VOLTAGE PROTECTION RELAYS

1. INTRODUCTION

GR series with in-built microcontroller technology are designed to protect against O/U Voltages and Over Temperature as well as with a phase sequence function.

2. USAGE

GR-A/GR-D/GR-AD/GR-ADF/GR-ADFP/GR-WADFP: Over and under voltage limit adjustments should be done according to user's requirement just before the power is applied to system. When the power is applied to the system, the device waits for 1 second so that the voltage can be stabilized. After 1 second, device checks voltage level whether it is inside or outside of the ranges. GR-XXX continuously checks voltage levels and phase sequence during the operation. It turns off the power for protection within an adjusted time delay if the voltage level is out of range but however, do still keep on checking voltages levels of each line. Device will switch the power on once the voltage level reaches at the normal range interval.

Device can inform user about the status of system or the error type. "**U**" LED is "on" to indicate the power is on. Both "**A**" and "**D**" LEDs are on under normal operating conditions. "**A**" LED turns off to indicate an over voltage error whereas "**D**" LED to turn off indicating an under voltage error. If both LEDs (A&D) are off to indicate a phase error (failure).

PTC: GR-XXX with optional PTC is used for a continual sensing of motor-internal heat in order to prevent the damage due to over heating.

- If PTC not used, PTC terminals should be short-circuit.

GR-SDF: No neutral, Under Voltage Protection And Phase Sequence Relay. Before the power is applied into the system, under voltage limit adjustment can be done if necessary. When the power is applied into the system GR-SDF waits for 1 second for voltage stabilization. After 1 second, it monitors voltage levels and phase sequence (if available) to turn back to its normal operating condition. GR-SDF continuously checks voltage levels and phase sequence. The system will be switched off in following to an adjustable time delay of 0.1-15 sec. if any abnormality (values not in the permitted ranges) found during the operation. Device is capable of informing the user about the system status or about the root cause of failure in question.

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

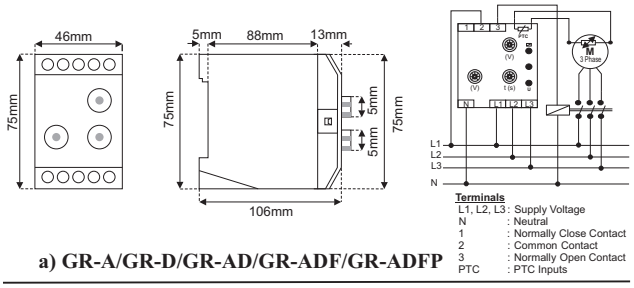
Product Scale Information

(V) : 390-490 Over Voltage Adjustment
(V) : 270-370 Under Voltage Adjustment
t : Delay Time Adjustment

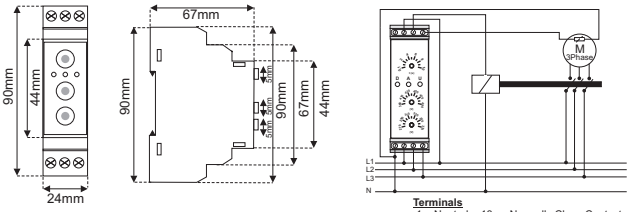
3. USAGE AND SAFETY

- 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.

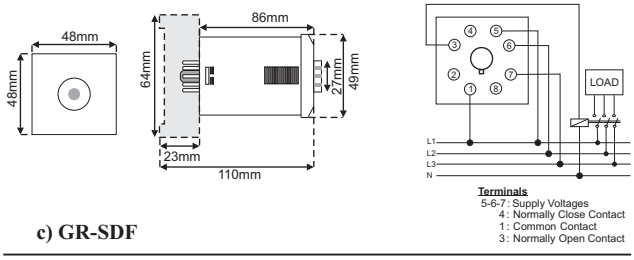
4. MECHANICAL DIMENSIONS AND CONNECTION DIAGRAMS



a) GR-A/GR-D/GR-AD/GR-ADF/GR-ADFP



b) GR-WADFP



c) GR-SDF

5. TECHNICAL SPECIFICATIONS

Model	Un	Operating Range	Contact Output	Under Voltage	Over Voltage	Phase Sequence	PTC Resistance	Delay Time	Dimensions and Connection Diagrams	Mount Type	Protection Class	Plastic Material	Operating Temperature	Weight
GR-A	220VAC 3Phase + 1Neutral 50-60 Hz	(0,7-1,3)xUn	250VAC-5A	270-370VAC (Adjustable)	390-490VAC (Adjustable)	–	–	0-15 sec. (Adjustable)	a	Rail Mounted	IP 20	V0 Nonflammable	-25°C … +65°C	290 gr.
GR-D						–	–		a					280 gr.
GR-AD						–	–		a					290 gr.
GR-ADF						●	–		a					295 gr.
GR-ADFP						●	Turn On 1600-2000ohm		a					295 gr.
GR-WADFP						●	Turn Off 1000-1400ohm	0-10 sec. (Adjustable)	b					95 gr.
GR-SDF	3x380VAC 50-60 Hz	(0,65-1,3)xUn		270-390VAC (Adjustable)	450VAC (Fixed)	●	–	3 sec. (Fixed)	c	Socket Mounted				105 gr.

HANEL ELECTRONIC IND. CO.
Merkez Mah. Hakimiyet Cad. 122. Sk. No:14/A-B Yakuplu Beylikdüzü - İSTANBUL
Phone: +90 212 879 07 74 Fax: +90 212 879 07 78
Web: www.hanel.com.tr E-Mail : hanel@hanel.com.tr

Stock Code: 50 MK00 000006 - V01