



TECHNICAL SPECIFICATION

FEATURES :

Protection Available	- Over Voltage - Under Voltage - Over Frequency - Under Frequency - Asymmetry - Phase Loss - Phase Sequence - Neutral Loss
Auto/ Manual / ZVR Reset Option	
Network Selection	3Ø-3W/3Ø-4W/1Ø-2W
Time parameter: Power on delay, Trip delay	
Recovery time (Auto Reset / ZVR Reset)	

INPUT SPECIFICATION :

Direct Voltage AC	50 to 300V AC (L - N) 3Ø-4W/1Ø-2W 85 to 520V AC (L - L) 3Ø-3W
Frequency	45.0 Hz to 65.0 Hz
Resolution	1 Volt
Accuracy	Class 1.0

DISPLAY AND KEY :

Display	UPPER: 3 Digit, 7 Seg, 0.4" LOWER: 3 Digit, 7 Seg, 0.28"
Keys	SET, INC, DEC/RST

GENERAL SPECIFICATION :

Dimension (mm)	90 (H) x 35 (W) x 61.5 (D) mm
Trip Setting	Under Voltage : 85-520V AC 3Ø-3W 50-300V AC 3Ø-4W/1Ø-2W Over Voltage : 85-550V AC 3Ø-3W 50-330V AC 3Ø4W/1Ø2W Under Frequency : 45.0 Hz To 65.0 Hz Over Frequency : 45.0 Hz To 65.0 Hz Phase Asymmetry : (10-100V) Hysteresis : (0-99V)
Time Parameter	Power ON Delay Time : 0.0 To 99.9 Sec. Trip delay Time : 0.0 To 999 Sec. Recovery Time : 0.0 To 99.9 Sec.

ACCURACY

Class 1.0 (Standard)

OUTPUT SPECIFICATION :

Relay	2 nos.
Relay Type	1 C/O (NO-C-NC)
Rating	5A, 230V AC , 24V DC

AUXILIARY SUPPLY :

Supply voltage	100 to 270V AC, 50-60Hz
Power consumption (VA RATING)	3 VA @ 230V AC MAX

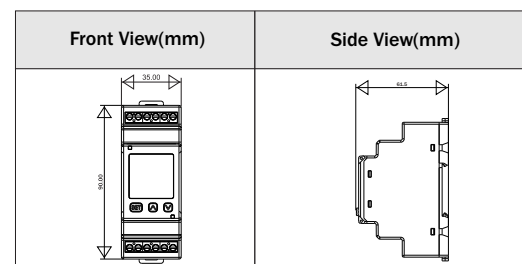
ENVIRONMENT CONDITION :

Operating Temp.	0 °C to 55 °C
Relative Humidity	UP to 95% RH (non-condensing)
Protection Level (As per request)	IP-65 (Front side) As per IS/IEC 60529 : 2001

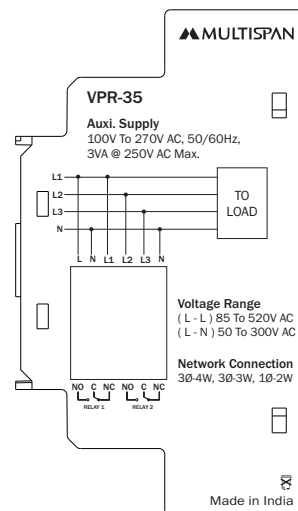
NETWORK CONNECTION :

3Ø-3W/3Ø-4W/1Ø-2W

MECHANICAL INSTALLATION



TERMINAL CONNECTION



KEY OPERATION

FUNCTION	PRESS KEY
OPERATOR MODE	
To enter in parameter setting	[SET] For 5 sec
To view individual phase voltage	[Δ] OR [V]
To Scroll & Hold Page	[SET] + [Δ]
To reset the relay contact in manual mode after tripping	[V] RST
PARAMETER SETTING MODE	
It is used to set parameter value and to be save & exit from menu	[SET]
To increase value in parameter setting	[Δ]
To decrease value in parameter setting	[V] RST

DISPLAY PAGE		
3Ø-4W	3Ø-3W	1Ø-2W
1) Voltage L1-N 240 V L1	1) Voltage L1-L2 415 V L12	1) Voltage L1-N 230 V L1
2) Voltage L2-N 260 V L2	2) Voltage L2-L3 380 V L23	2) Frequency 49.9 V F-9
3) Voltage L3-N 298 V L3	3) Voltage L3-L1 520 V L31	
4) Frequency 50.1 V F-9	4) Frequency 500 V F-9	

MECHANICAL INSTALLATION

- To install the instrument on a DIN rail, raise the clamp at the back of the instrument and place it on the rail. Now release the clamp, so the instrument fits on the DIN rail.
- Ensure proper fitting of the instrument by pulling it outwards.
- To remove the instrument raise the clamp to release it from the DIN rail.
- The equipment in its installed state must not come in close proximity to any heating source, caustic vapors, oil steam, or other unwanted process byproducts.
- Do not connect anything to unused terminals.

MAINTENANCE

- The equipment should be cleaned regularly to avoid blockage of ventilating parts.
- Clean the equipment with a clean soft cloth. Do not use isopropyl alcohol or any other cleaning agent.
- Fusible resistor must not be replaced by operator.

INSTALLATION GUIDELINES

- Do not allow pieces of metal, wire clippings, or fine metallic fillings from installation to enter the product or else it may lead to a safety hazard that may in turn endanger life or cause electrical shock to the operator.
- Circuit breaker or mains switch must be installed between power source and supply terminal to facilitate power 'ON' or 'OFF' function. However this mains switch or circuit breaker must be installed at convenient place normally accessible to the operator.
- Use and store the instrument within the specified ambient temperature and humidity ranges as mentioned in this manual.

OR



SAFETY PRECAUTION

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 all the equipment is not handled in a manner specified by the manufacturer, it might impair the protection provided by the equipment.



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



WARNING : Risk of electric shock.

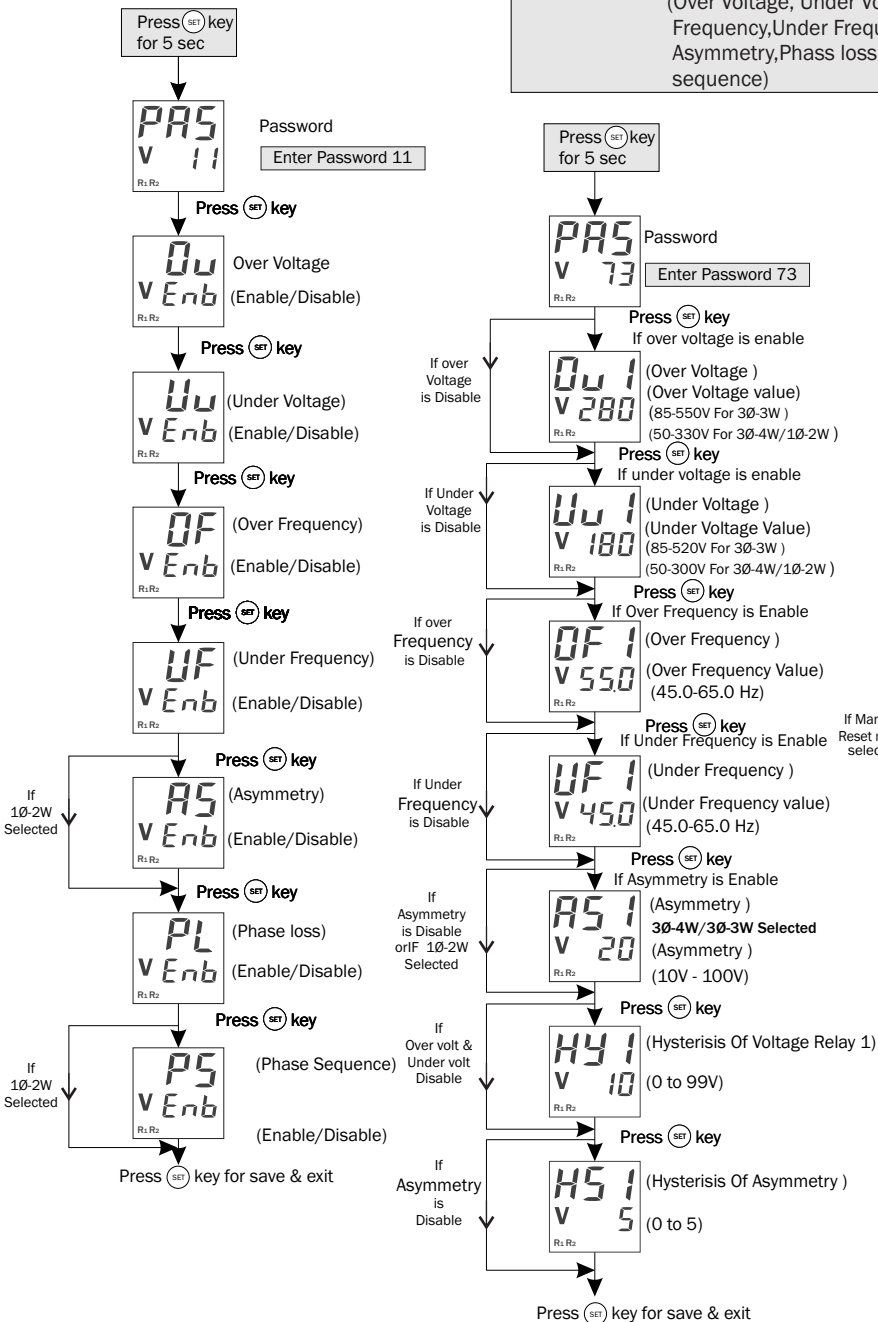
WARNING GUIDELINES



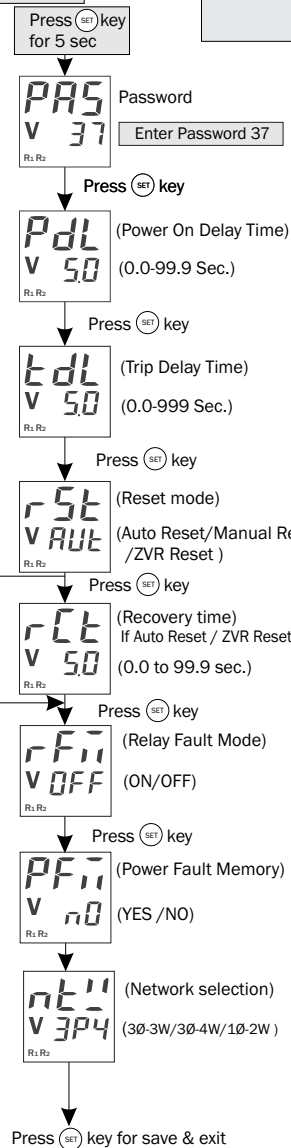
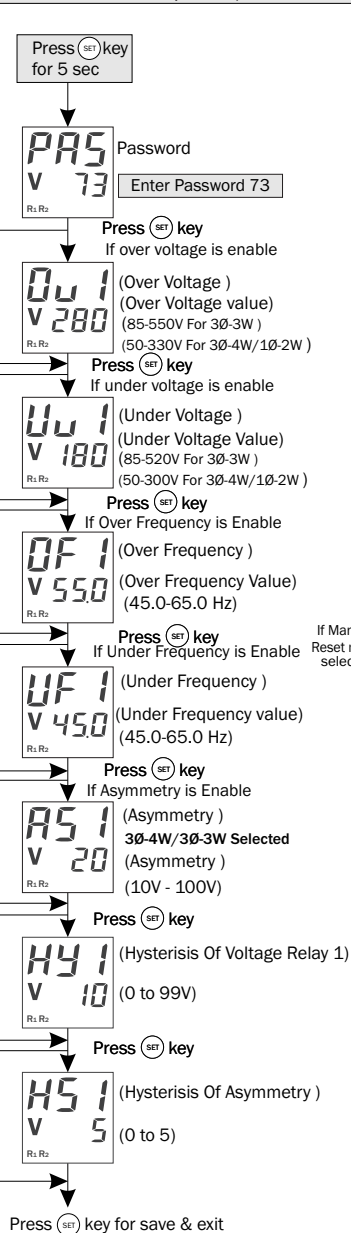
WARNING : Risk of electric shock.

- To prevent the risk of electric shock, power supply to the equipment must be kept OFF while doing the wiring arrangement. Do not touch the terminals while power is being supplied.
- To reduce electro magnetic interference, use wire with adequate rating and twists of the same of equal size shall be made with shortest connection.
- Cable used for connection to power source, must have a cross section of 1mm or greater. These wires should have insulations capacity made of at least 1.5kV.
- A better anti-noise effect can be expected by using standard power supply cable for the instrument.

PARAMETER SETTING



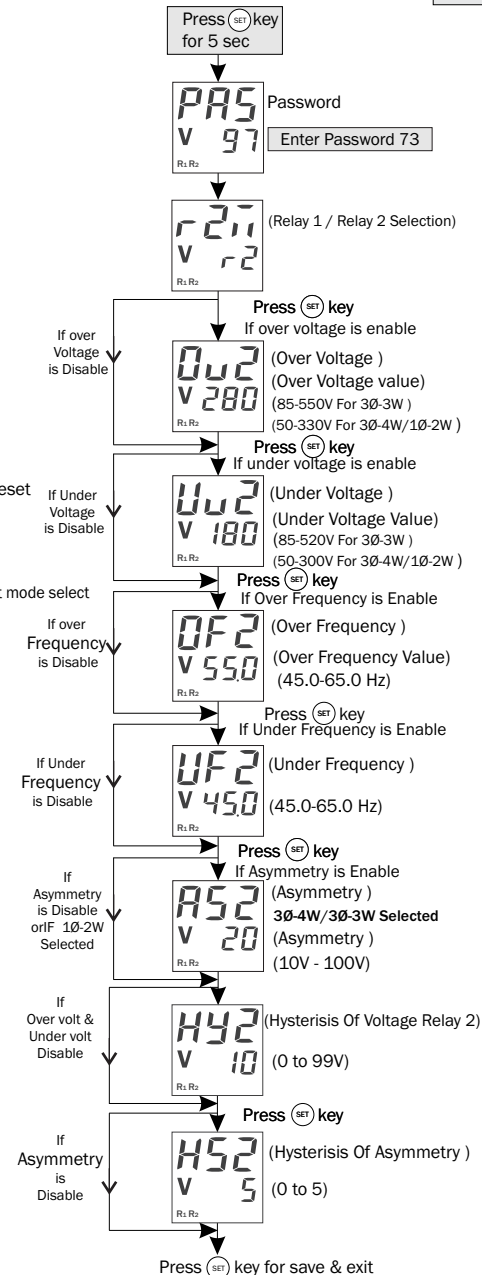
Password 11 : To Enable / Disable parameter (Over Voltage, Under Voltage, over Frequency, Under Frequency, Asymmetry, Phase loss, Phase sequence)



Password 37 : To set Power on delay time, Trip delay, Reset mode, Recovery Time, Relay Fault Mode, Power Fault Memory, Network Selection

Password 73 : 1Relay Settings (Over Voltage, Under Voltage, over Frequency, Under Frequency, Asymmetry, Hysteresis, AsymmetryHysteresis)

Password 97 : 2Relay Settings (Over Voltage, Under Voltage, over Frequency, Under Frequency, Asymmetry, Hysteresis, AsymmetryHysteresis)



FAULT MESSAGE

280 V 0u *** OV	Over Voltage in or V _{L2} (3Ø-4W) Over Voltage Value=280V
180 V 0u *** UV	Under Voltage in V _{L1} (3Ø-4W) Under Voltage Value=180V
55.1 V 0F *** OF	Over Frequency Fault Over Frequency Value=55.0 Hz
44.9 V 0F *** UF	Under Frequency Fault Under Frequency Value=45.0 Hz
20 V AS *** P _A	Asymmetry Voltage between y & B Phase Asymmetry Voltage = 20 V
L3 V PL *** P _L	L3 - Phase loss
PS V *** P _S	Phase sequence Fault

Note : LED Status - * blinking LED • LED on ○ LED off

NOTE :-

- For Hold & Scroll Press (SET) + (▲) key for 3 Sec.
- If Reset Mode Selected As ZVR (Zero Value Reset), then the Relay will be reset after Selected Reset time once the healthy condition achieved OR Zero Value reached.
- If you select 1 Phase - 2 wire network connection, then Phase sequence and asymmetry parameter will not appear in parameter setting