

Technical Specifications

Supply voltage	: 220 Vac (%±35, 3 Phases + N, 50/60 Hz.
Hysteresis	: % 20 (Asymmetry Value)
Power Consumption	: < 7 VA
Ambient Temperature	: -5°C...+55°C
Contact Type	: 1 Inversor, 10A/ 250 Vac(Omron)
PTC Resistance	: 2 k Ohm
Electrical Connector	: PCB Clamp
Electrical Life	: 100.000 On/Off (Resistive Load)
Connection Type	: DIN 35 rail or Vertical Installation(Installation springs behind the box should be pushed outward to enable screwing).

Type	Supply	time interval	Asymmetry	Temperature Protection	Electrical Connection	Weight (kg)
SFMK 01	Phase-Neutral		%20		PCB Clamp	0,09
SFMK 01P	Phase-Neutral		%20	PTC	PCB Clamp	0,09
SFMK 03	Phase-Neutral		%40		PCB Clamp	0,09
SFMK 03P	Phase-Neutral		%40	PTC	PCB Clamp	0,09
SFSR	Phase-Neutral				PCB Clamp	0,09
SFMK A	Phase-Neutral		%5...%30		PCB Clamp	0,09
SFMK AP	Phase-Neutral		%5...%30	PTC	PCB Clamp	0,09
FMK 01	Phase-Neutral		%20		PCB Clamp	0,13
FMK 01P	Phase-Neutral		%20	PTC	PCB Clamp	0,13
FMK 03	Phase-Neutral		%40		PCB Clamp	0,13
FMK 03P	Phase-Neutral		%40	PTC	PCB Clamp	0,13
FMK A	Phase-Neutral		%5...%30		PCB Clamp	0,13
FMK AP	Phase-Neutral		%5...%30	PTC	PCB Clamp	0,13
FSR	Phase-Neutral				PCB Clamp	0,13
SFMK A-10	Phase-Neutral	5...10sec. (t-on Fixed)	%5...%30		PCB Clamp	0,09

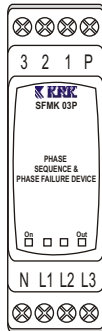
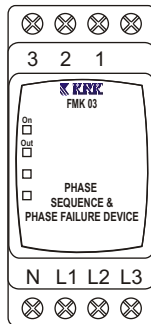
KARACA®

KRK®

29001
9001:2008

PHASE FAILURE & PHASE SEQUENCE DEVICE

<i>FMK 01</i>	<i>SFMK 01</i>
<i>FMK 01P</i>	<i>SFMK 01P</i>
<i>FMK 03</i>	<i>SFMK 03</i>
<i>FMK 03P</i>	<i>SFMK 03P</i>
<i>FMK A</i>	<i>SFMK A</i>
<i>FMK A-10</i>	<i>SFMK A-10</i>
<i>FMK AP</i>	<i>SFMKAP</i>
<i>FSR</i>	<i>SFSR</i>



User Guide

General Specifications

SFMK - FMK SERIES: Motor (Phase) Protection Relay with Phase Sequence. It protects motor when one of the phases is cut or its value fluctuates more than asymmetry value, or Phase sequence is wrong and motor overheats.

FSR: It protects motor against wrong phase sequence.

Protection Functions

1- Phase Loss : If systems loses one or two phases device will not give output to protect system by cutting energy.

2-Temperature Protection: If the heat of the motor exceeds PTC's value device will cut output.

3. Voltage Asymmetry: If system's phase-neutral 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).

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

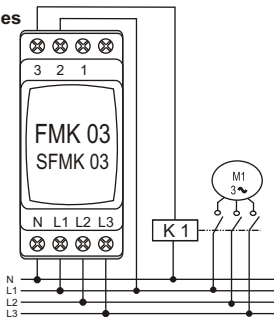
4-Phase Sequence Failure : If the sequence of the phases are wrong the output is closed without delay.

5-PTC Protection: If "PTC" protection isn't desired "PTC" inputs must be short-cut. Otherwise must be connected to the motor. It will protect motor from over-heating.

6-Delay On t-on (SFMK A-10) : In Protected system; if phase failure, voltage unbalance and phase sequence failure is exist for any reason, then these failures are fixed and system return to normal, relay outputs between 5 to 10 second delay.

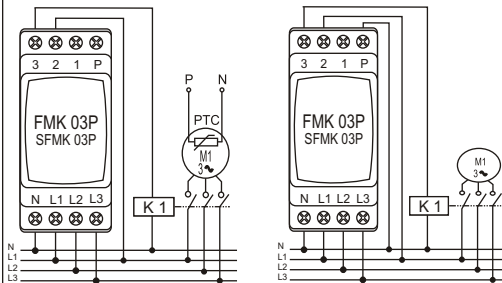
Connection Schemes

FMK SFMK Series



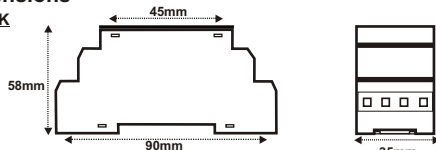
FMK SFMK P Series

To Cancel PTC protection in FMK SFMK P Series



Dimensions

FMK



SFMK

