RENF22R2MMW

multifunction relay, Harmony Timer Relays, 8A, 2CO, 0.05s to 999h asymmetrical on delay and off delay 24 to 240V AC DC

Green Premium™

Main

Range of product	Harmony Timer Relays
Product or component type	Multifunction relay
Device short name	RENF22
Supported OS	Android
Software version	V4.4 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 and instantaneous contact, cadmium free
Time delay type	Power on-delay On-delay and off-delay Pulse delay Asymmetrical on-delay and off-delay Interval Off-delay Symmetrical flashing Safe-guard Star-delta Asymmetrical flashing Bistable
Time delay range	0.05 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 Un
Maximum RF power transmitted	0.0002 mW
NFC operating frequency	13.56 MHz
Supply frequency	50...60 Hz +/- 5 %
Connections - terminals	Screw terminals, 1 x 0.5...1 x 3.3 mm² (AWG 20...AWG 12) solid without cable end Screw terminals, 2 x 0.5...2 x 2.5 mm² (AWG 20...AWG 14) solid without cable end Screw terminals, 1 x 0.2...1 x 2.5 mm² (AWG 24...AWG 14) flexible with cable end Screw terminals, 2 x 0.2...2 x 1.5 mm² (AWG 24...AWG 16) flexible with cable end
Tightening torque	0.6…1 N.M conforming to IEC 60947-1 0.60…0.99 N.m conforming to IEC 60947-1
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 +/- 0.7 % for 50...100 ms 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...3600 s time delay range at 25 °C +/- 20 ms for 100 ms...10 s time delay range at 25 °C +/- 30 ms for 50...100 ms time delay range at 25 °C
Control signal pulse width	100 Ms with load in parallel 60 ms no-load
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	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 for resistive load, 8 A at 250 V, AC
Mechanical durability	10000000 cycles
Rated impulse withstand voltage	5 kV 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
Safety reliability data	MTTFd = 227.5 years 100 % duty cycle continuous operating condition at 30 °C
Mounting position	Any position
Mounting support	35 mm DIN rail conforming to IEC 60715
Status LED	LED Un: (steady), green for power ON LED R1: (steady), amber for relay energised LED R2: (steady), amber for relay energised LED pairing: (steady), green for communication status LED Un: (fast blinking), green for diagnosis mode LED R1: (blinking), amber for timing in progress LED R2: (blinking), amber for timing in progress
Maximum communication distance	10 mm
Function available	A- Power on-delay relay-2 C/O Ac- On-delay and off-delay relay w/ control signal-2 C/O Ad- Pulse delayed relay w/ control signal-2 C/O Ah- Pulse delayed relay (single cycle) w/ control signal-2 C/O Ak- Asymmetrical on-delay and off -delay relay w/ control signal-2 C/O At- Power on-delay relay w/ pause/summation (Y1)-2 C/O B- Single interval relay w/ control signal-2 C/O Bw- Double interval relay w/ control signal-2 C/O C- Off-delay relay w/ control signal-2 C/O D- Symmetrical flashing relay (starting pulse-off)-2 C/O Di- Symmetrical flashing relay (starting pulse-on)- 2 C/O Dt- Symmetrical flashing relay (starting pulse-off) w/ pause/summation (Y1)-2 C/O Dit- Symmetrical flashing relay (starting pulse-on) w/ pause/summation (Y1)-2 C/O H- Interval relay-2 C/O Ht- Interval relay w/ pause/summation (Y1)-2 C/O Li- Asymmetrical flashing relay (starting pulse-on)-2 C/O Lt- Asymmetrical fl ashing relay (starting pulse-off) w/ pause/summation (Y1)-2 C/O Lit- Asymmetrical flashing relay (starting pulse-on) w/ pause/summation (Y1)-2 C/O N- Safe-guard relay-2 C/O O- Delayed Safe-guard relay-2 C/O P- Pulse delayed relay w/ fixed pulse length-2 C/O Pt- Pulse delayed relay w/ fixed pulse length and pause/summation-2 C/O Qt- Star-delta relay (2 CO outputs w/ split common)-2 C/O Qtt- Star-delta relay (2 CO outputs w/ split common) w/ pause/summation (Y1)-2 C/O TI- Bistable relay w/ control signal on-2 C/O Tt- Retriggerable bistable relay w/ control signal on-2 C/O W- Interval relay w/ control signal off-2 C/O L- Asymmetrical flashing relay (starting pulse-off)-2 C/O
Width	22.5 mm
Net weight	0.0904 kg

Life Is On | Schneider Electric

Environment

|	
Immunity to microbreaks	10 ms
Dielectric strength	2.5 KV for 1 mA/1 minute at 50 Hz with between relay output and power supply with basic insulation With basic insulation
Standards	IEC 61000-6-1 IEC 61000-6-2 IEC 61000-6-4 EN 61812-1 IEC 61000-6-3
Directives	2014/35/EU - low voltage directive 2014/53/EU - radio equipment directive 2014/30/EU - electromagnetic compatibility
Product certifications	CE[RETURN]CSA[RETURN]KC[RETURN]UL[RETURN]CCC[RETURN]EAC[RETURN]DNV-GL
Ambient air temperature for operation	-20…60 °C
Ambient air temperature for storage	-40…70 °C
IP degree of protection	IP40 housing: conforming to IEC 60529 IP40 front face: conforming to IEC 60529 IP20 terminals: conforming to IEC 60529
Pollution degree	3 conforming to IEC 60664-1
Vibration resistance	20 m/s² (f= 10…150 Hz) conforming to IEC 60068-2-6
Shock resistance	15 gn not operating for 11 ms conforming to IEC 60068-2-27 5 gn in operation for 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 IEC 61000-4-2 Electrostatic discharge immunity test - test level: 8 kV level 3 (air discharge) conforming to 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

Packing Units

Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Height	2.4 cm
Package 1 Width	8.05 cm
Package 1 Length	9.45 cm
Package 1 Weight	103.635 g
Unit Type of Package 2	S02
Number of Units in Package 2	40
Package 2 Height	15.0 cm
Package 2 Width	30.0 cm
Package 2 Length	40.0 cm
Package 2 Weight	4.616 kg
Unit Type of Package 3	P06

Number of Units in Package 3	640
Package 3 Height	70.0 cm
Package 3 Width	60.0 cm
Package 3 Length	80.0 cm
Package 3 Weight	84.13 kg

Offer Sustainability

|	
Sustainable offer status	Green Premium product
REACh Regulation	REACh Declaration
EU RoHS Directive	Pro-active compliance (Product out of EU RoHS legal scope)
Mercury free	Yes
China RoHS Regulation	China RoHS Declaration
RoHS exemption information	Yes
Environmental Disclosure	Product Environmental Profile
Circularity Profile	End Of Life Information

Dimensions
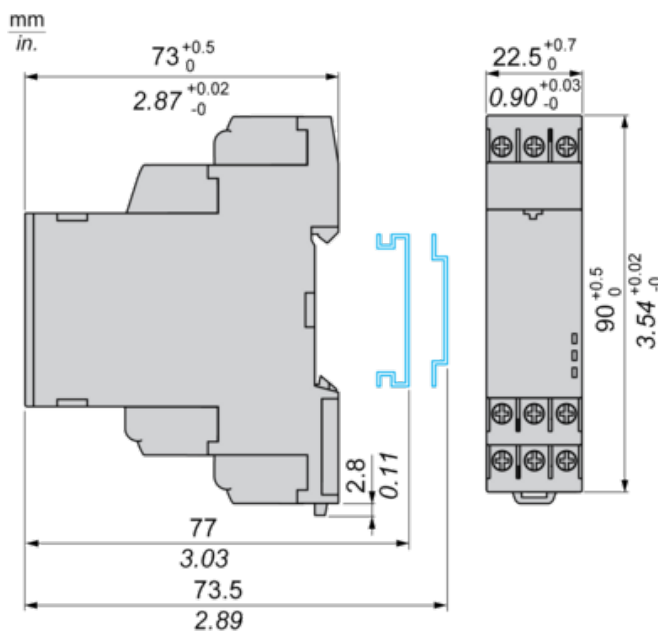
Internal Wiring Diagram

A1	15	25/21
A1 Y1	15	25/21
	R1	R2
A2	16 18	26/22 28/24
18	16	A2
28/24	26/22	Y1
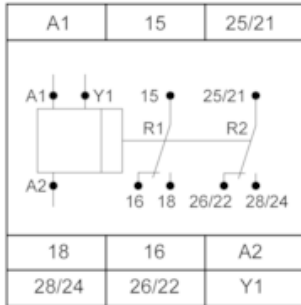
Wiring Diagram
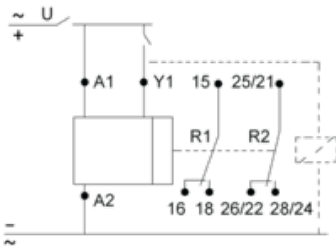
Function A: Power On-Delay Relay

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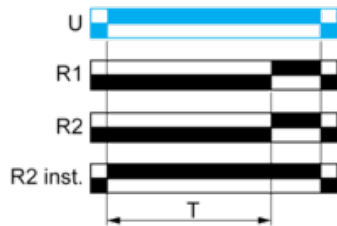
Function At: Power On-Delay Relay with Pause / Summation Control Signal

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").
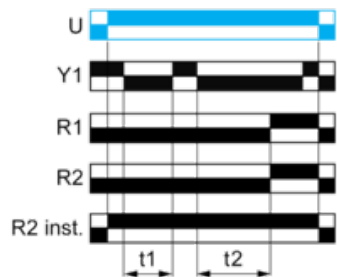
Function: 2 Output

$T = t1 + t2 + \ldots$

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").
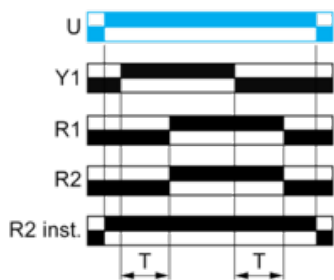
Function: 2 Output

Function Ad : Pulse Delayed Relay with Control Signal
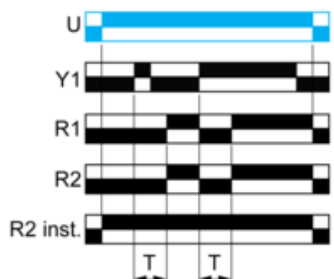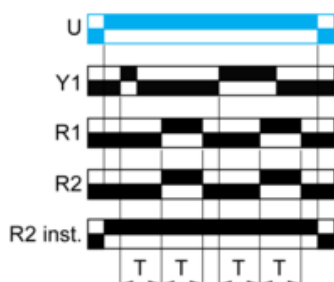
Description

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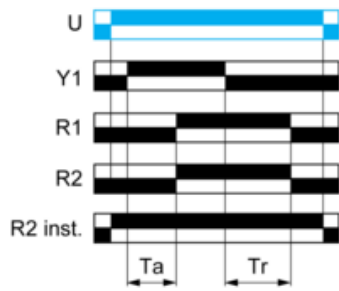
At the end of this timing period Ta, the output(s) R closes.

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").

Life Is On | Schneider Electric

Function: 2 Output
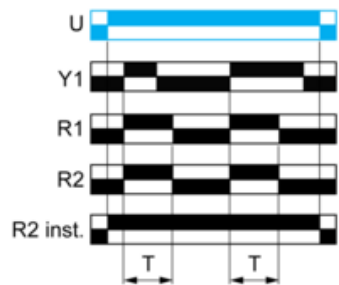

Function B: Single Interval Relay with Control Signal

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").
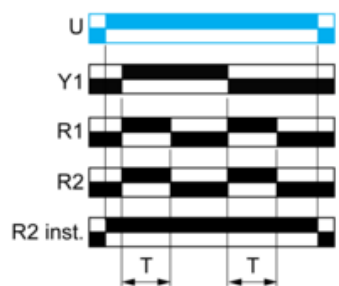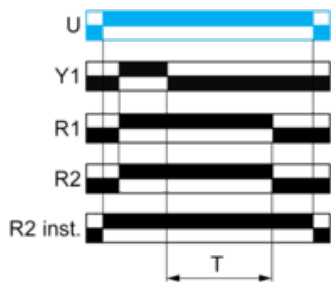
Function: 2 Output

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").
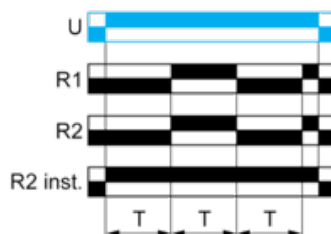
Function: 2 Output

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").
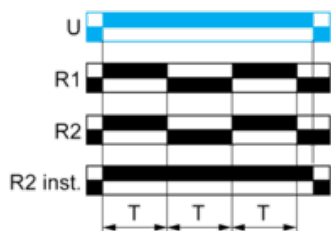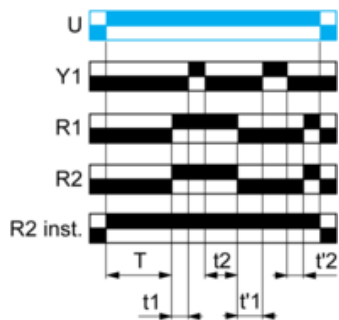
Function: 2 Output

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 indefintely 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").
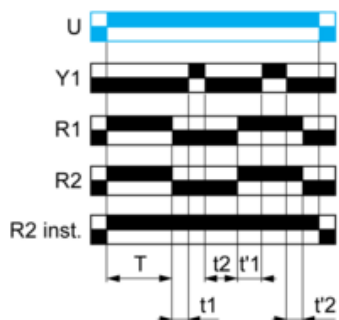
Function: 2 Output

T = t1 + t2 +…
T = t'1 + t'2 +…

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").
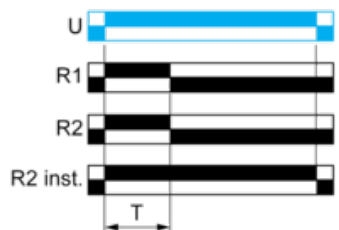
Function: 2 Output

T = t1 + t2 +…
T = t'1 + t'2 +…

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").
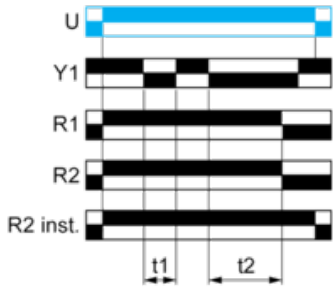
Function: 2 Output

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

$$T = t1 + t2 + \ldots$$

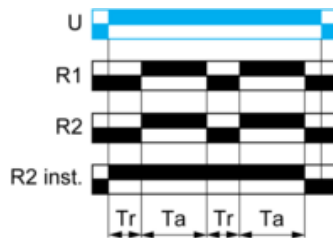## Function L: Asymmetrical Flashing Relay (Starting Pulse-Off)

Description

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

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

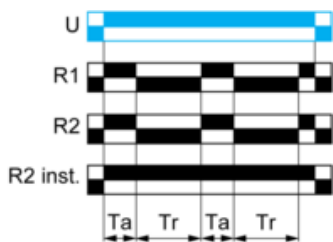## Function Li: Asymmetrical Flashing Relay (Starting Pulse-On)

Description

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

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
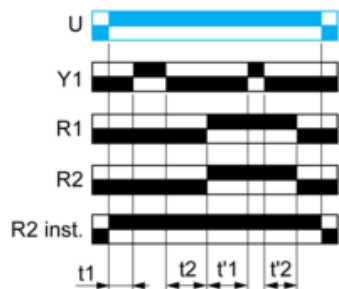
Description

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

The output(s) R close state will remain for the same timing duration Ta and the timing can be interrupted / paused each time Y1 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.

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

$$Tr = t1 + t2 + \ldots$$
$$Ta = t'1 + t'2 + \ldots$$

Function Lit: Asymmetrical Flashing Relay (Starting Pulse-On) With Pause / Summation Control Signal
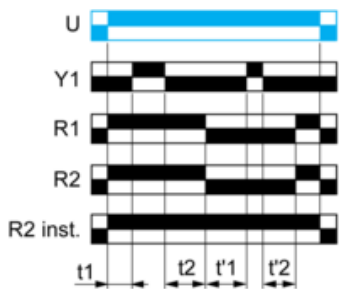
Description

On energisation of power supply, output(s) R starts at output(s) R close(s) for timing duration Ta and the timing can be interrupted / paused each time Y1 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 initial state will remain for timing duration Tr the timing can be interrupted / paused each time Y1 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 removal.

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

Function: 2 Output

$$Ta = t1 + t2 + \ldots$$
$$Tr = t'1 + t'2 + \ldots$$

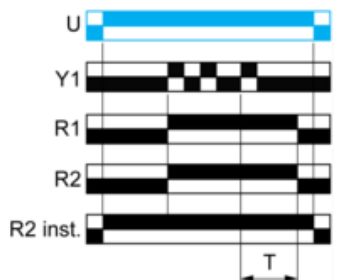## Function N : Safe-Guard Relay

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.

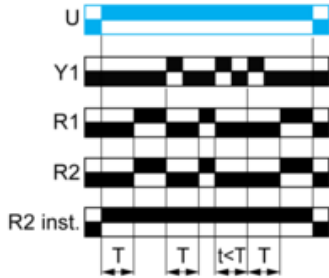At the end of this timing period, the output(s) R close(s).

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
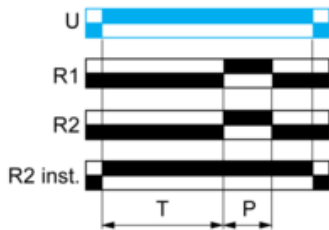
Description

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
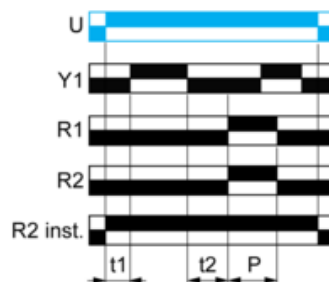
Description

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").

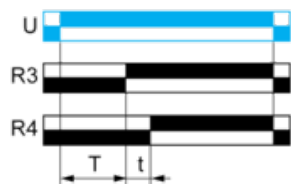### Function: 2 Output

T = t1 + t2 + …

P = 500ms

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. Diagnostic feature not available.
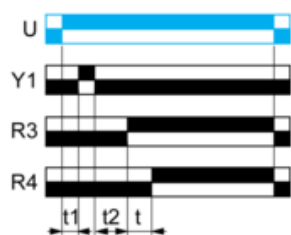
Function: 2 Output

T = 50, 60... 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. Diagnostic feature not available.

Function: 2 Output

T = t1 + t2 +...

t = 50, 60 ... ms

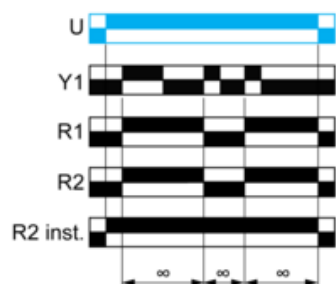## Function TL : Bistable Relay with Control Signal On

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

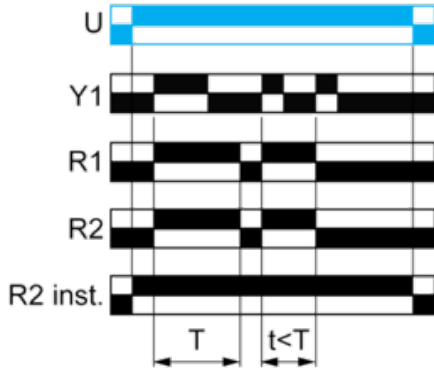## Function Tt : Retriggerable Bistable Relay with Control Signal On

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 denergization 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
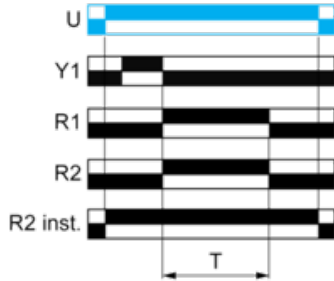
Legend

Relay de-energised

Relay energised

Output open

Output closed

U -	Supply
R1/R2 -	2 timed outputs
Ta -	Adjustable On-delay
Tr -	Adjustable Off-delay
Y1 -	Retrigger / Restart control
R2 inst. -	The second output is instantaneous if the right position is selected
T -	Timing period
R4 -	Delta contact output
t -	Delay to switch ON Delta contact output
R3 -	Star-Delta contact output