

RE 1 timing relays

Solid state output, width 17.5 mm

References :
[page 28411/3](#)
 Dimensions, schemes :
[page 28411/4](#)
 Compatibility :
[page 28411/5](#)

Characteristics

Type			RE1-LA (On-delay)	RE1-LC (Off-delay)
Environment				
Conforming to standards			IEC 144, 158-1 and 255-5, NF C 20-010, 20-040 and 63-030, VDE 0110 C and EN 50005	
Product certifications			CSA, NEMKO, SEMKO, BV	NEMKO, BV
Protective treatment			"TH"	"TH"
Ambient air temperature around the device	Operation	°C	- 25...+ 60	- 25...+ 60
	Storage	°C	- 40...+ 85	- 40...+ 85
Rated insulation voltage (Ui)	Conforming to IEC 158-1 and CSA	V	IEC 158-1 : 250; CSA : 300	IEC 158-1 : 250 ; CSA : 300
Vibration resistance Conforming to NF C 20-616 & IEC 68-2-6	Severity	A	55	55
	Permissible acceleration		5 gn (60...500 Hz)	5 gn (60...500 Hz)
Shock resistance Conforming to NF C 20-608	Severity	A	50	50
	Permissible acceleration		50 gn (pulse duration 11 ms)	50 gn (pulse duration 11 ms)
Degree of protection			IP 40	IP 40
Maximum operating altitude	Without derating	m	3000	3000
Operating positions	Without derating		Any position	Any position
Cabling	Using cable	mm ²	1 x 0.75 to 2 x 1.5, with or without cable end; captive screw clamps	
	Using Faston connectors		2 x 2.8 or 2 x 6.35	
	Using open or closed tags		Removable screw clamps	

Control circuit characteristics

Supply voltage	And permissible variation	V	\sim and \equiv 24...240; 0.8...1.1 Un	\sim 24...240; 0.8...1.1 Un
Frequency	And permissible variation	Hz	50/60 \pm 20 %	50/60 \pm 20 %
Control contact	Hard-wired connection only		-	RE1-LC : connecting cable to timer \leq 10 m

Time delay characteristics

Timing range			0.1...3 s; 1...30 s; 10...300 s; 2...60 min	
Setting accuracy			0.1...300 s : \leq 10 % of the full scale 2...60 min : \leq 15 % of the full scale	
Repeat accuracy	Conforming to VDE 0435		\pm 3 % (0...40 °C)	\pm 3 % (0...40 °C)
Reset time during the time delay period	Range from 0.1...300 s	ms	150 (25 after the time delay)	200
	Range from 2...60 min	ms	650 (25 after the time delay)	1600
Maximum immunity to micro-breaks during the time delay period	Range from 0.1...300 s	ms	10 (2 after the time delay)	20
	Range from 2...60 min	ms	200 (2 after the time delay)	200
Time delay indication	By integral LED		LED illuminates during the time delay period	

Switching characteristics (solid state type)

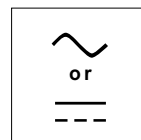
Maximum continuous current	At ambient θ : 20 °C	A	0.7 (minimum 10 mA)	0.7 (minimum 10 mA)
Maximum short time rating	For 10 ms	A	15	15
Volt drop, "closed state"		V	3 max to 0.7 A	3 max to 0.7 A
Leakage current "open state"		mA	\leq 5	\leq 1
Maximum power loss		W	2.5	4
Derating	For temperature > 20 °C	mA	5 per °C	5 per °C
Overload protection	Conforming to IEC 255-5		3 kV 0.5 joule	3 kV 0.5 joule
Electrical durability	In millions of operating cycles		100	100

RE 1 timing relays

Solid state output, width 17.5 mm

Characteristics :
page 28411/2
Dimensions, schemes :
page 28411/4
Compatibility :
page 28411/5

References



On-delay timers

Type of circuit	Type of connection	Timing range	Reference	Weight kg
a.c. or d.c. 24...240 V	For cable 1 x 0.75 to 2 x 1.5 mm² with or without cable end, recessed +/- screw clamp terminals.	0.1...3 s	RE1-LA001	0.055
		1...30 s	RE1-LA002	0.055
		10...300 s	RE1-LA003	0.055
		2...60 min	RE1-LA004	0.055
	For open or closed tags recessed +/- screw clamp terminals.	0.1...3 s	RE1-LA301	0.055
		1...30 s	RE1-LA302	0.055
		10...300 s	RE1-LA303	0.055
		2...60 min	RE1-LA304	0.055
	For Faston connectors 2 x 2.8 or 2 x 6.35	0.1...3 s	RE1-LA101	0.055
		1...30 s	RE1-LA102	0.055
		10...300 s	RE1-LA103	0.055
		2...60 min	RE1-LA104	0.055



RE1-LA001



RE1-LA301



RE1-LC013



RE1-LC112

Off-delay timers

a.c. 24...240 V	For cable 1 x 0.75 to 2 x 1.5 mm² with or without cable end, recessed +/- screw clamp terminals.	0.1...3 s	RE1-LC011	0.055
		1...30 s	RE1-LC012	0.055
		10...300 s	RE1-LC013	0.055
		2...60 min	RE1-LC014	0.055
	For open or closed tags recessed +/- screw clamp terminals.	0.1...3 s	RE1-LC311	0.055
		1...30 s	RE1-LC312	0.055
		10...300 s	RE1-LC313	0.055
		2...60 min	RE1-LC314	0.055
	For Faston connectors 2 x 2.8 or 2 x 6.35	0.1...3 s	RE1-LC111	0.055
		1...30 s	RE1-LC112	0.055
		10...300 s	RE1-LC113	0.055
		2...60 min	RE1-LC114	0.055

Accessories (to be ordered separately)

Description		Sold in lots of	Unit reference	Weight kg
Lead sealing kit		10	LA9-RE01	0.005
Mounting plate	For M4 screws, 40 mm centres	10	AM1-PT01	0.020
Clip-in markers (5 max. per timer)	Strip of 10 identical numbers (0 to 9)	25	AB1-R (1)	0.002
	Strip of 10 identical capital letters (A to Z)	25	AB1-G (1)	0.002

(1) To order, add the required number or letter to the end of the reference.

Other versions

Cabling by captive or removable screw clamp connections; Faston connectors.
For other information : bulk purchase, prices, delivery times, please consult your Regional Sales Office.

RE 1 timing relays

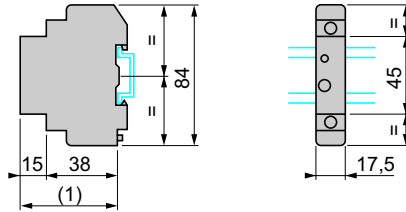
Solid state output, width 17.5 mm

Dimensions, mounting, schemes

Characteristics :
page 28411/2
References :
page 28411/3
Compatibility :
page 28411/5

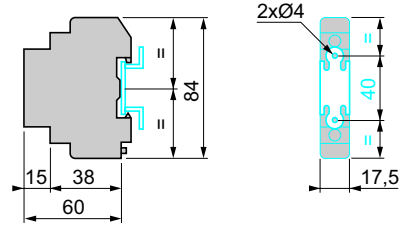
Dimensions and mounting methods for timers RE1-LA and LC

Mounting on AM1-DP200, AM1-DE200 rail



(1) 60 with AM1-DP, 67.5 with AM1-DE.

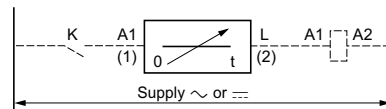
Mounting with plate AM1-PT01



Wiring schemes

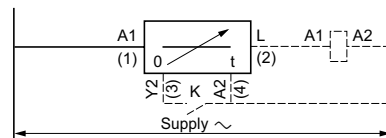
Caution : The terminal references enclosed in brackets refer to old version electronic timers.

RE1-LA On-delay



The timer is connected in series between the load which requires delayed energisation and switch K. The mains supply can be a.c. or d.c. with any voltage between 24 V and 240 V. (See page opposite for use of timer in conjunction with other Telemecanique products).

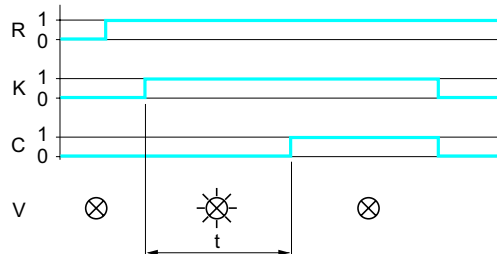
RE1-LC Off-delay



The timer is connected in series with the load which requires delayed de-energisation. Switch K is linked to terminals Y2 and A2 of the timer and terminal A2 is linked to the mains supply as shown in the scheme opposite. The unit operates on a.c. current at a voltage between 24 V and 240 V. (See page opposite for use of timer in conjunction with other Telemecanique products).

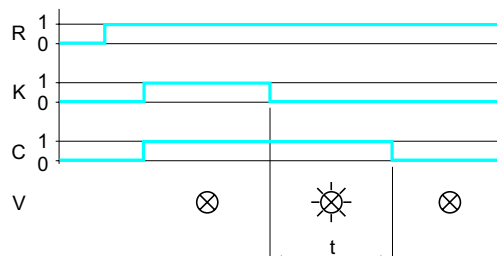
Sequential diagrams

RE1-LA On-delay



Mains supply R must be switched on. When switch K closes, the set timing period t starts and built-in indicator V lights up simultaneously. When the set time period t has elapsed, load C is energised and indicator V goes out. Load C remains energised until switch K opens or until the mains supply R is switched off.

RE1-LC Off-delay



Mains supply R must be switched on. When switch K closes, load C is energised. When switch K opens, timing starts and built-in indicator V lights up simultaneously. When set time t has elapsed, load C is de-energised and indicator V goes out. Load C then remains de-energised until switch K closes again.

RE 1 timing relays

Solid state output, width 17.5 mm

Characteristics :
page 28411/2
References :
page 28411/3
Dimensions and schemes :
page 28411/4

Compatibility with other Telemecanique products

The electronic timer can only operate correctly if the characteristics of the equipment with which it is associated are compatible with the switching characteristics of the timer.

a.c. circuit 50 or 60 Hz



RE1-LA001

All RE1-LA and RE1-LC electronic timers are compatible with the Telemecanique a.c. controlled components listed below :

Contactors for electricity supply authority dual tariffs, control relays, plug-in control relays

Type	Operational voltage ~	Comments
GY1-M	220 V 50 Hz	-
CA2-K	24...127 V 50/60 Hz for RE1-LA 24...240 V 50/60 Hz for RE1-LC	on 24 V : use a CA2-KN●●●Z7 -
CA2-DN	24...240 V 50/60 Hz	on 24 V : use a CA2-DN●●Z7
CA2-DK	24...240 V 50/60 Hz	on 24 V : use a CA2-DK●●Z7
RHN, RHK	24...127 V 50/60 Hz	on 24 V : use an RHN, RHK-●●●JE

Mini-contactors and contactors

LC1-K	24...127 V 50/60 Hz for RE1-LA 24...240 V 50/60 Hz for RE1-LC	on 24 V : use an LC1-K●●●●Z7 -
LC1-D09	24...240 V 50/60 Hz	on 24 V : use an LC1-D09●●●Z7
LC1-D12	24...240 V 50/60 Hz	on 24 V : use an LC1-D12●●●Z7
LC1-D18	24...240 V 50/60 Hz	on 24 V : use an LC1-D18●●●Z7
LC1-D25	24...240 V 50/60 Hz	on 24 V : use an LC1-D25●●●Z7
LC1-D32	24...240 V 50/60 Hz	on 24 V : use an LC1-D32●●●Z7
LC1-D40 to D95	110...240 V 50/60 Hz	-

Integral 18, 32 and 63 contactor breakers

LD1, LD5-LB	110...240 V 50/60 Hz	-
LD1, LD4, LD5-LC and LD	110...240 V 50/60 Hz	-



RE1-LC112

Contactors

Type	Supply voltage ~	Coil	Rectifier
LC1-F115, F150, F185, F225, F265, F330	220, 240 V 50/60 Hz 220 V 50/60 Hz 240 V 50/60 Hz	LX1-FF, FG, FH●●●2 LX9-FJ931 + LX9-FJ932 +	- DR5-TE4U DR5-TE4U
LC1-F500	220 V 50/60 Hz 240 V 50/60 Hz	LX9-FK931 + LX9-FK932 +	DR5-TE4U DR5-TE4U
LC1-F630	220 V 50/60 Hz 240 V 50/60 Hz	LX9-FL930 + LX9-FL931 +	DR5-TE4U DR5-TE4U

d.c. circuit

RE1-LA timers are compatible with the components listed below :

Mini-control relays, control relays and plug-in control relays

Type	Supply voltage ---	Comments
CA3-K	24...72 V	on 24 V : use a CA3-KN●●ZD
CA3-DN	24...240 V	on 24 V : use a CA3-DN●●ZD
CA3-DK	24...240 V	on 24 V : use a CA3-DK●●ZD
CA4-DN	24 V	Use a CA4-DN●●BW
RHN	24...125 V	on 24 V : use an RHN-●●●JV
RHK	24...125 V	on 24 V : use an RHK-●●●JV

Mini-contactors and contactors

LP1-K	24...72 V	on 24 V : use an LP1-K●●●●ZD
LP4-K	24 V	Use an LP4-K●●●●BW3
LP1-D09 to D32	24...240 V	on 24 V : use an LP1-D●●●●ZD
LP1-D40 to D80	48...240 V	-
LP4-D12	24 V	Use an LP4-D12●●BW

Contactors

Type	Supply voltage ---	Coil
LC1-F115, F150	220 V 240 V	LX4-FF220 LX4-FF250
LC1-F185, F225	220 V 240 V	LX4-FG220 LX4-FG250
LC1-F265, F330	220 V 240 V	LX4-FH220 LX4-FH250

Other combinations For other operational voltages and other contactors, please consult your Regional Sales Office.



RE1-LA301

Zelio Time timing relays

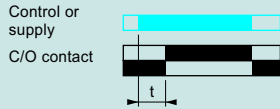
Functions and selection

Functions

Diagram

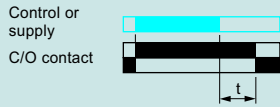
Operating principle

On-delay



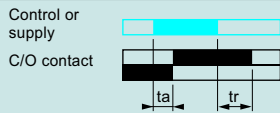
Timing starts when the relay is energised. When the set time delay (t) has elapsed, the output contact closes. When the relay is de-energised, the contact returns to its initial position. The output contact does not close if the duration of the control instruction is less than the set time delay. Timing can also be started by opening of a control contact (models with external control).

Off-delay



Energisation of the relay or closing of the control contact (models with external control) causes the output relay to close instantaneously. Timing starts when the relay is de-energised or when the control contact opens. When the set time delay (t) has elapsed, the contact returns to its initial position. If the energisation time or closing time of the control contact is less than the minimum time specified, the timing period does not start.

On and Off-delay



This function is a combination of the On and Off delay functions. The timing cycle must be controlled by an external contact.

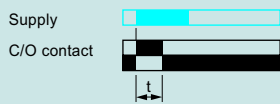
Symmetrical

The On and Off delays are equal.

Asymmetrical

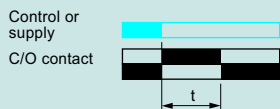
The On and Off delays are adjusted by 2 different potentiometers.

Timing relay with pulse on energisation



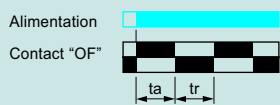
Energisation of the relay causes the output contact to close instantaneously and start the timing period. The contact returns to its initial position when the set time delay (t) has elapsed or if the supply is cut off before the end of the timing period.

Timing relay with pulse on de-energisation or on opening of a external control contact



De-energisation of the relay or opening of the external control contact (depending on model) causes the output contact to close instantaneously and start the timing period. When the set time delay (t) has elapsed, the contact returns to its initial position.

Flashing relay



Energisation of the relay starts the flashing period and causes the output relay to start the flashing cycle. When the relay is de-energised, the contact returns to its initial position.

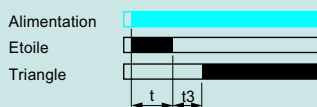
Symmetrical flashing relay

The On and Off flashing phases are identical.

Asymmetrical flashing relay

The On and Off flashing phases are adjusted by 2 different potentiometers (t_a and t_r).

Time delay relays for star-delta starters



Energisation of the relay causes the star contactor to close instantaneously and starts the timing period. When the set time delay (t) has elapsed, the star contactor returns to its initial position and the delta contactor closes, after a breaking time sufficient for the changeover.

Multifunction relays

On-delay - Pulse on energisation contact - Symmetrical flasher




Same functions as above +






























Off-delay - Pulse on energisation contact with externally controlled start - Symmetrical flasher

Same functions as above +

Star Delta starting (External control of start of the timing period is not possible for the star delta starting function).

Additional functions

-  **External control of starting:** opening of an external contact connected to the relay starts the timing period. Closing of this contact resets the timer.
-  **External control of partial stop of time delay:** closing of an external contact connected to the relay allows the timing period to be interrupted. The time elapsed is memorised. Timing restarts as soon as the contact opens. This type of control enables the totalising function to be performed.
-  **External adjustment of the time delay:** one or more external potentiometers can be used for remote adjustment of the timing period or periods.

	Output	Multifunction relay	See pages
	Solid state	RE9-TA	28466/2
	1 C/O	RE7-TL or RE8-TA	RE7: 28451/2, RE8: 28462/2
	2 C/O	RE7-TP	28451/2
	1 C/O	RE7-TM	28451/2
	Solid state	RE9-RA	28466/2
	1 C/O	RE7-RB11 or RE8-RB	RE7: 28453/2, RE8: 28462/2
	2 C/O	RE7-RL	28453/2
	2 C/O	RE7-RB13	28453/2
	1 C/O	RE8-RA	28462/2
	1 C/O	RE7-RA and RE7-RM	28453/2
	2 C/O	RE7-MA13	28452/2
	1 C/O	RE7-MA11	28452/2
	1 C/O	RE7-MV	28452/2
	1 C/O	RE7-PE or RE8-PE	RE7: 28454/2, RE8: 28463/2
	2 C/O	RE7-PP	28454/2
	1 C/O	RE8-PT	28463/2
	2 C/O	RE7-PD	28454/2
	1 C/O	RE7-PM	28454/2
	1 C/O	RE8-PD	28463/2
	1 C/O	RE7-CL or RE8-CL	RE7: 28455/2, RE8: 28462/2
	2 C/O	RE7-CP	28455/2
	1 C/O	RE7-CV	28455/2
	1 C/O	RE8-YG	28463/2
	2 C/O	RE7-YA and RE7-YR	28456/2
	1 N/C + N/O	RE8-YA	28463/2
	Output	Multifunction relay	See pages
	Solid state	RE9-MS	28467/2
	1 C/O	RE7-ML	28457/2
	2 C/O	RE7-MY13MW	28457/2
	2 C/O	RE7-MY13BU	28457/2