*	V7	*N7*	R7	S7	*Y7*

Up to and including 240 V, coil with integral suppression device available: add **2** to the code required. Example: **J72**.

CA3K control relays (80 to 115% Uc)

Volts DC	**12**	**20**	**24**	**36**	**48**	**60**	**72**	**100**	**110**	**125**	**200**	**220**	**230**	**240**	**250**
Code	JD	ZD	BD	CD	ED	ND	SD	KD	FD	GD	LD	MD	MPD	MUD	UD

Coil with integral suppression device available: add **3** to the code required. Example: **JD3**.

CA4K, low consumption control relays (wide range coil: 70 to 130% Uc)

Volts DC	**12**	**24**	**48**	**72**
Code	JW3	BW3	EW3	SW3

Application data: pages 30 and 31
Dimensions: page 29
Contact configuration: page 29

Telemecanique

Description	Application		Sold in lots of	Catalog number	Weight lb/kg
Mounting plates for fixing	On 1 DIN1 track	Clip-on fixing	1	**LA9D973**	.06/0.025
	On 2 DIN3 tracks	110/120 mm fixing centres	1	**DX1AP25**	.14/0.065
Marker holder	Clips onto front of relay		100	**LA9D90**	.002/0.001
Clip-in markers	See page 35.				
Suppressor modules incorporating LED indicator	Clips onto front of relay, with orientation device. No tools required for connection.	For AC and DC voltages 12 to 24 V (varistor)	5	**LA4KE1B ▲**	.02/0.010
		For AC and DC voltages 32 to 48 V (varistor)	5	**LA4KE1E ▲**	.02/0.010
		For AC and DC voltages 50 to 250 V (varistor)	5	**LA4KE1U ▲**	.02/0.010
		For DC voltages 12 to 24 V (diode + Zener diode)	5	**LA4KC1B ✻**	.02/0.010
		For DC voltages 32 to 48 V (diode + Zener diode)	5	**LA4KC1E ✻**	.02/0.010
		For AC voltages 220 to 250 V (RC)	5	**LA4KA1U ◗**	.02/0.010

▲ Protection by limitation of the transient voltage to 2 Uc maximum.
Maximum reduction of the transient voltage peaks.
Slight time delay on drop-out (1.1 to 1.5 times normal).

✻ No overvoltage or oscillation frequency.
Polarized component.
Slight time delay on drop-out (1.1 to 1.5 times normal).

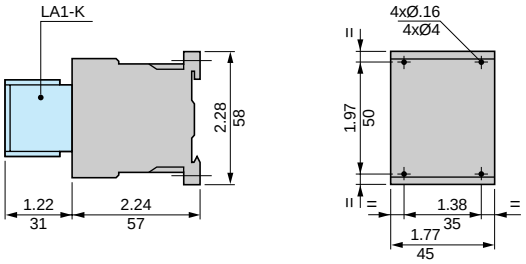
◗ Protection by limitation of the transient voltage to 3 Uc max. and limitation of the oscillation frequency.
Slight time delay on drop-out (1.2 times to 2 times normal).

Dimensions: page 27

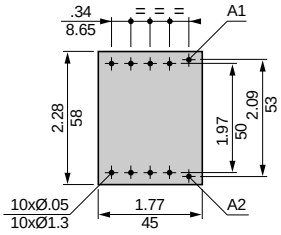
Telemecanique

CA2, CA3, CA4K control relays

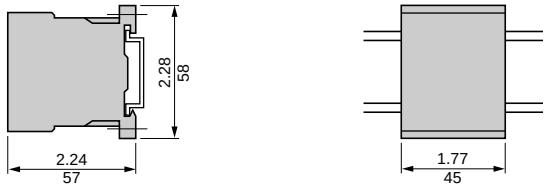
On panel



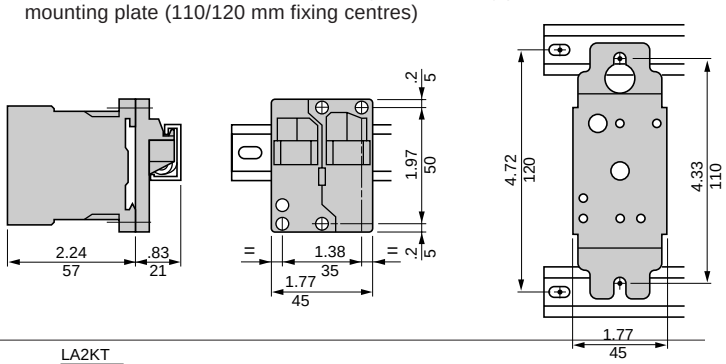
On printed circuit board



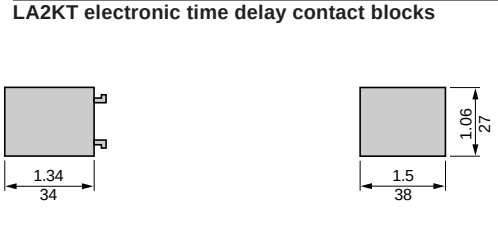
On AM1DP200 or AM1DE200 track (35 mm DIN3)

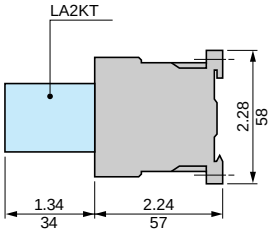


On asymmetrical rail with LA9D973 clip-on mounting plate or DX1AP25 mounting plate (110/120 mm fixing centres)



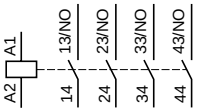
LA2KT electronic time delay contact blocks



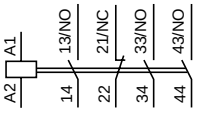


CA2, CA3, CA4K control relays

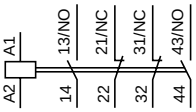
4 N/O



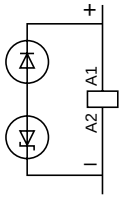
3 N/O + 1 N/C



2 N/O + 2 N/C

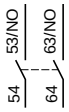


CA4K● coil (suppressor scheme)

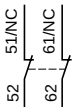


LA1K instantaneous auxiliary contact blocks for CA2, CA3, CA4-K

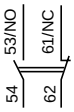
2 N/O



2 N/C

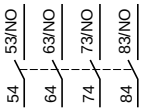


1 N/O + 1 N/C

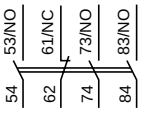


for CA2, CA3K

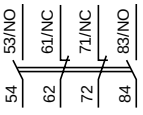
4 N/O



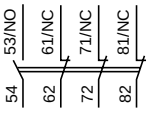
3 N/O + 1 N/C



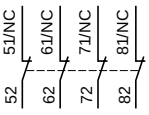
2 N/O + 2 N/C



1 N/O + 3 N/C

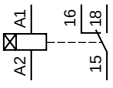


4 N/C

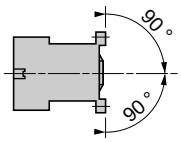
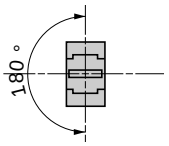
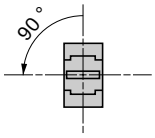
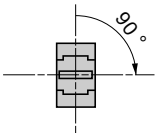


LA2KT electronic time delay contact blocks for CA2, CA3, CA4-K

1 C/O



Environment

Conforming to standards			IEC 947, NF C 63-140, VDE 0660, BS 5424		
Approvals			UL, CSA, DEMKO, NEMKO, SEMKO, FI		
Protective treatment	Conforming to IEC 68 (DIN 50016)		"TC" (Climateproof) See page 34.		
Degree of protection	Conforming to VDE 0106		Protection against direct finger contact		
Ambient air temperature	Storage	°F(°C)	-58 to 176 (-50 to 80)		
around the device	Operation	°F(°C)	-13 to 122 (-25 to 50)		
Maximum operating altitude	Without derating	ft(m)	6562 (2000m)		
Operating position	**Vertical axis**	**Horizontal axis**			
					
	Without derating	Without derating	With derating▲	With derating▲	
Flame resistance	Conforming to UL 94		Self-extinguishing V1		
	Conforming to NF F 16-101 and 16-102		Conforming to requirement 2		
Shock resistance	Control relay open		10 g		
(1/2 sine wave, 11 ms)	Control relay closed		15 g		
Vibration resistance	Control relay open		2 g		
5 to 300 Hz	Control relay closed		4 g		
Safe circuit separation	Conforming to VDE 0106 and IEC 536		VLSV ◆, up to 400 V		
Wire range		AWG	Min	Max	Max to IEC 947
Screw clamp terminals	Solid wire	(mm²)	One #16 (1.5)	Two #12 (4)	One #12 (4) and one #14 (2.5)
	Stranded wire without cable end	AWG (mm²)	One #20 (0.75)	Two #12 (4)	Two #14 (2.5)
	Stranded wire with cable end	AWG (mm²)	One #22 (0.50)	One #16 (1.5) and one #14 (2.5)	One #16 (1.5) and one #14 (2.5)
Faston connectors	Clip	in (mm)	Two .110 (2.8) or one .250 (6.35)		
Solder pins for printed circuit board	With locating device between power circuit and control circuit		4 mm x 35 microns		
Tightening torque	Philips head n° 2 and Ø 6	ft.lb (N.m)	7.1 (0.8)		
Terminal referencing	Conforming to standards EN 50005 and EN 50011		Up to 8 contacts		

◆ Very low safety voltage.
▲ Contact your local field sales office.

Control circuit characteristics

Type			**CA2K**	**CA3K**	**CA4K**
Rated control circuit voltage (Uc)		**V**	12 to 690 AC	12 to 250 DC	12 to 72 DC
Control voltage limits 122 °F	For operation		80 to 115% Uc	80 to 115% Uc	70 to 130% Uc
(≤ 50 °C) single voltage coil	For drop-out		≤ 0.20 Uc	≤ 0.10 Uc	≤ 0.10 Uc
Average consumption	Inrush		30 VA	2.4 W	1.5 W
at 68 °F (20 °C) and at Uc	Sealed		4.5 VA	2.4 W	1.5 W
Heat dissipation		**W**	1.3	2.4	1.5
Operating time	Between coil energization and				
at 68 °F (20 °C) and at Uc	- opening of the N/C contacts	**ms**	5 to 15	25 to 35	25 to 35
	- closing of the N/O contacts	**ms**	10 to 20	30 to 40	30 to 40
	Between coil de-energization and				
	- opening of the N/O contacts	**ms**	10 to 20	10	10 to 20
	- closing of the N/C contacts	**ms**	15 to 25	15	15 to 25
Maximum immunity to micro breaks		**ms**	2	2	2
Maximum operating rate	In operating cycles per hour		10,000	10,000	6000
Mechanical durability at Uc	50/60 Hz coil		10	–	–
In millions of operating cycles	Standard DC coil		–	20	–
	Wide range DC coil		–	–	30

Telemecanique

Contact characteristics of control relays and instantaneous contact blocks

Number of contacts	On **CA●K**			4
	On **LA1K**			2 or 4
Rated operational voltage (Ue)	Up to		**V**	690
Rated insulation voltage (Ui)	Conforming to BS 5424		**V**	690
	Conforming to UL 508		**V**	600
	Conforming to IEC 947		**V**	690
	Conforming to VDE 0110 group C		**V**	750
	Conforming to CSA C 22-2 n° 14		**V**	600
Conventional thermal current (Ith)	For ambient temperature ≤ 122°F (50°C)		**A**	10
Frequency limits of operational current			**Hz**	Up to 400
Minimum switching capacity	Minimum voltage (DIN 19 240)		**V**	17 ($\lambda < 10^{-8}$)
	Minimum current		**mA**	5
Short-circuit protection	Conforming to IEC 947 and VDE 0660, gG (gl) fuse		**A**	10
Rated making capacity	Conforming to IEC 947	I rms	**A**	110
Overload current	Permissible for	1 s	**A**	80
		500 ms	**A**	90
		100 ms	**A**	110
Impedance			**MΩ**	> 10
Non-overlap distance	Positively guided contacts ◆ as per INRS and BIA spec.		**mm**	0.5
UL508 contact rating	See page 12 for details.			A600, Q600

◆ Positively guided contacts: CNA approved.

Operational power of contacts
Conforming to IEC 947

AC supply, category AC-15
Electrical durability (valid up to 3600 operating cycles per hour on an inductive load such as the coil of an electromagnet: making current (cos φ 0.7) = 10 times breaking current (cos φ 0.4).

V	24	48	110/ 127	220/ 230	380/ 400	440	600/ 690
1 million operating cycles	VA	48	96	240	440	800	880	1200
3 million operating cycles	VA	17	34	86	158	288	317	500
10 million operating cycles	VA	7	14	36	66	120	132	200
Occasional making capacity	VA	1000	2050	5000	10 000	14 000	13 000	9000

DC supply, category DC-13
Electrical durability (valid up to 1200 operating cycles per hour on an inductive load such as the coil of an electromagnet, without economy resistor, the time constant increasing with the load.

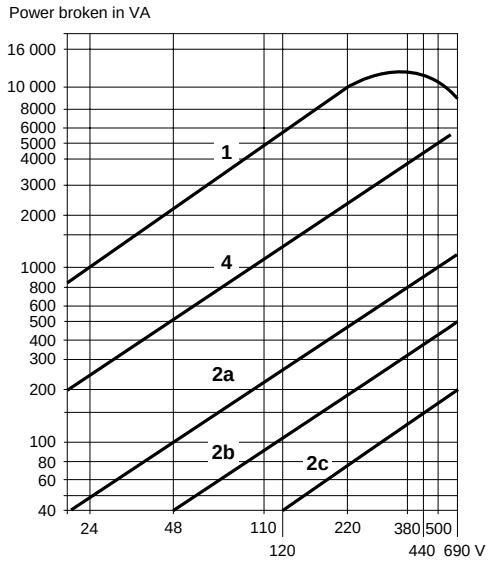
V	24	48	110	220	440	600
W	120	80	60	52	51	50
W	55	38	30	28	26	25
W	15	11	9	8	7	6
W	720	600	400	300	230	200

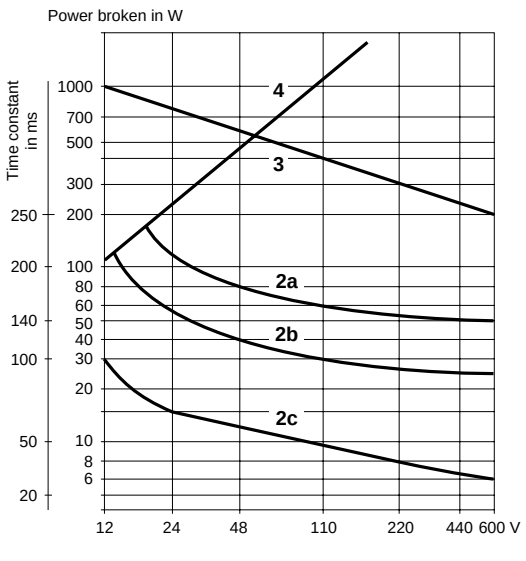
1 Breaking limit of contacts valid for:
- maximum of 50 operating cycles at 10 s intervals (breaking current = making current x cos φ 0.7).

2 Electrical durability of contacts for:
- 1 million operating cycles (2a)
- 3 million operating cycles (2b)
- 10 million operating cycles (2c).

3 Breaking limit of contacts valid for:
- maximum of 20 operating cycles at 10 s intervals with current passing for 0.5 s per operating cycle.

4 Thermal limit.





CAZSK11G7

LA1SK11

LA4SKEIU

– Miniature size saves space.
– Mounts on 35mm DIN3 track or can be mounted directly to a panel.
– Up to 4 poles

Control circuit supply	Consumption	Type of termination	Contact configuration NO	Contact configuration NC	Catalog Number	Weight lb/kg
AC	4.2 VA	Screw clamp	1	1	**CA2SK11●●**	.24/.109
			2	0	**CA2SK20●●**	.24/.109
DC	2.2 W	Screw clamp	1	1	**CA3SK11●●**	.24/.109
			2	0	**CA3SK20●●**	.24/.109

Contact Adder Decks

Used to expand the CA2SK two pole relays to a four pole relay.

Type of termination	Contact configuration NO	Contact configuration NC	Catalog Number	Weight lb/kg
Screw clamp	2	0	**LA1SK20**	.05/.022
	1	1	**LA1SK11**	.05/.022
	0	2	**LA1SK02**	.05/.022

Transient suppressor module

Dampens the voltage spike that may occur when the relay coil is de-energized. The spike may adversely affect solid state equipment near the relay. The transient suppressor module snaps into a cavity located in the side of the relay. These modules can be used with CA2SK and CA3SK relays.

Control circuit voltage	Catalog Number	Weight lb./kg.
24-48 V 50/60 Hz 24-48 VDC	**LA4SKEIE**	.02/.010
110-250 V 50/60 Hz 110-250 VDC	**LA4SKEIU**	.02/.010

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Coil voltage codes

Voltage	12	24	36	48	110	120	220	230	240	380	400
50/60 Hz	—	B7	—	E7	F7	G7	M7	P7	U7	Q7	V7
DC	JD	—	CD	ED	SD	—	—	—	—	—	—

Environment

Type			CA2	CA3
Conforming to standards			IEC337-1, 947-1, 947-5, NF C 63-140, VDE0660, BS4794	
Approvals			UL Listed File E148.39 CCN NKCR, CSA File LR12721 Class 3211 03, SEMKO, SEV, DEMKO	
Operating temperature range		°F(°C)	-4 to 131 (-20 to 55)	
Wire range	Stranded wire	AWG (mm²)	Two #20 (0.75) to #16 (1.5)	
	Solid wire	AWG (mm²)	Two #18 (1) to #14 (2.5)	

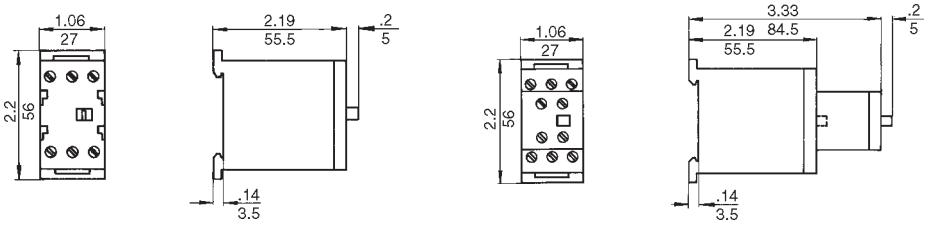
Control circuit characteristics

Type			CA2	CA3
Rated insulation voltage	Conforming to UL508	V	600	600
	Conforming to VDE 0110 Group C	V	660	660
Rated coil voltage Uc		V	24 to 600	12 to 220
Permissible voltage variation			+10/-20% Uc	
Average consumption	Inrush		15.5 VA	2.2 W
	Sealed		4.2 VA	2.2 W
Operating time	Pick-up	ms	8 to 16	10 to 18
	Drop-out	ms	6 to 8	4 to 6
Mechanical life	In millions of operations		10	10

Contact ratings

AC								DC	
	Inductive 35% PF						Resistive 75% PF		
		Make		Break					
Volts	NEMA rating	Amps	VA	Amps	VA	Continuous amps	Make, break & cont. amps	Volts	Continuous amps
120		60	7200	6	720	10	10	24	3
240	A600	30	7200	3	720	10	10	60	2
480		15	7200	1.5	720	10	10	110	.8
600		12	7200	1.2	720	10	10	240	.2

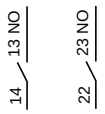
Approximate dimensions



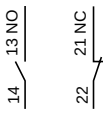
Contact configurations

Relays

2 N/O

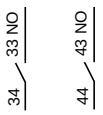


1 N/O

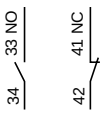


Contact adder decks

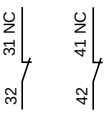
2 N/O



1 N/O and 1 N/O



2 N/C



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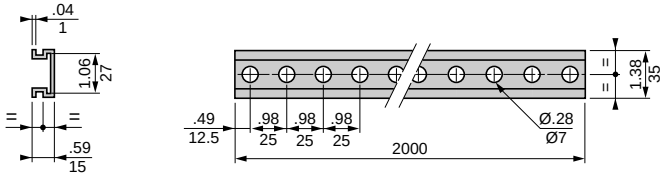
AM1ED200

AM1DE200

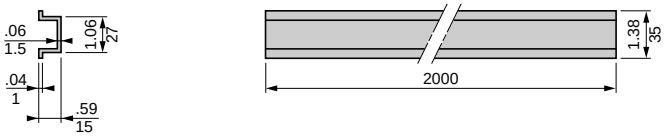
AM1DP200

	Description	Length	Catalog No.	Standard Pack
	15 mm depth 1 mm steel, zinc chromated	2 m 78.74"	AM1ED200	10
	15 mm depth 1.5 mm steel, zinc chromated	2 m 78.74"	AM1DE200	10
	7.5 mm depth 1 mm steel, zinc chromated	2 m 78.74"	AM1DP200	10

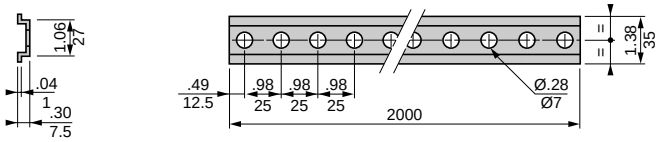
AM1ED200



AM1DE200

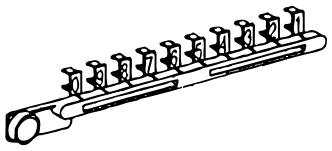
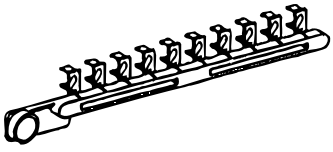
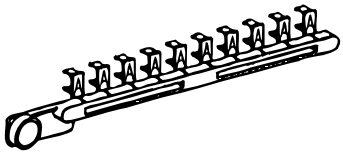
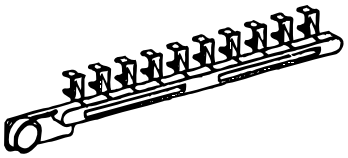


AM1DP200



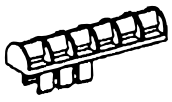
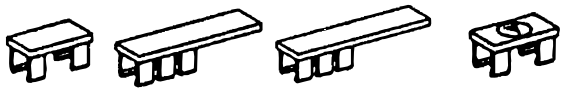
Telemecanique

Clip-in Marker Strips ▲

10 identical numbers (or symbols)	10 numbers 0 to 9	10 identical letters	
AB1R●●	AB1R11	AB1G●	AB1G●
			
Sold in lots of 25 identical strips Unit weight: 2g	Sold in lots of 25 identical strips Unit weight: 2g	Sold in lots of 25 identical strips Unit weight: 2g	Sold in lots of 25 identical strips Unit weight: 2g

Marking	Reference of 10-number tag strip	Marking	Reference of 10-number tag strip	Marking	Reference of 10-number tag strip	Marking	Reference of 10-number tag strip
Blank	AB1RV	0-9	AB1R11	A	AB1GA	N	AB1GN
1	AB1R1			B	AB1GB	O	AB1GO
2	AB1R2			C	AB1GC	P	AB1GP
3	AB1R3			D	AB1GD	Q	AB1GQ
4	AB1R4			E	AB1GE	R	AB1GR
5	AB1R5			F	AB1GF	S	AB1GS
6	AB1R6			G	AB1GG	T	AB1GT
7	AB1R7			H	AB1GH	U	AB1GU
8	AB1R8			I	AB1GI	V	AB1GV
9	AB1R9			J	AB1GJ	W	AB1GW
0	AB1R0			K	AB1GK	X	AB1GX
+	AB1R12			L	AB1GL	Y	AB1GY
_	AB1R13			M	AB1GM	Z	AB1GZ

Marking Components

Holder for 6 markers	Blank clip-in marker	Clip-in marker with earth symbol ■
AB1SR6	AB1SA●	AB1RT
		
Sold in lots of 200	Sold in lots of 500	Sold in lots of 500
Unit weight: 0.6 g	Unit weight: 0.3 g (AB1SA1,SA2) 0.4 g (AB1SA3)	Unit weight: 0.3 g

	Size mm	Unit reference	Size mm	Unit reference
Holder for up to 6 AB1R or G markers	4.5x8.3	AB1SA1	4.5x8.3	AB1RT
	4.5x14	AB1SA2		
	4.5x19	AB1SA3		

▲ Can also be used on other Telemecanique products such as GV1 thermal-magnetic circuit breakers, modular contractors, "D" range contactors, "K" range contactors, etc.
■ Black on white background

In order to make the correct choice of protective treatment, two points should be remembered:
1. The prevailing climate of the country is never the only criterion
2. Only the ambient conditions in the immediate vicinity of the equipment need be considered.

TH Treatment — Standard treatment

The D-Line and K-Line relay are TH treated as standard, and because of this can be used in particularly severe conditions such as:
– hot and humid atmospheres with prevailing heavy condensation,
– dripping water and fungi.

Insulating parts use plastic materials which resist attack from insects (termites, beetles…).
These qualities have led to this treatment being called **Tropical Finish**.

Characteristics

Steel parts are usually chrome galvanized or chrome galvanized or chrome cadmium plated; when the item has a mechanical function it can also be painted.

Parts with an insulating function are manufactured in a material with improved leakage resistance, (standards IEC 112, NFC 26-220, DIN 53480) and are treated to be fungus resistant.

Metallic enclosures are given a baked enamel finish, applied over a protective phosphatizing coat.

TH treatment is suitable for the most severe climatic conditions and conforms to the following standards:

UTE Publication C 63-100 (treatment II)
12 successive humid heat cycles at:
+40°C / **104°F** temperature and 95% relative humidity
+48 hours of salt spray.

Standards DIN 50015-50016, alternating environmental chamber conditions:
+23°C / **73°F** temperature and 83% relative humidity
+40°C / **104°F** temperature and 92% relative humidity.

Utilization limits

TH treatment can be used in the following temperature and humidity conditions:
Temperature from +20 to +40°C / **+68 to +104°F** with a relative humidity which can reach 95%.

Telemecanique

NOTES:

Telemecanique

NOTES:

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Square D Company
Industrial Control Business
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