OP437-V01

selec

VPRD2M

Operating Instructions



FEATURES

- Over voltage, Under voltage, Phase Asymmetry, Phase sequence, Phase failure monitoring in 3Ø system.
- True RMS Measurement.
- Trip Time Delay, Recovery time Delay, Power ON Delay.
- Adjustable switching Hysteresis.
- One relay with two change over.

SPECIFICATIONS

DISPLAY : 3 Digits, LCD with Backlight (optional)
ELECTRICAL CONNECTIONS : 1Ø 2 wire, 3 Ø 4 wire
AUXILIARY SUPPLY : Self Powered
OPERATING RANGE : 127-288V AC(L-N)
FREQUENCY RANGE : 48-63Hz
VA RATING : 5VA max.
TRIP SETTINGS
Under Voltage : 127-219V AC(L-N) [For 1Ø2 wire/ 3Ø4 wire]
Over Voltage : 242-288V AC(L-N) [For 1Ø 2 wire / 3Ø 4 wire]
Phase Asymmetry : 5-30% [Only in case of 3Ø 4 wire]
TIME SETTING:
Power ON Delay : 0.5 – 300sec.
Trip Time Delay : 0 – 300sec.
Recovery Time : 0 – 300sec.
Response Time
Under Voltage : < 150ms
Over Voltage : < 150ms
Phase Asymmetry : < 150ms [Only 3Ø 4 wire]
Phase loss : < 200ms [Only 3Ø 4 wire]
Phase sequence : < 300ms [Only 3Ø 4 wire]
Hysteresis
Voltage : 1 – 99.9V
Asymmetry : 2 – 20%[Only 3Ø 4 wire]
Resolution
Voltage : 1V
ACCURACY
Voltage : ± 1% of reference value ± 2digits
Time : ± 5% of setting ±150ms
(Trip Time, Recovery Time, Power ON Delay)
OUTPUT SPECIFICATIONS
Relays : 2C/O (DPDT)
RELAY RATING : NO (5A, 250V AC / 28V DC)
NC (5A, 250V AC / 28V DC)
LED INDICATIONS
LED 1 (Green) : Power On
(only for product without backlight)
LED 2 (Red) : Relay (Glows continuously after Trip)

ENVIRONMENTAL SPECIFICATIONS
– Indoor use
– Altitude of up to 2000meters
– Pollution degree 2
Temperature : Operating : -10°C to +55°C
Storage : -25°C to +70°C
Humidity : Up to 95% RH, non-condensing
Weight : 112gms

SAFETY PRECAUTIONS

All safety related codifications, symbols and instructions that appear in this operating manual or on the equipment must be strictly followed to ensure the safety of the operating personnel as well as the instrument.

If the equipment is not used in a manner specified by the manufacturer it might impair the protection provided by the equipment.

If there is physical damage to the unit then do not use it.

Read complete instructions prior to installation and operation of the unit.

WIRING GUIDELINES

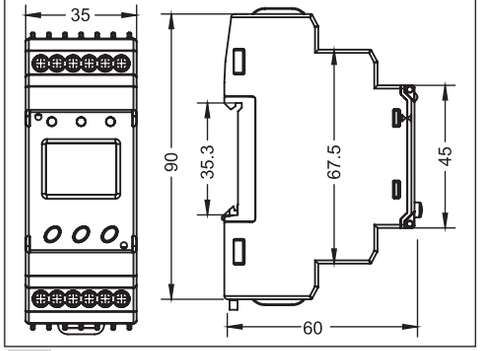
WARNING

1. To prevent the risk of electric shock power supply to the equipment must be kept OFF while doing the wiring arrangement.
2. Wiring shall be done strictly according to the terminal layout with shortest connections. Confirm that all connections are correct.

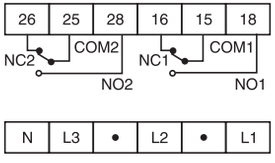
CAUTION

To ensure the safe operation of unit, check the wiring and connections.

DIMENSIONS (All dimensions in mm)



TERMINAL CONNECTIONS



Fuse Protection on each Phase : 0.5A

LED INDICATION CHART

Various Conditions	Power LED	' R ' LED
No fault	ON	OFF
Relay Trip	ON	ON

CONFIGURATION MENU

Press ▲ + ▼ for 3sec. to enter or exit configuration menu.

MAIN MENU

TO SCROLL THROUGH MAIN MENU PRESS ● + ▲ OR ● + ▼ KEYS

Network selection — NWK
Relay Settings — RLY
Time Setting for Relay — tMR
Hysteresis — HYS
Password — PW
Factory set — RSt

SUB MENU

Press ▲ Key to go to Relay 1 setting (RL1) from network selection (NWK)
Press ▼ Key to go to network selection (NWK) from Relay 1 setting (RL1)

Over voltage — OV
Set Over Voltage — S.OV
Under voltage — UV
Set under voltage — S.UV
Asymmetry — AS
Phase Asymmetry Setting — P.AS
Phase sequence — P.SQ
Phase failure — P.FL
MOD — MOd
Latch — LCH
Trip time delay — tRP
Recovery time — REC
Power ON delay — P.ON
Voltage Hysteresis — V.Lt
Asymmetry Hysteresis — ASY (For 3 Phase Only)
Password Enable / Disable — PW
Set password — S.PW
Factory set Yes / No — RSt

SUB MENU

Network Selection (NWK)

Press ▲ to enter sub menu from main menu

Press ▲ or ▼ to scroll through sub menu

Press ● + ▲ or ● + ▼ to change parameter value

DISPLAY (For 1sec)	DESCRIPTION	DEFAULT VALUE	RANGE	CONDITION
NWK	Network selection	3P4	1P2 / 3P4	

Relay (RLY) settings

Press ▲ to enter sub menu from main menu

Press ▲ or ▼ to scroll through sub menu

Press ● + ▲ or ● + ▼ to change parameter value

DISPLAY (For 2 sec)	DESCRIPTION	DEFAULT VALUE	RANGE	CONDITION
OV	Over voltage	> V ON R1	ON / OFF	
S.OV	Set Over Voltage	> V 264 R1	242 - 288V	This option will be prompted only when OV protection is ON
UV	Under voltage	<V OFF R1	ON / OFF	
S.UV	Set under voltage	<V 184 R1	127 - 219V	This option will be prompted only when UV protection is ON

DISPLAY (For 2 sec)	DESCRIPTION	DEFAULT VALUE	RANGE	CONDITION
AS	Asymmetry	ON	ON / OFF	This option will be prompted only when NWK is 3P4W
P.AS	Phase Asymmetry Setting	10.0	5.0 - 30.0%	This option will be prompted only when AS protection is ON
P.SQ	Phase sequence	ON	ON / OFF	This option will be prompted only when NWK is 3P4W
P.FL	Phase failure	ON	ON / OFF	This option will be prompted only when NWK is 3P4W
MOd	MOD	ON	ON / OFF	ON : NC (During Trip) OFF: NO (During Trip)
LCH	Latch	OFF	ON / OFF	If Latch is ON, user has to reset the unit manually when fault is removed

Time Setting for Relay (TMR) — Press ▲ to enter sub menu from main menu

Press ▲or ▼ to scroll through sub menu — Press ● + ▲ or ● + ▼ to change parameter value

DISPLAY (For 2 sec)	DESCRIPTION	DEFAULT VALUE	RANGE	CONDITION
tRP	Trip time delay	1.0	0.0 - 300s	0.0 - 9.9 (step of 0.1s) 10 - 99 (step of 1s) 100 - 300 (step of 10s)
REC	Recovery time	0.5	0.0 - 300s	0.0 - 9.9 (step of 0.1s) 10 - 99 (step of 1s) 100 - 300 (step of 10s)
P.ON	Power ON delay	0.5	0.5 - 300s	0.5 - 9.9 (step of 0.1s) 10 - 99 (step of 1s) 100 - 300 (step of 10s)

Hysteresis (HYS) — Press ▲ to enter sub menu from main menu

Press ▲or ▼ to scroll through sub menu — Press ● + ▲ or ● + ▼ to change parameter value

DISPLAY (For 2 sec)	DESCRIPTION	DEFAULT VALUE	RANGE	CONDITION
VLt	Hysteresis for voltage	1.0	1.0 - 99.9V	
ASy	Hysteresis for Asymmetry	2.0	2 - 20%	This option will be prompted only when NWK is 3P4W

Password (PW) — Press ▲ to enter sub menu from main menu

Press ▲or ▼ to scroll through sub menu — Press ● + ▲ or ● + ▼ to change parameter value

DISPLAY (For 2 sec)	DESCRIPTION	DEFAULT VALUE	RANGE	CONDITION
PW	Password	dIS	ENB / DIS	Enable / Disable password protection
S.PW	Set password	0	0-999	Will be prompted only when Password protection is enabled

NOTE : PW will be asked when the user enter the config. menu if PW protection is enabled in the config menu and the user has to enter the password which he has set in the S.PW (set password) option.

Factory set (RST) — Press ▲ to enter sub menu from main menu

Press ▲or ▼ to scroll through sub menu — Press ● + ▲ or ● + ▼ to change parameter value

DISPLAY (For 2 sec)	DESCRIPTION	DEFAULT VALUE	RANGE	CONDITION
RSt	Reset (Factory set)	NO	YES / NO	

TRIP VALUE SETTING (Online) — **Press ▲ key for 3 sec. to enter or exit Trip Value Setting menu :**

Press ▲or ▼ to scroll through main menu — Press ● + ▲ or ● + ▼ to change parameter value

DISPLAY (For 1sec)	DESCRIPTION	DEFAULT VALUE	RANGE	CONDITION
LCK	LOCK	YES	YES / NO	This option will prompted first when the user enters the trip setting menu. User has to set NO after which he can access the trip setting menu.
S.OV	Set over voltage for Relay	264	242 - 288V AC(L-N)	
S.UV	Set under voltage for Relay	184	127 - 219V AC(L-N)	
tRP	Trip time delay for Relay	1.0	0.0 - 300s	
LCK	LOCK	NO	YES / NO, (In this option if YES is selected by the user, then whenever the user enters the Trip Value Setting, initially LOCK option will be prompted. The user will have to set NO after which he can access the trip setting menu. If the user wants to disable LOCK option, he can set NO when LOCK option is prompted after TRP option.)	

NOTE : If Values are changed, the same setting in config. menu will also changed and vice versa.

ONLINE KEYS — Individual parameters can be viewed with every press of ▼ keys.

PARAMETER	SYMBOL
*Average Voltage	L1 L2 L3
Voltage (L1-phase)	L1
Voltage (L2-phase)	L2
Voltage (L3-phase)	L3
Phase Asymmetry	As %

* **Default Page** : This page is displayed after 3 sec. from other online page.
For 3P4W system average of L-N voltages is shown.
For 1P2W system L1-N voltage is shown.

TRIP INDICATION — Trip Indication on press of ▲ key : Trip value will be displayed till the key is pressed.

RESET — Press ● key for 3sec. to reset manually (Applicable only if Latch is ON)

Master Password : 753

In Trip value setting & configuration menu, if no key pressed for 30 sec. then unit resumes online mode.

(Specifications subject to change as development is a continuous process.)

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