MOTOR PROTECTION RELAYS

1. INTRODUCTION

Main problems of industrial electrical motors arises from the phase-phase voltage fluctuations, over heat and incorrect connections. So, Motor Protection Relay is designed to provide protection aganist such inconveniences.

2. USAGE

If L1,L2 and L3 voltages are in toleration limits , the relay is switched on and the motor works.If L1,L2,and L3 voltages are out of toleration limits the relay is switched off and the motor stops.In case of the phase-phase voltages reaches at its nominal value,the relay is switched on and the motor re-starts.

Phase Sequence: To determine direction of rotation , phase sequence prevent to energize motor unless L1,L2,and voltages get connected in sequence.Replacing any of two phases might be sufficient for sequencing.

PTC: Motors get warm overmuch because of over loading.This situations disrupts interturn insulaton of motor and damages the motor.When the temperature of motor exceeds limited level PTC feature provide deactivation of motor.

MKR-01/ MKR-W01: Motor Protection Relay.
MKR-01P/MKR-01PV: Motor Protection Relay with PTC.
MKR-01PF/MKR-01PVF/MKR-W01PF: Motor Protection Relay with PTC and Phase Sequence.
MKR-W01F: Motor Protection Relay with Phase Sequence.

Note: When PTC not used, PTC terminal pins must be short circuited.

MKR-WF : When pahse inputs are in normal sequence the relay is switched on an Led lights up,the motor works.If Phase sequence is incorrect the relay is switched off and Led turns off, motor stops.

MKR-03 : The relays is switched on and its LED be turned on if the supply voltage is in between the set values. Hence, the motor will start running. The relay is switched off and then the motor stops when the voltage is below the set value or exceeds 240V.
NOTE: MKR-03 is the best-used for the monophase motors being under the negative effect of low/high voltages. No auxiliary contact is required under 1KW

MKR-PTC/MKR-VPTC : When the coil temperature of motor exceeds PTC temperature limit, the output relay is instantly switched off. When the coil temperature reaches at the allowed temperature ranges, the relay is switched on and the LED turns on. Thus, motor starts operating.

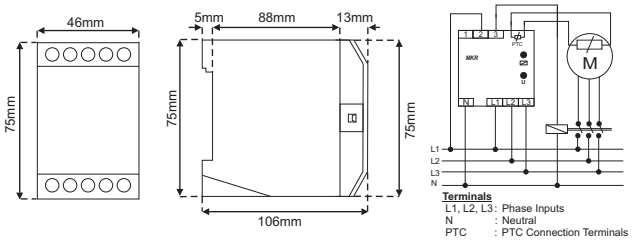
NOTE: Custom-made devices with different standards are specified on their label.

3. USAGE AND SAFETY

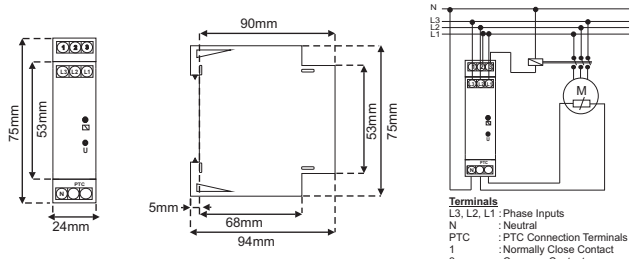
- Turn off power during connection/wiring.
- Check correct mains voltage/wiring terminal.
- Installation shall only be performed by qualified personnel.
- Do not use any solvent or alike for cleaning.

5.TECHNICAL SPECIFICATIONS

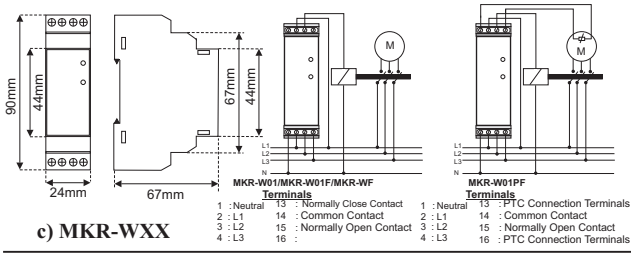
4. MECHANICAL DIMENSIONS AND CONNECTION DIAGRAMS



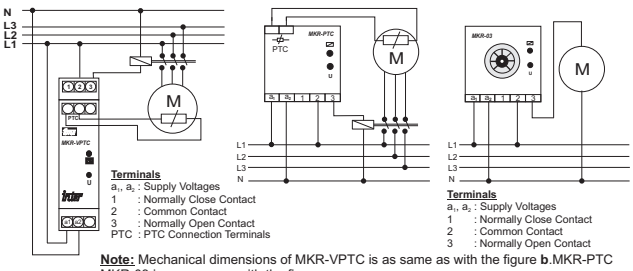
a) MKR-01 / MKR-01P / MKR-01PF



b) MKR-01PV / MKR-01PVF



c) MKR-WXX



Note: Mechanical dimensions of MKR-VPTC is as same as with the figure **b**.MKR-PTC MKR-03 is as same as with the figure **a**.

d) MKR-VPTC / MKR-PTC / MKR-03

Model	Un	Time	Contact	Voltage Fault	Phase Sequence	PTC Resistance	Dimensions and Connection Diagrams	Mount Type	Protection Class	Plastic Material	Operating Temperature	Weight
MKR-01	3x220VAC 3Phase + 1Neutral 50-60 Hz	0-3 sec. (Fixed)	250VAC-5A	%40 Assymetry	–	–	a	Rail Mounted	IP 20	V0 Nonflammable	-25°C … +65°C	150 gr.
MKR-W01					–	–	c					85 gr.
MKR-01P					–	Turn On 1600-2000 ohm Turn Off 1000-1400 ohm	a					170 gr.
MKR-01PV					–		b					100 gr.
MKR-W01PF					●		c					85 gr.
MKR-01PF					●		a					170 gr.
MKR-01PVF					●		b					100 gr.
MKR-W01F					●	–	c					85 gr.
MKR-WF				–	●	–						85 gr.
MKR-03	220VAC 1Phase + 1Neutral 50-60 Hz			Over: 240VAC (Fixed) Under: 180-200VAC	–	–	d					275 gr.
MKR-PTC				–	–	Turn On 1600-2000 ohm Turn Off 1000-1400 ohm						270 gr.
MKR-VPTC				–	–							150 gr.

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