

Control & Monitoring Relays

Single Phase Voltage Relay MXV-20



DESCRIPTION

Single phase voltage relay for detecting a level of AC or DC voltage.

When the monitored voltage rises and reaches the determined setpoint, which is adjusted on the front panel, the relay energises. When the voltage drops and passes the setpoint, minus the hysteresis which is adjustable on the front, the relay de-energises. With inverted relay function the internal relay work the opposite way.

The Voltage relay has a latch function where the relay after energising will remain energised, regardless of input voltage, until the latch jumper or the operating voltage is disconnected. Typically used in safety circuits.

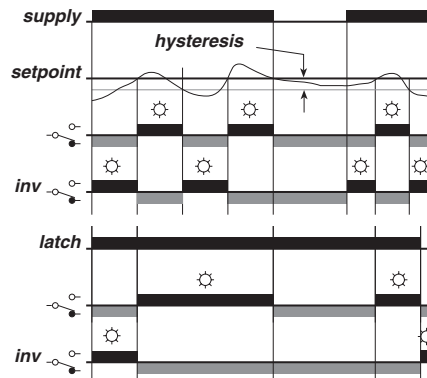
Features

- Monitoring of 1-500VAC/DC in 4 ranges in one version.
- Adjustable setpoint.
- Adjustable hysteresis of 3-35%.
- Automatic locking function (latch).
- Inversion of the relay function.
- Output SPDT.
- Supply voltage 24VDC, 24VAC, 115VAC, 230VAC or 400VAC.

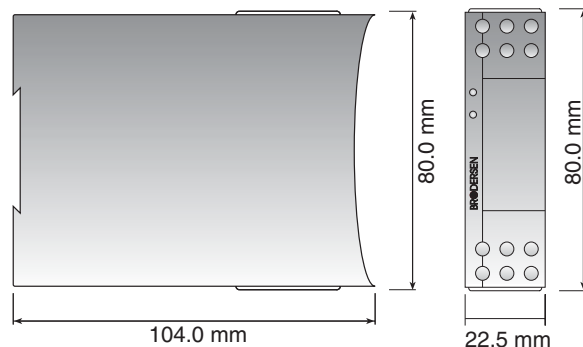
VERSIONS/ORDERING CODES

Type:				
Single phase voltage relay	MXV-20	MXV-20	230	1
Supply voltage				
24V DC		924		
24V AC		024		
115V AC		115		
230V AC		230		
400V AC		400		
Measuring range:				
1-5V AC/DC		1		
4-20V AC/DC		2		
10-50V AC/DC		3		
40-200V AC/DC		4		
100-500V AC/DC		5		

OPERATION



MECHANICAL DIMENSIONS



TECHNICAL DATA

Input:

Input signal	Impedance	U _{max}
1-5V AC/DC	5,5kOhm	50V AC
4-20V AC/DC	22kOhm	100V AC
10-50V AC/DC	55kOhm	150V AC
40-200V AC/DC	220kOhm	300V AC
100-500V AC/DC	550kOhm	525V AC

Accuracy	1%
Temperature drift	Max. 0,05%/°C
Setting accuracy:	Typically ± 10%
Hysteresis:	Adjustable 3-35%
Response time:	Time constant $\tau = 0,2s$, Worst case of response time max. $5 \times \tau$

Output:

SPDT relay

Contact material:	AgNi 0,15 with hardened gold plating Au.
Max load AC:	8A/240V AC ($\cos\phi=1$) Max. breaking capacity 2000VA, Inductive load. See fig. 1.
Max load DC:	8A/24V DC Max breaking capacity 50-270W see fig. 2.
Max. in rush current:	15A (max. 4s/duty cycle less than 10%).
Min. in rush current:	10mA, 24V DC.
Frequency :	Max. 1000 operations pr. hour.
Life span:	Mech. Min. 3×10^7 operations Elect. Min 1×10^5 operations with full load.
Delay:	<20ms.

Supply voltage:

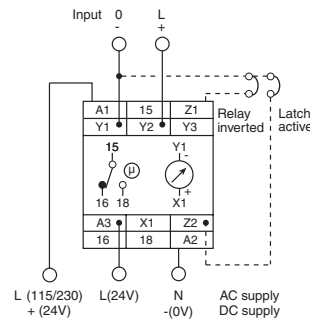
Versions:	924=24V DC (20,4-27,6)V DC. 024=24V AC (20,4-27,6)V AC. 115=115V AC (98-132)V AC. 230=230V AC (196-264)V AC. 400=400V AC (340-460)V AC.
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Net frequency:	40-70Hz.
Consumption:	AC; max. 3VA DC; max. 2W

General data:

Ambient temperature:	-20 to 55°C.
Storage temperature:	-40 to 80°C.
Mounting:	35mm DIN-rail (EN50022).
Terminals:	Screw terminals with dual compartment. Terminal screws are combined crosshead/ slotted. Up to 2 x 2,5mm ² wire (2 x 1,5mm ² inc. ferrule). Recommended torque, 0,5Nm. Max 0,7 Nm. (VDE0609-1). Terminal identification in accordance with DIN46199/EN50005.
Indicators:	Green LED = operating voltage. Red LED = relay switched on.
Protection:	IP20.
Electrical isolation:	3,75kVAC (1 min.) between input, supply and relay output (EN60950). Note: No galvanic isolation between input and analogue output.
Housing:	Noryl (GE), UL94V1.
Terminal block:	Noryl (GE), UL94V0.
Weight:	180 g.

WIRING DIAGRAM



Coding:
Relay inv.; Jumper Y1 - Z1
Latching; Jumper Y1 - Z2

SPECIFICATIONS

MXV-20 is designed and developed with regard to relevant specifications:

- EN60204-1 / VDE0113 electrical material on machines.
- VDE0110 / IEC664 Isolation specifications/creepage and clearance distances.
- Electrical safety in accordance with EN61010.
- IEC414 Safety regulations for control and monitoring equipment.
- EMC: Emission EN50081-1.
Immunity EN50082-2.
- Humidity in accordance with IEC68-2-3; RH=95%, 40°C.
- Vibration in accordance with IEC68-2-6:
- Shock when mounted, in accordance with IEC68-2-27.

MXV-20 is CE-marked in accordance with EMC-and the Low Voltage Directive.

OUTPUT LOAD DIAGRAMS

Fig. 1

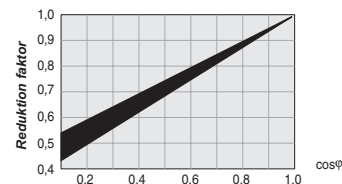


Fig. 2

