

V. Repair and maintenance

All repairs of the BISTABLE RELAY BR -11 are performed by the manufacturer. The device does not require any maintenance.

VI. Warranty Card

The manufacturer guarantees the correct operation of the BISTABLE RELAY BR -11. The warranty period is 36 months from the date of sale. The warranty is extended by the time of repair. Warranty repairs are performed by the manufacturer free of charge after the AUTOMAT is delivered to the manufacturer. Improper use of the device or independent modifications to it will void the warranty.



RoHS



The BISTABLE RELAY BR -11 meets the requirements of the European Union Directives
- Directive LVD 2014/35/EU - Low Voltage Directive of 26 February 2014
- Directive EMC 2014/30/EU - Electromagnetic Compatibility Directive of 26 February 2014



In order to protect the environment, do not throw away used electrical appliances and electronics together with municipal waste. Used equipment should be delivered to collection points for recycling free of charge. Any information on this can be obtained at sellers, distributors, manufacturer or on the Internet. The product's packaging is made of ecological materials. The PVC packaging tape will be used while stocks last.



MART

BISTABLE RELAY
BR-11

CE
RoHS

MADE IN EUROPE

3-YEAR
WARRANTY

User manual

I. Purpose

BISTABLE RELAY BR-11 performs two functions, the activation method of which can be selected:

- > function I - triggered by an impulse in the range of 40 ms ... 2 s - switching the receiver on or off with the impulse switch. Each subsequent switching on causes a change in the state of the executive relay. If the receiver was turned on, the momentary switching on of the impulse switch turns the receiver off and vice versa.
- > function II - triggered by an impulse longer than 2 s - switching the receiver on for a specified time set by the potentiometer. After this time, the receiver will be automatically turned off. The adjustment range of the switch-off delay time is adjustable in the range: 1 s ... 60 min
 - >> the method of starting a given function can be changed with the TEST - MODE button:
 - > starting function I - with a pulse longer than 2 s
 - > starting function II - impulse within the range of 40 ms ... 2 s

> the switch-off delay time can be set in one of three time periods:

- > 1 s ... 60 s
- > 1 s ... 6 min
- > 1 s ... 60 min

Setting to 0 in each range means 1s.

BISTABLE RELAY BR-11 enables switching the receiver on and off with many parallel connected impulse switches, which means that the receiver can be turned on or off in any place. BISTABLE RELAY BR-11 can work with an unlimited number of impulse switches without backlight and a limited number of switches with backlight, connected in parallel.

BISTABLE RELAY BR-11 can be used in "intelligent" electrical installations.

II. Properties of the BR-11 BISTABLE RELAY

- >> short response time to pressing < 40 ms
- >> short standby time for the next press > 200 ms
- >> switch-off delay time adjustable in the following ranges: 60 s, 6 min, 60 min
- >> high switching power - 16 A (4000 W), 250 VAC
- >> high inrush current - resistance to 100 A surge current
- >> freedom of connections:
 - > executive relay contacts (one normally open contact - NO, one normally closed contact - NC) galvanically separated, which allows connections in various configurations
- >> indication light (LED):
 - > Green LED - indication of 230 VAC supply voltage on N-L terminals
 - > Red LED - signalling that contacts 1-2 are closed, information during programming
 - > Blue LED - signalling that contacts 2-3 are closed, information during programming
- >> mounting on 35 mm DIN rail.
- >> TEST - MODE button, for selecting the appropriate operation option of the BISTABLE RELAY BR-11.

The BISTABLE RELAY BR-11 uses a specialized OMRON G2RL-1-E-HR relay, designed to switch various types of lighting lamps. The special design of the relay enables effective switching of lamps with an inrush current up to 100 A.

III. Installation

BISTABLE RELAY BR-11 may be installed only by a person authorized to operate electrical installations.

Remember to choose the right protection.

On the front panel of the BR-11 BISTABLE RELAY, there are three informative LEDs: green, red and blue, and the TEST - MODE button.

On the side walls of the BR-11 BISTABLE RELAY there are: connection diagram and operating characteristics.

In order to connect the BISTABLE RELAY BR-11:

1. make sure the electrical system is turned off
2. connect the BISTABLE RELAY BR-11 according to the diagram (fig.1, fig.2) in the options:
 - > S1 control signal from L voltage
 - > S1 control signal from voltage N
 - > when using terminals 1-2 - after switching on the power, the receivers are turned off
 - > when using terminals 2-3 - after turning on the power, the receivers are turned on
3. switch on the supply voltage:
 - > the green LED lights up
 - > after 1 s they will flash twice - red LED and blue LED
 - > after 2 seconds, the blue LED will light up, which indicates closed contacts 2-3
4. press the TEST-MODE button (less than 5 s)
 - > the blue LED turns off and the red LED turns on
 - > contacts 2-3 will open and contacts 1-2 will close
 - > subsequent switching on of the TEST-MODE button will change the contact state
5. check operation with impulse switch
 - > each subsequent switching on causes a change in the voltage status on the receiver and a change in the LED lighting:
 - blue - contacts 2-3 closed
 - red - contacts 1-2 closed
6. By using the TEST-MODE button, you can also select:
 - >> turn-off delay time
 - > press the TEST-MODE button for more than 5 seconds
 - > when the LEDs blink (red LED, blue LED) - release the TEST-MODE button
 - > successive presses of the TEST-MODE button change the ranges:
 - LED red - range 60 s, LED blue - range 6 min, LED red and LED blue - range 60 min.
 - After the control range is selected, the potentiometer is active on the selected range
 - >> how to start the function
 - > press the TEST-MODE button for more than 10 s
 - > release the TEST-MODE button - successive presses of the TEST-MODE button change the way starting the function:
 - LED red:
 - > starting function I - with an impulse within the 40 ms ... 2 s interval
 - > starting function II - with an impulse longer than 2 s
 - Blue LED:
 - > starting function I - with an impulse longer than 2 s
 - > starting function II - with an impulse within the range of 40 ms ... 2 s

After setting each function, wait 10 seconds for the settings to be accepted. After 10 seconds, the red LED and blue LED will go out for a moment, and the red LED and the blue LED will light up again for a moment. The LED (red or blue) will light up - the state of the relay before changing the settings.

 7. the efficiently operating installation is ready for operation
 8. BISTABLE RELAY BR-11 does not respond to impulse when the pause between successive pressings is shorter than 200 ms.
 9. A schematic diagram of the operation of the BISTABLE RELAY BR-11 is shown in Fig. 3.

BISTABLE RELAY BR-11 can work with an unlimited number of switches without illumination and a limited number of switches with illumination, connected in parallel:

- neon illuminated connectors (1mA) <5 pcs.

IV. Technical data

Rated supply voltage LN	230 VAC, + 10%, - 15%
Rated frequency	50 Hz
Maximum load current (power):	
> resistive load	16 A, AC1 (4 000 W)
> incandescent lamps	10 A (2500 W)
> halogen lamps	8 A (2000 W)
> fluorescent lamps	8 A (2000 W)
> energy-saving lamps and LED	8 A (2000 W)
Instantaneous inrush current	100 A
Executive contacts	1 x NO, 1 x NC
Rated power consumption	0,5 W
Short-circuit current of impulse buttons	5 mA
Response time to the impulse button	< 40 ms
Time to be ready again	> 200 ms
Function check	TEST-MODE button
Time delay ranges	60 s, 6 min, 60 min
Times of starting functions I and II	40 ms < T1 < 2 s, T2 > 2 s or vice versa
Mechanical durability	100 000 operations
Protection level	IP 20
Work position	Vertical
Installation	One 18 mm field, 35 mm rail
Cross section of connection cables	0,2+2,5 mm ²
Working temperature	-40...+70 °C
Weight	80 g

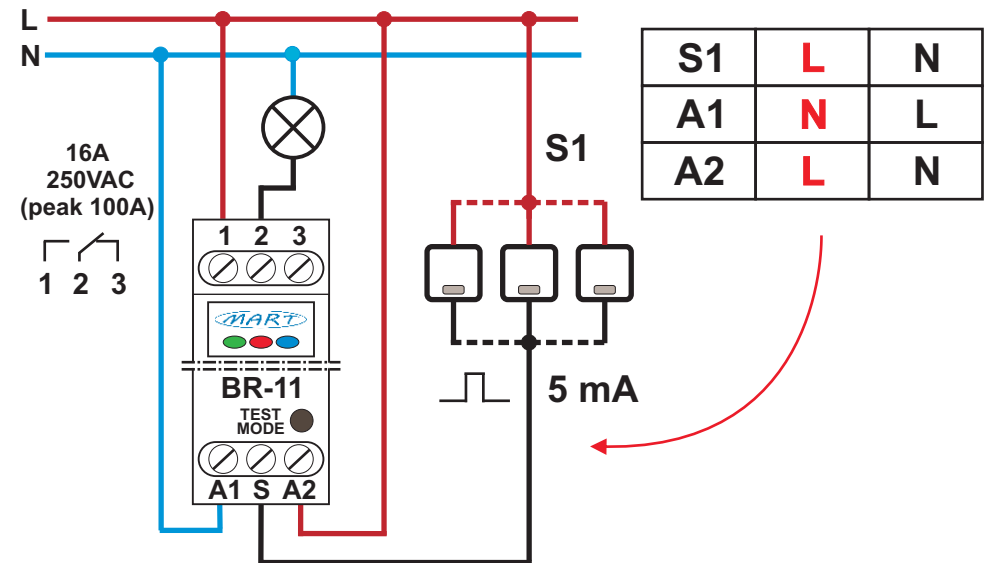


Fig .1 .An exemplary diagram of the connection of the BISTABLE RELAY BR-11 along with a table of possible connection variants .

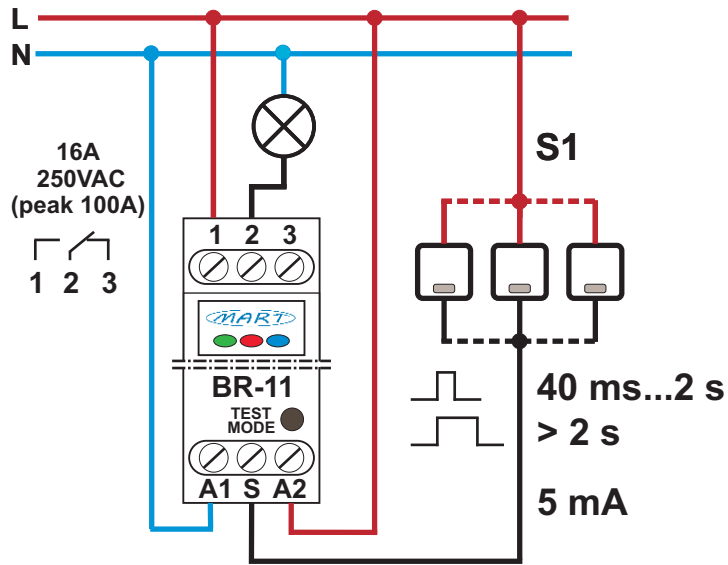


Fig. 2-1. Connection diagram of the BR-11 BISTABLE RELAY
 > L signal control on S clamp
 > after turning the power on (N-L) - the receiver is off

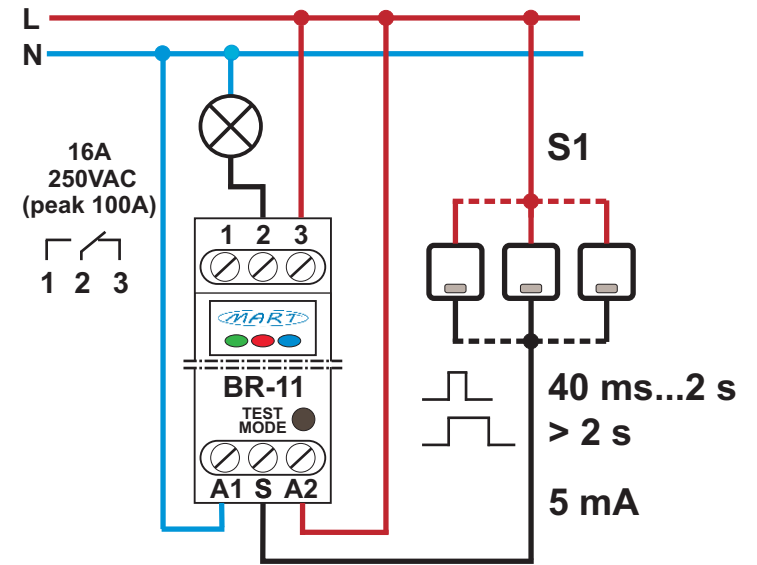


Fig. 2-2. Connection diagram of the BR-11 BISTABLE RELAY
 > L signal control on S clamp
 > after turning on the power (N-L) - the receiver is on

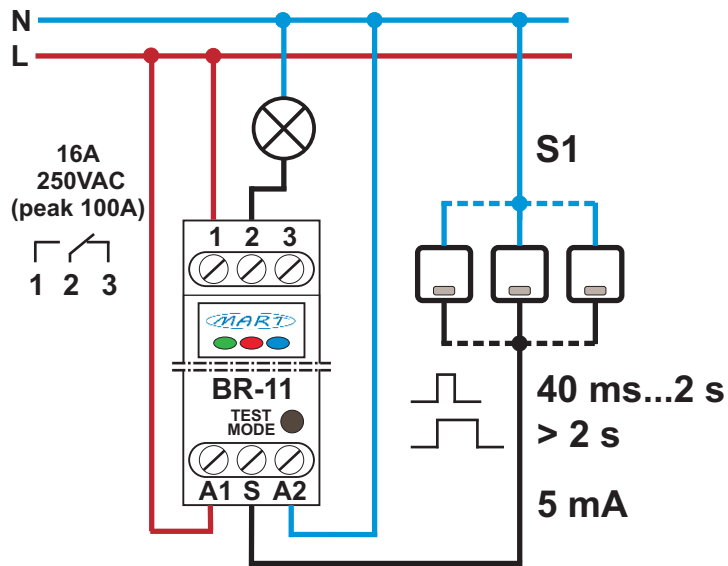


Fig. 2-3. Connection diagram of the BR-11 BISTABLE RELAY
 > N signal control on S clamp
 > after turning the power on (N-L) - the receiver is off

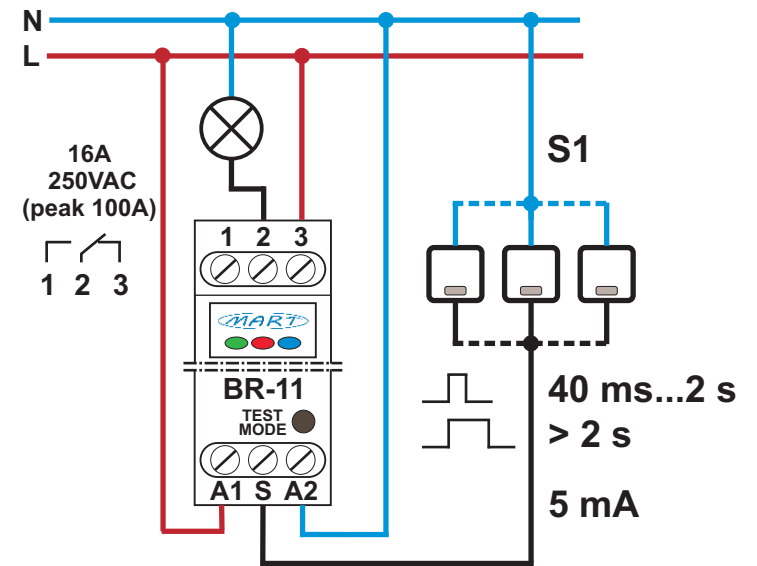
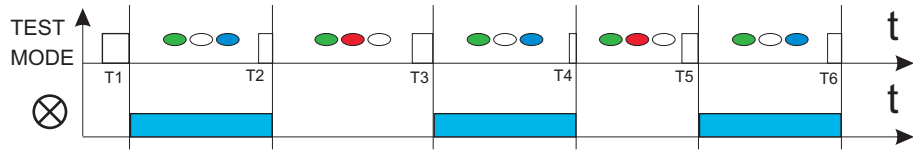
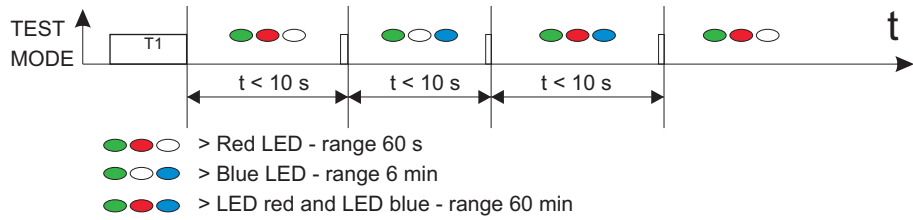


Fig. 2-4. Connection diagram of the BR-11 BISTABLE RELAY
 > N signal control on S clamp
 > after turning on the power (N-L) - the receiver is on

1. Reaction of the BR-11 RELAY to the TEST button. Tx impulse time T_x impulse time <math>< 5</math> s.



2. Selection of switch-off delay time ranges. Impulse time $5\text{ s} < T_1 < 10\text{ s}$.



3. Selecting the method of starting function I and function II. Impulse time $T_1 > 10\text{ s}$.

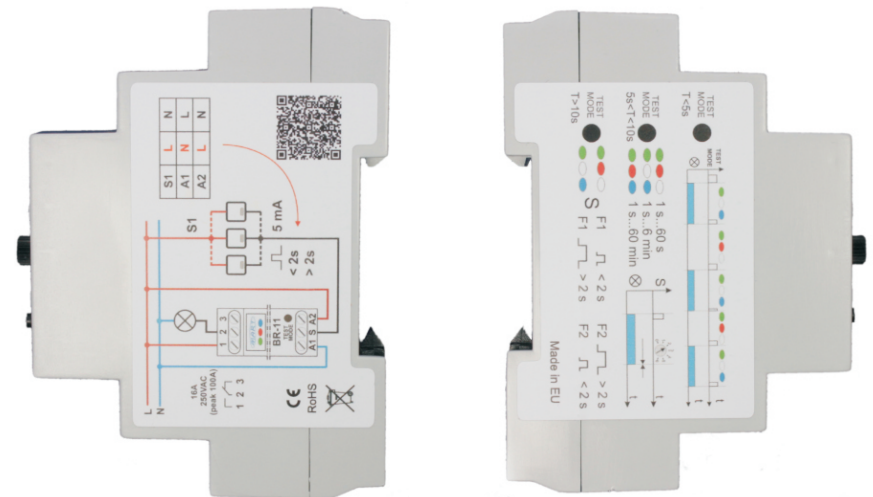
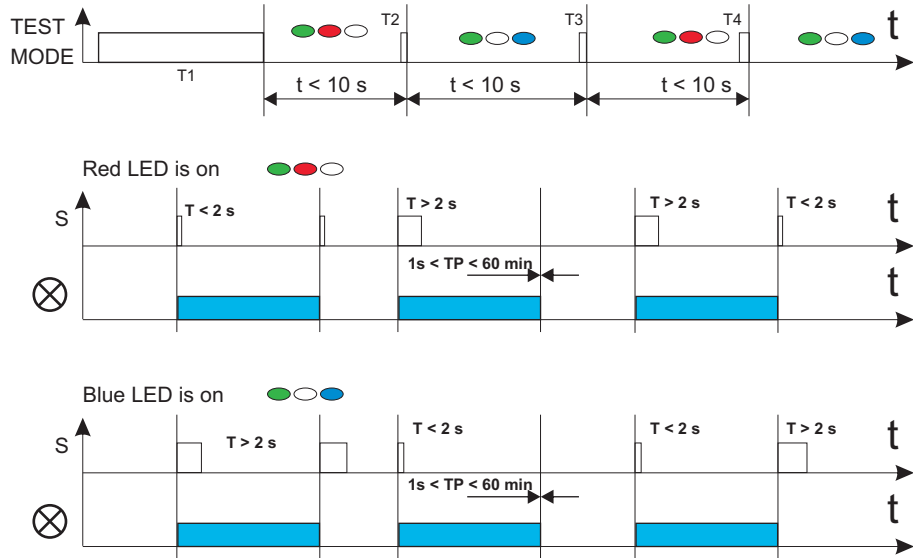


Fig. 3. Schematic diagram of the operating principle of the BISTABLE RELAY BR-11.