

Control & Monitoring Relays

Single Phase High Current Relay via External Shunts MXC-30



DESCRIPTION

A relay for monitoring high AC or DC current by connecting AC current transformer with secondary current of 0-1,0A AC or a DC shunt with voltage drop of 0-60mV DC.

The relay is delivered in two variations for over-or under-current. Over-current:

When the monitored current rises and reaches the determined setpoint, which is adjusted on the front panel, the relay energises. When the current drops and passes the setpoint, minus the hysteresis which is adjustable on the front, the relay de-energises.

Under-current:

When the monitored current drops and reaches the determined setpoint, which is adjusted on the front panel, the relay energises. When the current rises and passes the setpoint, plus the hysteresis which is adjustable on the front, the relay de-energises.

There is also a latch function where the relay after energising will remain energised, regardless of input current, until the latch jumper or the operating voltage is disconnected. Typically used in safety circuits. The contact function of the relay can also be inverted.

The relay has an analogue, 2-10V DC, output which when connected to an external voltmeter can be used for the accurate adjustment of setpoint.

Features:

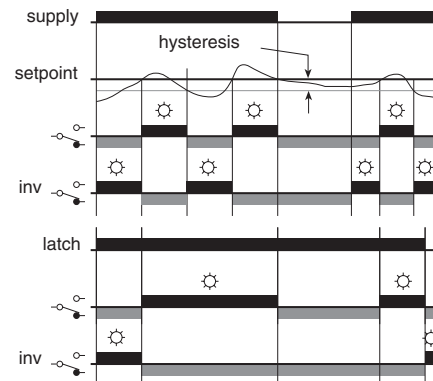
- Monitoring of up to 500A, range depend of the connected AC current transformer or DC shunt.
- Adjustable setpoint and hysteresis.
- Latch function and inversion of the relay function.
- Output SPDT and 2-10V DC referenced to the setpoint.
- Operating voltage 24VDC , 24/115VAC or 24/230VAC.

VERSIONS/ORDERING CODES

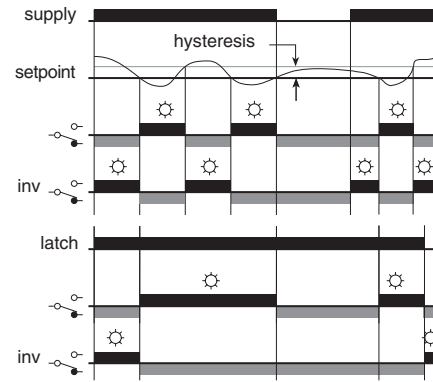
Type: Single phase high current relay.	MXC-30	230	1
Supply voltage: 24V DC. 115V AC/ 24V AC. 230V AC / 24V AC.		924 115 230	
Over/under current: Over current. Under current.			1 2

OPERATION

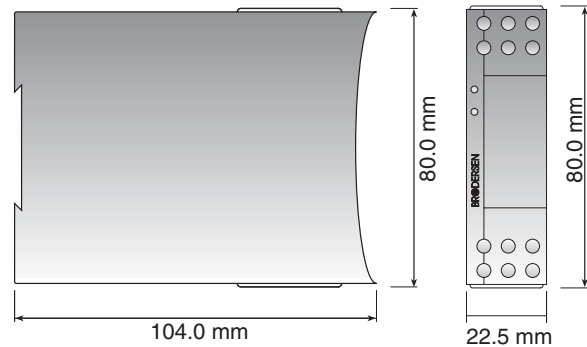
Over current, code 1



Under current, code 2



MECHANICAL DIMENSIONS



TECHNICAL DATA

Input:

Input signal:
0-60mV DC;
0-1,0A AC;

$$V_{\max} = 10V$$

$$I_{\max} = 1,4A_{\text{RMS}}$$

Temperature drift: Max. 0,05%/°C.
Setting accuracy: Typically $\pm 10\%$.
Hysteresis: 3-30% of chosen range, adjustable.
Response time: Time constant $\tau = 0,12s$,
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 time: Mech. Min. 3×10^7 operations.
Elect. Min. 1×10^5 operations with full load.
Delay; <20ms.

Analogue output: 2-10V DC, refers to setpoint in chosen range.
 $I_{\max} = 2mA / R_{\text{load}} > 5k\Omega$.
Accuracy better than $\pm 0,5\%$.

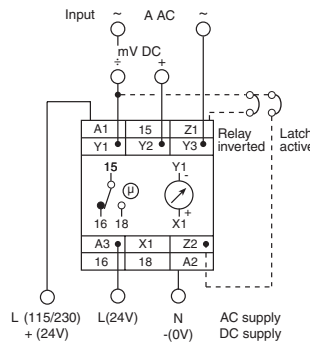
Supply voltage:

Versions: 924=24V DC (20,4-27,6)V DC.
115=24/115V AC (20,4-27,6 /98-132)V AC.
230=24/230V AC (20,4-27,6/196-264)V AC.
45-65Hz.
Consumption: AC; 3VA.
DC; 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 2,5mm² wire (2 x 1,5mm² inc. ferrule).
Recommended torque, 0,5 Nm.,
Max. 0,7 Nm. (VDE0609-1).
Indicators: Green LED = working voltage.
Red LED = relay on.
Protection: IP20.
Electrical isolation: 3,75kVAC (1 min.) between i supply and output (EN60950).
Housing: Noryl (GE), UL94V1.
Terminal block: Noryl (GE), UL94V0.
Weight: Approx. 200g.

WIRING DIAGRAM



Input: 0-60mVDC
0-1,0A AC

Terminals: Y1/Y2
Y1/Y3

Coding: Relay inverter Jumper Y1- Z1
Latching, Jumper Y1- Z2

Analogue output 2-10V DC;
X1 = (+) V
Y1 = (-) 0

SPECIFICATIONS

MXC-30 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.

MXC-30 is CE-marked in accordance with EMC- and the Low Voltage Directive.

OUTPUT LOAD DIAGRAMS

Fig. 1

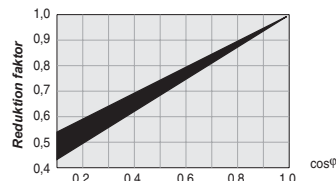
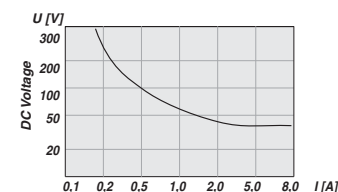


Fig. 2



ACCESSORIES

- Brodersen current transformers: Type AAT-xxx.x
- Brodersen DC current shunts: Type AAS-xxx