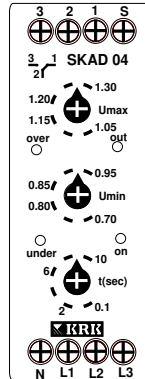
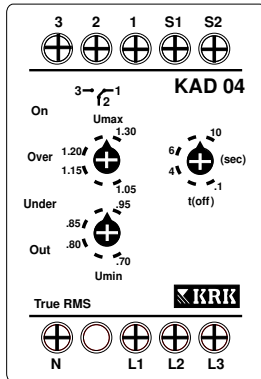


True RMS

UNDER & OVER VOLTAGE MONITORING DEVICE

KAD 04
SKAD 04



User Guide

UG-26/REV 00

General Specifications

The devices are used for three phase systems, to protect systems from : Phase loss, Phase sequence failure, Under voltage, Over voltage

Protection Functions

I- Phase Loss : If the system has lost one of the phases, the output is closed without delay ("on" and "under" leds are lighted). In case of supply voltage loss, all led 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. "Under" and "over" leds are flashing.

III- Under and Over Voltage Protection : Under and Over voltage tolerances can be adjusted separately. If the phase-neutral voltage values are between the adjusted levels "out" led is on (2-3 contacts are closed). Otherwise device close the output(1-2 contacts are closed). During normal operation any of phases voltage value decreases under the adjusted value "under" led is on, increases ver the adjusted value "over" led is on. If one of the phase is over the limit and one of the under the limit both "under" and "over" leds are on. If these condition continues more than adjusted delay time "out" led is off (1-2 contacts are closed). Related warning leds remain on. If these condition continues less than adjusted time, warning leds are off. Device operating normally.

IV- If any of phases values increases over $1.5 \times U_n$ or decreases under $0.5 \times U_n$ device will closed the system without delay. Warning leds will light on accordingly.

V- If phase sequence control is not desired ;

S1-S2 must be short-cut when using KAD 04.

S-N must be short-cut when using SKAD 04

*** If the supply (L1) decreases under 150V the output is closed without delay and "under" led is on.

$$\text{Tolerance(\%)} = \frac{\text{Phase-Neutral value}}{\text{Phase-Neutral nominal value}} \times 100$$

Sample: If $U_{min}=0.80$, $U_{max}=1.10$, $t(\text{sec})=2$ adjusted;

Under Voltage Tolerance= $220 \times 0.80=176V$

Over Voltage Tolerance= $220 \times 1.10=242V$

Delay Time= 2 second

If any of the phase-neutral value out of the 176V-242V and this condition continues more than 2 second "out" led is off. (1-2 contacts are closed.)

If the output is closed from under tolerance output will open 180V. If the output is closed from over tolerance output will open 237V.

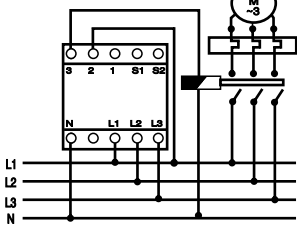
2

Technical Specifications

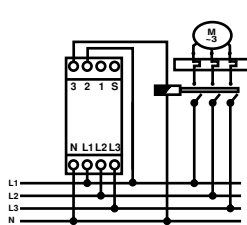
Power Supply	: 220 Vac \pm 35, 50 Hz (L1-N)
Under Voltage Tolerance	: %5...%30
Over Voltage Tolerance	: %5...%30
Delay Time	: 0.1sec...10sec
Hysteresis	: %2 (Adjusted value)
Power Consumption	: <7 VA
Ambient Temperature	: -5°C...+55°C
Contac Type	: Relay, 1 Inversor, 10A/ 250 Vac(Omron)
Electrical Connector	: PCB Clamp
Connection	: DIN 35 rail or Vertical Installation(Installation springs behind the box should be pushed outward to enable screwing).
Weight	: KAD 04 : 0,18 kg
Connection Schemes	: SKAD 04 : 0,12 kg

3 phase with phase sequence protection

KAD 04

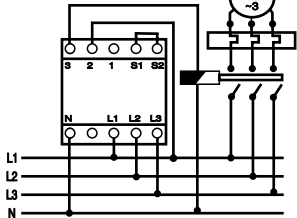


SKAD 04

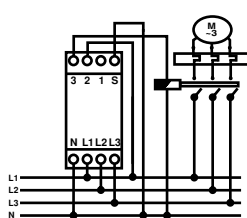


3 phase without phase sequence protection

KAD 04



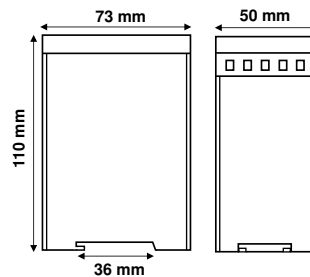
SKAD 04



3

Dimensions

KAD 04



SKAD 04

