Microprocessor Timers
RTx-410, 412, 414

Connection diagram
RTx-410, 412, 414

U= 24-240Vac/ dc

S

Rd

B1 A1   15

A2   16 18

RTx-41x dimensions

A1 B1 15

U◯◯R

RTx-410

RTx-410

35,4   65,8   90,0   23,0

3,0

18 16 A2

17,5   56,4

Front panel view of RTx-41x

A1 B1 15

screw terminals

LED indicator
of output relay

Power on
LED
indicator

U 🟢 🔴 R

Czas
Time

2   4
6
8
0

Tryb
Mode

RTx-410

Time range
setting switch

Time setting
potentiometer

time mode
setting switch

screw terminals

18 16 A2

CE

Features

- Multi-function*:
  RTx-410:
  A, B, C, D, As, Bs, Cs, Ds, Ar, Br, ABc, Pc
  RTx-412:
  Ac, Bc, A1c, B1c, C1c, D1c, Wd, Zsc
  RTx-414
  A i, C i, Asi, Csi, B1i, P1c, P2c, P3c, P4c, A2c

- Multi-range; choice of eight selectable time ranges from 0.01s to 100hr

- Analogue time setting

- Wide supply voltage range from 24 to 230V

- Binary control input B1

- LED power on indicator (Un)

- LED indicator of output state (R)

- 35 mm DIN rail mounted

Technical data

Supply voltage options V_x	24-240V AC/DC
Supply voltage tolerance	(0.8-1.1) Vx
Frequency	50 / 60Hz
Time range	0.01s - 100hr in eight sub-ranges (choosing by switch): (0.01-0.1s)**; 0.1-1s; 1-10s; 10-100s; 1-10min; 10-100min; 1-10h; 10-100h

** **NOTE**: Setting error may be higher than stated.
The time setting should be selected on try-out basis.

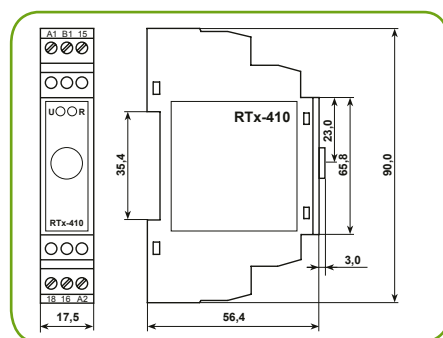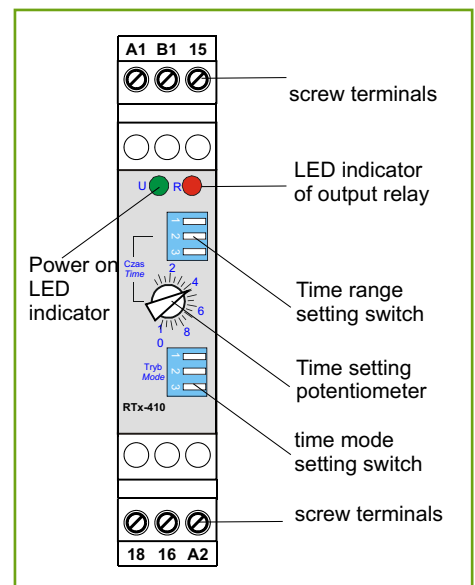|	
Restoration time	$\leq$ 0.1s
Contact ratings	
- contact make	5A
- contact break	5A (220V, cosφ $\leq$ 0.4) 0.1A (220V DC, L/R=40ms)
- carry continuously	5A
Repeatability	1% +10ms
Setting error	±5% of the full scale ±10ms
Operating temperature	(-25...+60)°C

Information required with order
relay type
Example
RTx-410

Microprocessor Timers
RTx-420

Connection diagram
RTx-420

RTx-42x dimensions

Front panel view of RTx-420

- screw terminals
- LED indicator of output relay
- Time range setting switch
- Time setting potentiometer
- time mode setting switch
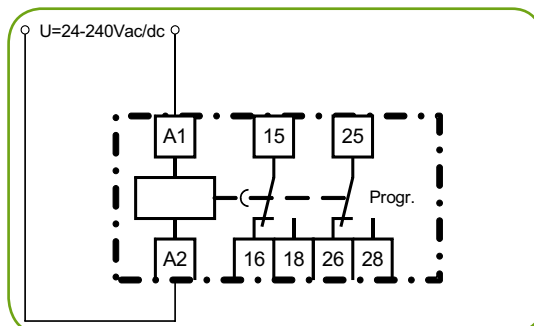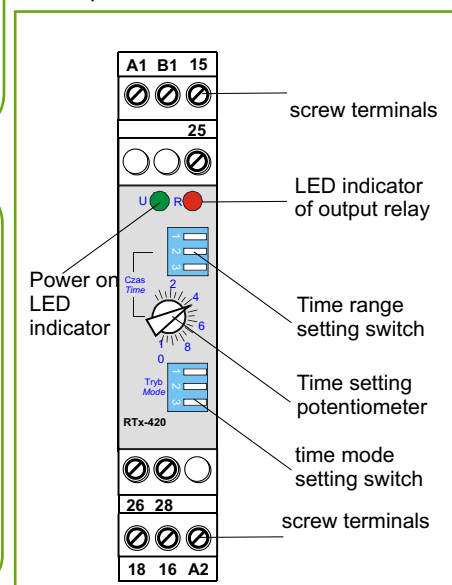- screw terminals
- Power on LED indicator

Features

- Multi-function*:
  A, B, C, D
- Multi-range; choice of eight selectable time ranges from 0.01s to 100hr
- Analogue time setting
- Wide supply voltage range from 24 to 240V
- LED power on indicator (Un)
- LED indicator of output state (R)
- 35 mm DIN rail mounted
- 2 c/o outputs: deleyed+delayed/instantenous

Technical data
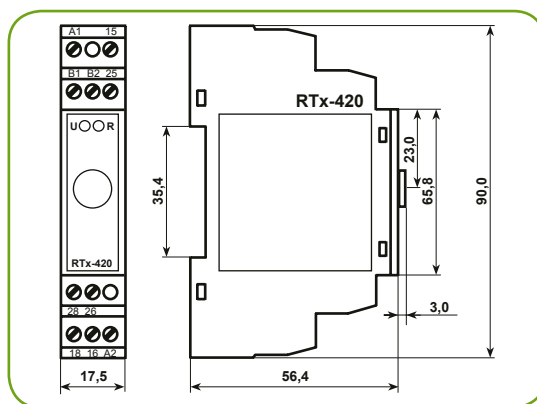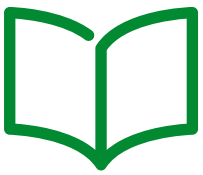
Supply voltage options V_x	24-240V AC/DC
Supply voltage tolerance	(0.8-1.1) Vx
Frequency	50 / 60Hz
Time range	0.01s - 100hr in eight sub-ranges (choosing by switch): (0.01-0.1s)**; 0.1-1s; 1-10s; 10-100s; 1-10min; 10-100min; 1-10h; 10-100h

** **NOTE**: Setting error may be higher than stated. The time setting should be selected on try-out basis.

Restoration time	≤ 0.1s
Contact ratings	
- contact make	5A
- contact break	5A (220V, $\cos\varphi \leq 0.4$)
	0.1A (220V DC, L/R=40ms)
- carry continuously	5A
Repeatability	1% +10ms
Setting error	±5% of the full scale ±10ms
Operating temperature	(-25...+60)°C

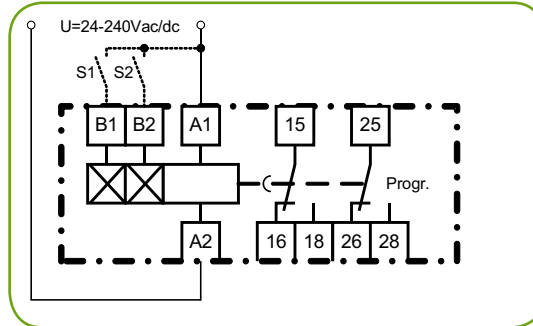## Information required with order
relay type
Example
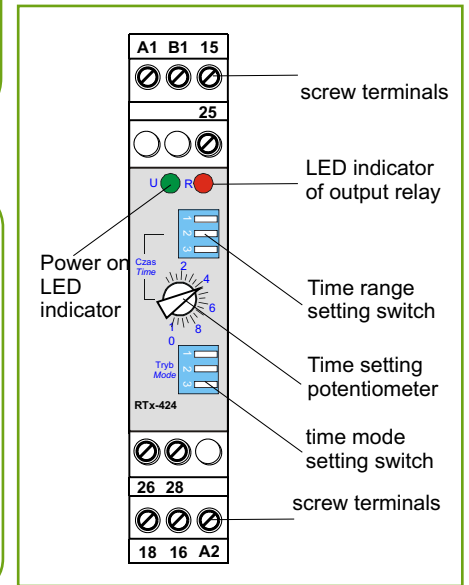RTx-420

Microprocessor Timers
RTx-424

Connection diagram
RTx-424

U=24-240Vac/dc

S1 S2

| B1 | B2 | A1 | | 15 | | 25 |

Progr.

A2   16 18   26 28

Front panel view of RTx-424

A1 B1 15

screw terminals

25

LED indicator
of output relay

Power on
LED
indicator

Czas
Time

2
4
6
8
1
0

Time range
setting switch

Time setting
potentiometer

Tryb
Mode

time mode
setting switch

RTx-424

screw terminals

26 28

18 16 A2

RTx-424 dimensions

A1   15

B1 B2 25

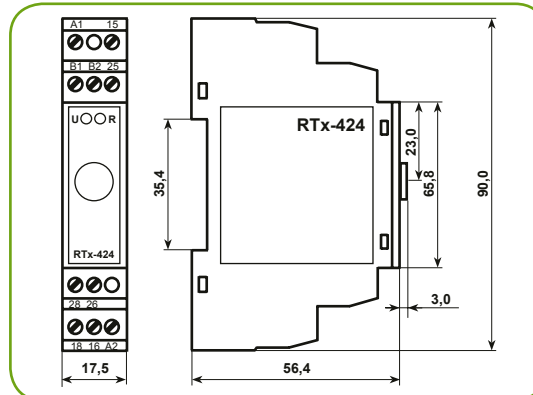U O O R

RTx-424

28 26

18 16 A2

RTx-424

35,4

23,0
65,8
90,0

3,0

17,5   56,4

Features

- Multi-function*:
  A, B, C, D
- Multi-range; choice of eight selectable time ranges from 0.01s to 100hr
- Analogue time setting
- Wide supply voltage range from 24 to 240V
- 2 Binary Logic Input B1 and B2
- LED power on indicator (Un)
- LED indicator of output state (R)
- 35 mm DIN rail mounted
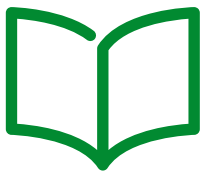- 2 c/o outputs:
  deleyed+delayed/instantenous

Technical data

Supply voltage options V_x	24-240V AC/DC
Supply voltage tolerance	(0.8-1.1) Vx
Frequency	50 / 60Hz
Time range	0.01s - 100hr in eight sub-ranges (choosing by switch): (0.01-0.1s)**; 0.1-1s; 1-10s; 10-100s; 1-10min; 10-100min; 1-10h; 10-100h

** NOTE: Setting error may be higher than stated. The time setting should be selected on try-out basis.

Restoration time	≤ 0.1s
Contact ratings	
- contact make	5A
- contact break	5A (220V, $\cos\varphi \leq 0.4$) 0.1A (220V DC, L/R=40ms)
- carry continuously	5A
Repeatability	1% +10ms
Setting error	±5% of the full scale ±10ms
Operating temperature	(-25...+60)°C

Information required with order
relay type
Example
RTx-424

Microprocessor Star/delta Timer
RTx-426

Connection diagram
RTx-426

U=24-240Vac/dc

| A1 | 15 | 25 |
| A2 | 16 | 18 | 26 | 28 |

RTx-426 dimensions

RTx-426

35,4
23,0
65,8
90,0
3,0
17,5
56,4

Front panel view of RTx-426

| A1 | B1 | 15 |
| | | 25 |

Power on LED indicator

Czas Time

Tryb Mode

RTx-426

| 26 | 28 |
| 18 | 16 | A2 |

screw terminals

LED indicator of output relay

Time range setting switch

Time setting potentiometer

time between star and delta
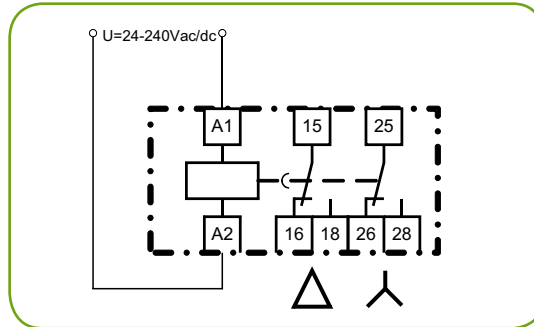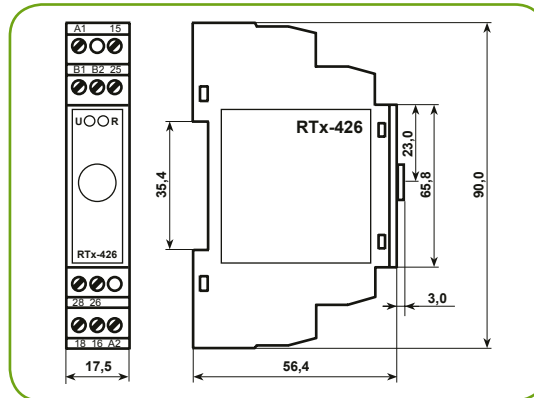
screw terminals

CE

Features

- Star/delta starting timer for LV motors
- Multi-range; choice of eight selectable time ranges from 0.01s to 100hr
- Analogue time setting for star connection
- Time between star and delta arrangement: 50-350ms
- Wide range of power supply 24-240V AC/DC
- 2 c/o outputs:
  - 26-26-28 - star arrangement
  - 15-16-18 - delta arrangement
- LED power on indicator (Un)
- LED indicator of delta arrangement (lit) and star arrangement (flushing) (R)
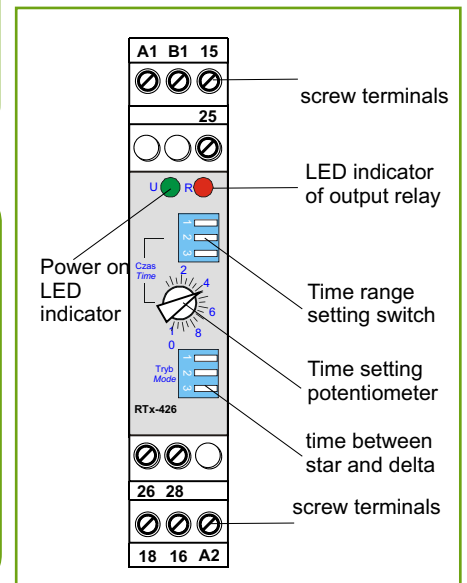- 35 mm DIN rail mounted

Technical data

Supply voltage options V_x	24-240V AC/DC
Supply voltage tolerance	(0.8-1.1) Vx
Frequency	50 / 60Hz
Time range for star arragement	0.01s - 100hr in eight sub-ranges (choosing by switch): (0.01-0.1s)**; 0.1-1s; 1-10s; 10-100s; 1-10min; 10-100min; 1-10h; 10-100h

** **NOTE**: Setting error may be higher than stated. The time setting should be selected on try-out basis.

Time range for delta arragement	50ms - 350ms step 50ms
Restoration time	≤ 0.1s
Contact ratings	
- contact make	5A
- contact break	5A (220V, $\cos\varphi \leq 0.4$) 0.1A (220V DC, L/R=40ms)
- carry continuously	5A
Repeatability	1% +10ms
Setting error	±5% of the full scale ±10ms
Operating temperature	(-25...+60)°C

Information required with order
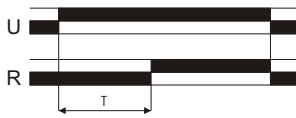relay type
Example
RTx-426

Modes of Operation Diagrams
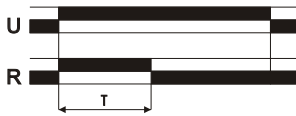
Key:
U   - supply voltage Un
R   - output contacts state
T, T1, T2 - time setting

A function
(time-delayed pick-up)

Timing commences upon application of the supply voltage. At the end of the timing the output contacts change their state and maintain this state until supply voltage is interrupted.
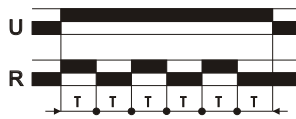
B function
(time-delayed drop-off)

Inverse of A function. The output contacts change their state at the instant the supply voltage is applied. The output contacts change state to their rest position after the timing T is completed.
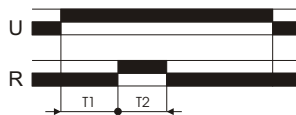
C function (cyclic operation)

Timing commences upon application of the supply voltage. At the end of time T the output relay is energised, timing T commences again and at the end of the timing range the output relay contacts change state to their rest position. The cycle repeats while the supply voltage is present.

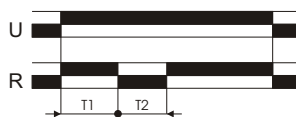### D function (cyclic operation)

Inverse of C function. The output relay is energised and timing T commences at the instant the supply voltage is applied. At the end of time T the output relay contacts revert to their rest position and timing T commences again. At the end of T the output contacts are energised again and the cycle repeats.
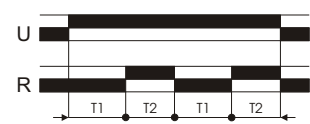
E1 function
(single cycle operation)

Timing T1 commences upon application of the supply voltage. At the end of time T1 the output contacts change their state and timing T2 commences. At the end of the timing range the output relays contacts change state to their rest position.

E2 function
(single cycle operation)

Inverse of E1 function. The output contacts change their state at the instant the supply voltage is applied until the timing T1 is completed. At the end of T1 the output contacts change state to their rest position and timing T2 commences. The output contacts change state at the end of time T2 and maintain this state while supply voltage is present.

E3 function (cyclic operation)

Timing T1 commences upon application of the supply voltage. At the end of time T1 the output relay is energised, timing T2 commences. At the end of the timing range T2 the output relays contacts change state to their rest position. The cycle repeats while supply voltage is present.

E4 function (cyclic operation)

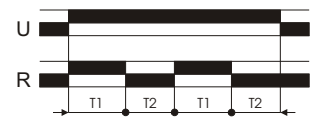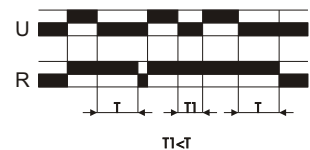Inverse of E3 function. The output contacts change their state at the instant the supply voltage is applied until timing T1 is completed. At the end of time T1 the output contacts change state to their rest position and time T2 commences. The cycle repeats while supply voltage is present.

F function
(time delay drop-off
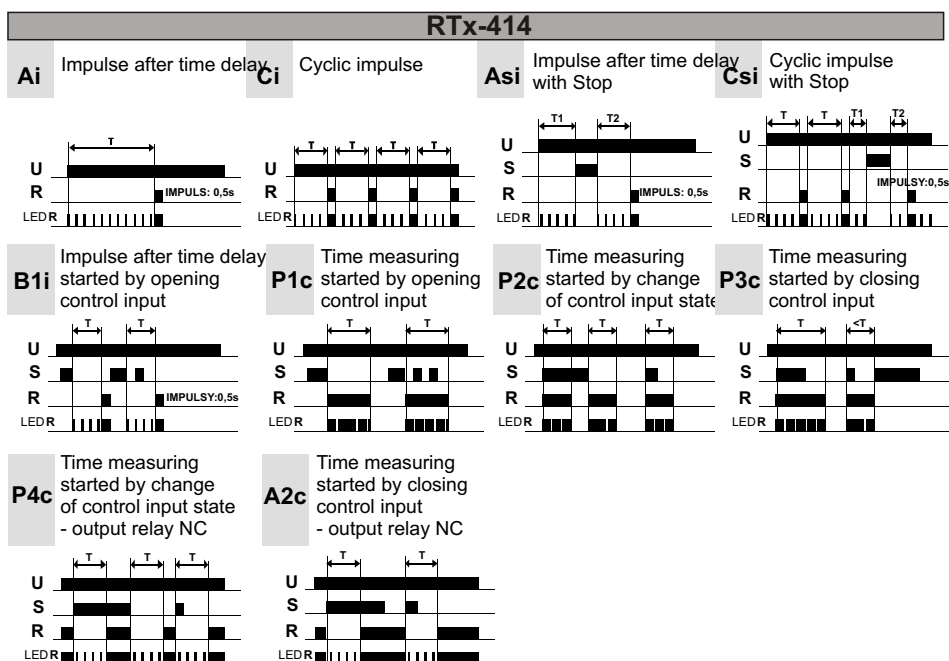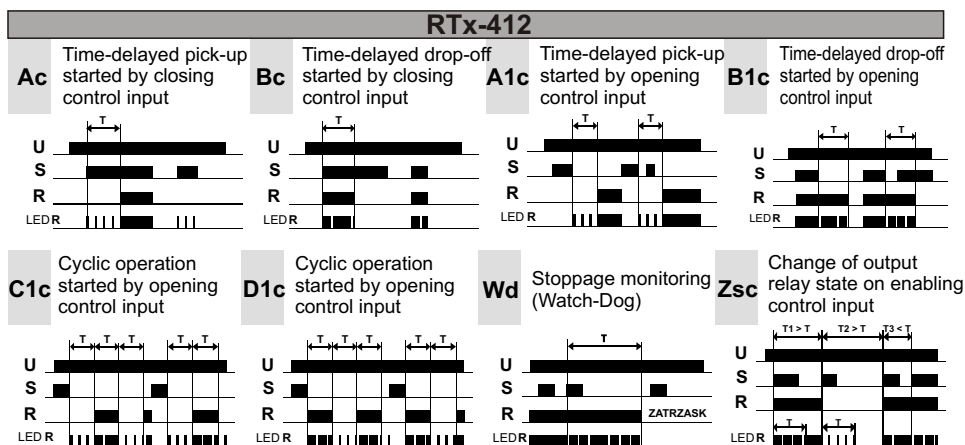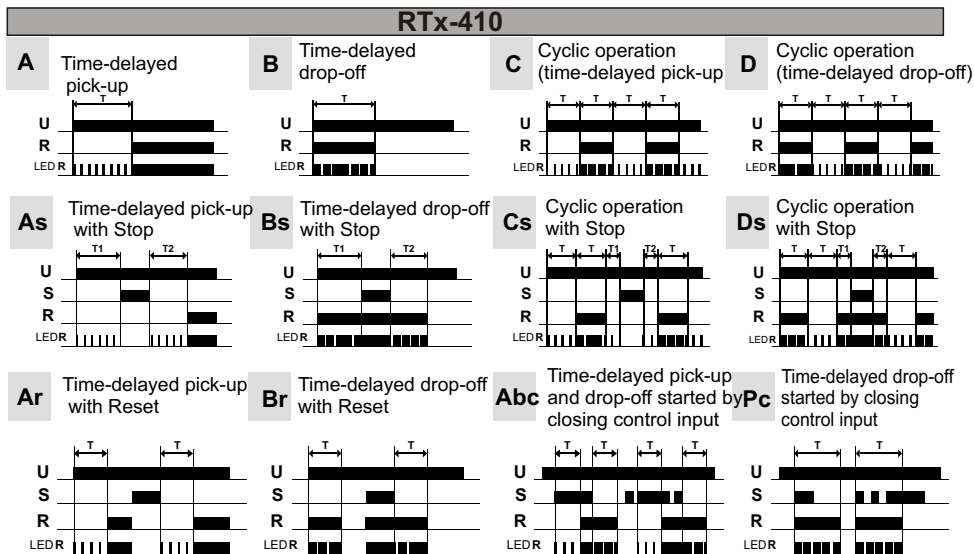on supply voltage interruption)

The output contacts change their state upon application of the supply voltage. Timing commences upon the interruption of the supply voltage. At the end of the timing range the output relay contacts change state to their rest position.

Modes of Operation Diagrams

Key to read diagrams:
U - supply voltage,
S - control contact (high state - B1 and A1 shorted),
T - time setting,

LED **R** - lighting of red LED indicator ("R" on the front panel).
- short pulses of LED - the output relay is not energised; elapsing time is measured, until output relay is energised,

RTx-410

A Time-delayed pick-up

B Time-delayed drop-off

C Cyclic operation (time-delayed pick-up

D Cyclic operation (time-delayed drop-off)

As Time-delayed pick-up with Stop

Bs Time-delayed drop-off with Stop

Cs Cyclic operation with Stop

Ds Cyclic operation with Stop

Ar Time-delayed pick-up with Reset

Br Time-delayed drop-off with Reset

Abc Time-delayed pick-up and drop-off started by closing control input

Pc Time-delayed drop-off started by closing control input

RTx-412

Ac Time-delayed pick-up started by closing control input

Bc Time-delayed drop-off started by closing control input

A1c Time-delayed pick-up started by opening control input

B1c Time-delayed drop-off started by opening control input

C1c Cyclic operation started by opening control input

D1c Cyclic operation started by opening control input

Wd Stoppage monitoring (Watch-Dog)

Zsc Change of output relay state on enabling control input

RTx-414

Ai Impulse after time delay

Ci Cyclic impulse

Asi Impulse after time delay with Stop

Csi Cyclic impulse with Stop

B1i Impulse after time delay started by opening control input

P1c Time measuring started by opening control input

P2c Time measuring started by change of control input state

P3c Time measuring started by closing control input

P4c Time measuring started by change of control input state - output relay NC

A2c Time measuring started by closing control input - output relay NC

Schneider Electric