



### Main

Range of product	Zelio Time
Product or component type	Modular timing relay
Device short name	RENF22
Operating system	Android
Software version	V4.4 and above
Software designation	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 and 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
Input voltage	$\leq 2.4$ V
Voltage range	0.85...1.1 Un
Nominal power	0.0002 mW
Maximum operating frequency	13.56 MHz
Supply frequency	50...60 Hz +/- 5 %
Connections - terminals	Screw terminals 1 x 0.5...1 x 3.3 mm <sup>2</sup> AWG 20...AWG 12 solid cable without 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 0.2...1 x 2.5 mm <sup>2</sup> AWG 24...AWG 14 flexible cable with cable end Screw terminals 2 x 0.2...2 x 1.5 mm <sup>2</sup> AWG 24...AWG 16 flexible cable with cable end
Tightening torque	0.6...1 N.m conforming to IEC 60947-1 5.3...8.8 lbf.in conforming to IEC 60947-1

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.

Housing material	Self-extinguishing
Repeat accuracy	+/- 0.2 % for 10 s...999 h time delay range +/- 0.5 % for 100 ms...10 s time delay range
Temperature drift	+/- 0.05 %/°C
Voltage drift	+/- 0.2 %/V
Setting accuracy of time delay	+/- 1 % for 1...999 h time delay range at 25 °C +/- 2 % for 1 h time delay range at 25 °C +/- 20 ms for 100 ms...10 s time delay range at 25 °C
Minimum pulse duration	100 ms with load in parallel 60 ms no-load
Insulation resistance	100 MOhm at 500 V DC conforming to IEC 60664-1
Reset time	120 ms on de-energisation
Power consumption in VA	3 VA at 240 V AC
Power consumption in W	1.5 W at 240 V DC 0.6 W at 24 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
[Uimp] rated impulse withstand voltage	5 kV for 1.2/50 µs conforming to IEC 60664-1
Delay response	<= 100 ms
Creepage distance	4 kV/3 conforming to IEC 60664-1
Overvoltage category	III conforming to IEC 60664-1
Safety reliability data	MTTFd = 227.5 years for 100 % duty cycle continuous operating condition at 30 °C
Mounting position	Any position
Mounting support	35 mm DIN rail conforming to EN/IEC 60715
Local signalling	Un, green LED: (steady) for power ON R1, amber LED: (steady) for relay energised R1, amber LED: (blinking) for timing in progress R2, amber LED: (steady) for relay energised R2, amber LED: (blinking) for timing in progress Pairing, green LED: (steady) for communication status Un, green LED: (fast blinking) for diagnosis mode
Operating distance	10 mm
Response time	2 s
Width	22.5 mm
Product weight	0.0904 kg

## Environment

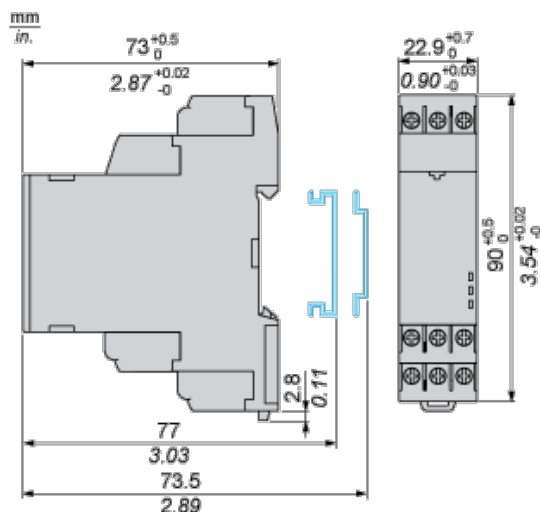
immunity to microbreaks	10 ms
dielectric strength	2.5 kV for 1 mA/1 minute at 50 Hz between relay output and power supply with basic insulation with basic insulation
standards	EN 61000-6-1 EN 61000-6-2 EN 61000-6-3 EN 61000-6-4 EN 61812-1
directives	2014/30/EU - electromagnetic compatibility 2014/35/EU - low voltage directive 2014/53/EU - radio equipment 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 housing conforming to IEC 60529 IP40 on front face 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	15 gn (not operating) during 11 ms conforming to IEC 60068-2-27 5 gn (in operation) during 11 ms conforming to IEC 60068-2-27
relative humidity	95 % at 25...55 °C
electromagnetic compatibility	Electrostatic discharge immunity test (test level: 6 kV, level 3 - contact discharge) conforming to EN/IEC 61000-4-2 Electrostatic discharge immunity test (test level: 8 kV, level 3 - air discharge) conforming to EN/IEC 61000-4-2 Fast transients immunity test (test level: 1 kV, level 3 - capacitive connecting clip) conforming to IEC 61000-4-4 Fast transients immunity test (test level: 2 kV, level 3 - direct contact) conforming to IEC 61000-4-4 Surge immunity test (test level: 1 kV, level 3 - differential mode) conforming to IEC 61000-4-5 Surge immunity test (test level: 2 kV, level 3 - common mode) conforming to IEC 61000-4-5 Radiated radio-frequency electromagnetic field immunity test (test level: 10 V, level 3 - 0.15...80 MHz) conforming to IEC 61000-4-6 Electromagnetic field immunity test (test level: 10 V/m, level 3 - 80 MHz...1 GHz) conforming to IEC 61000-4-3 Immunity to microbreaks and voltage drops (test level: 30 % - 500 ms) conforming to IEC 61000-4-11 Immunity to microbreaks and voltage drops (test level: 100 % - 20 ms) conforming to IEC 61000-4-11 Radiated emission, class B conforming to EN 55022 Conducted emission, class A conforming to EN 55022 Electromagnetic field immunity test (test level: 3 V/m, level 2 - 1.4 GHz...2 GHz) conforming to IEC 61000-4-3 Electromagnetic field immunity test (test level: 1 V/m, level 1 - 2...2.7 GHz) conforming to IEC 61000-4-3

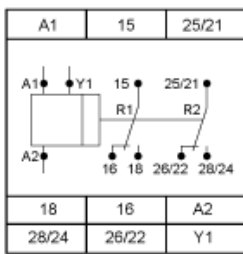
## Offer Sustainability

Sustainable offer status	Green Premium product
RoHS (date code: YYWW)	Compliant - since 1551 - Schneider Electric declaration of conformity
REACH	Reference not containing SVHC above the threshold
Product environmental profile	Available
Product end of life instructions	Available

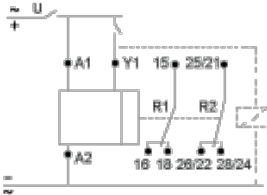
## Dimensions



## Internal Wiring Diagram



## Wiring Diagram

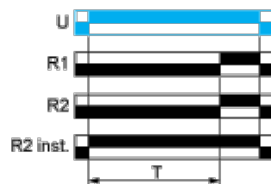


## Function A: Power On-Delay Relay

### 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

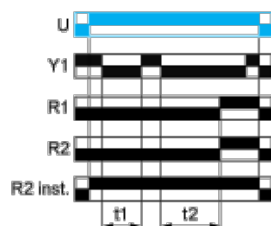


## Function At: Power On-Delay Relay with Pause / Summation Control Signal

### 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



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

## Function Ac: On-Delay and Off-Delay Relay with Control Signal

### Description

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

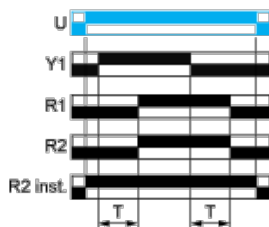
At the end of this timing period, the output(s) R close(s).

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

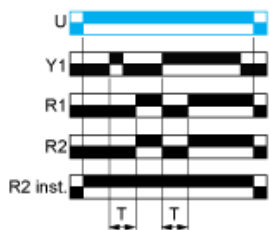
After energisation of power supply, pulsing or maintaining of energization of Y1 starts the timing T.

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

### Description

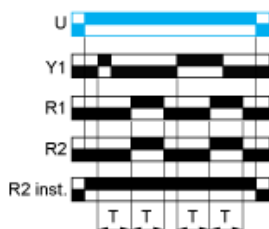
After energisation of power supply, pulsing or maintaining of energization of Y1 starts the timing T.

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 and Off-Delay Relay With Control Signal

### Description

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

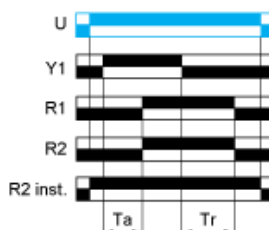
At the end of this timing period Ta, the output(s) R closes.

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

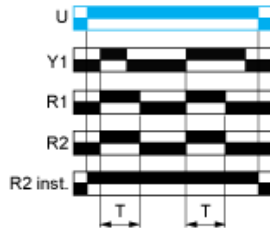


## Function B: Single Interval Relay with Control Signal

### 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

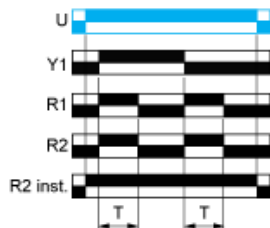


## Function Bw : Double Interval Relay with Control Signal

### 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

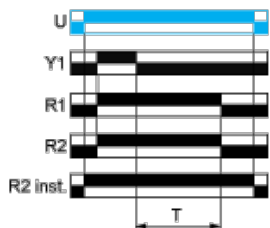


## Function C: Off-Delay Relay with Control Signal

### 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

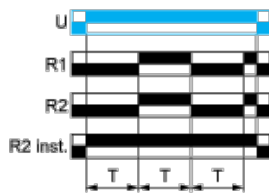


## Function D: Symmetrical Flashing Relay (Starting Pulse-Off)

### 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

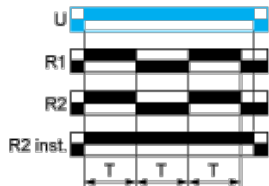


## Function Di: Symmetrical Flashing Relay (Starting Pulse-On)

### 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

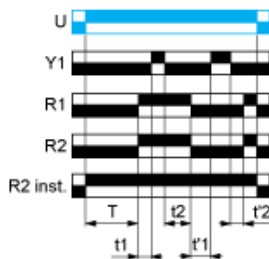


## Function Dt: Symmetrical Flashing Relay (Starting Pulse-Off) With Pause / Summation Control Signal

### 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



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

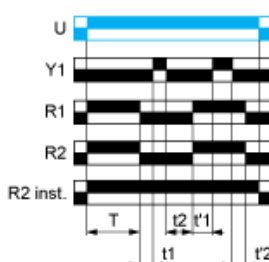
$$T = t'_1 + t'_2 + \dots$$

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

### 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



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

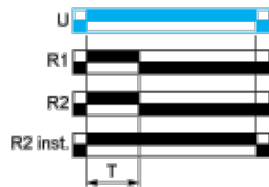
$$T = t'_1 + t'_2 + \dots$$

## 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

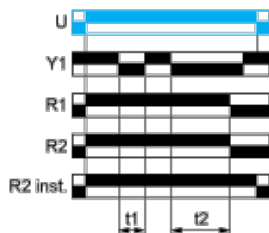


## Function Ht: Interval Relay With Pause / Summation Control Signal

### 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



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

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

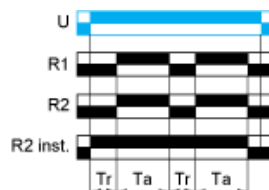
### Description

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

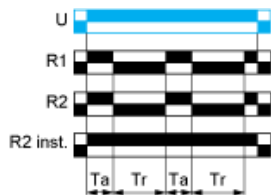
On energisation of power supply, output(s) R starts at output(s) R close(s) for timing duration  $T_a$  then change(s) to its/their initial state for timing duration  $T_r$ .

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 Signal

### Description

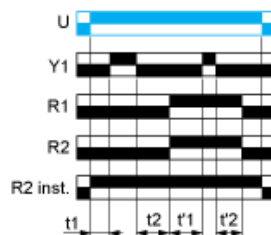
On energisation of power supply, output(s) R starts at its/their initial state for timing duration  $T_r$  and the timing can be interrupted / paused each time Y1 energizes. When the cumulative total of time periods elapsed reaches the pre-set value  $T_r$ , then changes to output(s) R close(s).

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 Signal

### Description

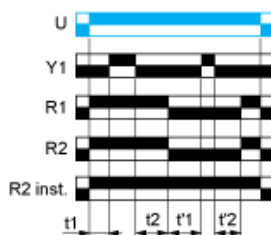
On energisation of power supply, output(s) R starts at output(s) R close(s) for timing duration  $T_a$  and the timing can be interrupted / paused each time Y1 energizes. When the cumulative total of time periods elapsed reaches the pre-set value  $T_a$ , the output(s) R revert (s) to its/their initial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

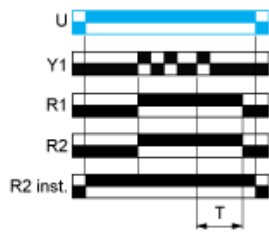
After energisation of power supply and on energization of Y1 cause the output(s) R close(s) and starts the timing T.

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).

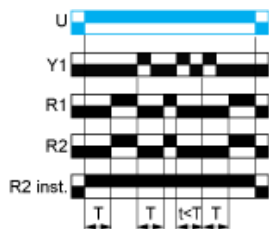
On energization of Y1, the output(s) R revert(s) to its/their initial state and the timing T restarts.

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

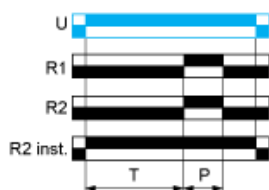
#### Description

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 = 500ms

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

#### Description

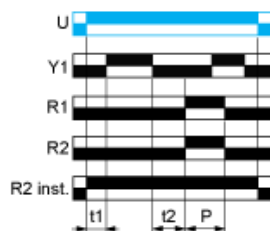
On energisation of power supply, the timing T starts.

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



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

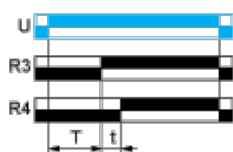
$$P = 500\text{ms}$$

## Function Qt: Star-Delta Relay (2 CO Outputs 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



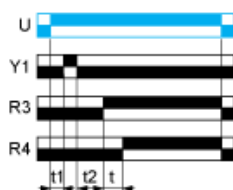
$$T = 50, 60 \dots \text{ms}$$

## Function Qtt: Star-Delta Relay (2 CO Outputs With Split Common) with Pause / Summation Control Signal

### 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



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

$$t = 50, 60 \dots \text{ms}$$

## Function TL : Bistable Relay with Control Signal On

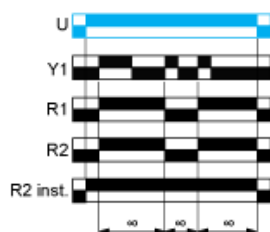
### Description

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

### Description

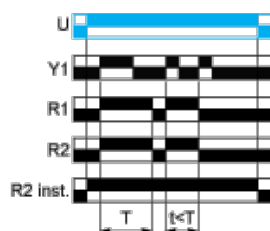
After energisation of power supply and on energization of Y1 cause the output(s) R close(s) and starts the timing T.

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

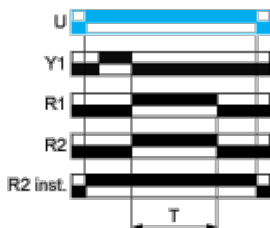


## Function W: Interval Relay with Control Signal Off

### Description

After energisation of power supply and on energization of Y1 following by denenergization 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/R22 timed outputs

-

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

**t** - Delay to switch ON Delta contact output

**R3** - Star-Delta contact output