

# SINGLE / THREE PHASE OVER / UNDER VOLTAGE MONITORING DEVICES GKR / DGR / GKRC / DGRC SERIES

## General

GKR ve DGR series "over and under voltage" monitoring devices are adjustable "delay OFF" protection devices. They are mainly used for protection of 3-phase and single-phase systems - such as electronic command and control systems, capacitors of power compensation, switch-boards, air-condition systems, motors etc.

## Utilization and Operation Principles

For all relays

"On" is the supply led

"Out" is normal led

"U>" is over voltage error led

"U<" is under voltage error led

1-When the device is energized for the first time, "On" led is ON and if the monitored voltages are within the adjusted range "Out" led is ON and output relay switches ON.

2-When any of the phase/phases fall(s) below the adjusted interval, "U<" error led turns ON, after 0.1-10 sec, output relay switches OFF and "Out" led turns OFF.

3-When any of the phase/phases exceed(s) the adjusted interval, "U>" error led turns ON, after 0.1-10 sec output relay switches OFF and "Out" led turns OFF.

Look at table 1

\* For under voltage monitoring, device switches OFF its output relay instantaneously when the measured voltage(s) fall(s) below %50 of its nominal value.

For over voltage monitoring, device switches OFF its output relay immediately when the measured voltage(s) exceeds %50 of its nominal value.

GKR-02F / GKRC-02F / GKRC-02FA / GKR-03F / GKRC-03F / switches off output relay instantaneously in case of incorrect phase sequence then all leds turn off except "ON" led.

**\*Please notice the right side for connection diagram and dimensions.**

## Technical Data

Rated Voltage (Vin)	: Look at the label of the device
Rated Frequency	: 50/60 Hz
Auxiliary Supply Voltage	: 190-260 V AC (for only GKRC-02FA)
Voltage Adjustment (L-L)	: Umax : 400 - 500 V AC (for only GKRC-02FA) Umin : 300 - 400 V AC (for only GKRC-02FA) Umax : (1,05 - 1,30) x Vin (for others) Umin : (0,70 - 0,95) x Vin (for others)
Delay Time	: 0.1 - 10sn. min.(adjustable)
Output Contact	: 1C/O, 8A, 2000 VA, Cosφ=1
Set Point Hysteresis	: %3
Ambient Temperature	: - 5°C ; + 50°C
Installation	: Surface mounted or rail-mounted
Dimensions	: Type PK10 / PK21 / PK25
Protection Class	: IP 20
Weight	: 0,3 kg (Type PK21 / PK25)

## Precautions For Installation and Safe Use

Failure to follow those instructions will result in death or serious injury.

- Disconnect all power before working on equipment.
- When the device is connected to the network, do not remove the front panel.
- Do not try to clean the device with solvent or the like. Only clean the device with a dried cloth.
- Verify correct terminal connections when wiring.
- Electrical equipment should be serviced only by your competent seller.
- Only for rack panel mounting.

**⚠ No responsibility is assured by the manufacturer or any of its subsidiaries for any consequences arising out of the use of this material.**

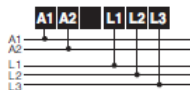
## Condition of leds

On	Out	U>	U<	
●	●	○	○	Voltage(s) is/are within adjusted limits
●	○	●	●	Both low and high voltage
●	●	○	●	Temporary low voltage
●	○	○	●	Continuous low voltage
●	●	●	○	Temporary high voltage
●	○	●	○	Continuous high voltage

● :LED is ON ○ :LED is OFF

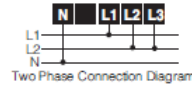
Table-1

## Auxiliary Supply Connection Diagram (For only GKRC-02FA)

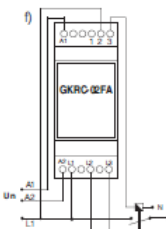
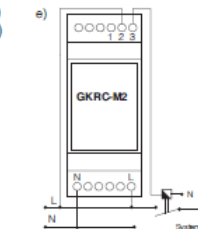
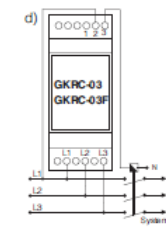
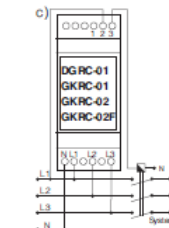
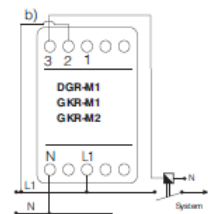
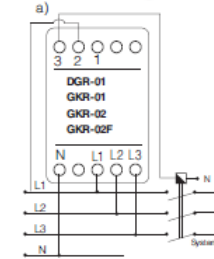


## Utilization with Single-Phase and Two-Phase Systems (For only GKR-01/02, GKRC-01/02, DGR-01, DGRC-01)

See following connection diagrams for both cases:



## Connection Diagram



Function Table

TYPE	Protection Function		3 phases 4 wires star	3 phases 3 wires delta	1 phases 2 wires	Dimension	Connection
	High voltage	Low voltage					
DGR-01	●	●	●			PK-21	a
DGR-M1		●			●	PK-21	b
GKR-01	●		●			PK-21	a
GKR-M1	●				●	PK-21	b
GKR-02	●	●	●			PK-21	a
GKR-02F	●	●	●			PK-21	a
GKR-M2	●				●	PK-21	b
GKRC-02	●		●			PK-25	c
GKRC-02F	●		●			PK-25	c
GKRC-02FA	●			●		PK-25	f
GKRC-03	●		●			PK-25	d
GKRC-03F	●		●			PK-25	d
GKRC-01	●		●			PK-25	c
DGRC-01		●	●			PK-25	c
GKRC-M2	●				●	PK-25	e

Table-2

## Dimensions

