



www.repol.pl/en/Products/Time-relays



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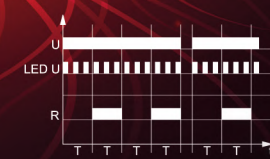
Time relays – available time functions



ER - ON delay and OFF delay with control contact S, independent settings of T1 and T2 intervals.
Relays: MT-W...M, RPC-1ER...



Bp - Symmetrical cyclical operation pause first.
Relays: RPC-.MA-..., RPC-.MB-..., RPC-1MC-UNI, RPC-.MD-UNI, RPC-.BP-..., TR4N, T-R4, PIR15...T



Applying the supply voltage U starts the cyclical operation from the interval T - switching the output relay R off followed by switching on the output relay R for the interval T. The cyclical operation lasts until the supply voltage U is interrupted.

Time relays – available time functions



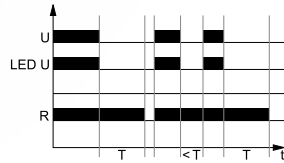
Click on the **NAME** of time function, to see timing diagram and description of the function.



	MT-W...M	RPC-MA-...	RPC-MB-...	RPC-2A-UNI	RPC-1MC-UNI	RPC-MD-UNI	RPC-1ER-...	RPC-1EA-...	RPC-1ES-...	RPC-1EU-...	RPC-1IP-...	RPC-1SA-...	RPC-1WT-...	RPC-E-...	RPC-WU-...	RPC-BP-...	RPC-2SD-UNI	RPC-1AS-A23	TR4N 1 CO, 2 CO	TR4N 4 CO	T-R4	PIR15...T	
	Modular DIN rail enclosure																	Industrial		Plug-in			
A - OFF delay without supply voltage.				✓																			
AUTO - ON for the set interval, triggered by applying voltage or contact S, mode "Extra Time".																		✓					
B - Cyclical operation, with the control contact S.	✓	✓				✓													✓	✓			
Bi - Symmetrical cyclical operation, pulse first.		✓	✓		✓	✓													✓	✓	✓	✓	
Bi(S) - Symmetrical cyclical operation, pulse first, time T measuring stop by contact S.					✓	✓													✓	✓	✓	✓	
Bp - Symmetrical cyclical operation, pause first.		✓	✓		✓	✓										✓			✓	✓	✓	✓	
Bp(S) - Symmetrical cyclical operation, pause first, time T measuring stop by contact S.					✓	✓													✓	✓	✓	✓	
E - ON delay.	✓	✓	✓	✓	✓	✓								✓					✓	✓	✓	✓	
ER - ON and OFF delay, with the control contact S, independent intervals T1, T2.	✓						✓												✓	✓	✓	✓	
E(R) - ON delay, with the Reset function.	✓				✓																		
E(S) - ON delay, time T measuring stop by contact S.	✓				✓																		
Es - ON delay, with the control contact S.	✓																					✓	
Esa - ON and OFF delay, with the control contact S.		✓				✓													✓	✓			
Esa(R) - ON and OFF delay, with the control contact S, with the Reset function.					✓																		
Esf - ON delay, with the control contact S, without the interval T extension.			✓																				
Esp - ON delay - one cycle, with the control contact S.	✓		✓																				
Est - ON delay, with the control contact S, with the interval T extension.	✓		✓																				
EWa - OFF delay and breaking time delay, with the control contact S, independent intervals T1, T2.	✓							✓															
EWf - ON and OFF delay, with the control contact S, independent intervals T1, T2.	✓																						
EWs - ON delay and ON for the set interval, with the control contact S, independent intervals T1, T2.	✓								✓														
EWu - ON delay for the set interval, independent intervals T1, T2.	✓																						
EWu + NWu - ON delay for interval, continuous ON, with the control contact S, independent intervals T1, T2.										✓													
li + lp - Cyclical operation, pulse or pause first, with the control contact S, independent intervals T1, T2.											✓												
nWa - Maintained single shot trailing edge.				✓																			
nWs - Latching ON delay.				✓																			
nWu - Maintained single shot leading edge.				✓																			
nWuWa - Maintained single shot leading and trailing edge.				✓																			
Pi - Cyclical operation, pulse first, independent intervals T1, T2, T3.	✓																						
Pi(S) - Cyclical operation, pulse first, with the control contact S, independent intervals T1, T2, T3.	✓																						
Pp - Cyclical operation, pause first, independent intervals T1, T2, T3.	✓																						
Pp(S) - Cyclical operation, pause first, with the control contact S, independent intervals T1, T2, T3.	✓																						
PWM - Pulse width modulation.																			✓	✓			
R - OFF delay, with the control contact S, mode "Extra Time".	✓	✓			✓	✓												✓	✓	✓		✓	
Ra - OFF delay, with the control contact S, without the interval T extension.			✓																				
SD - Star-Delta start-up, independent intervals T1, T2.																	✓						
T - Generation of the 0,5 s pulse after the interval T.		✓				✓																	
Wa - ON for the set interval, with the control contact S.	✓	✓			✓	✓													✓	✓		✓	
Wi - ON for the set interval, switching off prior the interval T, with the control contact S, mode "Extra Time".	✓	✓	✓		✓	✓												✓	✓	✓		✓	
Ws - Single shot for the set interval, with the control contact S.	✓	✓			✓	✓													✓	✓		✓	
Wst - ON for the set interval, with the control contact S, with the interval T extension.			✓																				
Wswa - ON for the set intervals, with the control contact S, independent intervals T1, T2.	✓											✓											
Wt - Monitoring of the sequence of pulses, switching on extended with contact S, independent intervals T1, T2.	✓												✓										
Wu - ON for the set interval.	✓	✓	✓		✓	✓									✓				✓	✓	✓	✓	
Wu(R) - ON for the set interval, with the Reset function.	✓				✓	✓																	
Wu(S) - ON for the set interval, time T measuring stop by contact S.	✓				✓	✓																	
ON - Stable ON.	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓					
OFF - Stable OFF.	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓					

A - OFF delay without supply voltage.

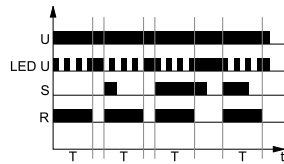
Relays: RPC-2A-UNI



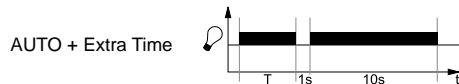
When the supply voltage U is supplied, the output relay R switches into on-position (green LED U illuminated). If the supply voltage is interrupted (green LED U not illuminated), the set interval T begins. After the set interval T has lapsed, the output relay R switches into off-position. If the supply voltage is reconnected before the interval T has lapsed, the interval already measured is erased and is restarted with the next cycle.

AUTO - ON for a set interval triggered by applying the supply voltage U or closing of the control contact S.

Relays: RPC-1AS-A23



Each application of the supply voltage U or closing of the control contact S while supply voltage U is applied results in immediate switching the R contact on for an adjustable interval T. After the T interval has lapsed, the R contact remains off. Opening and closing of the control contact S within the T interval does not affect the function to be fulfilled.



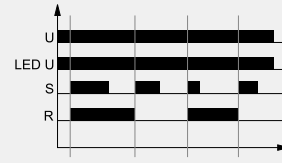
If the AUTO function is activated in the "Extra Time" Mode, after the T interval has lapsed, the R contact is switched off for 1 s, and switched on again for 10 s. After the time of 10 s has been measured, the R contact is switched off.

U - supply voltage; R - output state of the relay; S - control contact state; T, T1, T2, T3 - measured times; t - time axis

① Timing diagram and description of the function for the MT-W...M relay may vary due to the specific nature of this relay (programming with buttons, LED display)

B - Cyclical operation controlled with closing of the control contact S.

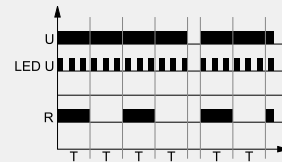
Relays: MT-W...M ①, RPC-.MA-..., RPC-.MD-UNI, TR4N



The input of the time relay is supplied with U voltage continuously. Closing of the control contact S immediately switches on the output relay R. Each next closing of the control contact S results in a change of the status of the output relay R to an opposite one (the feature of a bistable relay).

Bi - Symmetrical cyclical operation pulse first.

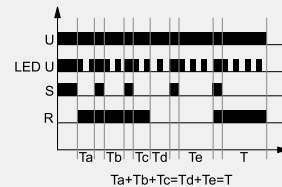
Relays: RPC-.MA-..., RPC-.MB-..., RPC-1MC-UNI, RPC-.MD-UNI, TR4N, T-R4, PIR15...T



Applying the supply voltage U starts the cyclical operation from switching on the output relay R for the set interval T. After the interval T has lapsed, the output relay R switches off for the interval T. The cyclical operation lasts until the supply voltage U is interrupted.

Bi(S) - Symmetrical cyclical operation pulse first, with interval T measurement stopped for the time the S contact is switched on.

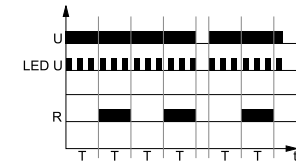
Relays: RPC-1MC-UNI



Applying the supply voltage U starts cyclical operation from measurement of the interval T - switching on the output relay R. If in the course of measurement of interval T the control contact S is closed, the measurement of the time of switching off the R relay will be interrupted for the time the S contact remains closed. Opening of the control contact S triggers further measurement of the interval T. After the interval T has lapsed, the output relay R switches on for the set interval T. If during the measurement of the interval T the control contact S is closed, measurement of the time of switching off the R relay will be interrupted for the time the S contact remains closed. Opening of the control contact S triggers further measurement of the interval T. The cyclical operation lasts until the supply voltage U is interrupted.

Bp - Symmetrical cyclical operation pause first.

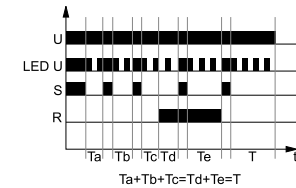
Relays: RPC-.MA-..., RPC-.MB-..., RPC-1MC-UNI, RPC-.MD-UNI, RPC-.BP-..., TR4N, T-R4, PIR15...T



Applying the supply voltage U starts the cyclical operation from the interval T - switching the output relay R off followed by switching on the output relay R for the interval T. The cyclical operation lasts until the supply voltage U is interrupted.

Bp(S) - Symmetrical cyclical operation pause first, with interval T measurement stopped for the time the S contact is switched on.

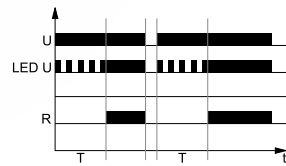
Relays: RPC-1MC-UNI



Applying the supply voltage U starts the cyclical operation from the interval T - switching the output relay R off. If in the course of measurement of interval T the control contact S is closed, the measurement of the time of switching off the R relay will be interrupted for the time the S contact remains closed. Opening of the control contact S triggers further measurement of the interval T. After the interval T has lapsed, the output relay R switches on for the set interval T. If during the measurement of the interval T the control contact S is closed, measurement of the time of switching on the R relay will be interrupted for the time the S contact remains closed. Opening of the control contact S triggers further measurement of the interval T. The cyclical operation lasts until the supply voltage U is interrupted.

E - ON delay.

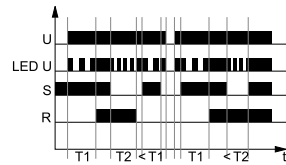
Relays: MT-W...M ①, RPC-MA-..., RPC-MB-..., RPC-2A-UNI, RPC-1MC-UNI, RPC-MD-UNI, RPC-E-..., TR4N, T-R4, PIR15...T



On applying the supply voltage U the set interval T begins - off-delay of the output relay R. After the interval T has lapsed, the output relay R switches on and remains on until supply voltage U is interrupted.

ER - ON delay and OFF delay with control contact S. Independent settings of T1 and T2 intervals.

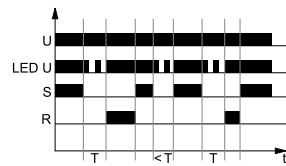
Relays: MT-W...M ①, RPC-1ER-...



The input of the time relay is supplied with voltage U continuously. Closing of the control contact S starts the interval T1, and after it has lapsed, the output relay R switches on. Opening of the control contact S starts the interval T2, and after it has lapsed, the output relay R switches off. In case the control contact S is closed in the course of the interval T2, the measured time is reset and the output relay R remains switched on. In case the control contact S is closed for time shorter than T1, the unit will not switch the output relay R on.

E(R) - ON delay with the Reset function.

Relays: MT-W...M ①, RPC-1MC-UNI

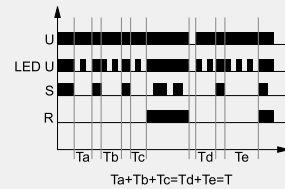


On applying the supply voltage U the set interval T begins. After the interval T has lapsed, output relay R turns on. If control contact S is closed during the measurement T, measuring of interval T is stopped for the time the S contact remains closed. After opening contact S, time T is measured from the start. After the interval T has lapsed, the output relay R switches on until the moment of turning off supply voltage U or when the control contact S is closed again.

U - supply voltage; R - output state of the relay; S - control contact state; T, T1, T2, T3 - measured times; t - time axis
① Timing diagram and description of the function for the MT-W...M relay may vary due to the specific nature of this relay (programming with buttons, LED display)

E(S) - ON delay, with time measurement stopped with contact S.

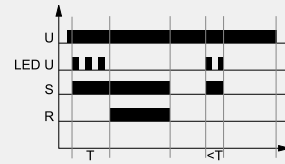
Relays: MT-W...M ①, RPC-1MC-UNI



On applying the supply voltage U the set interval T begins. If during measuring time T control contact S is closed, measuring of time T is stopped for the time of closing contact S. Opening of control contact S resumes measuring of time T. After finishing measuring time T, the output relay R switches on and remains on until supply voltage U is interrupted.

Es - ON delay with the control contact S.

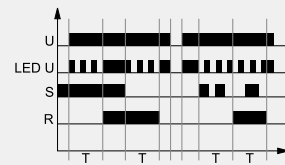
Relays: MT-W...M ①, PIR15...T



The input of the time relay is supplied with voltage U continuously. Closing of the control contact S starts the interval T - on-delay of the output relay R. After the interval T has lapsed, the output relay R switches on and remains in this position until the control contact S is opened. In case the control contact S is closed for time shorter than the set interval T, the output relay R will not activate.

Esa - ON and OFF delay with the control contact S.

Relays: RPC-MA-..., RPC-MD-UNI, TR4N



The input of the time relay is supplied with voltage U continuously. Closing of the control contact S starts the interval T - on-delay of the output relay R. After the interval T has lapsed, the output relay R switches on. Opening of the control contact S begins further measurement of the interval T - off-delay of the output relay R, and after the interval has lapsed, the output relay switches off. In case the time for which the control contact S is closed in the course of measurement of the on-delay of the output relay R is shorter than the set interval T, the output relay R will switch on after the set interval T, and the output relay R will remain in on position for the interval T. When the output relay R is in on position, closing of the control contact S does not affect the function to be performed.

Esa(R) - ON and OFF delay controlled with on and off of the S contact with the Reset function.

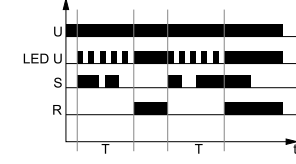
Relays: RPC-1MC-UNI



The input of the time relay is supplied with voltage U continuously. Closing of the control contact S begins the measurement of the set interval T - ON delay of the output relay R. If the control contact S is opened during the measurement of the interval T - ON delay of the output relay R, the measured time will be reset. The interval T measurement will start after the control contact S has been closed. After the set interval T has lapsed, the output relay R switches on. Opening of the control contact S will again trigger measurement of the set interval T - OFF delay of the output relay R, and after the interval has been measured, the output relay R switches off. If the control contact S is closed during the interval T measurement, the measured time will be reset. Opening of the control contact S will again trigger measurement of the interval T.

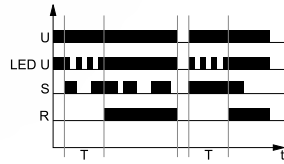
Esf - ON delay with the control contact S, without the interval T extension.

Relays: RPC-MB-...



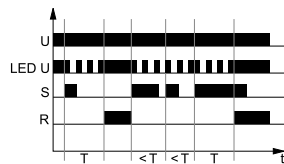
The input of the time relay is supplied with voltage U continuously. Closing of the control contact S starts the interval T - on-delay of the output relay R. After the interval T has lapsed, the output relay R switches on and remains in this position until the control contact S is closed again, which instantly switches the output relay off for the time T, and after the interval T has lapsed, the output relay R switches on again. In the course of measurement of the interval T, opening or closing of the control contact S does not affect the status of the output relay R. The output relay R may be switched on again after the current cycle has been completed.

Esp - ON delay - one cycle, with closing of the control contact S.
Relays: MT-W...M ①, RPC-MB-...



The input of the time relay is supplied with voltage U continuously. Closing of the control contact S starts the interval T, and after the interval T has lapsed, the output relay R switches on and remains in this position until the supply voltage U is interrupted. When the output relay R is on, opening or closing of the control contact S does not affect its status.

Est - ON delay with closing of the control contact S, with the interval T extended.
Relays: MT-W...M ①, RPC-MB-...



The input of the time relay is supplied with voltage U continuously. Closing of the control contact S starts the interval T, and after the interval T has lapsed, the output relay R switches on and remains in this position until the control contact S is closed again or until the supply voltage U is interrupted. Closing of the control contact S resets the thus far measured time and starts the new interval T.

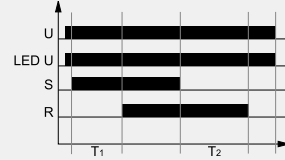
Ewa - OFF delay and breaking time delay with opening of the control contact S. Independent settings of T1 and T2 intervals.
Relays: MT-W...M ①, RPC-1EA-...



The input of the time relay is supplied with voltage U continuously. Closing of the control contact S switches on the output relay R. Opening of the control contact S starts the interval T1, and after the interval has lapsed, the output relay R switches off for the interval T2. Following the interval T2, the output relay R will be switched on again when the control contact S is closed on the lapse of the interval. In the course of the intervals T1 and T2 the position of the control contact S is of no importance.

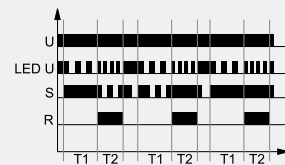
U - supply voltage; R - output state of the relay; S - control contact state; T, T1, T2, T3 - measured times; t - time axis
① Timing diagram and description of the function for the MT-W...M relay may vary due to the specific nature of this relay (programming with buttons, LED display)

Ewf - ON delay and OFF delay with the control contact S. Independent settings of T1 and T2 intervals.
Relays: MT-W...M



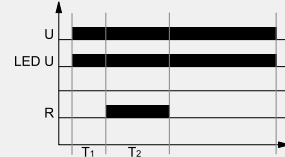
Time relay input is powered by voltage U in a constant way. Closing the control contact S starts measuring the time T1 (display shows a vertical strip spinning to the right). After T1 time is finished, the relay R turns on (display shows two horizontal strips, and LED diode "R" is on). Opening the control contact S starts measuring the time T2 - delayed turning off of the operating relay R (display shows a vertical strip spinning to the left). After measuring T2 time the operating relay R turns off (display shows "End", and LED diode "R" is off).

Ews - ON delay and ON for the set time with closing of the control contact S. Independent settings of T1 and T2 intervals.
Relays: MT-W...M ①, RPC-1ES-...



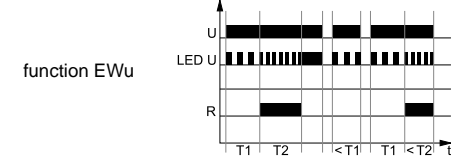
The input of the time relay is supplied with voltage U continuously. Closing of the control contact S starts the interval T1, and after the interval has lapsed, the output relay R switches on for the interval T2. Following the interval T2, the output relay switches off, and the circuit awaits for the control contact S to be closed again. In the course of the intervals T1 and T2 the position of the control contact S is of no importance.

EWu - ON delay for the set interval. Independent settings of T1 and T2 intervals.
Relays: MT-W...M

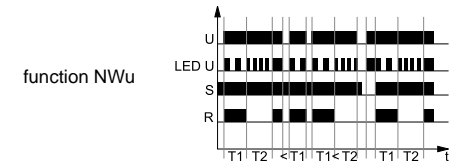


Turning on feeding U starts work from measuring the time T1 (display shows a vertical strip spinning to the right), and after its completion the operating relay R starts at T2 time (display shows a vertical strip spinning to the left, and LED diode "R" is on). After measuring T2 time the operating relay turns off (display shows "End", and LED diode "R" is off).

EWu + NWu - ON delay for the set interval (EWu) or switching ON for the set interval-switching OFF for the set interval-continuous ON (NWu), with the control contact S. Independent settings of T1 and T2 intervals.
Relays: RPC-1EU-...



When the control contact S is open, application of the supply voltage U starts operation in the EWu function - the interval T1, and after the interval T1 has lapsed, the output relay switches on for the interval T2.

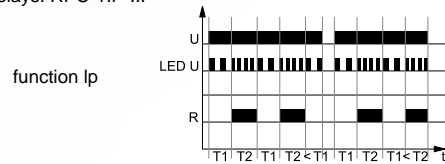


When the control contact S is closed, application of the supply voltage U starts operation in the NWu function - from switching on the output relay R for the interval T1, and after the interval T1 has lapsed, the output relay switches off for the interval T2, and following the interval T2, the output relay R switches on for continuous time. In the course of the interval operation, closing of the control contact S at any time will cause reset and the operation in the NWu function will start whereas opening of the control contact S at any time will cause reset and the operation in the EWu function will start.

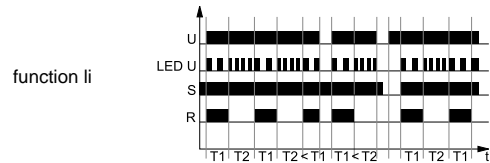


li + lp - Cyclical operation in two independent intervals T1 and T2. Operation in the function li or lp depending on the position of the control contact S.

Relays: RPC-1IP-...



Application of the supply voltage U when the control contact S is open start the cyclical operation in the lp function - from the interval T1 (time of switching off the output relay R), following which the output relay R is switched on for the interval T2. The cyclical operation continues until the supply voltage U is interrupted.

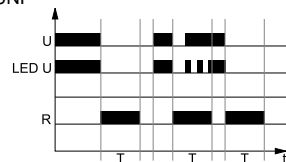


When the control contact S is closed, application of the supply voltage U starts operation in the li function - from switching on the output relay R for the interval T1, and after the interval T1 has lapsed, the output relay switches off for the interval T2. The cyclical operation continues until the supply voltage U is interrupted.

In the course of the relay operation, closing of the control contact S at any time will cause reset and the operation in the li function will start whereas opening of the control contact S at any time will cause reset and the operation in the lp function will start.

nWa - Maintained single shot trailing edge.

Relays: RPC-2A-UNI

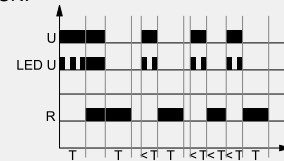


When the supply voltage U is supplied, the output relay R remains in off-position (green LED U illuminated). As soon as the supply voltage is interrupted, the output relay switches into on-position and the set interval T begins (green LED not illuminated). After the set interval T has lapsed, the output relay switches into off-position. When the supply voltage is reconnected before the interval T has lapsed, the unit continues to perform the actual single shot.

U - supply voltage; R - output state of the relay; S - control contact state; T, T1, T2, T3 - measured times; t - time axis
 Ⓛ Timing diagram and description of the function for the MT-W...M relay may vary due to the specific nature of this relay (programming with buttons, LED display)

nWs - Latching ON delay.

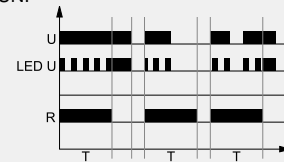
Relays: RPC-2A-UNI



Applying the supply voltage U triggers the operation with delay in switching on the R contact by the set T interval. The R contact is switched on after the delay interval has lapsed. Interrupting the supply voltage while the R contact starts measurement of the T interval after which the R contact is to be switched off. After the T interval of switching the R contact off has lapsed, the R contact is switched off. Interruption of the supply voltage U while ON-delay by the set T interval is being measured for the R contact stops measurement of the T interval and switches the R contact immediately for the set T interval; after the interval has lapsed, the R contact is switched off. Applying the supply voltage U when the T interval is being measured for the R contact to be switched off stops measurement of the interval, switches the R contact off, and starts measurement of ON-delay for the R contact.

nWu - Maintained single shot leading edge.

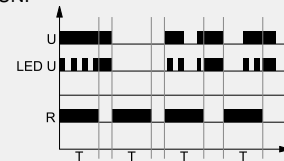
Relays: RPC-2A-UNI



When the supply voltage U is applied (green LED U illuminated), the output relay R switches into on-position and the set interval T begins (green LED U flashes). After the interval T has lapsed, the output relay switches into off-position. This status remains until the supply voltage is interrupted. If the supply voltage is reconnected before the interval T has lapsed, the unit continues to perform the actual single shot.

nWuWa - Maintained single shot leading and trailing edge.

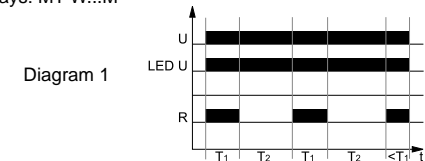
Relays: RPC-2A-UNI



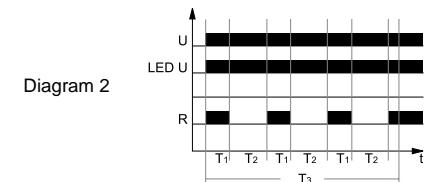
When the supply voltage U is applied, the output relay R switches into on-position and the set interval T begins (green LED U illuminated). After the interval T has lapsed, the output relay switches into off-position. As soon as the supply voltage is interrupted the output relay switches into on-position again, and the set interval T begins (green LED not illuminated). After the set interval T has lapsed, the output relay switches into off-position. If the supply voltage is interrupted (nWu) or reconnected (nWa) before the interval T has lapsed, the unit continues to perform the actual single shot.

Pi - Cyclical operation pulse first. Independent settings of T1 and T2 intervals. Possibility of turning on or omitting T3 time.

Relays: MT-W...M



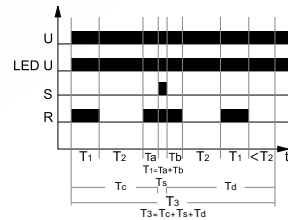
Turning on feeding voltage U starts cyclic work from turning on the operating relay R for the T1 time (display shows a vertical strip spinning to the right, and LED diode "R" is on), after which occurs turning off of the operating relay R for T2 time (display shows a vertical strip spinning to the left, and LED diode "R" is off). Cyclic work lasts until the moment of turning off feeding voltage - see Diagram 1.



Note: it is possible to turn on T3 time (i.e. the time of cyclic work) during programming the relay (when the LED T3 diode is flashing) by confirming it with the OK button, or omitting the T3 time by pressing "F/T" button. When T3 time has been turned on and set, during cyclic work green LED diode T3 is flashing. After T3 time is finished display shows "End", LED diode T3 is off, and operating relay R remains in the state which it was in at the moment of the end of T3 time. If T3 time finishes during measuring T1 time, the operating relay R will remain on (LED "R" is on), and if it finishes during measuring T2 time, the operating relay R will remain off (LED diode "R" is off). Another turning on the function of cyclic work will be possible after turning off feeding U and turning it on again - see Diagram 2.

Pi(S) - Cyclical operation pulse first. Independent settings of T1 and T2 intervals. Possibility of turning on or omitting T3 time. Possibility of stopping and resuming cyclic work by control contact S.

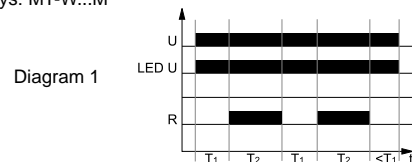
Relays: MT-W...M



Turning on the feeding voltage U starts cyclic work from turning on the operating relay R for the T1 time (display shows a vertical strip spinning to the right, and LED diode "R" is on), after which the operating relay turns off for T2 time (display shows a vertical strip spinning to the left, and LED diode "R" is off). Cyclic work lasts until the moment of turning off feeding voltage U. Note: it is possible to turn on T3 time (i.e. the time of cyclic work) during programming the relay (when the LED T3 diode is flashing) by confirming it with the OK button, or omitting the T3 time by pressing "F/T" button. When T3 time has been turned on and set, during cyclic work green LED diode T3 is flashing. After T3 time is finished display shows "End", LED diode T3 is off, and operating relay R remains in the state which it was in at the moment of the end of T3 time. If T3 time finishes during measuring T1 time, the operating relay R will remain on (LED "R" is on), and if it finishes during measuring T2 time, the operating relay R will remain off (LED diode "R" is off). Another turning on the function of cyclic work will be possible after turning off feeding U and turning it on again. Operation of contact S: closing control contact S immediately stops measuring times. Opening control contact S resumes measuring times. The break in carrying out the function Pi(S) (by the period of closing contact S) is included in T3.

Pp(S) - Cyclical operation pause first. Independent settings of T1 and T2 intervals. Possibility of turning on or omitting T3 time.

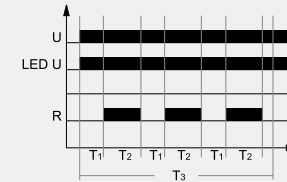
Relays: MT-W...M



Turning on feeding voltage U starts cyclic work from measuring the time of break T1 - the time of turning off the operating relay R (display shows a vertical strip spinning to the right), after which occurs turning off of the operating relay R for the T2 time (Display shows a vertical strip spinning to the left, and LED diode "R" is on). Cyclic work lasts until the moment of turning off feeding voltage U - see Diagram 1.

U - supply voltage; R - output state of the relay; S - control contact state; T, T1, T2, T3 - measured times; t - time axis
 Ⓛ Timing diagram and description of the function for the MT-W...M relay may vary due to the specific nature of this relay (programming with buttons, LED display)

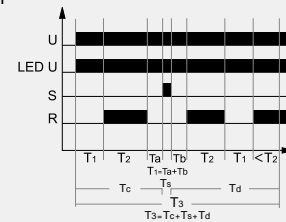
Diagram 2



Note: it is possible to turn on T3 time (i.e. the time of cyclic work) during programming the relay (when the LED T3 diode is flashing) by confirming it with the OK button, or omitting the T3 time by pressing "F/T" button. When T3 time has been turned on and set, during cyclic work green LED diode T3 is flashing. After T3 time is finished display shows "End", LED diode T3 is off, and operating relay R remains in the state which it was in at the moment of the end of T3 time. If T3 time finishes during measuring T1 time, the operating relay R will remain on (LED "R" is on), and if it finishes during measuring T2 time, the operating relay R will remain off (LED diode "R" is off). Another turning on the function of cyclic work will be possible after turning off feeding U and turning it on again - see Diagram 2.

Pp(S) - Cyclical operation pause first. Independent settings of T1 and T2 intervals. Possibility of turning on or omitting T3 time. Possibility of stopping and resuming cyclic work by control contact S.

Relays: MT-W...M

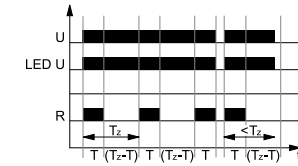


Turning on feeding voltage U starts cyclic work from measuring break time T1 - time of turning off the operating relay R (display shows a vertical strip spinning to the right), after which occurs turning on the operating relay R for the T2 time (display shows a vertical strip spinning to the left, and LED diode "R" is on). Cyclic work lasts until the moment of turning off feeding voltage U.

Note: it is possible to turn on T3 time (i.e. the time of cyclic work) during programming the relay (when the LED T3 diode is flashing) by confirming it with the OK button, or omitting the T3 time by pressing "F/T" button. When T3 time has been turned on and set, during cyclic work green LED diode T3 is flashing. After T3 time is finished display shows "End", LED diode T3 is off, and operating relay R remains in the state which it was in at the moment of the end of T3 time. If T3 time finishes during measuring T1 time, the operating relay R will remain on (LED "R" is on), and if it finishes during measuring T2 time, the operating relay R will remain off (LED diode "R" is off). Another turning on the function of cyclic work will be possible after turning off feeding U and turning it on again. Operation of contact S: closing control contact S immediately stops measuring times. Opening control contact S resumes measuring times. The break in carrying out the function Pi(S) (by the period of closing contact S) is included in T3.

PWM - Pulse width modulation.

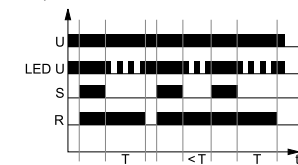
Relays: TR4N



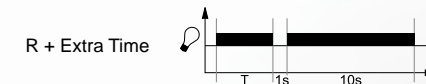
Set the relay to a single Tz cycle which is one of the time ranges available for a time relay. The cycle shall be set with the time selection knob. Then, set the interval T, i.e. the ON time of the output relay R with the time fine setting knob. The interval T may be set from 0.1 to 1.0 of the time range (Tz cycle). Applying the supply voltage U immediately switches on the output relay R for the set interval, and after the interval has lapsed, the output relay R switches off for the time left until the set time Tz. After the Tz time, consecutive cycles start and are continued until the supply voltage U is interrupted. In the course of the PWM function, the ON time of the output relay R may be changed, and such change does not affect the interval of the Tz cycle. The changed ON time of the output relay R shall be realized starting from the new Tz cycle following the change.

R - OFF delay with the control contact S.

Relays: MT-W...M Ⓛ, RPC-MA-..., RPC-1MC-UNI, RPC-MD-UNI, RPC-1AS-A23, TR4N, PIR15...T



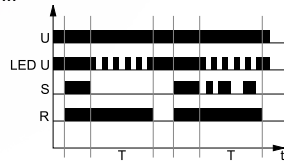
The input of the time relay is supplied with voltage U continuously. Closing of the control contact S immediately switches on the output relay R. Opening of the control contact S starts the set time of the delayed switching off of the output relay R. After the interval T has lapsed, the output relay R switches off. If the control contact S is closed during the interval T, the already measured time is reset, and the output relay R is switched on again. The OFF delay of the output relay R will start when the control contact S is opened again.



If the R function is activated in the "Extra Time" Mode, after the T interval has lapsed, the R contact is switched off for 1 s, and switched on again for 10 s. After the time of 10 s has been measured, the R contact is switched off.

Ra - OFF delay with the control contact S, without the interval T extension.

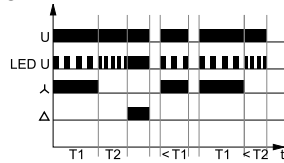
Relays: RPC-.MB-...



The input of the time relay is supplied with voltage U continuously. Closing of the control contact S immediately switches on the output relay R. Opening of the control contact S starts the set time of the delayed switching off of the output relay R. After the interval T has lapsed, the output relay R switches off. Opening or closing of the control contact S within the interval T does not affect the function to be performed.

SD - Star-Delta start-up.

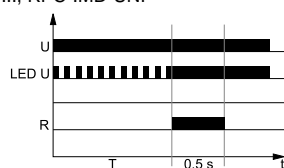
Relays: RPC-2SD-UNI



When the supply voltage U is applied, the operating star-contact (15-18) becomes closed, which is signaled with illumination of the yellow LED. Measurement of the set time T1 starts, and the green LED slow flashes. After the T1 time has lapsed, the star contact is disconnected and the relay begins measuring the T2 time, which is signaled with the green LED fast flashing. After the T2 time has lapsed, the delta contact (25-28) is switched on together with the yellow LED, and the green LED remains illuminated.

T - Generation of the 0,5 s pulse after the interval T.

Relays: RPC-.MA-..., RPC-.MD-UNI



Applying the supply voltage U starts the interval T. After the interval T has lapsed, the output relay switches on for 0,5 s (the time of the NO contact of the output relay).

U - supply voltage; R - output state of the relay; S - control contact state; T, T1, T2, T3 - measured times; t - time axis
 Ⓢ Timing diagram and description of the function for the MT-W...M relay may vary due to the specific nature of this relay (programming with buttons, LED display)

Wa - ON for the set interval triggered with the control contact S.

Relays: MT-W...M Ⓢ, RPC-.MA-..., RPC-1MC-UNI, RPC-.MD-UNI, TR4N, PIR15...T



The input of the time relay is supplied with voltage U continuously. Closing of the control contact S does not start the interval T, and it does not change the position of the output relay R. Opening of the control contact S immediately switches on the output relay R for the set time. After the interval T has lapsed, the output relay R switches off. Opening and closing of the control contact S in the course of the interval T does not affect the function to be performed. The output relay R may be switched on again for the set interval with another closing and opening of the control contact S.

Wi - ON for the set interval controlled by closing of the control contact S, with the function of switching off the output relay R prior to the lapse of the interval T.

Relays: MT-W...M Ⓢ, RPC-.MB-..., RPC-1AS-A23



The input of the time relay is supplied with voltage U continuously. Closing of the control contact S immediately switches the output relay R on for the set interval T. After the interval T has lapsed, the output relay R is switched off. Any next closing of the control contact S switches on the output relay R again. In case the control contact S is closed again during the interval T, the output relay is immediately switched off, and the measured interval is cancelled. In the course of the interval T, any opening of the control contact S does not affect the function to be performed.

Wi + Extra Time



If the Wi function is activated in the "Extra Time" Mode, after the T interval has lapsed, the R contact is switched off for 1 s, and switched on again for 10 s. After the time of 10 s has been measured, the R contact is switched off.

Ws - Single shot for the set interval triggered by closing of the control contact S.

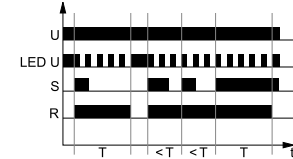
Relays: MT-W...M Ⓢ, RPC-.MA-..., RPC-1MC-UNI, RPC-.MD-UNI, TR4N, PIR15...T



The input of the time relay is supplied with voltage U continuously. Closing of the control contact S immediately switches the output relay R on for the set interval T. After the interval T has lapsed, the output relay R is switched off. In the course of the interval T, any opening of the control contact S does not affect the function to be performed. The output relay R may be switched on again for the set interval, after the interval T has lapsed, by closing the control contact S again.

Wst - ON for the set interval by closing the control contact S, with extension of the interval T - extension of the time of switching on the output relay R.

Relays: RPC-.MB-...

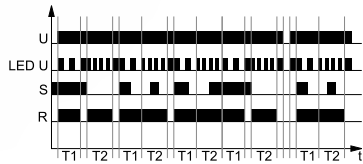


The input of the time relay is supplied with voltage U continuously. Closing of the control contact S immediately switches the output relay R on for the set interval T. After the interval T has lapsed, the output relay R is switched off. The next closing of the control contact S immediately switches on the output relay R for the interval T. In case the control contact S is closed within the interval T, the measured time is cancelled, and the interval T starts again.

Time relays – available time functions

WsWa - ON for the set intervals T1 and T2 with the control contact S. Independent settings of T1 and T2 intervals.

Relays: MT-W...M ①, RPC-1SA-...



The input of the time relay is supplied with voltage U continuously. Closing of the control contact S switches the output relay R for the interval T1, and after the interval has lapsed, the relay R is switched off. Opening of the control contact S switches on the output relay R for the interval T2. If the control contact S is open when the interval T1 lapses, the output relay R will remain on for the interval T2. If the control contact S is closed when the interval T2 lapses, the output relay R will remain on for the interval T1.

Wt - Monitoring of the sequence of pulses. Switching on extended with consecutive pulses / closings of the contact S. Independent settings of T1 and T2 intervals.

Relays: MT-W...M ①, RPC-1WT-...

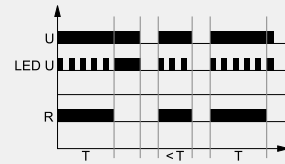


On applying the supply voltage U the output relay R is switched on for the set interval T1. After the interval T1 has lapsed, the interval T2 starts with the output relay R still switched on. For the output relay to switch on, the control contact S must be closed and then opened (single pulse) during the interval T2, which cancels the time already measured and starts the interval T2 again. In case of absence of a single pulse prior to lapse of the interval T2, the output relay R will switch off, and it may be switched on after the supply voltage has been interrupted and applied again.

U - supply voltage; R - output state of the relay; S - control contact state; T, T1, T2, T3 - measured times; t - time axis
 ① Timing diagram and description of the function for the MT-W...M relay may vary due to the specific nature of this relay (programming with buttons, LED display)

Wu - ON for the set interval.

Relays: MT-W...M ①, RPC-.MA-..., RPC-.MB-..., RPC-1MC-UNI, RPC-.MD-UNI, RPC-.WU-..., TR4N, T-R4, PIR15...T



Applying the supply voltage U immediately switches the output relay R on for the set interval T. After the interval T has lapsed, the output relay R switches off.

Wu(R) - ON for the set interval with the Reset function.

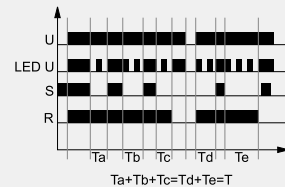
Relays: MT-W...M ①, RPC-1MC-UNI



Applying the supply voltage U immediately switches the output relay R on for the set interval T. When control contact S is closed, measurement of the interval T is stopped for the time of closing contact S (with output relay R on). After opening contact S, time T is measured from the beginning. After the interval T has lapsed, the output relay R switches off.

Wu(S) - ON for the set interval, with time measurement stopped with closing of contact S.

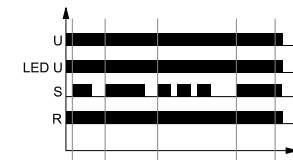
Relays: MT-W...M ①, RPC-1MC-UNI



Applying the supply voltage U immediately switches the output relay R on for the set interval T. If the control contact S is closed, the interval T measurement will be stopped until the moment when control contact is opened. Opening contact S starts further measuring of time T. After finishing measuring time T, the output relay R switches off.

ON - Stable ON.

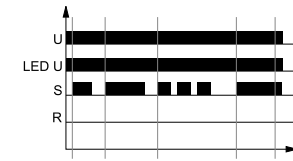
Relays: MT-W...M ①, RPC-.MA-..., RPC-.MB-..., RPC-1MC-UNI, RPC-.MD-UNI, RPC-1ER-..., RPC-1EA-..., RPC-1ES-..., RPC-1EU-..., RPC-1IP-..., RPC-1SA-..., RPC-1WT-..., RPC-.E-..., RPC-.WU-..., RPC-.BP-..., RPC-1AS-A23



Applying the supply voltage U results in stable switching on the R contact. Switching the control contact S does not affect the status of the R contact.

OFF - Stable OFF.

Relays: MT-W...M ①, RPC-.MA-..., RPC-.MB-..., RPC-1MC-UNI, RPC-.MD-UNI, RPC-1ER-..., RPC-1EA-..., RPC-1ES-..., RPC-1EU-..., RPC-1IP-..., RPC-1SA-..., RPC-1WT-..., RPC-.E-..., RPC-.WU-..., RPC-.BP-..., RPC-1AS-A23



Applying the supply voltage U does not result in any change of the status of the relay - the R contact remains switched off permanently. Switching the control contact S on and off does not affect the status of the R contact.

