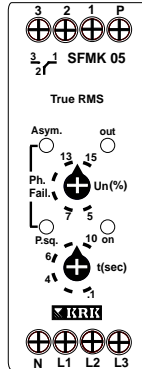
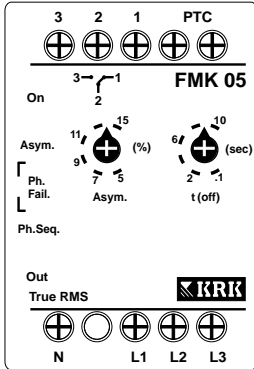


True RMS

## PHASE SEQUENCE & PHASE FAILURE DEVICE

FMK 05  
SFMK 05



### User Guide

UG-23/REV 00

### General Specifications

- The devices are protect motors from ;
- \_\_\_Phase loss
  - \_\_\_Phase sequence failure
  - \_\_\_Phase asymmetry
  - \_\_\_Motor overheat

### Protection Functions

**I- Phase Loss :** If the system has lost one of the phases, the output is closed without delay ( "Ph. seq." and "Asym." led are lighted). In case of supply voltage loss, all of leds are off.

**II-Phase Sequence Failure :** If the sequence of the phases are wrong the output is closed without delay. Any case if the sequence is changed during normal operation the output is closed without delay . In this condition "Ph. seq." led is on.

**III- Voltage Asymmetry:** If system's phase-phase voltage values are between the adjusted asymmetry value, "out" led is on (2-3 contacts are closed). Otherwise the output is closed (1-2 contacts are closed). During normal operation, if asymmetry occurs "Asym." Led is on and if it continues more than adjusted delay time device will cut-off the system (1-2 contact are closed). If it return normal value will continue to normal operation and all warning leds are off.

$$\text{Asymmetry (\%)} = \frac{\text{The max. deviation between Ph-Ph values}}{\text{Nominal value of Ph-Ph}} \times 100$$

**IV- PTC Protection :** If "PTC" protection is not desired, "PTC" inputs must be short-cut. Otherwise must be connected to the motor. It will protect motor from overheating. When PTC value over the 2K ohm, the output is closed without delay.

**V- If any of phases values increases over 1.5xUn or decreases 0.5xUn device will closed the system without delay. Warning leds will light on accordingly.**

\*\*\* If the supply (L1) decreases under 150V the output is closed without delay and "Ph. seq." and "Asym." leds are on

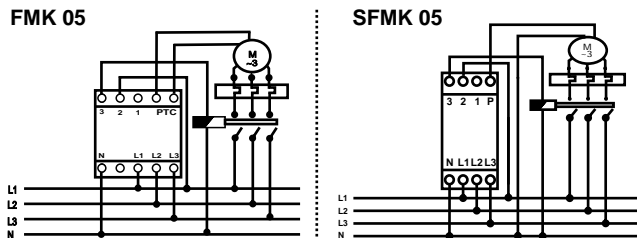
### Technical Specifications

Type	Electrical Connector	Weight (kg)
SFMK 05	PCB Clamp	0,09
FMK 05	PCB Clamp	0,18

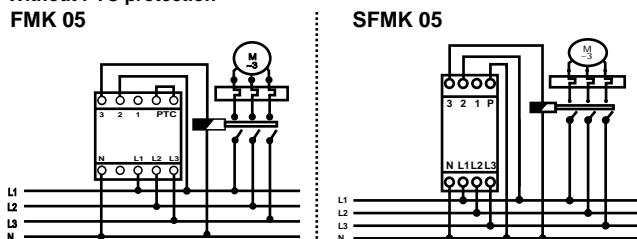
- Supply Voltage : 220 Vac  $\pm$ 30, 50/60 Hz (L1-N)  
 Asymmetry Adjustment : %5...%15  
 Hysteresis : % 20 (Adjusted value)  
 Delay Time : 0.1sec...10sec  
 PTC Value : 2K ohm  
 Power Consumption : <=3W  
 Ambient Temperature : -5°C...+55°C  
 Contact Type : 1 Inversor, Relay, 10A, 250 Vac(Omron)  
 Connection : DIN 35 rail or Vertical Installation(Installation springs behind the box should be pushed outward to enable screwing).

### Connection Schemes

With PTC protection

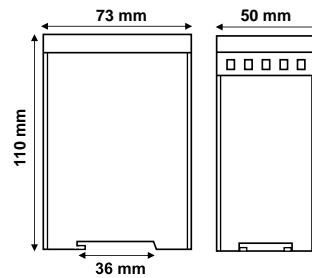


Without PTC protection



### Dimensions

FMK 05



SFMK 05

