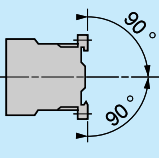
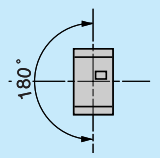
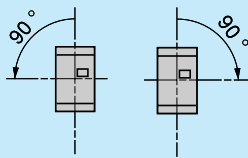


Environment					
Conforming to standards		IEC 60947, NF C 63-140, VDE 0660, BS 5424			
Product certifications		UL, CSA			
Operating positions		<p>Vertical axis</p>  <p>Without derating</p>	<p>Horizontal axis</p>  <p>Without derating</p>	 <p>Possible positions for CA2 K only, with derating, please consult your Regional Sales Office.</p>	
Connection		Min.	Max.		
Screw clamp connections	Solid cable	mm ²	1 x 1.5	2 x 4	Max. to IEC 60947
	Flexible cable without cable end	mm ²	1 x 0.75	2 x 4	1 x 4 + 1 x 2.5
	Flexible cable with cable end	mm ²	1 x 0.34	1 x 1.5 + 1 x 2.5	2 x 2.5
Spring terminals	Solid cable	mm ²	1 x 0.75	1 x 1.5	1 x 1.5 + 1 x 2.5
	Flexible cable without cable end	mm ²	1 x 0.75	1 x 1.5	2 x 1.5
Faston connectors	Clip	mm	2 x 2.8 or 1 x 6.35		
Solder pins for printed circuit board	With locating device between power and control circuits		4 mm x 35 microns		
Tightening torque	Philips head n° 2 and Ø 6	N.m	0.8...1.3		
Terminal referencing	Conforming to standards EN 50005 and EN 50011		Up to 8 contacts		
Protective treatment	Conf. to IEC 60068 (DIN 50016)		"TC" (Klimafest, Climateproof)		
Degree of protection	Conforming to VDE 0106		Protection against direct finger contact (devices with screw clamp terminals or pins for printed circuit board)		
Ambient air temperature around the device	Storage	°C	- 50...+ 80		
	Operation	°C	- 25...+ 50		
Maximum operating altitude	Without derating	m	2000		
Vibration resistance 5...300 Hz	Control relay open		2 gn		
	Control relay closed		4 gn		
Flame resistance	Conforming to UL 94		Self-extinguishing material V1		
	Conforming to NF F 16-101 and 16-102		Conforming to requirement 2		
Shock resistance (1/2 sine wave, 11 ms)	Control relay open		10 gn		
	Control relay closed		15 gn		
Safety separation of circuits	Conforming to VDE 0106 and IEC 60536		SELV (Safety Extra Low Voltage), up to 400 V		

Control circuit characteristics					
Control relay type		CA2 K	CA3 K	CA4 K	
Rated control circuit voltage (Uc)	V	~ 12...690	~ 12...250	~ 12...120	
Control voltage limits (y 50 °C) single voltage coil	For operation	0.8...1.15 Uc	0.8...1.15 Uc	0.7...1.3 Uc	
	For drop-out	≤ 0.2 Uc	≤ 0.1 Uc	≤ 0.1 Uc	
Mechanical durability at Uc In millions of operating cycles	50/60 Hz coil	10	–	–	
	Standard ~ coil	–	20	–	
	Wide range, low consumption ~ coil	–	–	30	
Maximum operating rate	In operating cycles per hour	10 000	10 000	6000	
Average consumption at 20 °C and at Uc	Inrush	30 VA	3 W	1.8 W	
	Sealed	4.5 VA	3 W	1.8 W	
Heat dissipation	W	1.3	3	1.8	
Operating time at 20 °C and at Uc	Between coil energisation and opening of the N/C contacts	ms	5...15	25...35	25...35
		ms	10...20	30...40	30...40
	Between coil de-energisation and opening of the N/O contacts	ms	10...20	10	10...20
		ms	15...25	15	15...25
Maximum immunity to microbreaks	ms	2	2	2	

Contact characteristics of control relays and instantaneous contact blocks

Number of auxiliary contacts	On CA● K On LA1 K		4 2 or 4 for CA2 K and CA3 K , 2 for CA4 K
Rated operational voltage (Ue)	Up to	V	690
Rated insulation voltage (Ui)	Conforming to BS 5424	V	690
	Conforming to IEC 60947	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 ≤ 50 °C	A	10
Frequency of the operational current		Hz	Up to 400
Minimum switching capacity	U min (DIN 19 240)	V	17
	I min	mA	5
Short-circuit protection	Conforming to IEC 60947 and VDE 0660, gG fuse	A	10
Rated making capacity	Conforming to IEC 60947 I rms	A	110
Short-time rating	Permissible for		
	1 s	A	80
	500 ms	A	90
	100 ms	A	110
Insulation resistance		MΩ	> 10
Non-overlap distance	CA● K and LA1 K: linked contacts conforming to INRS, BIA and CNA specifications	mm	0.5 (see schemes page 22004/3)

Operational power of contacts conforming to IEC 60947

a.c. supply, category AC-15

Electrical durability (valid for up to 3600 operating cycles/hour) on an inductive load such as the coil of an electromagnet: making current ($\cos \varphi 0.7$) = 10 times the power broken ($\cos \varphi 0.4$)

d.c. supply, category DC-13

Electrical durability (valid for 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 load.

	V	24	48	110/127	220/230	380/400	440	600/690	V	24	48	110	220	440	600
1 million operating cycles	VA	48	96	240	440	800	880	1200	W	120	80	60	52	51	50
3 million operating cycles	VA	17	34	86	158	288	317	500	W	55	38	30	28	26	25
10 million operating cycles	VA	7	14	36	66	120	132	200	W	15	11	9	8	7	6
Occasional making capacity	VA	1000	2050	5000	10 000	14 000	13 000	9000	W	720	600	400	300	230	200

1 Breaking limit of contacts valid for:

- maximum of 50 operating cycles at 10 s intervals (power broken = making current x $\cos \varphi 0.7$).

2 Electrical durability of contacts for:

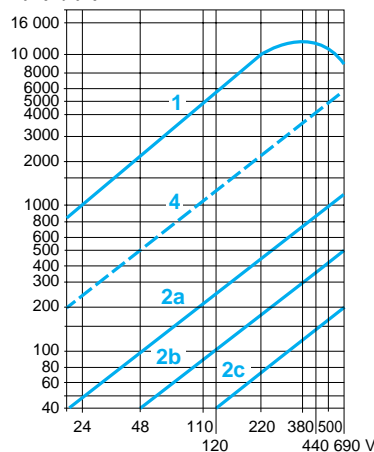
- 1 million operating cycles (2a)
- 3 million operating cycles (2b)
- 10 million operating cycles (2c).

3 Breaking limit of contacts valid for:

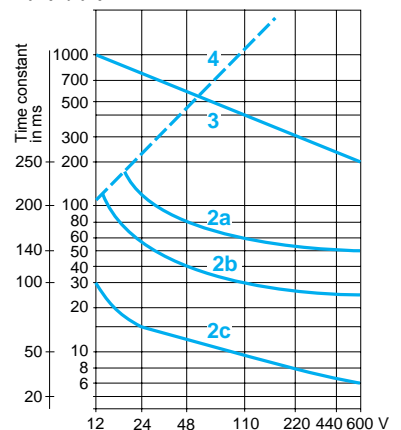
- maximum of 20 operating cycles at 10 s intervals with current passing for 0.5 s per operating cycle.

4 Thermal limit

Power broken in VA



Power broken in W



Control relays

k control relays

For a.c. or d.c. control circuit

816892



CA2 KN40●●

Control relays for a.c. control circuit

- Mounting on 35 mm $\underline{\text{U}}$ rail or \varnothing 4 screw fixing.
- Screws in the open "ready-to-tighten" position.

Control circuit Consumption	Auxiliary contacts	Basic reference, to be completed by adding the voltage code (1)	Weight kg
Screw clamp connections			
4.5 VA	4 –	CA2 KN40●●	0.180
	3 1	CA2 KN31●●	0.180
	2 2	CA2 KN22●●	0.180

816891



CA2 KN403●●

Spring terminal connections			
4.5 VA	4 –	CA2 KN403●●	0.180
	3 1	CA2 KN313●●	0.180
	2 2	CA2 KN223●●	0.180

Faston connectors, 1 x 6.35 or 2 x 2.8			
4.5 VA	4 –	CA2 KN407●●	0.180
	3 1	CA2 KN317●●	0.180
	2 2	CA2 KN227●●	0.180

Solder pins for printed circuit boards			
4.5 VA	4 –	CA2 KN405●●	0.210
	3 1	CA2 KN315●●	0.210
	2 2	CA2 KN225●●	0.210

Control relays for d.c. control circuit

- Mounting on 35 mm $\underline{\text{U}}$ rail or \varnothing 4 screw fixing.
- Screws in the open "ready-to-tighten" position.

8169411



CA3 KN407●●

Screw clamp connections			
3 W	4 –	CA3 KN40●●	0.225
	3 1	CA3 KN31●●	0.225
	2 2	CA3 KN22●●	0.225

Spring terminal connections			
3 W	4 –	CA3 KN403●●	0.225
	3 1	CA3 KN313●●	0.225
	2 2	CA3 KN223●●	0.225

Faston connectors, 1 x 6.35 or 2 x 2.8			
3 W	4 –	CA3 KN407●●	0.225
	3 1	CA3 KN317●●	0.225
	2 2	CA3 KN227●●	0.225

Solder pins for printed circuit boards			
3 W	4 –	CA3 KN405●●	0.255
	3 1	CA3 KN315●●	0.255
	2 2	CA3 KN225●●	0.255

(1) Standard control circuit voltages (for other voltages, please consult your Regional Sales Office):

Control relays CA2 K (0.8...1.15 Uc) (0.85...1.1 Uc)

Volts ~	12	20	24(2)	36	42	48	110	115	127	220/230	230/240	380/400	400/415	440	500	660/690		
50/60 Hz										230	240	400	415			690		
Code	J7	Z7	B7	C7	D7	E7	F7	FE7	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

Control relays CA3 K (0.8...1.15 Uc)

Volts ---	12	20	24(2)	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.

(2) When connecting an electronic sensor or timer in series with the coil of the control relay, select a 20 V coil (~ code Z7, --- code ZD) so as to compensate for the incurred voltage drop.

Control relays

k control relays

For d.c. control circuit



CA4 KN40●●●

Low consumption control relays (d.c. control circuit)

- Mounting on 35 mm rail or Ø 4 screw fixing.
- Screws in the open "ready-to-tighten" position.

Control circuit Consumption	Auxiliary contacts	Basic reference, to be completed by adding the voltage code (1)	Weight kg
Screw clamp connections			
1.8 W	4 —	CA4 KN40●●	0.235
	3 1	CA4 KN31●●	0.235
	2 2	CA4 KN22●●	0.235
Spring terminal connections			
1.8 W	4 —	CA4 KN403●●	0.235
	3 1	CA4 KN313●●	0.235
	2 2	CA4 KN223●●	0.235
Faston connectors, 1 x 6.35 or 2 x 2.8			
1.8 W	4 —	CA4 KN407●●	0.235
	3 1	CA4 KN317●●	0.235
	2 2	CA4 KN227●●	0.235
Solder pins for printed circuit boards			
1.8 W	4 —	CA4 KN405●●	0.265
	3 1	CA4 KN315●●	0.265
	2 2	CA4 KN225●●	0.265

(1) Standard control circuit voltages (for other voltages, please consult your Regional Sales Office):

Control relays CA4 K (Wide range coil: 0.7...1.3 Uc)

Volts ~	12	20	24	48	72	110	120
Code	JW3	ZW3	BW3	EW3	SW3	FW3	GW3

Control relays

k control relays

Instantaneous and time delay auxiliary contact blocks



LA1 KN20



LA1 KN40

Instantaneous auxiliary contact blocks

Clip-on front mounting, 1 per control relay

Connection	Composition		Reference	Weight kg
Screw clamp terminals	2	–	LA1 KN20	0.045
	–	2	LA1 KN02	0.045
	1	1	LA1 KN11	0.045
	4	–	LA1 KN40 (1)	0.045
	3	1	LA1 KN31 (1)	0.045
	2	2	LA1 KN22 (1)	0.045
	1	3	LA1 KN13 (1)	0.045
Spring terminals	–	4	LA1 KN04 (1)	0.045
	2	–	LA1 KN203	0.045
	–	2	LA1 KN023	0.045
	1	1	LA1 KN113	0.045
	4	–	LA1 KN403 (1)	0.045
	3	1	LA1 KN313 (1)	0.045
	2	2	LA1 KN223 (1)	0.045
Faston connectors 1 x 6.35 or 2 x 2.8	1	3	LA1 KN133 (1)	0.045
	–	4	LA1 KN043 (1)	0.045
	2	–	LA1 KN207	0.045
	–	2	LA1 KN027	0.045
	1	1	LA1 KN117	0.045
	4	–	LA1 KN407 (1)	0.045
	3	1	LA1 KN317 (1)	0.045
2	2	LA1 KN227 (1)	0.045	
1	3	LA1 KN137 (1)	0.045	
–	4	LA1 KN047 (1)	0.045	

Electronic time delay contact blocks

- Relay output with common point changeover contact, ~ or --- 240 V, 2 A maximum
- Control voltage 0.85...1.1 Uc
- Maximum switching capacity 250 VA or 150 W
- Operating temperature - 10...+ 60 °C
- Reset time: 1.5 s during the time delay period 0.5 s after the time delay period



LA2 KT2

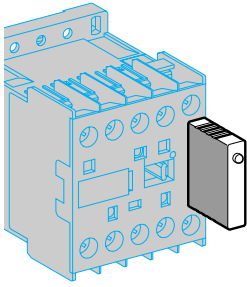
Clip-on front mounting, 1 per control relay

Voltage	Type	Timing range	Composition	Reference	Weight
V		s			kg
~ or --- 24...48	On-delay	1...30	1	LA2 KT2E	0.040
~ 110...240	On-delay	1...30	1	LA2 KT2U	0.040

Other versions

Electronic timers type RE4.
Please consult your Regional Sales Office.

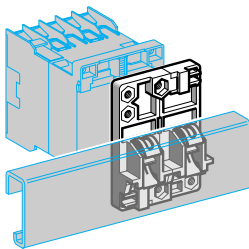
(1) Block of 4 contacts for use on CA2 K and CA3 K.



LA4 K●●●

Suppressor modules incorporating LED indicator

Mounting and connection	Type	For voltages	Sold in lots of	Unit reference	Weight kg
Clips onto front of relay with locating device. No tools required.	Varistor (1)	~ and --- 12...24 V	5	LA4 KE1B	0.010
		~ and --- 32...48 V	5	LA4 KE1E	0.010
		~ and --- 50...129 V	5	LA4 KE1FC	0.010
		~ and --- 130...250 V	5	LA4 KE1UG	0.010
	Diode + Zener diode (2)	--- 12...24 V	5	LA4 KC1B	0.010
		--- 32...48 V	5	LA4 KC1E	0.010
	RC (3)	~ 220...250 V	5	LA4 KA1U	0.010



LA9 D973

Mounting accessories

Description	Application		Sold in lots of	Unit reference	Weight kg
Mounting plates	On 1 □ rail	Clip-on	1	LA9 D973	0.025
	On 2 □ rails	110/120 mm fixing centres	10	DX1 AP25	0.065

Marking accessories

Description	Application		Sold in lots of	Unit reference	Weight kg
Marker holder	Clip-on fixing on front face	–	100	LA9 D90	0.001
Clip-in markers	4 maximum per relay	Strips of 10 identical numbers 0 to 9	25	AB1 R● (4)	0.002
		Strips of 10 identical capital letters A to Z	25	AB1 G● (4)	0.002

(1) Protection provided by limiting the transient voltage to 2 Uc max.
Maximum reduction of transient voltage peaks.

Slight increase in drop-out time (1.1 to 1.5 times the normal time).

(2) No overvoltage or oscillating frequency.

Polarised component.

Slight increase in drop-out time (1.1 to 1.5 times the normal time).

(3) Protection by limiting the transient voltage to 3 Uc max. and limitation of the oscillating frequency.

Slight increase in drop-out time (1.2 to 2 times the normal time).

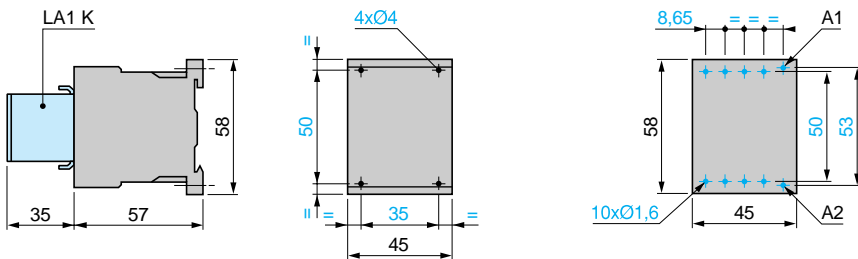
(4) Complete the reference by replacing the dot with the required character.

Control relays

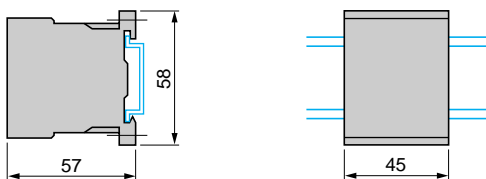
CA2 K, CA3 K, CA4 K

On panel

On printed circuit board



On mounting rail AM1 DP200 or AM1 DE200 (L 35 mm)

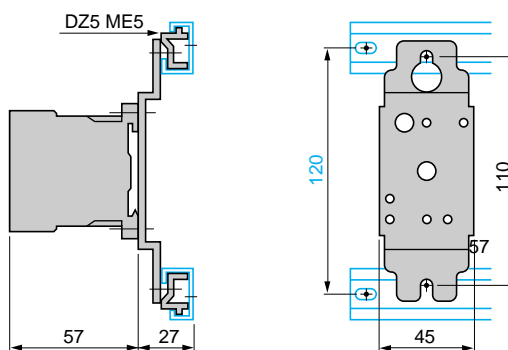
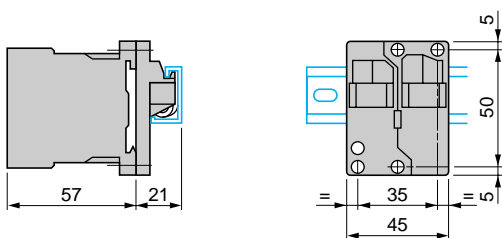


LA9 D973

On asymmetrical rail with clip-on mounting plates

DX1 AP25

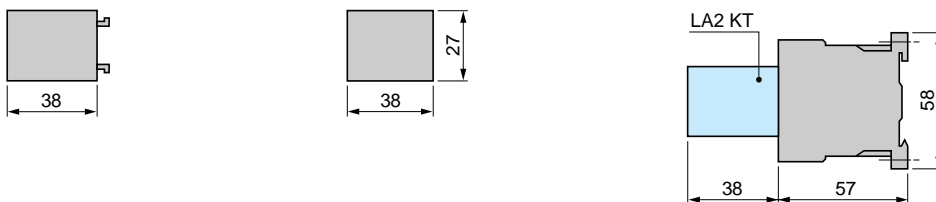
On asymmetrical rail with clip-on mounting plates



Electronic time delay contact blocks

LA2 KT

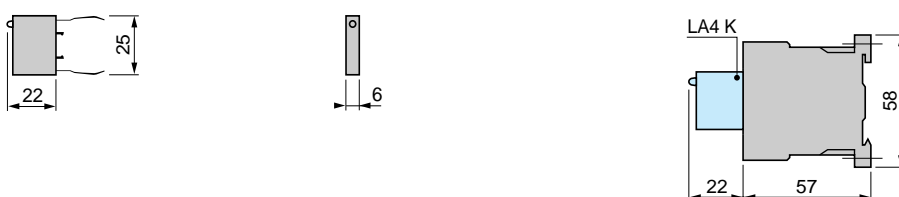
On control relay



Suppressor modules

LA4 K

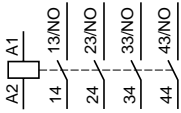
On control relay



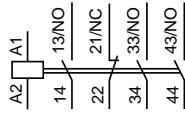
Control relays

CA2 K, CA3 K, CA4 K

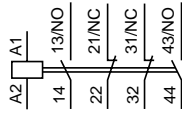
4 N/O



3 N/O + 1 N/C

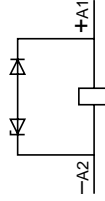


2 N/O + 2 N/C

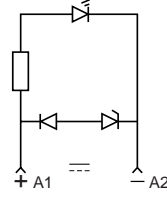


With integral suppression device

CA3 K



CA4 K

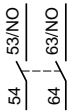


Instantaneous auxiliary contact blocks LA1 K

For CA2 K, CA3 K, CA4 K

2 N/O

LA1 KN20,
LA1 KN207



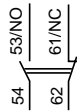
2 N/C

LA1 KN02,
LA1 KN027



1 N/O + 1 N/C

LA1 KN11,
LA1 KN117



For CA2 K, CA3 K

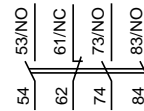
4 N/O

LA1 KN40,
LA1 KN407



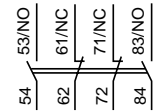
3 N/O + 1 N/C

LA1 KN31,
LA1 KN317



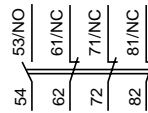
2 N/O + 2 N/C

LA1 KN22,
LA1 KN227



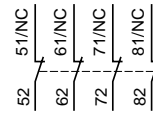
1 N/O + 3 N/C

LA1 KN13, LA1 KN137



4 N/C

LA1 KN04, LA1 KN047

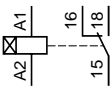


Electronic time delay contact blocks LA2 KT

For CA2 K, CA3 K, CA4 K

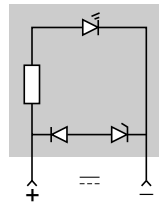
1 C/O

LA2 KT2



Suppressor modules

LA4 KC



LA4 KE

