TRE 701

TRE 701 is a multifunction multitime time relay with build-in microprocessor technology. It covers most of the user needs. It comprehends simple and more sophisticated time functions with very wide time ranges. It can be delivered in many varieties according to operating voltages and the number of output contacts.

Basic technical data

Time ranges	
(time ranges selected with	seconds: 1, 10
a microswitch)	minutes: 1, 10
	hours: 1, 10, 100, 500
	ON, OFF
Operating voltage ranges	
(select one range)	24 - 240 V AC/DC
	12 V AC/DC
	230 V AC
Output contacts	1 - 3 x 8 A/250 V

Function description:

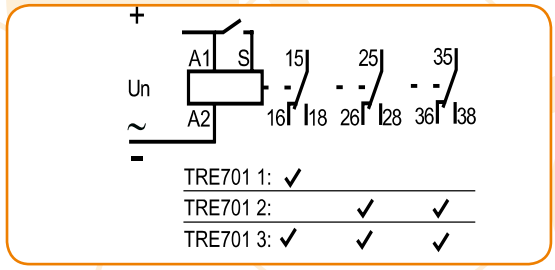
A: A pulse after power-on or after the rising edge of trigger pulse S.
B: Delay after power-on or after the rising edge of trigger pulse S.
C: A pulse after power-on or after the rising edge of trigger pulse S. Retriggerable.
D: Delay after power-on or after the rising edge of trigger pulse S. Retriggerable.
E: The first edge of trigger pulse S turns relay on while the second edge starts counting down till relay off. Additional trigger S before the process is finished prolongs the on-state.
F: Each rising edge of trigger S appends additional period T to the time of on-state.
G: Pulsating operating with a starting pulse or pause which depends on the state of trigger S at power-on.
H: Bistable operating. Each rising edge of trigger S swaps the relay into the opposite state.
I: Prolonged pulse after power-on. The presence of trigger S temporarily stops counting.
J: Prolonged pause after power-on. The presence of trigger S temporarily stops counting.

Notes
Functions A - D: If triggering at power-on is required, then the control signal S must be active.

When changing function, the relay must be powered OFF and ON again.

It is possible to upgrade the relay with some user-defined functions with one or two independent output relays (for larger quantities).

Connection diagram:



TRE701 1: ✓		
TRE701 2:	✓	✓
TRE701 3: ✓	✓	✓

Orderind data:

TRE 701 2 24 - 240 V
TRE 701 - relay type
2 - number of contacts (1,2,3)
24 - 240 V - operating voltage
(12 V AC/DC, 230 V AC, 24-240 V AC/DC)

NOTE: Combination with 3 output contacts and 230 VAC operating voltage cannot be delivered.
For technical data see page 129.

TRE 702

TRE 702 is a multifunction T1-T2 time relay with built-in microprocessor technology. It covers most of the user needs. The time relay comprehends simple and more sophisticated time functions with very wide time ranges. It can be delivered in many varieties according to operating voltages and the number of output contacts. It excels in the possibility of setting extremely asymmetrical T1-T2 time functions.

Function description:

A: A pulse after power-on or after the rising edge of trigger pulse S.Eventual signals S occurring before time T expiry have no influence.
B: Delay after power-on or after the rising edge of trigger pulse S. Eventual signals S occurring before time T expiry have no influence.
C: A pulse after power-on or after the rising edge of trigger pulse S. Retriggerable.
D: Delay after power-on or after rising edge of trigger pulse S. Retriggerable.
E: The first edge of trigger pulse S turns relay on while the second edge starts counting down till relay off. Additional trigger S prolongs the on-state before the process is finished.
F: Prolonged pulse after power-on. The presence of trigger S temporarily stops counting.
G: Pulsating operating with a non-equal pulse-pause rate. A starting pulse or a pause which depends on the state of trigger S at power-on.
H: After the rising edge of trigger S, the device waits for period T1 and the relay is activated (if trigger S is still present). After period T2, it is deactivated.
If the trigger signal is shorter than period T1, the relay does not activate at all.
If trigger S reappears during period T2, it has no influence.
I: After the rising edge of trigger S, the device waits for period T1 and the relay is activated (if the trigger S is still present). At the falling edge of trigger S the second counting starts and when it reaches T2 , the relay is deactivated.
If the trigger signal is shorter than period T1, the relay does not activate at all.
If trigger S reappears during period T2, it has no influence.
J: The rising edge of trigger S activates the relay for period T1.
The falling edge of trigger S activates the relay for period T2.
If trigger S falls down during period T1, period will be cancelled.
If trigger S reappears during period T2, it has no influence.

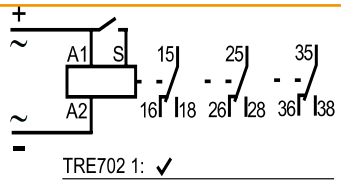
Note:
Functions A - D: triggering power-on, is required the control signal S must be active.
When changing function, the relay must be powered OFF and ON again.

For larger quantities, it is possible to upgrade the relay with some user-defined functions by means of one or two independent output relays.

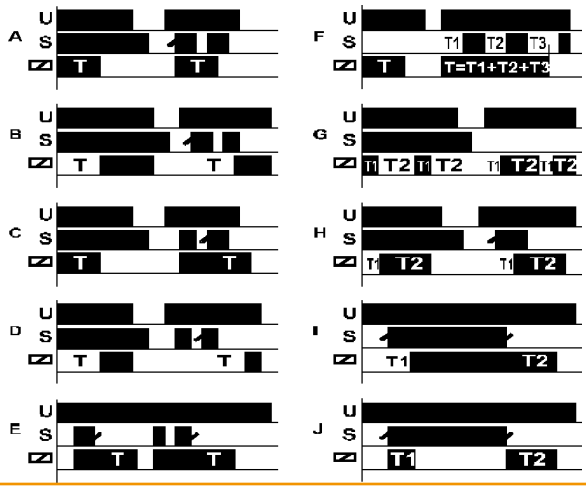
Basic technical data

Time ranges	
(time ranges selected with	seconds: 1, 10
a microswitch)	minutes: 1, 10
	hours: 1, 10, 100,
	T1,T2: 1h - 1 min;
	10 h - 10 min;100 h - 1h
Operating voltage ranges	
(select one range)	24 - 240 V AC/DC
	2 V AC/DC
	230 V AC
Output contacts	1 - 3 x 8 A/250 V

Connection diagram:



TRE702 1:	✓		
TRE702 2:		✓	✓
TRE702 3:	✓	✓	✓



Ordering data:

TRE 702 2 24 - 240 V
TRE 702 – relay type
2 - a number of contacts (1, 2, 3)
24 - 240 V - operating voltage
(12 V AC/DC, 230 V AC, 24-240 V AC/DC)

NOTE: A combination with three contacts and 230 V AC operating voltage cannot be delivered.
For technical data see page 129.

TRE 703

TRE 703 is a one-function one-time time relay used for more sensitive applications. It can be delivered in many varieties according to function, time range, operating voltage and the number of output contacts.

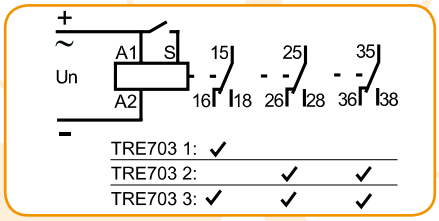
Function description

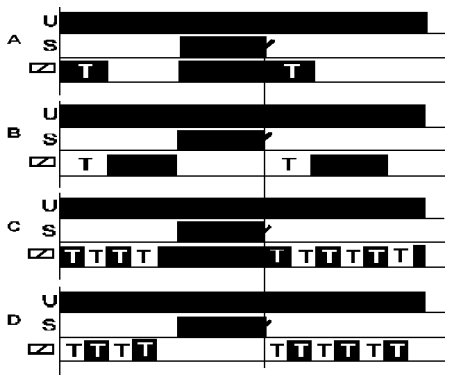
A: Pulse at power-on or at falling edge of control signal S
B: Pause at power-on or at falling edge of control signal S
C: Pulsating with starting pulse
D: Pulsating with starting pause

Basic technical data

Time ranges (select one range)	seconds: 3,15
	minutes: 1, 3, 15
	hours: 1, 3
Operating voltage ranges	
(select one range)	24-240 V AC/DC
	12 V AC/DC
	230 V AC
Output contacts	1 - 3 x 8 A/250 V

Connection diagram





Ordering data

TRE 703 2 24-240 V A 1 h
TRE 703 - relay type
2 - number of contacts (1, 2, 3)
24-240 V - operating voltage (12 V AC/DC, 230 V AC, 24-240 V AC/DC)
A - time function (A, B, C, D)
1 h - time range (3 s, 15 s, 1 min, 3 min, 15 min, 1 h, 3 h)

NOTE: A combination with three contacts and 230 V AC operating voltage can not be delivered.

For technical data see page 129.

TRE 704

TRE 704 is a star-delta switch. Time T1 can be adjusted within the selected time range. It can be delivered in many varieties according to time range and operating voltage.

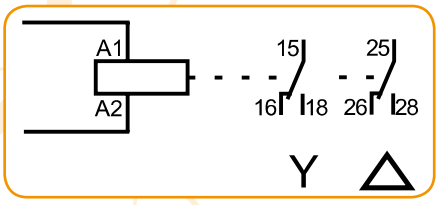
Function description

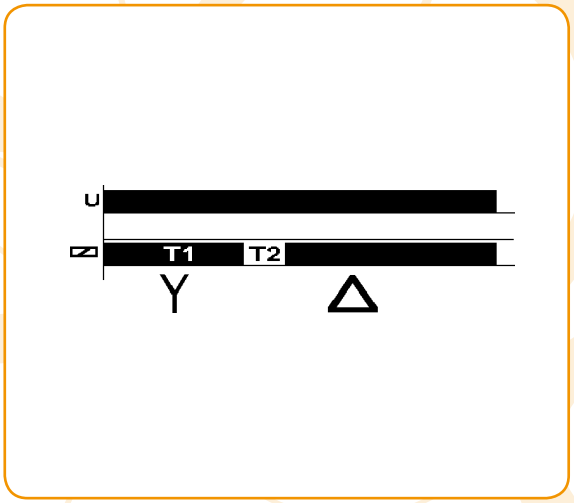
After power-on, the relay Y is activated for time T.
After the pause. T2 = 100 ms, the relay Δ is activated.

Basic technical data

Time ranges		
(select one range)	seconds:	10, 30, 60, 100, 600
Operating voltage ranges		
(select one range)		24-240 V AC/DC
		12 V AC/DC
		230 V AC
Output contacts		2 x 8 A/250 V

Connection diagram





Ordering data

TRE 704 24-240 V 100 s
TRE 704 - relay type
24-240 V - operating voltage (12 V AC/DC, 230 V AC, 24-240 V AC/DC)
100 s - time range (10, 30, 60, 100, 600)

For technical data see page 129.

TRE 705

TRE 705 is a bistable time relay with hold-on after power off. Time T1 can be adjusted within the selected time range. It can be delivered in many varieties according to time range and operating voltage.

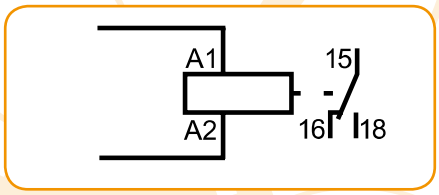
Function description

A: The relay is activated after power-on. After power-off, it remains activated for the period T.
B: The relay is activated at power-off and remains activated for the period T.

Basic technical data

Time ranges		
(select one range)	seconds:	3, 10, 30, 60, 100, 300
Operating voltage ranges		
(select one range)		24-240 V AC/DC
		12 V AC/DC
Output contacts		6 A/250 V

Connection diagram



Ordering data

TRE 705 - 24-240 V A 100 s
TRE 705 - relay type
24-240 V - operating voltage (12 V AC/DC, 24-240 V AC/DC)
A - time function
100 s - time range (3, 10, 30, 60, 100, 300 seconds)

For technical data see page 129.

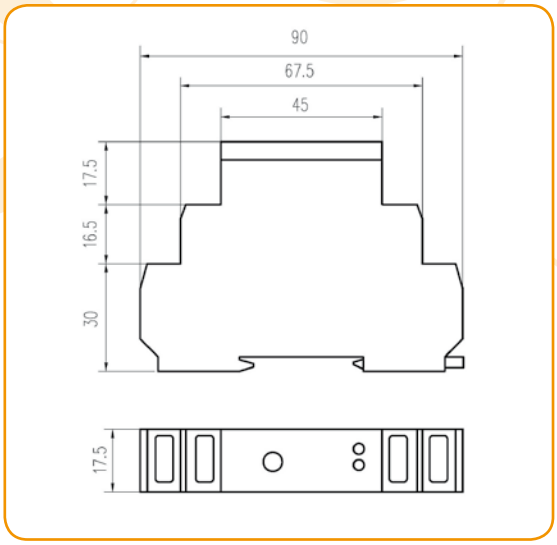
TRE 706

TRE 706 is a staircase switch. Time can be adjusted in the range from 0.5 to 10 minutes. It is edge triggered, which means that it is broken-switch proof. Enhanced version B has the possibility of multiplying ON time by factor 8. This fast-on function is activated by holding the switch for prolonged time (6- to 8 - second). This is very useful at cleaning, repairs etc.

Basic technical data

Time ranges	0.5 - 10 minutes
	ON, OFF
	Option B: extra
	4-80 minutes
	ON, OFF
Operating voltage	230 V AC
Output contact	16 A/250 V
Number of bulb lamps (<1mA)	10

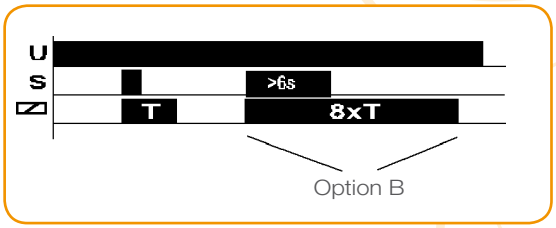
DIMENSIONS



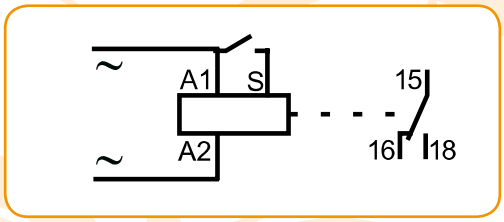
Function description

The signal S activates the relay for period T. If the duration of the signal S is longer than 6 seconds, the period T is prolonged by factor 8 (version B). This is indicated by changing the brightness of the control red LED.

If the signal S reappears before the period T expires, the counting time starts again from the beginning.



Connection diagram



Ordering data

TRE 706 A

TRE 706 - relay type
A - option (A, B): A is a basic version, B has the possibility of time prolonged operation

Technical data for time relays TRE 701 to TRE 706

Operating voltage range: -15%, +10%
Input resistance of control input S:
(TRE 701, 702, 703, 706): 100 kOhm
Min. duration of trigger pulse S: 50 ms
Time setting repeatability:
TRE 703/704/705/706/CRT < 2%
TRE 701/702 < 1%
Nominal time range tolerance
TRE 703, 704, 705, 706: 5%
TRE 701/702: 1%
Operating temperature: 0°C to 55°C
(-20°C to +65°C available on order)
Storage temperature: -25°C to +70°C
Degree of protection: IP20
Diameter of connection cable: 2.2 mm max.
Mechanical endurance: >10^7 cycles
Standards: EN 60669, EN 60256; EN 61000, EN 61010, EN 61812