

# Type: MXCVR

## Single Phase, Under and Over Voltage plus Time Delay

- 17.5mm DIN rail housing
- True R.M.S.
- Microprocessor based (self checking)
- Monitors own supply
- Detects if supply exceeds the set Under or Over Voltage trip levels
- Fixed trip level - 70% of Un (time delay automatically cancelled when the supply drops below this level)
- Adjustments for under and over voltage trip level
- Adjustment for time delay (from under or over voltage condition)
- 1 x SPDT relay output 8A
- Intelligent LED indication for supply and relay status

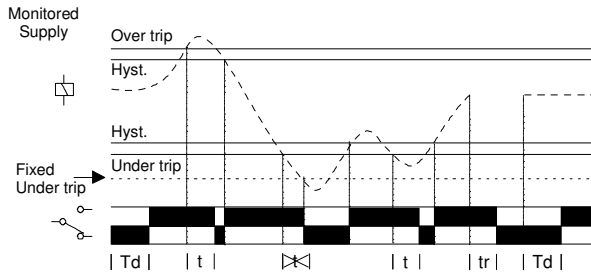
# MX Series



Dims:  
to DIN 43880  
W. 17.5mm

Terminal Protection to IP20

### FUNCTION DIAGRAM



### INSTALLATION AND SETTING



Installation work must be carried out by qualified personnel.

- BEFORE INSTALLATION, ISOLATE THE SUPPLY.
- Connect the unit as required. The Connection Diagram below shows a typical installation, whereby the supply to a load is being monitored by the Monitoring relay. If a fault should occur (i.e. under voltage condition), the relay will de-energise and assuming control of the external Contactor, de-energise the Contactor as well.

#### Applying power.

- Set the "Over %" **3** adjustment to maximum and the "Under %" **5** adjustment to minimum. Set the "Delay (t)" **4** to minimum.
- Apply power and the green "Power supply" **1** and red "Relay" **2** LED's will illuminate, the relay will energise and contacts 15 and 18 will close. Refer to the troubleshooting table if the unit fails to operate correctly.

#### Setting the unit.

- Set the "Over %" and the "Under %" adjustments to give the required monitoring range.
- If large supply variations are anticipated, the adjustments should be set further from the nominal voltage.
- Set the "Delay (t)" adjustment as required. (Note that the delay is only effective should the supply increase above or drop below the set trip levels. However, if during an under voltage condition the supply drops below the 2<sup>nd</sup> under voltage trip level, any set time delay is automatically cancelled and the relay de-energises).

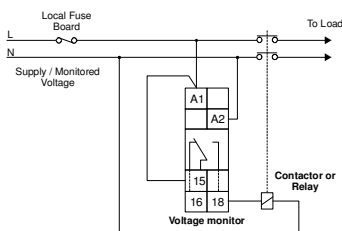
**Note:** If the supply voltage increases above the maximum "Over %" trip setting by approx. 5% or more, the relay will de-energise immediately.

#### Troubleshooting.

The table below shows the status of the unit during a fault condition.

Supply fault	Green LED	Red LED	Relay
Supply missing	Off	Off	De-energised
Under or Over Voltage condition (during timing)	On	Flashing	Energised for set delay (t)
Under or Over Voltage condition (after timing)	On	Off	De-energised
Supply below 70% of Un (fixed under trip level [2])	On	Off	De-energised

### CONNECTION DIAGRAM



### SETTINGS



1. Power supply status (Green) LED.
  2. Relay output / Timing status (Red) LED.
  3. "Over %" trip level adjustment.\*
  4. "Time delay" adjustment.
  5. "Under %" trip level adjustment.\*
- \* scaled as % of the nominal voltage "Un".

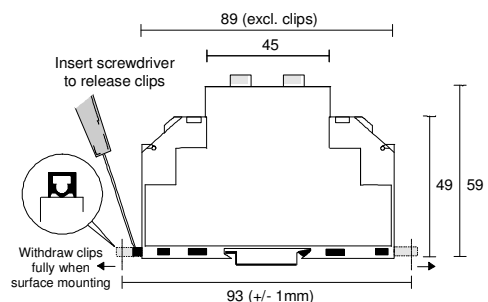
### TECHNICAL SPECIFICATION

Supply / monitoring voltage Un (A1, A2):	110, 115, 220, 230, 240V AC (Voltage should be specified when ordering)	
Frequency range:	48 - 63Hz	
Supply variation:	70 - 130% of Un	
Isolation:	Over voltage cat. III	
Rated impulse withstand voltage:	4kV (1.2 / 50μs) IEC 60664	
Power consumption:	8VA max.	
Trip levels:	Under [2]: 70% of Un (fixed) Under: 75 - 95% of Un Over: 105 - 125% of Un	
Measuring ranges:	Under: 82 - 104V 115V: 86 - 109V 220V: 165 - 209V 230V: 173 - 218V 240V: 180 - 228V	Over: 115 - 137V 121 - 144V 231 - 275V 241 - 287V 252 - 300V
Trip accuracy:	± 1%	
Hysteresis:	≈ 1% of trip level (factory set)	
Repeat accuracy:	± 0.5% @ constant conditions	
Immunity from micro power cuts:	< 50ms	
Response time:	≈ 50ms	
Time delay (t):	0.2 - 10 sec (± 5%) Note: actual delay (t) = adjustable delay + response time	
Power on delay (Td):	≈ 1sec. (worst case = Td x 2)	
Ambient temp:	-20 to +60°C	
Relative humidity:	+95%	
Output (15, 16, 18):	SPDT relay	
Output rating:	AC1 250V 8A (2000VA) AC15 250V 5A (no), 3A (nc) DC1 25V 8A (200W)	
Electrical life:	≥ 150,000 ops at rated load	
Dielectric voltage:	2kV AC (rms) IEC 60947-1	
Rated impulse withstand voltage:	4kV (1.2 / 50μs) IEC 60664	
Housing:	Orange flame retardant UL94 VO	
Weight:	≈ 70g	
Mounting option:	On to 35mm symmetric DIN rail to BS5584:1978 (EN50 002, DIN 46277-3) Or direct surface mounting via 2 x M3.5 or 4BA screws using the black clips provided on the rear of the unit.	
Terminal conductor size:	≤ 2 x 2.5mm <sup>2</sup> solid or stranded	
Approvals:	Conforms to IEC, CE and  and RoHS Compliant. EMC: Immunity: EN/IEC 61000-6-2 (EN/IEC 61000-4-3 15V/m 80MHz - 2.7GHz) Emissions: EN/IEC 61000-6-4	

#### Options:

1. For other Supply / monitoring voltages, please consult Sales.

### MOUNTING DETAILS



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MXCVR-I-A

The Information provided in this literature is believed to be accurate (subject to change without prior notice); however, use of such information shall be entirely at the user's own risk.