RELETEK

For a better control

2021

Index

Twilight switch RD-ST1

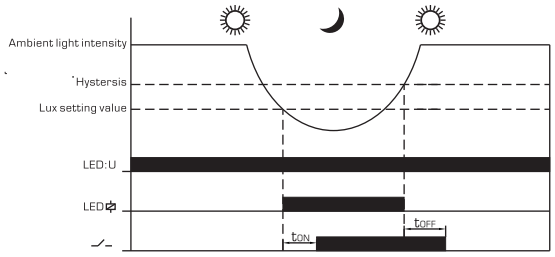
☐ Features

- Sensitivity adjustment from 2 to100 lux.
- Eternal light sensor included in delivery.
- Fixed switching on and off delay.
- LED indication for power supply and relay status.
- 2 module Din-rail mounting.

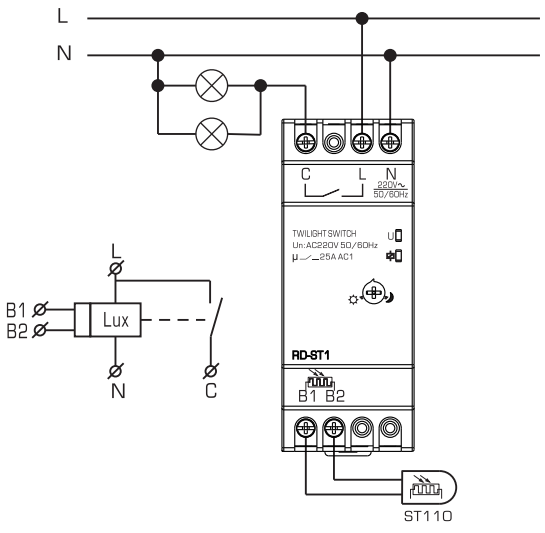
☐ Technical data

Rated control voltage	AC220V
Frequency	50/60Hz
Sensitivity threshold	2~100lux adjustable
Switch-on delay	2-5s
Switch-off delay	10-15s
Hysteresis (switching off/on ratio)	1.20
Output contact	1NO
Current rating	25A/250V AC1
Incandescent lamp load	3000 W
Halogen lamp load	3000 W
Fluorescent lamp load (compensated)	1000 W
Fluorescent lamp load (uncompensated)	1300 W
Protection degree	Terminal: IP20, Sensor: IP65
Ambient temperature	-25°C~+40°C

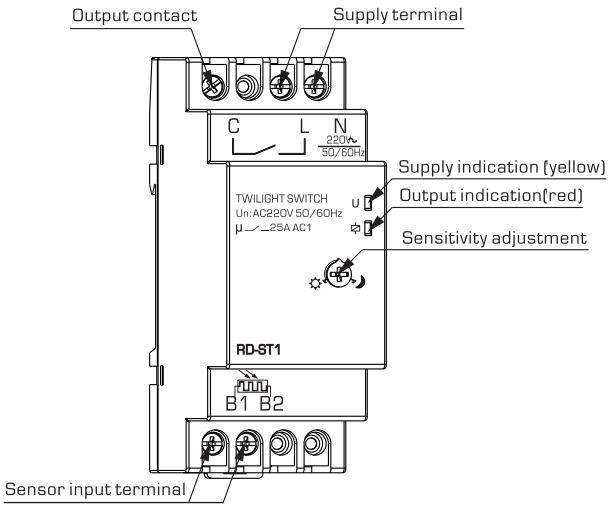
☐ Function diagram



☐ Wiring diagram



☐ Description



External twilight switch TS01

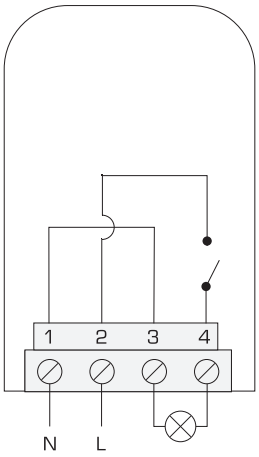
☐ Features

- Sensitivity adjustment from 2 to 200 lux.
- Wall or pole fixing.
- Protection against dust and rain.
- LED indication for instantaneous signal of calibration point.
- Resisting the rays UV.

☐ Technical data

Rated control voltage	AC230V
Frequency	50/60Hz
Sensitivity threshold	2~200lux adjustable
Output contact	1NO
Current rating	16A/250V AC1
Incandescent lamp load	2000 W
Halogen lamp load	1500 W
Fluorescent lamp load	1000 W
LED lamp load(230V)	200 W
Protection degree	IP54
Wire size	0.5mm²~2.5mm²

☐ Wiring diagram



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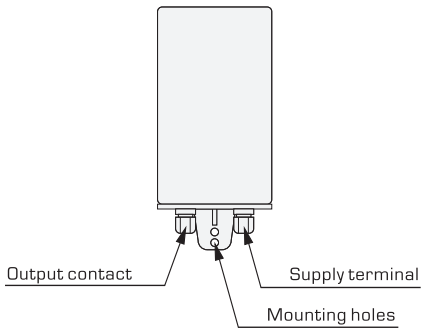
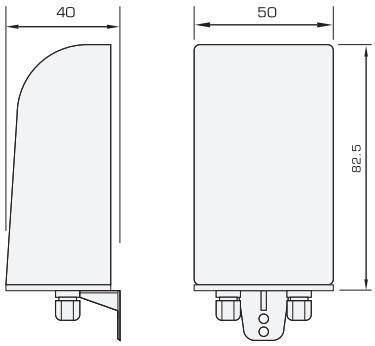


☐ Dimensions



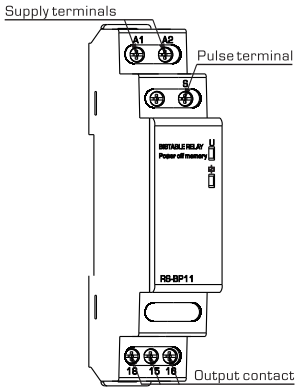
☐ Features

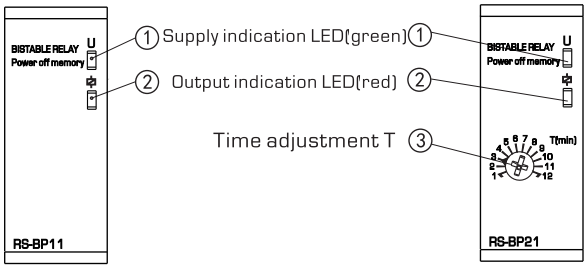
- Microcontroller based.
- Bistable lighting control.
- Relay state memory.
- Operation with illuminated pushbuttons.
- Device triggering by either L or N.
- LED indication for power supply and relay status.
- 1 Module Din-rail mounting.

☐ Technical data

Models	RS-BP11	RS-BP21
Supply terminals	A1,A2	
Pulse terminal	S	
Supply voltage	AC 230V	
Rated frequency	50/60Hz	
Controlling current	<1mA	
Power consumption	<0.8W	
Output contacts	1 C/O	
Time adjustment range	-	1min~12min
Current rating	10A /AC1	
Insulation voltage	250V	
Protection degree	IP20	
Pollution degree	3	
Electrical life	10^5	
Mechanical life	10^6	
Altitude	≤2000m	
Ambient temperature	-5°C~+40°C	
Storage temperature	-10°C~+50°C	
Wire size	0.5mm²~1mm²	
Torque	0.5Nm	
Mounting	TH-35 DIN-Rail	

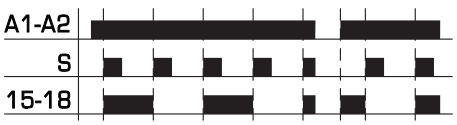
☐ Front-face panel



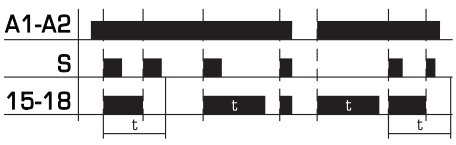


☐ Function diagrams

● RS-BP11

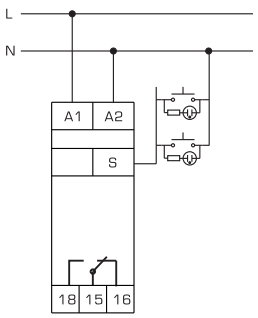


● RS-BP21

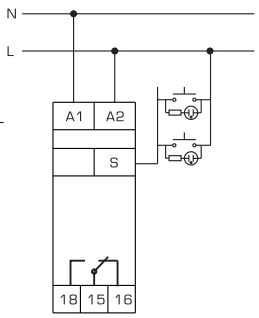


☐ Wiring diagrams

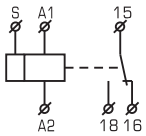
● Start impulse: N



● Start impulse: L



≤200uA



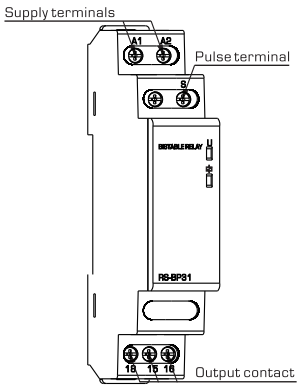
☐ Features

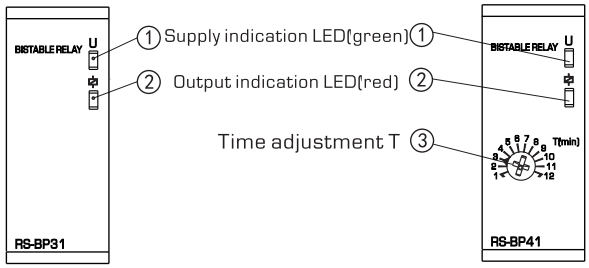
- Microcontroller based
- Bistable lighting control
- Operation with illuminated pushbuttons
- Device triggering by either L or N
- 1 C/O output-10A
- LED indication for power supply and relay status
- 1 Module Din-rail mounting

☐ Technical data

Models	RS-BP31	RS-BP41
Supply terminals	A1,A2	
Pulse terminal	S	
Supply voltage	AC 230V	
Rated frequency	50/60Hz	
Controlling current	<1mA	
Power consumption	<0.8W	
Output contacts	1 C/O	
	-	1min~12min
Current rating	10A /AC1	
Insulation voltage	250V	
Protection degree	IP20	
Pollution degree	3	
Electrical life	10^5	
Mechanical life	10^6	
Altitude	≤2000m	
Ambient temperature	-5°C~+40°C	
Storage temperature	-10°C~+50°C	
Wire size	0.5mm²~1mm²	
Torque	0.5Nm	
Mounting	TH-35 DIN-Rail	

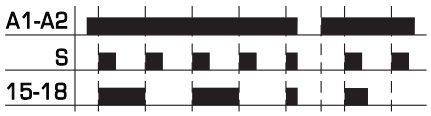
☐ Front-face panel



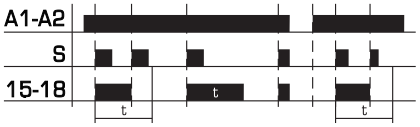


☐ Function diagrams

● RS-BP31

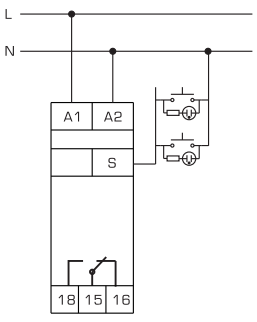


● RS-BP41

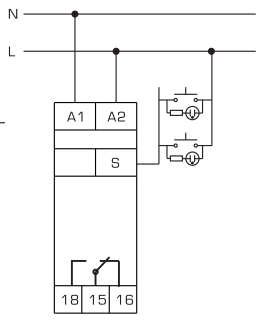


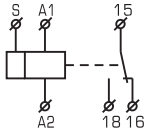
☐ Wiring diagrams

● Start impulse: N



● Start impulse: L





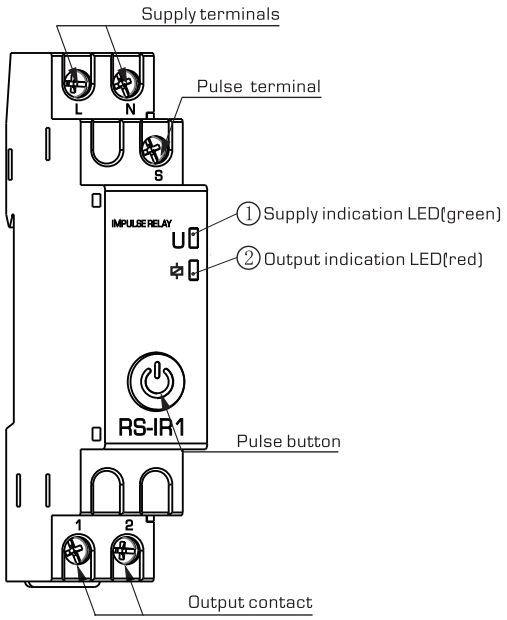
☐ Features

- Microcontroller based.
- Switch on/off control via button on the panel.
- 1 NO output-16A.
- LED indication for power supply and relay status.
- 1 Module Din-rail mounting.

☐ Technical data

Models	RS-IR1	RS-IR1M
Supply terminals	L,N	
Pulse terminal	S	
Supply voltage	AC/DC 24-240V	
Rated frequency	50/60Hz	
Controlling current	<1mA	
Power consumption	<0.8W	
Output contacts	1 NO	
Memory function	No	Yes
Current rating	16A /AC1, 10A/DC30V	
Insulation voltage	250V	
Protection degree	IP20	
Pollution degree	3	
Electrical life	10^5	
Mechanical life	10^6	
Altitude	≤2000m	
Ambient temperature	-5°C~+40°C	
Storage temperature	-10°C~+50°C	
Wire size	0.5mm²~1mm²	
Torque	0.5Nm	
Mounting	TH-35 DIN-Rail	

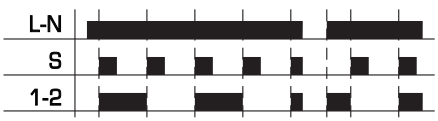
☐ Front-face panel



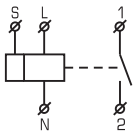
☐ Function diagrams

● RS-IR1

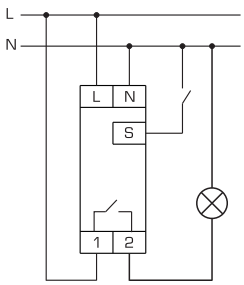
● RS-IR1M



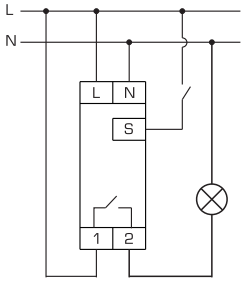
☐ Wiring diagrams



● Pulse from N phase



● Pulse from L phase



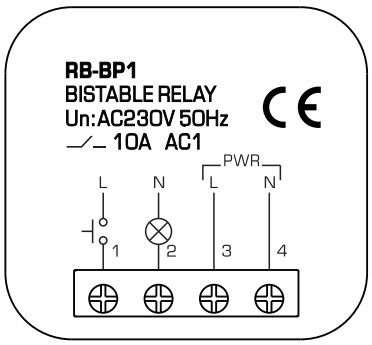
☐ Features

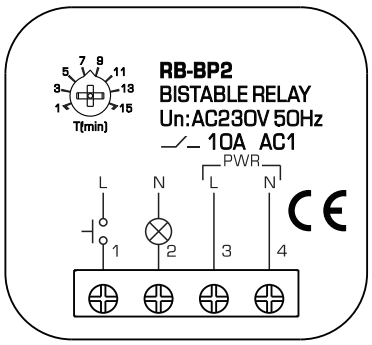
- Microcontroller based
- Bistable lighting control
- Operation with illuminated pushbuttons
- Device triggering by either L or N
- 1 C/O output-10A
- LED indication for power supply and relay status
- 1 Module Din-rail mounting

☐ Technical data

Models	RB-BP1	RB-BP2
Supply terminals	3,4	
Output terminal	2	
Pulse terminal	1	
Supply voltage	AC 230V	
Rated frequency	50/60Hz	
Output contacts	1 NO	
Power consumption	<0.8W	
Memory function	-	Yes
Time adjustment range	-	1min~12min
Current rating	10A /AC1	
Insulation voltage	250V	
Protection degree	IP20	
Pollution degree	3	
Electrical life	10^5	
Mechanical life	10^6	
Altitude	≤2000m	
Ambient temperature	-25°C~+50°C	
Storage temperature	-10°C~+50°C	
Wire size	0.5mm²~1mm²	
Torque	0.5Nm	

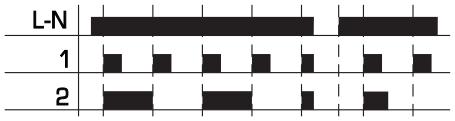
☐ Front-face panel



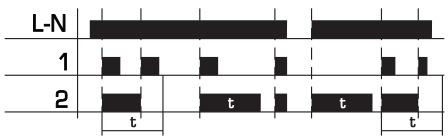


☐ Function diagrams

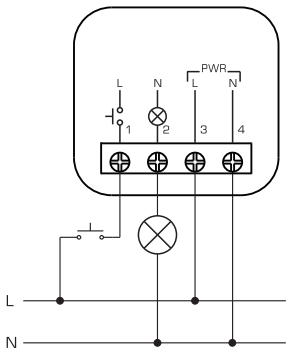
● RB-BP1



● RB-BP2



☐ Wiring diagrams



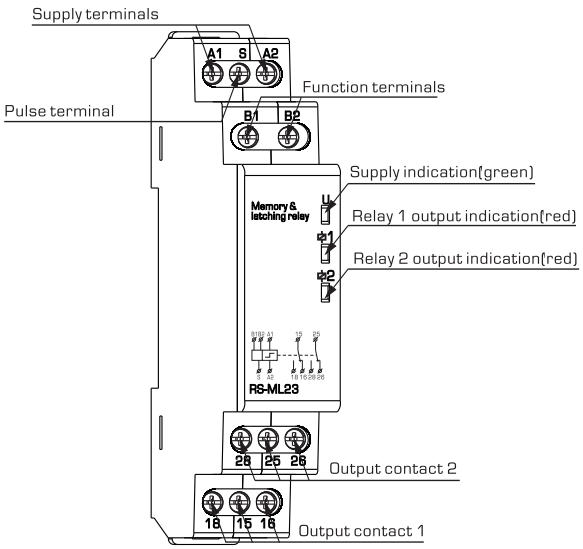
☐ Features

- Microcontroller based
- Memory relay
- AC/DC 24-240V universal voltage
- Function seleced via external jumper between B1-B2
- LED indication for power supply and relay status
- 1 Module Din-rail mounting

☐ Technical data

Models	RS-ML13	RS-ML23
Supply terminals	A1,A2	
Pulse terminal	S	
Supply voltage	AC/DC 24-240V	
Rated frequency	50/60Hz	
Supply indication	green LED	
Output indication	red LED	
Output contacts	1 C/O	2 C/O
Current rating	10A /AC1	
Contacts capacity	AC-15: 3A	
Insulation voltage	250V	
Protection degree	IP20	
Pollution degree	3	
Electrical life	10^5	
Mechanical life	10^6	
Altitude	≤2000m	
	-5˚C~+40˚C	
Storage temperature	-10˚C~+50˚C	
Wire size	0.5mm²~1mm²	
Torque	0.5Nm	
Mounting	TH-35 DIN-Rail	

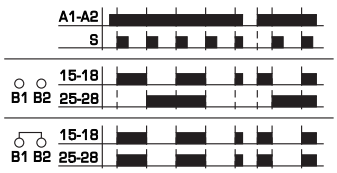
☐ Front-face panel



☐ Function diagrams

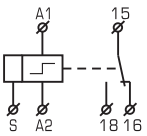
● RS-ML13

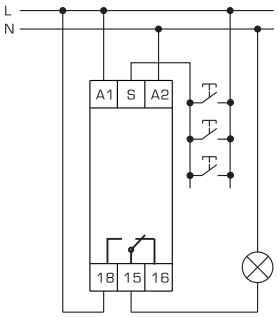
● RS-ML23



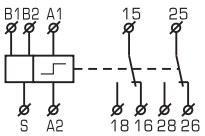
☐ Wiring diagrams

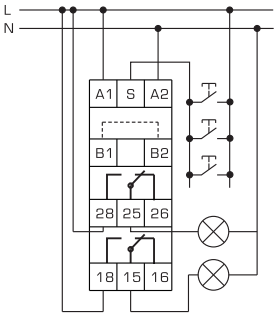
● RS-ML13





● RS-ML23





WiFi smart switch RS-WIFI 1/RS-WIFI 2

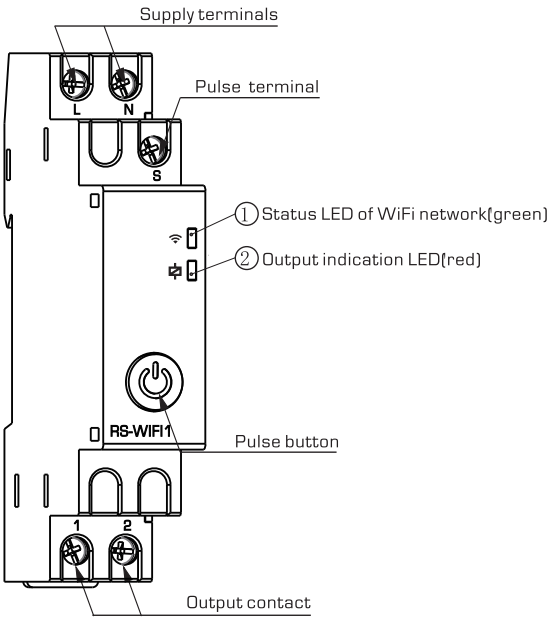
☐ Features

- Microcontroller based
- Memory function
- AC/DC 48-240V universal voltage
- 1NO output- 16A
- WiFi and bluetooth connection available
- 1 Module Din-rail mounting

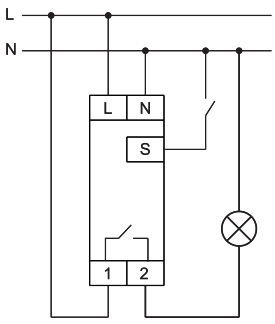
☐ Technical data

Models	RS-WIFI 1	RS-WIFI 2
Supply terminals	A1,A2	
Pulse terminal	S	
Supply voltage	AC/DC 24-240V	
Rated frequency	50/60Hz	
Supply indication	green LED	
Output indication	red LED	
Output contacts	1 NO	
Current rating	16A /AC1	
Astronomical function	No	Yes
Insulation voltage	250V	
Protection degree	IP20	
Pollution degree	3	
Electrical life	10^5	
Mechanical life	10^6	
Altitude	≤2000m	
Ambient temperature	-5°C~+40°C	
Storage temperature	-10°C~+50°C	
Wire size	0.5mm²~1mm²	
Torque	0.5Nm	
Mounting	TH-35 DIN-Rail	

☐ Front-face panel



☐ Wiring diagram



Economical time relay RS-TA12F/RS-TB12F

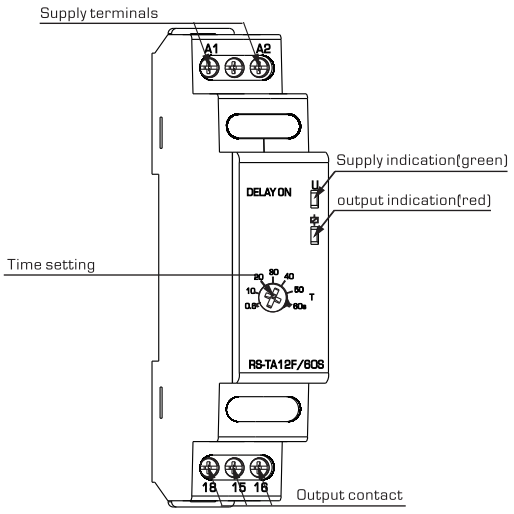
☐ Features

- Microcontroller based
- ON-delay/OFF-delay
- Time range: 0.1s-1s, 1s-10s, 0.3-30s, 0.6-60s
  0.1min-1min, 1min-10min
- Repetition accuracy<0.2%
- LED indication for power supply and relay status
- 1 Module Din-rail mounting

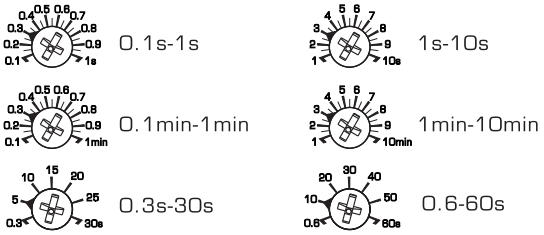
☐ Technical data

Models	RS-TA12F	RS-TB12F
Supply terminals	A1,A2,A3	
Supply voltage	A1-A2: AC 220V; A3-A2: AC/DC 24V	
Rated frequency	50/60Hz	
Time range	0.1-1s,1-10s,0.1m-1m,1-10m,0.3-30s,0.6-60s	
Setting accuracy	<5%	
Repetition accuracy	<0.2%	
Output contacts	1 C/O	
Current rating	8A /AC1	
Contacts capacity	AC-15: 2A	
Insulation voltage	250V	
Protection degree	IP20	
Pollution degree	3	
Electrical life	10^5	
Mechanical life	10^6	
Altitude	≤2000m	
Ambient temperature	-5°C~+40°C	
Storage temperature	-10°C~+50°C	
Wire size	0.5mm²~1mm²	
Torque	0.5Nm	
Mounting	TH-35 DIN-Rail	

☐ Front-face panel

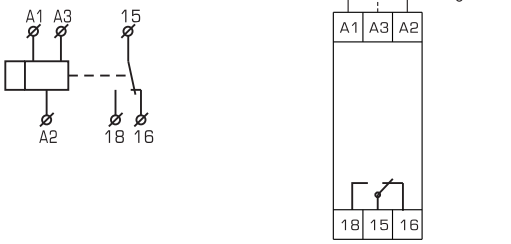


☐ Time range



☐ Function diagrams

☐ Wiring diagrams



ON-delay time relay RS-TA12/14/23

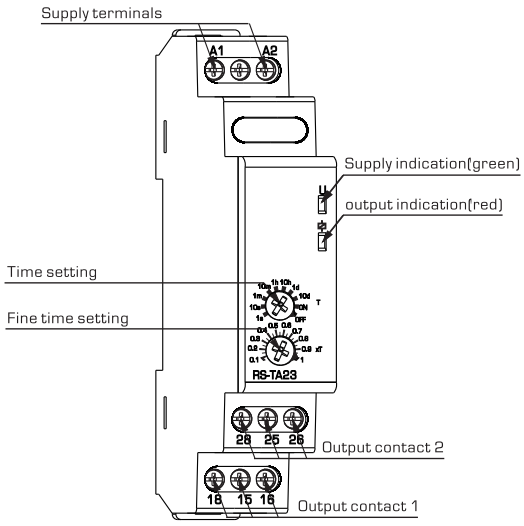
☐ Features

- Microcontroller based
- ON-delay
- 10 time ranges(1s,10s,1m,10m,1h,10h,1d,10d,ON,OFF)
- Repetition accuracy<0.2%
- LED indication for power supply and relay status
- 1 Module Din-rail mounting

☐ Technical data

Models	RS-TA12	RS-TA14	RS-TA23
Supply terminals	A1,A2,A3	A1,A2	
Supply voltage	A1-A2: AC220V A3-A2: AC/DC24V	AC/DC 12-240V	AC/DC 24-240V
Rated frequency	50/60Hz		
Time range	0.1s-10days		
Setting accuracy	<5%		
Repetition accuracy	<0.2%		
Output contacts	1 C/O		2 C/O
Current rating	8A /AC1		
Contacts capacity	AC-15: 2A		
Insulation voltage	250V		
Protection degree	IP20		
Pollution degree	3		
Electrical life	10^5		
Mechanical life	10^6		
Altitude	≤2000m		
Ambient temperature	-5°C~+40°C		
Storage temperature	-10°C~+50°C		
Wire size	0.5mm²~1mm²		
Torque	0.5Nm		
Mounting	TH-35 DIN-Rail		

☐ Front-face panel



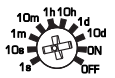
☐ Time range


0.1-1s


1-10s


0.1-1min


1-10min


0.1-1h

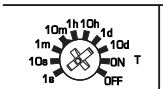
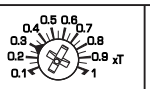
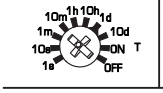
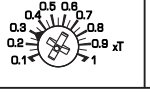

1-10h


0.1-1days


1-10days

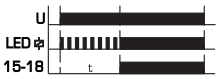

ON


OFF

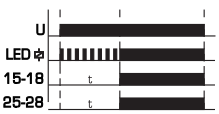
		Time adjustment: t=10m x 0.3=3min
		Time adjustment: t=1d x 0.7=0.7day

☐ Function diagrams

● RS-TA12, RS-TA14

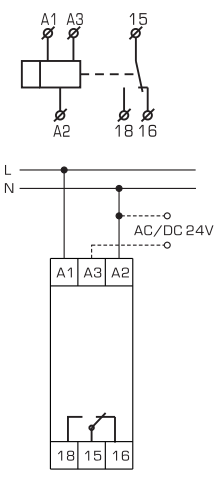


● RS-TA23

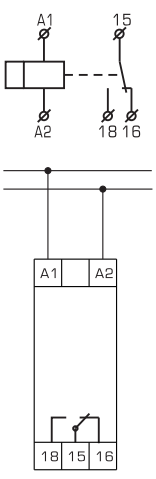


☐ Wiring diagrams

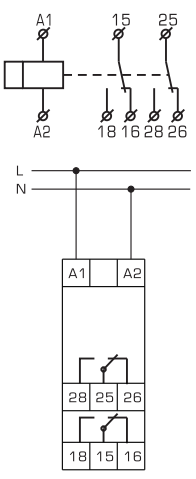
● RS-TA12



● RS-TA14



● RS-TA23



ON-delay time relay

RS-TA14-16/RS-TA24-16

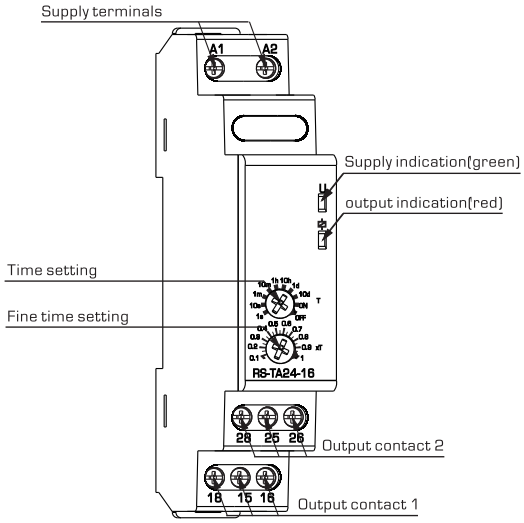
☐ Features

- Microcontroller based
- ON-delay
- 10 time ranges(1s,10s,1m,10m,1h,10h,1d,10d,ON,OFF)
- Repetition accuracy<0.2%
- LED indication for power supply and relay status
- 1 Module Din-rail mounting

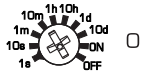
☐ Technical data

Models	RS-TA14-16	RS-TA24-16
Supply terminals	A1,A2	
Supply voltage	AC/DC 12-240V	
Rated frequency	50/60Hz	
Time range	0.1s-10days	
Setting accuracy	<5%	
Repetition accuracy	<0.2%	
Output contacts	1 C/O	2 C/O
Current rating	16A /AC1	
Insulation voltage	250V	
Protection degree	IP20	
Pollution degree	3	
Electrical life	10^5	
Mechanical life	10^6	
Altitude	≤2000m	
Ambient temperature	-5°C~+40°C	
Storage temperature	-10°C~+50°C	
Wire size	0.5mm²~1mm²	
Torque	0.5Nm	
Mounting	TH-35 DIN-Rail	

☐ Front-face panel



☐ Time range

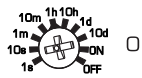


0.1-1s

1-10s

0.1-1min

1-10min

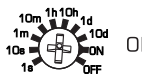


0.1-1h

1-10h

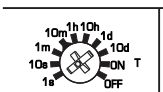
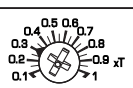
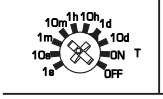
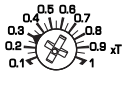
0.1-1days

1-10days



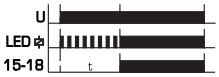
ON

OFF

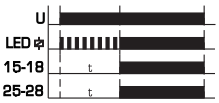
		Time adjustment: t=10m x 0.3=3min
		Time adjustment: t=1d x 0.7=0.7day

☐ Function diagrams

● RS-TA14-16

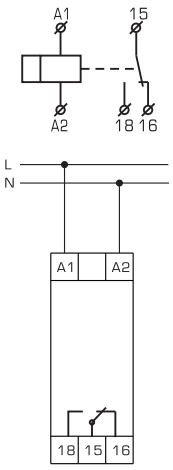


● RS-TA24-16

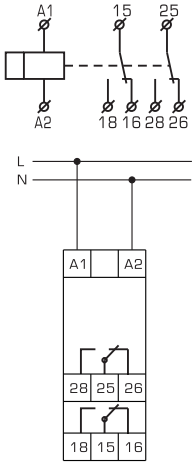


☐ Wiring diagrams

● RS-TA14-16



● RS-TA24-16



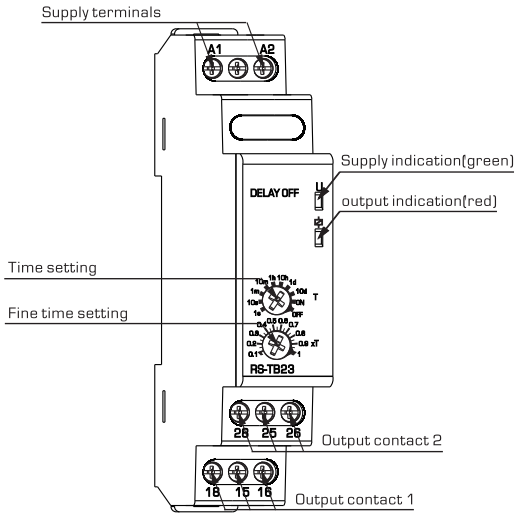
☐ Features

- Microcontroller based
- OFF-delay
- 10 time ranges(1s,10s,1m,10m,1h,10h,1d,10d,ON,OFF)
- Repetition accuracy<0.2%
- LED indication for power supply and relay status
- 1 Module Din-rail mounting

☐ Technical data

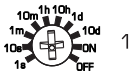
Models	RS-TB12	RS-TB14	RS-TB23
Supply terminals	A1,A2,A3	A1,A2	
Supply voltage	A1-A2: AC220V A3-A2: AC/DC24V	AC/DC 12-240V	AC/DC 24-240V
Rated frequency	50/60Hz		
Time range	0.1s-10days		
Setting accuracy	<5%		
Repetition accuracy	<0.2%		
Output contacts	1 C/O		2 C/O
Current rating	8A /AC1		
Contacts capacity	AC-15: 2A		
Insulation voltage	250V		
Protection degree	IP20		
Pollution degree	3		
Electrical life	10^5		
Mechanical life	10^6		
Altitude	≤2000m		
Ambient temperature	-5°C~+40°C		
Storage temperature	-10°C~+50°C		
Wire size	0.5mm²~1mm²		
Torque	0.5Nm		
Mounting	TH-35 DIN-Rail		

☐ Front-face panel

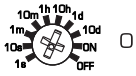


☐ Time range

0.1-1s

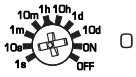


1-10s

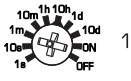


0.1-1min

1-10min



0.1-1h



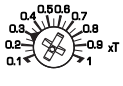
1-10h

0.1-1days

1-10days

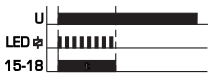
ON

OFF

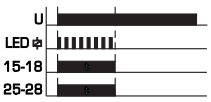
		**Time adjustment:** t=10m x 0.3=3**min**
		**Time adjustment:** t=1d x 0.7=0.7day

☐ Function diagrams

● RS-TB12, RS-TB14

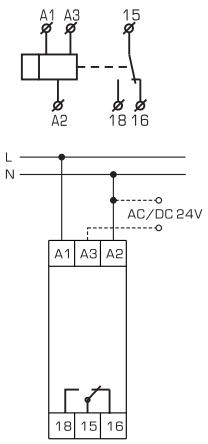


● RS-TB23

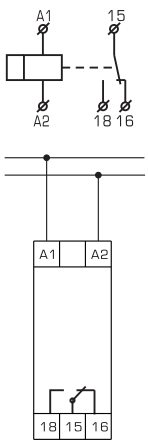


☐ Wiring diagrams

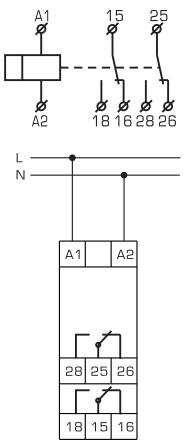
● RS-TB12



● RS-TB14



● RS-TB23



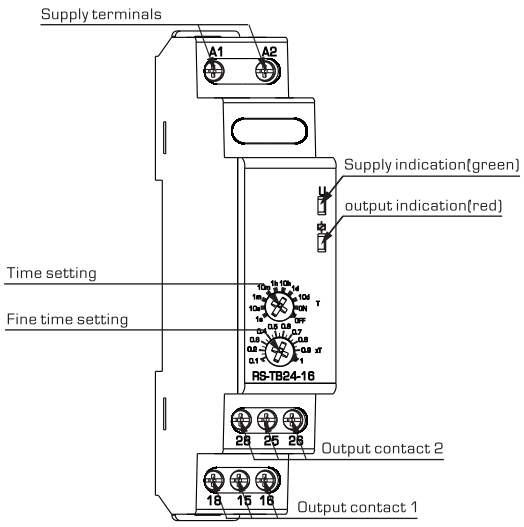
☐ Features

- Microcontroller based
- OFF-delay
- 10 time ranges(1s,10s,1m,10m,1h,10h,1d,10d,ON,OFF)
- Repetition accuracy<0.2%
- LED indication for power supply and relay status
- 1 Module Din-rail mounting

☐ Technical data

Models	RS-TB14-16	RS-TB24-16
Supply terminals	A1,A2	
Supply voltage	AC/DC 12-240V	
Rated frequency	50/60Hz	
Time range	0.1s-10days	
Setting accuracy	<5%	
Repetition accuracy	<0.2%	
Output contacts	1 C/O	2 C/O
Current rating	16A /AC1	
Insulation voltage	250V	
Protection degree	IP20	
Pollution degree	3	
Electrical life	10^5	
Mechanical life	10^6	
Altitude	≤2000m	
Ambient temperature	-5°C~+40°C	
Storage temperature	-10°C~+50°C	
Wire size	0.5mm²~1mm²	
Torque	0.5Nm	
Mounting	TH-35 DIN-Rail	

☐ Front-face panel



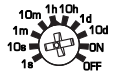
☐ Time range

0.1-1s

1-10s

0.1-1min

1-10min



0.1-1h

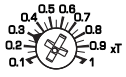
1-10h

0.1-1days

1-10days

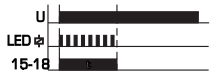
ON

OFF

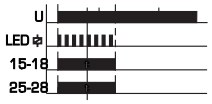
		Time adjustment: t=10m x 0.3=3min
		Time adjustment: t=1d x 0.7=0.7day

☐ Function diagrams

● RS-TB14-16

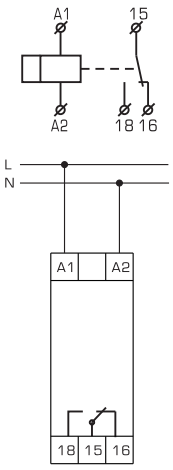


● RS-TB24-16

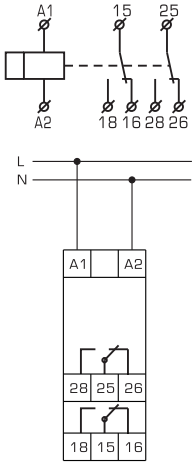


☐ Wiring diagrams

● RS-TB14-16



● RS-TB24-16



Asymmetric cycler time relay RS-TC13/23/23T

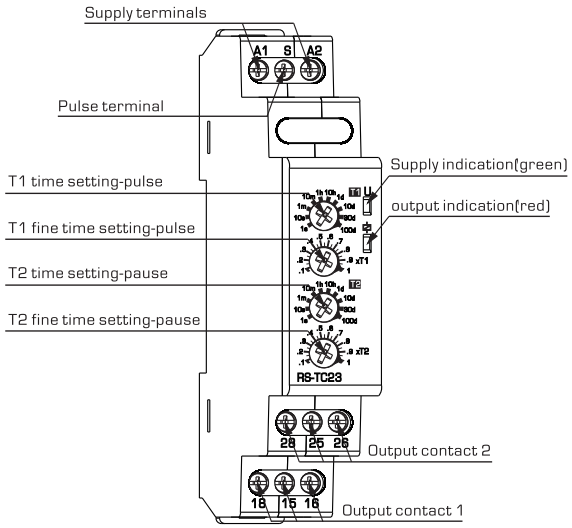
☐ Features

- Microcontroller based
- Cycler beginning with pulse/cycler beginning with pause
- 10 time ranges(1s,10s,1m,10m,1h,10h,1d,10d,30d,100d)
- Repetition accuracy<0.2%
- Function seleced via external jumper between A1-S
- LED indication for power supply and relay status
- 1 Module Din-rail mounting

☐ Technical data

Models	RS-TC13	RS-TC23	RS-TC23T
Supply terminals		A1,A2	
Supply voltage		AC/DC 24-240V	
Rated frequency		50/60Hz	
Time range		0.1s-100days	
Setting accuracy		<5%	
Repetition accuracy		<0.2%	
Output contacts	1 C/O	2 C/O	1 inst.C/O+1C/O
Current rating		8A /AC1	
Contacts capacity		AC-15: 2A	
Insulation voltage		250V	
Protection degree		IP20	
Pollution degree		3	
Electrical life		10^5	
Mechanical life		10^6	
Altitude		≤2000m	
Ambient temperature		-5˚C~+40˚C	
Storage temperature		-10˚C~+50˚C	
Wire size		0.5mm²~1mm²	
Torque		0.5Nm	
Mounting		TH-35 DIN-Rail	

☐ Front-face panel

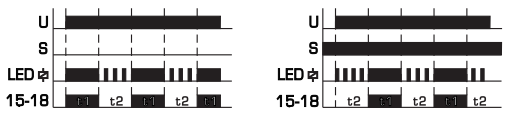


☐ Time range

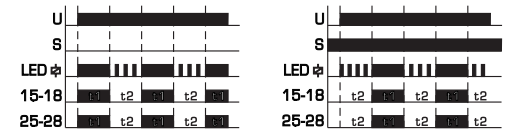
0.1-1s		1-10s	
0.1-1min		1-10min	
0.1-1h		1-10h	
0.1-1days		1-10days	
3-30days		10-100days	
T1	xT1	**Time adjustment:** t1=10m x 0.3=3**min**	
T2	xT2	**Time adjustment:** t2=1d **x** 0.7=0.7**day**	

☐ Function diagrams

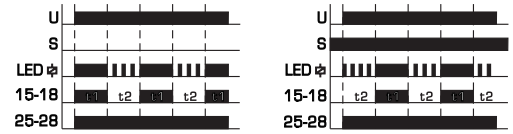
● RS-TC13



● RS-TC23

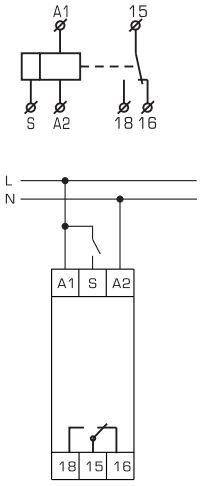


● RS-TC23T

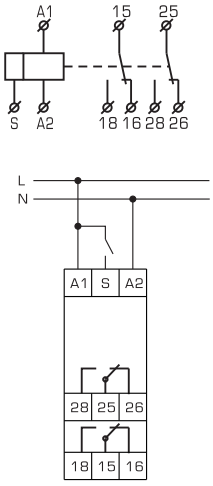


□ Wiring diagrams

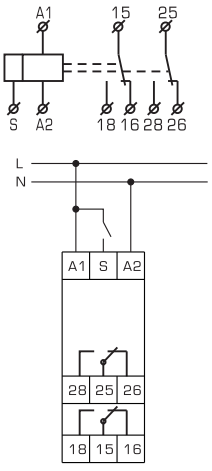
● RS-TC13



● RS-TC23



● RS-TC23T



Asymmetric cycler time relay RS-TC14-16/RS-TC24-16

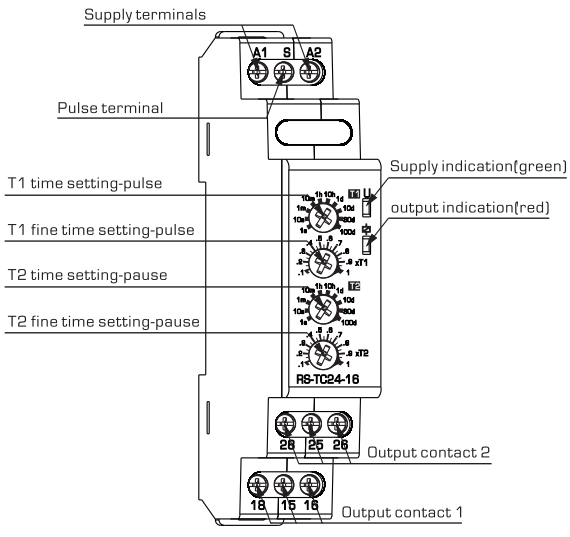
☐ Features

- Microcontroller based
- Cycler beginning with pulse/cycler beginning with pause
- 10 time ranges(1s,10s,1m,10m,1h,10h,1d,10d,30d,100d)
- Repetition accuracy<0.2%
- Function seleced via external jumper between A1-S
- LED indication for power supply and relay status
- 1 Module Din-rail mounting

☐ Technical data

Models	RS-TC14-16	RS-TC24-16
Supply terminals	A1,A2	
Supply voltage	AC/DC 12-240V	
Rated frequency	50/60Hz	
Time range	0.1s-100days	
Setting accuracy	<5%	
Repetition accuracy	<0.2%	
Output contacts	1 C/O	2 C/O
Current rating	16A /AC1	
Contacts capacity	AC-15: 5A	
Insulation voltage	250V	
Protection degree	IP20	
Pollution degree	3	
Electrical life	10^5	
Mechanical life	10^6	
Altitude	≤2000m	
Ambient temperature	-5°C~+40°C	
Storage temperature	-10°C~+50°C	
Wire size	0.5mm²~1mm²	
Torque	0.5Nm	
Mounting	TH-35 DIN-Rail	

☐ Front-face panel

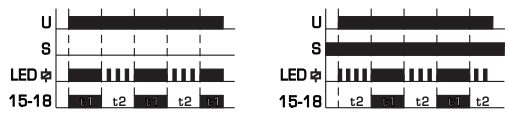


☐ Time range

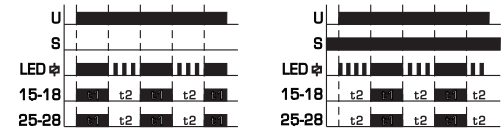
0.1-1s		1-10s	
0.1-1min		1-10min	
0.1-1h		1-10h	
0.1-1days		1-10days	
3-30days		10-100days	
T1	xT1	Time adjustment: t1=10m x 0.3=3min	
T2	xT2	Time adjustment: t2=1d x 0.7=0.7day	

☐ Function diagrams

● RS-TC14-16

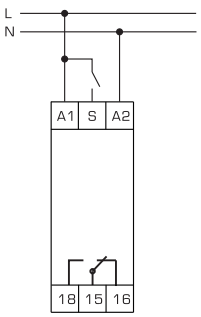


● RS-TC24-16

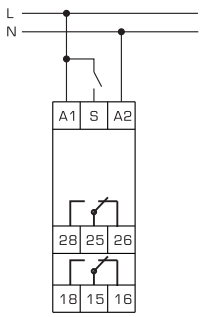


☐ Wiring diagrams

● RS-TC14-16



● RS-TC24-16



Star-delta time relay RS-TS22/RS-TS23

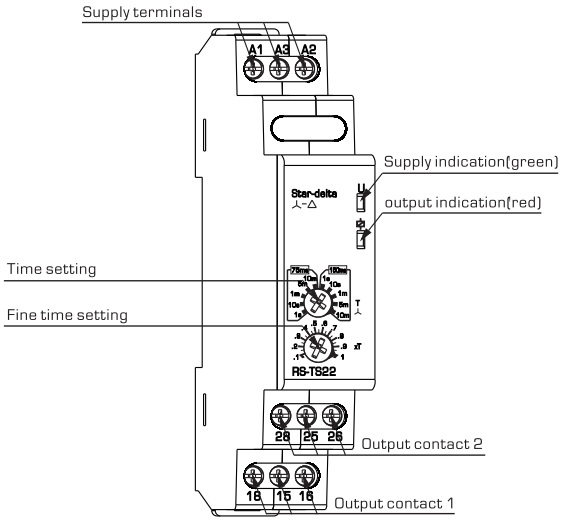
☐ Features

- Microcontroller based
- Star-delta start
- Star-delta transition time 75ms or 150ms
- 2 changeover contacts
- LED indication for power supply and relay status
- 1 Module Din-rail mounting

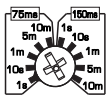
☐ Technical data

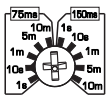
Models	RS-TS22	RS-TS23
Supply terminals	A1,A2,A3	A1,A2
Supply voltage	A1-A2: AC 220V A3-A2: AC/DC 24V	AC/DC 24-240V
Rated frequency	50/60Hz	
Time range	t1(⅄): 0.1s~10m,t2(⅄-Δ): 75ms/150ms	
Time setting	Potentiometer	
Setting accuracy	<5%	
Output contacts	2 C/O	
Current rating	8A /AC1	
Contacts capacity	AC-15: 2A	
Insulation voltage	250V	
Protection degree	IP20	
Pollution degree	3	
Electrical life	10^5	
Mechanical life	10^6	
Altitude	≤2000m	
Ambient temperature	-5°C~+40°C	
Storage temperature	-10°C~+50°C	
Wire size	0.5mm²~1mm²	
Torque	0.5Nm	
Mounting	TH-35 DIN-Rail	

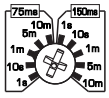
☐ Front-face panel

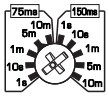


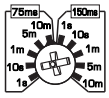
☐ Time range

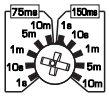

t1:0.1s-1s
t2:75ms

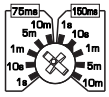

t1:1s-10s
t2:75ms

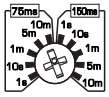

t1:0.1m-1m
t2:75ms

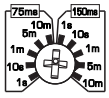

t1:0.5m-5m
t2:75ms

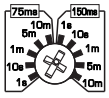

t1:1m-10m
t2:75ms

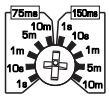

t1:0.1s-1s
t2:150ms

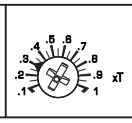

t1:1s-10s
t2:150ms


t1:0.1m-1m
t2:150ms


t1:0.5m-5m
t2:150ms

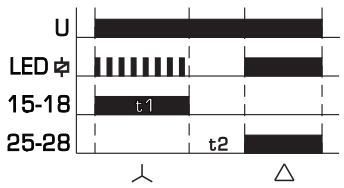

t1:1m-10m
t2:150ms



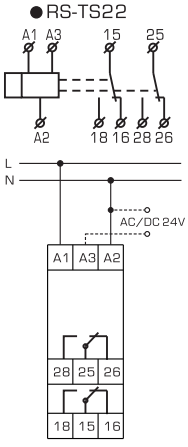


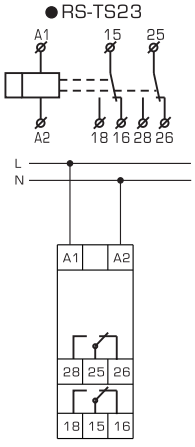
Time adjustment t1:
t1=5m x 0.3=1.5**min**

☐ Function diagram



☐ Wiring diagrams





Star-delta time relay RS-TS24-16

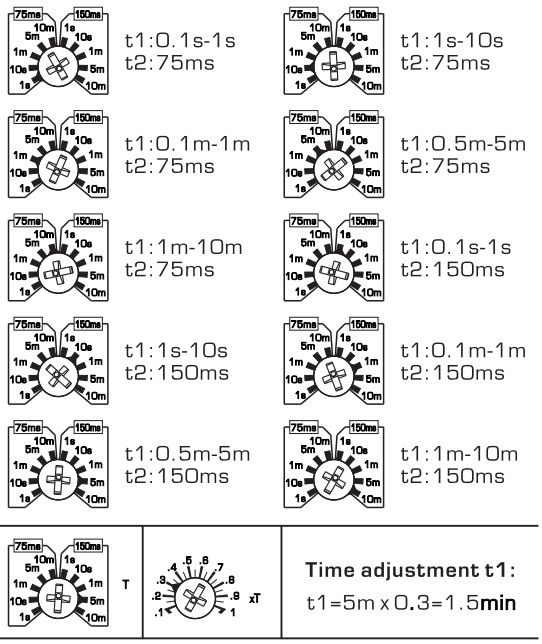
☐ Features

- Microcontroller based
- Star-delta start
- Star-delta transition time 75ms or 150ms
- 2 changeover contacts
- LED indication for power supply and relay status
- 1 Module Din-rail mounting

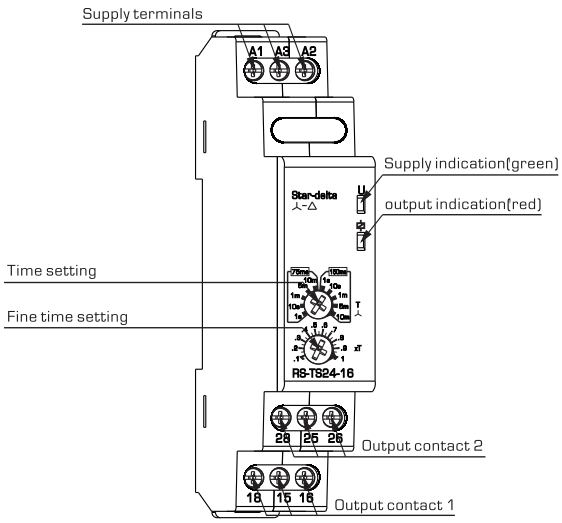
☐ Technical data

Supply voltage	AC/DC 12-240V
Rated frequency	50/60Hz
Time range	t1(⅄): 0.1s~10m,t2(⅄-Δ): 75ms/150ms
Setting accuracy	<5%
Output contacts	2 C/O
Current rating	16A /AC1
Insulation voltage	250V
Protection degree	IP20
Pollution degree	3
Electrical life	10^5
Mechanical life	10^6
Altitude	≤2000m
Ambient temperature	-5˚C~+40˚C
Storage temperature	-10˚C~+50˚C
Wire size	0.5mm²~1mm²
Torque	0.5Nm
Mounting	TH-35 DIN-Rail

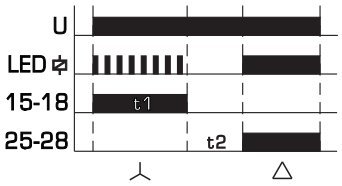
☐ Time range



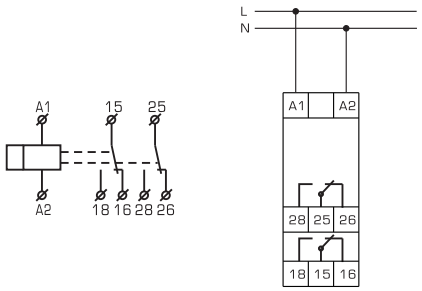
☐ Front-face panel



☐ Function diagram



☐ Wiring diagram



Staircase timer RS-TSL

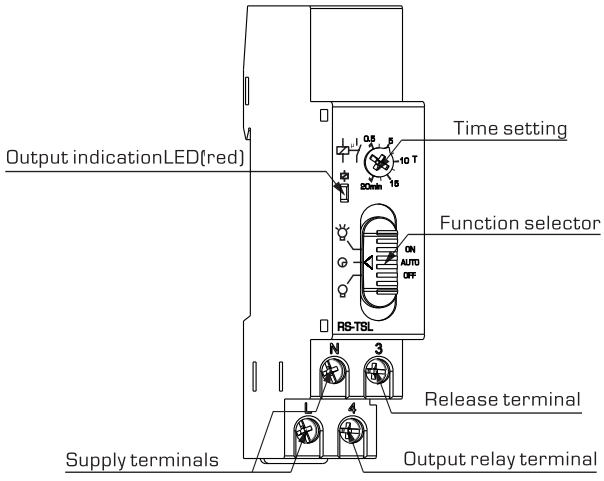
☐ Features

- Microcontroller based
- Possibility of 3wire or 4wire connection
- ON, OFF, AUTO three operation modes.
- 1NO-16A contact
- LED indication for power supply and relay status
- 1 Module Din-rail mounting

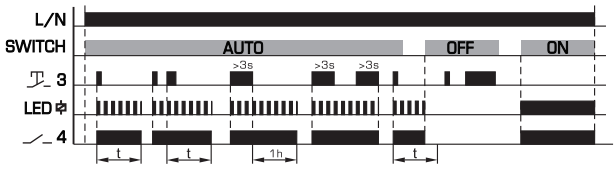
☐ Technical data

Supply voltage	AC 220-240V
Rated frequency	50/60Hz
Time range	0.5-20min
Setting accuracy	<5%
Output contacts	1NO
Current rating	16A /AC1
Insulation voltage	250V
Protection degree	IP20
Pollution degree	3
Electrical life	10^5
Mechanical life	10^6
Altitude	≤2000m
Ambient temperature	-5°C~+40°C
Storage temperature	-10°C~+50°C
Wire size	0.5mm²~2.5mm²
Torque	0.5Nm
Mounting	TH-35 DIN-Rail

☐ Front-face panel

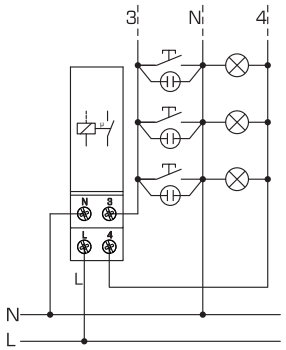


☐ Function diagram

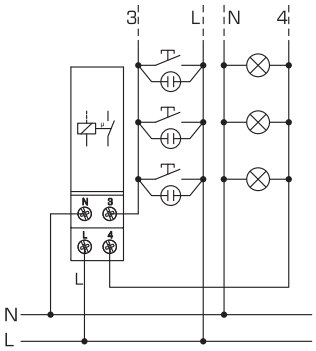


☐ Wiring diagram

3 wire connection



4 wire connection



Doublestage time relay RS-TD23

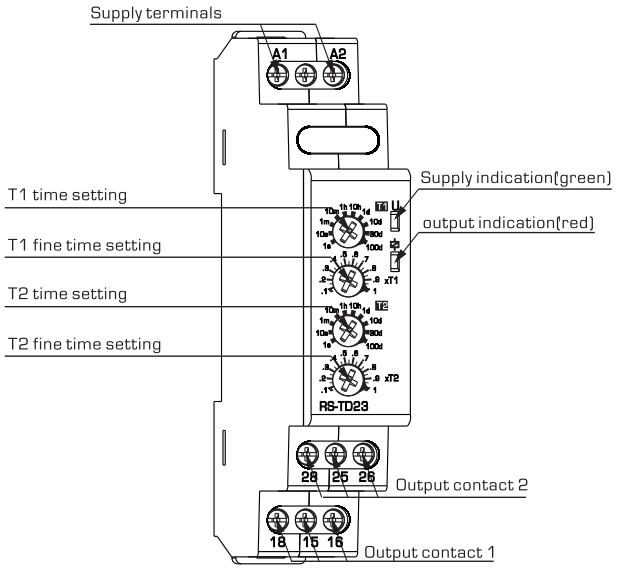
☐ Features

- Microcontroller based
- 2x delay on
- 10 time ranges(1s,10s,1m,10m,1h,10h,1d,10d,ON,OFF)
- Repetition accuracy<0.2%
- T1 and T2 are independently adjustable
- LED indication for power supply and relay status
- 1 Module Din-rail mounting

☐ Technical data

Supply terminals	A1,A2
Supply voltage	AC/DC 24-240V
Rated frequency	50/60Hz
Time range	0.1s-10days
Setting accuracy	<5%
Repetition accuracy	<0.2%
Output contacts	2 C/O
Current rating	8A /AC1
Contacts capacity	AC-15: 2A
Insulation voltage	250V
Protection degree	IP20
Pollution degree	3
Electrical life	10^5
Mechanical life	10^6
Altitude	≤2000m
Ambient temperature	-5°C~+40°C
Storage temperature	-10°C~+50°C
Wire size	0.5mm²~1mm²
Torque	0.5Nm
Mounting	TH-35 DIN-Rail

☐ Front-face panel

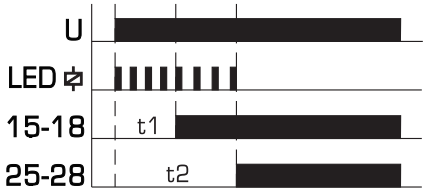


☐ Time range

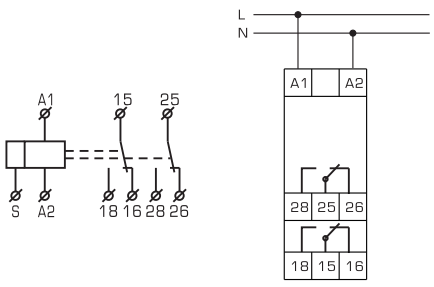
0.1-1s		1-10s	
0.1-1min		1-10min	
0.1-1h		1-10h	
0.1-1days		1-10days	
ON		OFF	

T1	xT1	**Time adjustment:** t1=10m x 0.3=**3min**
T2	xT2	**Time adjustment:** t1=1d x 0.7=**0.7day**

☐ Function diagram



☐ Wiring diagram



True delay OFF time relay RS-TT13

☐ Features

- Microcontroller based
- True delay OFF(delay OFF without power supply)
- 4 time ranges(1s,10s,100s,600s)
- Repetition accuracy<0.2%
- LED indication for relay status
- 1 Module Din-rail mounting

☐ Technical data

Supply terminals	A1,A2
Supply voltage	AC/DC 24-240V
Rated frequency	50/60Hz
Time range	0.1s-600s
Setting accuracy	<5%
Repetition accuracy	<0.2%
Output contacts	1 C/O
Current rating	8A /AC1
Insulation voltage	250V
Protection degree	IP20
Pollution degree	3
Electrical life	10^5
Mechanical life	10^6
Altitude	≤2000m
Ambient temperature	-5°C~+40°C
Storage temperature	-10°C~+50°C
Wire size	0.5mm²~1mm²
Torque	0.5Nm
Mounting	TH-35 DIN-Rail

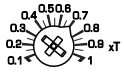
☐ Time range

0.1s-1s

1s-10s

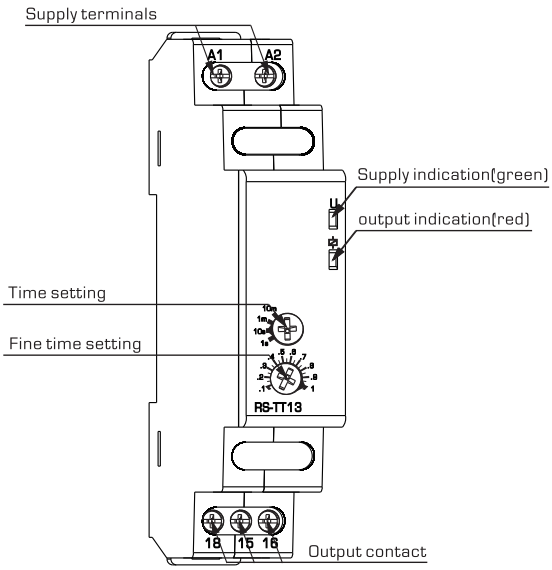
0.1min-1min

1min-10min

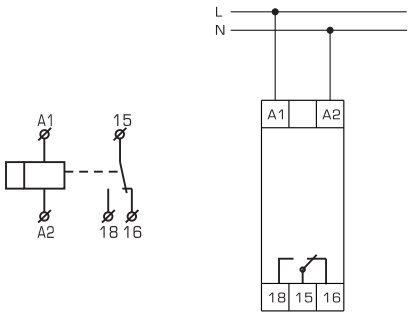
 T		**Time adjustment:** t=10m x 0.3=3min
 T		**Time adjustment:** t=10s x 0.7=0.7s
		

☐ Function diagram

☐ Front-face panel



☐ Wiring diagram



Right-left(inverser) relay RS-TLR22

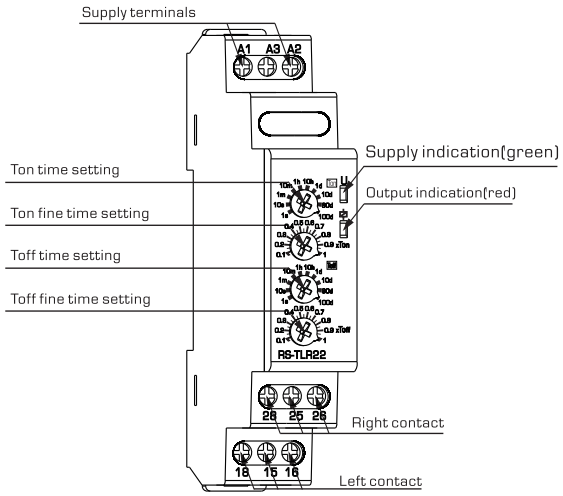
Right-left relay is used for 2 different loads, which works by turn. First load starts working, stops and waits(off) and second load starts working. Both working time is same.

Initially first relay is energized. After Ton delay, relay is de-energized. Both relays are de-energized during Toff delay. At the end of Toff, second relay stays in this position during Ton. When Ton finished both relays are de-energized. This cycle is repeated continuously.

☐ Technical data

Supply voltage	A1-A2:AC 220V; A3-A2: AC/DC 24
Rated frequency	50/60Hz
Time range	0.1s-100days
Setting accuracy	<5%
Repetition accuracy	<0.2%
Output contacts	2 C/O
Current rating	8A /AC1
Contacts capacity	AC-15: 2A
Insulation voltage	250V
Protection degree	IP20
Electrical life	10^5
Mechanical life	10^6
Altitude	≤2000m
Ambient temperature	-5°C~+40°C
Wire size/Torque	0.5mm²~1mm²/0.5Nm
Mounting	TH-35 DIN-Rail

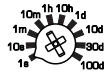
☐ Front-face panel

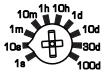


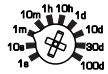
☐ Features

- Microcontroller based
- Right-left operation
- 10 time ranges(1s,10s,1m,10m,1h,10h,1d,10d,30d,100d)
- Repetition accuracy<0.2%
- LED indication for relay status
- 1 Module Din-rail mounting

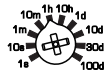
☐ Time range

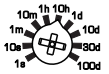

0.1-1s

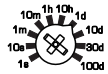

1-10s


0.1-1min

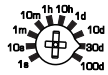

1-10min

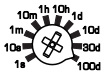

0.1-1h

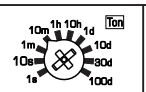

1-10h

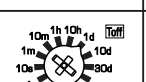

0.1-1day


1-10days

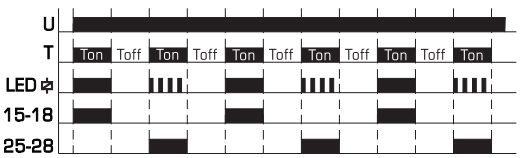

3-30days


10-100days

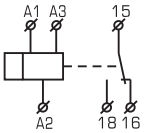

Time adjustment:
Ton=10m x 0.3=3min

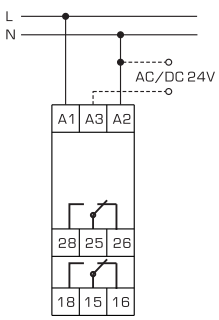

Time adjustment:
Toff=1d x 0.7=0.7days

☐ Function diagram



☐ Wiring diagram





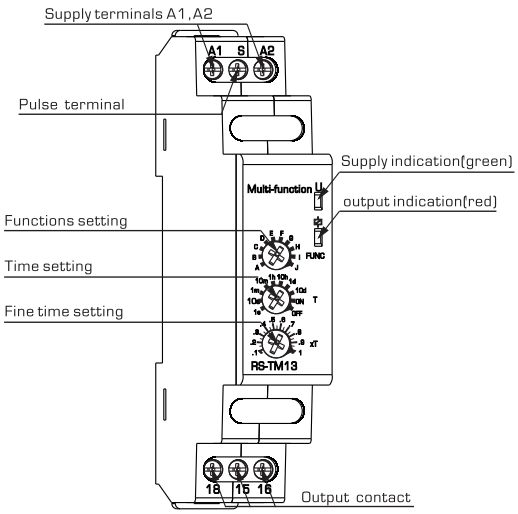
☐ Features

- Microcontroller based
- 10 functions
- 10 time ranges(1s,10s,1m,10m,1h,10h,1d,10d,ON,OFF)
- Wide supply voltage.
- LED indication for power supply and relay status
- 1 Module Din-rail mounting

☐ Technical data

Models	RS-TM14	RS-TM13	RS-TM23
Supply terminals	A1,A2		
Pulse terminal	S		
Supply voltage	AC/DC 12-240V	AC/DC 24-240V	
Rated frequency	50/60Hz		
Time range	0.1s-10days		
Setting accuracy	<5%		
Repetition accuracy	<0.2%		
Output contacts	1 C/O		2 C/O
Current rating	8A /AC1		
Contacts capacity	AC-15: 2A		
Insulation voltage	250V		
Protection degree	IP20		
Pollution degree	3		
Electrical life	10^5		
Mechanical life	10^6		
Altitude	≤2000m		
Ambient temperature	-5°C~+40°C		
Storage temperature	-10°C~+50°C		
Wire size	0.5mm²~1mm²		
Torque	0.5Nm		
Mounting	TH-35 DIN-Rail		

☐ Front-face panel



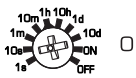
☐ Time range

0.1-1s

1-10s

0.1-1min

1-10min



0.1-1h

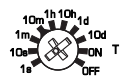
1-10h

0.1-1days

1-10days

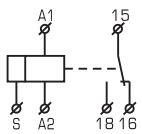
ON

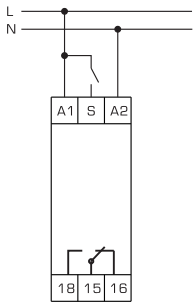
OFF

		**Time adjustment:** t=10m x 0.3=3**min**
		**Time adjustment:** t=1d x 0.7=0.7day

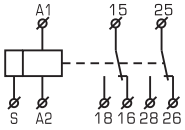
☐ Wiring diagrams

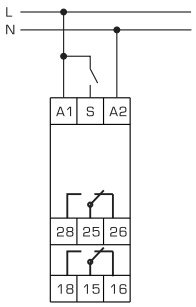
● RS-TM14/RS-TM13



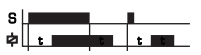
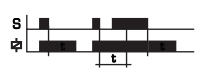


● RS-TM23





☐ Function diagrams

A			SWITCH ON DELAY - after the supply voltage has been applied the time t measurement starts. After the time is over the relay switches on (pos. 15-18). The next switch on interval appears after power supply voltage reset.
B			SWITCH OFF DELAY - after the supply voltage has been applied, the relay switches on immediately (pos. 15-18), and the preset time t is measured. After the preset time t has been measured, the output relay returns to the initial state (pos. 15-16).
C			FLASHER STARTING WITH OFF - (Starting from the switch off position). After the supply voltage has been applied, the preset time t is measured. After the time t is over, the relay switches on (pos. 15-18) and the preset time t is measured once more. After the preset time t is over, the output relay returns to the initial state (pos. 15-16), and the next operating cycle of the relay starts. The relay operates until the supply voltage is removed.
D			FLASHER STARTING WITH ON - (Starting from the switch on position). After the supply voltage has been applied, the relay is switched on immediately (pos. 15-18) and the preset time t is measured. After the time t is over, the relay switches off (pos. 15-16) and the preset time t is measured once more. After the preset time t is over, the relay R returns to the initial state, and the next operating cycle of the relay starts. The relay operates until the supply voltage is removed.
E			DELAY IMPULSE GENERATION 0,5 s - after the supply voltage has been applied the time measure t starts. After the time is over the relay switches on (pos. 15-18) for 0,5s, and switches off (pos. 15-16). The next switch on interval appears after power supply voltage reset.
F			TIME IMPULSE RELEASED BY RISING EDGE - after the impulse release has been applied to the powered system (rising edge) it switches on the relay (pos. 15-18), and starts to measure the preset time. After the time t is over the relay switches off (pos. 15-16). Impulse time duration is not important here.
G			TIME IMPULSE RELEASED BY FALLING EDGE - powered system switches on the relay after impulse release fades (falling edge)(pos. 15-18) and time measurement starts. The relay is switched off after time t is over. The following impulse release fades during time measurement does not cause time measure from the beginning(non-retriggerable).
H			SWITCH ON/OFF DELAY - after the impulse release has been applied to the powered system (rising edge) let the relay be switched off (pos. 15-16), at the same time, starts the preset time t measurement. After the time is over the relay is switched on (pos. 15-18). After the impulse release fade is detected (falling edge), the system starts preset time measurement again after it is over the relay is switched off (pos. 15-16). In case the impulse duration is shorter than the preset time t the relay is switched on for the t time only
I			LATCHING RELAY - supply voltage U must be applied continuously. Output changes state with every trigger switch s closure. If supply voltage U is removed, relay contacts return to their shelf state..
J			TIME IMPULSE RELEASED BY RISING EDGE WITH SWITCH OFF DELAY (retriggerable) - after the impulse release has been applied to the powered system (rising edge) it switches on the relay (pos. 15-18). After the impulse release fade is detected (falling edge), the system starts preset time measurement again and when it is over the relay is switched off (pos. 15-16). The following impulse release fade during time measurement causes from the beginning(retriggerable).

Multifunction time relay RS-TM14-16/RS-TM24-16

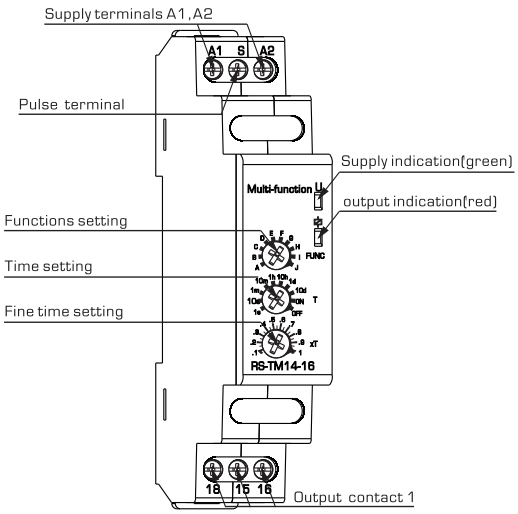
☐ Features

- Microcontroller based
- 10 functions
- 10 time ranges(1s,10s,1m,10m,1h,10h,1d,10d,ON,OFF)
- Wide supply voltage.
- LED indication for power supply and relay status
- 1 Module Din-rail mounting

☐ Technical data

Models	RS-TM14-16	RS-TM24-16
Supply terminals	A1,A2	
Pulse terminal	S	
Supply voltage	AC/DC 12-240V	
Rated frequency	50/60Hz	
Time range	0.1s-10days	
Setting accuracy	<5%	
Repetition accuracy	<0.2%	
Output contacts	1 C/O	2 C/O
Current rating	16A /AC1	
Contacts capacity	AC-15: 5A	
Insulation voltage	250V	
Protection degree	IP20	
Pollution degree	3	
Electrical life	10^5	
Mechanical life	10^6	
Altitude	≤2000m	
Ambient temperature	-5°C~+40°C	
Storage temperature	-10°C~+50°C	
Wire size	0.5mm²~1mm²	
Torque	0.5Nm	
Mounting	TH-35 DIN-Rail	

☐ Front-face panel



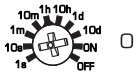
☐ Time range

0.1-1s

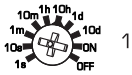
1-10s

0.1-1min

1-10min



0.1-1h



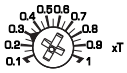
1-10h

0.1-1days

1-10days

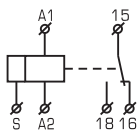
ON

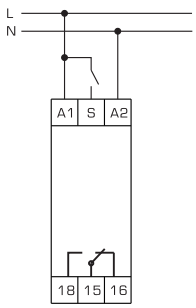
OFF

		**Time adjustment:** t=10m x 0.3=3**min**
		**Time adjustment:** t=1d x 0.7=0.7day

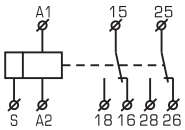
☐ Wiring diagrams

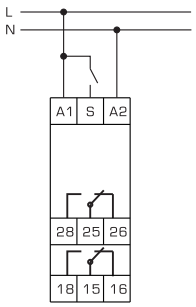
● RS-TM14-16



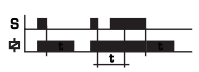


● RS-TM24-16





☐ Function diagrams

A			SWITCH ON DELAY - after the supply voltage has been applied the time t measurement starts. After the time is over the relay switches on (pos. 15-18). The next switch on interval appears after power supply voltage reset.
B			SWITCH OFF DELAY - after the supply voltage has been applied, the relay switches on immediately (pos. 15-18), and the preset time t is measured. After the preset time t has been measured, the output relay returns to the initial state (pos. 15-16).
C			FLASHER STARTING WITH OFF - (Starting from the switch off position). After the supply voltage has been applied, the preset time t is measured. After the time t is over, the relay switches on (pos. 15-18) and the preset time t is measured once more. After the preset time t is over, the output relay returns to the initial state (pos. 15-16), and the next operating cycle of the relay starts. The relay operates until the supply voltage is removed.
D			FLASHER STARTING WITH ON - (Starting from the switch on position). After the supply voltage has been applied, the relay is switched on immediately (pos. 15-18) and the preset time t is measured. After the time t is over, the relay switches off (pos. 15-16) and the preset time t is measured once more. After the preset time t is over, the relay R returns to the initial state, and the next operating cycle of the relay starts. The relay operates until the supply voltage is removed.
E			DELAY IMPULSE GENERATION 0,5 s - after the supply voltage has been applied the time measure t starts. After the time is over the relay switches on (pos. 15-18) for 0,5s, and switches off (pos. 15-16). The next switch on interval appears after power supply voltage reset.
F			TIME IMPULSE RELEASED BY RISING EDGE - after the impulse release has been applied to the powered system (rising edge) it switches on the relay (pos. 15-18), and starts to measure the preset time. After the time t is over the relay switches off (pos. 15-16). Impulse time duration is not important here.
G			TIME IMPULSE RELEASED BY FALLING EDGE - powered system switches on the relay after impulse release fades (falling edge)(pos. 15-18) and time measurement starts. The relay is switched off after time t is over. The following impulse release fades during time measurement does not cause time measure from the beginning(non-retriggerable).
H			SWITCH ON/OFF DELAY - after the impulse release has been applied to the powered system (rising edge) let the relay be switched off (pos. 15-16), at the same time, starts the preset time t measurement. After the time is over the relay is switched on (pos. 15-18). After the impulse release fade is detected (falling edge), the system starts preset time measurement again after it is over the relay is switched off (pos. 15-16). In case the impulse duration is shorter than the preset time t the relay is switched on for the t time only
I			LATCHING RELAY - supply voltage U must be applied continuously. Output changes state with every trigger switch s closure. If supply voltage U is removed, relay contacts return to their shelf state..
J			TIME IMPULSE RELEASED BY RISING EDGE WITH SWITCH OFF DELAY (retriggerable) - after the impulse release has been applied to the powered system (rising edge) it switches on the relay (pos. 15-18). After the impulse release fade is detected (falling edge), the system starts preset time measurement again and when it is over the relay is switched off (pos. 15-16). The following impulse release fade during time measurement causes from the beginning(retriggerable).

Digital multifunction time relay RD-TMS1

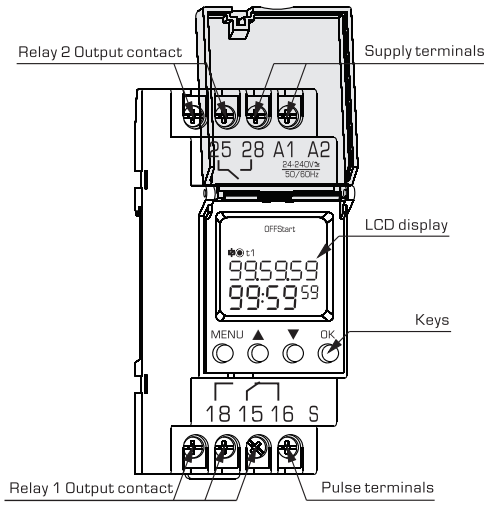
☐ Features

- Microcontroller based
- LCD display for functions,set delay and operating time
- 24 functions
- Time range:0s-99h59min59sec.
- AC/DC 24-240V supply voltage
- 1C/O+1NO contacts
- Backlighted LCD display
- Easy setting by keys
- 2 module Din-rail mounting

☐ Technical data

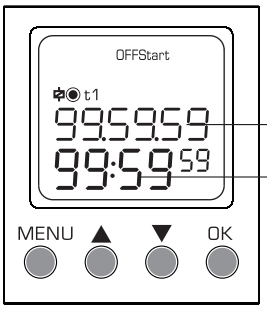
Supply terminals	A1, A2
Pulse terminal	S
Supply voltage	AC/DC 24-240V
Rated frequency	50/60Hz
Time range	0s-99h59min59sec
Repetition accuracy	max.±3s/24h 25°C
Data readout	Back-lighted LCD display
Data storage	10 year
Output contacts	1 C/O +1 NO
Current rating	8A /AC1
Contacts capacity	AC-15: 2A
Insulation voltage	250V
Protection degree	IP20
Pollution degree	3
Electrical life	10^5
Mechanical life	10^6
Altitude	≤2000m
Ambient temperature	-5°C~+40°C
Storage temperature	-10°C~+50°C
Wire size	0.5mm²~1mm²
Torque	0.5Nm
Mounting	TH-35 DIN-Rail

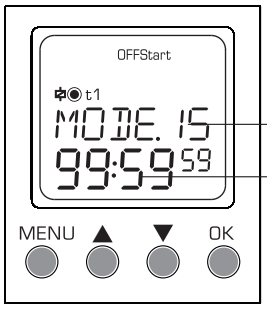
☐ Front-face panel



☐ Description

○ Panel





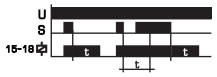
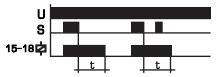
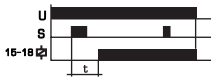
Symbol legend

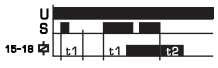
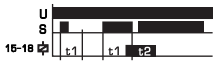
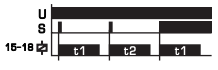
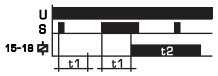
- ◘◉ — Relay 1 ON
- ◘○ — Relay 1 OFF
- SET — Parameters setting
- ONStart — Starting with ON
- OFFStart — Starting with OFF
- ⌐ — Time impulse release by rising edge
- ⌙ — Time impulse release by falling edge
- start — Starting with S pulse
- T — Time delay T
- T1 — Time delay T1
- T2 — Time delay T2

Keys

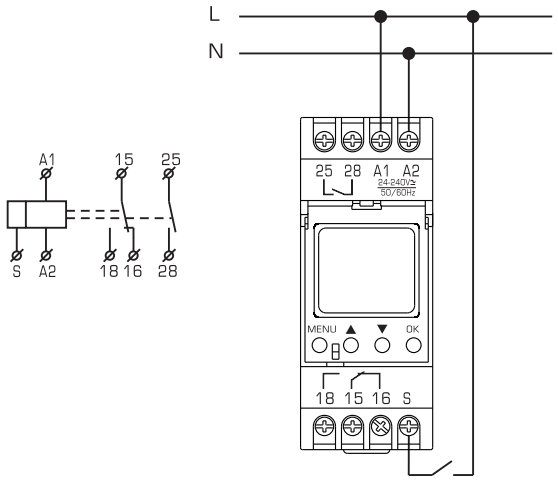
MENU ○	○Enter configuration menu ○Exit configuration menu	OK ○	○Confirm settings
▲ ○	○Select menu ○Digit +	▼ ○	○Select menu ○Digit -

☐ Function diagrams

01		SWITCH ON DELAY - after the supply voltage has been applied the preset time t measure starts. After the time is over the relay switches on (pos. 15-18). The next switch on mode appears after power supply voltage reset.
02		SWITCH OFF DELAY - after the supply voltage has been applied, the relay switches on immediately (pos.15-18), and the preset time t is measured. After the preset time is measured, the relay is switched off (pos.15-16). The next switch on interval appears after power supply voltage reset.
03		FLASHER STARTING WITH OFF – (Starting from the switch off position). After the supply voltage has been applied, the preset time t is measured. After the time is over, the relay switches on (pos. 15-18). Again with the preset time t interval, the relay is switched off (pos.15-16) and switched on (pos. 15-18). The next switch on interval appears after power supply voltage reset
04		FLASHER STARTING WITH ON – (Starting from the switch on position). After the supply voltage has been applied, the relay is immediatelly switched on (pos. 15-18) and the preset time t is measured. After the time t is over, the relay switches off (pos.15-16). Again with the preset time t interval the relay is switched on (pos.15-18) and switched off (pos.15-16). The next switch on interval appears after power supply voltage reset.
05		IMPULSE GENERATOR DELAY 0,5 sec. - After the supply voltage has been applied the preset time t measure starts. After the time t is over the relay switches on (pos.15-18) for 0,5 second, and switches off (pos. 11-12). The next switch on interval appears after power supply voltage reset.
06		TIME IMPULSE RELEASED BY RISING EDGE – after the impulse release has been applied to the power supply system (rising edge) it switches on the relay (pos. 151-18) and starts to measure the preset time. After the time t is over the relay is switched off (pos. 15-16). Impulse time duration is not important here.
07		TIME IMPULSE RELEASED BY FALLING EDGE – power supply system switches on the relay after impulse release fades (falling edge) (pos.15-18) and time measurement starts. After the time t is over the relay is switched off (pos. 15-16). The following impulse release fades during time measurement does not cause time measure from the beginning (non- retriggerable).
08		SWITCH ON/OFF DELAY – after the impulse release has been applied to the power-supply system (rising edge), it lets the relay be switched off (pos.15-16) and at the same time starts the preset time t measurement. After the time is over the relay is switched on (pos.15-18). After the impulse release fade is detected (falling edge), again the system starts the preset time measurement. When it is over the relay is switched off (pos. 15-16). In case the impulse duration time is shorter than the preset time t, the relay is switched on only for the time t.
09		BISTABLE RELAY WITH TIME LIMIT – after the impulse release has been applied to the power supply system (rising edge), it switches on the relay (pos.15-18) and starts to measure the preset time t. The relay is switched off during the next impulse release (rising edge) or after time t is over in case there was no such impulse occurence. Impulse time duration is not important for system operating.
10		TIME IMPULSE RELEASED BY RISING EDGE WITH SWITCH OFF DELAY (retriggerable) - after the impulse release has been applied to the power-supply system (rising edge) it switches on the relay (pos.15-18). After the impulse release fade is detected (rising edge), the system starts the preset time t measurement and when the time is over the relay is switched off (pos. 15-16). The following impulse release fade during time measurement causes time measure from the beginning (retriggerable).
11		TIME IMPULSE RELEASED BY RISING EDGE WITH SWITCH OFF DELAY (non-retriggerable) - after the impulse release has been applied to he power-supply system (rising edge) it switches on the relay (pos.15-18). After the impulse release fade is detected (falling modulated voltage), the system starts the preset time t measurement and when the time is over the relay is switched off (pos.15-16)
12		SWITCH ON DELAY RELEASED BY IMPULSE - after the impulse release has been applied to the power supply system (rising edge) it keeps the relay in a switched off position (pos.15-16) and simultaneously starts the preset time t measurement. After the time t is over the relay is switched on (pos. 15-18). The relay is switched on as long as there is a power supply voltage on, the next release impulses do not affect operation of the relay.
13		PERMANENT SWITCH ON MODE - After the supply voltage has been applied the relay is switched on permanently. When choosing this mode t1 and t2 time adjustments do not matter.
14		PERMANENT SWITCH OFF MODE - After the supply voltage has been applied the relay is switched off permanently. When choosing this mode t1 and t2 time adjustments do not matter.
15		SWITCH ON DELAY - after the supply voltage has been applied the t1 time measure starts. After the time is over the relay switches on (pos. 15-18) for t2 time. The next switch on interval appears after power supply voltage reset.
16		SWITCH OFF DELAY - after the supply voltage has been applied, the output relay switches on immediately (pos.15-18), and the preset time t1 is measured. After the preset time is measured, the relay is switched off (pos.15-16) for the preset t2 time and its another switch on mode. The next switch on interval appears after power supply voltage reset
17		FLASHER STARTING WITH OFF – (Starting from the switch off position). After the supply voltage has been applied, the preset time t1 is measured. After the time is over, the relay switches on (pos. 15-18) for the preset t2 time and again switches off (pos.15-16) for the preset t1 time. The next switch on interval appears after power supply voltage reset.
18		FLASHER STARTING WITH OFF – (Starting from the switch on position). After the supply voltage has been applied, the output relay switches on immediately (pos.15-18) for the preset time t1. After the time is over, the relay is switches off (pos.15-16) for the preset t2 time and its another switch on mode for t1 time. The next switch on interval appears after power supply voltage reset

19		SWITCH ON/OFF DELAY- (retriggerable) – after the impulse release has been applied to the power supply system (rising edge), it lets the relay be switched off (pos. 15-16) and at the same time, starts the preset time t1 measurement. After the time is over the relay is switched on (po. 15-18). After the impulse release fade is detected (falling modulated voltage), the system starts preset t2 time measurement and after it is over the relay is switched off (po. 15-16). In case the impulse release duration is shorter than the preset time t1, the relay is not switched on. Applying the impulse release during the preset t2 time measurement does not cause switching off the relay but it starts time measurement after the impulse fade (falling modulated voltage).
20		SWITCH ON/OFF DELAY- (non-retriggerable) – after the impulse release has been applied to the power-supply system (rising edge), it lets the relay be switched off (pos. 15-16), at the same time, starts the preset time t1 measurement. After the time is over the relay is switched on (pos. 15-18). After the impulse release fade is detected (falling modulated voltage), the system starts preset time t2 measuremnt and after it is over the relay is switched off (po. 15-16). The release input state can change during the time t2 measurement and does not affect functioning of the system In case the impulse release duration is shorter than the preset time t1, the relay is not switched on.
21		IMPULSE GENERATION WITH AN ALTERNATE TIME DURATION - after the impulse release has been applied to the power-supply system (growing value), it switches on the relay for the preset time t1, and switches it off. The next impulse release causes the relay switches on for t2 time. Another one switches on the relay for t1 time, etc. The impulse release time duration does not influence the relay switching on time.
22		SWITCH OFF DELAY RELEASED BY FALLING EDGE- after the impulse release has been applied to the power supply system, it switches on the relay (pos. 15-18). Impulse release fade causes the preset time t1 measurement, after it is over the relay is switched off (po. 15-16) for the preset time t2. During the t2 time the system is resistant to signals release. After the t2 time is over the relay is switched on again in the moment of applying impulse release (growing value)
23		TIME IMPULSE RELEASED BY IMPULSE WITH SPECIFIC TIME DURATION - after the impulse release has been applied and lasts continuously for the preset time t1, it switches on the relay (pos. 15-18) for time t2. If the release impulse is shorter than the preset time t1, the relay is not switched on - during switching on the relay the releasing impulses are ignored.
24		IMPULSE RELEASED BY FALLING EDGE - after the impulse release has been applied to the power supply system (rising edge), it switches on the relay for the preset time t1, and after the time elapses it switches off the relay. The impulse release fade (falling edge) switches on the relay (pos. 15-18) for the preset time t2, and after the time elapses it switches it off. During switching on the relay the rising edge and the falling edge are ignored.

□ Wiring diagram



Digital multifunction time relay RD-TMS2

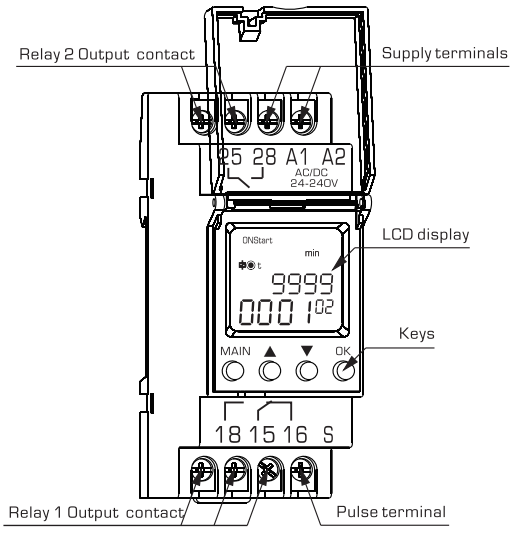
☐ Features

- Microcontroller based
- 24 functions
- LCD display functions,set delay and operating time
- Time ranges:0-9999s,0-9999min
- AC/DC 24-240V supply voltage
- 2 independent NO contacts, can be controlled by different operating modes.
- Backlighted LCD display
- Easy to set by keys
- 2 module Din-rail mounting

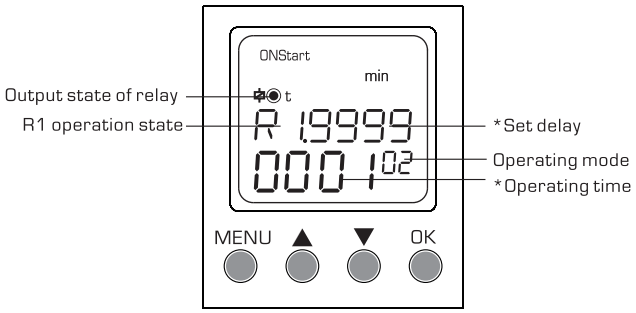
☐ Technical data

Supply terminals	A1, A2
Pulse terminal	S
Supply voltage	AC/DC 24-240V
Rated frequency	50/60Hz
Time range	0-9999s, 0-9999min
Repetition accuracy	max.±3s/24h 25°C
Data readout	Back-lighted LCD display
Data storage	10 year
Output contacts	1 C/O +1 NO
Current rating	8A /AC1
Contacts capacity	AC-15: 2A
Insulation voltage	250V
Protection degree	IP20
Pollution degree	3
Electrical life	10^5
Mechanical life	10^6
Altitude	≤2000m
Ambient temperature	-5°C~+40°C
Storage temperature	-10°C~+50°C
Wire size	0.5mm²~1mm²
Torque	0.5Nm
Mounting	TH-35 DIN-Rail

☐ Front-face panel



○ Panel



*: No display for operating mode 09,13,14.

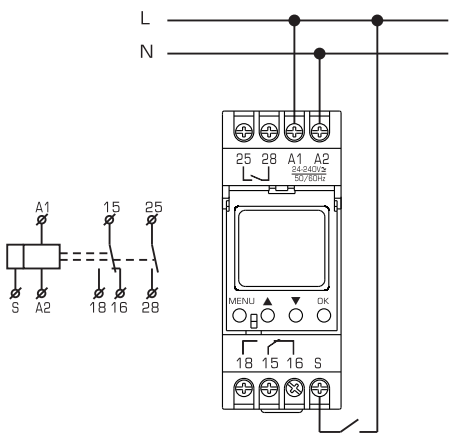
Symbol legend

◉	— Output relay ON	min	— Set time: minute
○	— Output relay OFF	sec	— Set time: second
R1	— Output relay 1	T	— Time delay T
R2	— Output relay 2	T1	— Time delay T1
SET	— Parameters setting	T2	— Time delay T2
ONStart	— Starting with ON	start	— Starting with S pulse
OFFStart	— Starting with OFF		
⌐	— Time impulse release by rising edge		
⌙	— Time impulse release by falling edge		

Keys

MENU	○Enter configuration menu ○Exit configuration menu	OK	○Confirm settings
▲	○Select menu ○Digit + ○Display menu selection	▼	○Select menu ○Digit - ○Display menu selection

☐ Wiring diagrams



☐ Function diagrams

01		SWITCH ON DELAY - after the supply voltage has been applied the preset time t measure starts. After the time is over the relay switches on (pos. 15-18). The next switch on mode appears after power supply voltage reset.
02		SWITCH OFF DELAY - after the supply voltage has been applied, the relay switches on immediately (pos.15-18), and the preset time t is measured. After the preset time is measured, the relay is switched off (pos.15-16). The next switch on interval appears after power supply voltage reset.
03		FLASHER STARTING WITH OFF – (Starting from the switch off position). After the supply voltage has been applied, the preset time t is measured. After the time is over, the relay switches on (pos. 15-18). Again with the preset time t interval, the relay is switched off (pos. 15-16) and switched on (pos. 15-18). The next switch on interval appears after power supply voltage reset
04		FLASHER STARTING WITH ON – (Starting from the switch on position). After the supply voltage has been applied, the relay is immediatelly switched on (pos. 15-18) and the preset time t is measured. After the time t is over, the relay switches off (pos.15-16). Again with the preset time t interval the relay is switched on (pos.15-18) and switched off (pos.15-16). The next switch on interval appears after power supply voltage reset.
05		IMPULSE GENERATOR DELAY 0,5 sec. - After the supply voltage has been applied the preset time t measure starts. After the time t is over the relay switches on (pos.15-18) for 0,5 second, and switches off (pos. 11-12). The next switch on interval appears after power supply voltage reset.
06		TIME IMPULSE RELEASED BY RISING EDGE – after the impulse release has been applied to the power supply system (rising edge) it switches on the relay (pos. 151-18) and starts to measure the preset time. After the time t is over the relay is switched off (pos. 15-16). Impulse time duration is not important here.
07		TIME IMPULSE RELEASED BY FALLING EDGE – power supply system switches on the relay after impulse release fades (falling edge) (pos.15-18) and time measurement starts. After the time t is over the relay is switched off (pos. 15-16). The following impulse release fades during time measurement does not cause time measure from the beginning (non- retriggerable).
08		SWITCH ON/OFF DELAY – after the impulse release has been applied to the power-supply system (rising edge), it lets the relay be switched off (pos.15-16) and at the same time starts the preset time t measurement. After the time is over the relay is switched on (pos.15-18). After the impulse release fade is detected (falling edge), again the system starts the preset time measurement. When it is over the relay is switched off (pos. 15-16). In case the impulse duration time is shorter than the preset time t, the relay is switched on only for the time t.
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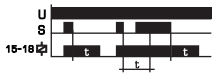
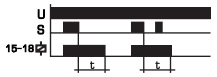
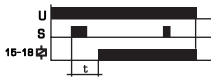
10		TIME IMPULSE RELEASED BY RISING EDGE WITH SWITCH OFF DELAY (retriggerable) - after the impulse release has been applied to the power-supply system (rising edge) it switches on the relay (pos.15-18). After the impulse release fade is detected (rising edge), the system starts the preset time t measurement and when the time is over the relay is switched off (pos. 15-16). The following impulse release fade during time measurement causes time measure from the beginning (retriggerable).
11		TIME IMPULSE RELEASED BY RISING EDGE WITH SWITCH OFF DELAY (non-retriggerable) - after the impulse release has been applied to he power-supply system (rising edge) it switches on the relay (pos.15-18). After the impulse release fade is detected (falling modulated voltage), the system starts the preset time t measurement and when the time is over the relay is switched off (pos.15-16)
12		SWITCH ON DELAY RELEASED BY IMPULSE - after the impulse release has been applied to the power supply system (rising edge) it keeps the relay in a switched off position (pos.15-16) and simultaneously starts the preset time t measurement. After the time t is over the relay is switched on (pos. 15-18). The relay is switched on as long as there is a power supply voltage on, the next release impulses do not affect operation of the relay.
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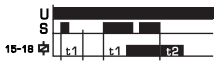
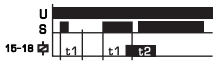
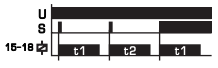
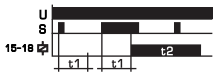
16		SWITCH OFF DELAY - after the supply voltage has been applied, the output relay switches on immediately (pos.15-18), and the preset time t1 is measured. After the preset time is measured, the relay is switched off (pos.15-16) for the preset t2 time and its another switch on mode. The next switch on interval appears after power supply voltage reset
17		FLASHER STARTING WITH OFF – (Starting from the switch off position). After the supply voltage has been applied, the preset time t1 is measured. After the time is over, the relay switches on (pos. 15-18) for the preset t2 time and again switches off (pos.15-16) for the preset t1 time. The next switch on interval appears after power supply voltage reset.
18		FLASHER STARTING WITH OFF – (Starting from the switch on position). After the supply voltage has been applied, the output relay switches on immediately (pos.15-18) for the preset time t1. After the time is over, the relay is switches off (pos.15-16) for the preset t2 time and its another switch on mode for t1 time. The next switch on interval appears after power supply voltage reset

19		SWITCH ON/OFF DELAY- (retriggerable) – after the impulse release has been applied to the power supply system (rising edge), it lets the relay be switched off (pos. 15-16) and at the same time, starts the preset time t1 measurement. After the time is over the relay is switched on (po. 15-18). After the impulse release fade is detected (falling modulated voltage), the system starts preset t2 time measurement and after it is over the relay is switched off (po. 15-16). In case the impulse release duration is shorter than the preset time t1, the relay is not switched on. Applying the impulse release during the preset t2 time measurement does not cause switching off the relay but it starts time measurement after the impulse fade (falling modulated voltage).
20		SWITCH ON/OFF DELAY- (non-retriggerable) – after the impulse release has been applied to the power-supply system (rising edge), it lets the relay be switched off (pos. 15-16), at the same time, starts the preset time t1 measurement. After the time is over the relay is switched on (pos. 15-18). After the impulse release fade is detected (falling modulated voltage), the system starts preset time t2 measuremnt and after it is over the relay is switched off (po. 15-16). The release input state can change during the time t2 measurement and does not affect functioning of the system In case the impulse release duration is shorter than the preset time t1, the relay is not switched on.
21		IMPULSE GENERATION WITH AN ALTERNATE TIME DURATION - after the impulse release has been applied to the power-supply system (growing value), it switches on the relay for the preset time t1, and switches it off. The next impulse release causes the relay switches on for t2 time. Another one switches on the relay for t1 time, etc. The impulse release time duration does not influence the relay switching on time.
22		SWITCH OFF DELAY RELEASED BY FALLING EDGE- after the impulse release has been applied to the power supply system, it switches on the relay (pos. 15-18). Impulse release fade causes the preset time t1 measurement, after it is over the relay is switched off (po. 15-16) for the preset time t2. During the t2 time the system is resistant to signals release. After the t2 time is over the relay is switched on again in the moment of applying impulse release (growing value)
23		TIME IMPULSE RELEASED BY IMPULSE WITH SPECIFIC TIME DURATION - after the impulse release has been applied and lasts continuously for the preset time t1, it switches on the relay (pos. 15-18) for time t2. If the release impulse is shorter than the preset time t1, the relay is not switched on - during switching on the relay the releasing impulses are ignored.
24		IMPULSE RELEASED BY FALLING EDGE - after the impulse release has been applied to the power supply system (rising edge), it switches on the relay for the preset time t1, and after the time elapses it switches off the relay. The impulse release fade (falling edge) switches on the relay (pos. 15-18) for the preset time t2, and after the time elapses it switches it off. During switching on the relay the rising edge and the falling edge are ignored.

Single channel digital weekly time switch RD-TPD1

☐ Description

RD-TPD1 series weekly time switch is used for realization of time functions in the control systems and automation. It operates according to the set time schedule planned by the user. Pulse program can be used for school or factory bell ringing.
There is an internal battery which can protect real time clock and all the settings when the electric power supply is off.

☐ Technical data

Supply terminals	A1-A2
Rated voltage	AC220-240V or AC/DC24-264V
Rated frequency	50/60Hz, 0
Power consumption	1W
Supply volltage tolerance	±10%
Number of channels	1
Number of programs	52
Programs	weekly, daily and pulse
Operating modes	manual, automatic, holiday
Summer/winter time	off, automatic changes
Time tolerance	≤1s/day at 25˚C
Power reserve	3 year or 10 year
Data readout	LCD display
Number of contacts	1 C/O
Current of contacts	16A/250V AC1
Switching capacity	4000VA/AC1,384W/DC
Mechanical life	10^6
Electrical life	10^5
Rated insulation voltage	250V
Protection degree	IP20
Pollution degree	3
Altitude	≤2000m
Ambient temperature	-20˚C~55˚C
Permissable relative humidity	≤50% at 40˚C(without condensation)
Storage temperature	-30˚C~70˚C
Wire size	1mm²~ 4mm²
Tightening torque	0.5Nm
Mounting	TH-35 Rail(EN60715)
Standard	EN/IEC60730-1, EN/IEC60730-2-7

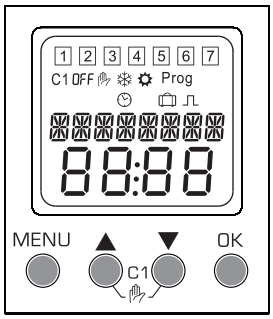
Maximum pilotable power

2300W	2300W	1000W	500W	500W

☐ Features

- Weekly time switch with pulse program
- 3 or 10 years power reserve(lithium battery).
- 52 programs
- Sealable cover of the front panel, easy setting by 4 keys.
- Automatic summer/winter time switchover
- LCD display
- Holiday mode.
- single channel
- Manual control by keys combination.
- Automatic transfer of weekdays
- 220-240VAC or 24-264VAC/DC input supply.
- 2 module Din-rail mounting

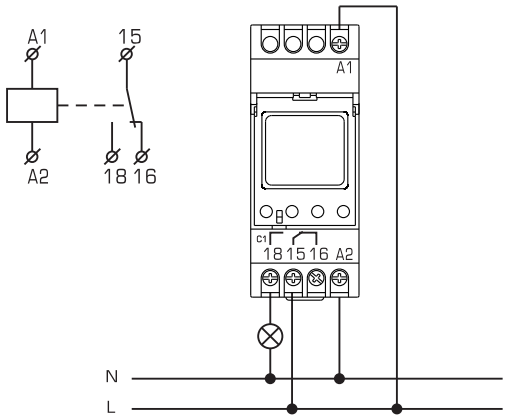
☐ Front-face panel



Symbol legend

1 2 3 4 5 6 7 — Days of the week Monday, Tuesday, ...Sunday
C1 — Channel 1
On OFF — Relay status
— Automatic mode
— Manual mode
— Pulse setting
— Holiday mode
— Winter time
— Summer time
Prog — Program setting

☐ Wiring diagram



Double channel digital weekly time switch RD-TPD2

☐ Description

RD-TPD2 digital time switch is used for realization of time functions in the control systems and automation. It operates according to the set time schedule planned by the user. Pulse program can be used for school or factory bell ringing.
There is an internal battery which can protect real time clock and all the settings when the electric power supply is off.

☐ Technical data

Supply terminals	A1-A2
Rated voltage	AC/DC24-264V
Rated frequency	50/60Hz,0
Power consumption	2W
Supply volltage tolerance	±10%
Number of channels	2
Number of programs	90
Programs	weekly, daily and pulse
Operating modes	manual, automatic, holiday
Summer/winter time	off, automatic changes
Time tolerance	≤1s/day at 25˚C
Power reserve	10 year
Data readout	LCD display
Number of contacts	2 C/O
Current of contacts	16A/250V AC1
Switching capacity	4000VA/AC1,384W/DC
Mechanical life	10^6
Electrical life	10^5
Rated insulation voltage	250V
Protection degree	IP20
Pollution degree	3
Altitude	≤2000m
Ambient temperature	-20˚C~55˚C
Permissable relative humidity	≤50% at 40˚C(without condensation)
Storage temperature	-30˚C~70˚C
Wire size	1mm²~ 4mm²
Tightening torque	0.5Nm
Mounting	TH-35 Rail(EN60715)
Standard	EN/IEC60730-1, EN/IEC60730-2-7

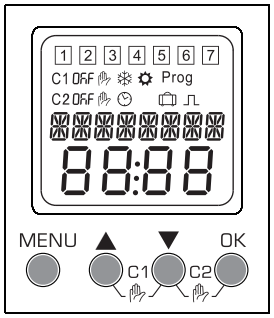
Maximum pilotable power

2300W	2300W	1000W	500W	500W

☐ Features

- Digital time switch with weekly program
- 10 year power reserve(lithium battery).
- 90 programs
- Sealable cover of the front panel, easy setting by 4 keys.
- Automatic summer/winter time switchover
- Back-lighted LCD display
- Holiday mode.
- Double channels (each channel can be assigned an individual program)
- Manual control by keys combination.
- Automatic transfer of weekdays
- 24-264V AC/DC input supply.
- 2 module Din-rail mounting

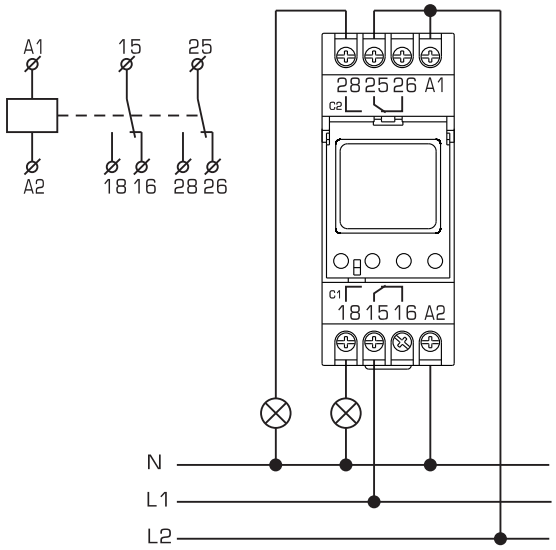
☐ Front-face panel



Symbol legend

1 2 3 4 5 6 7 — Days of the week Monday, Tuesday, ...Sunday
C1 — Channel 1
C2 — Channel 2
On OFF — Relay status
— Automatic mode
— Manual mode
— Holiday mode
— Winter time
— Summer time
Prog — Program setting
— Pulse setting

☐ Wiring diagram



Single channel astronomical time switch RD-TPA1

☐ Description

RD-TPA1 series astronomical time switch is for realization of time functions in the systems of automatics and steering. It will calculate the sunrise and sunset according to the geographic position and time zone. Night break program can be used to turn off the output at night.
There is an internal battery which can protect real time clock and all the settings when the electric power supply is off.

☐ Technical data

Supply terminals	A1-A2
Rated voltage	AC 220-240V or AC/DC 24-264V
Rated frequency	50/60Hz, 0
Power consumption	1W
Supply volltage tolerance	±10%
Number of channels	1
Program	astronomical
Mode of work	manual, automatic, holiday,
Summer/winter time	off, automatic changeover
Time tolerance	≤1s/day at 25°C
Power reserve	3 year or 10 year
Data readout	LCD display
Number of contacts	1 C/O
Current of contacts	16A/250V AC1
Switching capacity	4000VA/AC, 384W/DC
Mechanical life	10^6
Electrical life	10^5
Rated insulation voltage	250V
Protection degree	IP20
Pollution degree	3
Altitude	≤2000m
Ambient temperature	-30°C~55°C
Permissable relative humidity	≤50% at 40°C(without condensation)
Storage temperature	-35°C~70°C
Wire size	1mm²~ 4mm²
Tightening torque	0.5Nm
Mounting	TH-35 Rail(EN60715)
Standard	EN/IEC60730-1, EN/IEC60730-2-7

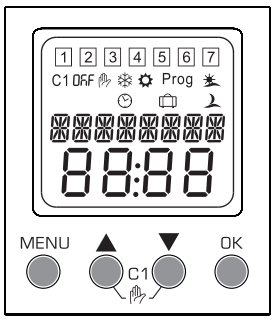
Maximum pilotable power

2300W	2300W	1000W	500W	500W

☐ Features

- Digital time switch with astronomical program
- 3 year or 10 year power reserve(lithium battery).
- Sealable cover of the front panel, easy setting by 4 keys.
- Automatic summer/winter time switchover
- LCD display
- Holiday mode.
- Single channel
- Automatic transfer of weekdays
- 220-240VAC or 24-264VAC/DC input supply.
- 2 module Din-rail mounting

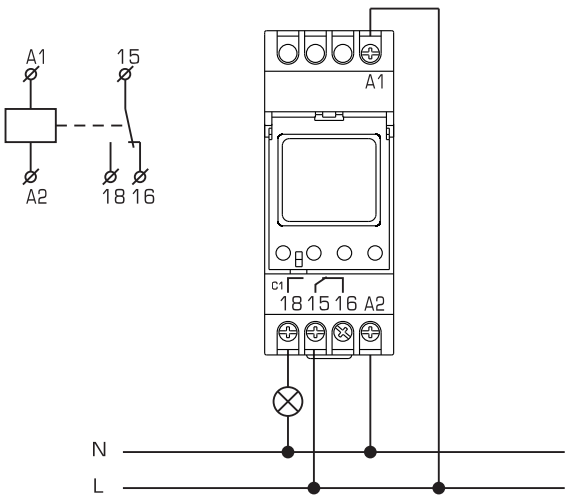
☐ Front-face panel



Symbol legend

1 2 3 4 5 6 7 — Days of the week Monday, Tuesday, …Sunday
C1 — Channel 1
On OFF — Relay status: On Activate; OFF Deactivate
— Automatic mode
— Manual mode
— Holiday mode
— Sunrise
— Sunset
— Winter time
— Summer time
Prog — Program setting

☐ Wiring diagram



Double channel astronomical time switch RD-TPA2

Features

- Digital time switch with astronomical program
- 10 year power reserve(lithium battery).
- Sealable cover of the front panel, easy setting by 4 keys.
- Automatic summer/winter time switchover
- Back-lighted LCD display
- Holiday mode.
- 2 channels version(each channel can be assigned an individual program)
- Automatic transfer of weekdays
- 24-264V AC/DC input supply.
- 2 module Din-rail mounting

Description

RD-TPA2 astronomical time switch is for realization of time functions in the systems of automatics and steering. It will calculate the sunrise and sunset according to the geographic position and time zone. Night break program can be used to turn off the output at night.
There is an internal battery which can protect real time clock and all the settings when the electric power supply is off.

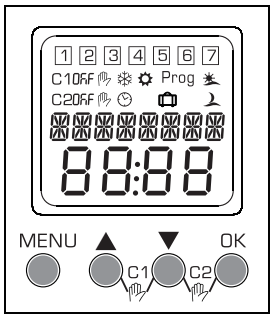
Technical data

Supply terminals	A1-A2
Rated voltage	AC/DC 24-264V
Rated frequency	50/60Hz, 0
Power consumption	2W
Supply volltage tolerance	±10%
Number of channels	2
Program	astronomical
Mode of work	manual, automatic, holiday,
Summer/winter time	off, automatic changeover
Time tolerance	≤1s/day at 20˚C
Power reserve	10 year
Data readout	LCD display, with back light
Number of contacts	2 C/O
Current of contacts	16A/250V AC1
Switching capacity	4000VA/AC, 384W/DC
Mechanical life	10^6
Electrical life	10^5
Rated insulation voltage	250V
Protection degree	IP20
Pollution degree	3
Altitude	≤2000m
Ambient temperature	-30˚C~55˚C
Permissable relative humidity	≤50% at 40˚C(without condensation)
Storage temperature	-30˚C~70˚C
Wire size	1mm²~ 4mm²
Tightening torque	0.5Nm
Mounting	TH-35 Rail(EN60715)
Standard	EN/IEC60730-1, EN/IEC60730-2-7

Maximum pilotable power

2300W	2300W	1000W	500W	500W

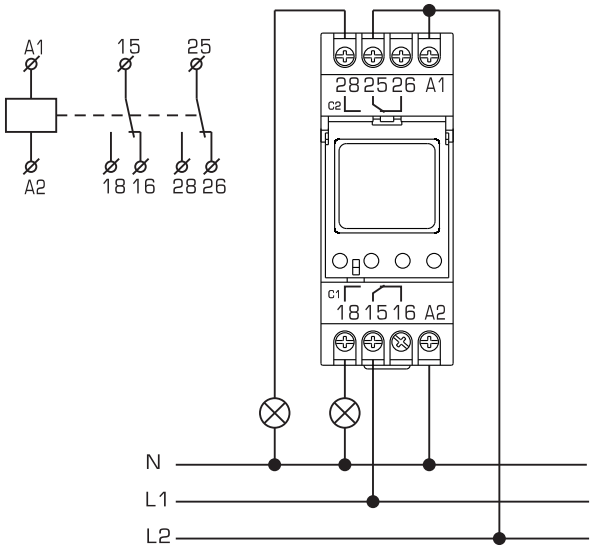
Front-face panel



Symbol legend

1 2 3 4 5 6 7 — Days of the week Monday, Tuesday, …Sunday
C1 — Channel 1
C2 — Channel 2
On OFF — Relay status
— Automatic mode
— Manual mode
— Holiday mode
— Sunrise
— Sunset
— Winter time
— Summer time
Prog — Program setting

Wiring diagram



Single channel multifunction time switch RD-TPM1

☐ Description

RD-TPM1 series multifunction time switch is for realization of time functions in the systems of automatics and steering. It calculates the sunrise and sunset time automatically according to the set geographic position and time zone, without the use of a photocell sensor.
There is an internal battery which can protect real time clock and all the settings when the electric power supply is off.

☐ Technical data

Supply terminals	A1-A2
Rated voltage	AC 220-240V or AC/DC 24-264V
Rated frequency	50/60Hz, 0
Power consumption	1W
Supply voltage tolerance	±10%
Number of channels	1
Number of programs	40
Program	weekly, annual and astronomical
Mode of work	manual, automatic, holiday, random
Summer/winter time	off, automatic changeover
Time tolerance	≤1s/day at 20°C
Power reserve	3 year or 10 year
Data readout	LCD display
Number of contacts	1 C/O
Current of contacts	16A/250V AC1
Switching capacity	4000VA/AC, 384W/DC
Mechanical life	10^6
Electrical life	10^5
Rated insulation voltage	250V
Protection degree	IP20
Pollution degree	3
Altitude	≤2000m
Ambient temperature	-20°C~55°C
Permissable relative humidity	≤50% at 40°C(without condensation)
Storage temperature	-30°C~70°C
Wire size	1mm²~ 4mm²
Tightening torque	0.5Nm
Mounting	TH-35 Rail(EN60715)
Standard	EN/IEC60730-1, EN/IEC60730-2-7

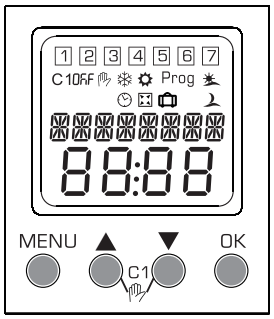
Maximum pilotable power

2300W	2300W	1000W	500W	500W

☐ Features

- Astronomical and annual programs。
- 3 year 10 year power reserve(lithium battery).
- 40 programs
- Sealable cover of the front panel, easy setting by 4 keys.
- Automatic summer/winter time switcheover
- Back-lighted LCD display(can be turned off)
- Holiday mode.
- Random mode
- Single channel
- Automatic transfer of weekdays
- 24-264V AC/DC input supply.
- 2 module Din-rail mounting

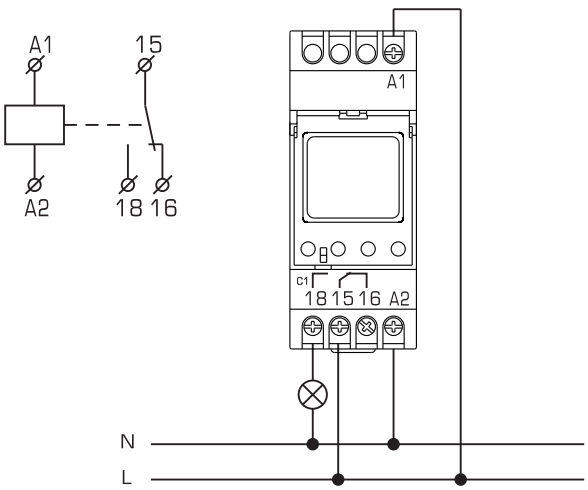
☐ Front-face panel



Symbol legend

1 2 3 4 5 6 7 — Days of the week Monday, Tuesday, …Sunday
C1 — Channel 1
On OFF — Relay status
— Automatic mode
— Manual mode
— Holiday mode
— Random mode
— Sunrise
— Sunset
— Winter time
— Summer time
Prog — Program setting

☐ Wiring diagram



Double channel multifunction time switch RD-TPM2

Description

RD-TPM2 multifunction time switch is for realization of time functions in the systems of automatics and steering. It calculates the sunrise and sunset time automatically according to the set geographic position and time zone, without the use of a photocell sensor.
There is an internal battery which can protect real time clock and all the settings when the electric power supply is off.

Technical data

Supply terminals	A1-A2
Rated voltage	AC/DC 24-264V
Rated frequency	50/60Hz, 0
Power consumption	2W
Supply voltage tolerance	±10%
Number of channels	2
Number of programs	80
Program	weekly, annual, astronomical
Mode of work	manual, automatic, holiday, random
Summer/winter time	off, automatic changeover
Time tolerance	≤1s/day at 20°C
Power reserve	10 year
Data readout	LCD display, with back light
Number of contacts	2 C/O
Current of contacts	16A/250V AC1
Switching capacity	4000VA/AC, 384W/DC
Mechanical life	10^6
Electrical life	10^5
Rated insulation voltage	250V
Protection degree	IP20
Pollution degree	3
Altitude	≤2000m
Ambient temperature	-20°C~55°C
Permissable relative humidity	≤50% at 40°C(without condensation)
Storage temperature	-30°C~70°C
Wire size	1mm²~ 4mm²
Tightening torque	0.5Nm
Mounting	TH-35 Rail(EN60715)
Standard	EN/IEC60730-1, EN/IEC60730-2-7

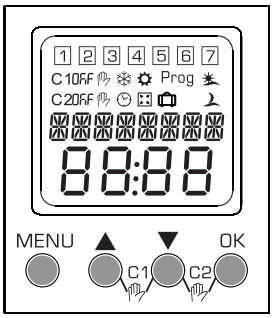
Maximum pilotable power

2300W	2300W	1000W	500W	500W

Features

- Astronomical and annual programs
- 10 year power reserve(lithium battery)
- 80 programs
- Sealable cover of the front panel, easy setting by 4 keys.
- Automatic summer/winter time switchover
- Back-lighted LCD display(can be turned off)
- Holiday mode.
- Random mode
- 2 channels (each channel can be assigned an individual program)
- Automatic transfer of weekdays
- 24-264V AC/DC input supply.
- 2 module Din-rail mounting

Front-face panel

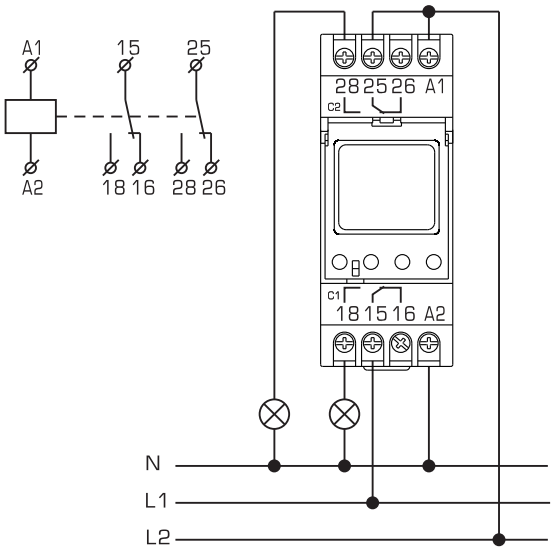


Symbol legend

1 2 3 4 5 6 7 — Days of the week Monday, Tuesday, …Sunday

C1 — Channel 1
C2 — Channel 2
On OFF — Relay status
— Automatic mode
— Manual mode
— Holiday mode
— Random mode
— Sunrise
— Sunset
— Winter time
— Summer time
Prog — Program setting

Wiring diagram



Features

- Microcontroller based
- Temperature and hysteresis setting by knobs
- External NTC probe IP65
- Temperature control range -5˚C~40˚C
- Output contact 1C/0-16A/250V
- LED indication for power supply and relay state
- AC/DC24-240V wide input range
- 2 module Din-rail mounting

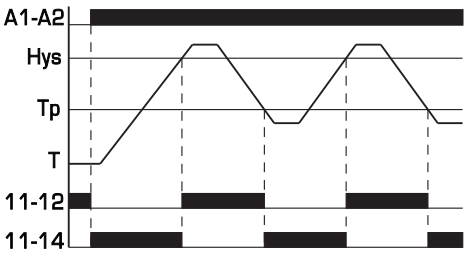
Technical data

Supply terminals	A1,A2
Supply voltage	AC/DC 24-240V
Rated frequency	50/60Hz
Power consumption	1.5W
Measuring terminals	T1,T2
Temperature range	-5~40˚C
Hysteresis	-0.5~3˚C
Output contacts	1C/0
Current rating	16A/250V AC1
Switching capacity	4000VA/AC1, 300W/DC
Protection degree	IP20
Pollution degree	3
Electrical life	10^5
Mechanical life	10^6
Altitude	≤2000m
Ambient temperature	-20˚C~+55˚C
Humidity	≤50% @40˚C(without condensation)
Storage temperature	-30˚C~+70˚C
Wire size	0.5mm²~2.5mm²
Torque	0.5Nm
Mounting	TH-35 Rail

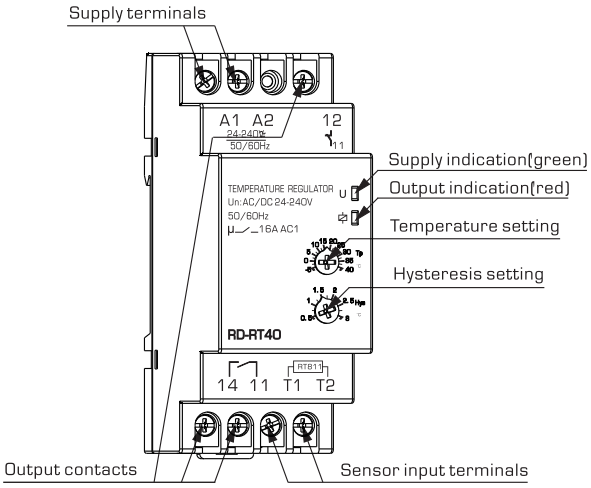
Temperature sensor

Model	RT811
Measure element	NTC
Sensor dimensions	Φ6mmx50mm
Sensor material	Stainless steel
Cable size and length	2x0.5mm²/2.5m
Cable material	High temperature PVC

Function diagram

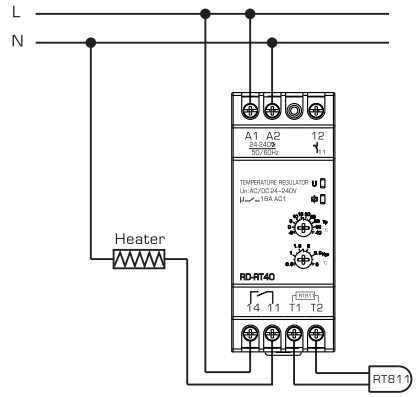


Operating instruction

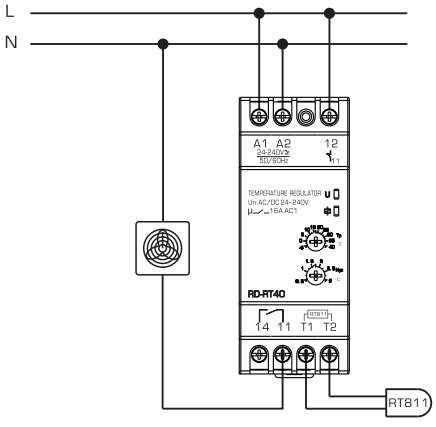


Wiring diagrams

● Heating



● Cooling



Temperature regulator RD-RTS130

☐ Features

- Microcontroller based
- Heating/cooling operating modes selectable
- LCD display operating modes, set and operating temperature
- Temperature measurement range -25˚C~130˚C
- Alarm function
- Auto-reset
- Easy to set with keys
- AC/DC 24-240V wide input range
- 2 module Din-rail mounting

☐ Technical data

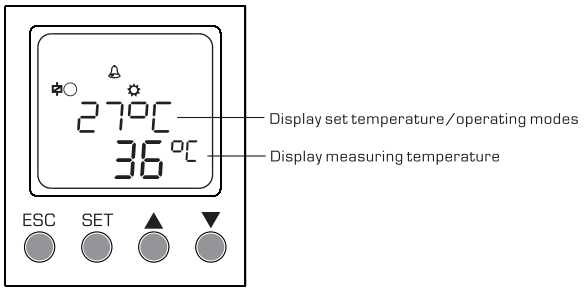
Supply terminals	A1,A2
Supply voltage	AC/DC 24-240V
Rated frequency	50/60Hz
Power consumption	1.5W
Measuring terminals	T1,T2
Alarm terminals	21, 24
Output terminals	11, 14
Temperature range	-25~130˚C
Hysteresis	1~30˚C
Correction range	-9~9˚C
Setting step value	1˚C
Display	LCD with backlight
Output contact	1NO
Current rating	16A/250V AC1
Switching capacity	4000VA/AC1, 300W/DC
Alarm current rating	2A/250V AC1
Protection degree	IP20
Pollution degree	3
Electrical life	10^5
Mechanical life	10^6
Altitude	≤2000m
Ambient temperature	-20˚C~+55˚C
Humidity	≤50% @40˚C(without condensation)
Storage temperature	-30˚C~+70˚C
Wire size	0.5mm²~1mm²
Torque	0.5Nm
Mounting	TH-35 Rail

Temperature sensor

Model	RT801
Measure element	KTY81-210
Sensor dimensions	Φ6mmx50mm
Sensor material	Stainless steel
Cable size and length	2x0.3mm²/2.5m
Cable material	Silicone

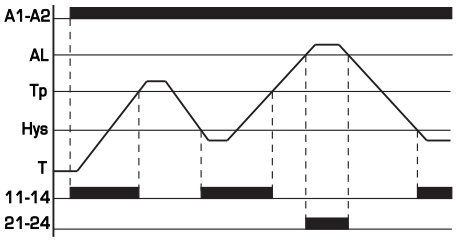
☐ Operating instruction

- Display

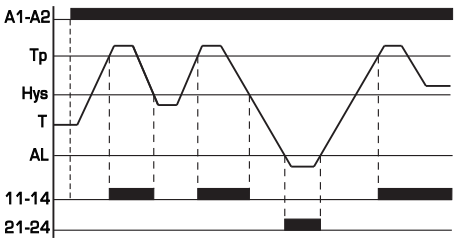


☐ Function diagrams

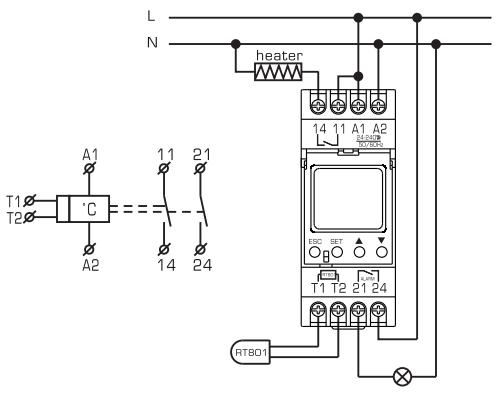
- Heating mode



- Cooling mode



☐ Wiring diagram



Voltage protector RM-MV

☐ Features

- Microcontroller based
- 3 digit display for operating voltage value
- Protect electrical device against overvoltage and undervoltage
- Reset/start delay adjustable(5~600s)
- Voltage measurement accuracy ≤1%
- Parameters setting by keys
- LEDs indication for overvoltage and undervoltage faults
- 3 Module, DIN Rail mounting

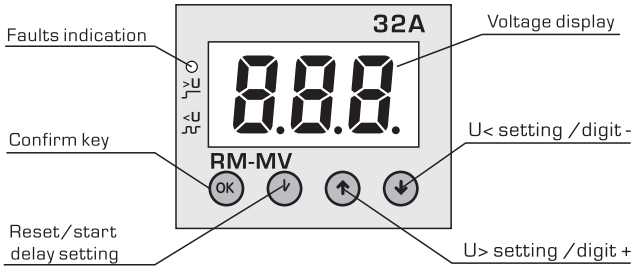
☐ Technical data

Rated voltage	AC 220V
Operation voltage range	AC 50V~450V
Rated frequency	50/60Hz
Overvoltage(>U) setting range	220~300V
Undervoltage(U<) setting range	120~210V
Hysteresis	2%
>U trip delay	0.5s
<U trip delay	≥120V: 0.5s ,<120V: <0.1s
Reset/start delay	5s~600s
Voltage measurement accuracy	≤1%(over the whole range)
Rated insulation voltage	400V
Output contact	1NO
Electrical life	10^5
Mechanical life	10^6
Protection degree	IP20
Pollution degree	3
Altitude	≤2000m
Operating temperature	-5°C~50°C
Humidity	≤50% at 40°C(without condensation)
Storage temperature	-25°C~55°C

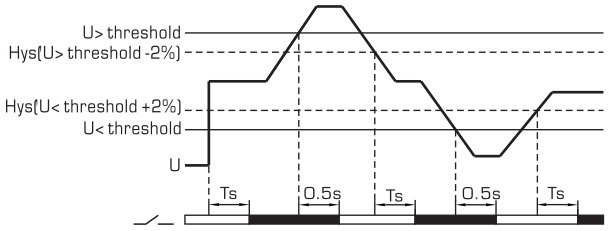
Technical parameter	Setting range	Step	Factory setting
Overvoltage trip value	220V~300V	1V	250V
Undervoltage trip value	120V~210V	1V	170V
Reset/start delay	5s~600s	1s	15s

Current specification	25A	32A	40A	50A	63A
Rated operating current(In,A)	25	32	40	50	63
Maximum operating current **Imax** (A, within 10min)	30	40	50	60	80
Max. power of load(kW)	5.5	7	8.8	11	13.9
Maximum wire size(mm^2)	6	8	10	16	16

☐ Front panel

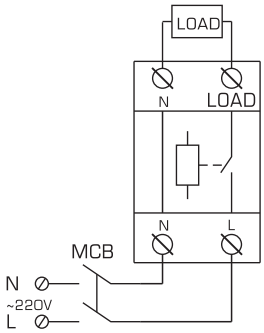


☐ Function digram

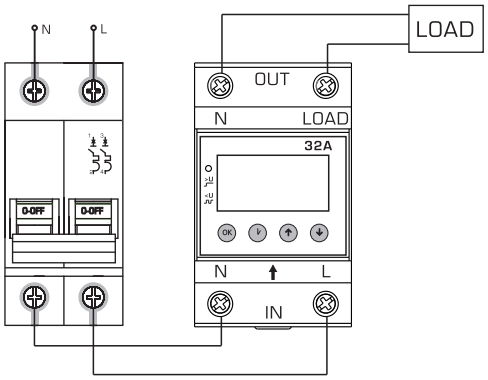


Ts: reset/start delay

☐ Symbol



☐ Wiring diagram



- Rated operating current of circuit breaker is 75% maximum current of the relay Ie=0.75x Imax

Voltage and current protector RM-MVA

☐ Features

- Microcontroller based
- Double 3 digit display for operating voltage value
- Protect electrical device against overvoltage and undervoltage
- Reset/start delay adjustable(5~600s)
- Voltage measurement accuracy ≤1%
- Parameters setting by keys
- LEDs indication for overvoltage and undervoltage faults
- 3 Module, DIN Rail mounting

☐ Technical data

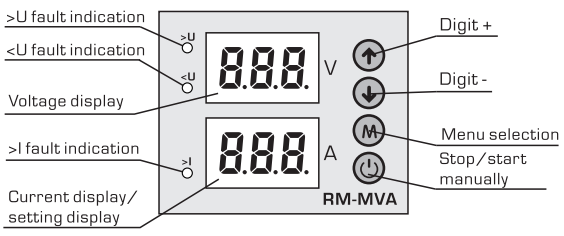
Rated supply voltage	AC 220V
Operation voltage range	AC 50V~450V
Rated frequency	50/60Hz
Overvoltage(U>) setting range	220~300V
Undervoltage(U<) setting range	120~210V
Hysteresis	2%
Reset/start delay	Ts: 5s~600s
Overcurrent faults trip delay range	Ta: 5s~600s
Overvoltage(U>) trip delay	<0.5s
Undervoltage(U<) trip delay	≥120V:0.5s ,<120V: 0.1s
Overcurrent(I>) trip delay	In<Ir *<Imax: Ta; Ir *≥Imax: ≤0. 1s
Voltage measurement accuracy	≤1%(over the whole range)
Rated insulation voltage	400V
Output contact	1NO
Electrical life	10^5
Mechanical life	10^6
Protection degree	IP20
Pollution degree	3
Altitude	≤2000m
Operating temperature	-5°C~40°C

* Operating current value

Technical parameter	Setting range	Step	Factory setting
Overvoltage trip value	220V~300V	1V	250V
Undervoltage trip value	120V~210V	1V	170V
Reset/start delay	5s~600s	1s	15s
Overcurrent faults trip delay	5s~600s	1s	90s

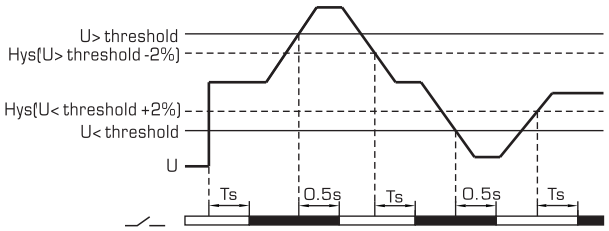
Current specification	25A	32A	40A	50A	63A
Rated operation current(**In**, A)	1-25	1-32	16-40	16-50	16-63
Maximum operating current **Imax** (A, within 10min)	32	40	50	60	80
Max. power of load(kW)	5.5	7	8.8	11	13.9
Maximum wire size(mm²)	6	8	10	16	16

☐ Front panel

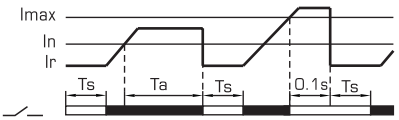


☐ Function diagrams

- Overvoltage and undervoltage

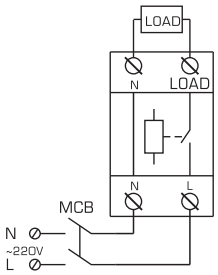


- Overcurrent

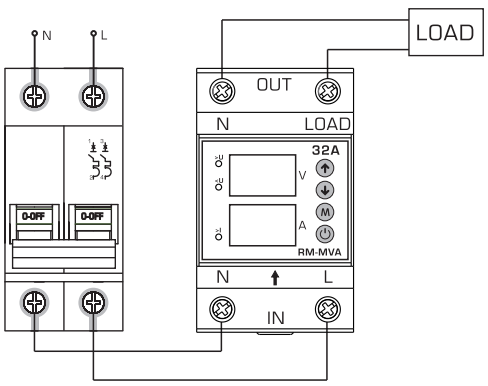


Ts: Reset/start delay
Ta: Overcurrent faults trip delay

☐ Symbol



☐ Wiring diagram



- Rated operating current of circuit breaker is 75% maximum current of the relay Ie=0.75x Imax

Voltage protector RD-MVL

☐ Features

- Microcontroller based
- 3 digit display for operating voltage value
- Protect electrical device against overvoltage and undervoltage
- Reset/start delay adjustable(5~600s)
- Voltage measurement accuracy 1%
- Parameters setting by keys
- LEDs indication for overvoltage and undervoltage faults
- 2 Module DIN Rail mounting

☐ Technical data

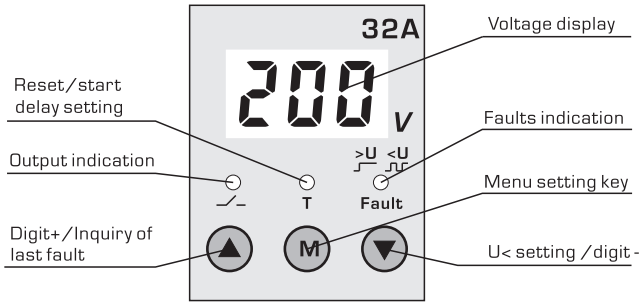
Rated supply voltage	AC 220V
Operation voltage range	AC 80V~400V
Rated frequency	50/60Hz
Overvoltage(>U) setting range	220~280V
Undervoltage(<U) setting range	140~210V
Hysteresis	2%
>U and <U trip delay	0.5s
Reset/start delay	5s~600s
Voltage measurement accuracy	≤1%(over the whole range)
Rated insulation voltage	400V
Output contact	1NO
Electrical life	10^5
Mechanical life	10^6
Protection degree	IP20
Pollution degree	3
Altitude	≤2000m
Operating temperature	-20°C~55°C
Humidity	≤50% at 40°C (without condensation)
Storage temperature	-30°C~70°C

● Default setting

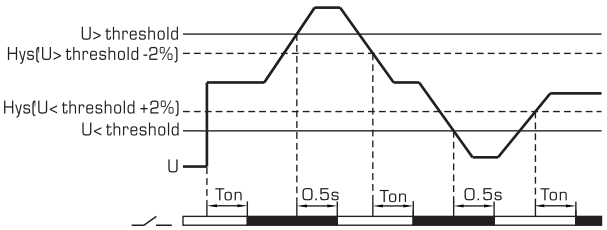
Technical parameter	Setting range	Step	Factory setting
Overvoltage trip value	220V~280V	1V	270V
Undervoltage trip value	140V~210V	1V	170V
Reset/start delay	5s~600s	1s	5s

Current specification	15A	25A	32A	50A	63A
Rated operating current(In,A)	15	25	32	50	63
Maximum operating current **Imax** (A, within 10min)	25	30	40	60	80
Max. power of load(kW)	3.6	5.5	7	11	13.9

☐ Front panel

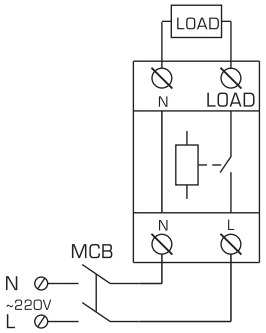


☐ Function digram

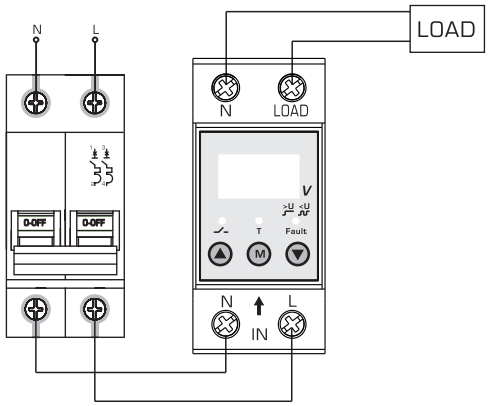


Ton: reset/start delay

☐ Symbol



☐ Wiring diagram



● Rated operating current of circuit breaker is 75% maximum current of the relay Ie=0.75x Imax

Voltage and current protector RD-MVA

☐ Features

- Microcontroller based
- Double 3 digit display for operating voltage value
- Protect electrical device against overvoltage and undervoltage
- Reset/start delay adjustable(5~600s)
- Voltage measurement accuracy ≤1%
- Parameters setting by keys
- LEDs indication for overvoltage and undervoltage faults
- 3 Module, DIN Rail mounting

☐ Technical data

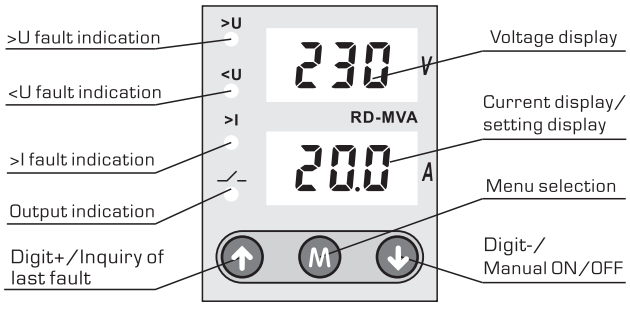
Rated supply voltage	AC 220V
Operation voltage range	AC 100V~400V
Rated frequency	50/60Hz
Overvoltage(U>) setting range	220~280V
Undervoltage(U<) setting range	140~210V
Hysteresis	>U:5V; <U:3V
Reset/start delay	Ts: 5s~600s
Overcurrent faults trip delay range	Ta: 5s~600s
Overvoltage(U>) trip delay	<0.5s
Undervoltage(U<) trip delay	≥120V:0.5s ,<120V: 0.1s
Overcurrent(I>) trip delay	In<Ir *<Imax: Ta; Ir *≥Imax: ≤0. 1s
Voltage measurement accuracy	2%(over the whole range)
Rated insulation voltage	400V
Output contact	1NO
Electrical life	10^5
Mechanical life	10^6
Protection degree	IP20
Pollution degree	3
Altitude	≤2000m

* Operating current value

Technical parameter	Setting range	Step	Factory setting
Overvoltage trip value	220V~280V	1V	250V
Undervoltage trip value	140V~210V	1V	170V
Reset/start delay	5s~600s	1s	5s
Overcurrent faults trip delay	5s~600s	1s	90s

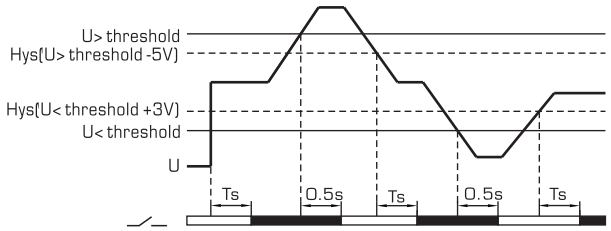
Current specification	25A	32A	40A	50A	63A
Rated operation current(**In**, A)	1-25	1-32	5-40	5-50	5-63
Maximum operating current **Imax** (A, within 10min)	32	40	50	60	80
Max. power of load(kW)	5.5	7	8.8	11	13.9
Maximum wire size(mm^2)	6	8	10	16	16

☐ Front panel

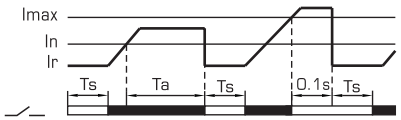


☐ Function diagrams

- Overvoltage and undervoltage

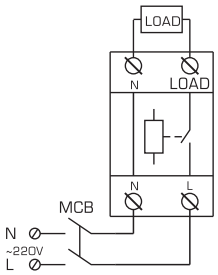


- Overcurrent

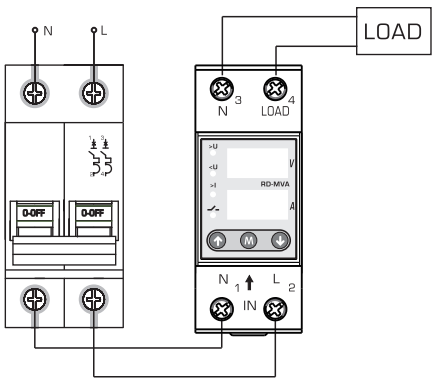


Ts: Reset/start delay
Ta: Overcurrent faults trip delay

☐ Symbol



☐ Wiring diagram



- Rated operating current of circuit breaker is 75% maximum current of the relay Ie=0.75x Imax

Three phase voltage protector RM-FV

Features

- Microcontroller based
- 3 digit display for operating voltage value
- Protect electrical device against overvoltage and undervoltage three phase asymmetry and incorrect phase sequence.
- Reset/start delay adjustable(5~600s)
- Parameters setting by keys
- LEDs indication for faults
- 3 Module, DIN Rail mounting

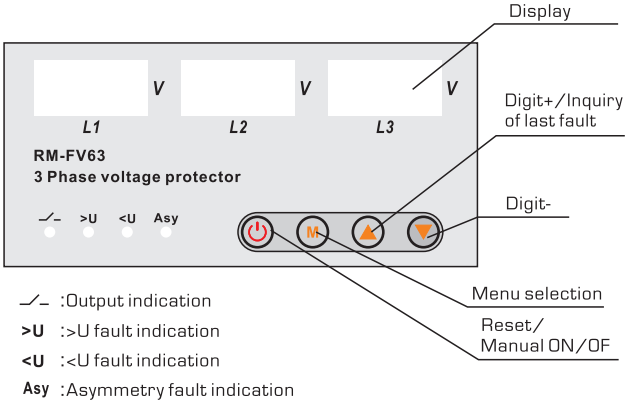
Technical data

Rated supply voltage	AC 220V
Operation voltage range	AC 50V~400V
Rated frequency	50/60Hz
Overvoltage(U>) setting range	220~300V
Undervoltage(U<) setting range	120~210V
Hysteresis	2%
Reset/start delay	Ts: 5s~600s
Phase sequence protection	ON-OFF
Auto-reset	ON-OFF
Overvoltage(U>) trip delay	<0.1s
Undervoltage(U<) trip delay	≥120V:0.5s ,<120V: 0.1s
Voltage measurement accuracy	1%(over the whole range)
Rated insulation voltage	400V
Output contact	1NO
Electrical life	10^5
Mechanical life	10^6
Protection degree	IP20

* Operating current value

Technical parameter	Setting range	Step	Factory setting
Overvoltage trip value	220V~300V	1V	250V
Undervoltage trip value	120V~210V	1V	170V
Reset/start delay	5s~600s	1s	5s
Asymmetry trip value	20V~99V	1V	50V
Phase sequence protection	ON-OFF		OFF
Auto-reset	ON-OFF		ON

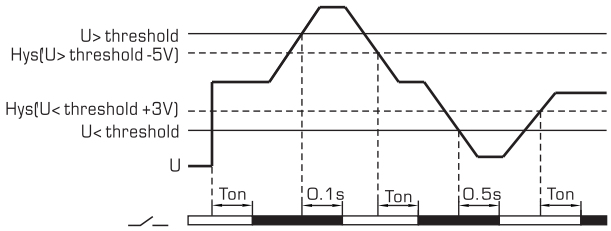
Front panel



⎍ :Output indication
>U :>U fault indication
<U :<U fault indication
Asy :Asymmetry fault indication

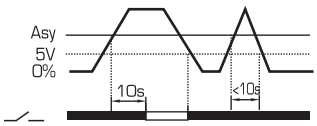
Function diagrams

- Overvoltage and undervoltage

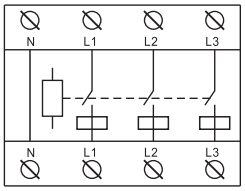


Ton: Reset/start delay

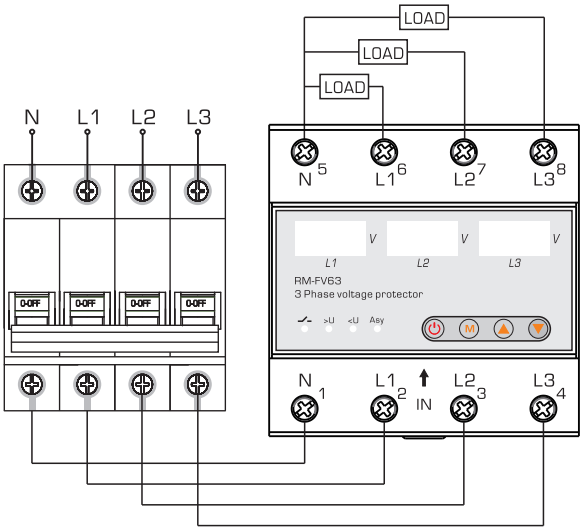
- Asymmetry



Symbol



Wiring diagram



Voltage and current protector RM-FVA

Features

- Microcontroller based
- Double 3 digit display for operating voltage value
- Protect electrical device against overvoltage and undervoltage
- Reset/start delay adjustable(5~600s)
- Voltage measurement accuracy ≤1%
- Parameters setting by keys
- LEDs indication for overvoltage and undervoltage faults
- 3 Module, DIN Rail mounting

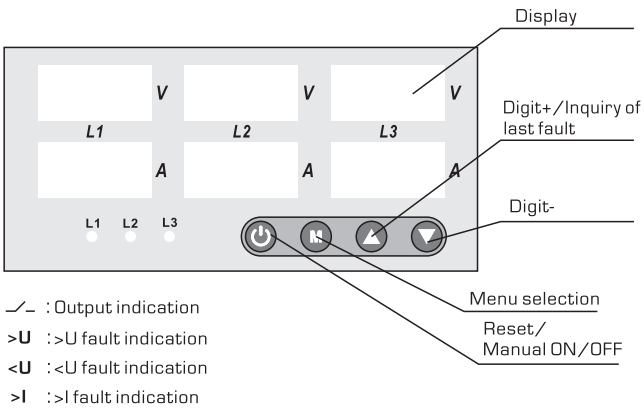
Technical data

Rated supply voltage	AC 220V
Operation voltage range	AC 50V~400V
Rated frequency	50/60Hz
Overvoltage(U>) setting range	220~300V
Undervoltage(U<) setting range	120~210V
Hysteresis	2%
Reset/start delay	Ts: 5s~600s
Overcurrent faults trip delay range	Ta: 5s~600s
Overvoltage(U>) trip delay	<0.1s
Undervoltage(U<) trip delay	≥120V:0.5s ,<120V: 0.1s
Overcurrent(I>) trip delay	In<Ir *<80A: Ta; Ir *≥Imax: ≤0.1s
Voltage measurement accuracy	1%(over the whole range)
Rated insulation voltage	400V
Output contact	1NO
Electrical life	10^5
Mechanical life	10^6
Protection degree	IP20

* Operating current value

Technical parameter	Setting range	Step	Factory setting
Overvoltage trip value	220V~300V	1V	250V
Undervoltage trip value	120V~210V	1V	170V
Reset/start delay	5s~600s	1s	5s
Overcurrent trip value	5A~63A	1A	63A
Overcurrent trip delay	5s~600s	1s	15s
Asymmetry trip value	20V~99V	1V	50V
Continuous overcurrent faults times	OFF-1~20	1	3
Phase sequence protection	ON-OFF		OFF

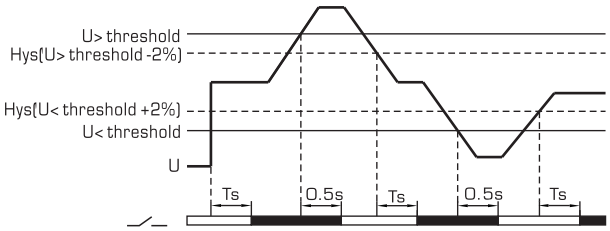
Front panel



⎍ : Output indication
>U : >U fault indication
<U : <U fault indication
>I : >I fault indication

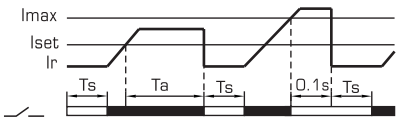
Function diagrams

- Overvoltage and undervoltage

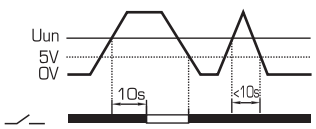


- Overcurrent

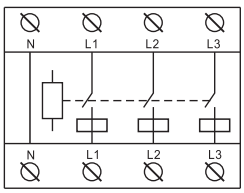
Ts: Reset/start delay
Ta: Overcurrent faults trip delay



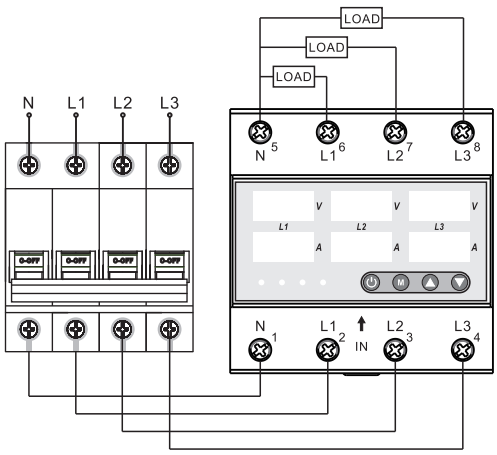
- Asymmetry



Symbol



Wiring diagram



Voltage protector KD230S

☐ Features

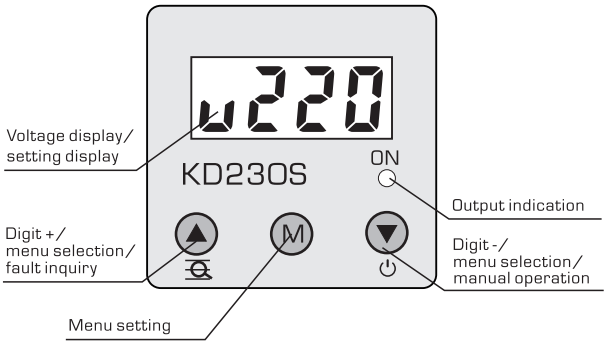
- Microcontroller based
- 4 digit display for operating voltage value
- Protection against overvoltage, undervoltage.
- Wide measurement range 100-400V
- Parameters setting by keys

☐ Technical data

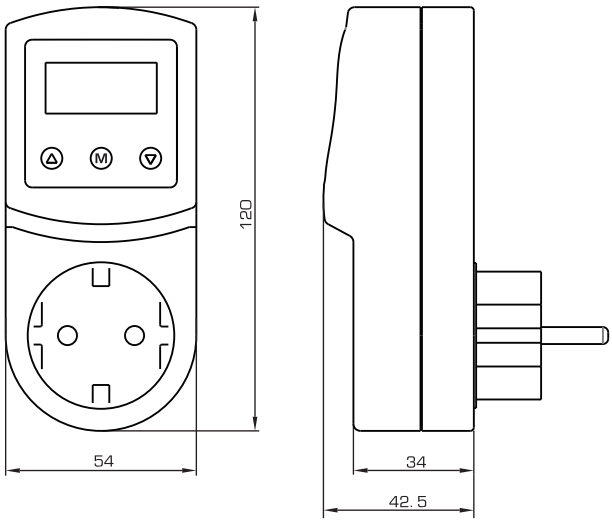
Rated supply voltage	AC 230V
Operation voltage range	AC 100V~400V
Rated frequency	50Hz
Overvoltage(U>) setting range	220~280V
Undervoltage(U<) setting range	160~210V
U> Hysteresis	5V
U< Hysteresis	3V
Reset/start delay	Ts: 5s~600s
Overvoltage(U>) trip delay	<285V:0. 5s; ≥285V:0.1s; ≥380V:0.02s
Undervoltage trip delay	0. 5s
Rated insulation voltage	250V
Maximum switching current	16A
Electrical life	10^5
Mechanical life	10^6
Protection degree	IP20
Pollution degree	3
Altitude	≤2000m
Operating temperature	-20°C~55°C
Humidity	≤50% at 40°C(without condensation)

Technical parameter	Setting range	Step	Factory setting
Overvoltage trip value	220V~280V	1V	250V
Undervoltage trip value	160V~210V	1V	170V
Reset/start delay	5s~600s	1s	10s

☐ Front panel



☐ Dimensions



Electronic circuit breaker CB1

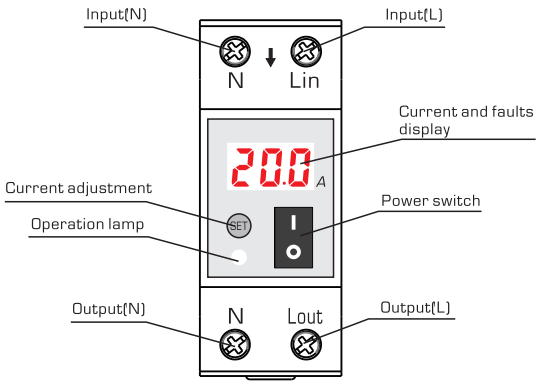
☐ Features

- Microcontroller based
- 3 digit display for operating current value
- Protect electrical device against over/under voltage and over current.
- Parameters setting by key
- LEDs indication for faults
- 2 Module DIN Rail mounting

☐ Technical data

Models	CB1-22	CB1-32	CB1-63
Rated current	2A-22A	5A-32A	5A-63A
Current adjustable step value	0.2A		
Rated supply voltage	AC 220V, 50Hz		
Operation voltage range	AC 100V~300V		
Overvoltage(U>) trip value	260V		
Undervoltage(U<) trip value	160V		
Start delay	5s		
Recovery time for faults	10s		
Overvoltage trip time	>260V:0.5s; >285V:0.1s; >380V:0.04s		
Undervoltage trip time	<160V:0.5s; <80V:0.1s		
Rated insulation voltage	400V		
Output contact	1NO		
Protection degree	IP20		
Altitude	≤2000m		
Operating temperature	-20℃~55℃		

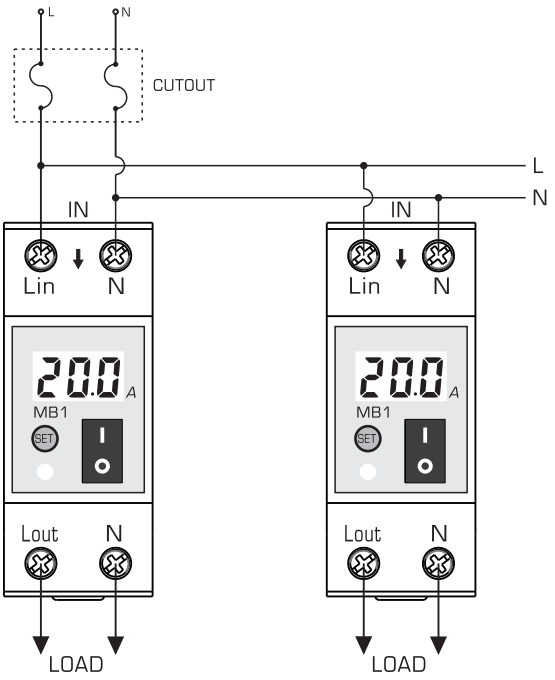
☐ Front panel



● Faults code

-U-	Overvoltage fault: input voltage is higher than 260V
_U_	Undervoltage fault: input voltage is lower than 160V
o-L	Overload fault: input current is lower than 1.1xIset
---	Short circuit fault: input current is higher than short circuit current value.
Err	Continuous faults: If three continuous overload or short circuit faults occured, the relay need to be reset with power switch after clear the faults.

☐ Wiring diagram



Electronic circuit breaker CB2

☐ Features

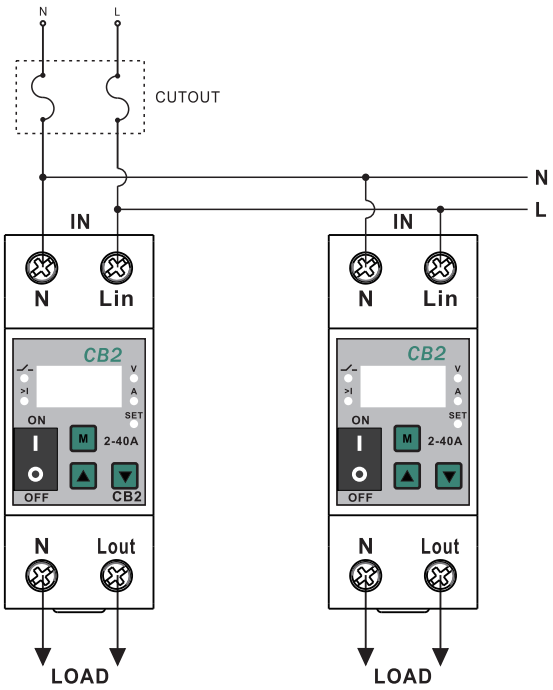
- Microcontroller based
- 3 digit display for operating current value
- Protect electrical device against over/under voltage, over current and short circuit.
- Parameters setting by key
- Password setting by users
- LEDs indication for faults
- 2 Module DIN Rail mounting

☐ Technical data

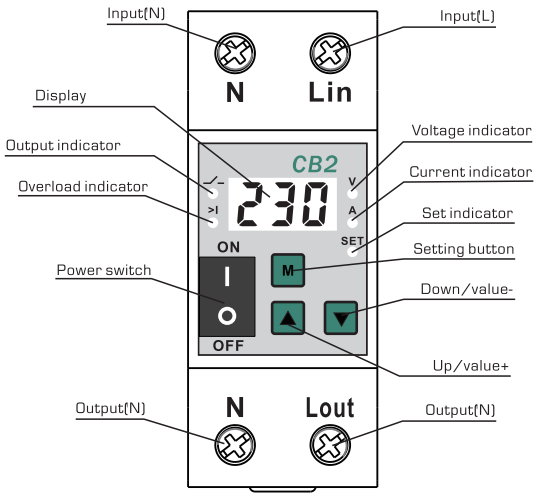
Models	CB2-22	CB2-32	CB2-63
Rated current	2A-22A	5A-32A	16A-63A
Rated supply voltage	AC 220V, 50Hz		
Operation voltage range	AC 100V~300V		
Overvoltage(U>) setting	220-280V		
Undervoltage(U<) setting	140-210V		
Start delay	3-100s		
Recovery time for faults	10s		
Overvoltage trip time	>260V:0.5s; >285V:0.1s; >380V:0.04s		
Undervoltage trip time	<160V:0.5s; <80V:0.1s		
Rated insulation voltage	400V		
Output contact	1NO		
Protection degree	IP20		
Altitude	≤2000m		
Operating temperature	-20℃~55℃		

Technical date		Setting range			Step	Factory setting
CUr	Current setting A	CB2-22	CB2-32	CB2-63	1	5
		2A-22A	5A-32A	16A-63A		
UrH	U> setting V	220-280			1	250
UrL	U< setting V	140-210			1	170
UPr	Voltage protection	on : The function is on oFF : The function is off				on
ton	Start delay s	5-100			1	5
PAS	Password setting	000-999				111

☐ Wiring diagram



☐ Front panel



Priority change relay of 2 motors RM-PCR1

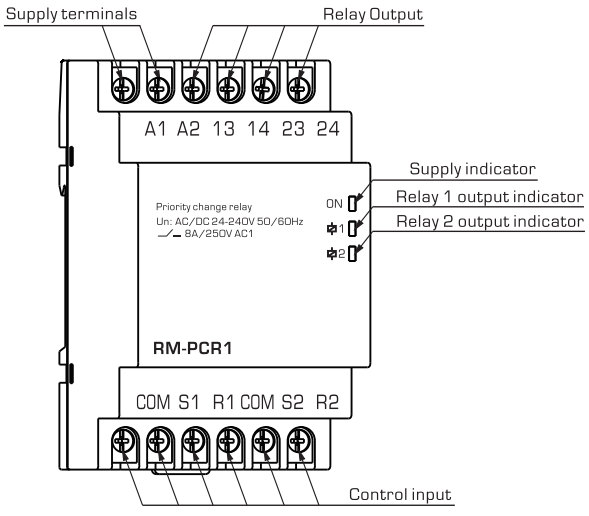
☐ Features

- Microcontroller based.
- Priority control for starting of 2 motor
- Standard 2wire control
- Possible 3 wire control
- LED indication for control state
- 3 Module, Din-rail mounting

☐ Technical data

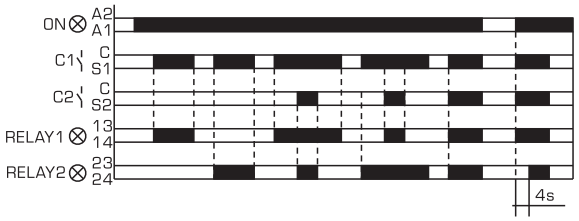
Supply terminals	A1,A2
Rated supply voltage	AC/DC 24-240V
Rated frequency	50/60Hz
Power consumption	1.5W max
Control input terminals	COM,S1,S2,R1,R2
Type of input	Negative
Input voltage	12V
Input current	1mA max
High input signal	>3.5V
Low input signal	<1.5V
Input delay	20ms
Control delay of second motor in case of simultaneity at power up	4s
Type of output	1NO
Maximum switching current	8A/250V AC-1
Pollution degree	3
Electrical life	10^5
Mechanical life	10^6
Altitude	≤2000m
Ambient temperature	-25°C~+50°C
Permissable relative humidity	≤50% at 40°C(without condensation)
Storage temperature	-25°C~+55°C
Conductor size	0.5mm²~2.5mm²
Torque	0.5Nm

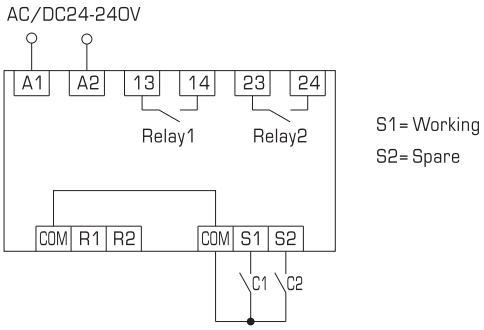
☐ Front-face panel



☐ Function and wiring diagram

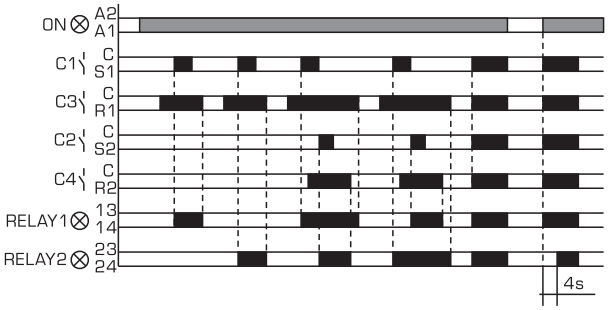
- Two wire control

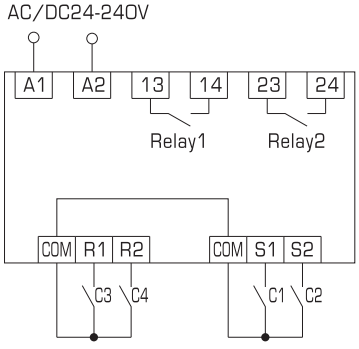




S1= Working
S2= Spare

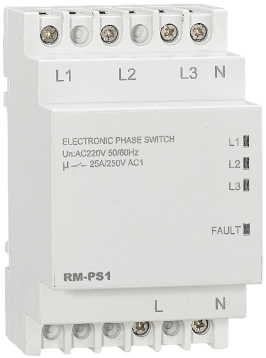
- Three wire control





S1= Start primary
R1= Stop primary
S2= Start standby
R2= Stop standby

Automatic phase switch RM-PS1



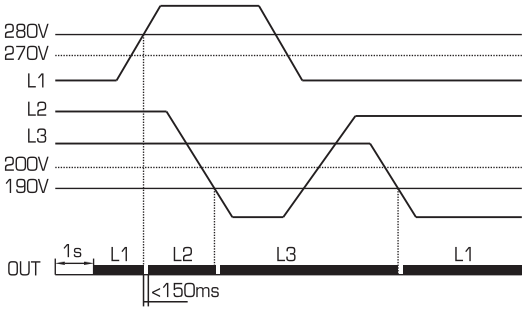
Features

- Microcontroller based.
- Switching time <150ms
- Maximum load 25A(160A/20ms)
- Over and under voltage protection
- LED indication for control state
- 3 Module, Din-rail mounting

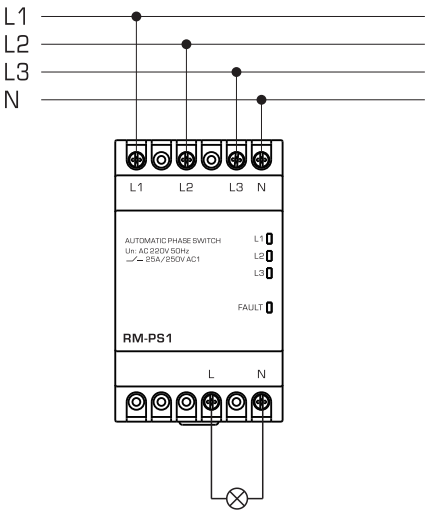
Technical data

Supply terminals	N,L1,L2,L3
Rated supply voltage	AC 3*220V(N-L1/L2/L3)
Operation voltage range	AC 50-400V
Rated frequency	50/60Hz
Umax setting range	280V
Umin setting range	190
Auto-reclosing delay(Ton)	1s
Prior phase	L1
Switching time	<150ms
Voltage hysteresis	10V
Voltage accuracy	<1%
Max operating phase voltage	400V
Transient withstand	450V
Maximum load current(AC-1)	25A(160A/20ms)
Pollution degree	3
Electrical life	10^5
Mechanical life	10^6
Altitude	≤2000m
Ambient temperature	-25°C~+50°C
Permissable relative humidity	≤50% at 40°C(without condensation)
Storage temperature	-25°C~+55°C
Conductor size	0.5mm²~2.5mm²
Torque	0.5Nm

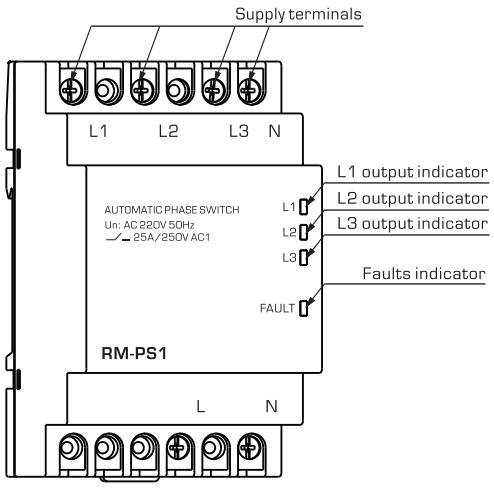
Function diagram



Wiring diagram



Front-face panel



Auto phase selector switch RM-PS3

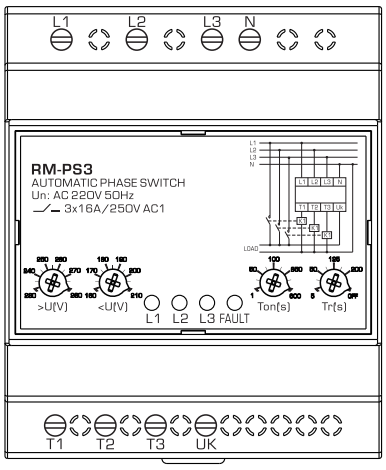
☐ Features

- Microcontroller based.
- Parameter setting by knobs
- With "Priority" phase
- Overvoltage and undervoltage
- LED indication for control state
- Din-rail mounting

☐ Technical data

Supply terminals	N,L1,L2,L3
Rated supply voltage	AC 3*220V(N-L1/L2/L3)
Operation voltage range	AC 50-400V
Rated frequency	50/60Hz
Umax setting range	230-280V
Umin setting range	160-210V
Auto-reclosing delay(Ton)	1-600s
Return delay to priority phase	5-200s/OFF
Switch delay to reserve phases	<0.2s
Voltage hysteresis	6V
Voltage accuracy	<1%
Max operating phase voltage	400V
Transient withstand	450V
Maximum switched current of output contacts	16A
Pollution degree	3
Electrical life	10^5
Mechanical life	10^6
Altitude	≤2000m
Ambient temperature	-25°C~+50°C
Permissable relative humidity	≤50% at 40°C(without condensation)
Storage temperature	-25°C~+55°C
Conductor size	0.5mm²~1mm²
Torque	0.5Nm

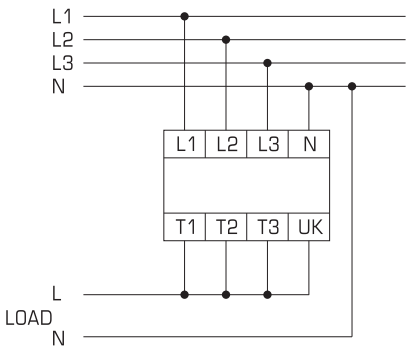
☐ Front-face panel



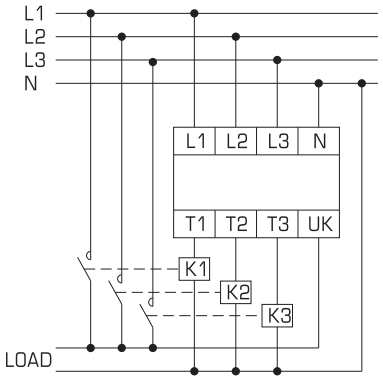
- N,L1,L2,L3: supply terminals.
- T1,T2,T3: Voltage output terminal
- UK: Voltage measurement terminal

☐ Wiring diagrams

- Current load is not more than 16A



- Current load is more than 16A



Auto phase selector switch RM-PS63

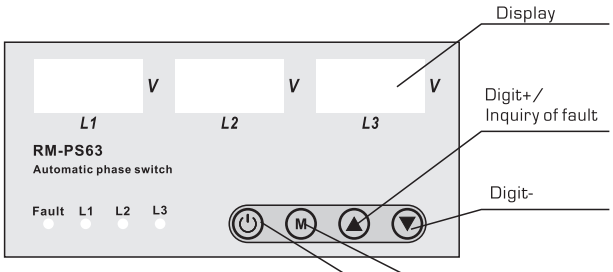
☐ Features

- Microcontroller based.
- Parameter setting by knobs
- With "Priority" phase
- Overvoltage and undervoltage protection
- LED indication for operating voltage.
- Din-rail mounting

☐ Technical data

Supply terminals	N,L1,L2,L3
Rated supply voltage	AC 3*220V(N-L1/L2/L3)
Rated frequency	50Hz
Umax setting range	220-300V
Umin setting range	120-210V
Auto-reclosing delay(Ton)	1-600s
Return delay to priority phase	5-200s/OFF
Switch delay to reserve phases	<0.2s
Voltage hysteresis	5V
Overvoltage trip delay	0.1s; ≥350V: 0.02s
Undervoltage trip delay	5s
Voltage accuracy	<1%
Max. operating phase voltage	400V
Rated operating current	63A
Max. operating current	80A
Pollution degree	3
Electrical life	10^5
Mechanical life	10^6
Altitude	≤2000m
Ambient temperature	-25°C~+50°C
Permissable relative humidity	≤50% at 40°C(without condensation)
Storage temperature	-25°C~+55°C
Conductor size	0.5mm²~1mm²

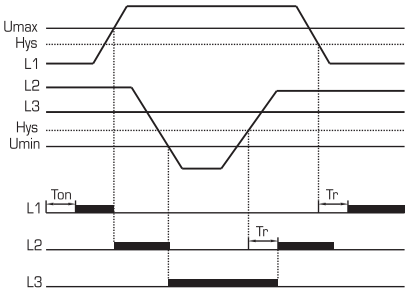
☐ Front-face panel



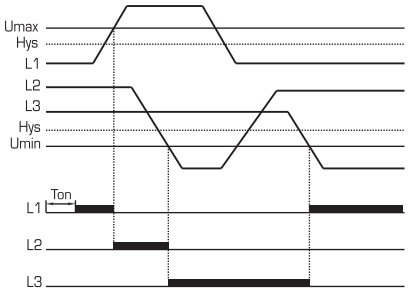
Fault: fault indication
L1: L1 output indication
L2: L2 output indication
L3: L3 output indication

☐ Function diagrams

● Tr set at 5-200s

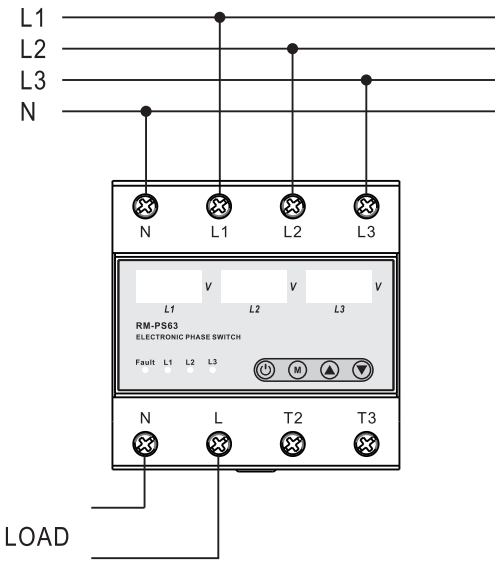


● Tr set at **OFF**



Ton: auto-reclosing time delay
Tr: delay to return to the priority phase

☐ Wiring diagrams



Single phase voltage monitoring relay RS-MV11/12/13

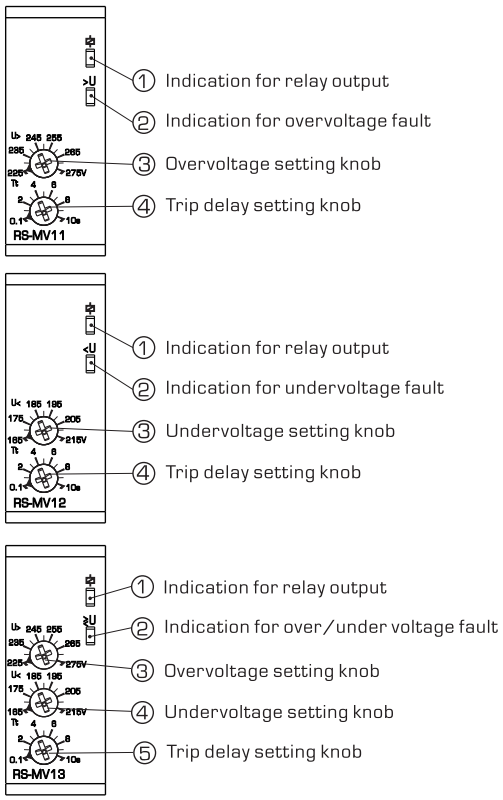
Features

- Microcontroller based
- Supply voltage monitoring(True RMS measurement)
- Voltage measurement error:<1%
- LED indication for control state
- Threshold voltage and trip delay setting by independent knobs
- Auto reset
- 1module Din rail mounting

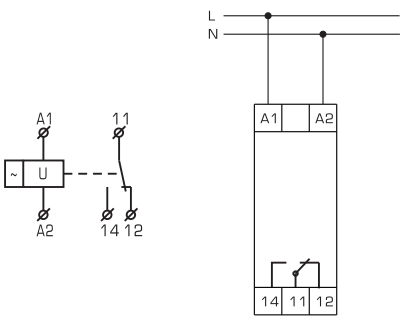
Technical data

Supply terminals	A1,A2
Rated supply voltage	AC220V
Rated frequency	50/60Hz
Voltage operation range	AC150-275V
U> threshold setting	225V~275V
U< threshold setting	165V~215V
Hysteresis	±3% of threshold setting value
Voltage measurement error	≤1%(over the whole range)
Trip delay	0.1~10s
Trip delay error	±5%+0.1s
Output contacts	11,12,14
Current rating	8A /AC1
Contacts capacity	AC-15: 2A
Type of output	1C/O
Rated insulation voltage	250V
Max.fuse ratings	RT36-00 5A
Protection degree	IP20
Pollution degree	3
Electrical life	10^5
Mechanical life	10^6
Altitude	≤2000m
Operating temperature	-25°C~+50°C
Humidity	≤50% at 40°C(without condensation)
Storage temperature	-25°C~55°C
Wire size	0.5mm²~1mm²

Front-face panel

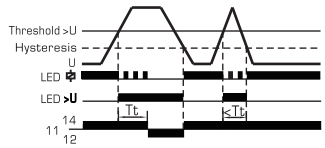


Wiring diagram

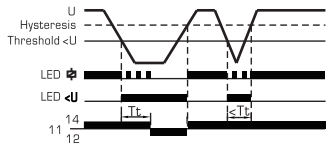


Function diagrams

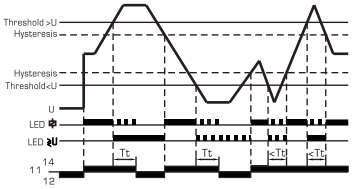
● RS-MV11



● RS-MV12



● RS-MV13



☐ Features

- Microcontroller based.
- True RMS measurement
- Parameters setting by knobs
- N phase failure protection for 3phase 4 wire
- 1C/O output-8A
- LED indication for supply and output state
- 1 module Din-rail mounting

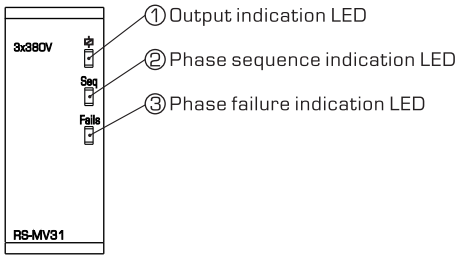
☐ Technical data

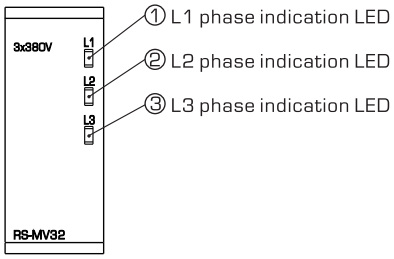
Modes	3phase 3wire	3phase 4wire
Supply terminals	L1,L2,L3	L1,L2,L3,N
Supply voltage	380V/400V/415V	220V/230V/240V
Operating voltage range	266V-540V	154V-312V
U> setting value	(105%-125%)xUn	
U< setting value	(75%-95%)xUn	
Asymmetry setting	adjustable: 5%~20%; fixed: 8%	
U> trip delay	adjustable: 0.1~10s; fixed: 2s	
U< trip delay	adjustable: 0.1~10s; fixed: 2s	
Asymmetry trip delay	adjustable: 0.1~10s; fixed: 2s	
Hysteresis	2% fixed	
Trip time for incorrect phase sequence and phase failure	<0.5s	
Delay error	±10%+0.1s	
Knob setting error	1% x scale value	
Rated insulation voltage	415V	
Output contacts	1C/O	
Current rating	8A/250V AC1	
Mechanical life	10^6	
Electrical life	10^5	
Protection degree	IP20	
Pollution degree	3	
Altitude	≤2000m	
Operating temperature	-20°C~55°C	
Permissable relative humidity	≤50% at 40°C(without condensation)	
Storage temperature	-30°C~70°C	
Wire size/Torque	0.5mm²~2.5mm²/0.5Nm	
Mounting	TH-35 Rail(EN60715)	

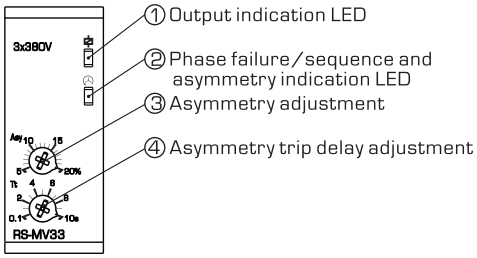
Models	U>	U<	Phase failure	Phase sequence	Asymmetry
RS-MV31(N)			●	●	
RS-MV32(N)			●	●	●
RS-MV33(N)			●	●	●
RS-MV34(N)	●	●	●		
RS-MV35(N)	●	●	●		
RS-MV36(N)	●	●	●	●	
RS-MV37(N)	●	●	●	●	●

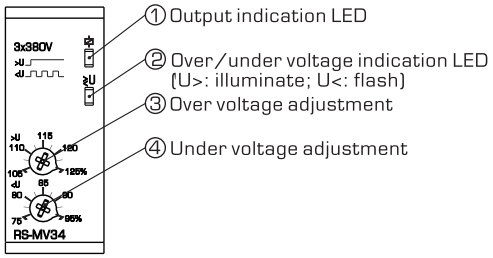
Models	Supply voltage (Un)	Note
RS-MV3□ /208	3x208	3phase 3wire
RS-MV3□ /220	3x220	3phase 3wire
RS-MV3□ /240	3x240	3phase 3wire
RS-MV3□ /380	3x380	3phase 3wire
RS-MV3□ /400	3x400	3phase 3wire
RS-MV3□ /415	3x415	3phase 3wire
RS-MV3□ N/220	3x380/220	3phase 4wire
RS-MV3□ N/230	3x400/230	3phase 4wire
RS-MV3□ N/240	3x415/240	3phase 4wire

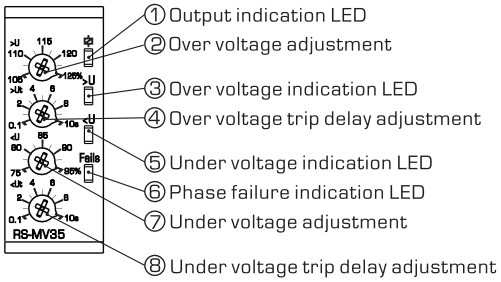
☐ Front-face panel

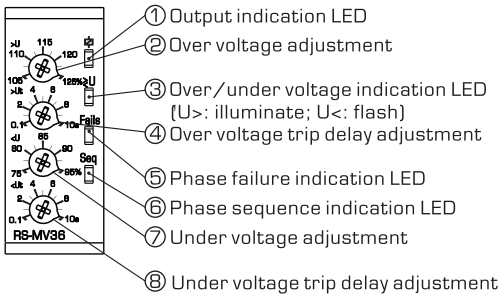


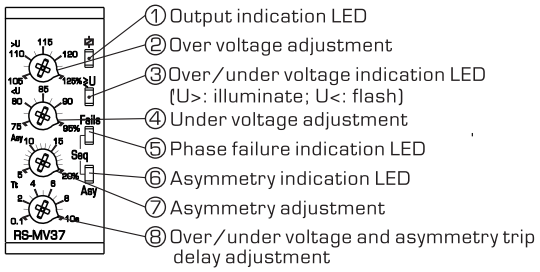


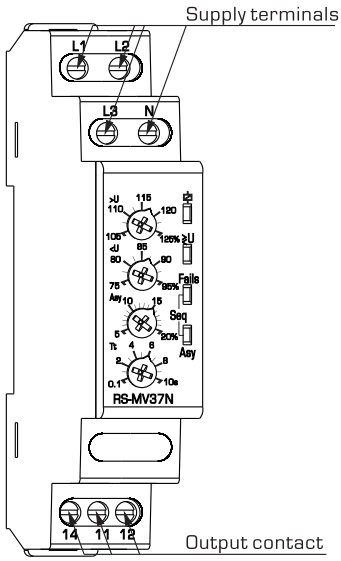






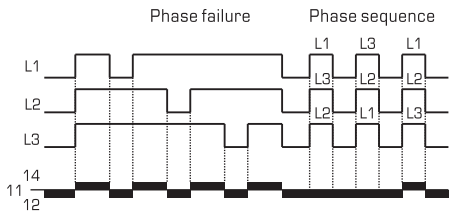




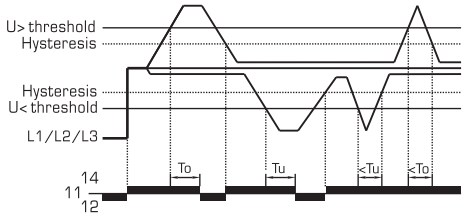


☐ Function diagrams

● Phase failure and phase sequence

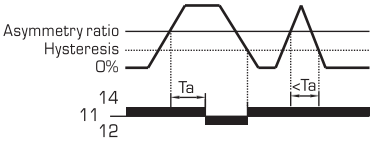


● Overvoltage and undervoltage



To: Overvoltage trip delay
Tu: Undervoltage trip delay

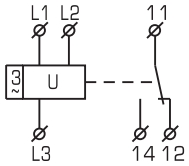
● Asymmetry

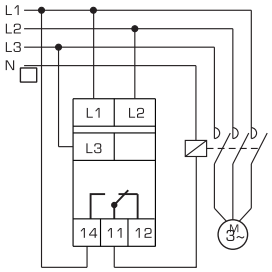


Ta: Asymmetry trip delay

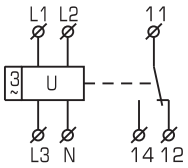
☐ Wiring diagrams

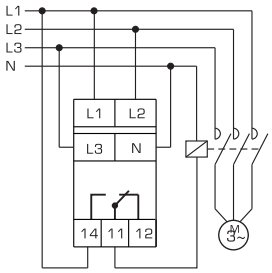
● RS-MV31/32/33/34/35/36/37





● RS-MV31N/32N/33N/34N/35N/36N/37N





☐ Features

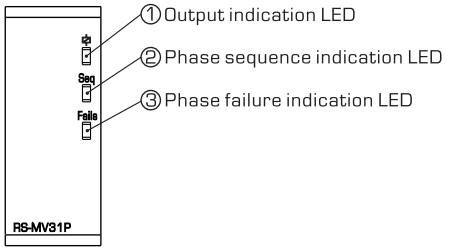
- Microcontroller based
- Supply voltage measurement (True RMS)
- Overvoltage, undervoltage, phase failure, asymmetry and phase sequence protection
- Protection parameters setting by knobs
- 10 operating voltage selectable:
  208V/220V/230V/240V/380V/400V/415V/440V/460V/480V
- 1 module DIN rail mounting.

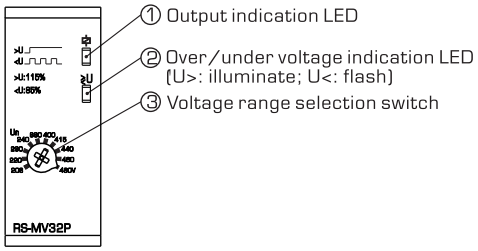
☐ Technical data

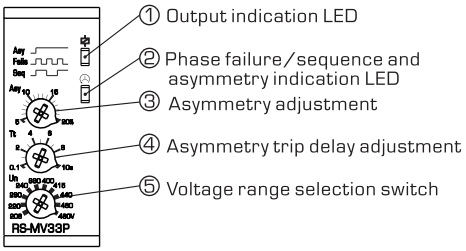
Supply terminals	L1,L2,L3
Rated voltage supply(Un)	208V/220V/230V/240V/380V/ 400V/415V/440V/460V/480V
Voltage supply range	165-528V
Measuring range	150-552V
U> setting value	adjustable:(105%-125%)xUn; fixed:115%
U< setting value	adjustable:(75%-95%)xUn; fixed:85%
Asymmetry setting	adjustable: 5%~20%; fixed: 8%
U> trip delay	adjustable: 0.1~10s; fixed: 2s
U< trip delay	adjustable: 0.1~10s; fixed: 2s
Asymmetry trip delay	adjustable: 0.1~10s; fixed: 2s
Voltage hysteresis	6V
Asymmetry hysteresis	2%
Trip time for incorrect phase sequence and phase failure	<0.5s
Voltage measurement error	≤1%
Delay error	±10%+0.1s
Knob setting error	1% x scale value
Rated insulation voltage	480V
Output contacts	1C/O
Current rating	8A/250V AC1
Mechanical life	10^6
Electrical life	10^5
Protection degree	IP20
Pollution degree	3
Altitude	≤2000m
Operating temperature	-20°C~55°C
Permissable relative humidity	≤50% at 40°C(without condensation)
Storage temperature	-30°C~70°C
Wire size/Torque	0.5mm²~2.5mm²/0.5Nm
Mounting	TH-35 Rail(EN60715)

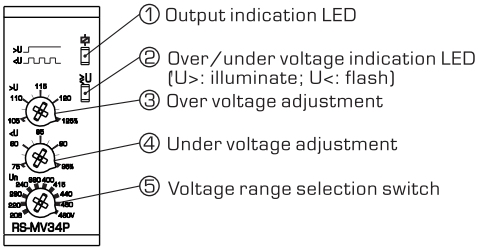
Models	U>	U<	Phase failure	Phase sequence	Asymmetry	Selectable Un
RS-MV31P			●	●		
RS-MV32P	●	●	●			●
RS-MV33P			●	●	●	●
RS-MV34P	●	●	●			●
RS-MV35P	●	●	●			●
RS-MV36P	●	●	●	●		●
RS-MV37P	●	●	●	●	●	●

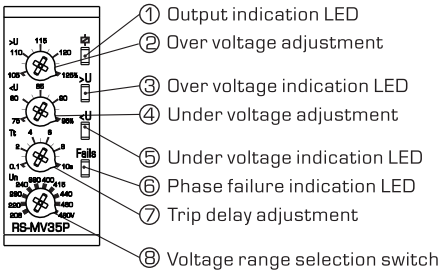
☐ Front-face panel

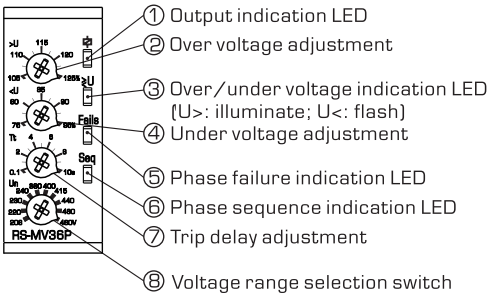


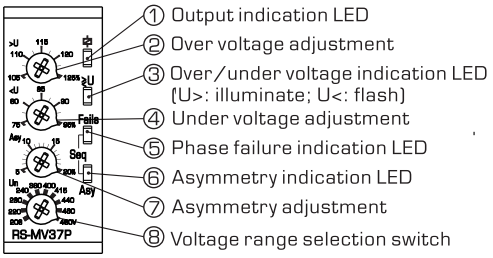


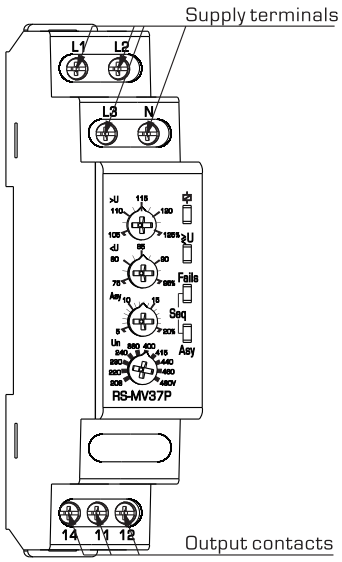






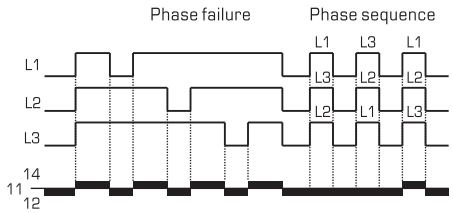




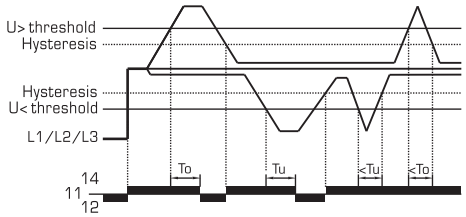


☐ Function diagrams

● Phase failure and phase sequence

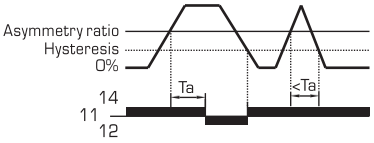


● Overvoltage and undervoltage



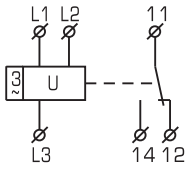
To: Overvoltage trip delay
Tu: Undervoltage trip delay

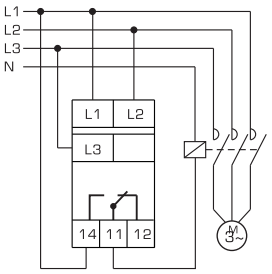
● Asymmetry



Ta: Asymmetry trip delay

☐ Wiring diagrams





☐ Features

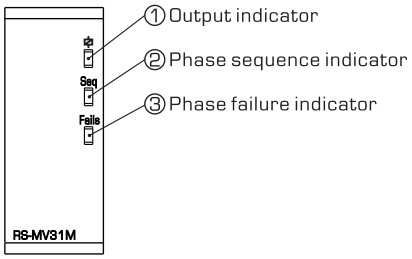
- Microcontroller based.
- True RMS measurement
- Select 3phase 3wire or 3phase 4wire mode by a knob.
- N phase failure protection for 3phase 4 wire
- 1NO+1NC output-8A
- LED indication for supply and output state
- 1 module Din-rail mounting

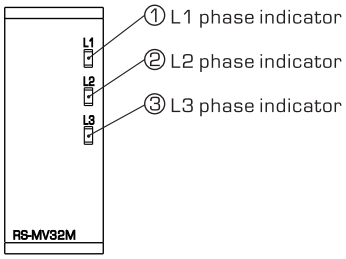
☐ Technical data

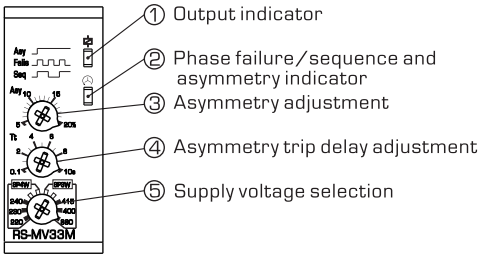
Modes	3phase 3wire	3phase 4wire
Supply terminals	L1,L2,L3	L1,L2,L3,N
Supply voltage	380V/400V/415V	220V/230V/240V
Operating voltage range	266V-540V	154V-312V
U> setting value	(105%-125%)xUn	
U< setting value	(75%-95%)xUn	
Asymmetry setting	adjustable: 5%~20%; fixed: 8%	
U> trip delay	adjustable: 0.1~10s; fixed: 2s	
U< trip delay	adjustable: 0.1~10s; fixed: 2s	
Asymmetry trip delay	adjustable: 0.1~10s; fixed: 2s	
Hysteresis	2% fixed	
Trip time for incorrect phase sequence and phase failure	<0.5s	
Delay error	±10%+0. 1s	
Knob setting error	1% x scale value	
Rated insulation voltage	415V	
Output contacts	1NO+1NC	
Current rating	8A/250V AC1	
Mechanical life	10^6	
Electrical life	10^5	
Protection degree	IP20	
Pollution degree	3	
Altitude	≤2000m	
Operating temperature	-20°C~55°C	
Permissable relative humidity	≤50% at 40°C(without condensation)	
Storage temperature	-30°C~70°C	
Wire size/Torque	0.5mm²~2.5mm²/0.5Nm	
Mounting	TH-35 Rail(EN60715)	

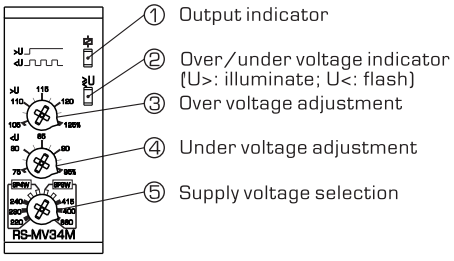
Models	U>	U<	Phase failure	Phase sequence	Asymmetry
RS-MV31M			●	●	
RS-MV32M			●	●	●
RS-MV33M			●	●	●
RS-MV34M	●	●	●		
RS-MV35M	●	●	●		
RS-MV36M	●	●	●	●	
RS-MV37M	●	●	●	●	●

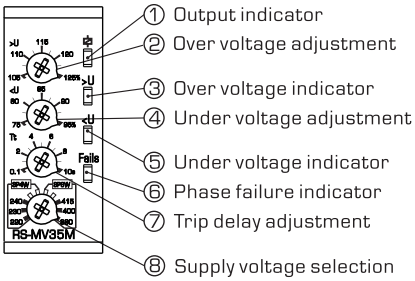
☐ Front-face panel

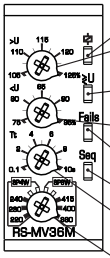




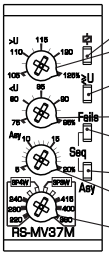




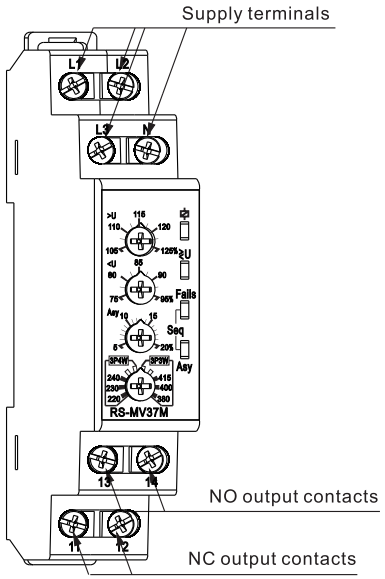




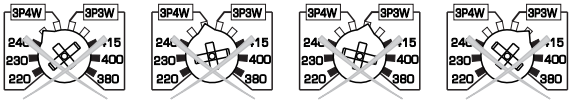
① Output indicator
② Over voltage adjustment
③ Over/under voltage indicator (U>: illuminate; U<: flash)
④ Under voltage adjustment
⑤ Phase failure indicator
⑥ Phase sequence indicator
⑦ Trip delay adjustment
⑧ Supply voltage selection



① Output indicator
② Over voltage adjustment
③ Over/under voltage indicator (U>: illuminate; U<: flash)
④ Under voltage adjustment
⑤ Phase failure indicator
⑥ Asymmetry indicator
⑦ Asymmetry adjustment
⑧ Supply voltage selection

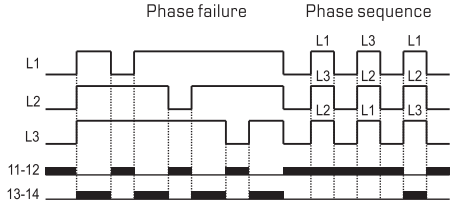


Note: supply voltage can't be set as below. Otherwise all indicator will flash.

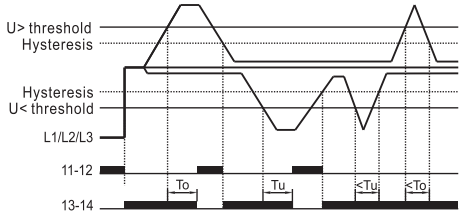


☐ Function diagrams

● Phase failure and phase sequence

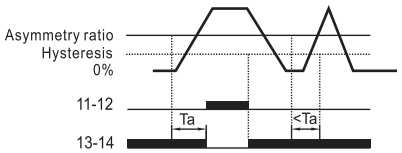


● Overvoltage and undervoltage



To: Overvoltage trip delay
Tu: Undervoltage trip delay

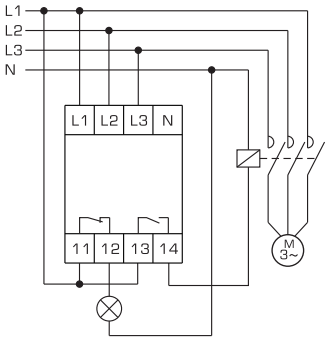
● Asymmetry



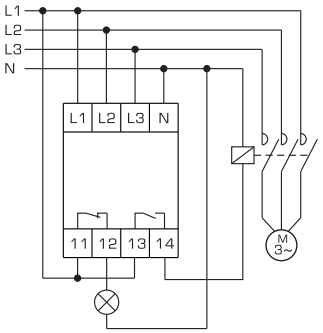
Ta: Asymmetry trip delay

☐ Wiring diagrams

● 3phase 3wire



● 3phase 4wire



Three phase voltage monitoring relay RD-MV35(N)/36(N)/37(N)

☐ Features

- Microcontroller based
- Supply voltage measurement (True RMS)
- Overvoltage, undervoltage, phase failure, asymmetry and phase sequence protection
- Protection parameters setting by knobs
- Supply voltage:
  RD-MV35,36,37: 208V,220V,240V,380V,400V,415V, 460V,480V
  RD-MV35N,36N,37N: 220V,230V,240V。
- N phase failure protection for RD-MV35N/36N/37N
- 2 module DIN rail mounting

☐ Technical data

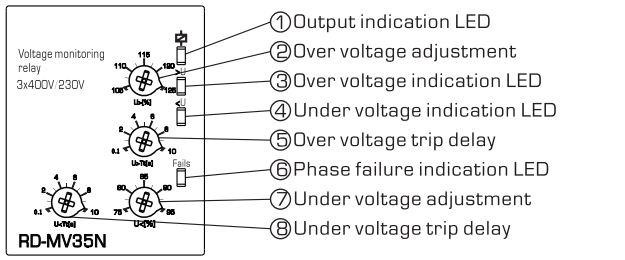
Models	RD-MV35/36/37	RD-MV35N/36N/37N
Supply terminals	L1,L2,L3	L3,N
U> setting value	(105%-125%)xUn	
U< setting value	(70%-95%)xUn	
Asymmetry setting	5%~20%	
U> trip delay	0.1~10s	
U< trip delay	0.1~10s	
Asymmetry trip delay	0.1~10s	
Voltage hysteresis	6V	5V
Asymmetry hysteresis	2%	
Trip time for incorrect phase sequence and phase failure	≤0. 2s	
Voltage measurement error	≤1%	
Delay error	±5%+0. 1s	
Knob setting error	1% x scale value	
Rated insulation voltage	480V	
Output contacts	1C/O, 1NO+1NC	
Current rating	8A/250V AC1	
Mechanical life	10^6	
Electrical life	10^5	
Protection degree	IP20	
Pollution degree	3	
Altitude	≤2000m	
Wire size/Torque	0.5mm²~2.5mm²/0.5Nm	

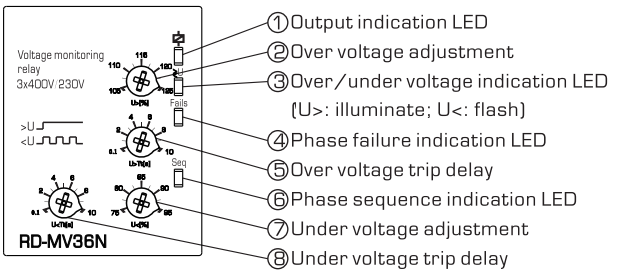
● Models

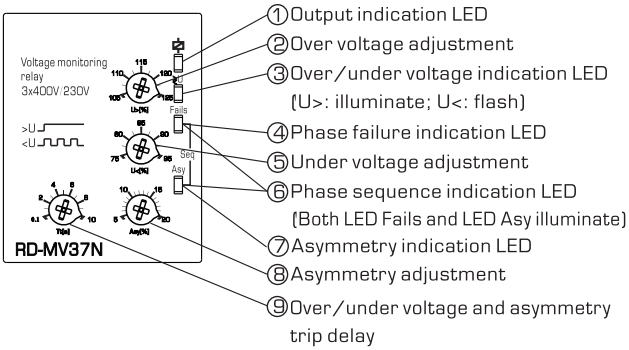
Models	U>	U<	Phase failure	Phase sequence	Asymmetry
RD-MV35	●	●	●		
RD-MV35N	●	●	●		
RD-MV36	●	●	●	●	
RD-MV36N	●	●	●	●	
RD-MV37	●	●	●	●	●
RD-MV37N	●	●	●	●	●

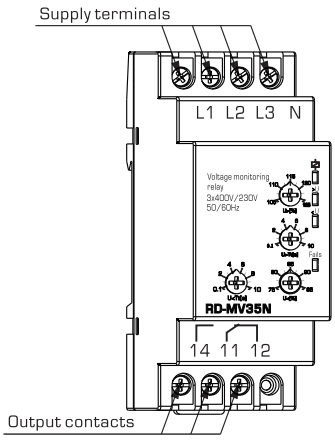
Models			Supply voltage (Un)
RD-MV35/208	RD-MV36/208	RD-MV37/208	3x208/50Hz
RD-MV35/220	RD-MV36/220	RD-MV37/220	3x220/50Hz
RD-MV35/240	RD-MV36/240	RD-MV37/240	3x240/50Hz
RD-MV35/380	RD-MV36/380	RD-MV37/380	3x380/50Hz
RD-MV35/400	RD-MV36/400	RD-MV37/400	3x400/50Hz
RD-MV35/415	RD-MV36/415	RD-MV37/415	3x415/50Hz
RD-MV35/460	RD-MV36/460	RD-MV37/460	3x460/50Hz
RD-MV35/480	RD-MV36/480	RD-MV37/480	3x480/50Hz
RD-MV35N/220	RD-MV36N/220	RD-MV37N/220	3x380/220/50Hz
RD-MV35N/230	RD-MV36N/230	RD-MV37N/230	3x400/230/50Hz
RD-MV35N/240	RD-MV36N/240	RD-MV37N/240	3x415/240/50Hz

☐ Front-face panel



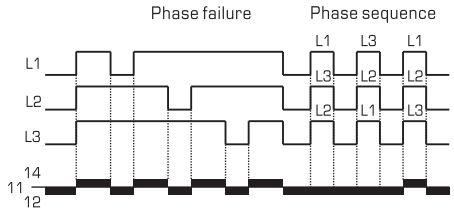




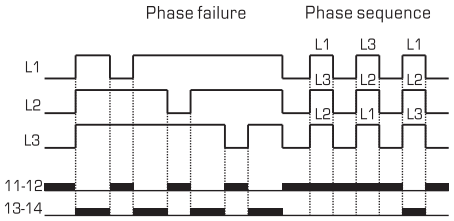


☐ Function diagrams

● Phase failure and phase sequence

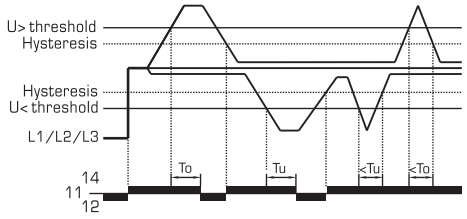


1C/O

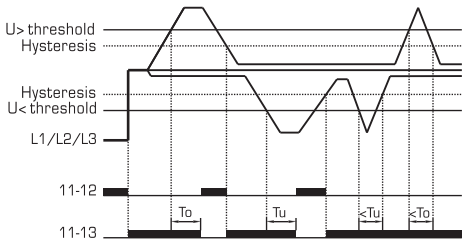


1NO+1NC

● Overvoltage and undervoltage



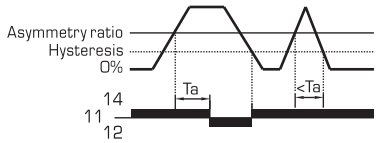
1C/O



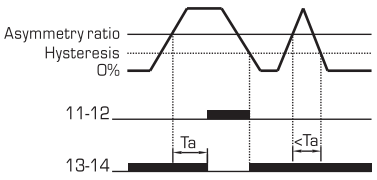
1NO+1NC

To: Overvoltage trip delay
Tu: Undervoltage trip delay

● Asymmetry



1C/O



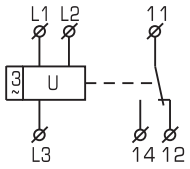
1NO+1NC

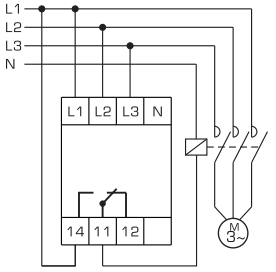
Ta: Asymmetry trip delay

☐ Wiring diagrams

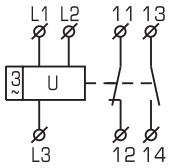
● RD-MV35/36/37

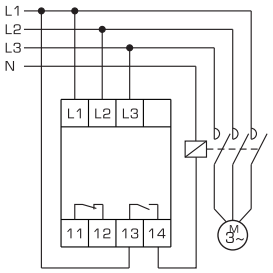
1C/O





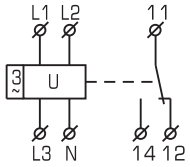
1NO+1NC

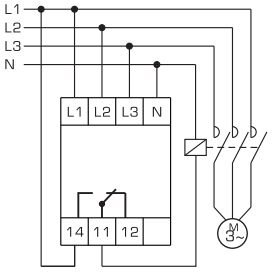




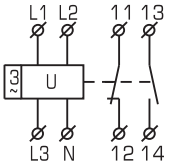
● RD-MV35N/36N/37N

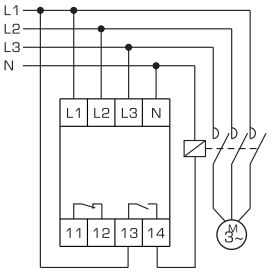
1C/O





1NO+1NC





☐ Features

- Microcontroller based
- LCD indication for operating voltage and status
- Overvoltage, undervoltage, phase failure, asymmetry and phase sequence protection
- 45Hz~65Hz wide measuring frequency
- Supply voltage measurement (True RMS)
- Menu setting for protection parameters
- Test and manual reset by keys
- N phase failure protection for 3phase 4wire system
- 2 module DIN rail housing

☐ Technical data

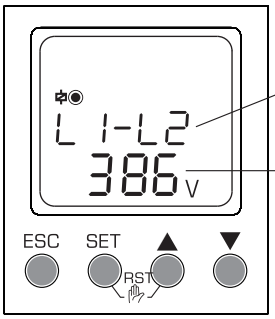
Models	RD-MVS1(2)	RD-MVS1(2)N
Supply terminals	L1,L2,L3	L3,N
Supply voltage	AC 200~500V/50Hz	AC 125~300V/50Hz
U> setting value	OFF-381~500V	OFF-221~300V
U< setting value	260V~379V-OFF	150V~219V-OFF
Asymmetry setting	OFF-5%~20%	
U> trip delay	0.1~20s	
U< trip delay	0.1~20s	
Asymmetry trip delay	0.1~20s	
Start-up delay	0.1~30s	
Reset delay	0.1~30s	
Voltage hysteresis	6V	5V
Asymmetry hysteresis	2%	
Trip delay for phase failure	≤0. 2s	
Voltage measurement error	≤1%	
Delay error	±5%+0. 1s	
Rated insulation voltage	415V	
Output contacts	1C/O, 1NO+1NC	
Current rating	8A/250V AC1	
Mechanical life	10^6	
Electrical life	10^5	
Protection degree	IP20	
Pollution degree	3	
Altitude	≤2000m	
Operating temperature	-20°C~55°C	
Permissable relative humidity	≤50% at 40°C(without condensation)	
Storage temperature	-30°C~70°C	
Wire size	0.5mm²~2.5mm²	
Mounting	TH35 Rail(EN60715)	

● Default setting parameters

Technical parameters	RD-MVS1(2)	RD-MVS1(2)N
Overvoltage trip value	437V	253V
Overvoltage trip delay	2s	
Undervoltage trip value	323V	187V
Undervoltage trip delay	2s	
Asymmetry trip value	8%	
Asymmetry trip delay	2s	
Phase sequence protective function	ON	
Start-up delay	0.3s	
Reset delay	0.3s	
Auto-reset	ON	

☐ Front-face panel and legend of symbol

○ Panel



Display L1-L2 if work normally; display faults symbol when faults occured.

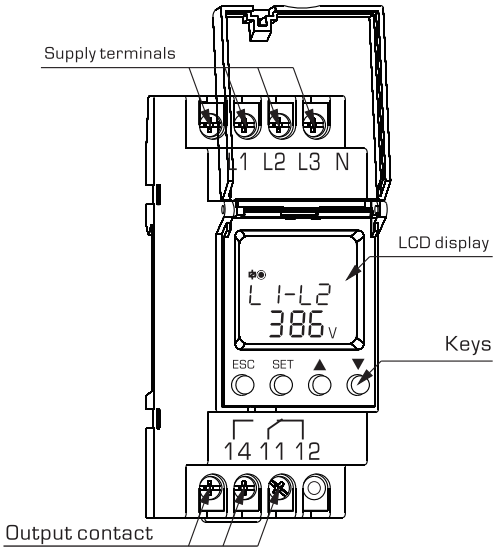
Operating voltage value

Symbol legend

◉	— Relay ON	Ov	— Over voltage
○	— Relay OFF	Uv	— Under voltage
SET	— Paremeters setting	ASY	— Asymmetry
Error	— Fault	PHSEQ	— Phase sequence
start	— Start-up delay	PHFAIL	— Phase failure

Keys

ESC ○Exit configuration menu ○Back to last menu	SET ○Enter configuration menu ○Confirm settings
▲ ○Select menu ○Digit -	▼ ○Select menu ○Digit +
SET ▲ RST ○Manual reset	



☐ Inquiry of phase voltage value

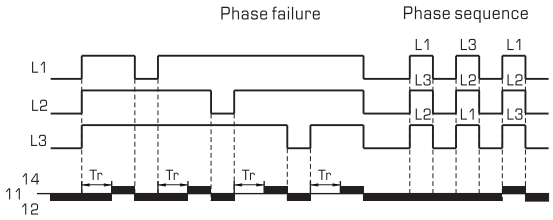
● RD-MVS1(2)

● RD-MVS1(2)N

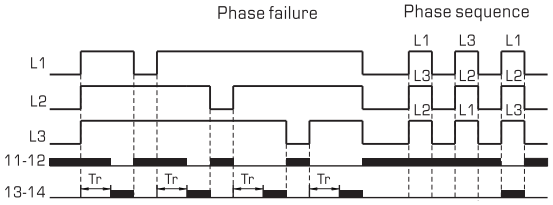
● Faults symbol is displayed if no keys pressed for 30 seconds after tripped for voltage faults.

☐ Function diagrams(auto-reset mode)

● Phase failure and phase sequence

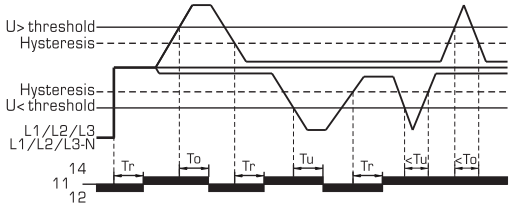


RD-MVS1/RD-MVS1N

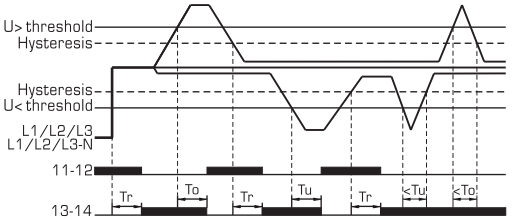


RD-MVS2/RD-MVS2N

● Overvoltage and undervoltage



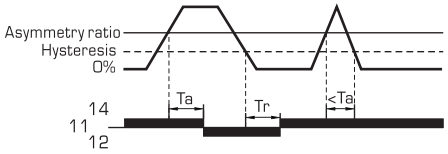
RD-MVS1/RD-MVS1N



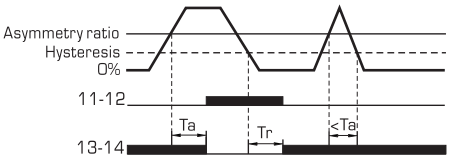
RD-MVS2/RD-MVS2N

To: Overvoltage trip delay
Tu: Undervoltage trip delay
Tr: Reset/start delay

● Asymmetry



RD-MVS1/RD-MVS1N

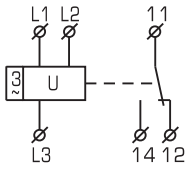


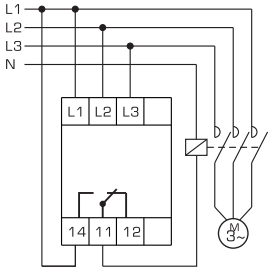
RD-MVS2/RD-MVS2N

Ta: Asymmetry trip delay

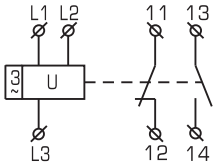
☐ Wiring diagrams

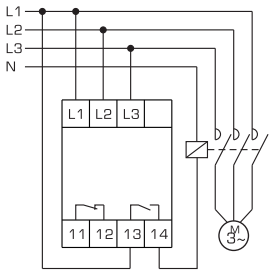
● RD-MVS1



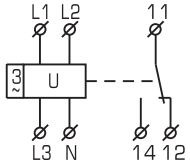


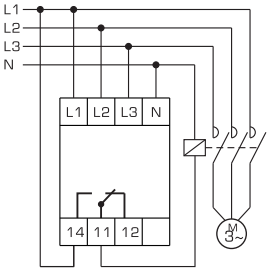
● RD-MVS2



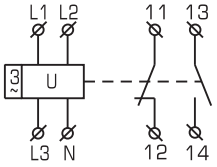


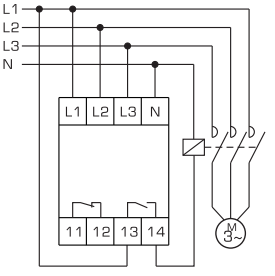
● RD-MVS1N





● RD-MVS2N





☐ Features

- Microcontroller based
- LCD indication for operating voltage and status
- Overvoltage, undervoltage, phase failure, asymmetry and phase sequence protection
- 45Hz~65Hz wide measuring frequency
- Supply voltage measurement (True RMS)
- Menu setting for protection parameters
- Test and manual reset by keys
- N phase failure protection for 3phase 4wire system
- 2 module DIN rail housing

☐ Technical data

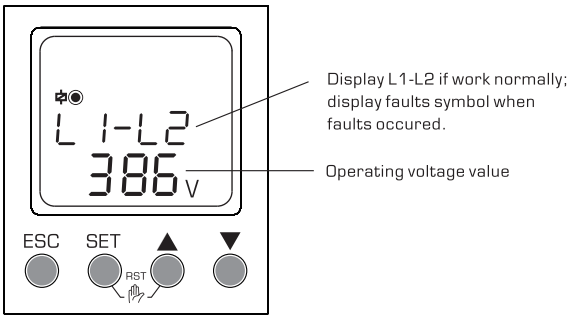
Models	RD-MVS5	RD-MVS5N
Supply terminals	L1,L2,L3	L3,N
Supply voltage	AC 200~500V/50Hz	AC 125~300V/50Hz
U> setting value	OFF-381~500V	OFF-221~300V
U< setting value	260V~379V-OFF	150V~219V-OFF
Asymmetry setting	OFF-5%~20%	
U> trip delay	0.1~20s	
U< trip delay	0.1~20s	
Asymmetry trip delay	0.1~20s	
Start-up delay	0.1~30s	
Reset delay	0.1~30s	
Voltage hysteresis	6V	5V
Asymmetry hysteresis	2%	
Trip delay for phase failure	≤0. 2s	
Voltage measurement error	≤1%	
Delay error	±5%+0. 1s	
Rated insulation voltage	415V	
Output contacts	2C/O	
Current rating	8A/250V AC1	
Mechanical life	10^6	
Electrical life	10^5	
Protection degree	IP20	
Pollution degree	3	
Altitude	≤2000m	
Operating temperature	-20˚C~55˚C	
Permissable relative humidity	≤50% at 40˚C(without condensation)	
Storage temperature	-30˚C~70˚C	
Wire size	0.5mm²~2.5mm²	
Mounting	TH35 Rail(EN60715)	

● Default setting parameters

Technical parameters	RD-MVS5	RD-MVS5N
Overvoltage trip value	437V	253V
Overvoltage trip delay	2s	
Undervoltage trip value	323V	187V
Undervoltage trip delay	2s	
Asymmetry trip value	8%	
Asymmetry trip delay	2s	
Phase sequence protective function	ON	
Start-up delay	0.3s	
Reset delay	0.3s	
Auto-reset	ON	

☐ Front-face panel and legend of symbol

○ Panel

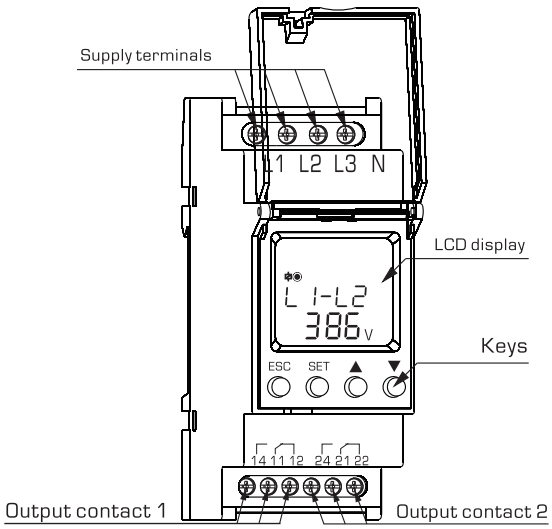


Symbol legend

◉	— Relay ON	Ov	— Over voltage
○	— Relay OFF	Un	— Under voltage
SET	— Paremeters setting	ASY	— Asymmetry
Error	— Fault	PHSEQ	— Phase sequence
start	— Start-up delay	PHFAIL	— Phase failure

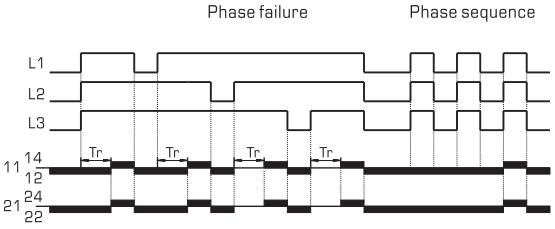
Keys

ESC ○Exit configuration menu ○Back to last menu	SET ○Enter configuration menu ○Confirm settings
▲ ○Select menu ○Digit -	▼ ○Select menu ○Digit +
SET ▲ RST ○Manual reset	

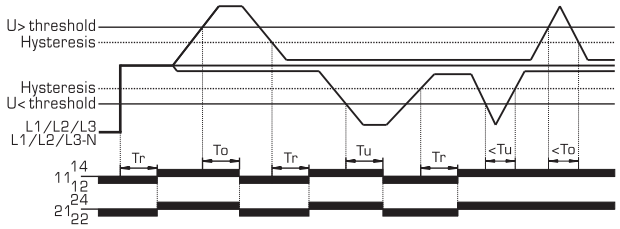


☐ Function diagrams(auto-reset mode)

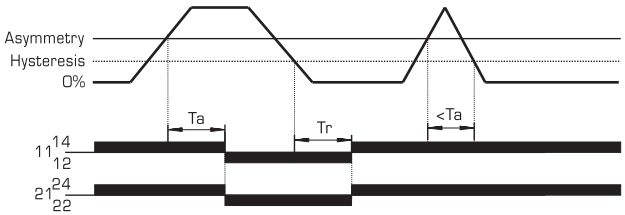
● Phase failure and phase sequence



● Overvoltage and undervoltage



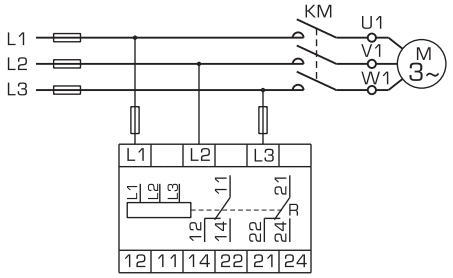
● Asymmetry



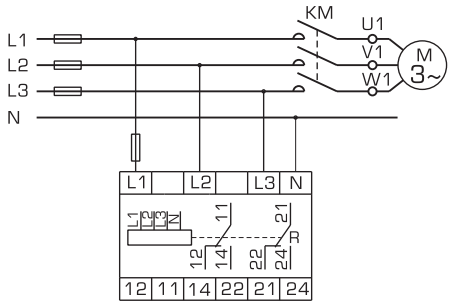
To: Overvoltage trip delay
Tu: Undervoltage trip delay
Tr: Reset/start delay
Ta: Asymmetry trip delay

☐ Wiring diagrams

● RD-MVS5



● RD-MVS5N



Current monitoring relay RS-MI

☐ Features

- Microcontroller based.
- Current actuation threshold adjustable
- Trip and start-up delay adjustable
- Possible to use for scanning of current from current transformer up to 600A
- 1C/O output-8A
- LED indication for power supply and relay status
- 1 module Din-rail mounting

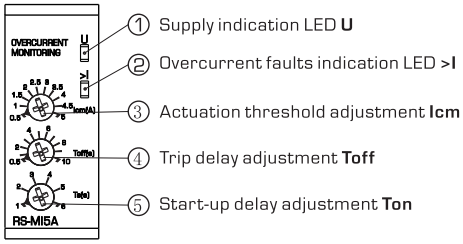
☐ Technical data

Power supply terminals	L-N
Rated supply voltage(Un)	AC220V±20%, 50/60Hz
Current input terminals	B1-B2
Current actuation threshold	0.5A~10A
Hysteresis	5% * current setting value
Current setting error	5%
Measurement frequency	45~65Hz
Start-up delay	1s~6s
Trip delay	0.5s~10s
Delay error	±5%
Power consumption	0.85W
Current load	8A/AC1
Output contact	1C/O
Rated insulation voltage	250VAC
Max.fuse ratings	RT36-00 5A
Protection degree	IP20
Pollution degree	3
Electrical life	10^5
Mechanical life	10^6
Altitude	≤2000m
Ambient temperature	-25°C~+50°C
Permissable relative humidity	≤50% at 40°C(without condensation)
Storage temperature	-25°C~+75°C

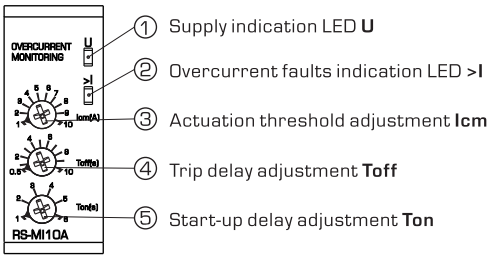
Models	Over current	Under current	Current range
RS-MI5A	●		0.5~5A
RS-MI10A	●		1~10A
RS-MI5B		●	0.5~5A
RS-MI10B		●	1~10A

☐ Front-face panel

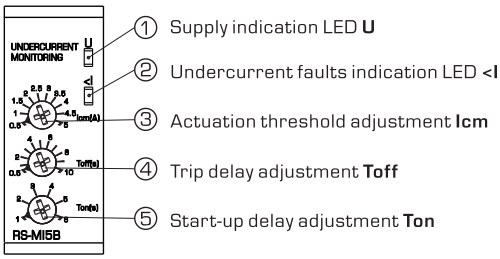
● RS-MI5A



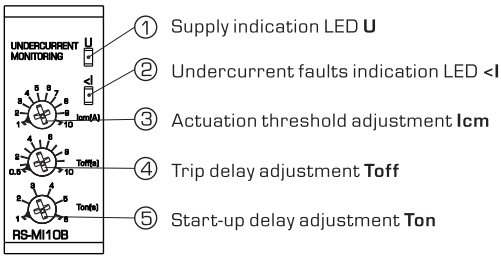
● RS-MI10A

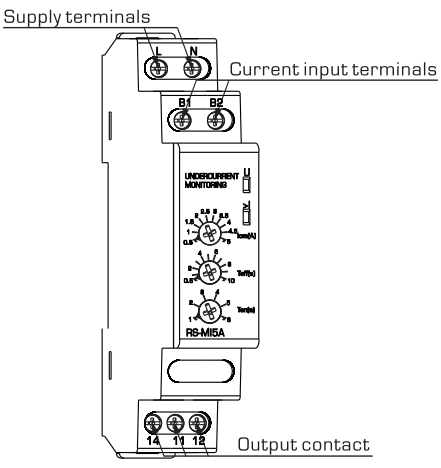


● RS-MI5B



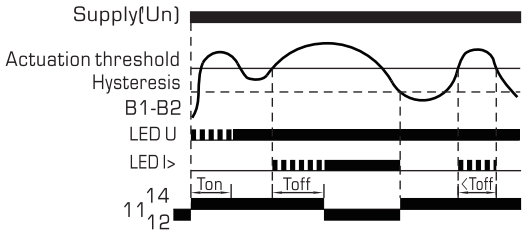
○ RS-MI10B



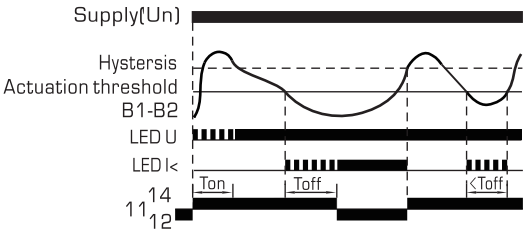


☐ Function diagrams

● RS-MI5A/RS-MI10A



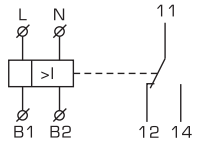
● RS-MI5B/RS-MI10B



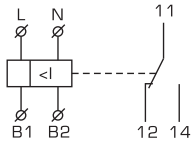
Ton : Start-up delay Toff : Trip delay

☐ Symbols

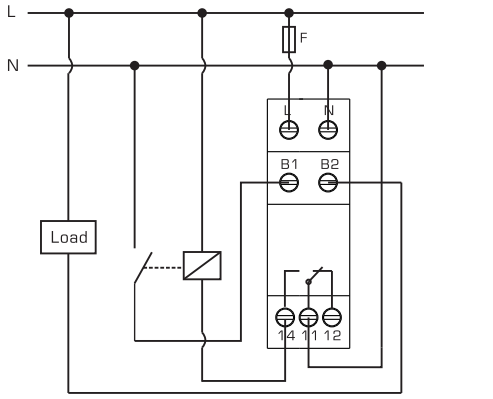
○ RS-MI5A/RS-MI10A

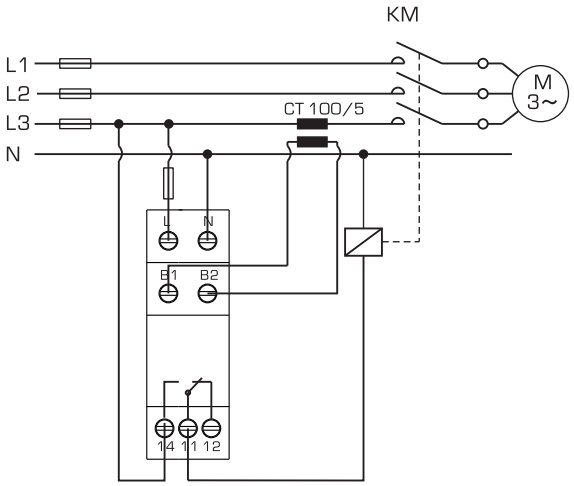


○ RS-MI5B/RS-MI10B



☐ Wiring diagrams





Note: It is possible to increase the current range of RS-MI by using an external current transformer if measured current exceed 10A

Power consumption limiter RD-PL1

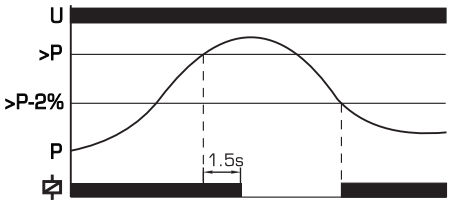
☐ Features

- Microcontroller based
- Power threshold adjustable range 0.5~2kW
- Reset delay 10~100s
- Maximum output current 16A
- Need to power-off reset after three continuous >P faults
- LED indication for power supply and output state
- 2 module Din-rail mounting

☐ Technical data

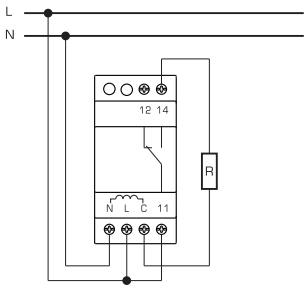
Supply terminals	L,N
Supply voltage	AC 220V
Voltage tolerance	-15%~10%
Rated frequency	50Hz
Power threshold	0.2~2kW
Trip delay	1.5s
Reset delay	10-100s
Hysteresis	2%x set value
Output contact	1NO 16A/250V AC1
Protection degree	IP20
Pollution degree	3
Electrical life	10^5
Mechanical life	10^6
Altitude	≤2000m
Ambient temperature	-20°C~+55°C
Humidity	50% @40°C(without condensation)
Storage temperature	-30°C~+70°C
Wire size	0.5mm²~2.5mm²
Mounting	TH-35 Rail(EN 60715)

☐ Function diagram

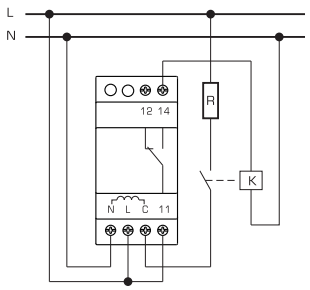


☐ Wiring diagram

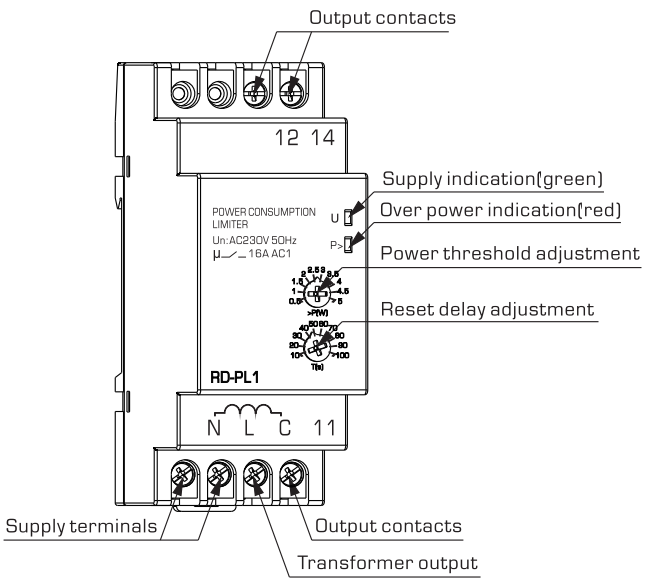
- Power consumption is not more than 2kW



- Power consumption is more than 2kW



☐ Operating instruction



Power consumption limiter RS-PL5

☐ Features

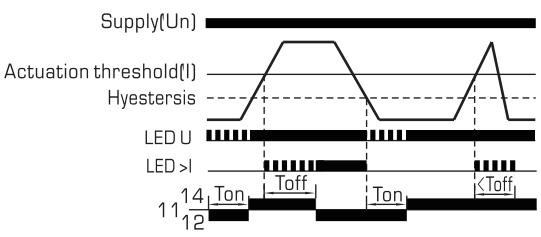
- Microcontroller based
- Current actuation threshold adjustable
- Trip delay and Reset delay adjustable
- Overcurrent, overvoltage and undervoltage protection
- Output contact 1C/0-10A
- LED indication for power supply and output state
- 1 module Din-rail mounting

☐ Technical data

Rated supply voltage(Un)	AC230V
Rated frequency	50/60Hz
Operation range	AC150~275V
Current actuation threshold	0.5~5A adjustable
Hysteresis	3% * actuation threshold value
Current measurement error	≤1%, True RMS measurement
Measurement frequency	50Hz
Max. input current	<10A
Trip delay	2s~40s
Reset delay	15s~300s
Trip delay error	±5%
U> trip value	260V
U> reset value	257V
U< trip value	160V
U< reset value	163V
Trip delay for voltage faults	0.5s
Power consumption	0.85W
Current load	8A/250V AC1
Output contact	1C/0
Contacts capacity	AC-15: 2A
Rated insulation voltage	250VAC
Max.fuse ratings	RT36-00 5A
Protection degree	IP20
Pollution degree	3
Electrical life	10^5
Mechanical life	10^6
Altitude	≤2000m
Ambient temperature	-25°C~+50°C
Permissable relative humidity	≤50% at 40°C(without condensation)

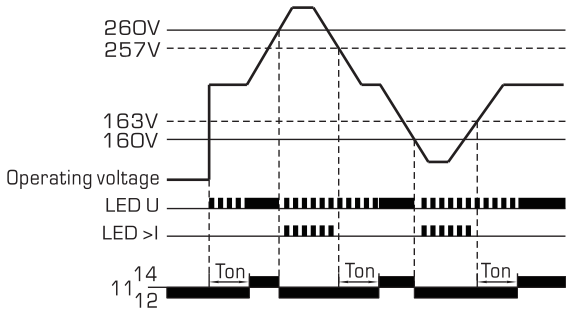
☐ Function diagrams

● Current measurement



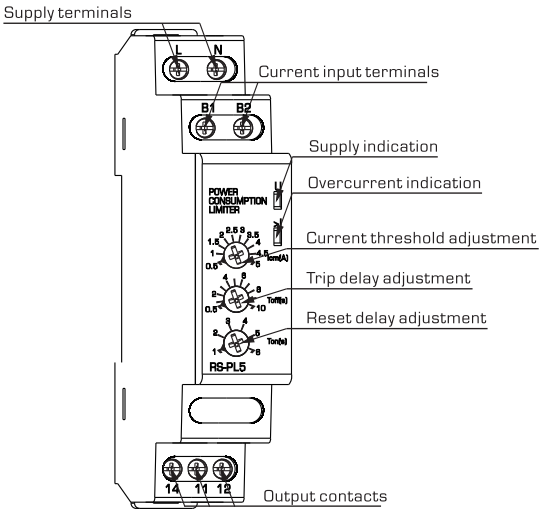
Ton: Reset delay; Toff: Trip delay

● Voltage measurement

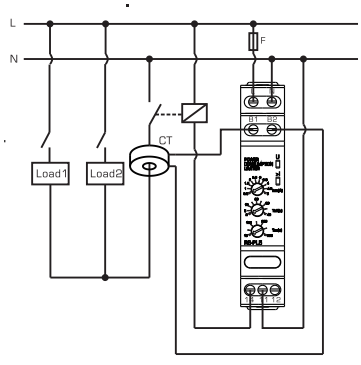


Ton: Reset delay

☐ Appearance



☐ Wiring diagram



Note: the limiter must cooperate with current transformers

Power consumption limiter RM-PL1

RM-PL1 power consumption limiter is used for protecting devices against overpower, overvoltage and undervoltage faults. It calculates the power consumption of using device through detecting input voltage and current values .

The output relay of RM-PL1 will close after Ton delay. When power consumption detected is higher than P> setting value, the output relay opens after Toff delay. When an input voltage fault was detected, the output relay opens. If continuous 5 times such faults. RM-PL1 begin a 10minutes delay and enter output state after the delay is elapsed.

RM-PL1 can be widely applied for power consumption limiting of heating system, lighting, motor and generator etc.

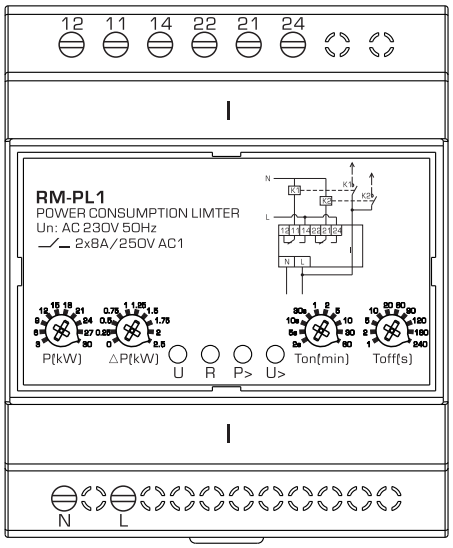
☐ Technical data

Supply terminals	N,L
Rated supply voltage	AC 50~450V
Rated frequency	50Hz
Overpower setting range	3~30kW
Overpower rough step value	3kW
Overpower fine step value	0.25kW
U> trip value	260V
U> reset value	254V
U> trip delay	0.1s
U< trip value	160V
U< reset value	166V
U< trip delay	5s
Reset/start delay(Toff)	1s~240s
Trip delay(Ton)	2s~3600s
Voltage measurement error	≤1%(50~450V)
Current measurement error	≤3%(3~150A)
Current load	<8A/AC1
Contacts capacity	AC-15: 2A
Output contact	2C/O
Rated insulation voltage	415VAC
Protection degree	IP20
Pollution degree	3
Electrical life	10^5
Mechanical life	10^6
Altitude	≤2000m
Ambient temperature	-25°C~+50°C
Permissable relative humidity	≤50% at 40°C(without condensation)
Storage temperature	-25°C~+55°C
Conductor size	0.5mm²~1mm²
Torque	0.5Nm

☐ Features

- Microcontroller based.
- Rated supply voltage 50-450VAC
- "Priority" control
- Overvoltage, undervoltage and overpower
- LED indication for control state
- DIN Rail mounting

☐ Front-face panel



○ N,L: supply terminals.

○ 11,12,14: Output relay K1; 11,12: NC contacts; 11,14: NO contacts.

○ 21,22,24: Output relay K2; 21,22: NC contacts; 21,24: NO contacts.

○ I: Current input.

☐ Functions description

1. Overpower protection

If operating power **P** is higher than **P>** setting value, the load will be disconnected.

2. Select the operating mode of relays K1 and K2.

2.1. K1 operating mode and K2 alert mode, see the wiring diagram as diagram 2.

When operating power **P** is higher than **P>** setting value, K relays opens and alert indication LED flash.

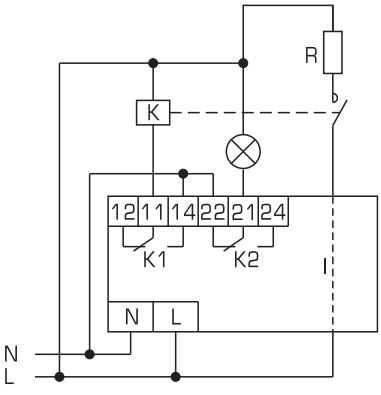


Diagram 2.

2.2. “Priority” operating mode. See diagram 3 for function diagram and diagram 4 for wiring diagram.

When power **Pn**+**Ph**>**P>**, K2 relay opens after 0.1s delay.

If **Pn**>**P>**, K1 relay opens after Toff delay.

If **Pn**<**P>**, K2 relay closes

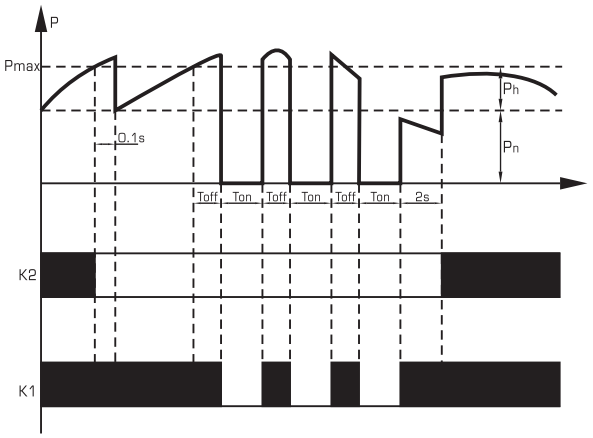


Diagram 3.

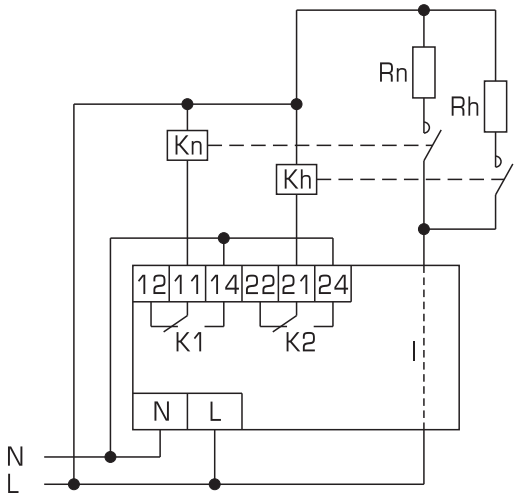


Diagram 4.

3. Continuous 5 times faults.

When operating power **P** is higher than **P>** setting value, the faults will plus one times, the limiter will begin a 10minutes delay after 5 times such faults.

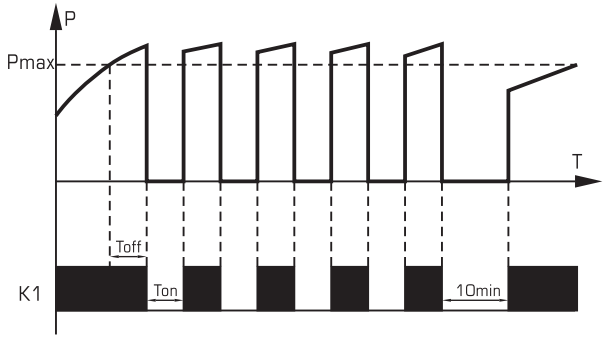


Diagram 5.

4. Overcurrent protection.

When operating current reached 150A, K1/K2 relays open after Toff delay.

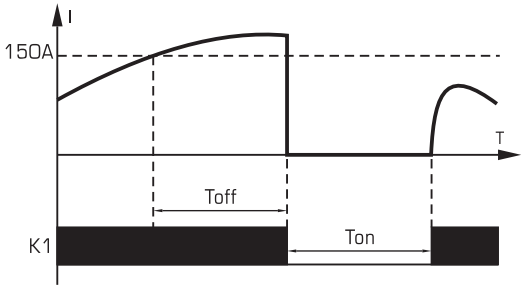


Diagram 6.

Power consumption limiter RM-PL3

RM-PL3 power consumption limiter is used for protecting devices against overpower, overvoltage and undervoltage faults. It calculates the power consumption of using device through detecting input voltage and current values .

The output relay of RM-PL3 will close after Ton delay. When power consumption detected is higher than P> setting value, the output relay opens after Toff delay. When an input voltage fault was detected, the output relay opens. If continuous 5 times such faults. RM-PL3 begin a 10minutes delay and enter output state after the delay is elapsed.

RM-PL3 can be widely applied for power consumption limiting of heating system, lighting, motor and generator etc.

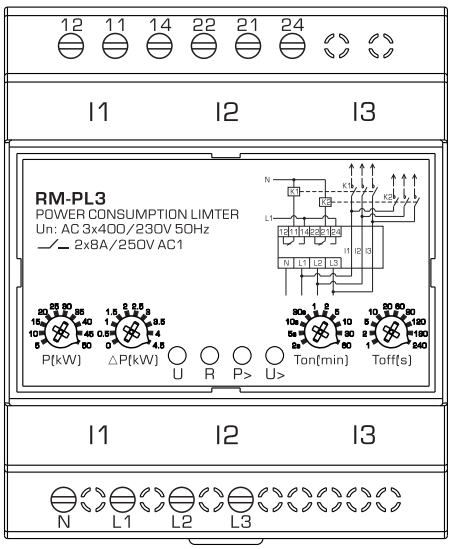
☐ Technical data

Supply terminals	N,L1,L2,L3
Rated supply voltage	AC 3*50~450V(N-L1/L2/L3)
Rated frequency	50Hz
Pmax setting range	5~50kW
Pmax rough step value	5kW
Pmax fine step value	0.5kW
U> trip value	260V
U> reset value	254V
U> trip delay	0.1s
U< trip value	160V
U< reset value	166V
U< trip delay	5s
Toff delay	1s~240s
Ton delay	2s~3600s
Voltage measurement error	≤1%(50~450V)
Current measurement error	≤3%(3~200A)
Current load	<8A/AC1
Contacts capacity	AC-15: 2A
Output contact	2C/O
Rated insulation voltage	415VAC
Protection degree	IP20
Pollution degree	3
Electrical life	10^5
Mechanical life	10^6
Altitude	≤2000m
Ambient temperature	-25°C~+50°C
Permissable relative humidity	≤50% at 40°C(without condensation)
Storage temperature	-25°C~+55°C
Conductor size	0.5mm²~1mm²
Torque	0.5Nm

☐ Features

- Microcontroller based.
- Rated supply voltage 3x50-450VAC
- "Priority" control
- Overvoltage, undervoltage and overpower
- LED indication for control state
- N phase failure protection
- Din-rail mounting

☐ Front-face panel

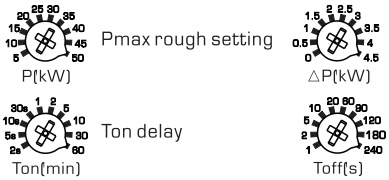


○ N,L1,L2,L3: supply terminals.

○ 11,12,14: Output relay K1; 11,12: NC contacts; 11,14: NO contacts.

○ 21,22,24: Output relay K2; 21,22: NC contacts; 21,24: NO contacts.

○ I1,I2,I3: Current input.



Pmax=P+△P, Max. power value is 50kW.
For example: Set Pmax value at 32.5kW, P set at 30kW,△P set at 2.5.

☐ Functions description

1. Calculation of operating power and overpower protection

If operating power **P** is higher than **Pmax**, the load will be disconnected.

P=Pa+Pb+PC. For example: **Pmax>**=16kW,**Pa**=11kW, **Pb**=5kW, **Pc**=0kw.**P**=11+6+0=17kW. **P>Pmax**.The load will be disconnected.

2. Select the operating mode of relays K1 and K2.

2.1. K1 operating mode and K2 alert mode, see the wiring diagram as diagram 2.

When operating power **P** is higher than **Pmax**, K relays open and alert indication LED flashes.

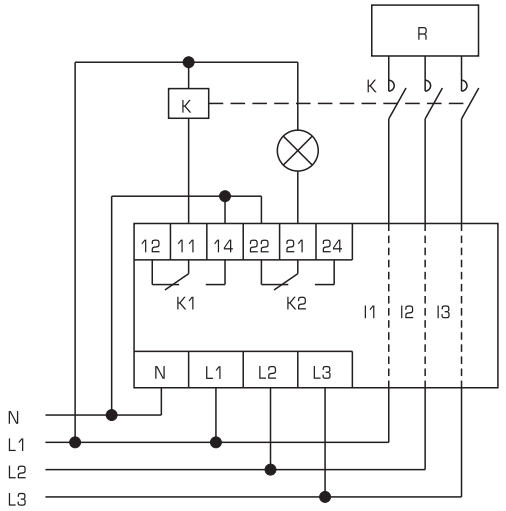


Diagram 2.

2.2. "Priority" operating mode. See diagram 3 for function diagram and diagram 4 for wiring diagram.

When power **Pn+Ph>Pmax**, K2 relay opens after 0.1s delay.

If **Pn>Pmax**, K1 relay opens after Toff delay.

If **Pn<Pmax**, K2 relay closes.

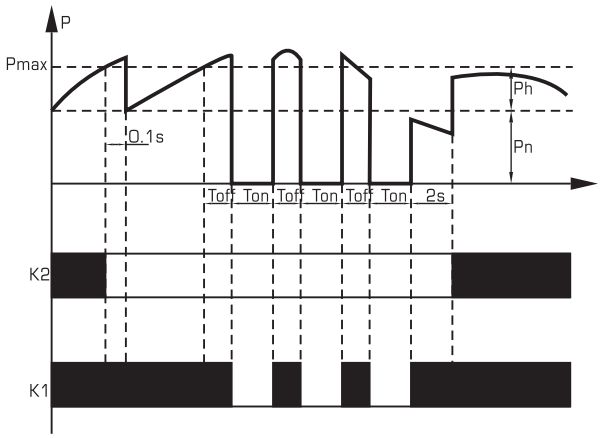


Diagram 3.

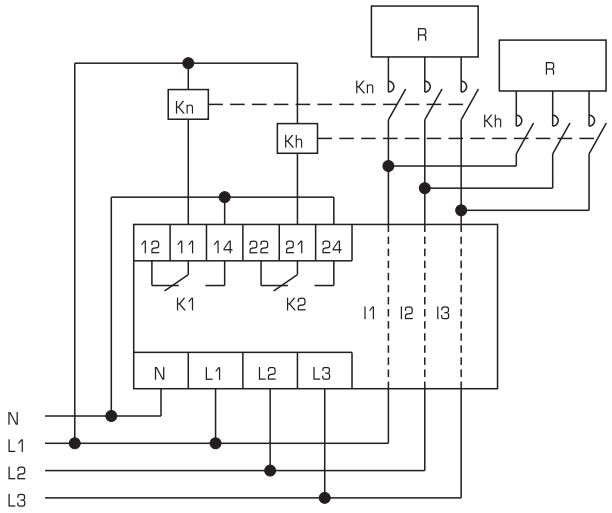


Diagram 4.

3. Continuous 5 times faults.

When operating power **P** is higher than **Pmax**, the faults will plus one time, the limiter will begin a 10minutes delay after 5 times such faults.

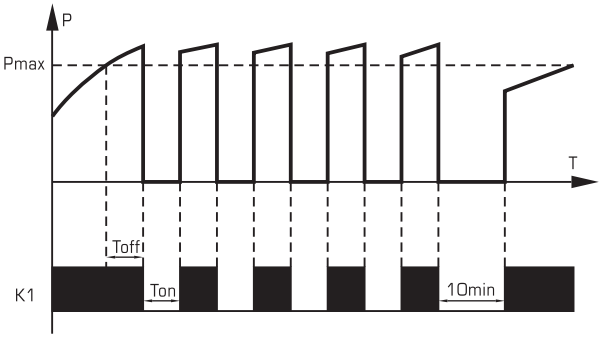


Diagram 5.

4. Overcurrent protection.

When operating current of any phases reached 230A, K1/K2 relays open after Toff delay.

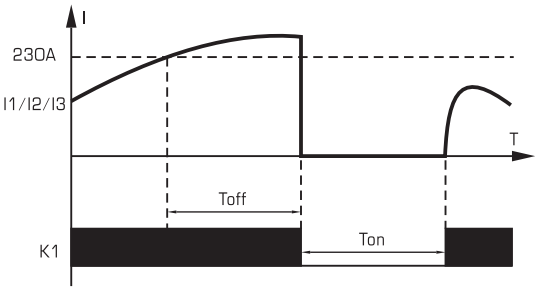


Diagram 6.

Single phase pump protection relay RS-MP5

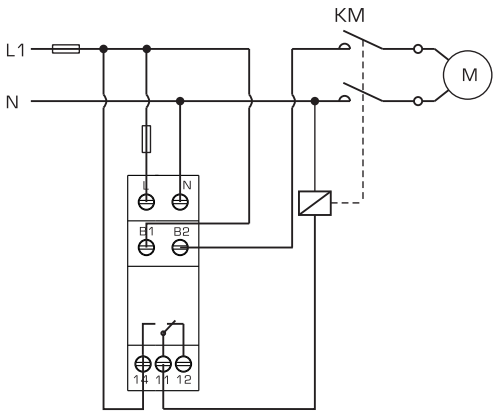
☐ Features

- Microcontroller based.
- Overload, undercurrent and overvoltage protection.
- 1 C/O output-8A
- Possible to use for scanning of current from current transformer up to 600A
- LED indication for trip cause
- 1 module Din-rail mounting

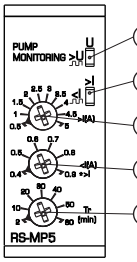
☐ Technical data

Power supply terminals	L-N
Rated supply voltage(Un)	AC220V±20%, 50/60Hz
Current input terminals	B1-B2
Current setting	0.5A~5A
Undercurrent setting	(0.4-0.9)x current setting value
Overvoltage trip value	265V
Undercurrent reset time	2~60min
Undercurrent trip delay	4s
Overvoltage trip delay	1s
Reset mode	Manual, automatic
Trip class	10
Current load	<8A/AC1
Output contact	1C/O
Rated insulation voltage	250VAC
Max.fuse ratings	RT36-00 5A
Protection degree	IP20
Pollution degree	3
Electrical life	10^5
Mechanical life	10^6
Altitude	≤2000m
Ambient temperature	-25°C~+50°C
Permissable relative humidity	≤50% at 40°C(without condensation)
Storage temperature	-25°C~+75°C
Conductor size	0.5~2.5mm^2
Tightening torque	0.5Nm

☐ Wiring diagram



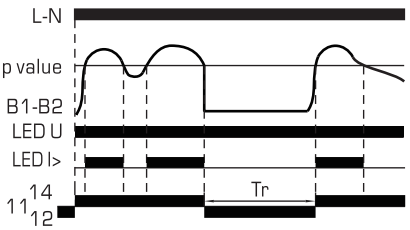
☐ Front-face panel



① Supply and overvoltage indication LED: (>U:flashing)
② Overload and undercurrent indication LED: (>I:lighting up; <I: flashing)
③ Current setting
④ Undercurrent setting (current setting x I)
⑤ Auto reset time

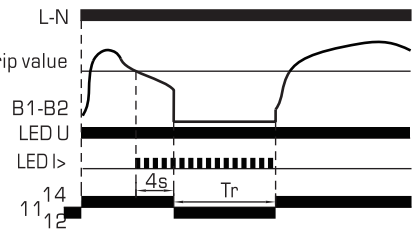
☐ Function diagrams

● Overcurrent



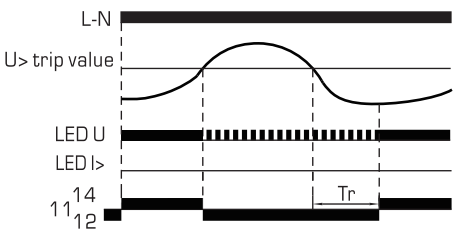
Tr: Reset time 2-60min

● Undercurrent



Tr: Reset time 2-60min

● Overvoltage



Tr: Reset time 2-60min

Liquid level control relay RD-LC1

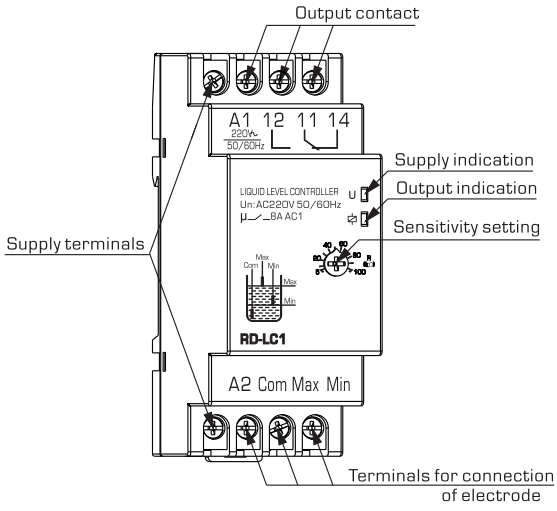
☐ Features

- Microcontroller based.
- Sensitivity 5kΩ~100kΩ adjustable
- 1 C/O output-8A
- Work with 2 or 3 electrodes mode
- LED indication for supply and output state
- 2 module Din-rail mounting

☐ Technical data

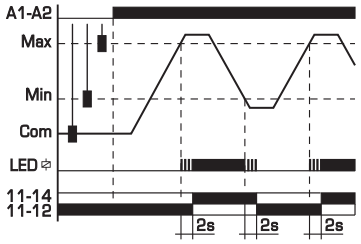
Power supply terminals	A1-A2
Rated supply voltage(Un)	AC220V, AC380V
Rated frequency	50/60Hz
Power consumption	<1W
Sensitivity	5kΩ~100kΩ adjustable
Trip delay	2s
Supply indication	Green LED
Output indication	Red LED
Output contact	1C/O
Current rating	8A/250V AC1
Rated insulation voltage	415V
Protection degree	IP20
Pollution degree	3
Electrical life	10^5
Mechanical life	10^6
Altitude	≤2000m
Ambient temperature	-25°C~+50°C
Permissable relative humidity	≤50% at 40°C(without condensation)
Storage temperature	-25°C~+75°C
Conductor size	0.5~2.5mm²
Tightening torque	0.5Nm
Mounting	TH35 Rail (EN60715)

☐ Front-face panel

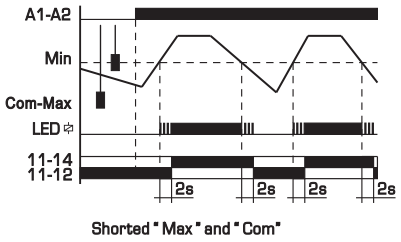


☐ Function diagrams

- 3 electrodes mode

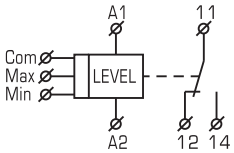


- 2 electrodes mode



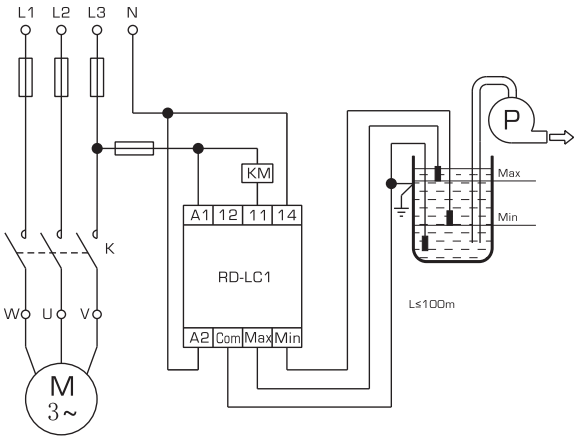
Shorted "Max" and "Com"

☐ Symbol

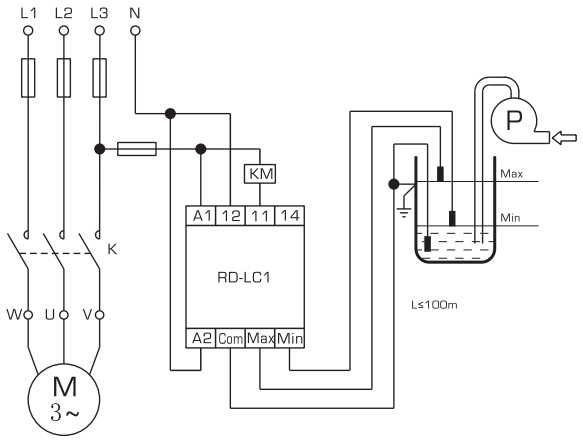


☐ Wiring diagrams

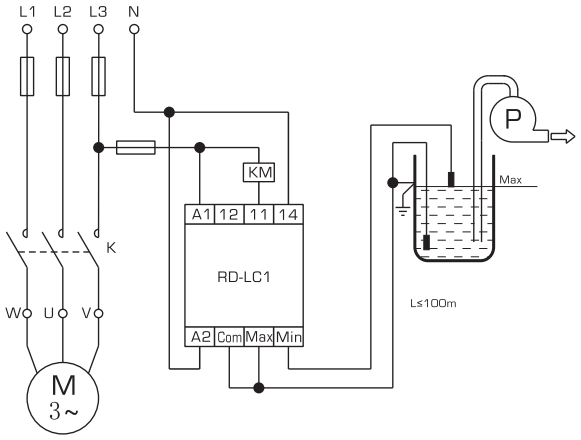
- 3 electrodes mode(draining)



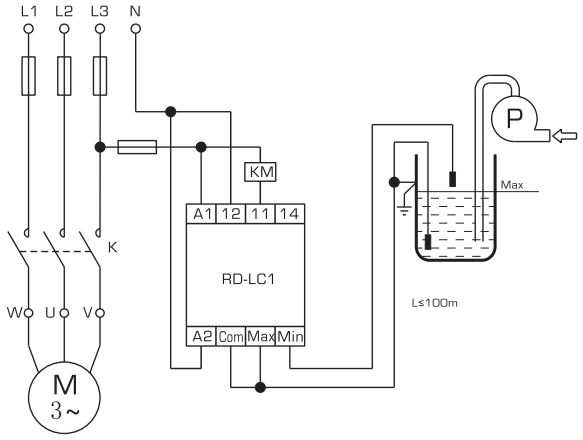
● 3 electrodes mode(filling)



● 2 electrodes mode(draining)



● 2 electrodes mode(filling)



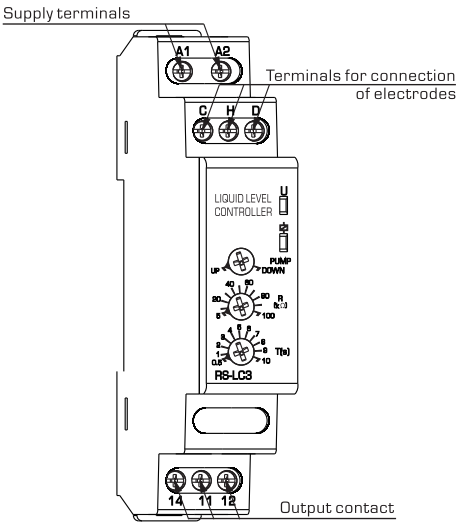
☐ Features

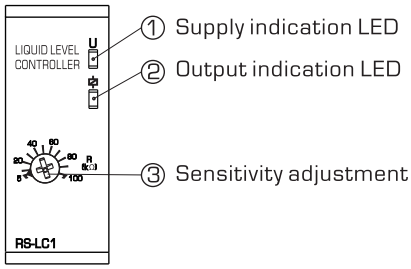
- Microcontroller based.
- Sensitivity 5kΩ~100kΩ adjustable
- 1 C/O output-8A
- Work with 2 or 3 electrodes mode
- 24-240VAC/DC
- Draining or filling function is selectable
- LED indication for supply and output state(RS-LC3)
- 1 module Din-rail mounting

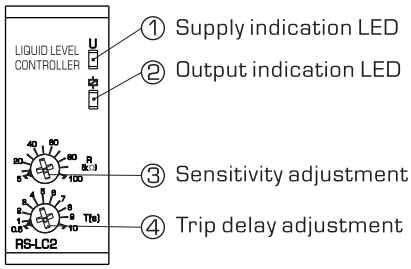
☐ Technical data

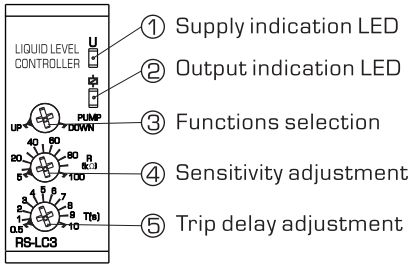
Power supply terminals	A1-A2
Rated supply voltage(Un)	AC/DC 24-240V
Rated frequency	50/60Hz
Power consumption	<1W
Sensitivity	5kΩ~100kΩ adjustable
Trip delay	RS-LC1: 2s; RS-LC2/LC3: 0.5-10s
Supply indication	Green LED
Output indication	Red LED
Output contact	1C/O
Current rating	8A/250V AC1
Rated insulation voltage	415V
Protection degree	IP20
Pollution degree	3
Electrical life	10^5
Mechanical life	10^6
Altitude	≤2000m
Ambient temperature	-25°C~+50°C
Permissable relative humidity	≤50% at 40°C(without condensation)
Storage temperature	-25°C~+75°C
Conductor size	0.5~2.5mm²
Tightening torque	0.5Nm
Mounting	TH35 RAIL (EN60715)

☐ Front-face panel



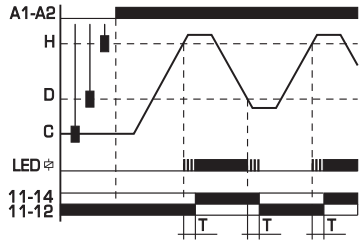




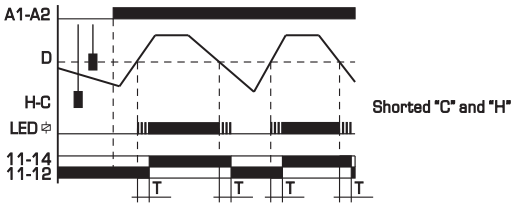


☐ Function diagrams

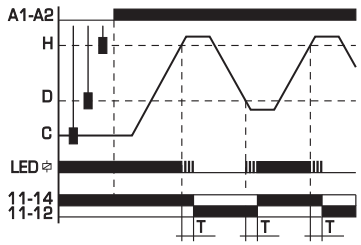
● RS-LC1,RS-LC2,RS-LC3: 3electrodes mode(down)



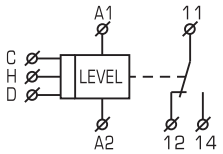
● RS-LC1,RS-LC2: 2electrodes mode



● RS-LC3: 3electrodes mode(up)

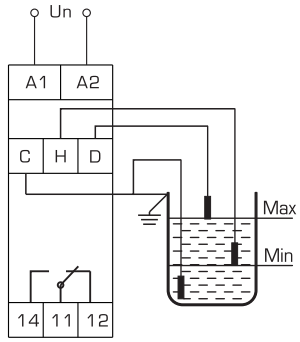


□ Symbol

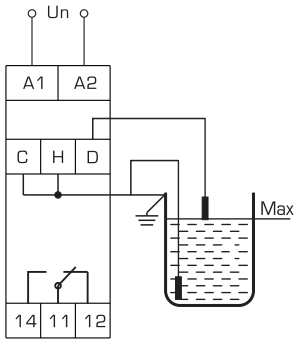


□ Wiring diagrams

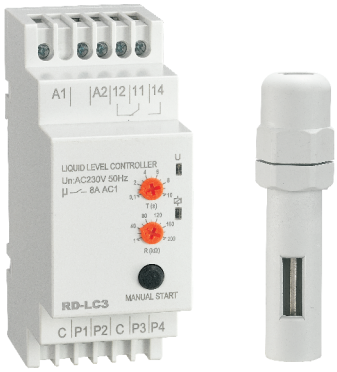
● 3 electrodes mode



● 2 electrodes mode



Liquid level control relay RD-LC3



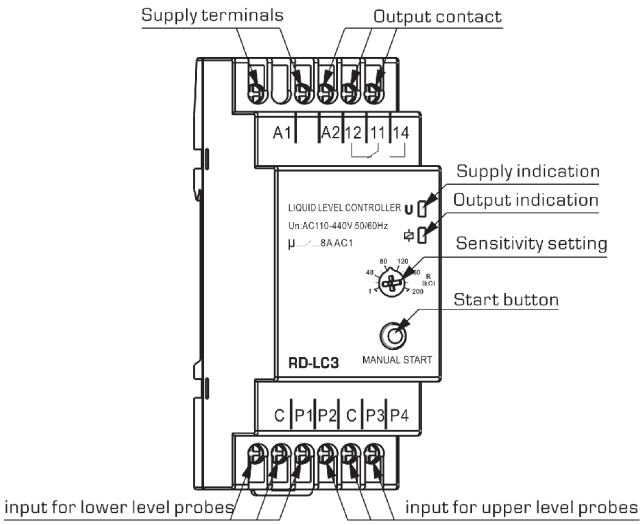
☐ Features

- Microcontroller based.
- Sensitivity 5kΩ~100kΩ adjustable
- 1 C/O output-8A
- One/two tank monitoring for draining and(or) filling.
- LED indication for supply and output state
- 2 module Din-rail mounting

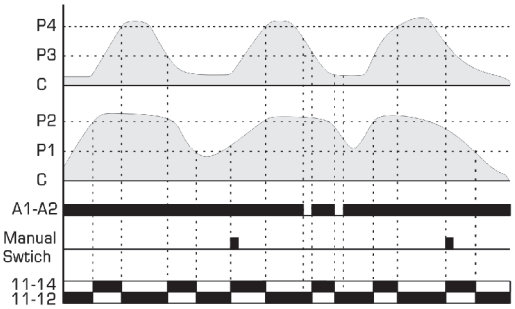
☐ Technical data

Power supply terminals	A1-A2
Rated supply voltage(Un)	AC220V, AC380V
Rated frequency	50/60Hz
Power consumption	<1W
Sensitivity	5kΩ~100kΩ adjustable
Trip delay	0.1s
Supply indication	Green LED
Output indication	Red LED
Output contact	1C/O
Current rating	8A/250V AC1
Rated insulation voltage	415V
Protection degree	IP20
Pollution degree	3
Electrical life	10^5
Mechanical life	10^6
Altitude	≤2000m
Ambient temperature	-25°C~+50°C
Permissable relative humidity	≤50% at 40°C(without condensation)
Storage temperature	-25°C~+75°C
Conductor size	0.5~2.5mm²
Tightening torque	0.5Nm
Mounting	TH35 Rail (EN60715)

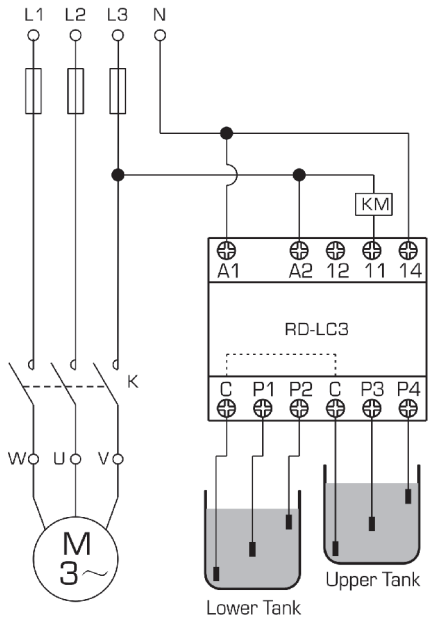
☐ Front-face panel



☐ Function diagrams



☐ Wiring diagram



Liquid level indicator RD-LS1

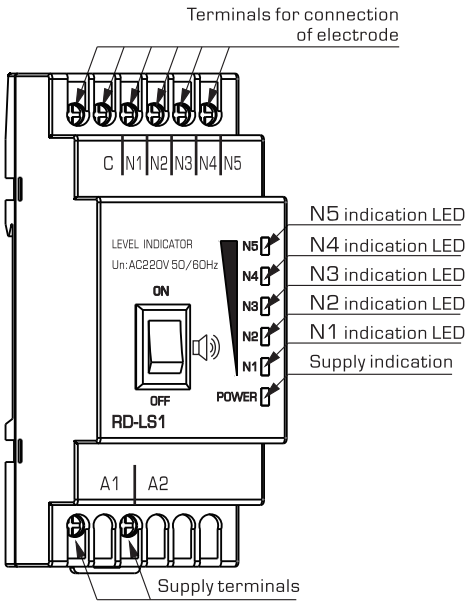
☐ Features

- Modular design, 36mm wide housing.
- LED indication for level state.
- Alarm for high and low level.
- Alarm function can be switch off.
- 2 module Din-rail mounting

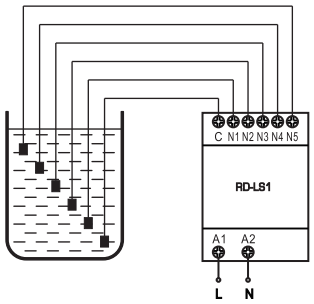
☐ Technical data

Power supply terminals	A1-A2
Rated supply voltage(Un)	AC 220-240V
Rated frequency	50/60Hz
Max.power consumption	0.5W
Supply indication	Green LED
Output indication	Red LED
Rated insulation voltage	240V
Protection degree	IP20
Pollution degree	3
Electrical life	10^5
Mechanical life	10^6
Altitude	≤2000m
Ambient temperature	-25°C~+50°C
Permissable relative humidity	≤50% at 40°C(without condensation)
Storage temperature	-25°C~+75°C
Conductor size	0.5~2.5mm^2
Tightening torque	0.5Nm
Mounting	TH35 rail (EN60715)

☐ Front-face panel



☐ Wiring diagram



Dual power supply module RM-DPS1

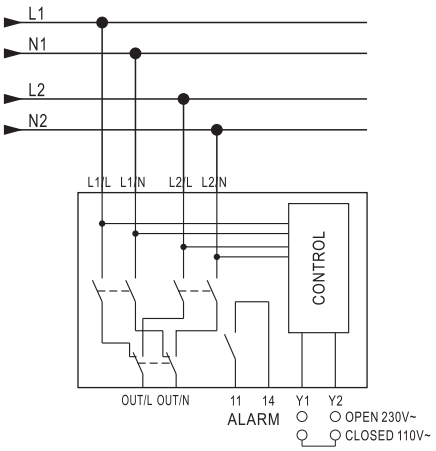
☐ Features

- Microcontroller based
- Transfer between line 1 and line 2
- Priority line 1
- Overvoltage and undervoltage protection
- Rated voltage set to 110V or 230V via a jumper
- LEDs indication for control state
- 3 module Din-rail mounting

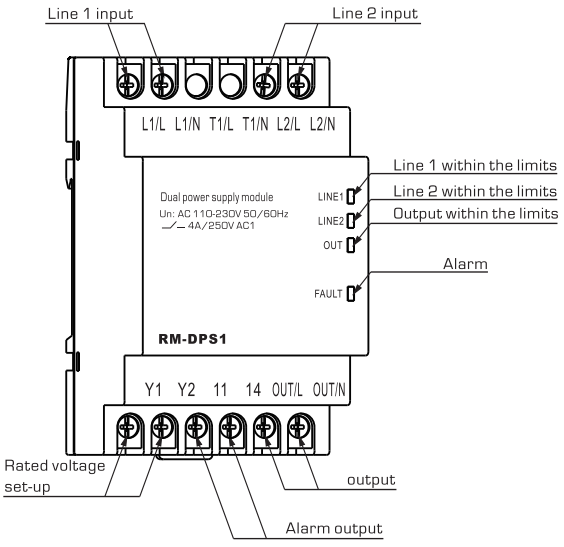
☐ Technical data

Supply terminals	LINE1(L1/L,L1/N),LINE2(L2/L,L2/N)
Rated supply voltage	110~230V
Operating limit	AC 80V~300V
Rated frequency	50/60Hz
Power consumption	2.4W
Voltage measurement accuracy	±1%
Recommended fuse	4A FAST
Output contact	OUT/L, OUT/N
Output contact type	2x2NO(line 1 and 2),1C/O(relay)
Max output current	4A/250V(AC1),1.5A/250V(AC15)
Alarm contact	11,14
Alarm contact type	1NO
Rated current	3A/250V(AC1)
Electrical life	10^5
Mechanical life	10^6
Protection degree	IP20
Pollution degree	3
Altitude	≤2000m
Operating temperature	-25˚C~50˚C
Humidity	≤50% at 40˚C(without condensation)
Storage temperature	-25˚C~55˚C

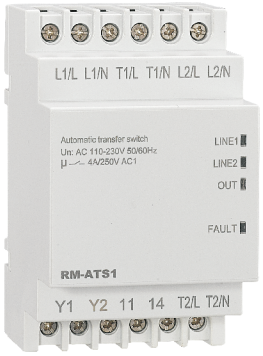
☐ Wiring diagram



☐ Front-face panel



Auto transfer switch RM-ATS1



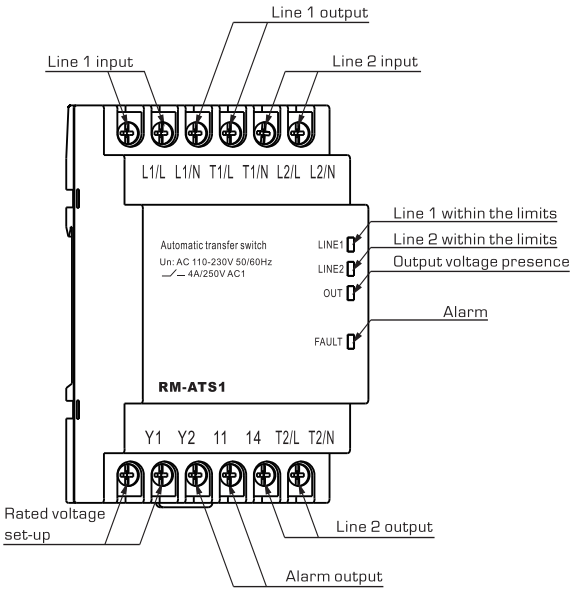
☐ Features

- Microcontroller based
- Transfer between line 1 and line 2
- Overvoltage and undervoltage protection
- Rated voltage set to 110V or 230V via a jumper
- LEDs indication for control state
- 2 module Din-rail mounting

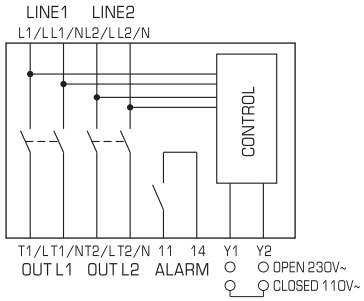
☐ Technical data

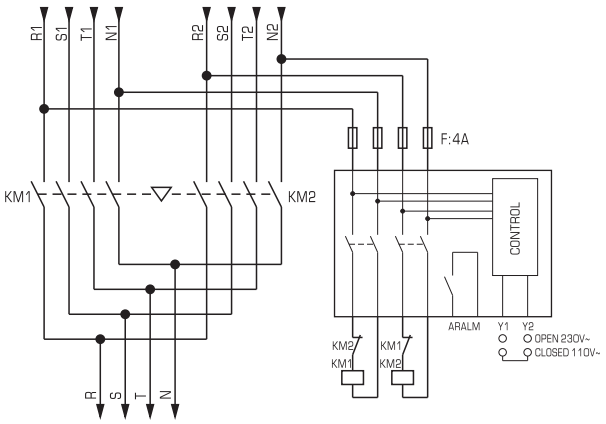
Supply terminals	LINE1(L1/L,L1/N),LINE2(L2/L,L2/N)
Rated supply voltage	110~230V
Operating limit	AC 80V~300V
Rated frequency	50/60Hz
Power consumption	2.4W
Voltage measurement accuracy	±1%
Recommended fuse	4A FAST
Output contact	OUT1(T1/L,T1/N),OUT2(T2/L,T2/N)
Output contact type	2x2NO
Max output current	4A/250V(AC1),1.5A/250V(AC15)
Alarm contact	11,14
Alarm contact type	1NO
Rated current	3A/250V(AC1)
Electrical life	10^5
Mechanical life	10^6
Protection degree	IP20
Pollution degree	3
Altitude	≤2000m
Operating temperature	-25°C~50°C
Humidity	≤50% at 40°C(without condensation)
Storage temperature	-25°C~55°C

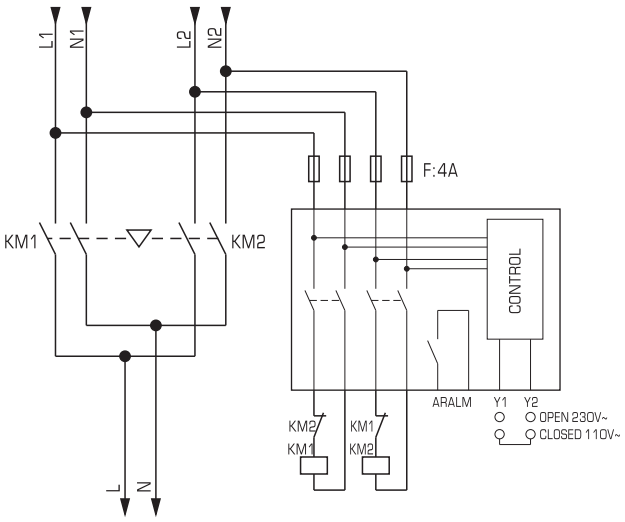
☐ Front-face panel



☐ Wiring diagrams







Auto transfer relay RM-PC1K

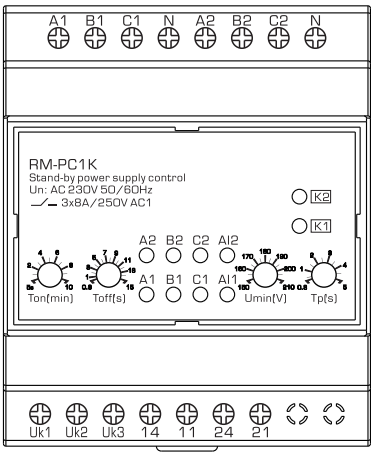
☐ Features

- Microcontroller based
- Transfer between 2 three phase supplies
- Overvoltage and undervoltage protection
- Parameters setting by knobs
- LEDs indication for overvoltage and undervoltage faults
- Mounting on DIN-Rail

☐ Technical data

Supply terminals	N,A1,B1,C1/N,A2,B2,C2
Rated supply voltage	AC 3*230V
Operation voltage range	AC 50V~400V
Rated frequency	50/60Hz
Overvoltage(>U) value	270V fixed
Undervoltage(<U) setting range	150~210V
Switch on delay Ton	5s~10min
Switch off delay Toff	0.3s~15s
Transfer delay	0.3s~5s
Voltage hysteresis	5V
Asymmetric voltage	80V
Voltage measurement accuracy	≤1%(over the whole range)
Trip delay for >U,<U and asym	0.3s
Max Output current	8A(AC1)
Electrical life	10^5
Mechanical life	10^6
Protection degree	IP20
Pollution degree	3
Altitude	≤2000m
Operating temperature	-25°C~50°C
Humidity	≤50% at 40°C(without condensation)

☐ Front-face panel

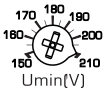


- N,A1,B1,C1: Three phase input terminals for supply 1
- N, A2, B2,C2: Three phase input terminals for supply 2
- Uk1,Uk2,Uk3: Measurement terminals for output voltage
- 11,14: Output contact of Relay 1
- 21, 24: Output contact of Relay 2

Switch on delay setting

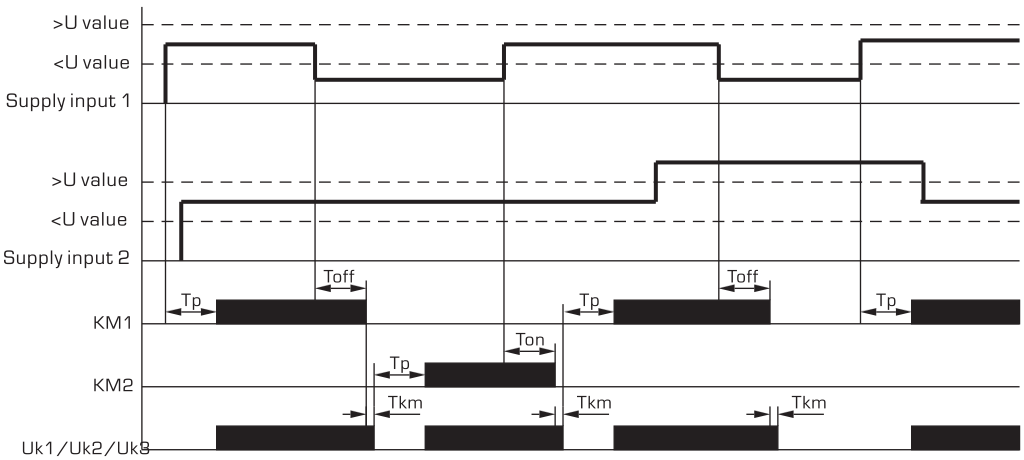
Switch off delay setting

Transfer delay setting



Umin threshold setting

☐ Function diagrams



Auto transfer relay RM-PC1S

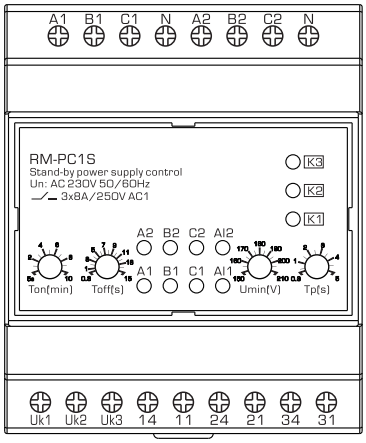
Features

- Microcontroller based
- Transfer between 2 three phase supplies
- Overvoltage and undervoltage protection
- Parameters setting by knobs
- LEDs indication for overvoltage and undervoltage faults
- Mounting on DIN-Rail

Technical data

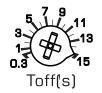
Supply terminals	N,A1,B1,C1/N,A2,B2,C2
Rated supply voltage	AC 3*230V
Operation voltage range	AC 50V~400V
Rated frequency	50/60Hz
Overvoltage(>U) value	270V fixed
Undervoltage(<U) setting range	150~210V
Switch on delay Ton	5s~10min
Switch off delay Toff	0.3s~15s
Transfer delay	0.3s~5s
Voltage hysteresis	5V
Asymmetric voltage	80V
Voltage measurement accuracy	≤1%(over the whole range)
Trip delay for >U,<U and asym	0.3s
Max Output current	8A(AC1)
Electrical life	10^5
Mechanical life	10^6
Protection degree	IP20
Pollution degree	3
Altitude	≤2000m
Operating temperature	-25°C~50°C
Humidity	≤50% at 40°C(without condensation)
Storage temperature	-25°C~55°C

Front-face panel



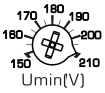
- N,A1,B1,C1: Three phase input terminals for supply 1
- N, A2, B2, C2: Three phase input terminals for supply 2
- Uk1,Uk2,Uk3: Measurement terminals for output voltage
- 11, 14: Output contact of Relay 1
- 21, 24: Output contact of Relay 2
- 31, 34: Output contact of Relay 3

Switch on delay setting



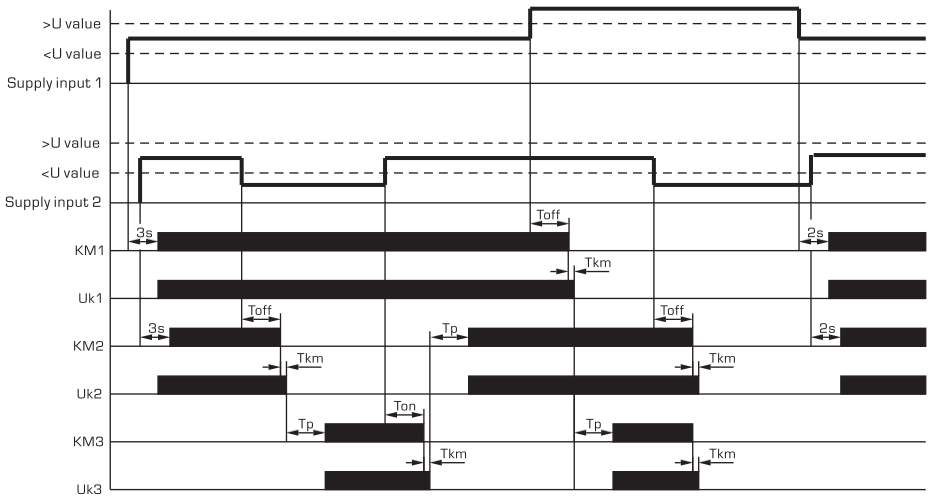
Switch off delay setting

Transfer delay setting

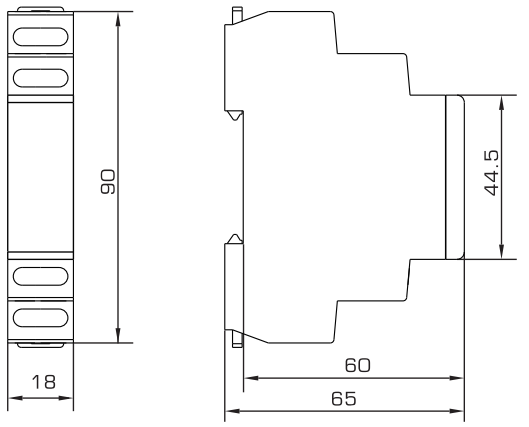


Umin threshold setting

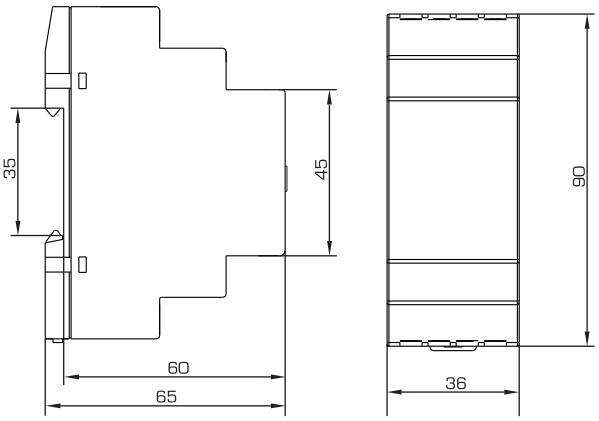
Function diagrams



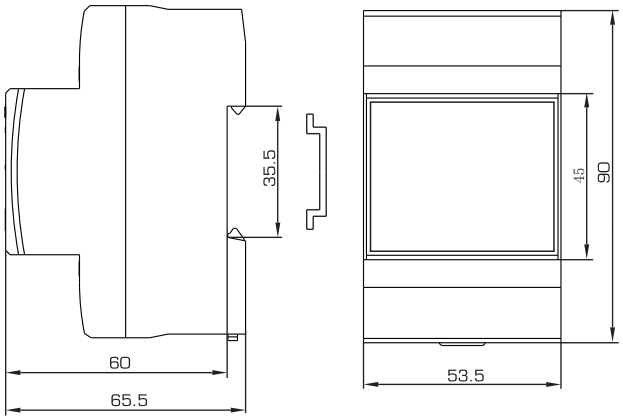
Dimensions



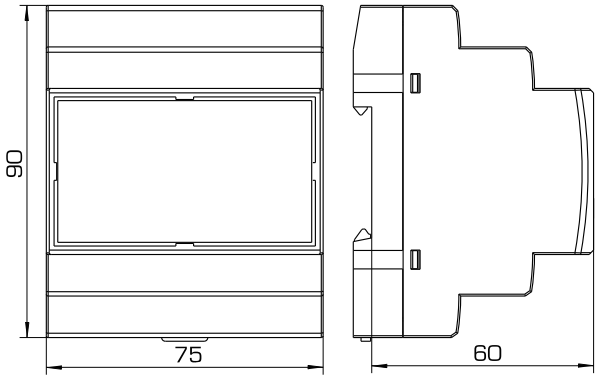
1 MODULE DESIGN



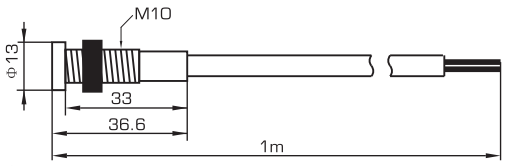
2 MODULE DESIGN



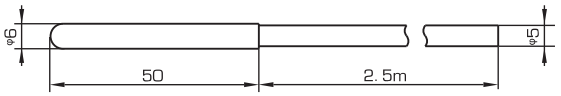
3 MODULE DESIGN



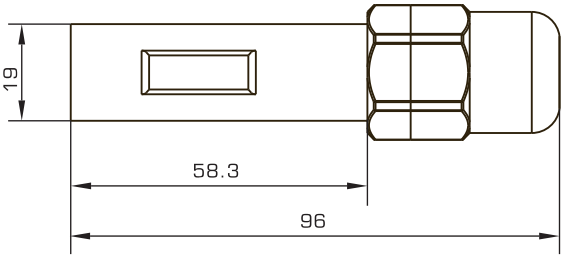
4 MODULE DESIGN



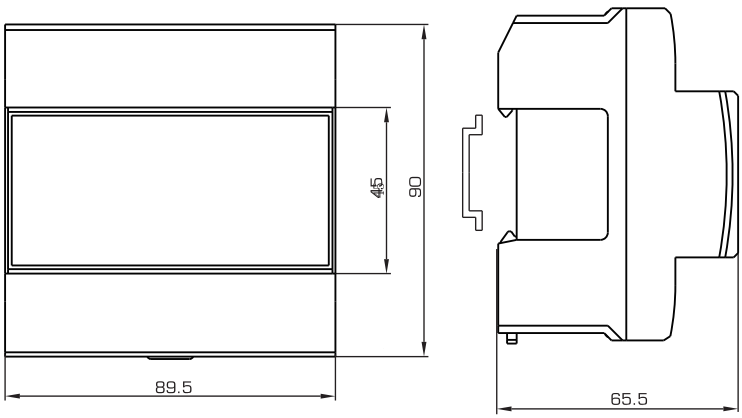
TWILIGHT SENSOR



TEMPERATURE SENSOR



LIQUID LEVEL SENSOR



5 MODULE DESIGN

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