

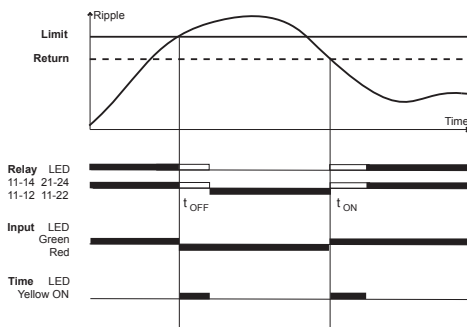
DC RIPPLE RELAY

Type: BR1A

FEATURES

- One unit for all voltages from 18 to 340Vdc
- 4 voltage sub-ranges for high accuracy
- High sensitivity. Adjustable from 0.4 to 6.4%
- 3 ripple sensitivity ranges for an easy adjustment
- Excellent accuracy and equal sensitivity for ripple frequencies from 30 to 3000Hz.
- No separate supply power needed
- Time delay - ON and OFF - individually adjustable
- Compact. 35mm box with 2 C/O contacts

FUNCTION DIAGRAM



Description:

The ripple relay BR1A is developed to supervise thyristor rectifiers for faulty thyristors. The relay is extremely sensitive, stable and detects with high accuracy ripple levels exceeding the set sensitivity in the frequency range from 30 to 3000 Hz. Supply power is taken from the input, and by using a wide range switchmode supply, the same relay can be used in systems with voltages from 18 to 340Vdc. In order to have the same precision for all system voltages, the range 18 to 340Vdc is divided into 4 overlapping subranges, selected by two DIP-switches. By use of another DIP-switch, the sensitivity range can be set from 0.4 to 1.6%, 0.8 to 3.2% or 1.6 to 6.4% of the system voltage.

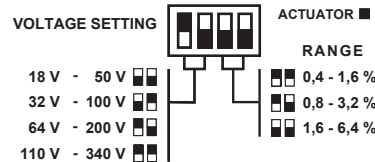
Operation:

The input voltage is divided into two signals. In order to measure the ripple in % of the varying system voltage, one part is averaged and used to set the internal reference voltage. The other signal, the AC signal related to the ripple, is amplified and conditioned through a bandpass filter in order to avoid false triggering due to frequencies outside the measuring range from 30 to 3000 Hz. The rectified mean value is then compared to a set part of the reference voltage. When the relay is powered up, and the ripple on the input is below the set limit, then the internal relay will pull in and the contacts 11-14 and 21-24 will close. The indication will be a green LED for the input and a yellow for the relay. If the ripple content of the input voltage increases and exceeds the set sensitivity, then the OFF delay starts to elapse, indicated by the red input LED and a yellow timing LED. The relay will drop out when the set OFF delay has expired and the yellow relay LED will extinguish. If the ripple content decreases by 10% of the set limit, the ON delay starts to elapse, indicated by the green input LED and a yellow timing LED. The relay will pull in when the set ON delay has expired and the yellow relay LED will be lit.

Application:

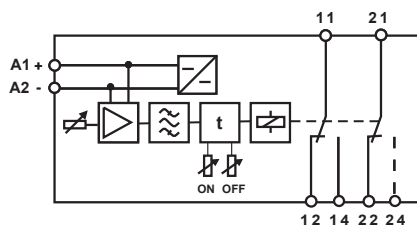
Supervision of DC Power supplies in general or battery chargers in UPS systems.

PROGRAMMABLE FEATURES

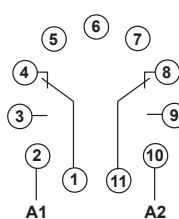


CONNECTION DIAGRAM

Rail mounting



Socket mounting



SPECIFICATIONS

INPUT	DC voltage 0 - 340V, 374V _{Peak}
Voltage Ranges selectable by dipswitch	18 - 50 V 32 - 100 V 64 - 200 V 110 - 340 V
Ripple Ranges selectable by dipswitch	0.4 - 1.6 % 0.8 - 3.2 % 1.6 - 6.4 %
Hysteresis	10 % of Ripple sensitivity

PERFORMANCE PARAMETERS

TIMING

Response time	Approx. 200 msec.
Time range during run	Separate On and Off delay 0.2 - 10 sec. adjustable

ELECTRICAL

Temp. dependence	Typ. ± 0.02 % / °C
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OUTPUT

Contact rating	Relay, 2 C/O, AgNi
Mechanical life	6 A, 250 VAC, 1500 W 30 million operations

SUPPLY

Power consumption	DC voltage from input Max. 3 W
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GENERAL

Temperature range	- 25 °C to + 55 °C ambient	
Humidity	Up to 90 % RH non-condensing	
Dielectric test voltage	Coil to relay contacts	4000 VAC
	Pole to pole	2500 VAC
Weight	0.22 kg	



EMC directive 89/336:

International Standards

Emission and	EN50263:2000
Immunity	EN61000-3-2 EN61000-3-3

Low voltage directive 73/23:

Electrical Relays	EN60255
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ORDERING INFORMATION

EXAMPLE:

TYPE

DC voltage monitoring control relay

INPUT AND SUPPLY VOLTAGE

18 - 340 Vdc

ADJUSTMENT

Trimpot and dipswitch adj.

HOUSING

Rail mounting
Socket Mounting

SIZE

35 mm.

CODE

Code end
Extended code

