



DIN 35mm

Features:

- 1Ø - 2 Wire, 3Ø - 4 Wire Input
- Monitors Under voltage, Over voltage, Phase asymmetry, Phase Failure & Phase Sequence
- True RMS Measurement
- Adjustable Switching Hysteresis
- One relay with two change over
- DIN Rail Mount

Display Specification

Type	Digital
Display	Liquid Crystal Display
No. of LED's	2
No. of Push Button	3

LED Indication Chart

Condition	'R' LED
Nominal Condition	OFF
Fault Condition	ON

Input Specifications

Functions	
Measurements	Under Voltage, Over Voltage, Phase Asymmetry, Phase Failure and Phase Sequence
Time Setting	Power ON delay, Trip time delay, Recovery time delay
Alarm Indications	Trip
Latching	Selectable
Reset	Auto / Manual
Electrical Connection	1Ø - 2wire, 3Ø - 4wire
Trip Settings	
Under Voltage	127 to 219V AC (L - N)
Over Voltage	242 to 288V AC (L - N)
Phase Sequence	Yes
Phase Failure	Yes
Phase Asymmetry	5 - 30%
Trip Time Settings	
Power On Delay	0.5 - 300sec
Trip Time Delay	0 - 300sec
Recovery Time Delay	0 - 300sec (In Auto Reset Mode)
Response Time	<150ms

Hysteresis

Voltage	1.0 - 99.9V for voltage
Asymmetry	2 - 20% (Only for 3Ø - 4wire)

Resolution

Voltage	1V
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Time setting

0 - 10sec	0.1sec
10 - 99sec	1sec
100 - 300sec	10sec

Accuracy

Voltage	±1% ±2 digits
Time Setting Accuracy	±5% of setting ±150ms

Output Specifications

No. of Relays	1
Type of Output	2 C/O (DPDT)
Contact Rating	NO, NC : 5A@250V

Auxiliary Supply Specifications

Supply Voltage	Self Powered
Nominal Input Voltage, Un	230V AC (L - N)
Operating Voltage	127 to 288V AC (L - N)
VA Rating	5VA max
Frequency	48 - 63Hz

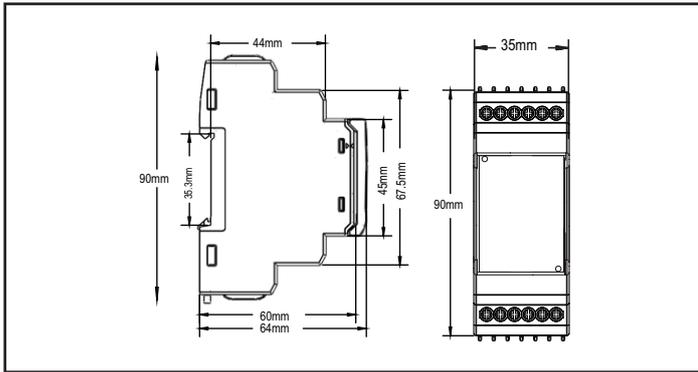
Environmental Specifications

Temperature	Operating Temperature: -10°C to 55°C Storage Temperature : -25°C to +70°C
Humidity (non-condensing)	Upto 95% RH
Pollution Degree	2

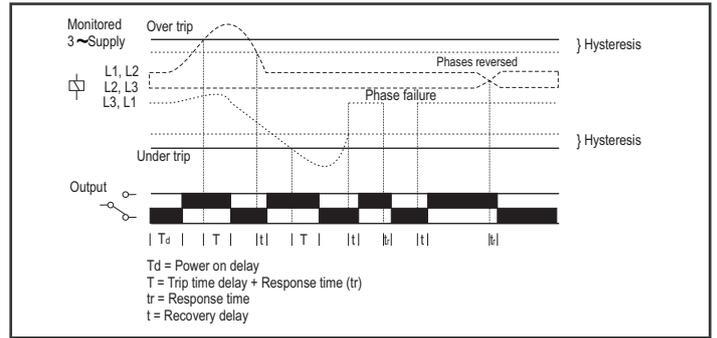
Mechanical Specifications

Mounting	DIN Rail
Weight	112gms
Screw Tightening Torque	0.5 NM

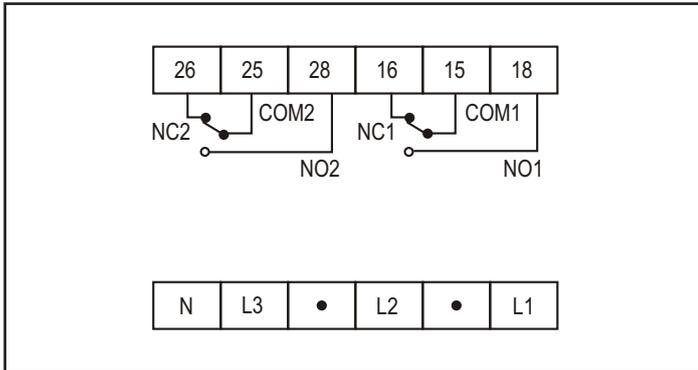
Dimensions



Timing Diagram



Terminal Connections



Ordering Information

Product Code	Supply Voltage	Certification
VPRD2M	127 to 288V AC	-



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, 3Ø 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

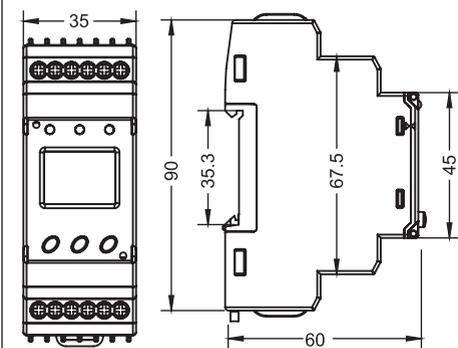
WARNING

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.

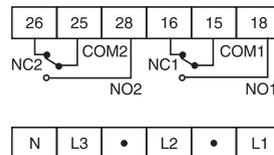
CAUTION

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

Network selection: **NWK**

Relay Settings: **RLY**

Time Setting for Relay: **EMR**

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: **SOV** Under voltage: **UV** Set under voltage: **SUV** Asymmetry: **AS**

Phase Asymmetry Setting: **PAS** Phase sequence: **PS9** Phase failure: **PFL** MOD: **MOD** Latch: **LCH**

Trip time delay: **TRP** Recovery time: **REC** Power ON delay: **PON**

Voltage Hysteresis: **VLE** Asymmetry Hysteresis: **ASY** (For 3 Phase Only)

Password Enable / Disable: **PW** Set password: **SPW**

Factory set Yes / No: **RSt**

TO SCROLL THROUGH MAIN MENU PRESS ▲ OR ▼ KEYS

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	ON	ON / OFF	
SOV	Set Over Voltage	264	242 - 288V	This option will be prompted only when OV protection is ON
UV	Under voltage	OFF	ON / OFF	
SUV	Set under voltage	184	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 ^{As}	ON / OFF	This option will be prompted only when NWK is 3P4W
PAS	Phase Asymmetry Setting	100 ^{V As}	5.0 - 30.0%	This option will be prompted only when AS protection is ON
PSQ	Phase sequence	ON	ON / OFF	This option will be prompted only when NWK is 3P4W
PFL	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	10 ^{RT}	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 ^{RT}	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 ^{RT Ten}	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	10 ^{V H}	1.0 - 99.9V	
ASY	Hysteresis for Asymmetry	20 ^{V As H %}	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	d15	ENB / DIS	Enable / Disable password protection
SPW	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 be prompted first when the user enters the trip setting menu. User has to set NO after which he can access the trip setting menu.
5.0V	Set over voltage for Relay	264 ^{>V RT}	242 - 288V AC(L-N)	
5.0V	Set under voltage for Relay	184 ^{<V RT}	127 - 219V AC(L-N)	
TRP	Trip time delay for Relay	10 ^{RT}	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.)

Selec Controls Pvt. Ltd., India

Factory Address :
EL-27/1, Electronic Zone, TTC Industrial Area,
MIDC, Mahape, Navi Mumbai - 400 710, INDIA.
Tel. No. : +91-22-28476443 / 1882
Fax No. : +91-22-28471733 | Toll free : 1800 227 353
Website: www.selec.com | Email: sales@selec.com