Timing relays

Zelio Time

Catalogue
January

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a brand of Schneider Electric

Telemecanique

Contents

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Applications	**These timing relays enable simple automation cycles to be set up using wired logic. They can also be used to complement the functions of PLCs.**			
Output	**Solid state** **Timing relays with solid state output reduce the amount of wiring required (wired in series). The durability of these timing relays is independent of the number of operating cycles.**		**Relay** **Relay outputs provide complete isolation between the supply and outut circuits.** **It is possible to have several output circuits.**	
				
Type	Modular	Industrial	Modular	Industrial
Timing ranges	*7 ranges :* 1 s, 10 s, 1 min, 10 min, 1 h, 10 h, 100 h	*1 or 2 ranges,* depending on model : 10 s, 30 s, 300 s, 60 min	Depending on model : *6 ranges :* 1 s, 10 s, 1 min, 10 min, 1 h, 10 h *7 ranges :* 1 s, 10 s, 1 min, 10 min, 1 h, 10 h, 100 h	Depending on model : *4 ranges :* 0.6 s, 2.5 s, 20 s, 160 s *7 ranges :* 1 s, 10 s, 1 min, 10 min, 1 h, 10 h, 100 h *7 ranges :* 1 s, 3 s, 10 s, 30 s, 100 s, 300 s, 10 min *10 ranges :* 1 s, 3 s, 10 s, 30 s, 100 s, 300 s, 30 min, 300 min, 30 h, 300 h
Relay type	**RE11 L● ●●**	**RE9**	**RE11 R● ●●**	**RE7**
Pages	16 and 17	20	24 to 27	30 to 33

These timing relays enable simple automation cycles to be set up using wired logic.
They can also be used to complement the functions of PLCs.

Relay
Relay outputs provide complete isolation between the supply and output circuits.
It is possible to have several output circuits.





Optimum	Plug-in		Panel-mounted	
	Universal	Miniature	Analogue	Digital
1 range, depending on model : 0.5 s, 3 s, 10 s, 30 s, 300 s, 30 min	*7 ranges :* 1 s, 10 s, 1 min, 10 min, 1 h, 10 h, 100 h	*7 ranges :* 0,1 s...1 s 1 s...10 s 0,1 min...1 min 1 min...10 min 0,1 h...1 h 1 h...10 h 10 h...100 h	*14 ranges :* 1,2 s, 3 s, 12 s, 30 s, 120 s, 300 s, 12 min, 30 min, 120 min, 300 min, 12 h, 30 h, 120 h, 300 h	Depending on model : *7 ranges :* 99.99 s, 999.99 s, 99 min 59 s, 99.99 min, 999.9 min, 99 h 59 min, 999.9 h *11 ranges :* 99.99 s, 999.99 s, 9999 s, 99 min 59 s, 99.99 min, 999.9 min, 9999 min, 99 h 59 min, 99,99 h, 999.9 h, 9999 h
RE8	**RE 88 867 ●●●**	**RE XL●TM●●**	**RE 48A ●●●**	**RE 88 857 ●●●**
38 to 41	*(1)*	43	49	*(1)*

(1) Please consult your Regional Sales office.

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521931-12-M

RE11

560904

RE7 RL13BU

521938-44-M

RE 48A

532535

RE XL

Presentation

A timing relay is a component which is designed for timing events in industrial automation systems by closing or opening contacts before, during or after a set timing period.

There are two main 'families' of timing relays:
■ "DIN rail mounted" relays (RE7, RE8, RE9, RE11, REXL…) designed for mounting on DIN rails in an enclosure,

■ "Panel mounted" relays type RE 48A, designed for mounting on the front of a panel to give users easy access to the settings.

These relays have one, two or four outputs. Sometimes the second output can be either timed or instantaneous.
If the power is switched off during the timing period, the relay reverts to its initial position.

Application examples:
■ opening of automatic doors,
■ alarm,
■ lighting in toilets,
■ car park barriers ...

Definitions

The following definitions will assist in understanding the operation of these relays:

■ **Relay output:**
This is the most common type of output. When the relay is energised, the moving armature is attracted by the coil and so actuates the contacts, which change state. When the relay is de-energised, both the armature and the contacts revert to their initial position.
This type of output allows complete isolation between the supply and the output.

There are three types of output:

□ **C/O**: changeover contact, i.e. when the relay is de-energised, the circuit between the common point C and N/C is closed and when the relay is operating (coil energised), it closes the circuit between the common point C and N/O.

□ **N/C**: a contact that is closed without being actuated is called a Normally Closed (N/C) contact.

□ **N/O**: a contact that closes when actuated is called a Normally Open (N/O) contact.

■ **Solid state output:**
These outputs are entirely electronic and involve no moving parts; service life is therefore increased.

■ **Breaking capacity:**
The current value that a contact is capable of breaking in specified conditions.

■ **Mechanical durability:**
The number of mechanical operating cycles of the contact or contacts.

■ **Minimum switching capacity** (or minimum breaking capacity): corresponds to the minimum required current which can flow through the contacts of a relay.

■ **G (Gate) input :** Gate input allows timing in progress to be interrupted without resetting it.

Definitions *(continued)*

Functions

Timing functions are identified by letters.

Main timing functions	Complementary functions *(1)*	Definitions
A *(2)*		Delay on energisation
	Ac	Timing after closing and opening of control contact
	Ad	Timing on closing of control contact
	Ah	Flashing single cycle by operation of control contact
	Ak	Asymmetrical On-delay and Off-delay with external control
	At	Delay on energisation with memory
	Aw	Off-delay on energisation or on opening of control contact
B *(2)*		Timing on impulse, one shot
	Bw	Pulse output (width adjustable)
C *(2)*		Timing after opening of control contact
D *(2)*		Symmetrical flashing, start with output in rest position
	Di *(2)*	Symmetrical flashing, start with output in operating position
H *(2)*		Timing on energisation
	He	Pulse-on de-energisation
	Ht	Timing on energisation with memory
K		Delay on de-energisation (without auxiliary supply)
L *(2)*		Asymmetrical flashing, start with output in rest position
	Li *(2)*	Asymmetrical flashing, start with output in operating position
	Lt	Asymmetrical flashing with partial stop of timing
N		Safe-guard
O		Delayed safe-guard
P		Delayed fixed-length pulse
	Pt	Impulse counter (on-delay)
	Qc	Star-delta timing
	Qe	Star-delta timing
	Qg	Star-delta timing
	Qt	Star-delta timing
T		Bistable relay
	Tt	Timed impulse relay
W		On-delay after opening of control contact

(1) Complementary functions enhance the main timing functions.
*Example: **Ac**: timing after closing and opening of control contact.*
(2) The most commonly used timing functions.

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Selection table

Selection criteria

- **Functions** (On-delay or Off-delay, counter, flashing…)
- **Supply voltage** (example: ∿/⎓ 12 V…240 V).
- **Timing range** (example: 0.05 s…100 h)
- **Type of output** (contact or solid state) and required **Number of contacts**.
- **Breaking capacity** or **Rated current** of contacts, expressed in Amperes.

This is the maximum current which may flow through the contacts.

Functions	Supply voltage	Timing range	Type of output	Rated current	Relay	Page
A	⎓ 12 V	0.1 s…100 h	2 C/O contacts	5 A	RE XL2TMJD	43
		0.1 s …100 h	4 C/O contacts	3 A	RE XL4TMJD	43
	⎓ 24 V	0.1 s…100 h	2 C/O contacts	5 A	RE XL2TMBD	43
		0.1 s…100 h	4 C/O contacts	3 A	RE XL4TMBD	43
	∿ 24 V	0.1 s…100 h	2 C/O contacts	5 A	RE XL2TMB7	43
		0.1 s…100 h	4 C/O contacts	3 A	RE XL4TMB7	43
	∿ 120 V	0.1 s…100 h	2 C/O contacts	5 A	RE XL2TMF7	43
		0.1 s…100 h	4 C/O contacts	3 A	RE XL4TMF7	43
	∿ 230 V	0.1 s…100 h	2 C/O contacts	5 A	RE XL2TMP7	43
		0.1 s…100 h	4 C/O contacts	3 A	RE XL4TMP7	43
	∿/⎓ 24…240 V	0.1 s…10 s	1 solid state output	0.7 A	RE9 TA11MW	20
		0.3 s…30 s		0.7 A	RE9 TA31MW	20
		3 s…300 s		0.7 A	RE9 TA21MW	20
		40 s…60 min		0.7 A	RE9 TA51MW	20
		1 s…100 h		0.7 A	RE11 LA MW	16
		0.02 s…300 h	2 timed C/O contacts	5 A	RE 48A TM12 MW	49
	∿/⎓ 24 V, ∿ 110…240 V	0.05 s…300 h	1 C/O contact	8 A	RE7 TL11BU	30
		0.1 s…3 s		8 A	RE8 TA61BUTQ	38
		0.1s…10 s		8 A	RE8 TA11BUTQ	38
		0.3 s…30 s		8 A	RE8 TA31BUTQ	38
		3 s…300 s		8 A	RE8 TA21BUTQ	38
		20…30 min		8 A	RE8 TA41BUTQ	38
	∿/⎓ 24 V, ∿ 110…240 V, ∿/⎓ 42…48 V	0.05 s…300 h	2 C/O contacts	8 A	RE7 TP13BU	32
A, Ac, At, B, Bw, C, D, Di, H, Ht	∿ 24…240 V	1 s…100 h	1 solid state output	0.7 A	RE11 LM BM	17
	∿/⎓ 12 V	1 s…100 h	1 C/O contact	8 A	RE11 RM JU	27
	∿/⎓ 12…240 V	1 s…100 h	1 C/O contact	8 A	RE11 RM MW	26
		1 s…100 h		8 A	RE11 RM MWS	27
	⎓ 24 V, ∿ 24…240 V	1 s…100 h	1 C/O contact	8 A	RE11 RM MU	26
A, At	⎓ 24 V, ∿ 24…240 V	1 s…100 h	1 C/O contact	8 A	RE11 RA MU	24
A, At, Aw	∿ 110…240 V, ∿/⎓ 24 V, ∿/⎓ 42…48 V	0.05 s…300 h	1 C/O contact	8 A	RE7 TM11BU	30
A, At, B, C, D, Di, H, Ht	⎓ 24 V, ∿ 24…240 V	1 s…10 h	1 C/O contact	5 A	RE11 RME MU	27
A, B, C, Di	∿/⎓ 24…240 V	0.02 s…300 h	2 timed C/O contacts	5 A	RE 48A ML12 MW	49
A, C, D, Di, H, Qg, Qt, W	∿ 110…240 V, ∿/⎓ 24 V, ∿/⎓ 42…48 V	0.05 s…300 h	2 C/O contacts	8 A	RE7 MY13BU	33
	∿/⎓ 24…240 V	0.05 s…300 h	2 C/O contacts	8 A	RE7 MY13MW	33
A, C, D, Di, H, W	∿ 110…240 V, ∿/⎓ 24 V, ∿/⎓ 42…48 V	0.05 s…300 h	1 C/O contact	8 A	RE7 ML11BU	30
A, D, Di, H	∿/⎓ 24…240 V ∿ 24…240 V	0.1 s…10 s et 3 s…300 s	1 solid state output	0.7 A	RE9 MS21MW	20
A1, A2, H1, H2	∿/⎓ 24…240 V	0.02 s…300 h	2 C/O contacts	5 A	RE 48A MH13 MW	49
Ac	∿ 110…240 V, ∿/⎓ 24 V, ∿/⎓ 42…48 V	0.05 s…300 h	1 C/O contact	8 A	RE7 MA11BU	30
		0.05 s…300 h	2 C/O contacts	8 A	RE7 MA13BU	32
Ad, Ah, N, O, P, Pt, Tl, Tt, W	⎓ 24 V, ∿ 24…240 V	1 s…100 h	1 C/O contact	8 A	RE11 RMX MU	27
Ak	∿ 110…240 V, ∿/⎓ 24 V, ∿/⎓ 42…48 V	0.05 s…300 h	1 C/O contact	8 A	RE7 MV11BU	30

Selection table *(continued)*

Functions	Supply voltage	Timing range	Type of output	Rated current	Relay	Page
B	⎓ 24 V, ∿ 24…240 V	1 s…100 h	1 C/O contact	8 A	RE11 RB MU	25
C	∿/⎓ 24 V	0.1 s…10 s	1 C/O contact	8 A	RE8 RA11BTQ	38
		0.3 s…30 s		8 A	RE8 RA31BTQ	38
		3 s…300 s		8 A	RE8 RA21BTQ	38
	⎓ 24 V, ∿ 24…240 V	1 s…100 h	1 C/O contact	8 A	RE11 RC MU	25
	∿ 110…240 V	0.1 s…10 s	1 C/O contact	8 A	RE8 RA11FUTQ	38
		0.3 s…30 s		8 A	RE8 RA31FUTQ	38
		3 s…300 s		8 A	RE8 RA21FUTQ	38
		20 s…30 min		8 A	RE8 RA41FUTQ	38
	∿/⎓ 24 V, ∿ 110…240 V, ∿/⎓ 42…48 V	0.05 s…300 h	1 C/O contact	8 A	RE7 RA11BU	31
		0.05 s…300 h		8 A	RE7 RM11BU	31
		0.05 s…300 h	2 C/O contacts	8 A	RE7 RL13BU	32
	∿ 24…240 V	0.1 s…10 s	1 solid state output	0.7 A	RE9 RA11MW7	20
		0.3 s…30 s		0.7 A	RE9 RA31MW7	20
		3 s…300 s		0.7 A	RE9 RA21MW7	20
		40 s…60 min		0.7 A	RE9 RA51MW7	20
		1 s…100 h		0.7 A	RE11 LC BM	17
D	∿/⎓ 24 V, ∿ 110…240 V	0.05 s…300 h	1 C/O contact	8 A	RE7 CL11BU	31
		0.1 s…10 s		8 A	RE8 CL11BUTQ	39
	∿/⎓ 24 V, ∿ 110…240 V, ∿/⎓ 42…48 V	0.05 s…300 h	2 C/O contacts	8 A	RE7 CP13BU	33
H	∿/⎓ 24 V, ∿ 110…240 V	0.05 s…300 h	1 C/O contact	8 A	RE7 PE11BU	31
		0.1 s…10 s		8 A	RE8 PE11BUTQ	40
		0.3 s…30 s		8 A	RE8 PE31BUTQ	40
		3 s…300 s		8 A	RE8 PE21BUTQ	40
	∿/⎓ 24 V, ∿ 110…240 V, ∿/⎓ 42…48 V	0.05 s…300 h	2 C/O contacts	8 A	RE7 PP13BU	33
	∿ 24…240 V	1 s…100 h	1 solid state output	0.7 A	RE11 LH BM	16
H, Ht	⎓ 24 V, ∿ 24…240 V	1 s…100 h	1 C/O contact	8 A	RE11 RH MU	24
He	∿/⎓ 24 V, ∿ 110…240 V	0.05 s…0.5 s	1 C/O contact	8 A	RE8 PT01BUTQ	41
K	∿/⎓ 24…240 V	0.05 s…10 min	1 C/O contact	5 A	RE7 RB11MW	31
	∿/⎓ 24 V, ∿ 110…240 V	0.05 s…0.5 s	1 C/O contact	8 A	RE8 RB51BUTQ	39
		0.1 s…10 s		8 A	RE8 RB11BUTQ	39
		0.3 s…30 s		8 A	RE8 RB31BUTQ	39
	∿/⎓ 24…240 V	0.05 s…10 min	2 C/O contacts	5 A	RE7 RB13MW	32
L, Li	⎓ 24 V, ∿ 24…240 V	1 s…100 h	1 C/O contact	8 A	RE11 RL MU	25
	∿ 24…240 V	1 s…100 h	1 solid state output	0.7 A	RE11 LL BM	17
	∿/⎓ 12 V	1 s…100 h	1 C/O contact	8 A	RE11 RL JU	25
	∿/⎓ 24…240 V	0.02 s…300 h	2 timed C/O contacts	5 A	RE 48A CV12 MW	49
L, Li, Lt	∿ 110…240 V, ∿/⎓ 24 V, ∿/⎓ 42…48 V	0.05 s…300 h	1 C/O contact	8 A	RE7 CV11BU	31
Qc	∿/⎓ 24 V, ∿ 110…240 V	0.1 s…10 s	1 C/O contact	8 A	RE8 YG11BUTQ	41
		0.3 s…30 s		8 A	RE8 YG31BUTQ	41
		3 s…300 s		8 A	RE8 YG21BUTQ	41
Qe	∿/⎓ 24 V	0.3 s…30 s	1 NO + 1 NC	8 A	RE8 YA32BTQ	41
	∿ 110…240 V	0.3 s…30 s	1 NO + 1 NC	8 A	RE8 YA32FUTQ	41
	∿ 380…415 V	0.3 s…30 s	1 NO + 1 NC	8 A	RE8 YA32QTQ	41
Qg	∿/⎓ 24 V, ∿ 110…240 V, ∿/⎓ 42…48 V	0.05 s…300 h	1 NO + 1 NC	8 A	RE7 YR12BU	33
Qt	∿/⎓ 24 V, ∿ 110…240 V, ∿/⎓ 42…48 V	0.05 s…300 h	2 C/O contacts	8 A	RE7 YA12BU	33
W	∿/⎓ 24 V	0.1 s…10 s	1 C/O contact	8 A	RE8 PD11BTQ	40
		0.3 s…30 s		8 A	RE8 PD31BTQ	40
		3 s…300 s		8 A	RE8 PD21BTQ	40
	∿ 110…240 V	0.1 s…10 s	1 C/O contact	8 A	RE8 PD11FUTQ	40
		0.3 s…30 s		8 A	RE8 PD31FUTQ	40
		3 s…300 s		8 A	RE8 PD21FUTQ	40
	∿/⎓ 24 V, ∿ 110…240 V, ∿/⎓ 42…48 V	0.05 s…300 h	2 C/O contacts	8 A	RE7 PD13BU	33
W, Ht	∿/⎓ 24 V, ∿ 110…240 V, ∿/⎓ 42…48 V	0.05 s…300 h	1 C/O contact	8 A	RE7 PM11BU	31

Functions

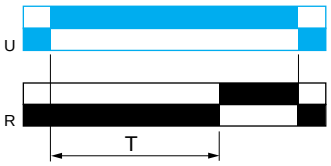
U : Supply
R : Relay or solid state output
R1/R2 : 2 timed outputs
R2 inst. :The second output is instantaneous if the right position is selected
T : Timing period
C : Control contact
G : Gate
Ta : Adjustable On-delay
Tr : Adjustable Off-delay

Function diagram:

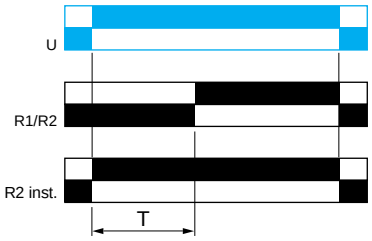
- Relay de-energised
- Relay energised
- Output open
- Output closed

Function A : Delay on energisation

1 output



2 outputs

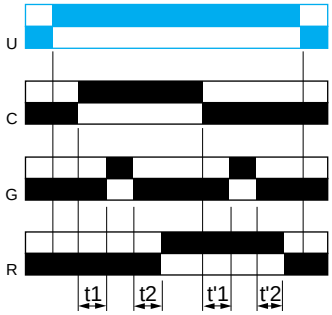


2 timed outputs (R1/R2) or 1 timed output (R1) and 1 instantaneous output (R2 inst.).

The timing period T begins on energisation.
After timing, the output(s) R close(s).
The second output can be either timed or instantaneous.

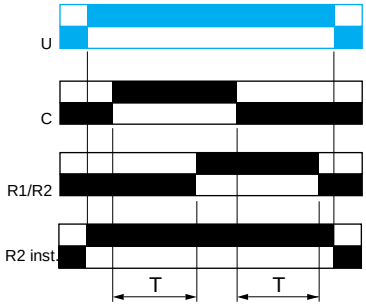
Function Ac: Timing after closing and opening of control contact

1 output



T = t1 + t2 + …
T = t'1 + t'2 + …

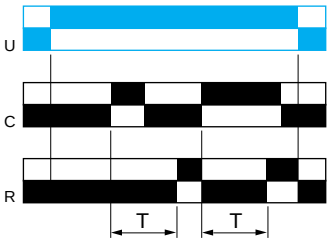
2 outputs



2 timed outputs (R1/R2) or 1 timed output (R1) and 1 instantaneous output (R2 inst.).

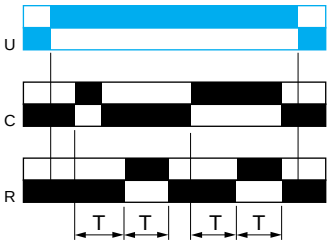
After power-up, closing of the control contact C causes the timing period T to start (timing can be interrupted by operating the Gate control contact G).
At the end of this timing period, the relay closes.
When control contact C re-opens, the timing T starts.
At the end of this timing period T, the output reverts to its initial position (timing can be interrupted by operating the Gate control contact G).
The second output can be either timed or instantaneous.

Function Ad: Timing on closing of control contact.



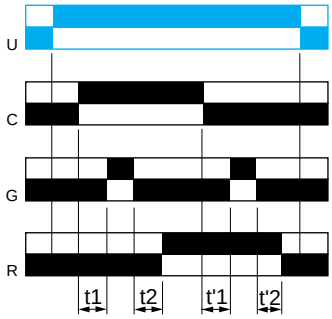
After power-up, pulsing or maintaining of control contact C starts the timing T.
At the end of this timing period T, the output R closes.
The output R will be reset the next time control contact C is pulsed or maintained.

Function Ah: Flashing single cycle by operation of control contact



After power-up, pulsing or maintaining of control contact C starts the timing T.
A single cycle then starts with 2 timing periods T of equal duration (start with output in rest position)
Output R closes at the end of the first timing period T and reverts to its initial position at the end of the second timing period T.
Control contact C must be reset in order to re-start the single flashing cycle.

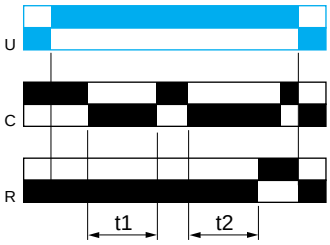
Function Ak: Asymmetrical On-delay and Off-delay with external control



After power-up and closing of the control contact C, timing starts for a period Ta (timing can be interrupted by operating the Gate control contact G).
At the end of this timing period Ta, the output R closes.
Opening of control contact C causes a second timing period Tr to start (timing can be interrupted by operating the Gate control contact G).
At the end of this timing period Tr, the output R reverts to its initial state.

Ta = t1 + t2 + …
Tr = t'1 + t'2 + …

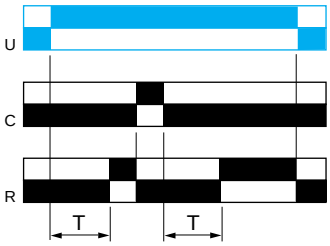
Function At: Delay on energisation with memory



After power-up, the first opening of control contact C starts the timing. Timing can be interrupted each time control contact C closes. When the cumulative total of time periods elapsed reaches the pre-set value T, the output relay closes.

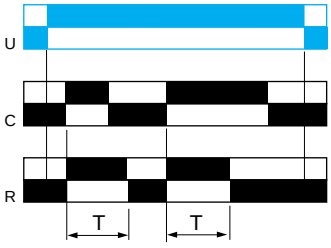
T = t1 + t2 + …

Function Aw: Off-delay on energisation or on opening of control contact



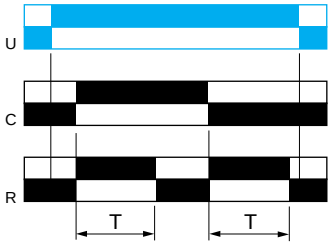
The timing period T starts on energisation.
At the end of the timing period T, the output R closes.
Closing of the control contact C makes the output R open.
Opening of control contact C restarts timing period T.
At the end of timing period T, the output R closes.

Function B: Timing on impulse, one shot



After power-up, pulsing or maintaining control contact C starts the timing T.
The output R closes for the duration of the timing period T then reverts to its initial state.

Function Bw: Pulse output (width adjustable)



On closing and opening of control contact C, the output R closes for the duration of the timing period T.

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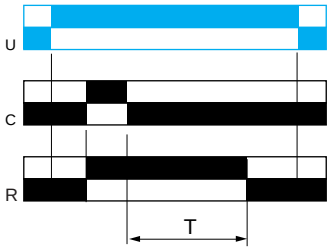
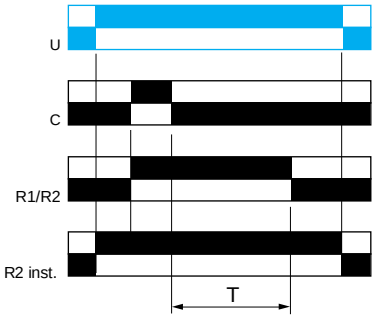
Function C: Timing after opening of control contact

1 output



2 outputs

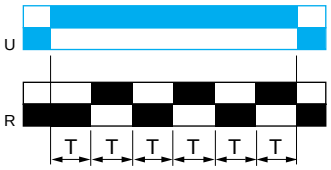


2 timed outputs (R1/R2) or 1 timed output (R1) and 1 instantaneous output (R2 inst.).

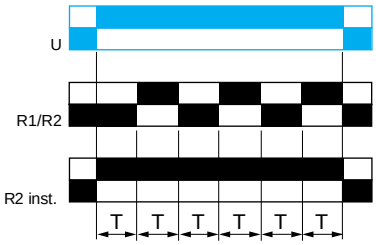
After power-up and closing of the control contact C, the output R closes.
When control contact C re-opens, timing T starts.
At the end of the timing period, the output(s) R revert(s) to its/their initial state.
The second output can be either timed or instantaneous.

Function D: Symmetrical flashing, start with output in rest position

1 output



2 outputs

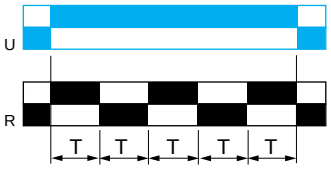


2 timed outputs (R1/R2) or 1 timed output (R1) and 1 instantaneous output (R2 inst.).

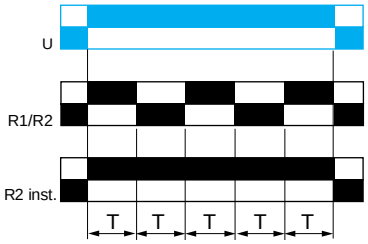
Repetitive cycle with two timing periods T of equal duration, with output(s) R changing state at the end of each timing period T.
The second output can be either timed or instantaneous.

Function Di: Symmetrical flashing start with output in operating position

1 output



2 outputs

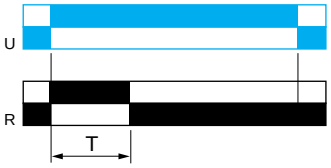


2 timed outputs (R1/R2) or 1 timed output (R1) and 1 instantaneous output (R2 inst.).

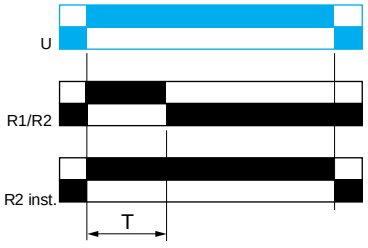
Repetitive cycle with two timing periods T of equal duration, with output(s) R changing state at the end of each timing period T.
The second output can be either timed or instantaneous.

Function H: Timing on energisation

1 output



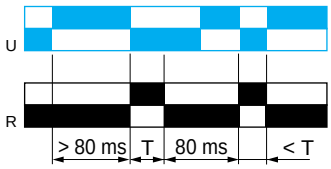
2 outputs



2 timed outputs (R1/R2) or 1 timed output (R1) and 1 instantaneous output (R2 inst.).

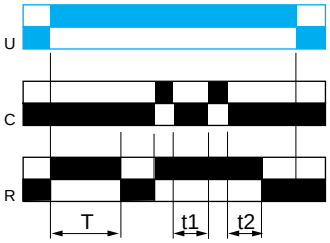
On energisation of the relay, timing period T starts and the output(s) R close(s).
At the end of the timing period T, the output(s) R revert(s) to its/their initial state.
The second output can be either timed or instantaneous.

Function He: Pulse-on de-energisation



On de-energisation, the output R closes for the duration of a timing period T.

Function Ht: Timing on energisation with memory

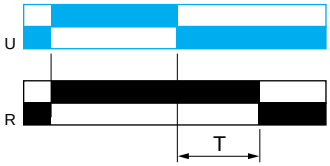


On energisation, the output R closes for the duration of a timing period T then reverts to its initial state.
Pulsing or maintaining control contact C will again close the output R.
Timing T is only active when control contact C is released and so the output R will not revert to its initial state until after a time t1 + t2 + … .
The relay memorises the total, cumulative opening time of control contact C and, once the set time T is reached, the output R reverts to its initial state.

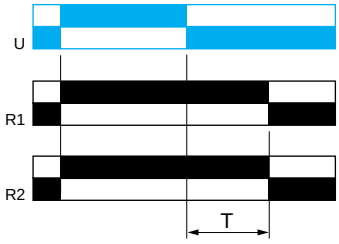
T = t1 + t2 + …

Function K: Delay on de-energisation (without auxiliary supply)

1 output

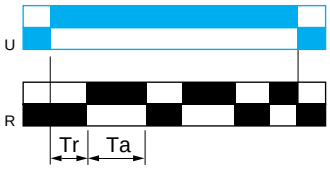


2 outputs



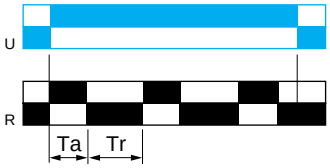
On energisation, the output(s) R close(s).
On de-energisation, timing period T starts and, at the end of this period, the output(s) R revert(s) to its/their initial state.

Function L: Asymmetrical flashing, start with output in rest position



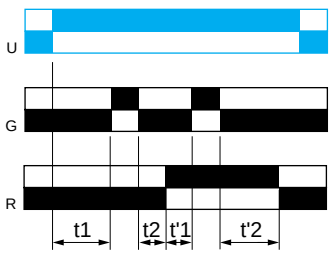
Repetitive cycle comprises of two, independently adjustable timing periods Ta and Tr. Each timing period corresponds to a different state of the output R.

Function Li: Asymmetrical flashing, start with output in operating position



Repetitive cycle comprises of two, independently adjustable timing periods Ta and Tr. Each timing period corresponds to a different state of the output R.

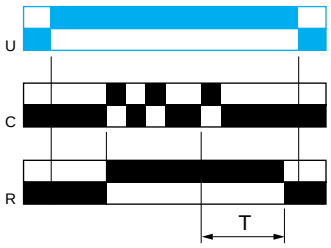
Function Lt: Asymmetrical flashing with partial stop of timing



Repetitive cycle comprises of two, independently adjustable timing periods Ta and Tr. Each timing period corresponds to a different state of the output R.
Gate control contact G can be operated to partially stop timing periods Ta and Tr.

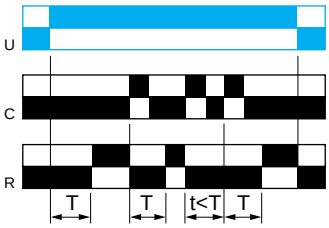
Tr = t1 + t2 + …
Ta = t'1 + t'2 + …

Function N: Safe-guard



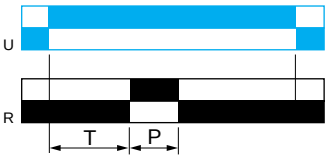
After power-up and an initial control pulse C, the output R closes.
If the interval between two control pulses C is greater than the set timing period T, timing elapses normally and the output R closes at the end of the timing period. If the interval is not greater than the set timing period, the output R remains closed until this condition is met.

Function O: Delayed safe-guard



An initial timing period T begins on energisation. At the end of this timing period, the output R closes.
As soon as there is a control pulse C, the output R reverts to its initial state and remains in that state until the interval between two control pulses is less than the value of the set timing period T. Otherwise, the output R closes at the end of the timing period T.

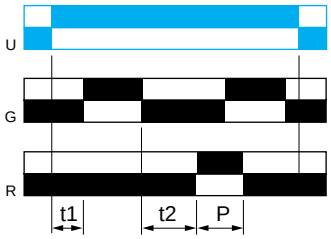
Function P: Delayed fixed-length pulse



P = 500 ms

The timing period T begins on energisation.
At the end of this period, the output R closes for a fixed time P.

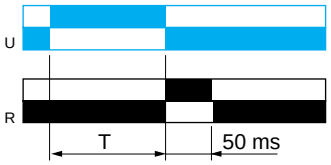
Function Pt: Impulse counter (on-delay)



T = t1 + t2 + …
P = 500 ms

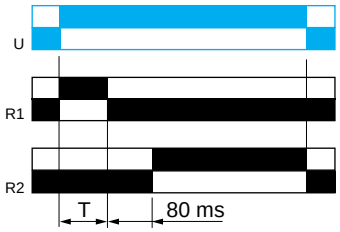
On energisation, timing period T starts (it can be interrupted by operating the Gate control contact G).
At the end of this period, the output R closes for a fixed time P.

Function Qc: Star-delta timing



On energisation, the star contact closes instantaneously and timing starts.
At the end of the timing period, the star contact opens.
After a 50 ms pause, the delta contact closes and remains in this position.

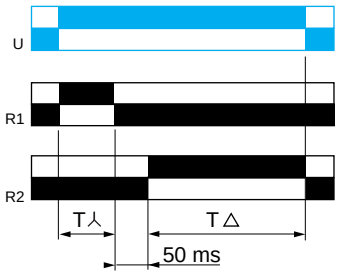
Function Qe: Star-delta timing



Timing for star-delta starter with contact for switching to star connection.

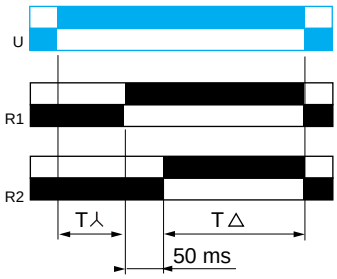
Zelio Time - timing relays

Function Qg: Star-delta timing



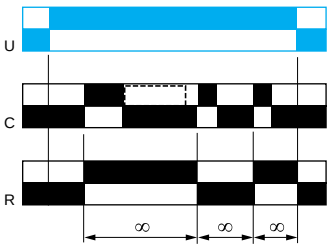
Timing for star-delta starter with contact for switching to star connection.

Function Qt: Star-delta timing



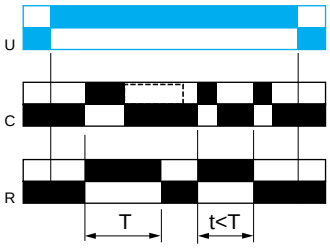
Timing for star-delta starter with double On-delay period.

Function T: Bistable relay



After power-up, pulsing or maintaining of control contact C switches the output on.
A second pulse on the control contact C switches the output R off.

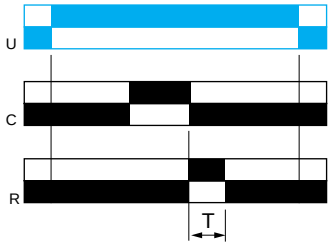
Function Tt: Timed impulse relay



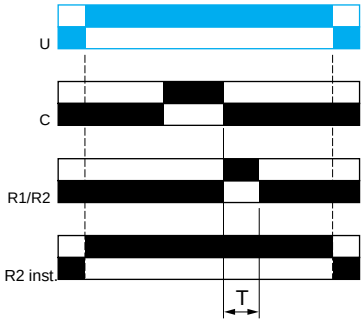
After power-up, pulsing or maintaining of control contact C switches output R on and starts timing T.
The output switches off at the end of the timing period T or following a second pulse on the control contact C.

Function W: On-delay after opening of control contact

1 output



2 outputs



2 timed outputs (R1/R2) or 1 timed output (R1) and 1 instantaneous output (R2 inst.).

After power-up and opening of the control contact, the output(s) close(s) for a timing period T.
At the end of this timing period the output(s) revert(s) to its/their initial state.
The second output can be either timed or instantaneous.

Zelio Time - timing relays

Modular relays, solid state output, width 17.5 mm

Timing characteristics

Selectable timing ranges by selector switch on front panel			**s**	0.1…1
				1…10
			min	0.1…1
				1…10
			h	0.1…1
				1…10
				10…100
Repeat accuracy (with constant parameters)	Conforming to IEC 61812-1			± 0.5 %
Drift	Temperature			± 0.05 % / °C
	Voltage			± 0.2 % / V
Setting accuracy at full scale	Conforming to IEC 61812-1			± 10 % at 25 °C
Minimum duration of control pulse	Typical		**ms**	50
Maximum reset time by de-energisation	Typical		**ms**	350
Immunity to microbreaks	Typical		**ms**	> 10

Supply characteristics

Supply voltage			**V**	Depending on version: ~ 24…240 ~/⎓ 24…240
Frequency			**Hz**	50/60
Operating range				85…110 % Un
On-load factor				100 %
Maximum power consumption	Depending on model	⎓ 24 V	**W**	0.6
		⎓ 240 V	**W**	1.5
		~ 240 V	**VA**	32

Output characteristics

Output type			Solid state
Breaking capacity	**A**	~/⎓	0.7 at 20° C (0.5 A UL)
Derating	**mA**		5 / °C
Maximum permissible current	**A**		20 ≤ 10 ms
Minimum breaking current	**mA**		10
Leakage current	**mA**		< 5
Maximum switching voltage	**V**	~/⎓	250
Typical voltage drop at terminals			3-wire 4 V - 2-wire 8 V
Electrical life			10^8 operations
Mechanical life			10^8 operations
Dielectric strength	**kV**	Conforming to IEC 60664, IEC 60255-5	2.5...1 mA / 1 min

Input characteristics

Input type		Volt-free contact (no potential) Control possible by 3-wire sensor with PNP output, maximum residual voltage: 0.4 V whatever the supply voltage of the timer

References : pages 16 and 17
Dimensions : page 16
Schemes : page 17

General characteristics

Conforming to standards			IEC 61812-1, EN 50081-1/2, EN 50082-1/2, LV directives (73/23/EEC + 93/68/EEC (CE marking) + EMC directive (89/336/EEC + IEC 60669-2-3)
Approvals			cULus, CSA
Ambient air temperature around the device	Storage	**°C**	- 30…+ 60
	Operation	**°C**	- 20…+ 60
Creepage distance and clearance	Conforming to IEC 60664-1	**kV**	4 kV/3
Degree of protection conforming to IEC 60529	Terminal block		IP 20
	Housing		IP 40
	Front panel		IP 50
Vibration resistance	Conforming to IEC 60068-2-6		f = 10…55 Hz A = 0.35 mm
Relative humidity without condensation	Conforming to IEC 60068-2-3		93 %
Electromagnetic compatibility	Immunity to electrostatic discharge, conforming to IEC 61000-4-2		Level III (Air 8 kV/Contact 6 kV)
	Immunity to electromagnetic fields, conforming to ENV 50140/204 (IEC 61000-4-3)		Level III (10 V/m: 80 MHz…1 GHz)
	Immunity to fast transients in bursts, conforming to IEC 61000-4-4		Level III (direct 2 kV / capacitive connecting clip 1 kV)
	Immunity to surges on the power supply, conforming to IEC 61000-4-5		Level III (common mode 2 kV / differential mode 1 kV)
	Immunity to radio frequency interference in common mode, conforming to ENV 50141 (IEC 61000-4-6)		Level III (10 V rms: 0.15…80 MHz)
	Immunity to voltage dips and breaks, conforming to IEC 61000-4-11		30 % / 10 ms
			60 % / 100 ms
			95 % / 5 s
	Radiated and mains conducted disturbance, conforming to EN 55022 (EN 55011 Group 1)		Class B
Fixing	Symmetrical mounting rail (EN 50022)	**mm**	35
Clamping capacity	Without cable end	**mm²**	2 x 2.5 or 1 x 4
	With cable end	**mm²**	2 x 1.5
Housing material			Self-extinguishing

References : pages 16 et 17
Dimensions : page 16
Schemes : page 17

Zelio Time - timing relays

Modular relays, solid state output, width 17.5 mm

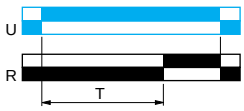
Solid state output

- *Multifunction, dual function or single function*
- *Multi-range (7 selectable ranges)*
- *Multivoltage*
- *Solid state output: 0.7 A*
- *Screw terminals*

Function diagrams

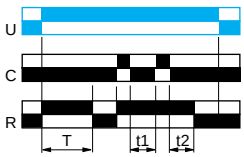
Function A

Delay on energisation



Function H

Timing on energisation

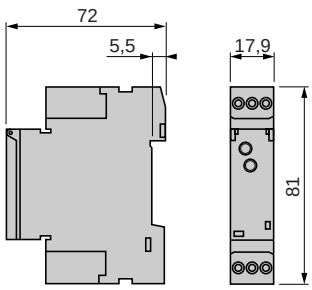


References

Functions		**Single function**	**Single function**
		A	H
Timing ranges	7 ranges	1 s - 10 s - 1 min - 10 min - 1 h - 10 h - 100 h	1 s - 10 s - 1 min - 10 min - 1 h - 10 h - 100 h
Voltages	∼ 24…240 V	–	**RE11 LH BM**
	∼/⎓ 24…240 V	**RE11 LA MW**	–
Nominal output current		0.7 A	0.7 A
Connection	Screw terminals	●	●
Weight (kg)		0.060	0.060

Dimensions and connection schemes

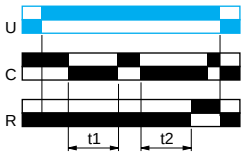
Dimensions



Characteristics : pages 14 and 15

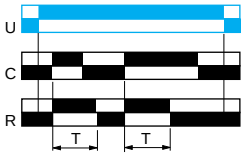
Schemes : page 17

Function At
Delay on energisation with memory

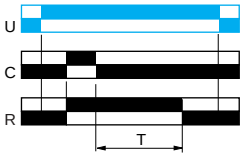


T = t1 + t2 + …

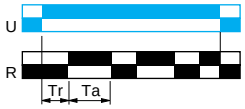
Function B
Timing on impulse, one shot



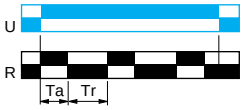
Function C
Timing after opening of control contact



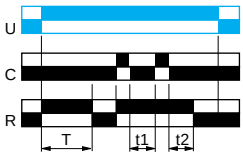
Function L
Asymmetrical flashing, start with output in rest position



Function Li
Asymmetrical flashing, start with output in operating position



Function Ht
Timing on energisation with memory

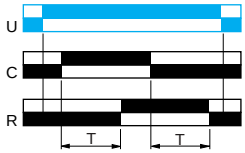


T = t1 + t2 + …

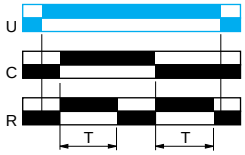
Function D
Symmetrical flashing, start with output in rest position

Function Di
Symmetrical flashing, start with output in operating position

Function Ac
Timing after closing and opening of control contact



Function Bw
Pulse output (width adjustable)

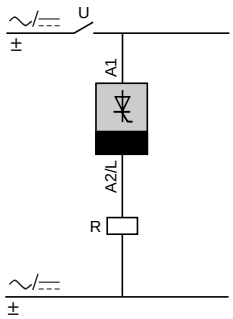


Single function	Dual function	Multifunction
C	L - Li	A - At - B - C - H - Ht - D - Di - Ac - Bw
1 s - 10 s - 1 min - 10 min - 1 h - 10 h - 100 h	1 s - 10 s - 1 min - 10 min - 1 h - 10 h - 100 h	1 s - 10 s - 1 min - 10 min - 1 h - 10 h - 100 h
RE11 LC BM	**RE11 LL BM**	**RE11 LM BM**
–	–	–
0.7 A	0.7 A	0.7 A
●	●	●
0.060	0.060	0.060

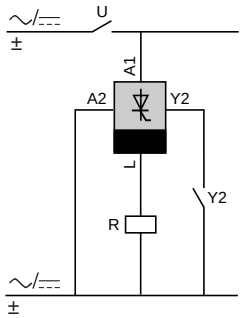
Connection schemes

Single function relay

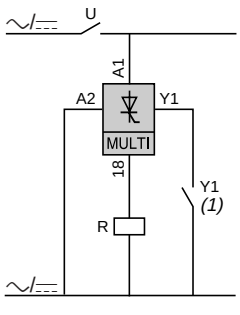
Functions A, H



Function C



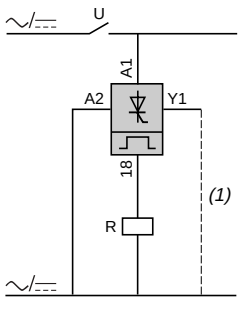
Multifunction relay



(1) Contact Y1 :
- *Control for functions B, C, Ac, Bw.*
- *Partial stop for functions At, Ht.*
- *Function D if Di selected.*
- *Not used for functions A and H.*

Flashing

Functions L, Li



(1) Link A2-Y1 for function L only.

Characteristics : pages 14 and 15
Dimensions : page 16

Zelio Time - timing relays

Industrial relays, solid state output, width 22.5 mm

Presentation

The RE9 range of relays is designed for simple, repetitive applications with short and intensive cycles because their solid state output provides very high electrical durability.
Each relay has a single timing range.
Each relay has a wide voltage range from 24 to 240 V.
The range comprises 9 references with 3 model types:

- RE9 TA: function A,
- RE9 RA: function C,
- RE9 MS: multifunction A, H, L, Li.

These products have a transparent, hinged flap on their front face to avoid any accidental alteration of the settings. This flap can be directly sealed.

Environment

Conforming to standards			IEC 61812-1, EN 61812-1
Product certifications			CSA, GL pending. UL
CE marking			Zelio Time timing relays conform to European regulations relating to CE marking
Ambient air temperature around the device	Storage	**°C**	- 40…+ 85
	Operation	**°C**	- 20…+ 60
Permissible relative humidity range	Conforming to IEC 60721-3-3		15…85 % Environmental class 3K3
Vibration resistance	Conforming to IEC 6068-2-6, 10 to 55 Hz		a = 0.35 ms
Shock resistance	Conforming to IEC 6068-2-27		15 gn - 11 ms
Degree of protection	Casing		IP 50
	Terminals		IP 20
Degree of pollution	Conforming to IEC 60664-1		3
Overvoltage category	Conforming to IEC 60664-1		III
Rated insulation voltage	Conforming to IEC	**V**	250
	Conforming to CSA	**V**	300
Test voltage for insulation tests	Dielectric test	**kV**	2.5
	Shock wave	**kV**	4.8
Voltage limits	Power supply circuit		0.85…1.1 Uc
Frequency limits	Power supply circuit	**Hz**	50/60 ± 5 %
Disconnection value	Power supply circuit		> 0.1 Uc
Mounting position without derating	In relation to normal vertical mounting plane		Any position
Cabling Maximum c.s.a.	Flexible cable without cable end	**mm^2**	2 x 2.5
	Flexible cable with cable end	**mm^2**	2 x 1.5
Tightening torque		**N.m**	0.6…1.1

Immunity to electromagnetic interference (EMC) (application class 2 conforming to EN 61812-1)

Electrostatic discharge	Conforming to IEC 61000-4-2		Level 3 (6 kV contact, 8 kV air)
Electromagnetic fields	Conforming to IEC 61000-4-3		Level 3 (10 V/m)
Fast transients	Conforming to IEC 61000-4-4		Level 3 (2 kV)
Shock waves	Conforming to IEC 61000-4-5		Level 3 (2 kV)
Radiated and conducted emissions	CISPR11		Group 1 class A
	CISPR22		Class A

References : page 20
Dimensions : page 20
Schemes : page 21

Zelio Time - timing relays
Industrial relays, solid state output, width 22.5 mm

Timing relay type			RE9 TA On-delay	RE9 RA Off-delay	RE9 MS Multifunction
Supply characteristics					
Supply voltage		**V**	∿/⎓ 24…240	∿ 24…240	∿/⎓ 24…240. See page 20
Voltage limits	Of the control circuit		0.85…1.1 Un		
Frequency		**Hz**	50…60 ± 5 %		
Control contact	Mechanical only		In series	Between Y2 and A2	In series
Maximum length of connecting cable	From contact to RE9	**m**	–	20	–
Control input consumption	Input Y2	**mA**	–	5	–
Timing characteristics					
Setting accuracy			< ± 20 %		
Repeat accuracy			< 1 %		
Minimum reset time	After the time delay period	**ms**	100		
Minimum switching time		**ms**	–	40	–
Maximum immunity to microbreaks	During the time delay period	**ms**	100	2	70
	After the time delay period	**ms**	2	–	2
Temperature drift			≤ 0.1 % per degree centigrade		
Switching characteristics (solid state type)					
Maximum continuous current	At ambient temperature: 20 °C	**A**	0.7 (minimum 10 mA)		
Maximum overload current	VDE 0435 part. 303, 4.8.3/Class II	**A**	15 for 10 ms		
Maximum voltage drop	Closed state	**V**	3 (at 0.7 A)		
Leakage current	Open state	**mA**	≤ 6	≤ 1	≤ 6
Maximum dissipated power		**W**	2.5	4	2.5
Derating	For temperature > 20 °C	**mA**	Without		
Electrical durability	In millions of operating cycles		> 100		

References : page 20
Dimensions : page 20
Schemes : page 21

Zelio Time - timing relays

Industrial single or multifunction relays, solid state output, width 22.5 mm

Solid state output

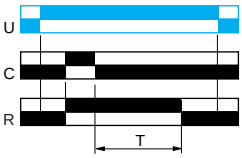
Function diagrams

Function A

Delay on energisation

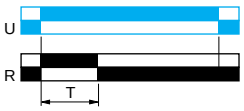
Function C

Timing after opening of control contact



Function H

Timing on energisation



Function D

Symmetrical flashing, start with output in rest position

Function Di

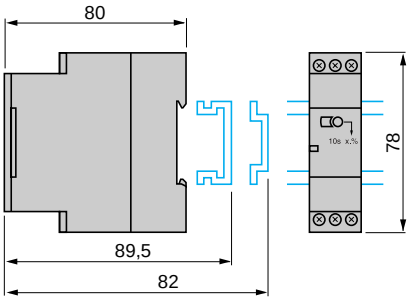
Symmetrical flashing, start with output in operating position

References

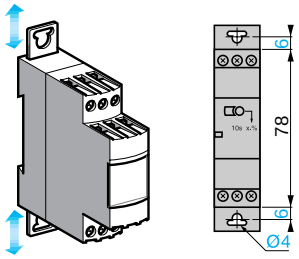
Functions		**A**	**C**	**A, H, D, Di**
Voltages	⎓ or ∿ 24…240 V	●	–	● **(A)**
	∿ 24…240 V	–	●	● **(H, D, Di)**
Timing ranges	0.1 s…10 s	**RE9 TA11MW**	**RE9 RA11MW7**	**RE9 MS21MW**
	0.3 s …30 s	**RE9 TA31MW**	**RE9 RA31MW7**	–
	3 s…300 s	**RE9 TA21MW**	**RE9 RA21MW7**	**RE9 MS21MW**
	40 s…60 min	**RE9 TA51MW**	**RE9 RA51MW7**	–
Weight (kg)		0.110	0.110	0.110

Dimensions

Rail mounting



Screw fixing



Characteristics : pages 18 and 19

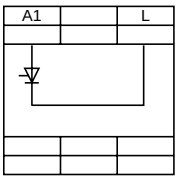
Schemes : page 21

Zelio Time - timing relays

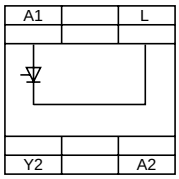
Industrial single or multifunction relays, solid state output, width 22.5 mm

Terminal blocks

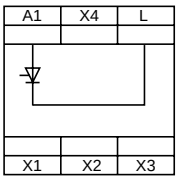
RE9 TA



RE9 RA

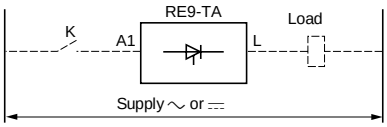


RE9 MS



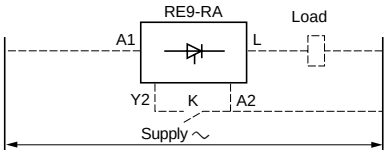
Recommended application schemes

RE9 TA



The timing relay is placed in series, with the load whose energisation is to be delayed on one side and switch K on the other side. The mains supply may be a.c. or d.c. and the voltage may be between 24 V and 240 V. See function diagram on page opposite.

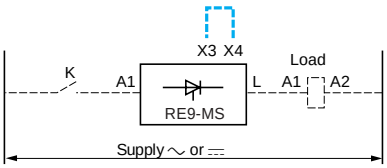
RE9 RA



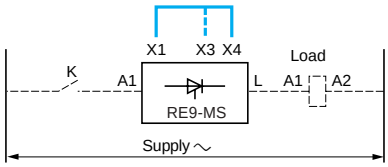
The timing relay is placed in series with the load whose de-energisation is to be delayed. Switch K is connected to terminals Y2 and A2 of the timing relay, and terminal A2 is connected to the mains supply, as indicated in the diagram opposite. The device is operated from an a.c. mains supply whose voltage is between 24 V and 240 V. See function diagram on page opposite.

RE9 MS

Delay on energisation
Function A



Timing on energisation
Function H



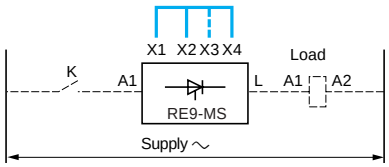
Link to be made between terminals X1 and X4

Selection of the timing range

X3-X4 not linked: range 3 s…300 s (factory configuration)

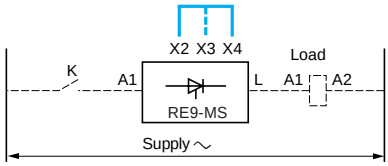
X3-X4 linked: range 0.1 s…10 s

Symmetrical flasher,
start with output in rest position
Function D



Link to be made between terminals X2 and X4 on one side and between X1 and X2 on the other side

Symmetrical flasher,
start with output in operating position
Function Di



Link to be made between terminals X1 and X4

Note : *For supply voltages greater than 30 V, the rated voltage of the load is equal to the supply voltage. For a supply voltage of 24 V, the voltage drop within the RE9 relay must be taken into account (about 3 V); a coil with a nominal voltage of 21 V must therefore be selected for the load.*

Characteristics : pages 18 and 19
Dimensions : page 20

Zelio Time - timing relays
Modular relays, relay output, width 17.5 mm

Timing characteristics

Relay type				RE11 R● ●●	RE11 RME MU
Selectable timing ranges by selector switch on front panel			**s**	0.1…1	0.1…1
				1…10	1…10
			min	0.1…1	0.1…1
				1…10	1…10
			h	0.1…1	0.1…1
				1…10	1…10
				10…100	–
Repeat accuracy (with constant parameters)	Conforming to IEC 61812-1			± 0.5 %	
Drift	Temperature			± 0.05 % / °C	
	Voltage			± 0.2 % / V	
Setting accuracy at full scale	Conforming to IEC 61812-1			± 10 % at 25 °C	
Minimum duration of control pulse	Typical		**ms**	30	
	Typical with load in parallel		**ms**	100	
Maximum reset time by de-energisation	Typical		**ms**	100	
Immunity to microbreaks	Typical		**ms**	> 10	

Supply characteristics

Relay type				RE11 R● ●●	RE11 R● JU
Supply voltage			**V**	∿/⎓ 12…240 ⎓ 24/∿ 24…240 depending on version	∿/⎓ 12 V
Frequency			**Hz**	50/60	
Operating range				85…110 % of Un	90…120 % of Un
On-load factor				100 %	
Maximum power consumption	Depending on model	∿/⎓ 12 V	**VA/W**	–	0.4
		⎓ 24 V	**W**	0.6	–
		⎓ 240 V	**W**	1.5	–
		∿ 240 V	**VA**	32	–

Output characteristics

Relay type			RE11 R● ●●	RE11 RME MU
Output type			Relay, 1 C/O contact, AgNi (cadmium-free)	
Breaking capacity			∿ 2000 VA, ⎓ 80 W	∿ 1250 VA, ⎓ 50 W
Maximum breaking current		**A**	∿ 8, ⎓ 8	∿ 5, ⎓ 5
Minimum breaking current		**mA**	10 /⎓ 10 V	
Maximum switching voltage		**V**	∿/⎓ 250 (except RE11 RMX MU: ∿ 250 and ⎓ 150)	
Electrical life			10^5 operations 8 A 250 V resistive	10^5 operations 5 A 250 V resistive
Mechanical life			5 x 10^6 operations	
Dielectric strength	Conforming to IEC 61812-1	**kV**	2.5/1min/1 mA/50 Hz	
Impulse voltage	Conforming to IEC 60664-1, IEC 61812-1	**kV**	5, wave: 1.2/50 µs	

Display characteristics

State indication by 1 LED	Green		Operating status indication Pulsing: relay energised, no timing in progress (except functions Di-D and Li-L) Flashing: timing in progress On steady: relay energised, no timing in progress

Input characteristics

Input type			Volt-free contact (no potential) Control possible by 3-wire sensor with PNP output, maximum residual voltage: 0.4 V whatever the supply voltage of the timer

References : pages 23 and 24
Dimensions : pages 24 and 26
Schemes : pages 25 and 27

Zelio Time - timing relays
Modular relays, relay output, width 17.5 mm

General characteristics

Conforming to standards			IEC 61812-1, EN 50081-1/2, EN 50082-1/2, LV directives (73/23/EEC + 93/68/EEC (CE marking) + EMC directive (89/336/EEC + IEC 60669-2-3)
Approvals			cULus, CSA, GL except RE11 RMX MU and RE11 RME MU
Ambient air temperature around the device	Storage	**°C**	- 30…+ 60
	Operation	**°C**	- 20…+ 60
Creepage distance and clearance	Conforming to IEC 60664-1	**kV**	4 kV/3
Degree of protection conforming to IEC 60529	Terminal block		IP 20
	Housing		IP 40
	Front panel		IP 50
Vibration resistance	Conforming to IEC 60068-2-6		f = 10…55 Hz A = 0.35 mm
Relative humidity without condensation	Conforming to IEC 60068-2-3		93 %
Electromagnetic compatibility	Immunity to electrostatic discharge, conforming to IEC 61000-4-2		Level III (Air 8 kV/Contact 6 kV)
	Immunity to electromagnetic fields, conforming to ENV 50140/204 (IEC 61000-4-3)		Level III (10 V/m: 80 MHz…1 GHz)
	Immunity to fast transients in bursts, conforming to IEC 61000-4-4		Level III (direct 2 kV / capacitive connecting clip 1 kV)
	Immunity to surges on the power supplies, conforming to IEC 61000-4-5		Level III (common mode 2 kV / differential mode 1 kV)
	Immunity to radio frequency interference in common mode, conforming to ENV 50141 (IEC 61000-4-6)		Level III (10 V rms: 0.15…80 MHz)
	Immunity to voltage dips and breaks, conforming to IEC 61000-4-11		30 % / 10 ms 60 % / 100 ms 95 % / 5 s
	Radiated and mains conducted disturbance, conforming to EN 55022 (EN 55011 Group 1)		Class B
Fixing	Symmetrical mounting rail (EN 50022)	**mm**	35
Clamping capacity	Without cable end	**mm²**	2 x 2.5 and 1 x 4
	With cable end	**mm²**	2 x 1.5
Spring terminals, 2 terminals per connection point	Flexible cable	**mm²**	1.5
	Solid cable	**mm²**	2.5
Housing material			Self-extinguishing

References :
pages 23 and 24

Dimensions :
pages 24 and 26

Schemes :
pages 25 and 27

Zelio Time - timing relays

Modular relays, relay output
width 17.5 mm

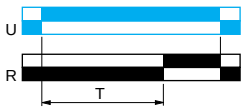
Output 1 C/O contact

- *Dual function or single function*
- *Multi-range (7 selectable ranges)*
- *Multivoltage*
- *1 relay output: 8 A*
- *Screw terminals*
- *State indication by 1 LED*
- *Option of supplying a load in parallel*
- *3-wire sensor control option*

Function diagrams

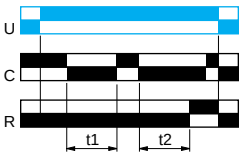
Function A

Delay on energisation



Function At

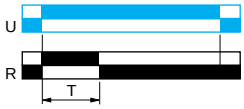
Delay on energisation with memory



T = t1 + t2 + ...

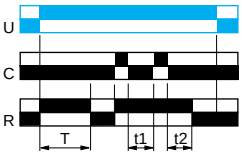
Function H

Timing on energisation



Function Ht

Timing on energisation with memory



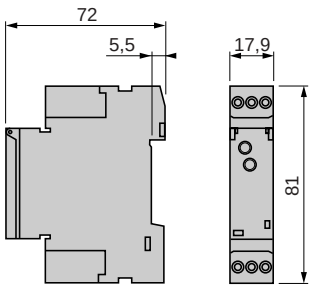
T = t1 + t2 + ...

References

Functions		Dual function	Dual function
		A - At	H - Ht
Timing ranges	7 ranges	1 s - 10 s - 1 min - 10 min - 1 h - 10 h - 100 h	1 s - 10 s - 1 min - 10 min - 1 h - 10 h - 100 h
Voltages	∿/ ⎓ 12 V	–	–
	⎓ 24 V / ∿ 24…240 V	**RE11 RA MU**	**RE11 RH MU**
Nominal output current		8 A	8 A
Connection	Screw terminals	●	●
Weight (kg)		0.060	0.060

Dimensions and connection schemes

Dimensions



Characteristics :
pages 22 and 23

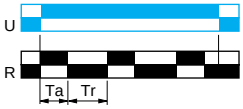
Schemes :
page 27

Function L

Asymmetrical flashing,
start with output in rest position

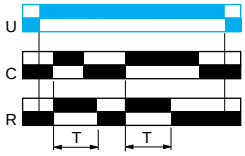
Function Li

Asymmetrical flashing,
start with output in operating position



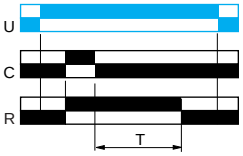
Function B

Timing on impulse, one shot



Function C

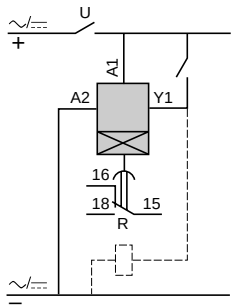
Timing after opening
of control contact



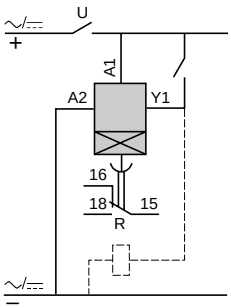
Dual function	**Dual function**	**Single function**	**Single function**
L - Li	L - Li	B	C
1 s - 10 s - 1 min - 10 min - 1 h - 10 h - 100 h	1 s - 10 s - 1 min - 10 min - 1 h - 10 h - 100 h	1 s - 10 s - 1 min - 10 min - 1 h - 10 h - 100 h	1 s - 10 s - 1 min - 10 min - 1 h - 10 h - 100 h
–	**RE11 RL JU**	–	–
RE11 RL MU	–	**RE11 RB MU**	**RE11 RC MU**
8 A	8 A	8 A	8 A
●	●	●	●
0.060	0.060	0.060	0.060

Connection schemes

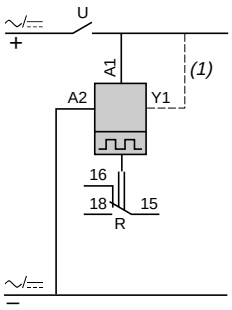
Functions A and At



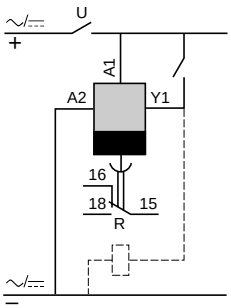
Functions H and Ht



Functions L and Li



Functions B and C



(1) Link A1-Y1 for function L only.

Characteristics :
pages 22 and 23

Dimensions :
page 26

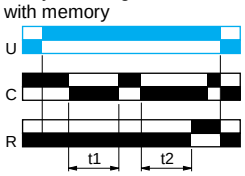
Zelio Time - timing relays
Modular relays, relay output, width 17.5 mm

Output 1 C/O contact
- *Multifunction*
- *Multi-range (6 or 7 selectable ranges)*
- *Multivoltage*
- *1 relay output: 5 or 8 A*
- *Screw or spring terminals*
- *State indication by 1 LED*
- *Option of supplying a load in parallel*
- *3-wire sensor control option*

Function diagrams

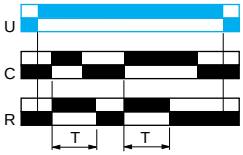
Function A
Delay on energisation

Function At
Delay on energisation with memory

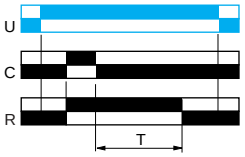


T = t1 + t2 + ...

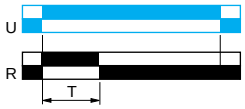
Function B
Timing on impulse, one shot



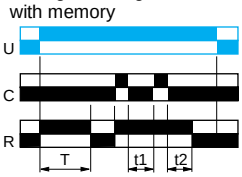
Function C
Timing after opening of control contact



Function H
Timing on energisation



Function Ht
Timing on energisation with memory

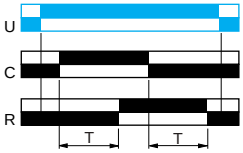


T = t1 + t2 + ...

Function D
Symmetrical flashing, start with output in rest position

Function Di
Symmetrical flashing, start with output in operating position

Function Ac
Timing after closing and opening of control contact



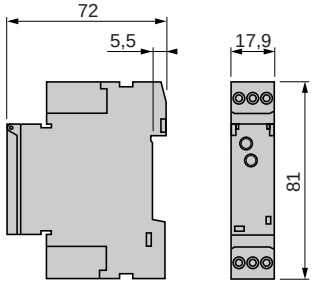
References

Functions		Multifunction	Multifunction
		A - At - B - C - H - Ht - D - Di - Ac - Bw	A - At - B - C - H - Ht - D - Di - Ac - Bw
Timing ranges	6 or 7 ranges	1 s - 10 s - 1 min - 10 min - 1 h - 10 h - 100 h	1 s - 10 s - 1 min - 10 min - 1 h - 10 h - 100 h
Voltages	∿/⎓ 12 V	–	–
	⎓ 24 V / ∿ 24…240 V	**RE11 RM MU**	–
	∿/⎓ 12…240 V	–	**RE11 RM MW**
Nominal output current		8 A	8 A
Connection	Screw terminals	●	●
	Spring terminals	–	–
Weight (kg)		0.060	0.060

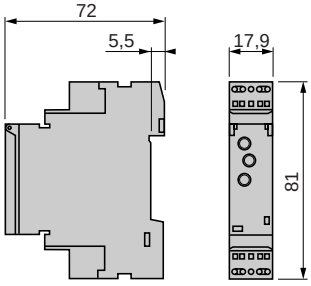
Dimensions and connection scheme

Dimensions

RE11 RM● MU, RE11 RM MW, RE11 RM JU



RE11 RM MWS

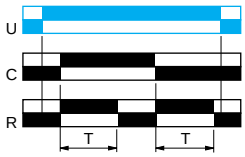


Characteristics : pages 22 and 23

Schemes : page 25

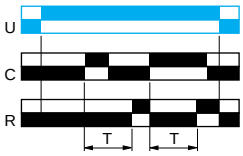
Function Bw

Pulse output (width adjustable)



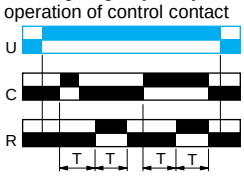
Function Ad

Timing on closing of control contact



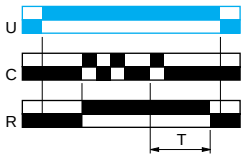
Function Ah

Flashing single cycle by operation of control contact



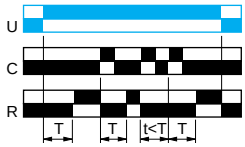
Function N

"Safe-guard"



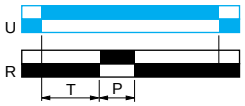
Function O

"Delayed safe-guard"



Function P

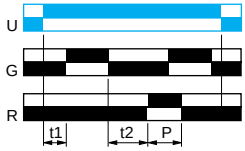
Delayed fixed-length pulse



P = 500 ms

Function Pt

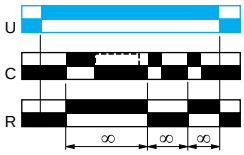
Impulse counter (on-delay)



T = t1 + t2 + ...
P = 500 ms

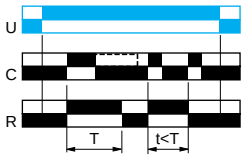
Function T

Bistable relay



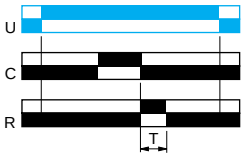
Function Tt

Timed impulse relay



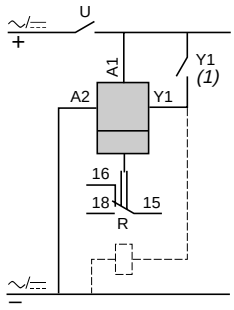
Function W

On-delay after opening of control contact



Multifunction	Multifunction	Multifunction	Multifunction
A - At - B - C - H - Ht - D - Di - Ac - Bw	A - At - B - C - H - Ht - D - Di - Ac - Bw	A - At - B - C - H - Ht - D - Di	Ad - Ah - N - O - P - Pt - T - Tt - W
1s-10s-1min-10min-1h-10h-100h	1s-10s-1min-10min-1h-10h-100h	1s-10s-1min-10min-1h-10h	1s-10s-1min-10min-1h-10h-100h
–	**RE11 RM JU**	–	–
–	–	**RE11 RME MU**	**RE11 RMX MU**
RE11 RM MWS	–	–	–
8 A	8 A	5 A	8 A
–	●	●	●
●	–	–	–
0.060	0.060	0.060	0.060

Connection scheme



(1) Contact Y1 :
- *Control for functions B, C, Ac, Bw, Ad, Ah, N, O, W, T, Tt.*
- *Partial stop for functions At, Ht and Pt.*
- *Function D if Di selected.*
- *Not used for functions A, H and P.*

Characteristics : pages 22 and 23

Dimensions : page 24

Zelio Time - timing relays

Industrial single or multifunction relays, relay output, width 22.5 mm

Presentation

The RE7 range of relays, with only 23 references, covers all timing applications.

These relays offer multi-range timing from 50 ms to 300 h.

They are multivoltage.

Three models combine several different functions: multifunction relays.

These products have a transparent, hinged flap on their front face to avoid any accidental alteration of the settings. This flap can be directly sealed.

Environment

Conforming to standards			IEC 61812-1, EN 61812-1
Product certifications			CSA, GL pending, UL
CE marking			Zelio Time timing relays conform to European regulations relating to CE marking
Ambient air temperature around the device	Storage	°C	- 40…+ 85
	Operation	°C	- 20…+ 60
Permissible relative humidity range	Conforming to IEC 60721-3-3		15…85 % Environmental class 3K3
Vibration resistance	Conforming to IEC 6068-2-6, 10 to 55 Hz		a = 0.35 ms
Shock resistance	Conforming to IEC 6068-2-27		15 gn - 11 ms
Degree of protection	Casing		IP 50
	Terminals		IP 20
Degree of pollution	Conforming to IEC 60664-1		3
Overvoltage category	Conforming to IEC 60664-1		III
Rated insulation voltage Between contact circuit and power supply or between contact circuit and control inputs	Conforming to IEC	V	250
	Conforming to CSA	V	300
Test voltage for insulation tests	Dielectric test	kV	2.5
	Shock wave	kV	4.8
Voltage limits	Power supply circuit		0.85…1.1 Uc
Frequency limits	Power supply circuit	Hz	50/60 ± 5 %
Disconnection value	Power supply circuit		> 0.1 Uc
Mounting position without derating	In relation to normal vertical mounting plane		Any position
Cabling Maximum c.s.a.	Flexible cable without cable end	mm^2	2 x 2.5
	Flexible cable with cable end	mm^2	2 x 1.5
Tightening torque		N.m	0.6…1.1

Immunity to electromagnetic interference (EMC) (application class 2 conforming to EN 61812-1)

Electrostatic discharge	Conforming to IEC 61000-4-2	Level 3 (6 kV contact, 8 kV air)
Electromagnetic fields	Conforming to IEC 61000-4-3	Level 3 (10 V/m)
Fast transients	Conforming to IEC 61000-4-4	Level 3 (2 kV)
Shock waves	Conforming to IEC 61000-4-5	Level 3 (2 kV)
Radiated and conducted emissions	CISPR11	Group 1 class A
	CISPR22	Class A

Consumption

Average consumption			∿ 50/60 Hz					⎓			
			24 V	48 V	110 V	240 V		24 V	48 V	110 V	240 V
	RE7-●●11BU	VA	0.7	1.6	1.8	8.5	W	0.5	1.2	–	–
	RE7-●●12BU and RE7-●●13BU	VA	1.2	2	2.8	12.5	W	0.8	1.6	–	–
	RE7-●●●●MW *(1)*	VA	2	2.5	3.2	6	W	2	1	3.2	2

(1) RE7-RB●●MW: current peak on energisation = 1 A / 30 ms.

References :
pages 30 to 33

Zelio Time - timing relays

Industrial single or multifunction relays, relay output, width 22.5 mm

Timing characteristics

Setting accuracy	As % of the full-scale value		± 10 %		
Repeat accuracy			± 0.2 %		
Influence of voltage	In the voltage range, 0.85…1.1 Un		< 0.2 %		
Influence of temperature			< 0.07 %/°C		
Immunity to microbreaks		**ms**	3		
Minimum control pulse		**ms**	20 (except **RE7-RB1●MW**: 1 s)		
Reset time		**ms**	50		

Output circuit characteristics

Maximum switching voltage		**V**	≂ 250		
Mechanical durability	In millions of operating cycles		20		
Current limit Ith		**A**	8 (except **RE7-RB●●MW**: 5 A)		
Rated operational limits at 70 °C Conforming to IEC 60947-5-1/1991 and VDE 0660			24 V	115 V	250 V
	AC-15	**A**	3	3	3
	DC-13	**A**	2	0.2	0.1
Minimum switching capacity			12 V/10 mA		
Contact material			90/10 nickel silver (except **RE7-RB●●MU**: gold flashed silver alloy)		

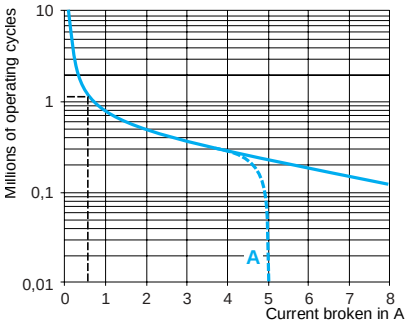
Remote control input characteristics

Maximum voltage	Applicable to inputs Y1Z2, X1Z2, X2Z2	**V**	60
Signal delivered by control inputs Y1Z2, X1Z2, X2Z2 ⚠ No galvanic insulation between these inputs and the supply	Switching current	**mA**	< 1
	Maximum distance	**m**	50
	Compatibility		3/4-wire PNP and NPN Telemecanique sensors or other sensors without an internal load
Potentiometer for connection between terminals Z1Z2, Z3Z2	Type		Linear at ± 20 %
	Resistance	**kΩ**	47 ± 20 %
	Power	**W**	0.2
	Maximum distance	**m**	25 by shielded cable: shielding linked to terminal Z2

a.c. load

Curve 1

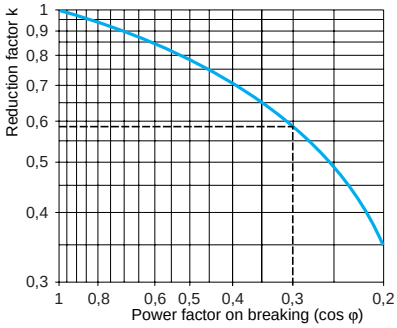
Electrical durability of contacts on resistive load in millions of operating cycles



A **RE7-RB●●MW**

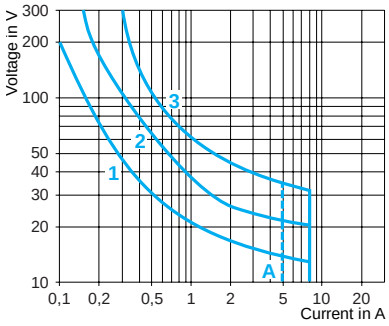
Curve 2

Reduction factor k for inductive loads (applies to values taken from durability curve 1)



d.c. load

Load limit curve

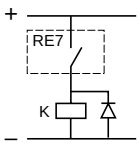


A **RE7-RB●●MW**
1 L/R = 20 ms
2 L/R with load protection diode
3 Resistive load

Example:

An LC1-F185 contactor supplied with 115 V/50 Hz for a consumption of 55 VA or a current consumption equal to 0.1 A and cos φ = 0.3.
For 0.1 A, curve 1 indicates a durability of approximately 1.5 million operating cycles.
As the load is inductive, it is necessary to apply a reduction coefficient k to this number of cycles as indicated by curve 2.

For cos φ = 0.3: k = 0.6
The electrical durability therefore becomes:
1.5 10^6 operating cycles x 0.6 = 900 000 operating cycles.



References :
pages 30 to 33

Zelio Time - timing relays

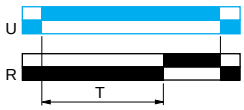
Industrial single or multifunction relays, relay output, width 22.5 mm

Output 1 C/O contact
Multiple timing ranges

Function diagrams

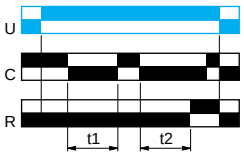
Function A

Delay on energisation



Function At

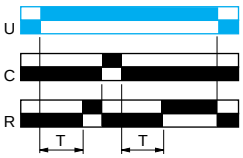
Delay on energisation with memory



T = t1 + t2 + ...

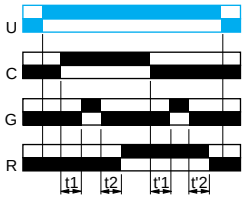
Function Aw

Off-delay on energisation or on opening of control contact



Function Ac

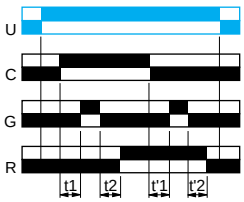
Timing after closing and opening of control contact



T = t1 + t2 + ...
T = t'1 + t'2 + ...

Function Ak

Asymmetrical On-delay and Off-delay with external control



Ta = t1 + t2 + ...
Tr = t'1 + t'2 + ...

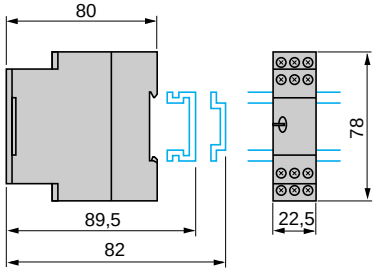
References

Functions		**A**	**A, Aw, At**	**Ac**	**Ak**
Timing ranges		0.05 s…300 h 10 ranges	0.05 s…300 h 10 ranges	0.05 s…300 h 10 ranges	0.05 s…300 h 10 ranges
Voltages	⎓ or ∿ 24 V	●	●	●	●
	∿ 110…240 V	●	●	●	●
	∿ or ⎓ 42…48 V	–	●	●	●
	⎓ or ∿ 24…240 V	–	–	–	–
References		**RE7 TL11BU**	**RE7 TM11BU**	**RE7 MA11BU**	**RE7 MV11BU**
Weight (kg)		0.150	0.150	0.150	0.150

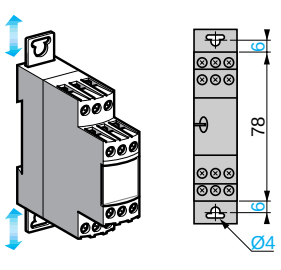
Dimensions and connection schemes

Dimensions

Rail mounting

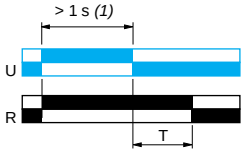


Screw fixing

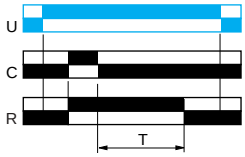


Characteristics : pages 28 and 29
Schemes : pages 34 and 35

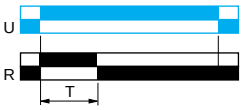
Function K
Delay on de-energisation (without auxiliary supply)



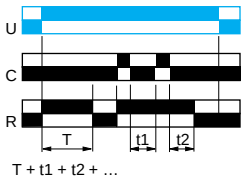
Function C
Timing after opening of control contact



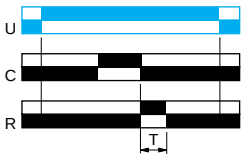
Function H
Timing on energisation



Function Ht
Timing on energisation with memory

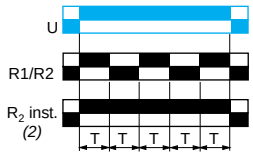


Function W
On-delay after opening of control contact

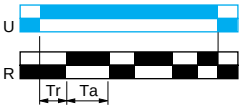


Function D
Symmetrical flashing, start with output in rest position

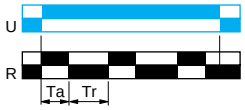
Function Di
Symmetrical flashing, start with output in operating position



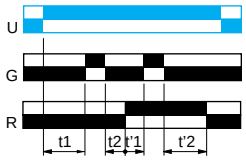
Function L
Asymmetrical flashing, start with output in rest position



Function Li
Asymmetrical flashing, start with output in operating position



Function Lt
Asymmetrical flashing with partial stop of timing



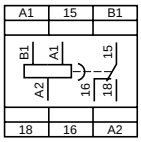
Tr = t1 + t2 + …
Ta = t'1 + t'2 + …

(1) If the device has been stored, de-energised, for more than a month, it must be energised for about 15 seconds in order to activate it. Subsequently, it only takes 1 second to start the time delay. ⚠ If this time is not complied with, the relay remains energised indefinitely.
(2) 2 timed outputs (R1/R2) or 1 timed output (R1) and 1 instantaneous output (R2 inst.).

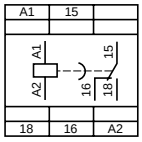
K	**C**	**H**	**Ht, W**	**D**	**L, Li, Lt**	A, C, H, W, D, Di
0.05 s…10 min 7 ranges	0.05 s…300 h 10 ranges	0.05 s…300 h 10 ranges	0.05 s…300 h 10 ranges	0.05 s…300 h 10 ranges	0.05 s…300 h 10 ranges	0.05 s…300 h 10 ranges
–	●	●	●	●	●	●
–	●	●	●	●	●	●
–	●	–	●	–	●	●
●	–	–	–	–	–	–
RE7 RB11MW	**RE7 RA11BU** **RE7 RM11BU** low level contact	**RE7 PE11BU**	**RE7 PM11BU**	**RE7 CL11BU**	**RE7 CV11BU**	**RE7 ML11BU**
0.150	0.150	0.150	0.150	0.150	0.150	0.150

Connection schemes

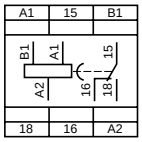
RE7 TL11BU



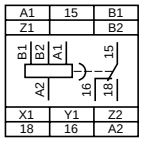
RE7 RB11MW



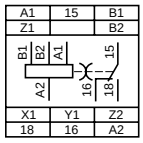
RE7 PE11BU



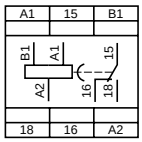
RE7 TM11BU, RE7 RA11BU RE7 RM11BU, RE7 PM11BU



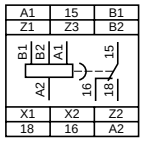
RE7 MA11BU RE7 MV11BU



RE7 CL11BU



RE7 CV11BU



Characteristics : pages 28 and 29
Dimensions : page 30
Schemes : pages 34 and 35

Zelio Time - timing relays

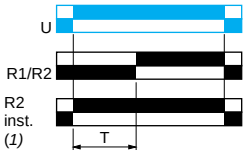
Industrial single or multifunction relays, relay output, width 22.5 mm

Output 2 C/O contacts
Multiple timing ranges

Function diagrams

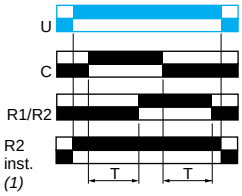
Function A

Delay on energisation



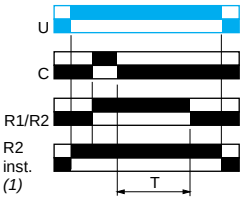
Function Ac

Timing after closing and opening of control contact



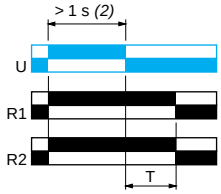
Function C

Timing after opening of control contact



Function K

Delay on de-energisation (without auxiliary supply)



(1) 2 timed outputs (R1/R2) or 1 timed output (R1) and 1 instantaneous output (R2 inst.).
(2) If the device has been stored, de-energised, for more than a month, it must be energised for about 15 seconds in order to activate it. Subsequently, it only takes 1 second to start the time delay. ⚠ If this time is not complied with, the relay remains energised indefinitely.

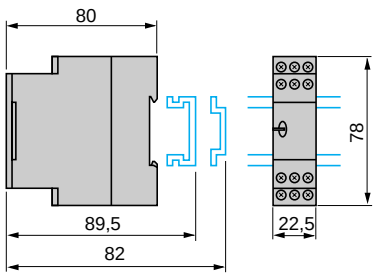
References

Functions		**A**	**Ac**	**C**	**K**
Timing ranges		0.05 s…300 h 10 ranges	0.05 s…300 h 10 ranges	0.05 s…300 h 10 ranges	0.05 s…10 min 7 ranges
Voltages	⎓ or ∿ 24 V	●	●	●	–
	∿ 110…240 V	●	●	●	–
	∿ or ⎓ 42…48 V	●	●	●	–
	⎓ or ∿ 24…240 V	–	–	–	●
References		**RE7 TP13BU**	**RE7 MA13BU** symmetrical	**RE7 RL13BU** low level contact	**RE7 RB13MW**
Weight (kg)		0.150	0.150	0.150	0.150

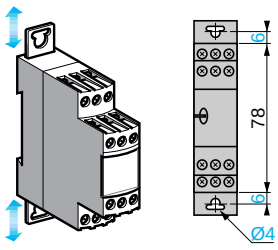
Dimensions and connection schemes

Dimensions

Rail mounting



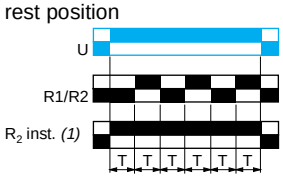
Screw fixing



Characteristics : pages 28 and 29
Schemes : pages 34 and 35

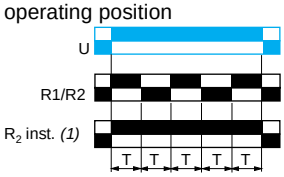
Function D

Symmetrical flashing, start with output in rest position



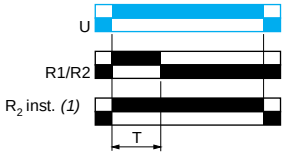
Function Di

Symmetrical flashing, start with output in operating position



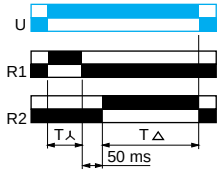
Function H

Timing on energisation



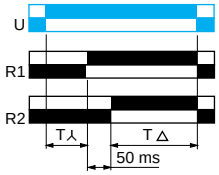
Function Qg

Star-delta timing



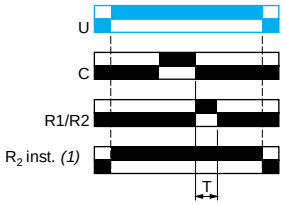
Function Qt

Star-delta timing



Function W

On-delay after opening of control contact

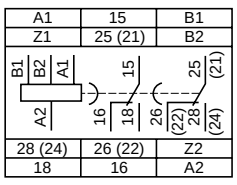


(1) 2 timed outputs (R1/R2) or 1 timed output (R1) and 1 instantaneous output (R2 inst.).

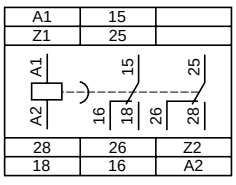
H	W	D	Qt	Qg	A, C, H, W, D, Di, Qg, Qt	
0.05 s…300 h 10 ranges	0.05 s…300 h 10 ranges	0.05 s…300 h 10 ranges	0.05 s…300 h 10 ranges	0.05 s…300 h 10 ranges	0.05 s…300 h 10 ranges	
●	●	●	●	●	●	–
●	●	●	●	●	●	–
●	●	●	●	●	●	–
–	–	–	–	–	–	●
RE7 PP13BU	**RE7 PD13BU**	**RE7 CP13BU**	**RE7 YA12BU**	**RE7 YR12BU**	**RE7 MY13BU**	**RE7 MY13MW**
0.150	0.150	0.150	0.150	0.150	0.150	0.150

Connection schemes

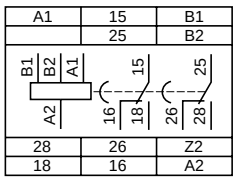
RE7 TP13BU



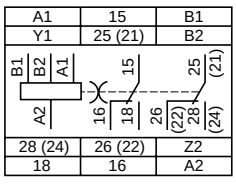
RE7 RB13MW



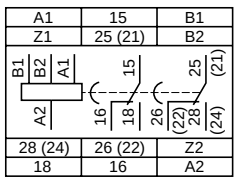
RE7 YA



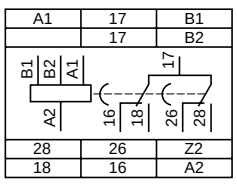
RE7 RL13BU, RE7 MA13BU
RE7 PD13BU



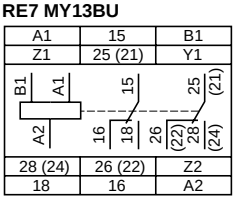
RE7 PP13BU
RE7 CP13BU



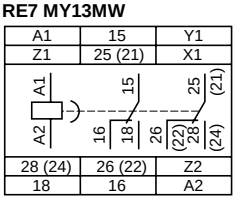
RE7 YR



RE7 MY13BU



RE7 MY13MW



Characteristics : pages 28 and 29
Dimensions : page 32
Schemes : pages 34 and 35

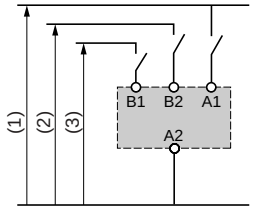
Zelio Time - timing relays

Industrial single or multifunction relays,
relay output, width 22.5 mm

Recommended application schemes

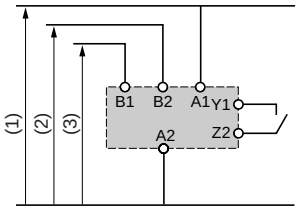
RE7 TL, TM, TP, CL, CP, ML, MY

Start on energisation



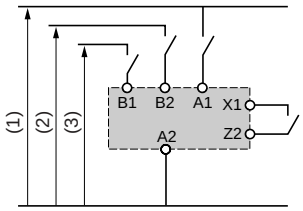
RE7 TM, MA, MV, RM, RL, PM, PD, ML, MY

Start by external control



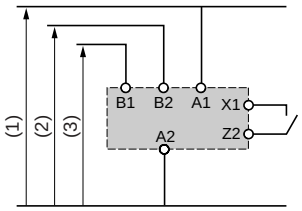
RE7 TM, PM, ML, MY

External control of partial stop



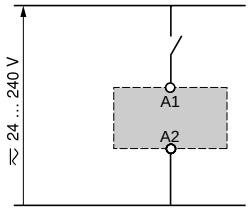
RE7 MA, MV, RA, RM

Start by external control



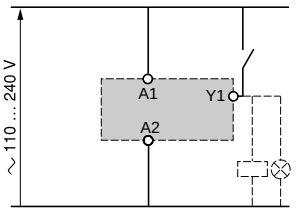
RE7 RB

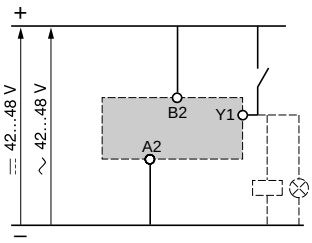
Start on de-energisation

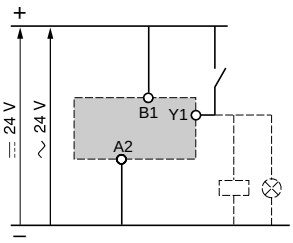


RE7 RA

Start by external control

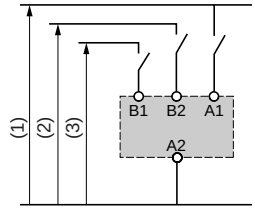






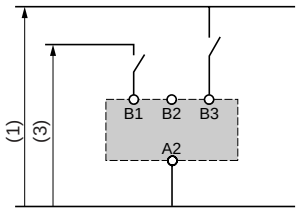
RE7 PP

Start on energisation



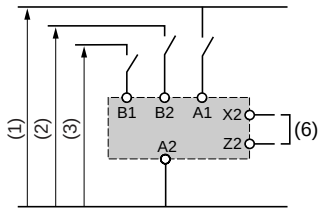
RE7 PE

Start on energisation



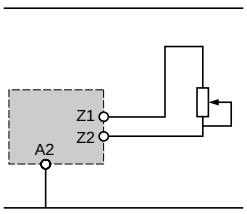
RE7 CV

Selection of starting phase



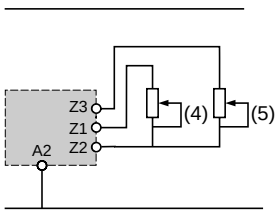
RE7 TM, TP, MA, RA, RM, PP, PM, ML, MY

Connection of potentiometer



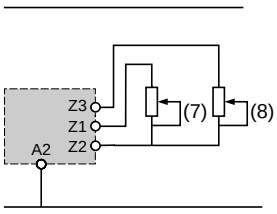
RE7 MV

Connection of potentiometers to asymmetrical timing relays

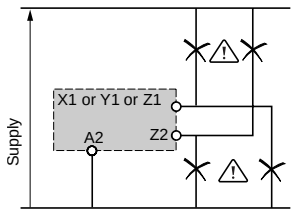


RE7 CV

Connection of potentiometers



Connection precautions



⚠ No galvanic isolation between supply terminals A1, A2, B1, B2 and control inputs X1, Y1, Z1, Z2.

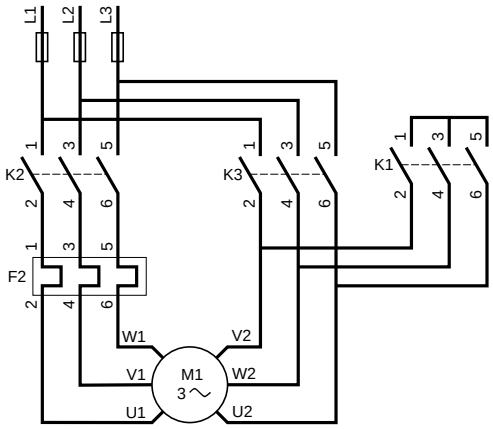
(1) ∿ 110...240 V except RE7 MY13MW : ⎓ 24...240 V
(2) ⎓ 12...48 V
(3) ⎓ 24 V
(4) Adjustment of the On-delay period
(5) Adjustment of the Off-delay period
(6) Start during the On-delay period : X2, Z2 linked. Start during the Off-delay period : X2, Z2 not linked
(7) Off-delay adjustment (tr) (contact 15/16 closed)
(8) On-delay adjustment (ta) (contact 15/18 closed)

Characteristics : pages 28 and 29
References : pages 30 to 33

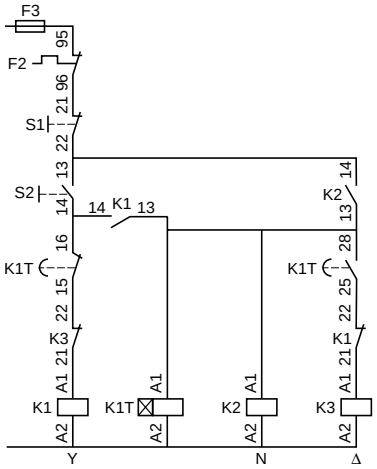
Zelio Time - timing relays
Industrial single or multifunction relays, relay output, width 22.5 mm

Recommended application schemes (continued)

Power scheme
RE7 YA12BU



Control schemes
Star-delta function with double On-delay timing Qt

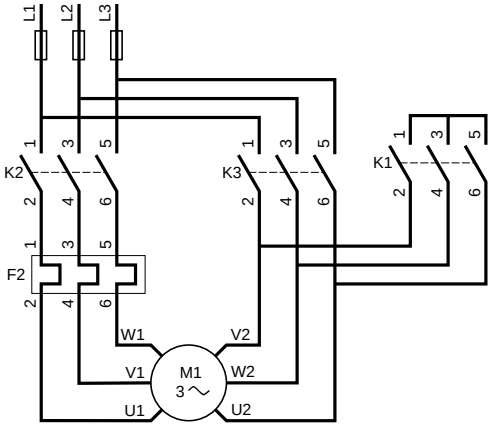


Terminal block

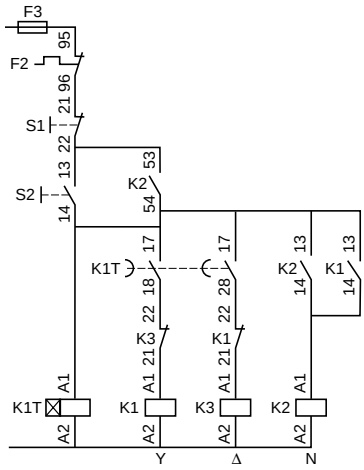
A1	15	B1
	25	B2
28	26	Z2
18	16	A2

K1T = relay RE7 YA

Power scheme
RE7 YR12BU



Control schemes
Star-delta function with contact for switching to star connection Q



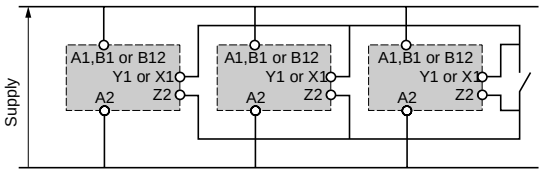
Terminal block

A1	17	B1
	17	B2
28	26	Z2
18	16	A2

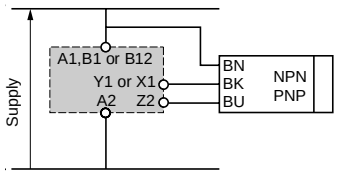
K1T = relay RE7 YR

⚠ No galvanic isolation between supply terminals A1, A2, B1, B2 and supply terminal Z2.
This terminal must therefore never be used (factory setting).

Control of several relays with a single external control contact



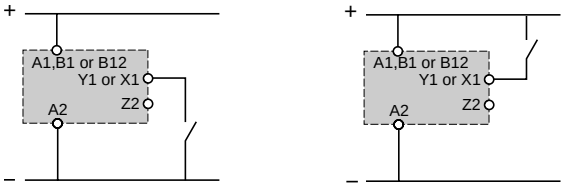
Connection of a Telemecanique 3-wire NPN or PNP sensor



It is advisable to follow the recommended wiring schemes detailed above and on previous pages. However, the connections below are possible if the restrictions given are taken into account.

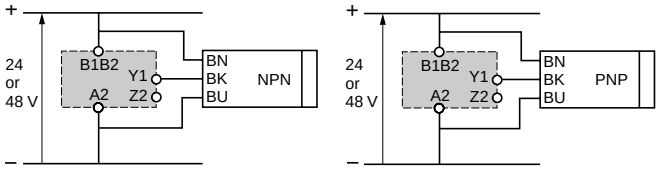
Connection of an external control contact without using terminal Z2:

- possible on all RE7 relays with external control option except RE7 RA11BU,
- d.c. supply only.



Connection of a Telemecanique 3-wire NPN or PNP sensor without using terminal Z2:

- only possible on relay RE7●●●●BU,
- d.c. supply only.



Characteristics : pages 28 and 29
References : pages 30 to 33

Zelio Time - timing relays

Industrial single-function relays, optimum, relay output, width 22.5 mm

Presentation

The RE8 range of relays is designed for simple and repetitive applications, providing basic functions.

Each relay comprises:
- a single timing range,
- a C/O output relay.

These products have a transparent, hinged flap on their front face to avoid any accidental alteration of the settings. This flap can be directly sealed.

Environment

Conforming to standards			IEC 61812-1. EN 61812-1
Product certifications			CSA, GL pending. UL
CE marking			Zelio Time timing relays conform to European regulations relating to CE marking
Ambient air temperature around the device	Storage	**°C**	- 40…+ 85
	Operation	**°C**	- 20…+ 60
Permissible relative humidity range	Conforming to IEC 60721-3-3		15…85 % Environmental class 3K3
Vibration resistance	Conforming to IEC 6068-2-6, 10 to 55 Hz		a = 0.35 ms
Shock resistance	Conforming to IEC 6068-2-27		15 gn - 11 ms
Degree of protection	Casing		IP 50
	Terminals		IP 20
Degree of pollution	Conforming to IEC 60664-1		3
Overvoltage category	Conforming to IEC 60664-1		III
Rated insulation voltage	Conforming to IEC	**V**	250
	Conforming to CSA	**V**	300
Test voltage for insulation tests	Dielectric test	**kV**	2.5
	Shock wave	**kV**	4.8
Voltage limits	Power supply circuit		0.9…1.1 Uc
Frequency limits	Power supply circuit	**Hz**	50/60 ± 5 %
Disconnection value	Power supply circuit		> 0.1 Uc
Mounting position without derating	In relation to normal vertical mounting plane		Any position
Connection maximum c.s.a.	Flexible cable without cable end	**mm^2**	2 x 2.5
	Flexible cable with cable end	**mm^2**	2 x 1.5
Tightening torque		**N.m**	0.6…1.1

Immunity to electromagnetic interference (EMC) (application class 2 conforming to EN 61812-1)

Electrostatic discharge	Conforming to IEC 61000-4-2		Level 3 (6 kV contact, 8 kV air)
Electromagnetic fields	Conforming to IEC 61000-4-3		Level 3 (10 V/m)
Fast transients	Conforming to IEC 61000-4-4		Level 3 (2 kV)
Shock waves	Conforming to IEC 61000-4-5		Level 3 (2 kV)
Radiated and conducted emissions	CISPR11		Group 1 class A
	CISPR22		Class A

Consumption

			~						⎓
			24 V	110 V	240 V	380 V	415 V		24 V
Consumption	RE8-TA, RA, CL, PE, PU, PT	**VA**	0.7	1.8	8.5	–	–	**W**	0.5
	RE8-YG, RB	**VA**	0.9	2.5	13	–	–	**W**	0.5
	RE8-YA	**VA**	0.9	2.5	13	8	9	**W**	0.7

References : pages 38 to 41
Dimensions : pages 38 and 40
Schemes : page 39

Zelio Time - timing relays

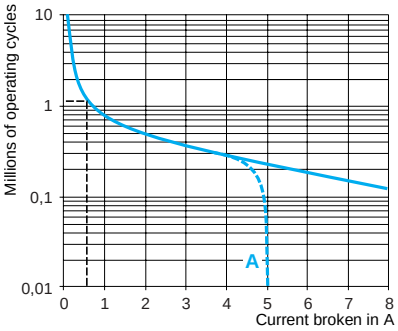
Industrial single-function relays, optimum, relay output, width 22.5 mm

Timing characteristics					
Setting accuracy	As % of the full-scale value		± 20 %		
Repeat accuracy			< 1 %		
Influence of voltage	In the voltage range, 0.9…1.1 Un		< 2.5 %		
Influence of temperature			< 0.2 %/°C		
Immunity to microbreaks		**ms**	3		
Minimum control pulse		**ms**	26 (except **RE8-YG**: 60)		
Reset time		**ms**	50		
Output circuit characteristics					
Maximum switching voltage		**V**	≂ 250		
Mechanical durability	In millions of operating cycles		20		
Current limit Ith		**A**	8		
Rated operational limits at 70 °C Conforming to IEC 60947-5-1/1991 and VDE 0660			24 V	115 V	250 V
	AC-15	**A**	3	3	3
	DC-13	**A**	2	0.2	0.1
Minimum switching capacity			12 V/10 mA		
Contact material			90/10 nickel silver		
Remote control input characteristics					
Signal delivered by control input Y1 ⚠ No galvanic insulation between this input and the supply	No-load voltage		Supply voltage		
	Switching current	**mA**	< 10		
	Maximum distance	**m**	50		
	Compatibility		2-wire sensors ⎓ with leakage current < 1 mA		

a.c. load

Curve 1

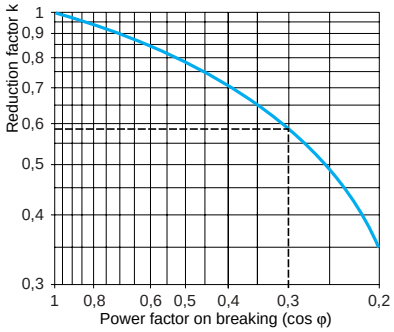
Electrical durability of contacts on resistive load in millions of operating cycles



A **RE8-RB●●BUTQ**

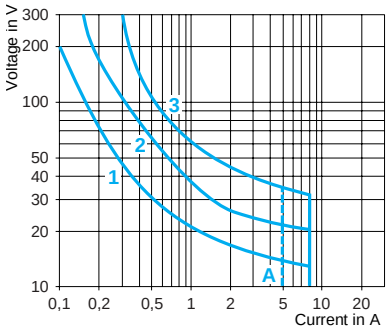
Curve 2

Reduction factor k for inductive loads (applies to values taken from durability curve 1)



d.c. load

Load limit curve

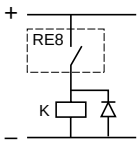


A **RE8-RB●●BUTQ**
1 L/R = 20 ms
2 L/R with load protection diode
3 Resistive load

Example:

An LC1-F185 contactor supplied with 115 V/50 Hz for a consumption of 55 VA or a current consumption equal to 0.1 A and cos φ = 0.3.
For 0.1 A, curve 1 indicates a durability of approximately 1.5 million operating cycles.
As the load is inductive, it is necessary to apply a reduction coefficient k to this number of cycles as indicated by curve 2.

For cos φ = 0.3: k = 0.6
The electrical durability therefore becomes:
1.5 10^6 operating cycles x 0.6 = 900 000 operating cycles.



References : pages 38 to 41
Dimensions : pages 38 and 40
Schemes : page 39

Zelio Time - timing relays

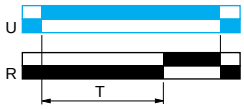
Industrial single-function relays, optimum, relay output, width 22.5 mm

Output 1 C/O contact
Single timing range

Function diagrams

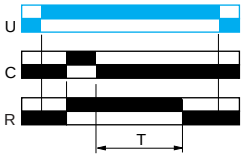
Function A

Delay on energisation



Function C

Timing after opening of control contact



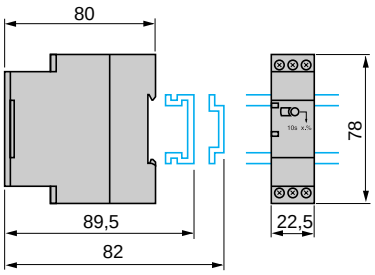
Unit references (Sold in packs of 10)

Functions		A	C	
Voltages	⎓ or ∿ 24 V	●	●	–
	∿ 110…240 V	●	–	●
	∿ 380…415 V	–	–	–
Timing ranges	0.05 s…0.5 s	–	–	–
	0.1 s…3 s	**RE8 TA61BUTQ**	–	–
	0.1 s…10 s	**RE8 TA11BUTQ**	**RE8 RA11BTQ**	**RE8 RA11FUTQ**
	0.3 s…30 s	**RE8 TA31BUTQ**	**RE8 RA31BTQ**	**RE8 RA31FUTQ**
	3 s…300 s	**RE8 TA21BUTQ**	**RE8 RA21BTQ**	**RE8 RA21FUTQ**
	20 s…30 min	**RE8 TA41BUTQ**	–	**RE8 RA41FUTQ**
Weight (kg)		0.110	0.110	0.110

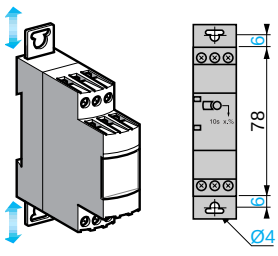
Dimensions

Dimensions

Rail mounting



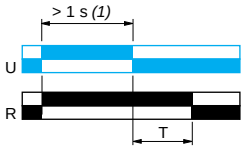
Screw fixing



Characteristics : pages 36 and 37
Schemes : page 39

Function K

Delay on de-energisation (without auxiliary supply)



Function D

Symmetrical flashing, start with output in rest position

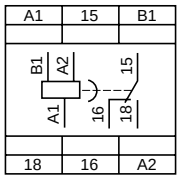
(9) If the device has been stored, de-energised, for more than a month, it must be energised for about 15 seconds in order to activate it. Subsequently, it only takes 1 second to start the time delay. ⚠ If this time is not complied with, the relay remains energised indefinitely.

K	D
●	●
●	●
–	–
RE8 RB51BUTQ	–
–	–
RE8 RB11BUTQ	**RE8 CL11BUTQ**
RE8 RB31BUTQ	–
–	–
–	–
0.110	0.110

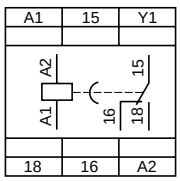
Schemes

Connection schemes

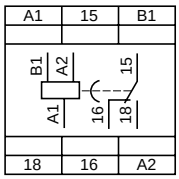
RE8 TA, CL



RE8 RA

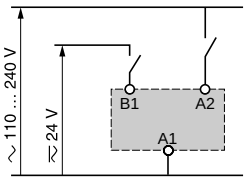


RE8 RB

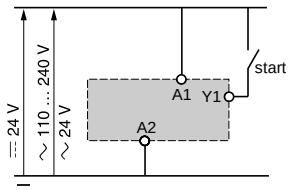


Recommended application schemes

RE8 TA, CL

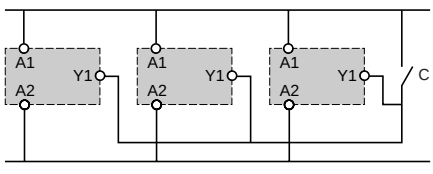


RE8 RA



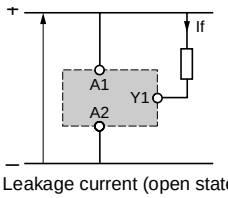
Control of several relays with a single external control contact

RE8 RA, RE8 PD



The external control contact C may be an electronic control device, for example a 2-wire sensor. In this case A1-A2 = ⎓ 24 V and the control device can only control up to a maximum of 4 relays.

Connection of a ⎓ 2-wire sensor



Leakage current (open state) If < 1 mA.

Characteristics : pages 36 and 37
Dimensions : page 38

Zelio Time - timing relays

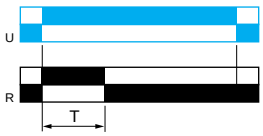
Industrial, single-function relays, optimum, relay output, width 22.5 mm

Output 1 C/O contact
Single timing range

Function diagrams

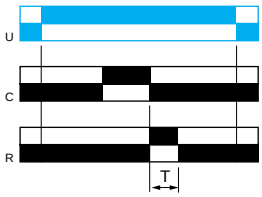
Function H

Timing on energisation



Function W

On-delay after opening of control contact



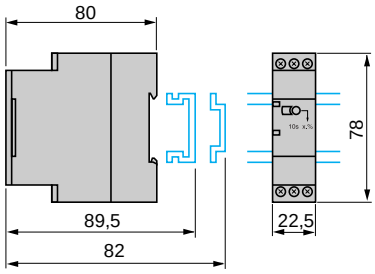
Unit references (Sold in packs of 10)

Functions		H	W	
Voltages	⎓ or ∿ 24 V	●	●	–
	∿ 110…240 V	●	–	●
	∿ 380…415 V	–	–	–
Timing ranges	0.05 s…0.5 s	–	–	–
	0.1 s…3 s	–	–	–
	0.1 s…10 s	**RE8 PE11BUTQ**	**RE8 PD11BTQ**	**RE8 PD11FUTQ**
	0.3 s…30 s	**RE8 PE31BUTQ**	**RE8 PD31BTQ**	**RE8 PD31FUTQ**
	3 s…300 s	**RE8 PE21BUTQ**	**RE8 PD21BTQ**	**RE8 PD21FUTQ**
	20 s…30 min	–	–	–
Weight (kg)		0.110	0.110	0.110

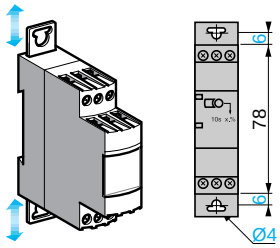
Dimensions, schemes

Dimensions

Rail mounting

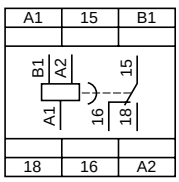


Screw fixing

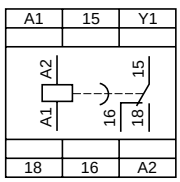


Connection schemes (terminal blocks)

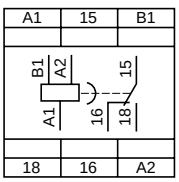
RE8 PE



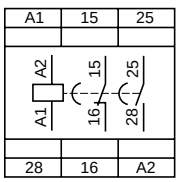
RE8 PD



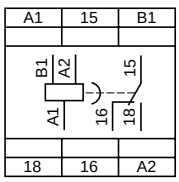
RE8 PT



RE8 YA

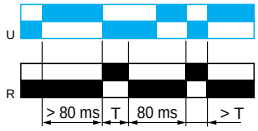


RE8 YG

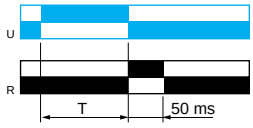


Characteristics : pages 36 and 37
Schemes : page 41

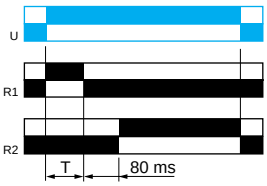
Function He
Pulse-on de-energisation



Function Qc
Star-delta timing



Function Qe
Star-delta timing

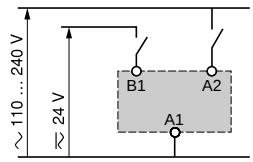


He	Qc	Qe		
●	●	●	–	–
●	●	–	●	–
–	–	–	–	●
RE8 PT01BUTQ	–	–	–	–
–	–	–	–	–
–	**RE8 YG11BUTQ**	–	–	–
–	**RE8 YG31BUTQ**	**RE8 YA32BTQ**	**RE8 YA32FUTQ**	**RE8 YA32QTQ**
–	**RE8 YG21BUTQ**	–	–	–
–	–	–	–	–
0.110	0.110	0.110	0.110	0.110

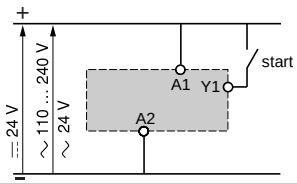
Recommended application schemes

Pulse-on energisation relays

RE8 PE, RE8 PT

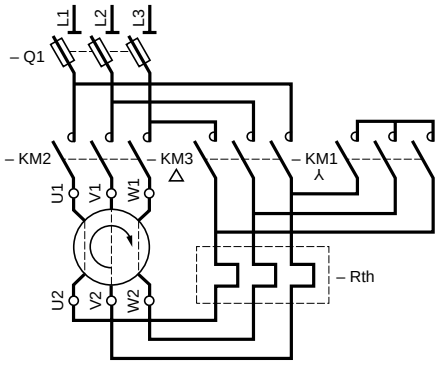


RE8 PD

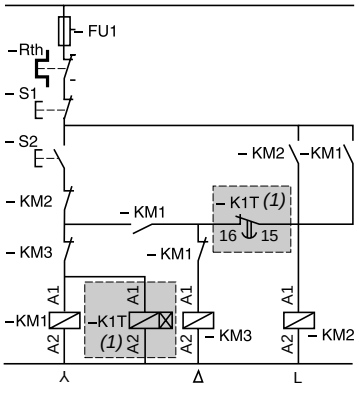


Timing relays for star-delta starters

RE8 YG, RE8 YA

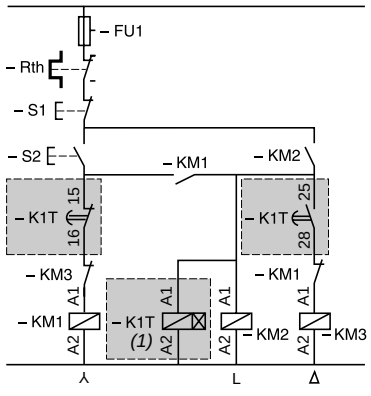


RE8 YG



(1) K1T: RE8 YG●1●●TQ

RE8 YA



(1) K1T: RE8 YA32●●TQ

Note : *Correct operation of the star-delta starter associated with the RE8 YG is only possible if the wiring scheme is strictly complied with.*

Characteristics : pages 36 and 37
Dimensions : page 40

Zelio Time - timing relays
Miniature plug-in relays, relay output

Timing characteristics

Repeat accuracy (with constant parameters)			± 0.5 %
Full scale setting accuracy	Conforming to IEC/EN 61812-1		10 % at 25 °C
Temperature drift			0.05 %/ °C
Maximum reset time by de-energisation	During time delay period	**ms**	50
	After time delay period	**ms**	250
Immunity to microbreaks		**ms**	≤ 5
Voltage drift			± 0.2 % / V

Output characteristics

Output type	Relay		2 and 4 cadmium-free C/O contacts
Rated current		**A**	∼ 3 (for RE XL4TM●●) and ∼ 5 (for RE XL2TM●●)
Rated insulation voltage		**V**	∼ 250
Maximum breaking capacity (resistive)		**A**	4 x 5
Maximum permissible current		**A**	10 < 0.01 s
Minimum breaking current		**mA**	100
Electrical life at I max ∼ 250 V resistive			10^5 operating cycles
Mechanical life			10^7 operations
Dielectric strength	To IEC/EN 61812-1 and 60601-1		2 kV at 1 mA for 1 min at 50 Hz

General characteristics

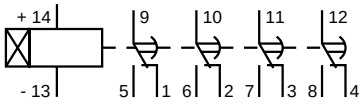
Conforming to standards			IEC/EN 61812-1, 60601-1, 60601-2, EN 50081-2, 61000-6-2, LV (73/23/EEC + 93/68/EEC) + EMC (89/336/EEC) directives
Product certifications			UL-cUL
State indication by LED	Output in operation		Red LED
	Power on		Yellow LED
Permissible voltage variation	⎓ 12 V		± 10 %
	⎓ 24 V		± 10 %
	∼ 24 V		± 15 %
	∼ 120 V		± 15 %
	∼ 230 V		± 15 %
Frequency		**Hz**	50/60 ± 1
Maximum power consumption	⎓ 12 V	**W**	1.5
	⎓ 24 V	**W**	1.2
	∼ 24 V	**VA**	1.7
	∼ 120 V	**VA**	2.6
	∼ 230 V	**VA**	3
Temperature limits	Operation	**°C**	- 20…+ 60
	Storage	**°C**	- 40…+ 70
Insulation voltage	To standard VDE 0010 IEC 255 Group C	**V**	∼/⎓ 250
Degree of protection	Conforming to IEC 60529		IP 50
Overvoltage protection		**joules**	2
Fixing	Base-mounted		On socket
Vibration resistance	Conforming to IEC 60068-2-6, 10 to 55 Hz		a = 0.35 mm
Relative humidity	Conforming to IEC 60068-2-3 without condensation		95 % max

Immunity to electromagnetic interference (EMC) (application class 2 conforming to EN 61812-1/A11)

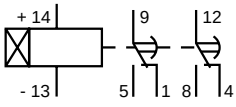
Electrostatic discharge	Conforming to IEC/EN 61000-4-2		Level 3 (Air 8 kV contact, 6 kV)
Electromagnetic fields	Conforming to IEC/EN 61000-4-3		Level 3 (10 V/m)
Fast transients	Conforming to IEC/EN 61000-4-4		Level 3 (2 kV)
Shock waves	Conforming to IEC/EN 61000-4-5		Level 3 (2 kV)
Radio frequencies in common mode	Conforming to IEC/EN 61000-4-6		Level 3 (10 V rms from 0.15 MHz to 80 MHz)
Voltage dips and breaks	Conforming to IEC/EN 61000-4-11		30 %/10 ms, 60 %/100 ms and 1 s, > 95 %/5 s
Radiated and conducted emissions	Conforming to EN 55022 (EN 55011 group 1)		Class B
Creepage distance and clearance	Conforming to IEC 60664-1	**kV**	4, in category 3

Internal schemes

Relay with 4 C/O contacts



Relay with 2 C/O contacts



References : page 43
Dimensions : page 43

Zelio Time - timing relays
Miniature plug-in relays, relay output

Relay output, 2 and 4 C/O contacts

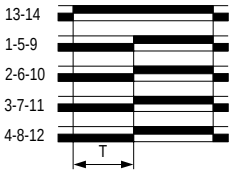
- *Miniature and plug-in (21 x 27 mm)*
- *Function A : on-delay*
- *7 timing ranges: 0.1 s to 100 h*
- *Excellent immunity to interference*
- *Power on and relay energised indication by 2 LEDs*

Function diagrams

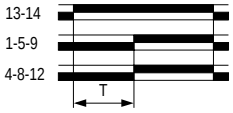
Function A

Delay on energisation

4 timed C/O contacts



2 timed C/O contacts



References

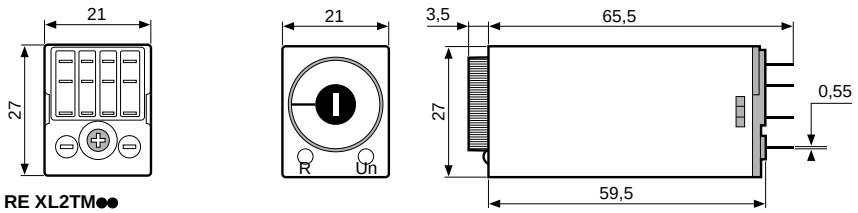
Functions		Single function	
		A	
Timing ranges	7 switchable ranges	0.1 s…1 s - 1 s…10 s - 0.1 min…1 min - 1 min…10 min - 0.1 h…1 h - 1 h…10 h - 10 h…100 h	
Relay output		4 timed C/O contacts	2 timed C/O contacts
Rated current		∼ 3 A	∼ 5 A
Voltages	⎓ 12 V	**RE XL4TMJD**	**RE XL2TMJD**
	⎓ 24 V *(1)*	**RE XL4TMBD**	**RE XL2TMBD**
	∼ 24 V 50/60 Hz *(1)*	**RE XL4TMB7**	**RE XL2TMB7**
	∼ 120 V 50/60 Hz	**RE XL4TMF7**	**RE XL2TMF7**
	∼ 230 V 50/60 Hz	**RE XL4TMP7**	**RE XL2TMP7**
Weight (kg)		0.050	0.050
Sockets *(2)* **with mixed contact terminals** *(3)*	With screw clamp terminals	**RXZ E2M114** *(5)*	**RXZ E2M114** *(5)*
	Weight (kg)	0.048	0.048
	With connector	**RXZ E2M114M** *(5)*	**RXZ E2M114M** *(5)*
	Weight (kg)	0.056	0.056
Sockets *(2)* **with separate contact terminals** *(4)*	With connector	**RXZ E2S108M** *(6)*	**RXZ E2S108M** *(6)*
	Weight (kg)	0.058	0.070

(1) For ⎓ 48 V supply, additional resistor 560 Ω 2 W / ⎓ 24 V.
For ∼ 48 V supply, additional resistor 390 Ω 4 W / ∼ 24 V.
(2) These products are sold in lots of 10.
(3) The inputs are mixed with the relay's supply terminals, with the outputs being located on the opposite side of the socket.
(4) The inputs and outputs are separated from the relay supply terminals.
(5) Thermal current Ith: 10 A
(6) Thermal current Ith: 12 A

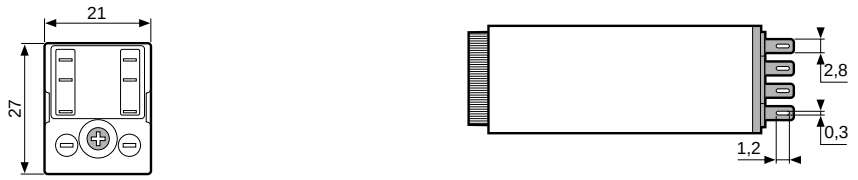
Dimensions and terminal referencing

Dimensions

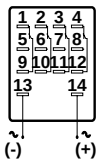
RE XL4TM●●

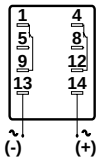


RE XL2TM●●



Terminal referencing





Characteristics : page 42
Schemes : page 42

Zelio Time - timing relays
Electronic relays, relay output, 48 x 48 housing

Presentation

The range of RE 48A timing relays, in 48 x 48 housing, is specially designed for integration in machines and equipment. It is suitable for applications requiring frequent modification or adjustment of the timing cycles.

RE 48A relays have the following characteristics:

■ All references are multivoltage 24 to 240 V ∿ and ⎓ and are therefore suitable for the majority of applications while at the same time reducing the number of products to be stocked.

■ The timing ranges covered are from 0.02 s to 300 h.

■ These timing relays can be panel-mounted using the spring clip supplied as standard, or DIN rail-mounted using standard sockets.

■ Two LED's on the front face provide immediate indication of the timing status:
- □ power ON,
- □ output relay state,
- □ timing in progress.

The size of the knob and clear indication of the timing scale allow easy adjustment, eliminating any errors during parameter setting.
In addition, in applications where only the timing cycle value is left freely accessible to users, a protective cover can be used to block access to the other settings.

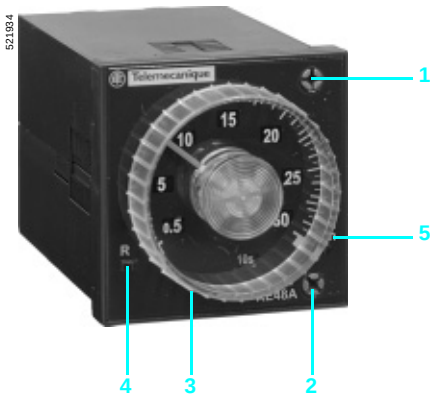
This range is comprises 4 references:

Reference	Description
RE 48A TM12MW	Single function □ On-delay □ two relay outputs
RE 48A CV12MW	Dual function □ asymmetrical flasher □ two relay outputs
RE 48A MH13MW	Multifunction □ On-delay and pulse-on energisation □ two relay outputs, of which one selectable and instantaneous
RE 48A ML12MW *(1)*	Multifunction □ On-delay □ timing on impulse □ Off-delay □ symmetrical flasher

(1) This relay features control inputs which provide a wider choice of timing modes:
Start Input *to control the start of timing,*
Gate Input *to suspend the timing in progress without cancelling it,*
Reset Input *to reset timing to its initial state during the cycle.*

Characteristics : pages 46 and 47 | Function diagrams : page 48 | References : pages 49 and 50 | Dimensions : pages 49 and 50 | Mounting : page 51

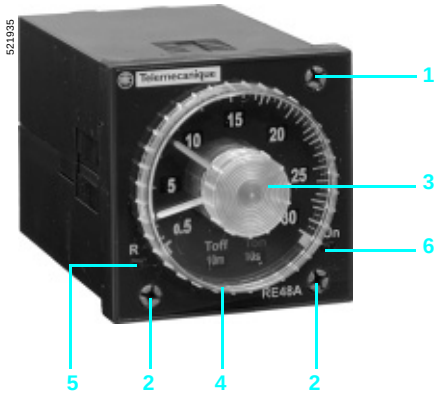
Zelio Time - timing relays
Electronic relays, relay output, 48 x 48 housing



Description

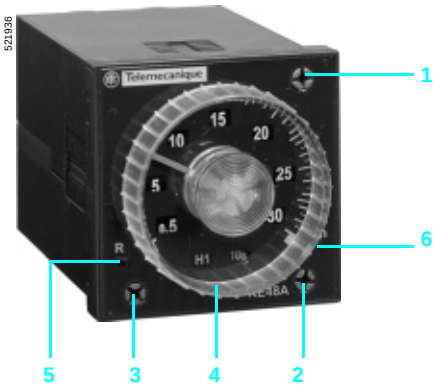
RE 48A TM12 MW timing relays have the following on the front face :

1 A time base selector knob (12 and 30)
2 A time unit selector knob (x 0.1 s, x 1 s, x 10 s, x 1 min, x 10 min, x 1 h, x 10 h)
3 A timing adjustment knob
4 A yellow LED, indicating the status of the output relay
5 A green LED, indicating power ON (flashing during the timing period).



RE 48A CV12 MW timing relays have the following on the front face :

1 A time base selector knob (12 and 30)
2 Two time unit selector knobs (x 0.1 s, x 1 s, x 10 s, x 1 min, x 10 min, x 1 h, x 10 h)
3 An orange button for setting the pulse time
4 A white button for setting the pause time
5 A yellow LED, indicating the status of the output relay
6 A green LED, indicating power ON (flashing during the timing period).



RE 48A M●1● MW timing relays have the following on the front face :

1 A time base selector knob (12 and 30)
2 A time unit selector knob (x 0.1 s, x 1 s, x 10 s, x 1 min, x 10 min, x 1 h, x 10 h)
3 A function selector knob:
A, B, C, Di for RE 48A ML12 MW
A1, A2, H1, H2 for RE 48A MH13 MW
4 A timing adjustment knob
5 A yellow LED, indicating the status of the output relay
6 A green LED, indicating power ON (flashing during the timing period).

Zelio Time - timing relays
Electronic relays, relay output, 48 x 48 housing

General characteristics

Conforming to standards			IEC 61812-1, EN 50081-1/2, EN 50082-1/2, LV directives (73/23/EEC + 93/68/EEC CE marking) + EMC directive (89/336/EEC + IEC 60669-2-3)
Approvals			UL, cULus, C-Tick, CSA, GL
Ambient air temperature around the device	Storage	**°C**	- 40…+ 70
	Operation	**°C**	- 20…+ 50
Degree of protection conforming to IEC 60529	Housing		IP 40
	Front face		IP 50
Vibration resistance	Conforming to IEC 60068-2-6		f = 10…55 Hz A = 0.35 mm
Relative humidity without condensation	Conforming to IEC 60068-2-3		93 %
Electromagnetic compatibility	Immunity to electrostatic discharge, conforming to IEC/EN 61000-4-2		Level III (Air 8 kV/Contact 6 kV)
	Immunity to electromagnetic fields conforming to IEC/EN 61000-4-3		Level III (10 V/m: 26 MHz…1 GHz)
	Immunity to fast transients in bursts, conforming to IEC/EN 61000-4-4		Level IV (direct 4kV / capacitive connecting clip 2 kV)
	Immunity to surges on the power supplies, conforming to IEC 61000-4-5		Level III (common mode 2 kV / differential mode 1 kV)
	Immunity to radio frequency interference in common mode, conforming to IEC/EN 61000-4-6		Level III (10 V rms: 0.15…80 MHz)
	Immunity to voltage dips and breaks, conforming to IEC/EN 61000-4-11		30 % / 10 ms 60 % / 100 ms 95 % / 5 s 60 % / 1 s
	Radiated and mains conducted disturbance, conforming to EN 55022 (EN 55011 Group 1)		Class B (0.15...30 MHz)
Fixing	Panel-mounting		Using mounting system (supplied with the product)
	Base-mounted		With socket
Connection			By socket or connector
Housing material			Self-extinguishing

Input characteristics

Type of input by volt-free contact			**Start**: starts the function (only for functions A, B, C and Di on RE 48A ML12 MW) **Gate**: stops timing in progress **Reset**: resets the relay, output to OFF

Output characteristics

Output type			Relay with 2 timed changeover contacts (except RE 48A MH13 MW: relay with 1 timed changeover contact and 1 instantaneous changeover contact)
Contact type			AgNi (cadmium-free)
Breaking capacity		**VA**	~ 1250
Maximum breaking current		**A**	~ 5 for 250 V
Minimum breaking current		**mA**	100/⎓ 12 V
Maximum switching voltage		**V**	~/⎓ 250
Electrical durability			10^5 operations
Mechanical durability			30 x 10^6 operations
Dielectric strength	Conforming to IEC 61812-1	**kV**	1/1min
Electric shock resistance	Conforming to IEC 60664-1, IEC 61812-1	**kV**	4, category 3
Rated operational voltage	~ AC-12		Ue = 240 V and Ie = 5 A
	~ AC-15		Ue = 240 V and Ie = 1.5 A
	⎓ DC-13		Ue = 30 V and Ie = 2 A

Presentation, description : pages 44 and 45 | Function diagrams : page 48 | References : pages 49 and 50 | Dimensions : pages 49 and 50 | Mounting : page 51

Zelio Time - timing relays
Electronic relays, relay output, 48 x 48 housing

Supply characteristics

Supply voltage			**V**	∿/⎓ 24…240
Frequency			**Hz**	50/60
Operating range				∿ - 15 %...+ 10 % ⎓ - 10 %...+ 10 %
On-load factor				100 %
Maximum power consumption	Depending on model	⎓ 24 V	**W**	0.5
		∿ 24 V	**VA**	1.1
		⎓ 240 V	**W**	1.7
		∿ 240 V	**VA**	4.8

Timing characteristics

Selectable timing ranges by selector switch on front face				**Time unit**	**Time scale**
			s	0.02…1.2	x 0.1 s	12
				0.05…3	x 0.1 s	30
				0.2…12	x 1 s	12
				0.5…30	x 1 s	30
				2…120	x 10 s	12
				5…300	x 10 s	30
			min	0.2…12	x 1 min	12
				0.5…30	x 1 min	30
				2…120	x 10 min	12
				5…300	x 10 min	30
			h	0.2…12	x 1 h	12
				0.5…30	x 1 h	30
				2…120	x 10 h	12
				5…300	x 10 h	30
Repeat accuracy (with constant parameters)	Conforming to IEC 61812-1			± 0.2 % of the maximum setting value		
Drift conforming to IEC 61812-1	Temperature			± 0.02 %/°C of the maximum setting value		
	Humidity			± 0.05 %/%HR of the maximum setting value		
	Voltage			∿/⎓ 24...48 V: ± 1 %/V of the maximum setting value ∿/⎓ 48...240 V: ± 0.2 %/V of the maximum setting value		
Setting accuracy at full scale	Conforming to IEC 61812-1			± 5 % at 25 °C		
Minimum control pulse duration on the Gate/Start/Reset input	Typical		**ms**	20		
Minimum reset time by de-energisation			**ms**	25		
Delay on pick-up			**ms**	55		
Immunity to microbreaks			**ms**	< 10		

Display characteristics

State indication	Green LED		Flashing: timer energised, timing in progress On steady: timer energised, relay energised, no timing in progress
	Yellow LED		On: output relay ON Off: output relay OFF

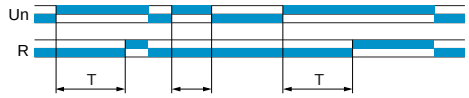
Zelio Time - timing relays
Electronic relays, relay output, 48 x 48 housing

Function diagrams

RE 48A TM12 MW

Function A

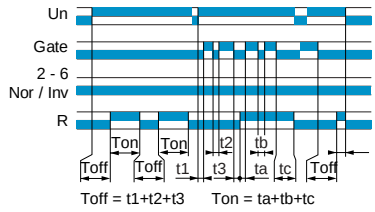
Delay on energisation



RE 48A CV12 MW

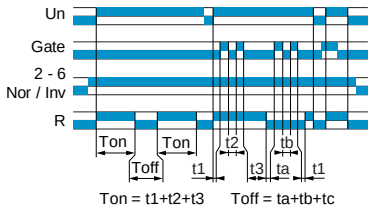
Function L

Asymmetrical flashing, start with output in rest position



Function Li

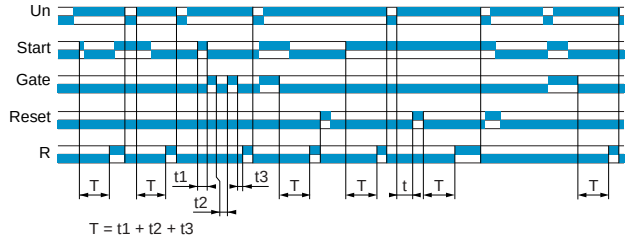
Asymmetrical flashing, start with output in operating position



RE 48A ML12 MW

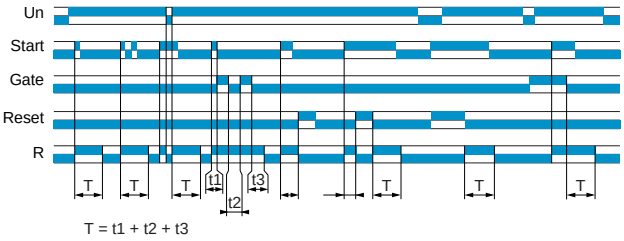
Function A

Delay on energisation



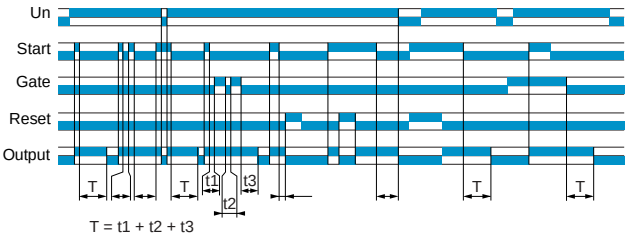
Function B

Timing on impulse, one shot



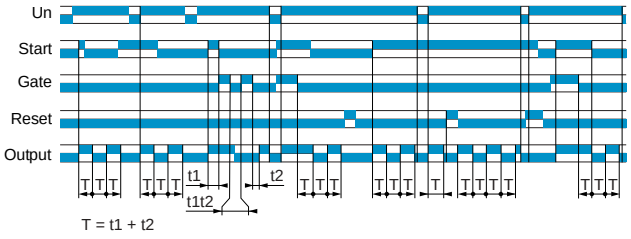
Function C

Timing after opening of control contact



Function Di

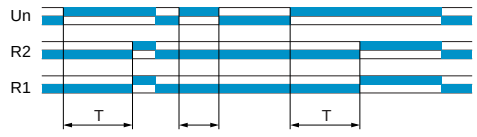
Symmetrical flashing, start with output in operating position



RE 48A MH13 MW

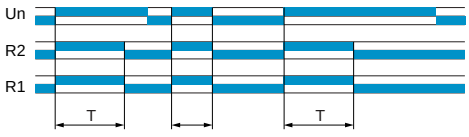
Functions A1, A2

Delay on energisation



Functions H1, H2

Pulse-on energisation



Note : *If A1 or H1 are selected, only R2 is timed, R1 is instantaneous*

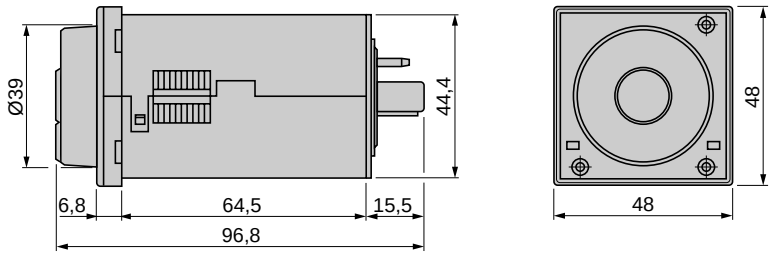
Zelio Time - timing relays
Electronic relays, relay output, 48 x 48 housing

References

Plug-in		8-pin	11-pin	11-pin	8-pin
Functions		**Single function**	**Dual function**	**Multifunction**	**Multifunction**
		A	L, Li	A, B, C, Di	A1, A2, H1, H2
Timing ranges		1.2 s, 3 s, 12 s, 30 s, 120 s, 300 s, 12 min, 30 min, 120 min, 300 min, 12 h, 30 h, 120 h, 300 h			
Relay output		2 C/O timed contacts	2 C/O timed contacts	2 C/O timed contacts	1 C/O timed contact 1 C/O instantaneous contact
Rated current		2 x 5 A	2 x 5 A	2 x 5 A	2 x 5 A
Voltages	~/⎓ 24...240 V	**RE 48A TM12 MW**	**RE 48A CV12 MW**	**RE 48A ML12 MW**	**RE 48A MH13 MW**
Weight (kg)		0.140	0.140	0.140	0.140

Dimensions

RE 48A ●● 1● MW



Presentation, description : pages 44 and 45
Characteristics : pages 46 and 47
Mounting : page 51

Zelio Time - timing relays
Electronic relays, relay output, 48 x 48 housing

References


RUZ C3M


RE 48A SOC11 AR


RE 48A SOC8 SOLD


RE 48ASOC11 SOLD


RE 48A SET COV

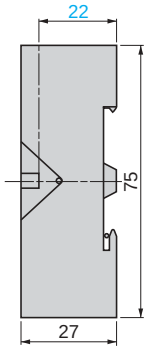

RE 48A IP COV

Description	Number of pins	For use with	Sold in lot of	Unit reference	Weight kg
IP 20 sockets with screw terminal connections and mixed contact terminals *(1)*	8	RE 48A TM12 MW, RE 48A MH13 MW	10	**RUZ C2M**	0.054
	11	RE 48A CV12 MW, RE 48A ML12 MW	10	**RUZ C3M**	0.054
IP 20 socket with screw terminal connections on rear face	11	RE 48A CV12 MW, RE 48A ML12 MW	1	**RE 48A SOC11 AR**	–
IP 20 solder connectors	8	RE 48A TM12 MW, RE 48A MH13 MW	1	**RE 48A SOC8 SOLD**	–
	11	RE 48A CV12 MW, RE 48A ML12 MW	1	**RE 48A SOC11 SOLD**	–
Setting protection cover	–	RE 48A TM12 MW RE 48A CV12 MW RE 48A ML12 MW RE 48A MH13 MW	1	**RE 48A SET COV**	–
IP64 protective cover	–	RE 48A TM12 MW RE 48A CV12 MW RE 48A ML12 MW RE 48A MH13 MW	1	**RE 48A IP COV**	–

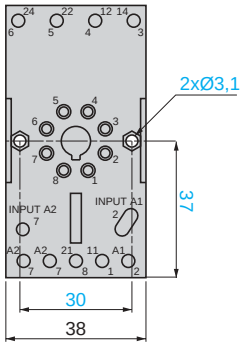
(1) The inputs are mixed with the relay's supply terminals, with the outputs being located on the opposite side of the socket.

Dimensions

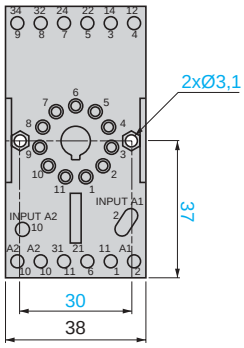
Common side view
RUZ C●M



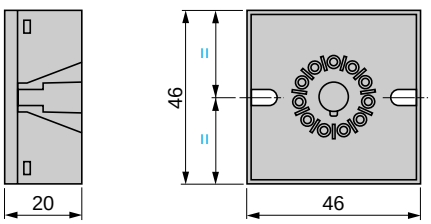
8-pin socket
RUZ C2M



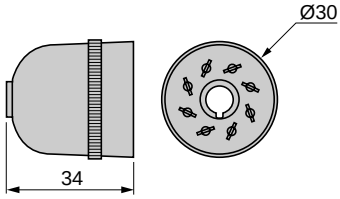
11-pin socket
RUZ C3M



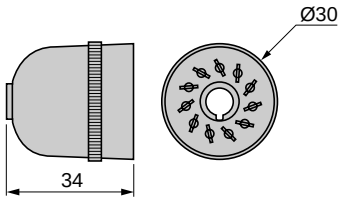
11-pin socket
RE 48A SOC11 AR



8-pin connector
RE 48A SOC8 SOLD



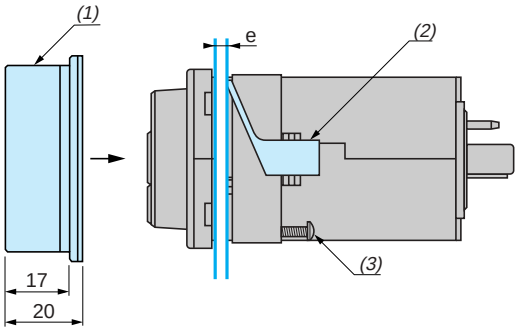
11-pin connector
RE 48A SOC11 SOLD



Presentation, description : pages 44 and 45
Function diagrams : page 48
Characteristics : pages 46 and 47

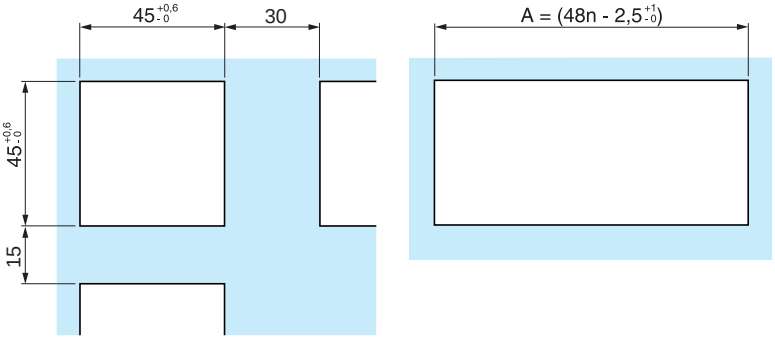
Mounting

Cover positioning and mounting



e : panel thickness
(1) IP 64 protective cover: RE 48A IP COV
(2) Panel mounting frame
(3) Locating screw

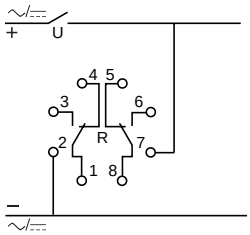
Panel cut-out



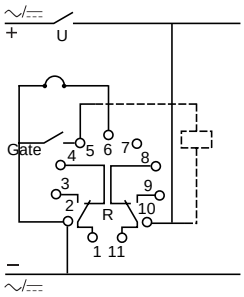
n : Number of devices mounted side-by-side

Connection schemes

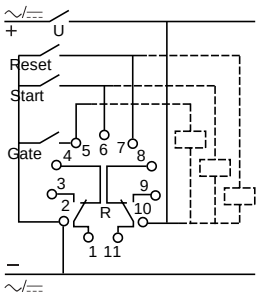
RE 48A TM12 MW



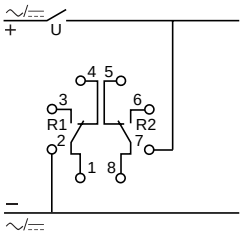
RE 48A CV12 MW



RE 48A ML12 MW



RE 48A MH13 MW



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