

Control & Monitoring Relays

Single Phase Voltage Relay MXV-10



DESCRIPTION

Single phase voltage relay for detecting AC/DC over-or under-voltage. The relay is delivered in two variations for over-and under-voltage.

Over-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.

Under-voltage:

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

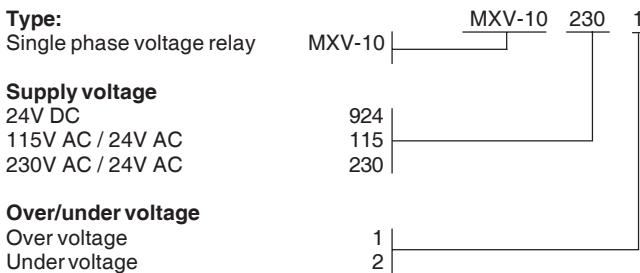
There is also a latch function where the relay after energising will remain energised, regardless of input voltage, until the latch jumper or the operating voltage is disconnected. Typically used in safety circuits. The contact function of the relay can also be inverted.

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

Features

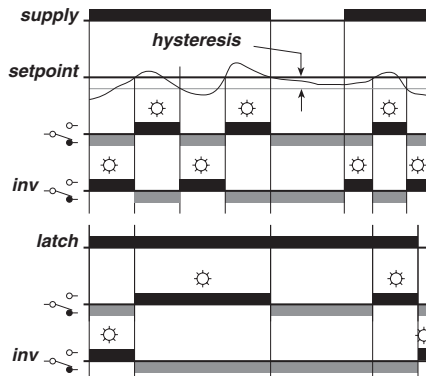
- Monitoring of 1-500VAC/DC in 5 ranges in one version.
- Adjustable setpoint.
- Adjustable hysteresis of 0,5-20%.
- Automatic locking function (latch).
- Inversion of the relay function.
- Output SPDT and 2-10VDC with reference to setpoint.
- Supply voltage 24VDC, 24/115VAC or 24/230VAC.

VERSIONS/ORDERING CODES

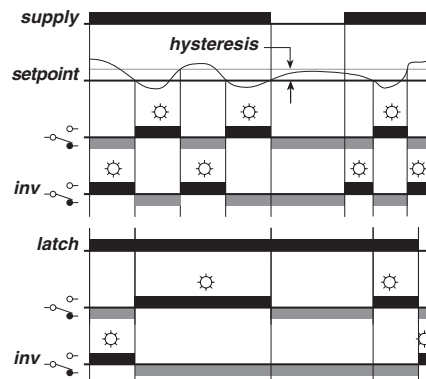


OPERATION

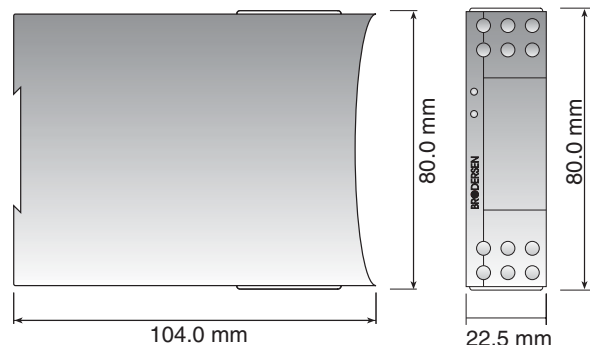
Over voltage, code 1



Under voltage, code 2



MECHANICAL DIMENSIONS



TECHNICAL DATA

Input:

Input signal	Impedance	U _{max}
1-5V AC/DC	500k	700V AC
4-20V AC/DC	500k	700V AC
10-50V AC/DC	500k	700V AC
40-200V AC/DC	500k	700V AC
100-500V AC/DC	500k	700V AC

Frequency :	45-65 Hz
Temperature drift	Max. 0,05%/°C
Setting accuracy:	Typically ± 10%
Hysteresis:	0,5-20% of chosen range, adjustable
Response time:	time constant $\tau = 0,8s$, 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.
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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. <20ms.
Delay;	<20ms.
Analogue output:	2-10V DC, refers to setpoint in chosen range. $I_{max} = 2mA / R_{load} > 5k\Omega$. Accuracy better than +/- 0,5%.

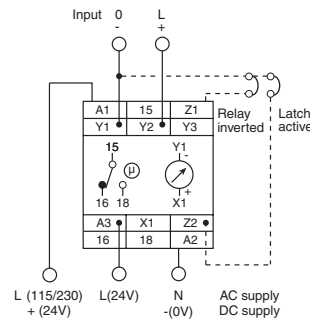
Supply voltage:

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.
Net frequency:	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 2,5mm 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

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

SPECIFICATIONS

MXV-10 is designed and developed with regard to relevant specifications:

- EN62024-1 / 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-10 is CE-marked in accordance with EMC-and the Low Voltage Directive.

OUTPUT LOAD DIAGRAMS

Fig. 1

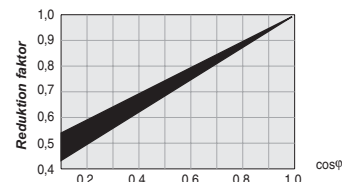
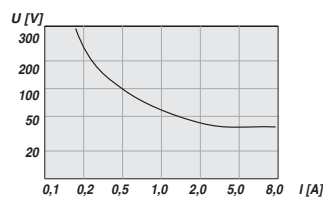


Fig. 2



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.

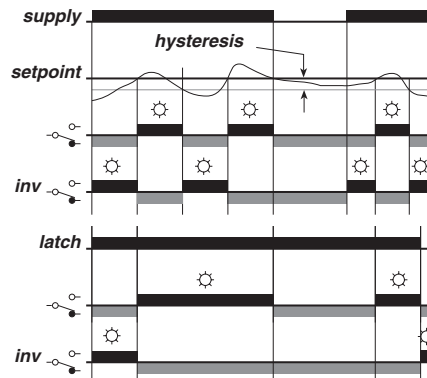
Features

- 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.

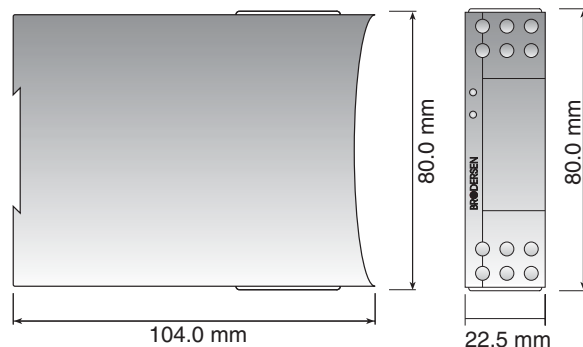
VERSIONS/ORDERING CODES

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:

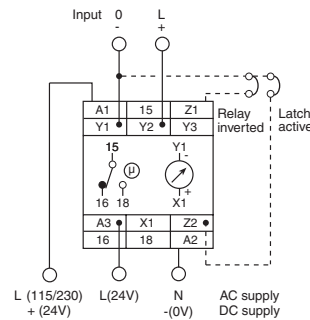
Versions:	924=24V DC (20,4-27,6)V DC. 024=24V AC (20,4-27,6)V AC. 115=115V AC (98-132)V AC. 230=230V AC (196-264)V AC. 400=400V AC (340-460)V AC.
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Net frequency:	40-70Hz.
Consumption:	AC; max. 3VA DC; max. 2W

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

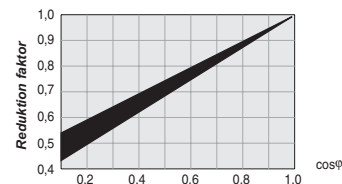
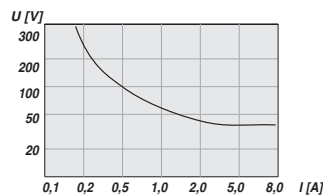


Fig. 2



Control & Monitoring Relays

Single Phase Current Relay MXC-10



DESCRIPTION

A relay for monitoring AC or DC Current via an internal shunt. 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

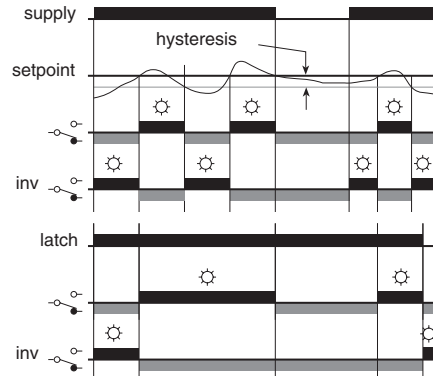
- Monitoring of 4mA - 2A AC/DC, in 5 ranges, in one version.
- Adjustable setpoint.
- Adjustable hysteresis 0,5-20%.
- Automatic locking function (Latch).
- Inversion of the relay function.
- Output SPDT and 2-10V DC referenced to the setpoint.
- Operating voltage 24VDC , 24/115VAC or 24/230VAC.

VERSIONS/ORDERING CODES

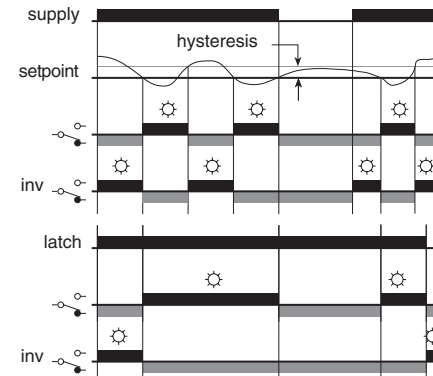
Type: Single phase current relay	MXC-10	MXC-10.	230.	1
Supply voltage 24V DC 115V AC / 24V AC 230V AC / 24V AC	924 115 230			
Over/under current Over current Under current	1 2			

OPERATION

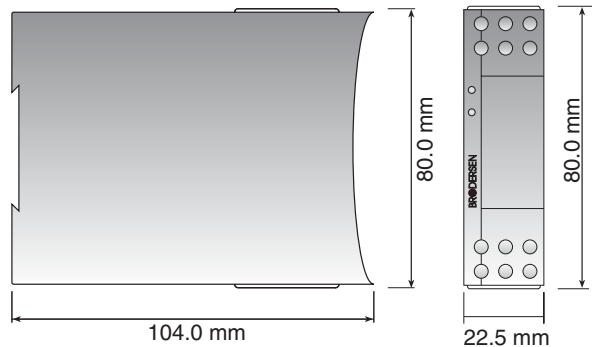
Over current, code 1



Under current, code 2



MECHANICAL DIMENSIONS



TECHNICAL DATA

Input:

Input signal:	I_{max} :	Impedance R_i :	Terminals:
4-20mA AC/DC;	} 340mA	} 50ohm	} Y1/Y2
10-50mA AC/DC;			
40-200mA AC/DC;			
100-500mA AC/DC;	} 5A	} 0,1ohm	} Y1/Y3
0,4-2A AC/DC;			

Frequency:	45-65 Hz.
Temperature drift:	Max. 0,05%/°C.
Setting accuracy:	Typically $\pm 10\%$.
Hysteresis:	0,5-20% of chosen range, adjustable
Response time:	time constant $\tau = 0,8s$, 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.
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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.

$$I_{max} = 2mA / R_{load} > 5k\Omega.$$

Accuracy better than $\pm 0,5\%$.

Supply voltage:

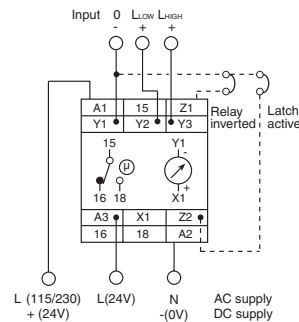
Versions:	924=24V DC (20,4-27,6)V DC. 115=24/115V AC (20,4-27,6/98-132)V AC. 230=24/230V AC (20,4-27,6/196-264)V AC.
Net frequency:	45-65Hz.

Consumption:	AC; 3VA. DC; 2W.
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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 $2 \times 2,5mm^2$ wire ($2 \times 1,5mm^2$ inc. ferrule). Recommended torque, 0,5 Nm., Max 0,7 Nm. (VDE0609-1). Terminal identification in accordance with DIN46199/EN50005.
Indicators:	Green LED = working 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



Input:	Terminals:
4-20mA	} Y1/Y2
10-50mA	
40-200mA	

100-500mA	} Y1/Y3
0,4-2A	

Coding:

Relay inverter. Jumper Y1-Z1

Latching, Jumper Y1-Z2

Analogue output 2-10V DC;

X1 = (+) V
Y1 = (-) 0

SPECIFICATIONS:

MXC-10 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-10 is CE-marked in accordance with EMC- and the Low Voltage Directive.

OUTPUT LOAD DIAGRAMS

Fig.1

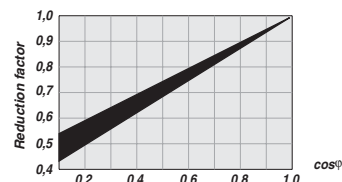
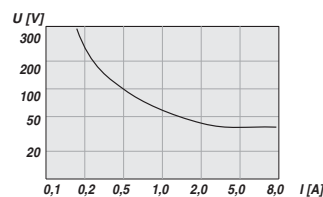


Fig. 2





DESCRIPTION

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

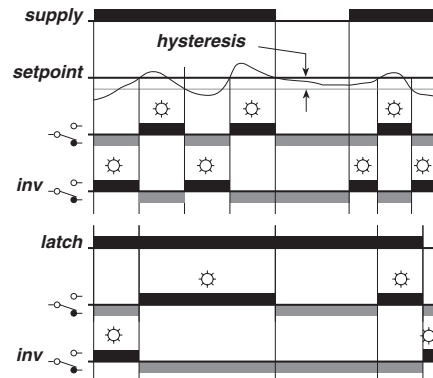
When the monitored current rises and reaches the determined setpoint, which is adjusted on the front panel, the relay energises. When the current drops and passes the setpoint, minus the hysteresis which is adjustable on the front, the relay de-energises. With inverted relay function the internal relay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

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

Features

- Monitoring of 10mA - 5A AC/DC in 5 ranges.
- Adjustable setpoint.
- Adjustable hysteresis 3-35%.
- Automatic locking function (Latch).
- Inversion of the relay function.
- Output SPDT.
- Operating voltage 24VDC , 24VAC, 115VAC, 230VAC or 400VAC.

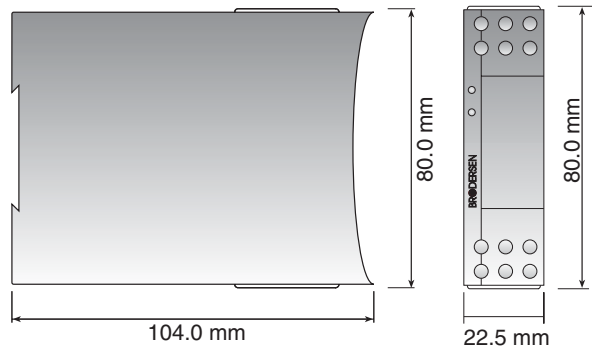
OPERATION



VERSIONS/ORDERING CODES

Type:	Single phase current relay	MXC-20	MXC-20.	230.	1
Supply voltage					
24V DC		924			
24V AC		024			
115V AC		115			
230V AC		230			
400V AC		400			
Measuring range:					
10-50mA		1			
40-200mA		2			
0,1A-0,5A		3			
0,4A-2A		4			
1-5A		5			

MECHANICAL DIMENSIONS



TECHNICAL DATA

Input

Input signal	Impedance	I _{max}
10-50mA AC/DC	4,7Ohm	0,7A
40-200mA AC/DC	1Ohm	1,4A
0,1-0,5A AC/DC	0,47Ohm	2,5A
0,4-2A AC/DC	0,1Ohm	5,5A
1-5A AC/DC	0,047Ohm	8A

Frequency at	
AC-input:	45-65 Hz.
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. $5 \times \tau$.
Voltage drop:	0,2V@FS.

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:

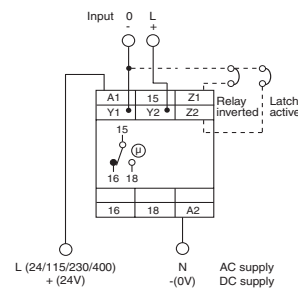
Versions:	924=24V DC (20,4-27,6)V DC.
	024=24V AC (20,4-27,6)V AC.
	115=115V AC (98-132)V AC.
	230=230V AC (196-264)V AC.
	400=400VAC (340-460)V AC.

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 $2 \times 2,5mm^2$ wire ($2 \times 1,5mm^2$ 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 (EN61010).
Housing:	Noryl (GE), UL94V1. Black
Terminal block:	Noryl (GE), UL94V0. Black
Weight:	180 g.

WIRING DIAGRAM



Coding:

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

SPECIFICATIONS:

MXC-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.

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

OUTPUT LOAD DIAGRAMS

Fig.1

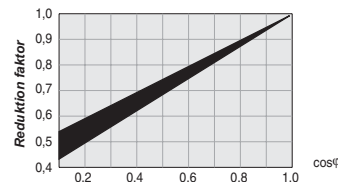
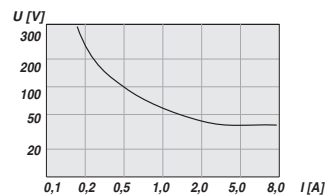


Fig. 2



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:

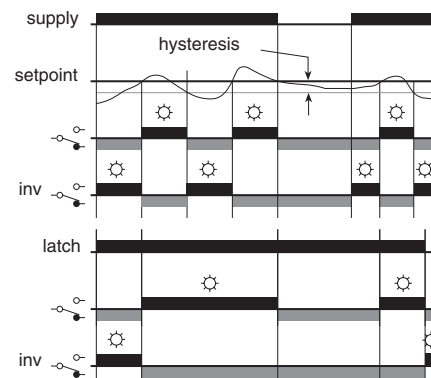
- Monitoring of up to 500A, range depend of the connected AC current transformer or DC shunt.
- Adjustable setpoint and hysteresis.
- Latch function and inversion of the relay function.
- Output SPDT and 2-10V DC referenced to the setpoint.
- Operating voltage 24VDC , 24/115VAC or 24/230VAC.

VERSIONS/ORDERING CODES

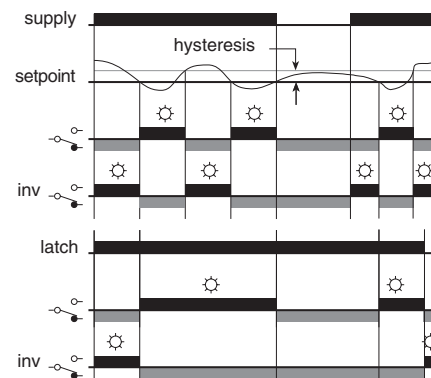
Type: Single phase high current relay.	MXC-30	230	1
Supply voltage: 24V DC. 115V AC/ 24V AC. 230V AC / 24V AC.	924	115	230
Over/under current: Over current. Under current.	1	2	

OPERATION

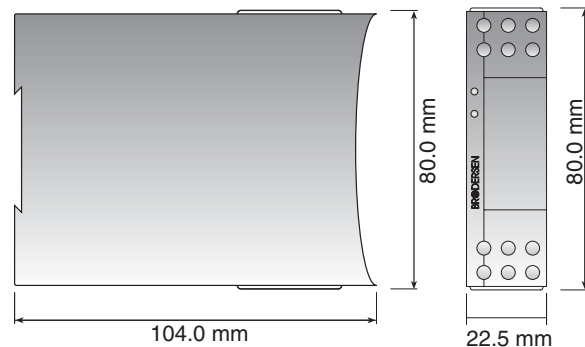
Over current, code 1



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 ($\cos\varphi=1$)
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 $\pm 0,5\%$.

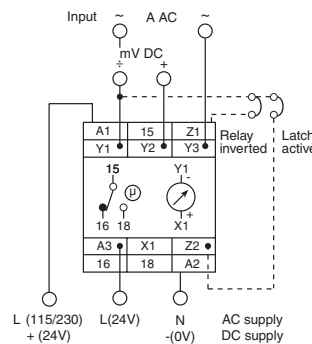
Supply voltage:

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

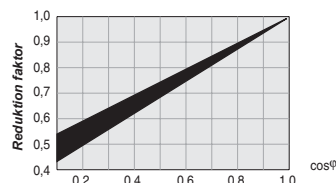
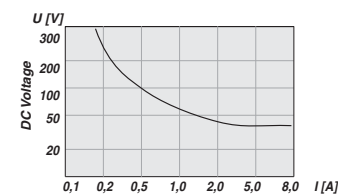


Fig. 2



ACCESSORIES

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



DESCRIPTION

A relay for monitoring a 3-phase AC power supply with/without Neutral. When the voltage of the 3 phases U,V,W (L1, L2, L3) are within the range, adjustable on the front, the relay is energised. If one or more of the phase voltages moves outside the limits, the relay de-energises. A LED indicates over or under voltage. When all the voltages are again within the limits the relay will re-energise. There is also a latch function where the relay after de-energising will remain de-energised, regardless of input voltage, until the latch jumper or the operating voltage is disconnected. Typically used in safety circuits. LED indication is still available when latched. With connection of Neutral the measuring abilities are optimal, as Neutral works as a measuring reference. Without Neutral, the phase monitoring relay generates a Neutral reference from the connected phases.

Note: 3x400 gives a nominal voltage between phases of 400VAC. The voltage between Phase and Neutral will be 230V AC.

Features

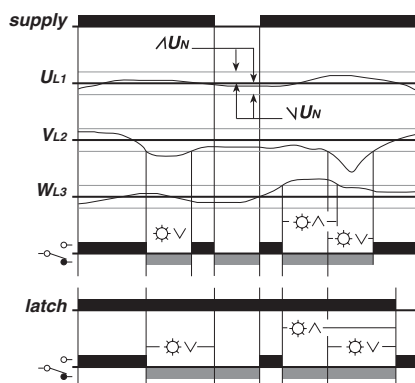
- Monitoring of over and under voltage, on 3 phase power supply with or without Neutral.
- Adjustable upper and lower voltage limits (80-99% / 101-120% of Un).
- Automatic locking (Latch).
- Output SPDT.
- Separate operating voltage 230V AC, or 400V AC.

VERSIONS/ORDERING CODES

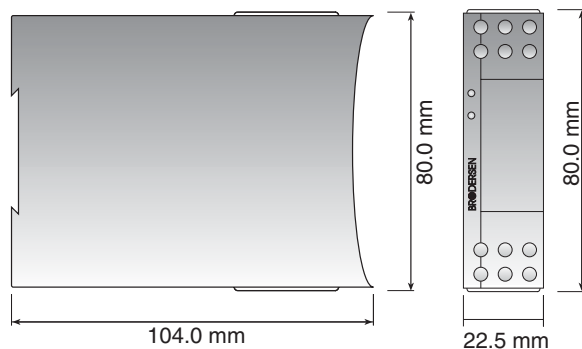
Type: 3-phase voltage relay	MXV-30	MXV-30	230 / 230
Supply voltage 230V AC 400V AC		230 400	
Measurement voltage 3 x 230V AC 3 x 400 V AC	(132V L/N) (230V L/N)	230 400	

OPERATION

Over and under voltage



MECHANICAL DIMENSIONS



TECHNICAL DATA

Input:

Input signal	Impedance	U_{MAX}
3 x 230V AC+N	316kOhm	600V AC
3 x 400V AC+N	560kOhm	600V AC

Frequency:	45-65Hz.
Measuring cycle:	80ms.
Response time:	$\tau = 0,5s$, worstcase $5 \times \tau$.
Temperature drift:	Max. 0,05%/°C.
Setting accuracy:	$U_n =$ Typically $\pm 3\%$.
Hysteresis:	Set 2%.

Output:

SPDT relay:	Contact material, AgNi 0,15 with hardened gold plating Au. Max. load AC, 8A/240V AC ($\cos \varphi=1$) Max. breaking capacity 2000VA . Inductive load. See fig. 1. Max. load DC, 8A/24V DC Max. breaking capacity 50-270W. See fig. 2.
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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.

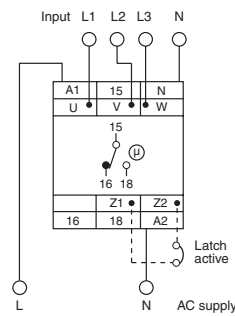
Supply voltage:

	230V AC (184-276V).
	400V AC (320-480V).
Consumption:	3VA.

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 $2 \times 2,5mm^2$ wire ($2 \times 1,5mm^2$ inc. ferrule). Recommended torque, 0,5Nm. Max. 0,7 Nm. (VDE0609-1). Terminal identification in accordance with DIN46199/EN50005.
Indicators:	Red LED \wedge = over voltage (failure-relay off). Red LED \vee = under voltage (failure-relay off).
Protection:	IP20.
Electric isolation:	3,75kVAC (1 min.) between input, supply and relay output (EN60950).
Housing:	Noryl (GE), UL94V1.
Terminal block:	Noryl (GE), UL94V0.
Weight:	180 g.

WIRING DIAGRAM



Coding:
Latching: Jumper, Z1-Z2

Phases can be connected in any order, as the phase sequence is not of importance.

SPECIFICATIONS:

MXV-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.

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

OUTPUT LOAD DIAGRAMS

Fig. 1

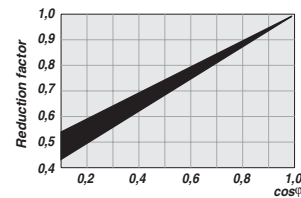
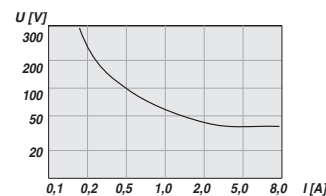


Fig. 2





DESCRIPTION

A relay for monitoring a 3-phase AC power supply with or without Neutral. The relay monitors that all phases are available and in the correct phase sequence (U,V,W), that none of the phases are shifted more than 20°C in relation to each other and that one or more of the phase voltages are not too low. When all three monitoring criteria are fulfilled the relay is activated. If one or more of the criteria are not fulfilled the relay de-energises and a red LED indicates failure. The nominal phase voltage is adjustable $\pm 15\%$ of the selected voltage version (3 x 115/3x230/3x400VAC). The low-voltage limit is also adjustable from 60-98% thus allowing detection of a motor-generated phase.

With connection of Neutral the measuring abilities are optimal, as Neutral works as a measuring reference. Without Neutral, the phase monitoring relay generates a Neutral reference from the connected phases.

Features

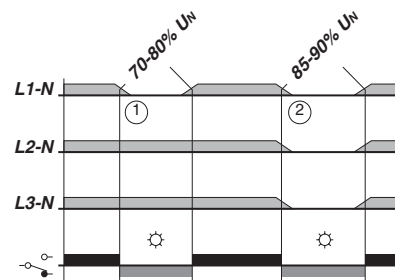
- Monitoring of
 - Phase rotation
 - Phase shift less than 20°
 - Low voltage
- Adjustable measuring voltage $U_n \pm 15\%$ of rated voltage U_n .
- Low voltage detection, adjustable 60- 98% of measuring voltage U_n .
- Output SPTD.
- Operating voltage via phases V and W (L2 and L3).

VERSION/ORDERING CODES

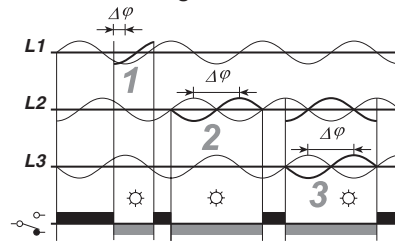
Type:			
Phase monitoring relay	MXP-10	MXP-10	230
Supply voltage/measuring voltage			
3 x 115V AC		115	
3 x 230V AC		230	
3 x 400V AC		400	

OPERATION

Voltage monitoring



Phase monitoring



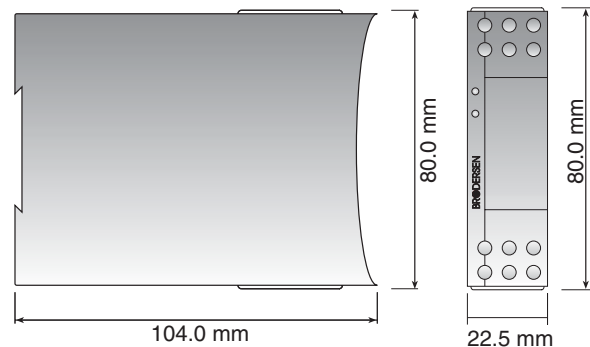
Examples of types of phase error:

1. Motor-generated phase, for example, when L1 is disconnected to an unloaded or lightly loaded 3-phase motor ($\Delta\phi > 20^\circ$).
2. Ohmic load or heavily loaded 3-phased motor, where L2 is disconnected ($\Delta\phi = 180^\circ$).
3. Reversed phase sequence (L2 and L3) ($\Delta\phi = 120^\circ$).

OPTION:

Can be delivered with separate supply voltage

MECHANICAL DIMENSIONS



TECHNICAL DATA

Input:

Input signal	Impedance	U _{max}
3 x 115V AC + N	150 kOhm	600V AC
3 x 230V AC + N	316 kOhm	600V AC
3 x 400V AC + N	560 kOhm	600V AC

Frequency:	47-53Hz.
Measuring cycle:	80ms.
Temperature drift:	Max. 0,05%/°C.
Response time:	$\tau = 0.2s$, worstcase $5 \times \tau$.
Setting accuracy:	U _n = Typically $\pm 3V$ AC. Low voltage typically $\pm 1\%$.

Output:

SPDT relay:	Contact material; AgNi0.15 with hardened gold plating Au. Max. Load AC; 8A/240VAC ($\cos\phi=1$) 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%).
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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.
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Delay;	<20ms.
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Supply voltage:

Supplied via phase:	V(L2) and W(L3).
Consumption:	3VA.

General data:

Ambient temperature:	-20 to 55°C.
Storage temperature:	-40 to 80°C.

Mounting:	35mm DIN-rail (EN50022).
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Terminals:	Screw terminals with dual compartment. Terminal screws are combined crosshead/slotted. Up to $2 \times 2.5\text{mm}^2$ wire ($2 \times 1.5\text{mm}^2$ inc. ferrule). Recommended torque, 0.5 Nm.,
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Max. 0,7 Nm. (VDE0609-1).
Terminal identification in accordance with DIN46199/EN50005.

Indicators:	Green LED = operating voltage. RedLED = relay off - failure.
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Protection:	IP20.
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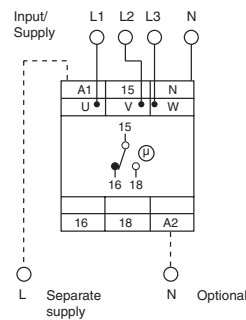
Electric isolation:	3.75kVAC (1 min.) between input, supply and relay uotput (EN60950).
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Housing:	Noryl (GE), UL94V1.
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Terminal block:	Noryl (GE), UL94V0.
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Weight:	180 g.
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WIRING DIAGRAM



SPECIFICATIONS:

MXP-10 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.

MXP-10 is CE-marked in accordance with EMC-and the Low Voltage Directive.

OUTPUT LOAD DIAGRAMS

Fig. 1

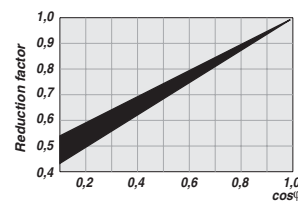
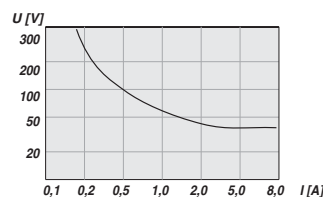


Fig. 2





DESCRIPTION

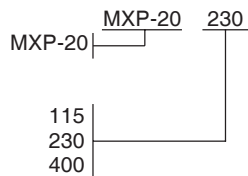
A relay for monitoring a 3-phase AC power supply with or without Neutral. The relay monitors that all phases are available and in the correct phase sequence L1, L2, L3 (U,V,W), that none of the phases are shifted more than 20° in relation to each other and that one or more of the phase voltages are not too low. When all three monitoring criteria are fulfilled the relay is activated. If one or more of the criteria are not fulfilled the relay de-energises and a red LED indicates failure. Fixed limits for energizing and de-energizing the single output relay. With connection of Neutral the measuring abilities are optimal, as Neutral works as a measuring reference. Without Neutral, the phase monitoring relay generates a Neutral reference from the connected phases.

Features:

- Monitoring of
 - Phase rotation
 - Phase shift less than 20°
 - Low voltage
- Output SPTD.
- Operating voltage via phases L2 and L3 (V and W).
- Delay= 0,5s to prevent faulty energization and deenergization caused by short interferences.

VERSION/ORDERING CODES

Type:
Phase monitoring relay.

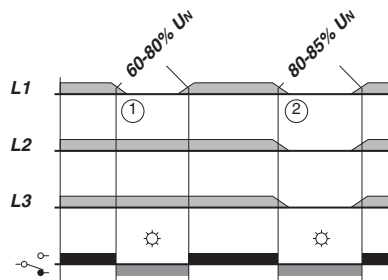


Supply voltage/measuring voltage:

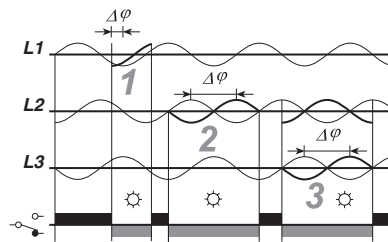
- 3 x 115V AC
- 3 x 230V AC
- 3 x 400V AC

OPERATION

Voltage monitoring



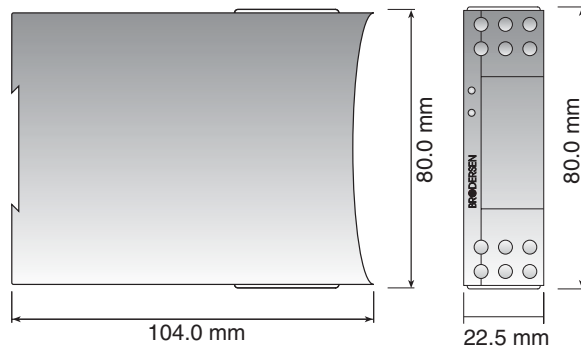
Phase monitoring



Examples of types of phase error :

1. Motor-generated phase, for example, when L1 is disconnected to an unloaded or lightly loaded 3-phase motor ($\Delta\phi > 20^\circ$).
2. Ohmic load or heavily loaded 3-phased motor, where L2 is disconnected ($\Delta\phi = 180^\circ$).
3. Reversed phase sequence (L2 and L3) ($\Delta\phi = 120^\circ$).

MECHANICAL DIMENSIONS



TECHNICAL DATA

Input:

Input signal	Impedance	U _{max}
3 x 115V AC + N	150 kOhm	300V AC
3 x 230V AC + N	316 kOhm	435V AC
3 x 400V AC + N	560 kOhm	580V AC

Frequency: 45-66Hz.

Temperature drift: All specifications apply for the specified temperature range.

Delay: 0.3s-0.7s.

Phase measuring:

With neutral: Fault: $\Delta\phi > 25^\circ$, typically $\Delta\phi > 20^\circ$
Without neutral: Fault: $\Delta\phi > 50^\circ$, typically $\Delta\phi > 40^\circ$

Voltage measuring:

With neutral:
Change on 1 phase:
Energized output relay: $> 90\%$ of V_{nom.}, typically by $> 80\%$.
Fault: $< 65\%$ of V_{nom.}, typically by $< 70\%$.

Change of 3 phases, symm.:
Energized output relay: 90% of V_{nom.}
Fault: $< 80\%$ of V_{nom.}, typically by $< 85\%$.

Without neutral:

Change on 1 phase:
Energized output relay: $> 90\%$ of V_{nom.}, typically by $> 80\%$.
Fault: $< 50\%$ of V_{nom.}, typically by $< 60\%$.

Change of 3 phases, symm.:
energized output relay: 90% of V_{nom.}, typically by $> 85\%$.
Fault: $< 75\%$ of V_{nom.}, typically by $< 80\%$.

Output:

SPDT relay: Contact material; AgNi0.15 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: < 20 ms.

Supply voltage:

Supplied via phase: V(L2) and W(L3).

Consumption: 3VA.

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).

Terminal identification in accordance with

DIN46199/EN50005.

Weight: 180 g.

Indicators: Green LED = operating voltage.

Red LED = relay off - failure.

Protection: IP20.

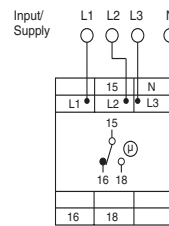
Electric isolation: 3.75kVAC (1 min.) between input,

supply and relay output (EN60950).

Housing: Noryl (GE), UL94V1.

Terminal block: Noryl (GE), UL94V0.

WIRING DIAGRAM



SPECIFICATIONS:

MXP-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.

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

OUTPUT LOAD DIAGRAMS

Fig. 1

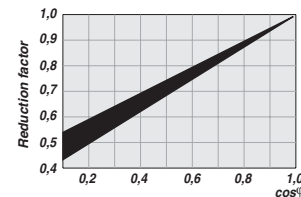
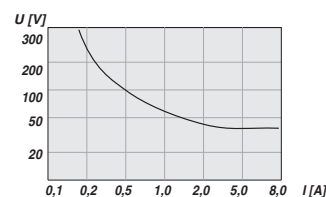


Fig. 2



Control & Monitoring Relays

Level Relay MXL-10



DESCRIPTION

A level control relay for most conductive fluids. With a 2 or 3 wire probe, one or two levels in a container can be controlled.

The probe is a conducting rod, the length of which can be adjusted to the container and the levels which have to be controlled.

To control 1 level (2-wire probes), one of the probes is constantly covered by the fluid and the length of the probe dictates the level. To control 2 levels (3-wire probes), one of the probes is constantly covered by fluid and the length of the two other probes dictates min. and max. levels.

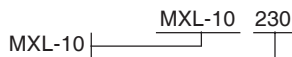
As conductivity will differ from fluid to fluid, the sensitivity can be adjusted on the front panel, to adjust the reaction time from the time the actual level is registered, to the relay being energised/de-energised.

Features

- Monitoring/control of levels of conducting fluids via 2 or 3 wire probes.
- Signal at max. and min. level in the same version.
- Sensitivity adjustable on input 5 - 50kOhm.
- Response time adjustable 0,1 - 5 sec.
- Automatic locking (Latch).
- Output SPDT.
- Supply voltage 24/115VAC or 24/230VAC and 24VDC.

VERSION/ORDERING CODES

Type:
Level relay

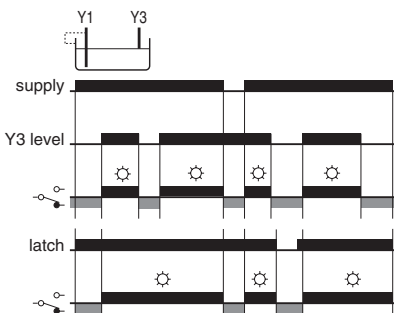
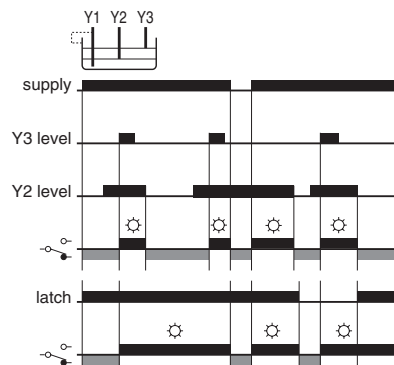


Supply voltage
24V DC
115V AC / 24V AC
230V AC / 24V AC

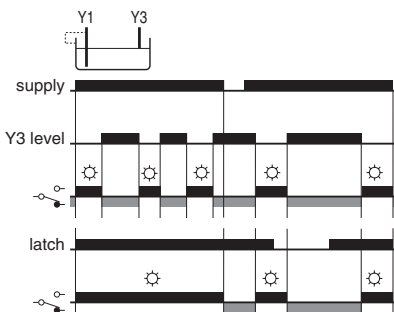
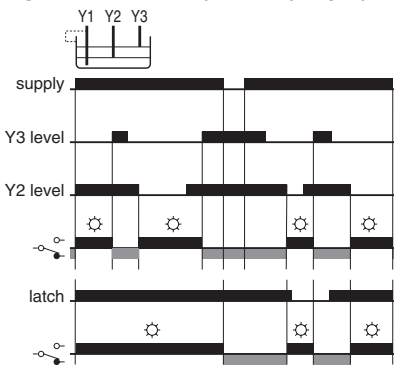


OPERATION

Signal at maximum (with jumper).



Signal at minimum (without jumper)



TECHNICAL DATA

Input:

Sensitivity: 5kOhm-50kOhm, adjustable.
 Probe Voltage: Max. 12Vp-p AC, 1kHz.
 Probe current: Max. 360µA.
 Temperature drift: Max. 0,05%/°C.
 Hysteresis: <0,1%.
 Reaction time: 0,1-5s, adjustable.
 Probe Cabel: Max. length 100m.
 Capacity max. 10nF.
 Isolation resistance>220kOhm.

Output:

SPDT relay: Contact material, AgNi 0,15 with hardened gold plating Au.
 Max. load AC: 8A/240V AC (cosφ=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 x 10⁷ operations.
 Elect. Min. 1 x 10⁵ operations with full load.
 Delay: <20ms.

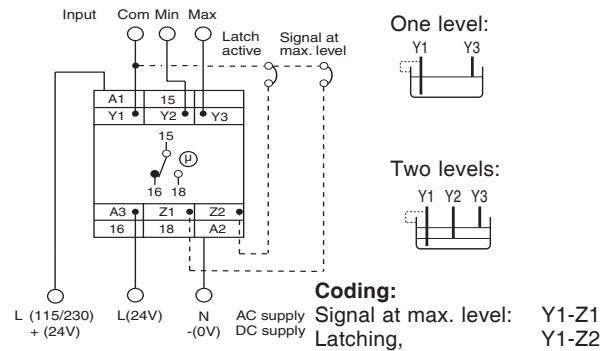
Supply voltage:

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
 Net frequency: 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, 0,5Nm, max 0,7Nm (VDE0609-1).
 Terminal identification in accordance with DIN46199/EN50005.
 Indicators: Green LED = operating voltage
 Red LED = relay switched on.
 Protection: IP20
 Electric isolation: 3,75kVAC (1 min.) between input, supply and relay output (EN60950)
 Housing: Noryl (GE), UL94V1.
 Terminal block: Noryl (GE), UL94V0.
 Weight: 180 g.

WIRING DIAGRAM



SPECIFICATIONS:

- MXL-10 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.

MXL-10 is CE-marked in accordance with EMC-and the Low Voltage Directive.

OUTPUT LOAD DIAGRAMS

Fig. 1

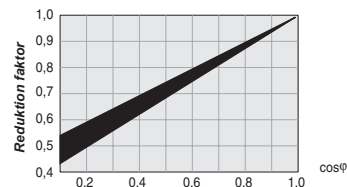
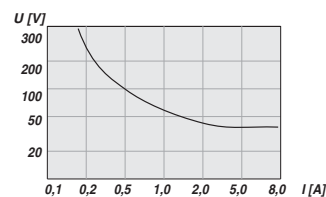
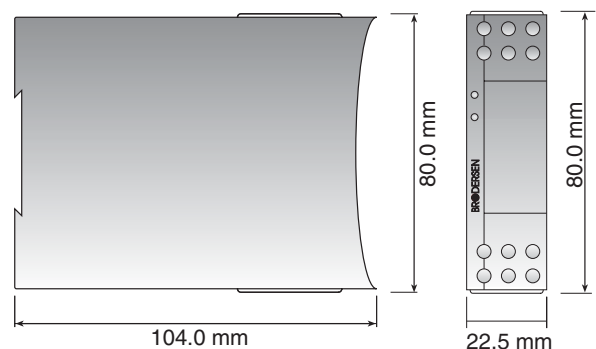


Fig. 2



MECHANICAL DIMENSIONS



Control & Monitoring Relays

Thermostat Relay MXT-10



DESCRIPTION

A thermostat relay for the monitoring or control of temperature in the range -50 to 300°C. The probe is a standard Pt100, either 2 or 3 wire. LED indication of a non-functional probe and relay activated.

When the temperature rises and reaches the determined setpoint, plus the hysteresis, which is adjusted on the front, the relay de-energises. As the temperature falls and passes the setpoint, minus the hysteresis, the relay re-energises. By strapping 2 terminals, the relay can be inverted allowing the thermostat relay to be used for the control of heating as well as cooling systems.

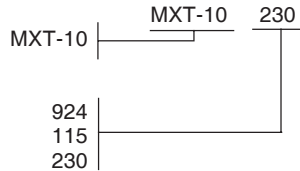
The relay has two analogue 0-10VDC outputs, one for measured temperature and the other for the setpoint.

Features

- 2/3 wire Pt100 input (DIN43760).
- Monitoring or control of temperature - 50 to 300°C in 5 ranges in one version.
- Adjustable Setpoint.
- Hysteresis adjustable $\pm 0,5-20\%$.
- Inversion of the relay contact function - heating/cooling control.
- LED indication of probe failure.
- Outputs.
- SPDT.
- Analogue 0 - 10VDC with ref. to measured temperature.
- Analogue 0 - 10VDC with ref. to setpoint.
- Supply voltage 24VDC, 24/115VAC or 24/230VAC.

VERSIONS/ORDERING CODES

Type:
Thermostat relay

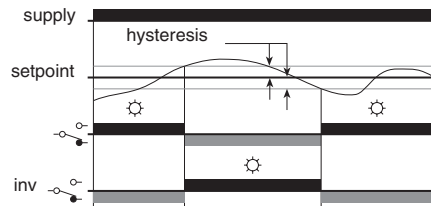


Supply voltage

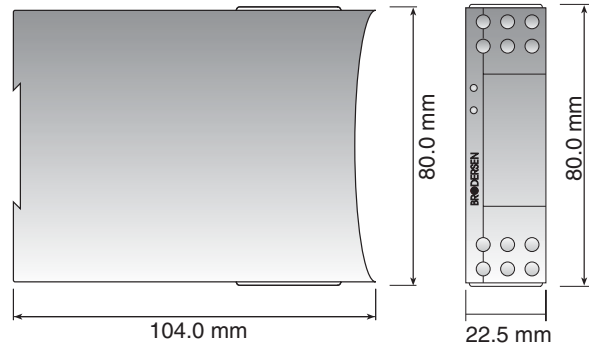
24V DC
115V AC / 24V AC
230V AC / 24V AC

OPERATION

Temperature monitoring



MECHANICAL DIMENSIONS



TECHNICAL DATA

Input: Pt-100 probe(DIN 43760), 3 conductors with compensation for cable resistance.

Temperature range: -50-50°C
0-50°C
0-100°C
100-200°C
200-300°C

Temperature drift: Max. 0,05%/°C

Setting accuracy: Typically ± 10%

Hysteresis: ±0,5-20% of chosen area, adjustable

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 ($\cos \varphi=1$)
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. time.

Life span: Mech. Min. 3×10^7 operations
Elect. Min. 1×10^5 operations with full load.

Delay: <20ms.

Analogue outputs: 0-10V DC, refers to setpoint and measured temperature in chosen areas.
 $I_{max} = 2mA / R_{load} > 5 k\Omega$.
Setpoint: ±1%
Measured value ±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.

Net frequency: AC; 3VA
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). Terminal identification in accordance with DIN46199/EN50005.

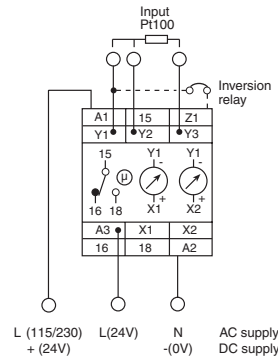
Indicators: Green LED = operating voltage.
Red LED (constant)= relay switched on.
Red LED (flashing)= non-functional probe.

Protection: IP20.

Electric isolation: 3,75kVAC (1 min.) between input, supply and relay output (EN60950).
Note: No galvanic isolation between input and analogue output.
Noryl (GE), UL94V1.
Terminal block:Noryl (GE), UL94V0.

Housing: Weight: 180 g.

WIRING DIAGRAM



Coding: Relay inverter, Jumper Y1-Z1

Analogue output 0-10V DC
Setpoint: X1= (+) V
Y1= (-) 0

Measured temperature: X2=(+) V
Y1=(-) 0

SPECIFICATIONS:

- MXT-10 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.

MXT-10 is CE-marked in accordance with EMC-and the Low Voltage Directive.

OUTPUT LOAD DIAGRAMS

Fig. 1

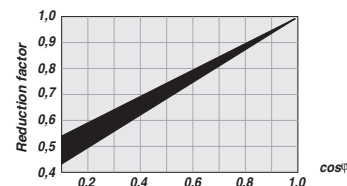


Fig. 2

