Zelio Timer Relays

DIN rail mounted timer relays


RE17


RE22

Miniature plug-in timer relays with sockets


REXL


RXZE2M114

Panel-mounted/plug-in timer relays


RE48A

Presentation

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

There are three main families of timing relays:
- DIN rail mounted relays (**RE7**, **RE8**, **RE9**, **RE17**, **RE22**, **REXL**…) designed for mounting on DIN rails in an enclosure.
- Miniature plug-in relays (**REXL**) designed to be plugged into sockets.
- Panel mounted/plug-in relays **RE48A** designed for mounting on the panel front 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, etc

Definitions

The following definitions explain the operation of the relays:

- **Relay output:**

This is the most common type of output. When the relay is energized, the moving armature is attracted by the coil and so actuates the contacts, which change state. When the relay is de-energized, 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 contacts:

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

This output is 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):

This is 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 it being reset.

Definitions (continued)

Functions

Timing functions are identified by letters. For the complementary functions, select the main timing function using the selection dial in the front panel; refer to functional diagrams for connection.

Main timing functions	Complementary functions *(1)*	Definitions
A *(2)*		Power On-delay relay
	Ac	On-delay and off-delay relay with control signal
	Ad	Pulse delayed relay with control signal
	Ah	Pulse delayed relay (single cycle) with control signal
	Ak	Asymmetrical on-delay and off-delay with control signal
	At	Power on-delay relay with pause/summation control signal
	Aw	Power on-delay with retrigger/restart control
B *(2)*		Interval relay with control signal
	Bw	Double interval relay with control signal
C *(2)*		Off-delay relay with control signal
	Ct	Off-delay relay with control signal and with pause/summation control
D *(2)*		Symmetrical flashing relay (starting pulse-off)
	Di *(2)*	Symmetrical flashing relay (starting pulse-on)
	Dt	Symmetrical flashing relay (starting pulse-off) with pause/summation control signal
	Dw	Symmetrical flashing relay (starting pulse-off) with retrigger/ restart control signal
H *(2)*		Interval relay
	He	Pulse-on de-energization
	Ht	Interval relay with pause/summation control signal
	Hw	Ineterval relay with retrigger/restart control signal
K		Delay on de-energization (without auxiliary supply)
L *(2)*		Asymmetrical flashing relay (starting pulse-off)
	Li *(2)*	Asymmetrical flashing relay (starting pulse-on)
	Lt	Asymmetrical flashing relay with pause/summation control
N		Safe guard relay
O		Delayed safe guard relay
P		Pulse delayed relay with fixed pulse length
	Pt	Pulse delayed relay with fixed pulse length and pause/ summation control signal
Q		Star-delta relay (2 N/O with same common)
	Qc	Star-delta timing (1 C/O)
	Qe	Star-delta timing (1 N/C + 1 N/O with split common)
	Qg	Star-delta timing (2 C/O with same common)
	Qt	Star-delta timing (2 C/O output with split common)
T	**Tl**	Bi-stable relay with control signal on
	Tt	Retriggerable bi-stable relay with control signal on
W		Interval relay with control signal off
	Wt	Interval relay with control signal off and with pause/ summation control

(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.

Zelio Timer Relays

Selection table

Selection criteria

- **Functions** (On-delay or off-delay, counter, flashing, …)
- **Supply voltage** (example: ⎓ 12 V…240 V)
- **Timing range** for a timing relay (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	Timing range	Supply voltage	Type of output	Rated current	Relay
A	0.1 s…100 h	⎓ 12 V	2 C/O contacts	5 A	REXL2TMJD
			4 C/O contacts	3 A	REXL4TMJD
	0.1 s…100 h	⎓ 24 V	2 C/O contacts	5 A	REXL2TMBD
			4 C/O contacts	3 A	REXL4TMBD
	0.1 s…100 h	∼ 24 V	2 C/O contacts	5 A	REXL2TMB7
			4 C/O contacts	3 A	REXL4TMB7
	0.1 s…100 h	∼ 120 V	2 C/O contacts	5 A	REXL2TMF7
			4 C/O contacts	3 A	REXL4TMF7
	0.1 s…100 h	∼ 230 V	2 C/O contacts	5 A	REXL2TMP7
			4 C/O contacts	3 A	REXL4TMP7
	0.1 s…10 s	⎓ 24…240 V	1 solid state output	0.7 A	RE9TA11MW
	0.3 s…30 s			0.7 A	RE9TA31MW
	3 s…300 s			0.7 A	RE9TA21MW
	40 s…60 min			0.7 A	RE9TA51MW
	0.1 s…100 h			0.7 A	RE17LAMW
	0.02 s…300 h		2 timed C/O contacts	5 A	RE48ATM12MW
	0.05 s…300 h	⎓ 24 V, ∼ 110…240 V	1 C/O contact	8 A	RE7TL11BU
	0.1 s…3 s			8 A	RE8TA61BUTQ
	0.1s…10 s			8 A	RE8TA11BUTQ
	0.3 s…30 s			8 A	RE8TA31BUTQ
	3 s…300 s			8 A	RE8TA21BUTQ
	20…30 min			8 A	RE8TA41BUTQ
	0.05 s…300 h	⎓ 24 V, ∼ 110…240 V, ⎓ 42…48 V	2 C/O contacts	8 A	RE7TP13BU
A, Ac, At, B, Bw, C, D, Di, H, Ht	0.1 s…100 h	∼ 24…240 V	1 solid state output	0.7 A	RE17LMBM
	0.1 s…100 h	⎓ 12 V	1 C/O contact	8 A	RE17RMJU
	0.1 s…100 h	⎓ 12…240 V	1 C/O contact	8 A	RE17RMMW
				8 A	RE17RMMWS
	0.1 s…100 h	⎓ 24 V, ∼ 24…240 V	1 C/O contact	8 A	RE17RMMU
	0.1 s…100 h	⎓ 24/∼ 24…240 V ⎓ 12 V ⎓ 12…240 V	2 C/O contact	8 A	RE22R2MMU RE22R2MJU RE22R2MMW
A, At	0.1 s…100 h	⎓ 24 V, ∼ 24…240 V	1 C/O contact	8 A	RE17RAMU
	0.1 s…100 h	⎓ 24 V, ∼ 24…240 V	2 C/O contact	8 A	RE22R2AMU
A, Aw	0.05 s…300 h	⎓ 24…240 V	1 C/O contact 2 C/O contacts	8 A	RE22R1AMR RE22R2AMR
A, At, Aw	0.05 s…300 h	∼ 110…240 V, ⎓ 24 V, ⎓ 42…48 V	1 C/O contact	8 A	RE7TM11BU
	0.05 s to 300 h	⎓ 24…240 V	1 C/O contact	8 A	RE22R1MAMR
A, At, B, C, D, Di, H, Ht	0.1 s…10 h	⎓ 24 V, ∼ 24…240 V	1 C/O contact	8 A	RE17RMEMU
A, B, C, Di	0.02 s…300 h	⎓ 24…240 V	2 C/O contacts	5 A	RE48AML12MW
A, C, D, Di, H, Qg, Qt, W	0.05 s…300 h	∼ 110…240 V, ⎓ 24 V, ⎓ 42…48 V	2 C/O contacts	8 A	RE7MY13BU
	0.05 s…300 h	⎓ 24…240 V	2 C/O contacts	8 A	RE7MY13MW
A, At, Aw, C, Ct, D, Dt, Dw, Di, Dit, Diw, H, Ht, Hw, Qg, Qgt, Qt, Qtt, Qtw, W, Wt	0.05 s…300 h	⎓ 24…240 V	2 C/O contacts	8 A	RE22R2MYMR
A, At, Aw, C, Ct, D, Dt, Dw, Di, Dit, Diw, H, Ht, Hw, W, Wt, Ac, Act	0.05 s…300 h	⎓ 24…240 V	1 C/O contact	8 A	RE22R1MYMR

Selection table (continued)

Functions	Timing range	Supply voltage	Type of output	Rated current	Relay
A, C, D, Di, H, W	0.05 s…300 h	~ 110…240 V, ⎓ 24 V, ⎓ 42…48 V	1 C/O contact	8 A	RE7ML11BU
A, D, Di, H	0.1 s…10 s and 3 s…300 s	⎓ 24…240 V ~ 24…240 V	1 solid state output	0.7 A	RE9MS21MW
A1, A2, H1, H2	0.02 s…300 h	⎓ 24…240 V	2 C/O contacts	5 A	RE48AMH13MW
Ac	0.05 s…300 h	~ 110…240 V, ⎓ 24 V, ⎓ 42…48 V	1 C/O contact	8 A	RE7MA11BU
			2 C/O contacts	8 A	RE7MA13BU
	0.05 s…300 h	⎓ 24…240 V	2 C/O contacts	8 A	RE22R2ACMR
Ac, Act	0.05 s…300 h	⎓ 24…240 V	1 C/O contact	8 A	RE22R1ACMR
Ad, Ah, N, O, P, Pt, Tl, Tt, W	0.1 s…100 h	⎓ 24 V, ~ 24…240 V	1 C/O contact	8 A	RE17RMXMU
	0.1 s…100 h	⎓ 24 V/~ 24…240 V	2 C/O contacts	8 A	RE22R2MXMU
Ak	0.05 s…300 h	~ 110…240 V, ⎓ 24 V, ⎓ 42…48 V	1 C/O contact	8 A	RE7MV11BU
Ak, Akt	0.05 s to 300 h	⎓ 24…240 V	1 C/O contact	8 A	RE22R1AKMR
B	0.1 s…100 h	⎓ 24 V, ~ 24…240 V	1 C/O contact	8 A	RE17RBMU
C	0.1 s…10 s	⎓ 24 V	1 C/O contact	8 A	RE8RA11BTQ
	0.3 s…30 s			8 A	RE8RA31BTQ
	3 s…300 s			8 A	RE8RA21BTQ
	0.1 s…100 h	⎓ 24 V, ~ 24…240 V	1 C/O contact	8 A	RE17RCMU
	0.1 s…10 s	~ 110…240 V	1 C/O contact	8 A	RE8RA11FUTQ
	0.3 s…30 s			8 A	RE8RA31FUTQ
	3 s…300 s			8 A	RE8RA21FUTQ
	20 s…30 min			8 A	RE8RA41FUTQ
	0.05 s…300 h	⎓ 24 V, ~ 110…240 V, ⎓ 42…48 V	1 C/O contact	8 A	RE7RA11BU
				8 A	RE7RM11BU
			2 C/O contacts	8 A	RE7RL13BU
	0.1 s…10 s	~ 24…240 V	1 solid state output	0.7 A	RE9RA11MW7
	0.3 s…30 s			0.7 A	RE9RA31MW7
	3 s…300 s			0.7 A	RE9RA21MW7
	40 s…60 min			0.7 A	RE9RA51MW7
	0.1 s…100 h			0.7 A	RE17LCBM
C, Ct	0.05 s to 300 h	⎓ 24…240 V	1 C/O contact	8 A	RE22R1CMR
			2 C/O contacts	8 A	RE22R2CMR
D	0.05 s…300 h	⎓ 24 V, ~ 110…240 V	1 C/O contact	8 A	RE7CL11BU
	0.1 s…10 s			8 A	RE8CL11BUTQ
	0.05 s…300 h	⎓ 24 V, ~ 110…240 V, ⎓ 42…48 V	2 C/O contacts	8 A	RE7CP13BU
D, Dw	0.05 s to 300 h	⎓ 24…240 V	1 C/O contact	8 A	RE22R1DMR
			2 C/O contacts	8 A	RE22R2DMR
H	0.05 s…300 h	⎓ 24 V, ~ 110…240 V	1 C/O contact	8 A	RE7PE11BU
	0.1 s…10 s			8 A	RE8PE11BUTQ
	0.3 s…30 s			8 A	RE8PE31BUTQ
	3 s…300 s			8 A	RE8PE21BUTQ
	0.05 s…300 h	⎓ 24 V, ~ 110…240 V, ⎓ 42…48 V	2 C/O contacts	8 A	RE7PP13BU
	0.1 s…100 h	~ 24…240 V	1 solid state output	0. 7 A	RE17LHBM
H, Hw	0.05 s to 300 h	⎓ 24…240 V	1 C/O contact	8 A	RE22R1HMR
			2 C/O contacts	8 A	RE22R2HMR
H, Ht	0.1 s…100 h	⎓ 24 V, ~ 24…240 V	1 C/O contact	8 A	RE17RHMU
He	0.05 s…0.5 s	⎓ 24 V, ~ 110…240 V	1 C/O contact	8 A	RE8PT01BUTQ
K	0.05 s…10 min	⎓ 24…240 V	1 C/O contact	5 A	RE7RB11MW
	0.05 s…0.5 s	⎓ 24 V, ~ 110…240 V	1 C/O contact	8 A	RE8RB51BUTQ
	0.1 s…10 s			8 A	RE8RB11BUTQ
	0.3 s…30 s			8 A	RE8RB31BUTQ
	0.05 s…10 min	⎓ 24…240 V	2 C/O contacts	5 A	RE7RB13MW
	0.05 s…10 min	⎓ 24…240 V	1 C/O contact	5 A	RE22R1KMR
			2 C/O contacts	5 A	RE22R2KMR
K, He	0.05 s to 300 h	⎓ 24…240 V	1 C/O contact	5 A	RE22R1MKMR

Selection table (continued)

Functions	Timing range	Supply voltage	Type of output	Rated current	Relay
L, Li	0.1 s…100 h	⎓ 24 V, ∿ 24…240 V	1 C/O contact	8 A	RE17RLMU
	0.1 s…100 h	∿ 24…240 V	1 solid state output	0.7 A	RE17LLBM
	0.1 s…100 h	⎓ 12 V	1 C/O contact	8 A	RE17RLJU
	0.02 s…300 h	⎓ 24…240 V	2 timed C/O contacts	5 A	RE48ACV12MW
L, Li, Lt	0.05 s…300 h	∿ 110…240 V, ⎓ 24 V, ⎓ 42…48 V	1 C/O contact	8 A	RE7CV11BU
L, Lt, Li, Lit	0.05 s…300 h	⎓ 24…240 V	1 C/O contact	8 A	RE22R1MLMR
Q	0.1 s…100 h	⎓ 24 V, ∿ 24…240 V ∿ 230…240 V, ∿ 380…440 V	1 C/O contact 1 C/O contact	8 A 8 A	RE22R1QMU RE22R1QMQ
Qc	0.1 s…10 s	⎓ 24 V, ∿ 110…240 V	1 C/O contact	8 A	RE8YG11BUTQ
	0.3 s…30 s			8 A	RE8YG31BUTQ
	3 s…300 s			8 A	RE8YG21BUTQ
	0.05 s…300 h	⎓ 24 V, ∿ 24…240 V	1 C/O contact	8 A	RE22R1QCMU
Qe	0.3 s…30 s	⎓ 24 V	1 N/O + 1 N/C	8 A	RE8YA32BTQ
	0.3 s…30 s	∿ 110…240 V	1 N/O + 1 N/C	8 A	RE8YA32FUTQ
	0.3 s…30 s	∿ 380…415 V	1 N/O + 1 N/C	8 A	RE8YA32QTQ
	0.3 s…30 s	∿ 380…415 V	2 C/O contacts	8 A	RE22R2QEMT
	0.3 s…30 s	⎓ 24…240 V	2 C/O contacts	8 A	RE22R2QEMR
Qg	0.05 s…300 h	⎓ 24 V, ∿ 110…240 V, ⎓ 42…48 V	1 N/O + 1 N/C	8 A	RE7YR12BU
	0.05 s to 300 h	⎓ 24…240 V	2 C/O contacts	8 A	RE22R2QGMR
Qt	0.05 s…300 h	⎓ 24 V, ∿ 110…240 V, ⎓ 42…48 V	2 C/O contacts	8 A	RE7YA12BU
	0.05 s to 300 h	⎓ 24…240 V	2 C/O contacts	8 A	RE22R2QTMR
W	0.1 s…10 s	⎓ 24 V	1 C/O contact	8 A	RE8PD11BTQ
	0.3 s…30 s			8 A	RE8PD31BTQ
	3 s…300 s			8 A	RE8PD21BTQ
	0.1 s…10 s	∿ 110…240 V	1 C/O contact	8 A	RE8PD11FUTQ
	0.3 s…30 s			8 A	RE8PD31FUTQ
	3 s…300 s			8 A	RE8PD21FUTQ
	0.05 s…300 h	⎓ 24 V, ∿ 110…240 V, ⎓ 42…48 V	2 C/O contacts	8 A	RE7PD13BU
W, Ht	0.05 s…300 h	⎓ 24 V, ∿ 110…240 V, ⎓ 42…48 V	1 C/O contact	8 A	RE7PM11BU
W, Wt	0.05 s…300 h	⎓ 24…240 V	2 C/O contacts	8 A	RE22R2MWMR

Functions

U: Supply
R: Relay or solid state output
R1/R2: 2 timed outputs
R2 inst.: Second output is instantaneous if the correct position is selected
T: Timing period

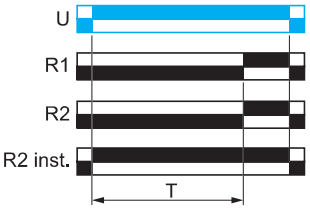
X1/X2/Y1: Control contacts
Ta: Adjustable on-delay
Tr: Adjustable off-delay

Function diagram :
- Relay de-energized
- Relay energized
- Output open
- Output closed

Function A: Power on-delay relay

1 output

2 outputs

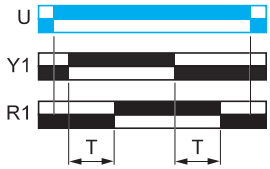


2 timed outputs (R1/R2) or 1 timed output (R1) and 1 instantaneous output (R2 inst.).

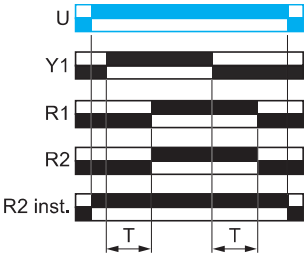
The timing period T begins on energization.
After timing, the output(s) R close(s).
The second output (R2) can be either timed (when set to "TIMED") or instantaneous (when set to "INST").

Function Ac: On-delay and off-delay with control signal

1 output



2 outputs

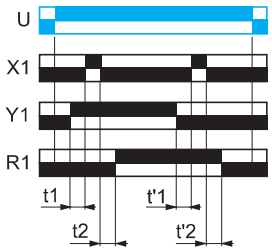


2 timed outputs (R1/R2) or 1 timed output (R1) and 1 instantaneous output (R2 inst.).

After power-up, and energization of Y1 the timing period T starts.
At the end of this timing period, the output(s) R close(s).
With de-energization of Y1, the timing period T starts.
At the end of this timing period T, the output (s) R revert(s) to its/their initial position.
The second output (R2) can be either timed (when set to "TIMED") or instantaneous (when set to "INST").

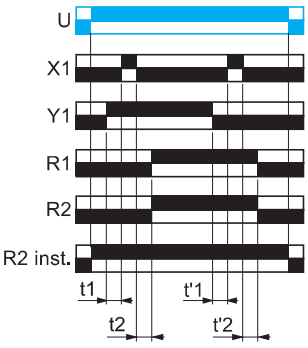
Function Act: On-delay and off-delay with control signal and pause/summation control

1 output



T = t1 + t2 + …
T = t'1 + t'2 + …

2 outputs

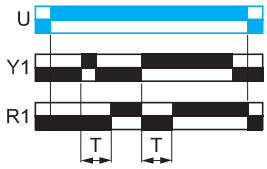


T = t1 + t2 + …
T = t'1 + t'2 + …

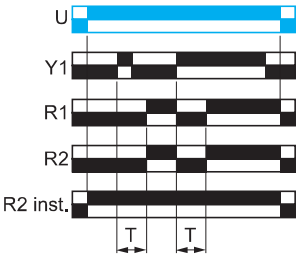
After power-up and energization of Y1 the timing period T starts and the timing can be interrupted/paused each time X1 energizes. When the cumulative total of time period elapsed reaches the pre-set value T, the output(s) R close(s).
With de-energization of Y1, the timing T starts and it can be interrupted/paused each time X1 energizes. When the cumulative total of time period elapsed reaches the pre-set value T, the output(s) R revert(s) to its/their initial position.
The second output (R2) can be either timed (when set to "TIMED") or instantaneous (when set to "INST").

Function Ad: Pulse delayed relay with control signal

1 output



2 outputs

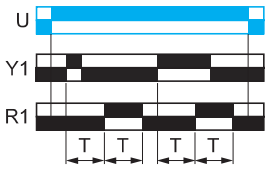


After power-up, pulsing or maintaining of energization of Y1 starts the timing T.
At the end of this timing period T, the output (s) R close(s).
The output(s) R will revert to its initial position the next time Y1 is pulsed or maintained.

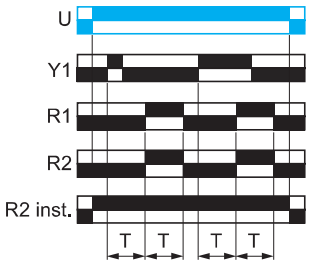
Functions (continued)

Function Ah: Pulse delayed relay (single cycle) with control signal

1 output



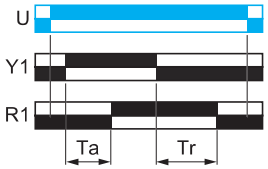
2 outputs



After power-up, pulsing or maintaining control contact Y1 starts the timing T.
A single cycle then starts with 2 timing period T of equal duration (start with output in rest position).
Output R changes state 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 Y1 must be reset in order to re-start the single flashing cycle.

Function Ak: Asymmetrical on-delay and off-delay with external control

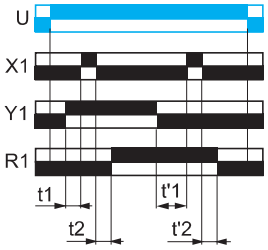
1 output



After power-up and energization of the control contact Y1, timing starts for a period Ta.
At the end of this timing period Ta, the output(s) R close(s).
De-energization of control contact Y1 causes a second timing period Tr to start.
At the end of this timing period Tr, the output(s) R reverts to its initial state.

Function Akt: Asymmetrical on-delay and off-delay with control signal and with pause/summation control

1 output

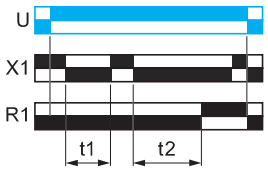


Ta = t1 + t2 + …
Tr = t'1 + t'2 + …

After power-up and energization of Y1, timing starts for a period Ta and timing can be interrupted/paused each time X1 energizes. When the cumulative total of time period elapsed reaches the pre-set value Ta, the output(s) R close(s).
De-energization of Y1 causes a second timing period Tr to start and can be interrupted/paused each time X1 energizes. When the cumulative total of time periods elapsed reaches the pre-set value Tr, the output(s) R reverts to its initial state.

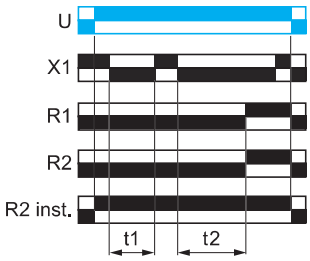
Function At: Power on-delay relay with pause/summation control

1 output



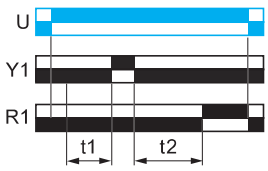
T = t1 + t2 + …

2 outputs

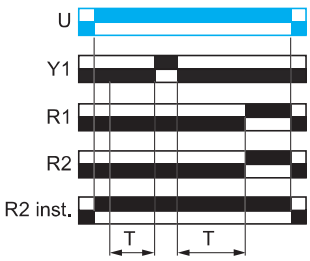


T = t1 + t2 + …

After power-up, the timing period T starts.
Timing can be interrupted /paused each time X1 energizes.
Note: Except for RE17●, RE22R2AMU, RE22R2MMW, RE22R2MMU, RE22R2MJU, timing can be interrupted/paused each time Y1 energizes.
When the cumulative total of time periods elapsed reaches the pre-set value T, the output(s) R close(s).
The second output (R2) can be either timed (when set to "TIMED") or instantaneous (when set to "INST").



T = t1 + t2 + …

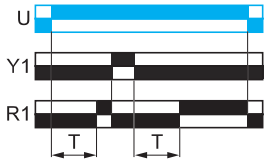


T = t1 + t2 + …

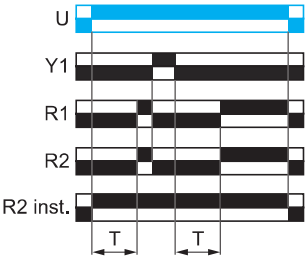
Functions (continued)

Function Aw: Power on-delay with retrigger/restart control

1 output



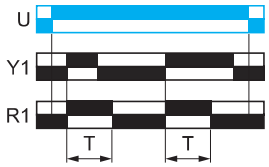
2 outputs



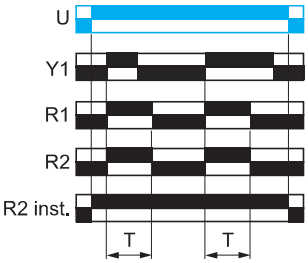
The timing period T starts on energization. At the end of the timing period T, the output(s) R closes.
Closing of the control contact Y1 makes the output R open. Opening of control contact Y1 restarts timing period T.
At the end of the timing period T, the output(s) R close(s).
The second output (R2) can be either timed (when set to "TIMED") or instantaneous (when set to "INST").

Function B: Interval relay with control signal

1 output



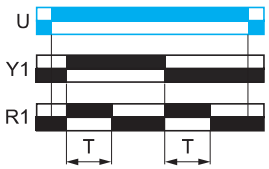
2 outputs



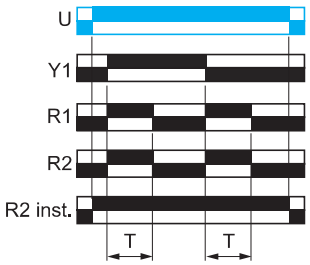
After power-up, pulsing or maintaining control contact Y1 starts the timing T.
The output R closes for the duration of the timing period T then reverts to its initial state. The second output (R2) can be either timed (when set to "TIMED") or instantaneous (when set to "INST").

Function Bw: Double interval relay with control signal

1 output



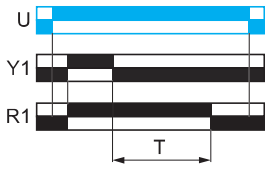
2 outputs



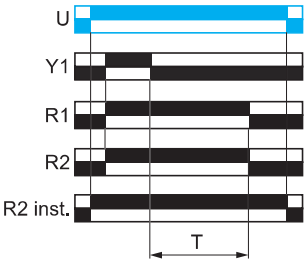
After power-up, transition of Y1 (either from energization to de-energization or vice-versa) will cause the output(s) R to close(s) for the duration of the timing period T and then revert(s) to its/their initial state.
The second output (R2) can be either timed (when set to "TIMED") or instantaneous (when set to "INST").

Function C: Off-delay relay with control signal

1 output



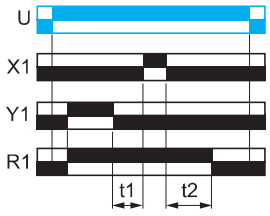
2 outputs



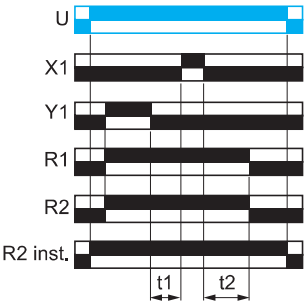
2 timed outputs (R1/R2) or 1 timed output (R1) and 1 instantaneous output (R2 inst.).

After power-up and closing of the control contact Y1, the output R closes.
When control contact Y1 re-opens, timing T starts.
At the end of the timing period, output(s) R revert(s) to its/their initial state.
The second output (R2) can be either timed (when set to "TIMED") or instantaneous (when set to "INST").

Function Ct : Off-delay relay with control signal and with pause/summation control



T = t1 + t2 + …



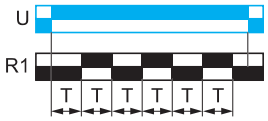
T = t1 + t2 + …

After power-up and energization of Y1 the output(s) R close(s).
When Y1 de-energizes, timing starts and can be interrupted/paused each time X1 energizes. When the cumulative total of time periods elapsed reaches the pre-set value T, the output(s) R revert(s) to its/their initial state.
The second output (R2) can be either timed (when set to "TIMED") or instantaneous (when set to "INST").

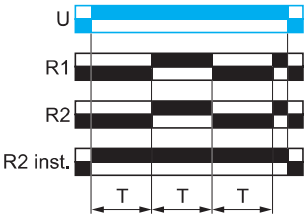
Functions (continued)

Function D: Symmetrical flasher relay (starting pulse-off)

1 output

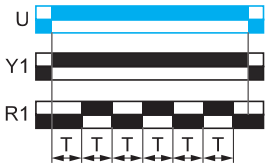


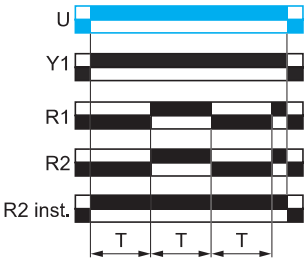
2 outputs



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 (R2) can be either timed (when set to “TIMED”) or instantaneous (when set to “INST”).

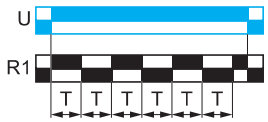




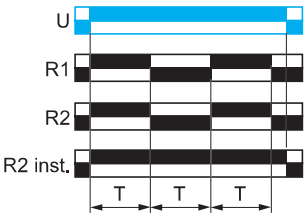
Note: Function D with Y1 is only for RE17 reference range and RE22R2MJU, RE22R2MMU, RE22R2MMW references.

Function Di: Symmetrical flasher relay (starting pulse-on)

1 output



2 outputs

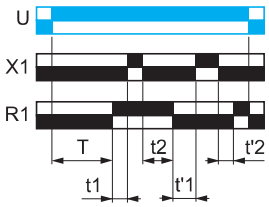


timed outputs (R1/R2) or 1 timed output (R1) and 1 instantaneous output (R2 inst.).

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 (R2) can be either timed (when set to “TIMED”) or instantaneous (when set to “INST”).

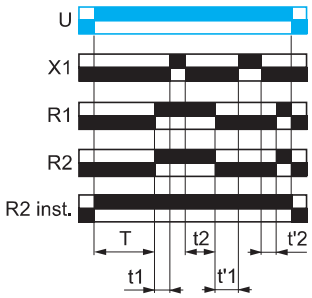
Function Dt : Symmetrical flashing relay (starting pulse-off) and with pause/summation control

1 output



T = t1 + t2 + …
T = t’1 + t’2 + …

2 outputs



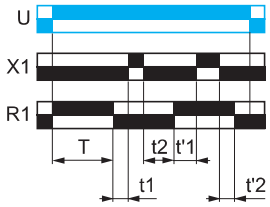
T = t1 + t2 + …
T = t’1 + t’2 + …

On power-up, output(s) R starts at its/ their initial state for timing duration T and the timing can be interrupted/paused each time X1 energizes. When the cumulative total of time period elapsed reaches the pre-set value T, then the output(s) R close(s).
The output(s) R close state will remain for the same timing duration T and the timing can be interrupted/paused each time X1 energizes. When the cumulative total of time period elapsed reaches the pre-set value T, the output(s) R revert(s) to its/ their initial state.
This cycle is repeated indefinitely until power supply is removed.
The second output (R2) can be either timed (when set to “TIMED”) or instantaneous (when set to “INST”).

Functions (continued)

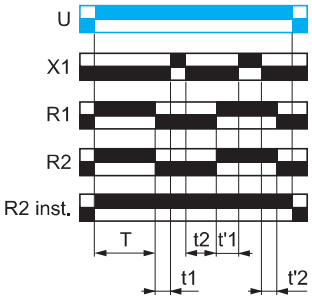
Function Dit : Symmetrical flashing relay (starting pulse-on) and with pause/summation control

1 output



T= t1 + t2 + …
T = t'1 + t'2 +…

2 outputs

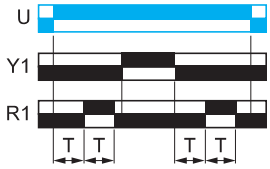


T= t1 + t2 + …
T = t'1 + t'2 +…

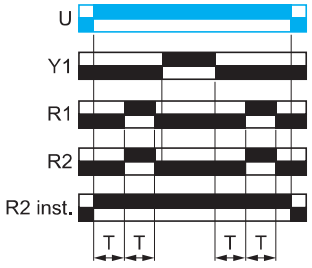
On power-up, output(s) R starts when output(s) R close(s) for time duration T and the time can be interrupted/paused each time X1 energizes. When the cumulative total of time periods elapsed reaches the pre-set value T, then revert(s) to its/their initial state.
The output(s) R at initial state will remain for the same time duration T and the time can be interrupted/paused each time X1 energizes. When the cumulative total of time period elapsed reaches the pre-set value T, the output(s) R change(s) to close state. This cycle is repeated indefinitely until power supply is removed.
The second output (R2) can be either timed (when set to "TIMED") or instantaneous (when set to "INST").

Function Dw: Symmetrical flashing relay (starting pulse-off) and with retrigger/restart control

1 output



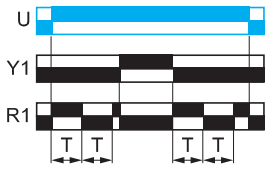
2 outputs



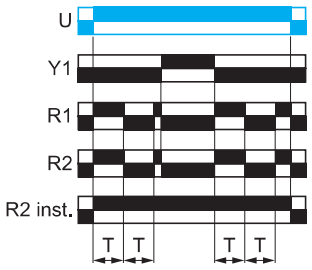
On power-up, output(s) R starts at its/their initial state for timing duration T then changes to output(s) R close(s) for the same timing duration T. This cycle is repeated indefinitely until power supply removal.
At any state of the output(s) R when Y1 energizes, the output(s) R will revert to its/their initial state and followed by Y1 de-energizes then same operation as described at the beginning resumes.
The second output (R2) can be either timed (when set to "TIMED") or instantaneous (when set to "INST").

Function Diw: Symmetrical flashing relay (starting pulse-on) and with retrigger/restart control

1 output



2 outputs

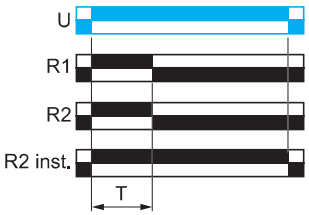


On power-up, output(s) R starts when output(s) R close(s) for timing duration T and revert(s) to its/their initial state for the same timing duration T. This cycle is repeated indefinitely until power supply is removed. At any state of the output(s) R when Y1 energizes, the output(s) R will revert to its/their initial state and followed by Y1 de-energizes then restarts the same operation as described at the beginning.
The second output (R2) can be either timed (when set to "TIMED") or instantaneous (when set to "INST").

Function H: Interval relay

1 output

2 outputs



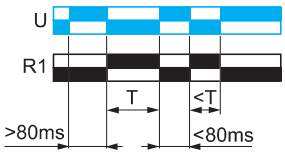
2 timed outputs (R1/R2) or 1 timed output (R1) and 1 instantaneous output (R2 inst.).

On energization of the relay, timing period T starts and the output(s) R close(s).
At the end of the timing period T, output(s) R revert(s) to its/their initial state.
The second output (R2) can be either timed (when set to "TIMED") or instantaneous (when set to "INST").

Functions (continued)

Function He: Pulse-on de-energization

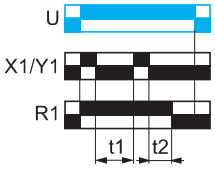
1 output



After energization of power supply > 80 ms followed by de-energization of power supply, the output(s) R close(s) for the duration of a timing period T then revert(s) to its/their initial state.
After energization of power supply < 80 ms followed by de-energization of power supply, the output(s) R close(s) and will not be able to sustain for the duration of a timing period T before revert(s) to its/their initial state.

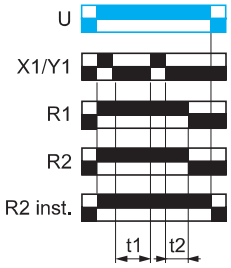
Function Ht: Interval relay (summation) with control signal

1 output



T = t1 + t2 + …

2 outputs

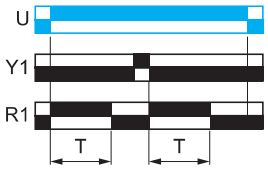


T = t1 + t2 + …

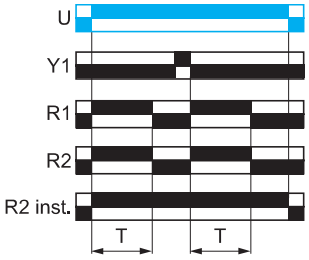
On power-up, output(s) R close(s) and timing period T starts, the timing can be interrupted/paused each time X1 energizes. When the cumulative total of time period elapsed reaches the pre-set value T, the output(s) R revert(s) to its/their initial state.
The second output (R2) can be either timed (when set to "TIMED") or instantaneous (when set to "INST").
Note: For RE17●, RE22R2AMU, RE22R2MMW, RE22R2MMU, RE22R2MJU, timing can be interrupted/paused each time Y1 energizes.

Function Hw : Interval Relay and with retrigger/restart control

1 output



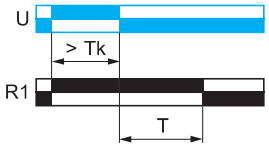
2 outputs



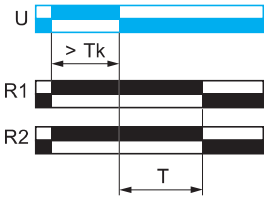
On energization of power supply, output(s) R close(s) and timing period T starts. At the end of the timing period T, the output(s) R revert(s) to its/their initial state.
At any state of the output(s) R when Y1 energizes and then de-energizes, the output(s) R close(s) and restarts the same operation as described at the beginning.
The second output (R2) can be either timed (when set to "TIMED") or instantaneous (when set to "INST").

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

1 output



2 outputs

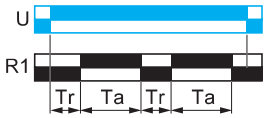


On energization, the output(s) R close(s). On de-energization, timing period T starts and, at the end of this period, the output(s) R revert to its/their initial state.
The energization of power supply > Tk is necessary to sustain the timing period T.
There are 3 references with different Tk as follows:
(a) RE22R1KMR --> Tk > 1 s
(b) RE22R2KMR --> Tk > 1 s
(c) RE22R1MKMR --> Tk > 80 ms

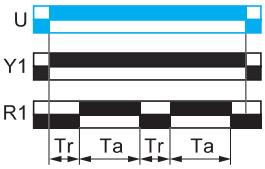
Functions (continued)

Function L: Asymmetrical flasher relay (starting pulse-off)

1 output



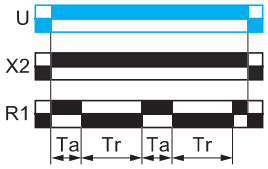
1 output



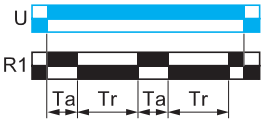
Repetitive cycle consisting of two, independently adjustable timing periods Ta and Tr.
Each timing period corresponds to a different state of the output R.

Function Li: Asymmetrical flasher relay (starting pulse-on)

1 output



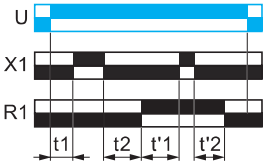
1 output



Repetitive cycle consisting 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

1 output

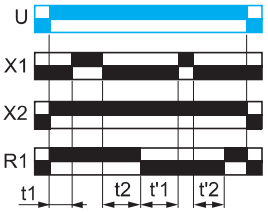


Tr = t1 + t2 + …
Ta = t'1 + t'2 + …

Repetitive cycle comprises of two, independently adjustable timing periods Ta and Tr.
Each timing period corresponds to a different state of the output R.
Control contact X1 can be operated to partially stop timing periods Ta and Tr.

Function Lit: Asymmetrical flashing relay (starting pulse-on) and with pause/summation control

1 output

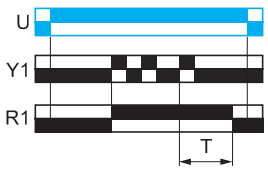


Ta = t1 + t2 + …
Tr = t'1 + t'2 + …

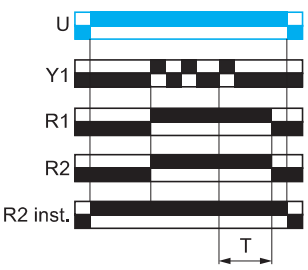
On energization of power supply, output(s) R close(s) for timing duration Ta and the timing can be interrupted/paused each time X1 energizes. When the cumulative total of time periods elapsed reaches the pre-set value Ta, the output(s) R revert(s) to its/their initial state.
The output(s) R at intial state will remain for timing duration Tr, the timing can be interrupted/paused each time X1 energizes. When the cumulative total of time periods elapsed reaches the pre-set value Tr, then changes to output(s) R close(s).
This cycle is repeated indefinitely until power supply is removed.

Function N: Safe guard relay

1 output



2 outputs

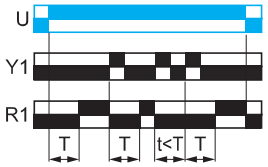


After power-up and an initial control pulse Y1, the output R closes.
If the interval between two control pulses Y1 is greater than the set timing period T, timing elapses normally and the output R opens at the end of the timing period. If the interval is not greater than the set timing period, the output R remains closed until this condition is met.

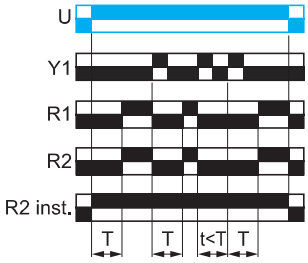
Functions (continued)

Function O: Delayed safe-guard relay

1 output



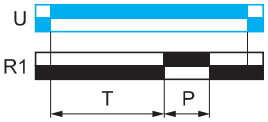
2 outputs



An initial timing period T begins on energization. At the end of this timing period, the output R closes.
When there is a control pulse Y1, 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.

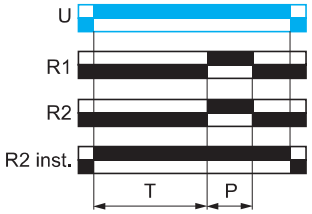
Function P: Pulse delayed relay with fixed pulse length

1 output



P = 500 ms

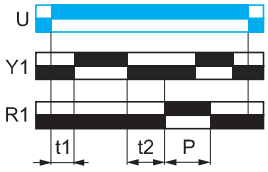
2 outputs



The timing period T starts on energization.
At the end of this period, the output R closes for a fixed time P and then revert(s) to its/their initial state..

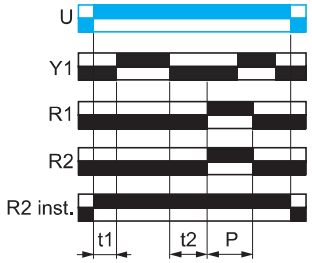
Function Pt: Pulse delayed relay (summation and fixed pulse length) with control signal off

1 output



T = t1 + t2 + …
P = 500 ms

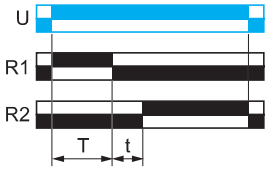
2 outputs



On energization, timing period T starts (it can be interrupted by operating control contact Y1).
When the cumulative total of time periods elapsed reaches the pre-set value T, the output(s) R close(s) for a fixed time P then revert(s) to its/their initial state.

Function Q: Star-Delta Relay (2 N/O output with same common)

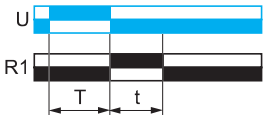
2 outputs



On energization of power supply, the output R1 closes such that it energizes Star contactor + Main contactor and the timing T starts (Star connection time duration starts).
At the end of the timing period T, the output R1 reverts to its initial state such that de-energizes Star contactor and causes t transition time starts.
At the end of the transition time, the output R2 closes such that energizes Delta contactor.

Function Qc: Star-delta timing (1 C/O output)

1 output

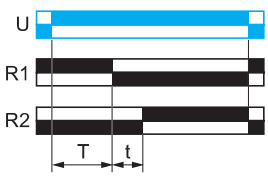


t = 50 ms

On energization of power supply, the output R initializes at its initial state to energize Star contactor + Main contactor and the timing T starts (Star connection time duration starts).
At the end of the time period T, the output R closes such that it de-energizes Star contactor and the power supply to start t transition time.
At the end of the transition time, the output R reverts to its initial state such that it energizes Delta contactor.

Function Qe: Star-delta timing (1 N/C + 1 N/O output with split common)

2 outputs

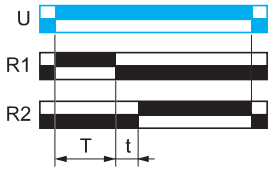


On energization of power supply, the output R1 is at its intitial state such that energizes Star contactor + Main contactor and the timing T starts (Star connection time duration starts).
At the end of the timing period T, the output R1 opens such that de-energizes Star contactor and causes t transition time starts.
At the end of the transition time, the output R2 closes such that energizes Delta contactor.

Functions (continued)

Function Qg: Star-delta timing (2 C/O output with same common)

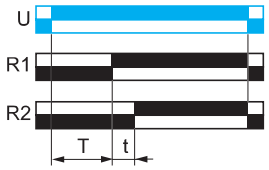
2 outputs



On energization of power supply, the output R1 closes such that it energizes Star contactor + Main contactor and the timing T starts (Star connection time duration starts).
At the end of the timing period T, the output R1 reverts to its initial state such that de-energizes Star contactor and causes t transition time starts.
At the end of the transition time, the output R2 closes such that energizes Delta contactor.

Function Qt: Star-delta timing (2 C/O output with split common)

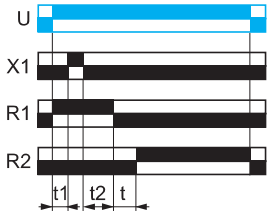
2 outputs



On energization of power supply, the output R1 and R2 initializes at its initial state such that it energizes Star contactor + Main contactor and the timing T starts (Star connection time duration starts).
At the end of the timing period T, the output R1 closes such that it de-energizes Star contactor and causes t transition time to start.
At the end of the transition time, the output R2 closes such that energizes Delta contactor.

Function Qgt : Star-delta relay (2 C/O with same common) with pause/summation control

2 outputs

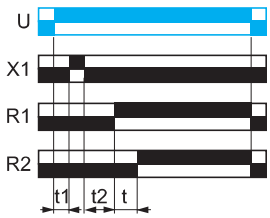


T = t1 + t2 + …

Insert new function here
Heading: Function Qgt : Star-Delta Relay (2 C/O with same common) with pause/ summation control
On energization of power supply, the output R1 closes such that it energizes Star contactor + Main contactor and the timing T starts (Star connection time duration starts).
During Star connection time, the timing can be interrupted/paused each time X1 energizes. When the cumulative total of time periods elapsed reaches the pre-set value T, R1 reverts to its initial state such that it de-energizes Star contactor and causes t transition time to start.
At the end of the transition time, the output R2 closes such that it energizes Delta contactor.

Function Qtt : Star-delta relay (2 C/O output with split common) with pause/summation control

2 outputs

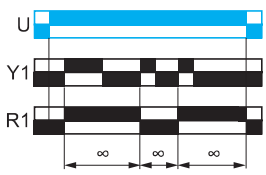


T = t1 + t2 + …

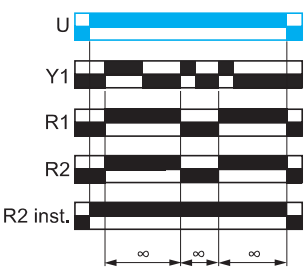
On energization of power supply, the output R1 and R2 initializes at its initial state such that it energizes Star contactor + Main contactor and the timing T starts (Star connection time duration starts).
During Star connection time, the timing can be interrupted/paused each time X1 energizes. When the cumulative total of time period elapsed reaches the pre-set value T, the output R1 closes such that it de-energizes Star contactor and causes t transition time to start.
At the end of the transition time, the output R2 closes such that it energizes Delta contactor.

Function TI: Bistable relay with control signal on

1 output



2 outputs

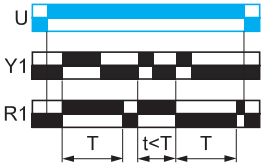


After energization of power supply and Y1, the output(s) R close(s). The subsequent energization of Y1 cause the output(s) R revert(s) to its/their initial state. This cycle is repeated indefinitely until power supply is removed.
The second output (R2) can be either timed (when set to “TIMED”) or instantaneous (when set to “INST”).

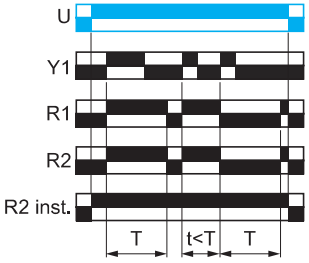
Functions (continued)

Function Tt: Retriggerable bistable relay with control signal on

1 output



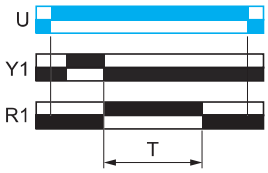
2 outputs



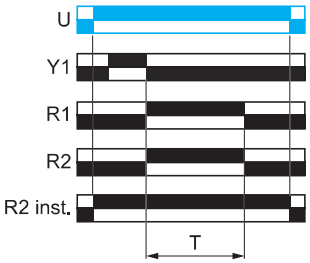
After energization of power supply and on energization of Y1, the output(s) R close(s) and starts the timing T.
If the duration interval between 2 consecutive energization of Y1 is greater than the pre-set value T, the output(s) R will toggle from its/their present status at the end of the timing period.
If the duration interval between 2 consecutive energization of Y1 is less than the pre-set value T, the output(s) R toggle from its/their present status as soon as Y1 energizes without completing T duration.
The second output (R2) can be either timed (when set to "TIMED") or instantaneous (when set to "INST").

Function W: Interval relay with control signal off

1 output



2 outputs

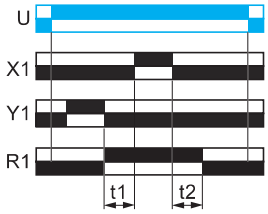


2 timed outputs (R1/R2) or 1 timed output (R1) and 1 instantaneous output (R2 inst.).

After power-up and opening of the control contact Y1, the output(s) R close(s) for a timing period T.
At the end of this timing period the output(s) revert to its/their initial state.
The second output (R2) can be either timed (when set to "TIMED") or instantaneous (when set to "INST").

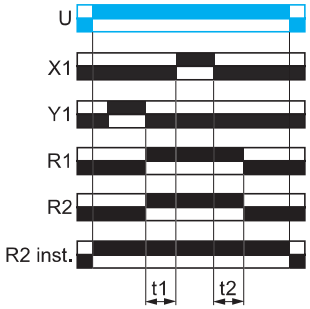
Function Wt: Interval relay with control signal off and with pause/summation control

1 output



T = t1 + t2 + …

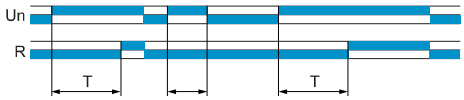
2 outputs



After power-up and opening of the control contact Y1, the output(s) R close(s) for a timing period T. Timing can be interrupted/paused each time X1 energizes.
When the cumulative total of time period elapsed reaches the pre-set value T, the output(s) R revert(s) to its/their initial state.
The second output (R2) can be either timed (when set to "TIMED") or instantaneous (when set to "INST").

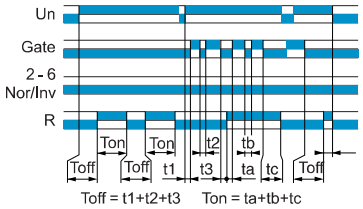
RE48ATM12MW

Function A: Delay on energization

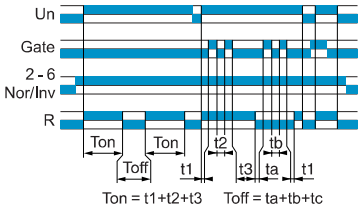


RE48ACV12MW

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

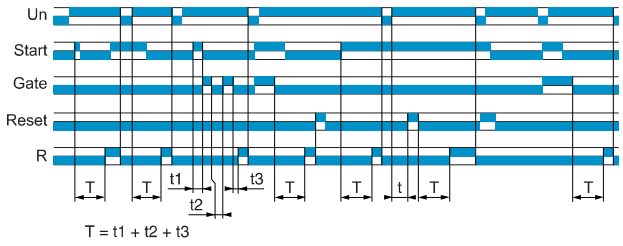


Function Li: Asymmetrical flashing, start with output in operating position

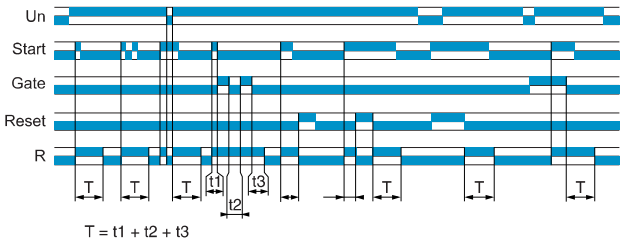


RE48AML12MW

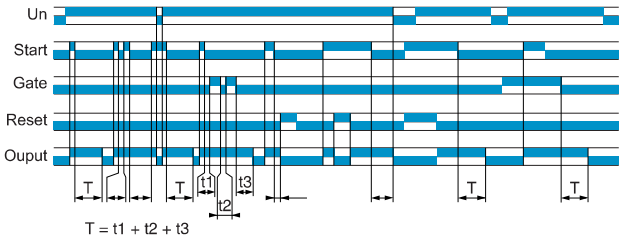
Function A: Delay on energization



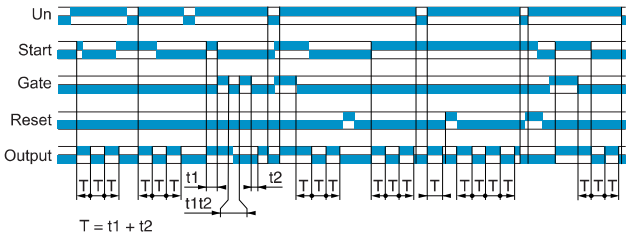
Function B: Timing on impulse, one shot



Function C: Timing after opening of control contact

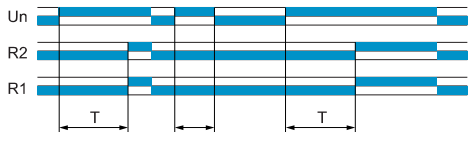


Function Di: Symmetrical flashing, start with output in operating position

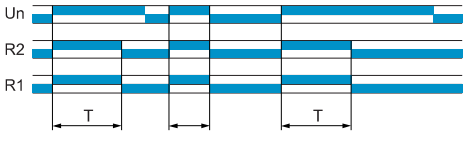


RE48AMH13MW

Functions A1, A2: Delay on energization



Functions H1, H2: Pulse-on energization



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

Zelio Timer Relays

Modular relays with solid state or relay output, width 17.5 mm/*0.689 in.*

Solid state output

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

PF121100A

RE17LAMW

PF121103B

RE17LLBM

Relay output, 1 C/O contact

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

PF121113A

RE17R●M●

Modular relays with solid state output 0.7 A

Single function

Timing ranges	Functions	Voltages V	Reference	Weight kg/*lb*
1 s, 10 s, 1 min, 10 min, 1 h, 10 h, 100 h	A	⎓ 24…240	**RE17LAMW**	0.060/ *0.132*
	H	~ 24…240	**RE17LHBM**	0.060/ *0.132*
	C	~ 24…240	**RE17LCBM**	0.060/ *0.132*
Dual function				
1 s, 10 s, 1 min, 10 min, 1 h, 10 h, 100 h	L, Li	~ 24…240	**RE17LLBM**	0.060/ *0.132*
Multifunction				
1 s, 10 s, 1 min, 10 min, 1 h, 10 h, 100 h	A, At, B, C, H, Ht, D, Di, Ac, Bw	~ 24…240	**RE17LMBM**	0.060/ *0.132*

Modular relays with relay output, 1 C/O contact

Single function

Timing ranges	Functions	Voltages V	Reference	Weight kg/*lb*
1 s, 10 s, 1 min, 10 min, 1 h, 10 h, 100 h	B	⎓ 24/~ 24…240	**RE17RBMU**	0.070/ *0.154*
	C	⎓ 24/~ 24…240	**RE17RCMU**	0.070/ *0.154*
Dual function				
1 s, 10 s, 1 min, 10 min, 1 h, 10 h, 100 h	A, At	⎓ 24/~ 24…240	**RE17RAMU**	0.070/ *0.154*
	H, Ht	⎓ 24/~ 24…240	**RE17RHMU**	0.070/ *0.154*
	L, Li	⎓ 24/~ 24…240	**RE17RLMU**	0.070/ *0.154*
		⎓ 12	**RE17RLJU**	0.070/ *0.154*
Multifunction				
1 s, 10 s, 1 min, 10 min, 1 h, 10 h, 100 h	A, At, B, C, H, Ht, D, Di, Ac, Bw	⎓ 12	**RE17RMJU**	0.070/ *0.154*
		⎓ 24/~ 24…240	**RE17RMMU**	0.070/ *0.154*
		⎓ 12…240	**RE17RMMW**	0.070/ *0.154*
			RE17RMMWS *(1)*	0.070/ *0.154*
	Ad, Ah, N, O, P, Pt, Tl, Tt, W	⎓ 24/~ 24…240	**RE17RMXMU**	0.070/ *0.154*
1 s, 10 s, 1 min 10 min, 1 h, 10 h	A, At, B, C, H, Ht, D, Di	⎓ 24/~ 24…240	**RE17RMEMU**	0.070/ *0.154*

(1) Connection by spring terminals.

Zelio Timer Relays

Modular single, dual or multifunction relays with diagnostic button and dial pointer, relay output, width 22.5 mm/*0.886 in.*

Output 1 C/O and 2 C/O contacts

- *Multifunction, dual function, or single function*
- *Multiple timing ranges (up to 10 switchable ranges)*
- *Multivoltage*
- *1 or 2 relay outputs: 8 A - 250 V*
- *Screw terminals*
- *State indication by LED*
- *Option of supplying a load in parallel*
- *3-wire sensor control option*
- *Diagnostic button (1) and dial pointer LED indicator*

RE22R2QTMR

RE22R2KMR

RE22R2QEMR

RE22R2HMR

RE22R1MYMR

References

Single function

Timing ranges	Functions	No. of relay outputs	Voltages	Reference	Weight
			V		kg/*lb*
10 time range selection **1 s, 3 s, 10 s, 30 s, 100 s, 300 s, 30 min, 300 min, 30 h, 300 h**	**Ac**	2	≂ 24…240	**RE22R2ACMR**	0.105/ *0.231*
	Qg	2	≂ 24…240	**RE22R2QGMR**	0.105/ *0.231*
	Qt	2	≂ 24…240	**RE22R2QTMR**	0.105/ *0.231*
7 time range selection **1 s, 3 s, 10 s, 30 s, 100 s, 300 s, 10 min**	**K**	1	≂ 24…240	**RE22R1KMR**	0.100/ *0.220*
		2	≂ 24…240	**RE22R2KMR**	0.100/ *0.220*
7 time range selection **0.5 s, 1 s, 3 s, 10 s, 30 s, 100 s, 300 s**	**Qc**	1	≂ 24/∼ 24…240	**RE22R1QCMU**	0.080/ 0.176
Single range selection **30 s**	**Qe**	2	≂ 24…240	**RE22R2QEMR**	0.090/ *0.198*
		2	∼ 380…415	**RE22R2QEMT**	0.090/ *0.198*

Dual function

Timing ranges	Functions	No. of relay outputs	Voltages	Reference	Weight
10 time range selection **1 s, 3 s, 10 s, 30 s, 100 s, 300 s, 30 min, 300 min, 30 h, 300 h**	**A, Aw**	1	≂ 24…240	**RE22R1AMR**	0.100/ *0.220*
		2	≂ 24…240	**RE22R2AMR**	0.105/ *0.231*
	C, Ct	1	≂ 24…240	**RE22R1CMR**	0.100/ *0.220*
		2	≂ 24…240	**RE22R2CMR**	0.105/ *0.231*
	Ac, Act	1	≂ 24…240	**RE22R1ACMR**	0.100/ *0.220*
	Ak, Akt	1	≂ 24…240	**RE22R1AKMR**	0.100/ *0.220*
	D, Dw	1	≂ 24…240	**RE22R1DMR**	0.100/ *0.220*
		2	≂ 24…240	**RE22R2DMR**	0.105/ *0.231*
	H, Hw	1	≂ 24…240	**RE22R1HMR**	0.100/ *0.220*
		2	≂ 24…240	**RE22R2HMR**	0.105/ *0.231*
	Wt, W	2	≂24…240	**RE22R2MWMR**	0.105/ *0.231*
7 time range selection **0.5 s, 1 s, 3 s, 10 s, 30 s, 100 s, 300 s**	**K, He**	1	≂24…240	**RE22R1MKMR**	0.100/ *0.220*
10 time range selection **1 s, 3 s, 10 s, 30 s, 100 s, 300 s, 30 min, 300 min, 30 h, 300 h**	**A, At, Aw**	1	≂ 24…240	**RE22R1MAMR**	0.100
	A, At, Aw, Ac, Act, C, Ct, D, Dt, Dw, Di, Dit, Diw, H, Ht, Hw, W, Wt,	1	≂ 24…240	**RE22R1MYMR**	0.100/ *0.220*
	A, At, Aw, C, Ct, D, Dt, Dw, Di, Dit, Diw, H, Ht, Hw, Qg, Qgt, Qt, Qtt, W, Wt	2	≂ 24…240	**RE22R2MYMR**	0.105/ *0.231*
	L, Li, Lt, Lit	1	≂ 24…240	**RE22R1MLMR**	0.100/ *0.220*

(1) The diagnostic button is not available for the K function related references (RE22R1KMR, RE22R2KMR and RE22R1MKMR).