

RENF22R2MMW

Harmony, NFC modular timing relay, 8 A, 2 CO, 0.1 s...999 h, multifunction, 24...240 V AC/DC



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 | 0.1 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 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 mm ² AWG 20...AWG 12) solid without cable end Screw terminals, 2 x 0.5...2 x 2.5 mm ² AWG 20...AWG 14) solid without cable end Screw terminals, 1 x 0.2...1 x 2.5 mm ² AWG 24...AWG 14) flexible with cable end Screw terminals, 2 x 0.2...2 x 1.5 mm ² AWG 24...AWG 16) flexible with cable end |
| Tightening torque | 5.31...8.85 Lbf.in (0.6...1 N.m) IEC 60947-1 5.3...8.8 lbf.in (0.60...0.99 N.m) IEC 60947-1 |
| Housing material | Self-extinguishing |
| Repeat accuracy | +/- 0.2 % 10 s...999 h +/- 0.5 % 100 ms...10 s |
| Temperature Drift | +/- 0.05 %/°C |
| Voltage drift | +/- 0.2 %/V |
| Setting accuracy of time delay | +/- 1 % 1...999 h 77 °F (25 °C) +/- 2 % 1 h 77 °F (25 °C) +/- 20 ms 100 ms...10 s 77 °F (25 °C) |

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.

| | |
|---------------------------------|---|
| Control signal pulse width | 100 Ms with load in parallel 60 ms no-load |
| Insulation resistance | 100 MOhm 500 V DC IEC 60664-1 |
| Recovery time | 120 ms on de-energisation |
| Power consumption in VA | 3 VA 240 V AC |
| Power consumption in W | 1.5 W 240 V DC 0.6 W 24 V DC |
| Switching capacity in VA | 2000 VA |
| Minimum switching current | 10 mA 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 IEC 60664-1 |
| Power on delay | 100 ms |
| Creepage distance | 4 kV/3 IEC 60664-1 |
| Overvoltage category | III 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 EN/IEC 60715 |
| Status LED | Un, green LED steady)power ON R1, amber LED steady)relay energised R2, amber LED steady)relay energised Pairing, green LED steady)communication status Un, green LED fast blinking)diagnosis mode R1, amber LED blinking)timing in progress R2, amber LED blinking)timing in progress |
| Maximum communication distance | 10 mm |
| Response Time | 2 s |
| Width | 0.89 in (22.5 mm) |
| Net Weight | 0.20 lb(US) (0.0904 kg) |

Environment

| | |
|---------------------------------------|--|
| Immunity to microbreaks | 10 ms |
| Dielectric strength | 2.5 KV 1 mA/1 minute 50 Hz between relay output and power supply with basic insulation Basic insulation |
| Standards | EN 61000-6-1 EN 61000-6-2 EN 61000-6-4 EN 61812-1 EN 61000-6-3 |
| Directives | 2014/35/EU - low voltage directive 2014/53/EU - radio equipment directive 2014/30/EU - electromagnetic compatibility |
| Product Certifications | CE CSA KC UL CCC EAC DNV-GL |
| Ambient Air Temperature for Operation | -4...140 °F (-20...60 °C) |
| Ambient Air Temperature for Storage | -40...158 °F (-40...70 °C) |
| IP degree of protection | Housing IP40 IEC 60529 Front face IP40 IEC 60529 Terminals IP20 IEC 60529 |
| Pollution degree | 3 IEC 60664-1 |
| Vibration resistance | 20 m/s ² 10...150 Hz)IEC 60068-2-6 |
| Shock resistance | 15 gn not operating 11 ms IEC 60068-2-27 5 gn in operation 11 ms IEC 60068-2-27 |

| | |
|-------------------------------|---|
| Relative humidity | 95 % 77...131 °F (25...55 °C) |
| Electromagnetic compatibility | Electrostatic discharge immunity test 6 kV contact discharge)level 3 EN/IEC 61000-4-2 Electrostatic discharge immunity test 8 kV air discharge)level 3 EN/IEC 61000-4-2 Fast transients immunity test 1 kV capacitive connecting clip)level 3 IEC 61000-4-4 Fast transients immunity test 2 kV direct contact)level 3 IEC 61000-4-4 Surge immunity test 1 kV differential mode)level 3 IEC 61000-4-5 Surge immunity test 2 kV common mode)level 3 IEC 61000-4-5 Radiated radio-frequency electromagnetic field immunity test 10 V 0.15...80 MHz)level 3 IEC 61000-4-6 Electromagnetic field immunity test 10 V/m 80 MHz...1 GHz)level 3 IEC 61000-4-3 Immunity to microbreaks and voltage drops 30 % 500 ms) IEC 61000-4-11 Immunity to microbreaks and voltage drops 100 % 20 ms) IEC 61000-4-11 Radiated emissionclass B EN 55022 Conducted emissionclass A EN 55022 Electromagnetic field immunity test 3 V/m 1.4 GHz...2 GHz)level 2 IEC 61000-4-3 Electromagnetic field immunity test 1 V/m 2...2.7 GHz)level 1 IEC 61000-4-3 |

Ordering and shipping details

| | |
|-----------------------|-------------------------------|
| Category | 22376-RELAYS-MEASUREMENT(RM4) |
| Discount Schedule | CP2 |
| GTIN | 00785901006305 |
| Nbr. of units in pkg. | 1 |
| Package weight(Lbs) | 3.66 oz (103.635 g) |
| Returnability | Yes |
| Country of origin | ID |

Packing Units

| | |
|------------------------------|--------------------------|
| Unit Type of Package 1 | PCE |
| Package 1 Height | 0.94 in (2.4 cm) |
| Package 1 width | 3.17 in (8.05 cm) |
| Package 1 Length | 3.72 in (9.45 cm) |
| Unit Type of Package 2 | S02 |
| Number of Units in Package 2 | 40 |
| Package 2 Weight | 10.18 lb(US) (4.616 kg) |
| Package 2 Height | 5.91 in (15 cm) |
| Package 2 width | 11.81 in (30 cm) |
| Package 2 Length | 15.75 in (40 cm) |
| Unit Type of Package 3 | P06 |
| Number of Units in Package 3 | 640 |
| Package 3 Weight | 185.48 lb(US) (84.13 kg) |
| Package 3 Height | 27.56 in (70 cm) |
| Package 3 width | 23.62 in (60 cm) |
| Package 3 Length | 31.50 in (80 cm) |

Offer Sustainability

| | |
|----------------------------|--|
| Sustainable offer status | Green Premium product |
| California proposition 65 | WARNING: This product can expose you to chemicals including: Nickel compounds, which is known to the State of California to cause cancer, and Di-isodecyl phthalate (DIDP), which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov |
| REACH Regulation | REACH Declaration |
| EU RoHS Directive | Pro-active compliance (Product out of EU RoHS legal scope) EU RoHS Declaration |
| Mercury free | Yes |
| RoHS exemption information | Yes |
| China RoHS Regulation | China RoHS Declaration |

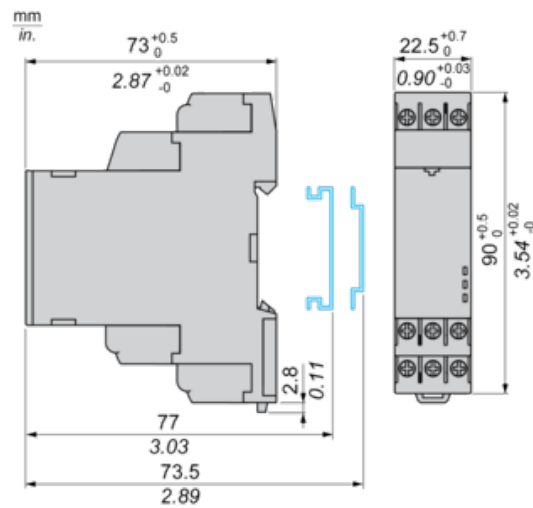
Environmental Disclosure

 [Product Environmental Profile](#)

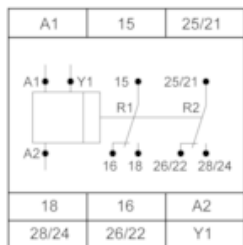
Circularity Profile

 [End Of Life Information](#)

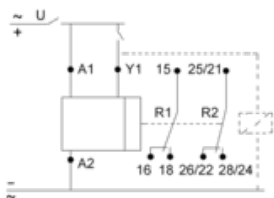
Dimensions



Internal Wiring Diagram



Wiring Diagram

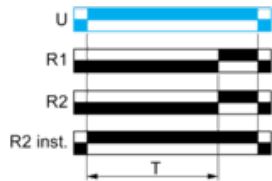


Function A: Power On-Delay Relay

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

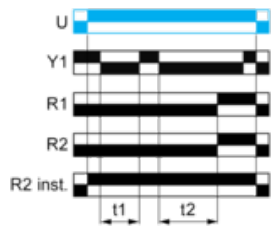


Function At: Power On-Delay Relay with Pause / Summation Control Signal

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.

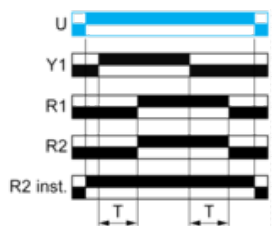
At the end of this timing period, the output(s) R close(s).

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

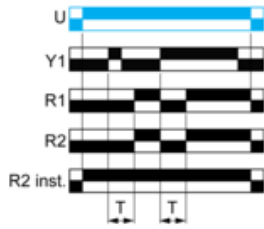


Function Ad : Pulse Delayed Relay with Control Signal

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

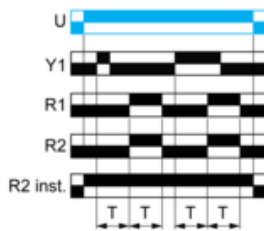


Function Ah : Pulse Delayed Relay (Single Cycle) with Control Signal

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

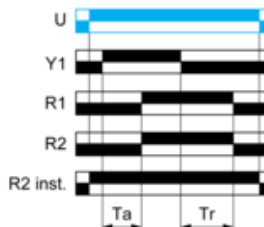


Function Ak: Asymmetrical On-Delay and Off-Delay Relay With Control Signal

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

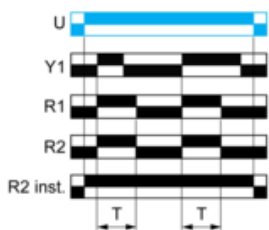


Function B: Single Interval Relay with Control Signal

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



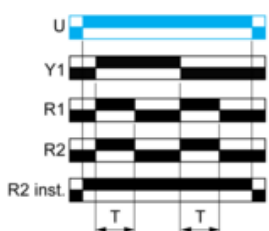
Function Bw : Double Interval Relay with Control Signal

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

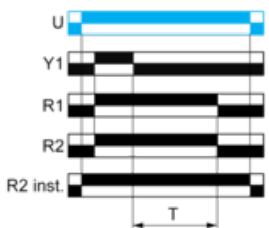


Function C: Off-Delay Relay with Control Signal

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

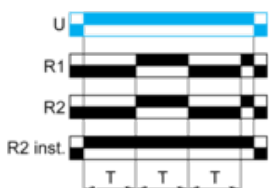


Function D: Symmetrical Flashing Relay (Starting Pulse-Off)

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

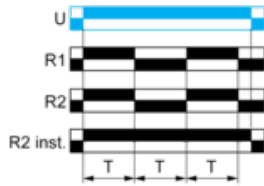


Function Di: Symmetrical Flashing Relay (Starting Pulse-On)

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

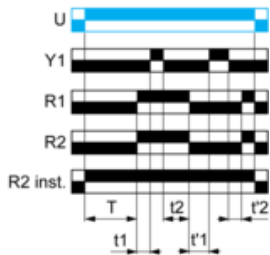


Function Dt: Symmetrical Flashing Relay (Starting Pulse-Off) With Pause / Summation Control Signal

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



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

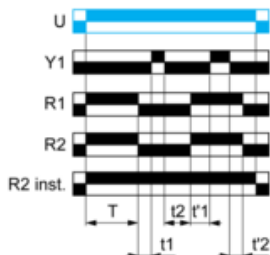
$$T = t'_1 + t'_2 + \dots$$

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



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

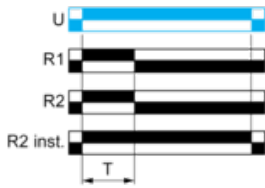
$$T = t'_1 + t'_2 + \dots$$

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

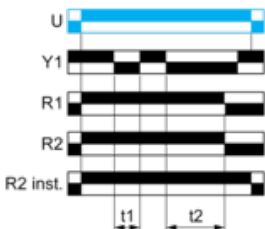


Function Ht: Interval Relay With Pause / Summation Control Signal

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



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

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

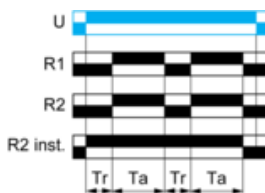
Description

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)

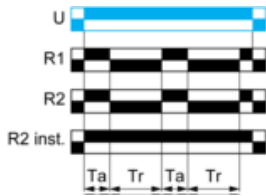
Description

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 Signal

Description

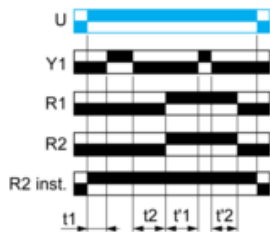
On energisation of power supply, output(s) R starts at its/their initial state for timing duration T_r and the timing can be interrupted / paused each time Y1 energizes. When the cumulative total of time periods elapsed reaches the pre-set value T_r , then changes to output(s) R close(s).

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

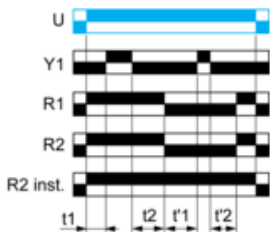
On energisation of power supply, output(s) R starts at output(s) R close(s) for timing duration T_a and the timing can be interrupted / paused each time Y1 energizes. When the cumulative total of time periods elapsed reaches the pre-set value T_a , the output(s) R revert(s) to its/their initial state.

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

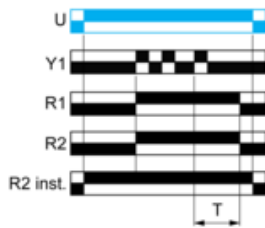
After energisation of power supply and on energization of Y1 cause the output(s) R close(s) and starts the timing T.

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).

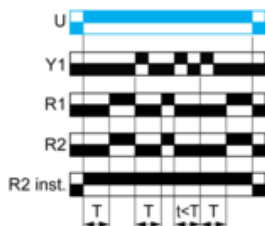
On energization of Y1, the output(s) R revert(s) to its/their initial state and the timing T restarts.

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

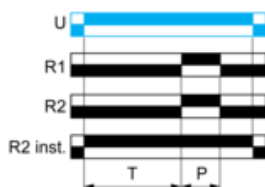
Description

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

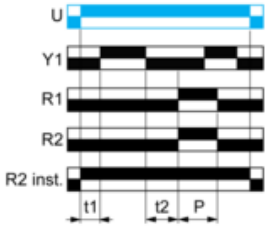
On energisation of power supply, the timing T starts.

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



$T = t1 + t2 + \dots$

$P = 500ms$

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



$T = 50, 60 \dots ms$

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



$T = t1 + t2 + \dots$

$t = 50, 60 \dots ms$

Function TL : Bistable Relay with Control Signal On

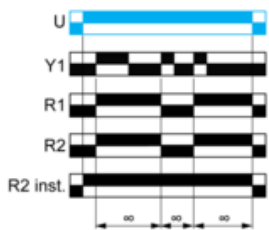
Description

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

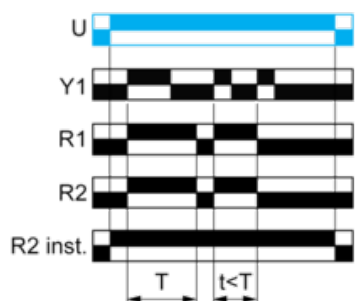
After energisation of power supply and on energization of Y1 cause the output(s) R close(s) and starts the timing T.

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

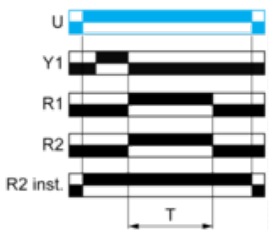


Function W: Interval Relay with Control Signal Off

Description

After energisation of power supply and on energization of Y1 following by deenergization 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 |