

**Zelio NFC Timing Relay:** As simple as

- 1 Install
- 2 Open app
- 3 Set parameters

### Zelio NFC Timing Relays

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

The mobile app, Zelio NFC created for NFC timing relay is Android enabled and can be downloaded on the phone from Google Play.

#### Simplify product selection

- > One product reference
- > 28 timing functions
- > 2 outputs
- > Wide range of voltage supplied (24...240 V c / a )

#### Achieve unprecedented accuracy

- > Reduce error margin from 10% to 0.2%
- > Timing can be set by hour, minute, second, or millisecond



Select Function



Select Time

#### Diagnose your relay

- > Read relay status
- > Overwrite the output
- > Manage relays without power

#### Count on superior security

- > Four-digit password protection



Diagnose



Security setting

#### Save valuable time

- > Clone settings
- > Store settings
- > Share settings through SMS

**Zelio NFC Timing Relay → World's first industrial NFC timing relay**



## Main

Range of product	Zelio Time
Product or component type	Modular timing relay
Device short name	RENF22
Supported OS	Android
Software version	V4.1 and above
App for product	Zelio NFC (downloadable from Google Play store)

## Complementary

Discrete output type	Relay
Nominal output current	8 A
Contacts type and composition	2 C/O timed contact, cadmium free 1 C/O timed or instantaneous contact, cadmium free
Time delay type	A Ac Ad Ah Ak At B Bw C D Di H Ht L Li Lt N O P Pt Qt TI Tt W Lit Dt Dit Qtt
Time delay range	0.1 s...999 h
Product compatibility	NFC enabled mobile device
[Us] rated supply voltage	24...240 V AC/DC
Release input voltage	<= 2.4 V
Voltage range	0.85...1.1 Us
Maximum RF power transmitted	0.0002 mW
NFC operating frequency	13.56 MHz
Supply frequency	50...60 Hz +/- 5 %

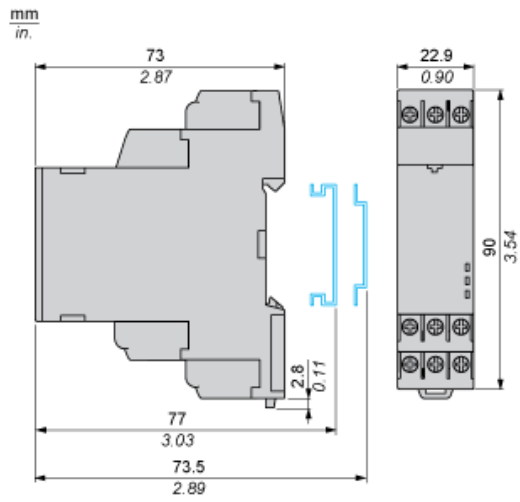
The information provided in this documentation contains general descriptions and/or technical characteristics of the performance of the products contained herein. This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications. It is the duty of any such user or integrator to perform the appropriate and complete risk analysis, evaluation and testing of the products with respect to the relevant specific application or use thereof. Neither Schneider Electric Industries SAS nor any of its affiliates or subsidiaries shall be responsible or liable for misuse of the information contained herein.

Connections - terminals	Screw terminals 2 x 0.2...2 x 1.5 mm <sup>2</sup> AWG 24...AWG 16 flexible cable with cable end Screw terminals 1 x 0.2...1 x 2.5 mm <sup>2</sup> AWG 24...AWG 14 flexible cable with cable end Screw terminals 2 x 0.5...2 x 2.5 mm <sup>2</sup> AWG 20...AWG 14 solid cable without cable end Screw terminals 1 x 0.5...1 x 3.3 mm <sup>2</sup> AWG 20...AWG 12 solid cable without cable end
Tightening torque	5.3...8 lb.in conforming to IEC 60947-1 0.6...1 N.m conforming to IEC 60947-1
Housing material	Self-extinguishing
Repeat accuracy	100 ms...10 s +/- 0.5 % 10 s...999 h +/- 0.2 %
Temperature drift	+/- 0.05 %/°C
Voltage drift	+/- 0.2 %/V
Setting accuracy of time delay	1 s...1 h +/- 2 % of set value at 25 °C 100 ms...1 s +/- 20 ms of set value at 25 °C 1...999 h +/- 1 % of set value at 25 °C
Control signal pulse width	60 ms no-load 100 ms with load in parallel
Insulation resistance	100 MOhm at 500 V DC conforming to IEC 60664-1
Recovery time	120 ms on de-energisation
Power consumption in VA	3 VA at 240 V AC
Power consumption in W	0.6 W at 24 V DC 1.5 W at 240 V DC
Switching capacity in VA	2000 VA
Minimum switching current	10 mA at 5 V
Maximum switching current	8 A
Maximum switching voltage	250 V
Electrical durability	100000 cycles at 8 A, 250 V AC on resistive load
Mechanical durability	10000000 cycles
Rated impulse withstand voltage	5 kV during 1.2...50 µs conforming to IEC 60664-1
Power on delay	< 100 ms
Creepage distance	4 kV/3 conforming to IEC 60664-1
Overvoltage category	III conforming to IEC 60664-1
Mounting position	Any position
Mounting support	35 mm DIN rail conforming to EN/IEC 60715
Status LED	R2, amber LED: (blinking) for timing in progress R1, amber LED: (blinking) for timing in progress Un, green LED: (fast blinking) for diagnosis mode Pairing, green LED: (steady) for communication status R2, amber LED: (steady) for relay energised R1, amber LED: (steady) for relay energised Un, green LED: (steady) for power ON
Maximum communication distance	10 mm
Response time	2 s
Width	22.5 mm
Product weight	0.0904 kg

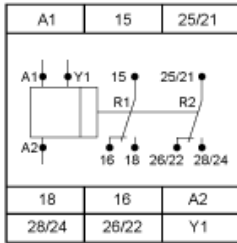
## Environment

Immunity to microbreaks	<= 10 ms
Dielectric strength	2.5 kV for 1 mA/1 minute at 50 Hz between relay output and power supply with basic insulation
Standards	EN 61000-6-1 EN 61000-6-2 EN 61000-6-3 EN 61000-6-4 EN 61812-1
Directives	1999/5/EC - R&TTE directive 2014/30/EU - electromagnetic compatibility 2014/35/EU - low voltage directive
Product certifications	CE CSA UL KC
Ambient air temperature for operation	-20...60 °C
Ambient air temperature for storage	-40...70 °C
IP degree of protection	IP20 on terminals conforming to IEC 60529 IP40 on front face conforming to IEC 60529 IP40 on housing conforming to IEC 60529
Pollution degree	3 conforming to IEC 60664-1
Vibration resistance	20 m/s <sup>2</sup> at 10...150 Hz conforming to IEC 60068-2-6
Shock resistance	5 gn (in operation) during 11 ms conforming to IEC 60068-2-27 15 gn (not operating) during 11 ms conforming to IEC 60068-2-27
Relative humidity	95 % at 25...55 °C
Electromagnetic compatibility	Conducted emission, class A conforming to EN 55022 Radiated emission, class B conforming to EN 55022 Immunity to microbreaks and voltage drops (test level: 100 % - 20 ms) conforming to IEC 61000-4-11 Immunity to microbreaks and voltage drops (test level: 30 % - 500 ms) conforming to IEC 61000-4-11 Electromagnetic field immunity test (test level: 10 V/m, level 3 - 80 MHz...1 GHz) conforming to IEC 61000-4-3 Radiated radio-frequency electromagnetic field immunity test (test level: 10 V, level 3 - 0.15...80 MHz) conforming to IEC 61000-4-6 Surge immunity test (test level: 2 kV, level 3 - common mode) conforming to IEC 61000-4-5 Surge immunity test (test level: 1 kV, level 3 - differential mode) conforming to IEC 61000-4-5 Fast transients immunity test (test level: 2 kV, level 3 - direct contact) conforming to IEC 61000-4-4 Fast transients immunity test (test level: 1 kV, level 3 - capacitive connecting clip) conforming to IEC 61000-4-4 Electrostatic discharge immunity test (test level: 8 kV, level 3 - air discharge) conforming to EN/IEC 61000-4-2 Electrostatic discharge immunity test (test level: 6 kV, level 3 - contact discharge) conforming to EN/IEC 61000-4-2

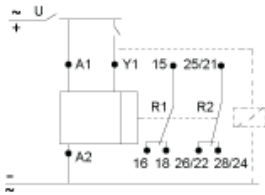
## Dimensions



Internal Wiring Diagram



Wiring Diagram

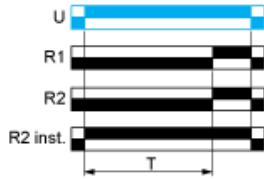


Function A: Power On-Delay

Description

On energisation of power supply, the timing period T starts. 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: 2 Output

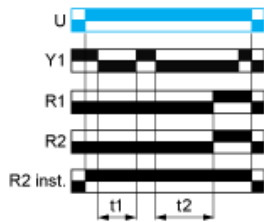


Function At: Power On-Delay with Pause / Summation Control

Description

On energisation of power supply, the timing period T starts. 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").

Function: 2 Output



$T = t_1 + t_2 + \dots$

Function Ac: On-Delay & Off-Delay with Control Signal

Description

After energisation of power supply and energization of Y1 causes the timing period T to start.

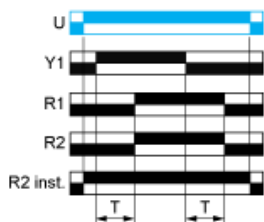
At the end of this timing period, the output(s) R close(s).

When deenergization of Y1, the timing 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: 2 Output



Function Ad : Pulse Delayed Relay with Control Signal

### Description

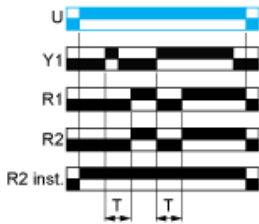
After energisation of power supply, pulsing or maintaining of energization of Y1 starts the timing T.

At the end of this timing period T, the output(s) R close(s).

The output(s) R reverts to its initial position the next time Y1 is energized in pulsation or permanent energized manner.

The second output (R2) can be either timed (when set to "TIMED") or instantaneous (when set to "INST").

### Function: 2 Output



### Function Ah : Pulse Delayed Relay (Single Cycle) with Control Signal

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### Description

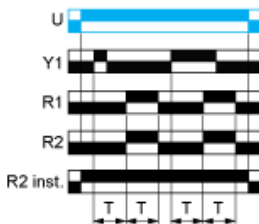
After energisation of power supply, pulsing or maintaining of energization of Y1 starts the timing T.

A single flashing cycle then starts with 2 timing periods T of equal duration (start with output(s) R in initial position). Output(s) 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.

Re-energizing of Y1, either in pulsation or permanent energized manner, will re-start the single flashing cycle again.

The second output (R2) can be either timed (when set to "TIMED") or instantaneous (when set to "INST").

### Function: 2 Output



### Function Ak: Asymmetrical On-Delay & Off-Delay with Control Signal

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### Description

After energisation of power supply and energization of Y1, timing starts for a period Ta.

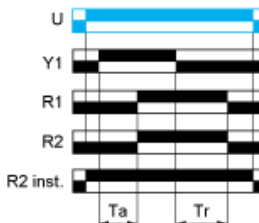
At the end of this timing period Ta, the output(s) R closes.

Deenergization of 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.

The second output (R2) can be either timed (when set to "TIMED") or instantaneous (when set to "INST").

### Function: 2 Output



### Function B : Interval Relay (Single Shot) With Control Signal

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### Description

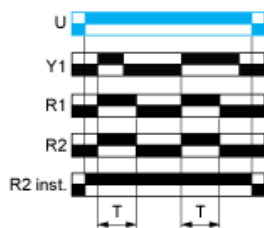
After energisation of power supply, pulsing or maintaining of energization of Y1 starts the timing T.

The output(s) R close(s) for the duration of the timing period T 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: 2 Output



### Function Bw : Double Interval Relay with Control Signal

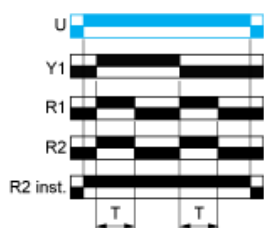
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#### Description

After energisation of power supply, transition of Y1 (either from energization to deenergization or vice-versa) will cause the output(s) R close(s) for the duration of the timing period T 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: 2 Output



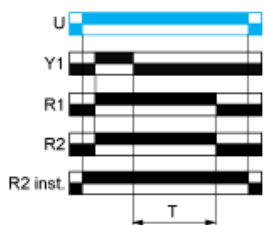
### Function C: Off-Delay Relay with Control Signal

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#### Description

After energisation of power supply and energization of Y1 causes output(s) R close(s). When Y1 deenergizes, timing 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: 2 Output



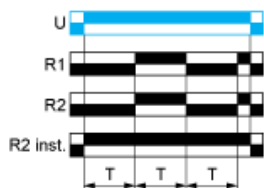
### Function D: Symmetrical Flashing Relay (Starting Pulse Off)

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#### Description

On energisation of power supply, output(s) R starts at its/their initial state for timing duration T then change(s) to output(s) R close(s) for the same timing duration T. This cycle is repeated indefinitely until power supply removal. The second output (R2) can be either timed (when set to "TIMED") or instantaneous (when set to "INST").

### Function: 2 Output



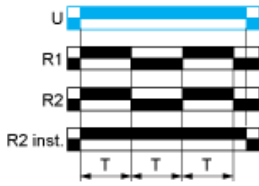
### Function Di: Symmetrical Flashing Relay (Starting Pulse On)

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### Description

On energisation of power supply, output(s) R starts at output(s) R close(s) for timing duration T then revert(s) to its/their initial state for the same timing duration T. This cycle is repeated indefinitely until power supply removal. The second output (R2) can be either timed (when set to "TIMED") or instantaneous (when set to "INST").

### Function: 2 Output

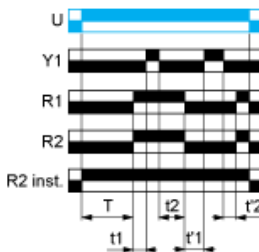


### Function Dt: Symmetrical Flashing Relay (Starting Pulse Off) & With Pause / Summation Control

### Description

On energisation of power supply, output(s) R starts at its/their initial state for timing duration T and the timing can be interrupted / paused each time Y1 energizes. When the cumulative total of time periods elapsed reaches the pre-set value T, then changes to 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 Y1 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. This cycle is repeated indefinitely until power supply removal. The second output (R2) can be either timed (when set to "TIMED") or instantaneous (when set to "INST").

### Function: 2 Output



$$T = t_1 + t_2 + \dots$$

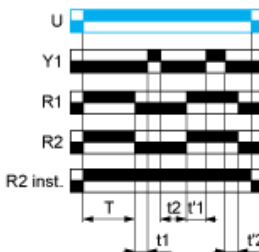
$$T = t'_1 + t'_2 + \dots$$

### Function Dit: Symmetrical Flashing Relay (Starting Pulse On) & With Pause / Summation Control

### Description

On energisation of power supply, output(s) R starts at output(s) R close(s) for timing duration T and the timing can be interrupted / paused each time Y1 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 timing duration T and the 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 change(s) to close state. This cycle is repeated indefinitely until power supply removal. The second output (R2) can be either timed (when set to "TIMED") or instantaneous (when set to "INST").

### Function: 2 Output



$$T = t_1 + t_2 + \dots$$

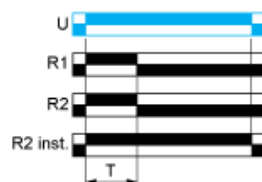
$$T = t'_1 + t'_2 + \dots$$

### Function H: Interval Relay

### Description

On energisation 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. The second output (R2) can be either timed (when set to "TIMED") or instantaneous (when set to "INST").

### Function: 2 Output

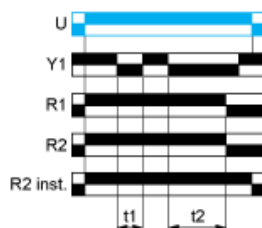


### Function Ht: Interval Relay & With Pause / Summation Control

#### Description

On energisation of power supply, output(s) R close(s) and timing period T starts. The 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 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: 2 Output



$$T = t1 + t2 + \dots$$

### Function L: Asymmetrical Flashing Relay (Starting Pulse Off)

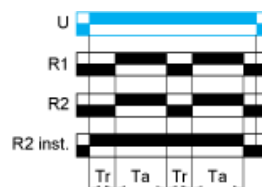
#### Description

On energisation of power supply, output(s) R starts at its/their initial state for timing duration  $T_r$  then change(s) to output(s) R close(s) for the another timing duration  $T_a$ .

This cycle is repeated indefinitely until power supply removal.

The second output (R2) can be either timed (when set to "TIMED") or instantaneous (when set to "INST").

### Function: 2 Output



### Function Li: Asymmetrical Flashing Relay (Starting Pulse On)

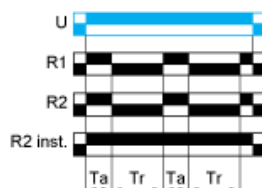
#### Description

On energisation of power supply, output(s) R starts at output(s) R close(s) for timing duration  $T_a$  then change(s) to its/their initial state for timing duration  $T_r$ .

This cycle is repeated indefinitely until power supply removal.

The second output (R2) can be either timed (when set to "TIMED") or instantaneous (when set to "INST").

### Function: 2 Output



### Function Lt: Asymmetrical Flashing Relay (Starting Pulse Off) & with Pause / Summation Control

### Description

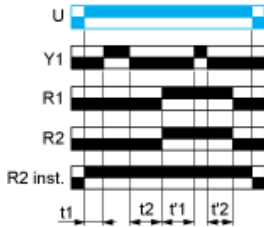
On energisation of power supply, output(s) R starts at its/their initial state for timing duration  $T_r$  and the timing can be interrupted / paused each time Y1 energizes. When the cumulative total of time periods elapsed reaches the pre-set value  $T_r$ , then changes to output(s) R close(s).

The output(s) R close state will remain for the same timing duration  $T_a$  and the timing can be interrupted / paused each time Y1 energizes. When the cumulative total of time periods elapsed reaches the pre-set value  $T_a$ , the output(s) R revert(s) to its/their initial state.

This cycle is repeated indefinitely until power supply removal.

The second output (R2) can be either timed (when set to "TIMED") or instantaneous (when set to "INST").

### Function: 2 Output



$$T_r = t_1 + t_2 + \dots$$

$$T_a = t'_1 + t'_2 + \dots$$

### Function Lit: Asymmetrical Flashing Relay (Starting Pulse On) & with Pause / Summation Control

### Description

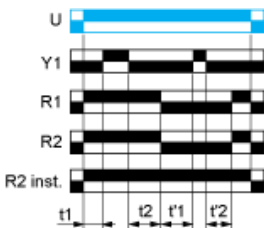
On energisation of power supply, output(s) R starts at output(s) R close(s) for timing duration  $T_a$  and the timing can be interrupted / paused each time Y1 energizes. When the cumulative total of time periods elapsed reaches the pre-set value  $T_a$ , the output(s) R revert(s) to its/their initial state.

The output(s) R at initial state will remain for timing duration  $T_r$  the timing can be interrupted / paused each time Y1 energizes. When the cumulative total of time periods elapsed reaches the pre-set value  $T_r$ , then changes to output(s) R close(s)

This cycle is repeated indefinitely until power supply removal.

The second output (R2) can be either timed (when set to "TIMED") or instantaneous (when set to "INST").

### Function: 2 Output



$$T_a = t_1 + t_2 + \dots$$

$$T_r = t'_1 + t'_2 + \dots$$

### Function N : Safe Guard Relay

### Description

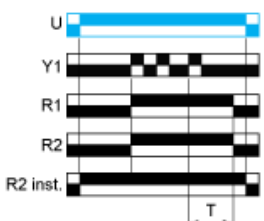
After energisation of power supply and on energization of Y1 cause the output(s) R close(s) and starts the timing T.

If the duration interval between 2 consecutive energization of Y1 is greater than the pre-set value T, the output(s) R close(s) 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 remain(s) closed and timing restarted base on the last energization of Y1.

The second output (R2) can be either timed (when set to "TIMED") or instantaneous (when set to "INST").

### Function: 2 Output



## Function O : Delayed Safe-Guard Relay

### Description

On energisation of power supply, the timing T starts.

At the end of this timing period, the output(s) R close(s).

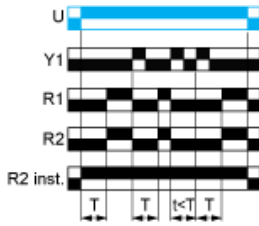
On energization of Y1, the output(s) R revert(s) to its/their initial state and the timing T restarts.

If the duration interval between 2 consecutive energization of Y1 is greater than the pre-set value T, the output(s) R close(s) 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 remain(s) at its/their initial state and timing restarted base on the last energization of Y1.

The second output (R2) can be either timed (when set to "TIMED") or instantaneous (when set to "INST").

### Function: 2 Output



## Function P : Pulse Delayed Relay with Fixed Pulse Length

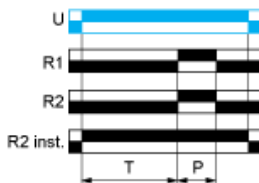
### Description

On energisation of power supply, the timing T starts.

At the end of this period, the output(s) R close(s) for a fixed time P 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: 2 Output



P = 500 ms

## Function Pt : Pulse Delayed Relay With Fixed Pulse Length & With Pause / Summation Control

### Description

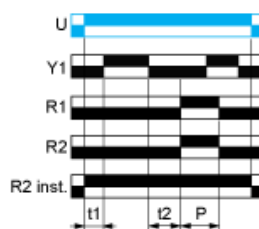
On energisation of power supply, the timing T starts.

The 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) for a fixed time P 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: 2 Output



T = t1 + t2 + ...

P = 500 ms

## Function Qt: Star-Delta Relay (2 CO with Split Common)

### Description

On energisation of power supply, the output R3 & R4 initializes at its initial 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 R3 closes such that deenergizes STAR CONTACTOR and causes t transition time starts. At the end of the transition time, the output R4 closes such that energizes DELTA CONTACTOR.

### Function: 2 Output



T = 20, 30... ms

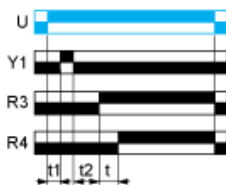
### Function Qtt: Star-Delta Relay (2 CO with same common) with Pause / Summation Control

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### Description

On energisation of power supply, the output R3 & R4 initializes at its initial state such that 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 Y1 energizes. When the cumulative total of time periods elapsed reaches the pre-set value T, the output R3 closes such that deenergizes STAR CONTACTOR and causes t transition time starts. At the end of the transition time, the output R4 closes such that energizes DELTA CONTACTOR.

### Function: 2 Output



T = t1 + t2 + ...

t = 20, 30 ... ms

### Function TL : Bi-stable Relay with Control Signal On

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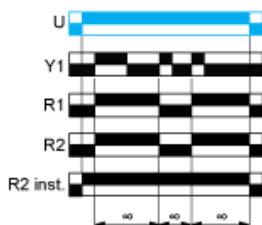
### Description

After energisation of power supply and on energization of Y1 cause the output(s) R close(s). The subsequent on energization of Y1 cause the output(s) R revert(s) to its/their initial state.

This cycle is repeated indefinitely until power supply removal.

The second output (R2) can be either timed (when set to "TIMED") or instantaneous (when set to "INST").

### Function: 2 Output



### Function Tt : Retriggerable Bistable Relay with Control Signal On

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### Description

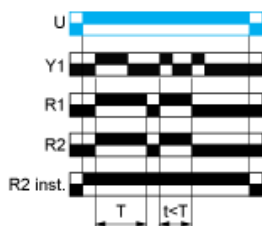
After energisation of power supply and on energization of Y1 cause the output(s) R close(s) and starts the timing T.

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 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: 2 Output

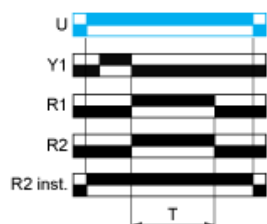


## Function W: Interval Relay with Control Signal Off

### Description

After energisation of power supply and on energization of Y1, the output(s) R close(s) and starts the timing T. At the end of the timing period, 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").

## Function: 2 Output



### Legend

□ Relay de-energised

■ Relay energised

□ Output open

■ Output closed

U Supply

-

R1/ 2 timed outputs

R2

-

Ta Adjustable On-delay

-

Tr Adjustable Off-delay

-

Y1 Retrigger / Restart control

-

R2 The second output is instantaneous if the right position is selected

inst.

-

T - Timing period

R4 Delta contact output

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t - Delay to switch ON Delta contact output

R3 Star-Delta contact output

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