MULTISPAN

Motor Protection Device MPD-192

CE

FEATURES

User Selectable Trip Time
Auto/Manual/ZVR Reset Function
True RMS Measurement

Protection Available

- Over/Under Voltage
- Over/Under Current
- Over/Under Frequency
- Single Phase Prevention
- Short Circuit
- Unbalance
- Phase Loss
- Lock Rotor Point
- Phase Sequence
- Neutral Loss

TECHNICAL SPECIFICATION

INPUT:

Voltage AC	
Direct Voltage AC	30 to 300V(L - N) 50 to 520V(L - L)
Burden	< 0.2VA
Current AC	
Primary CT Ratio	5 to 6000 Amp selectable
Secondary Current AC	0.1 to 5 Amp
Burden	< 0.2VA
Overload	Up to 6A continuous
Frequency	45.0 to 65.0 Hz

DISPLAY AND KEYS:

Display	3 Digit, 3 Line 7 Seg 0.56", RED LED
Keys	Scroll, SET, RST, INC, DEC

DIMENSION:

Size (mm)	96 (H) X 96 (W) X 53 (D) mm
Panel Cutout (mm)	92 (H) X 92 (W) mm

NETWORK SELECTION:

3 Phase - 4 Wire,3 Phase - 3 Wire

TRIP SETTING:

Under Current	0.00 to CTR
Over Current	0.00 to CTR
Under Voltage	50 to 520V For 3Ø - 3W 30 to 300V For 3Ø - 4W
Over Voltage	50 to 550V For 3Ø - 3W 30 to 330V For 3Ø - 4W
Over / Under Frequency	45.0 to 65.0 Hz
Short Circut	1 - 9 Scale
Lock Rotor Point	0.5 to 9.0 Scale
Unbalance	5 - 60%

TIME PARAMETER:

Power On Delay	0 to 99 Sec
Initial Time Delay	0 to 99 Sec
Trip Delay Time (Voltage, Current, Frequency, SSP, Unbalance)	0 to 999 Sec
Scrolling Time	1 to 99 Sec
Reset Time	0 to 99 Sec

OUTPUT SPECIFICATION:

Relay	2 Nos
Relay Type	1st Relay (NO - C - NC) 2nd Relay (NO - C)
Rating	1st Relay 10Amp, 250V AC 2nd Relay 5 Amp, 250V AC

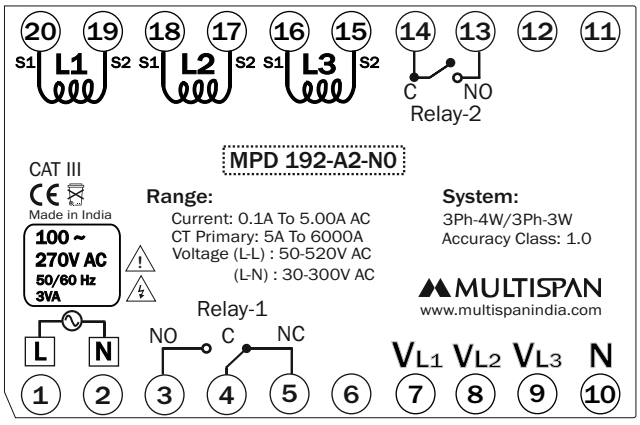
AUXILIARY SUPPLY:

Supply Voltage	100 to 270V AC, 50Hz
Power Consuption	4VA @ 230 AC MAX

ENVIRONMENTAL CONDITION:

Working Temperature	0 to 55°C
Storage Temperature	0 to 55°C
Relative Humidity	95 % RH Non-Condensing
Protection Level (As Per request)	IP-65 (Front side As per IS/IEC 60529 : 2001)

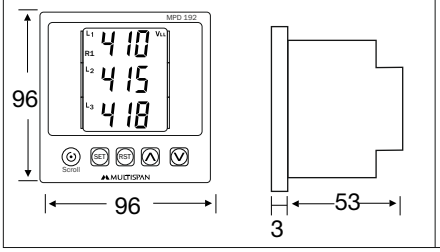
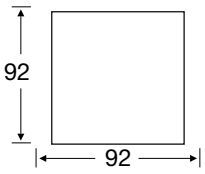
TERMINAL CONNECTION



KEY OPERATION

Operator Mode	
To View Individual Parameters Value	OR
To Enter In Parameter Setting Mode	SET
To View The Voltage Page While Display Indicate fault	
To View The Current Page While Display Indicate fault	
To Reset The Relay Contact manually after Tripping	RST
To Scroll & Hold For 5 Second Press	Scroll
Parameter Setting Mode	
Edited Parameter Value to be Set, And Move to the Next Step	SET
To Increment Parameter Value	
To Decrement Parameter Value	

MECHANICAL INSTALLATION

Outline Dimension (mm)	Panel Cutout Dimension (mm)
	

1. Prepare the panel cutout with proper dimensions as shown above.
2. Fit the unit into the panel with the help of clamp given.
3. 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.
4. Use the specified size of crimp terminal (M3.5 screws) to wire the terminal block. Tightening the screws on the terminal block using the tightening torque of the range of 1.2 N.m.
5. Do not connect anything to unused terminals.

MAINTENANCE

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

SAFETY PRECAUTION

Please read the "Safety Warnings" in the instruction manual supplied with the instrument thoroughly and completely for correct use. Failure to follow the safety rules can cause fire, trouble, electrical shock, etc. Therefore, make sure to operate the instrument on a correct power supply and voltage rating marked on each 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.

1) 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.
2) To reduce electro magnetic interference, use wire with adequate rating and twists of the same of equal size shall be made with shortest connection.
3. 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.
4) A better anti-noise effect can be expected by using standard power supply cable for the instrument.

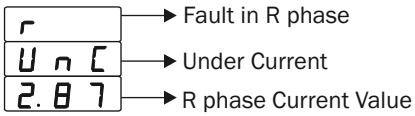
INSTALLATION GUIDELINES

1) 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.
2) 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.
3) Use and store the instrument within the specified ambient temperature and humidity ranges as mentioned in this manual.

FAULT MASSAGE

Under Current fault Message

1) Unc in R Phase

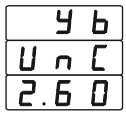


2) Unc in Y Phase

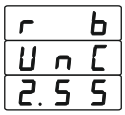
3) Unc in B Phase

4) Unc in RY Phase

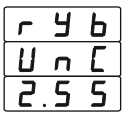
5) Unc in YB Phase



6) Unc in RB Phase

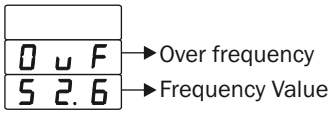


7) Unc in RYB Phase

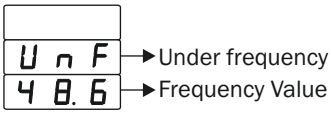


Frequency Fault Message

Over Frequency Fault Message

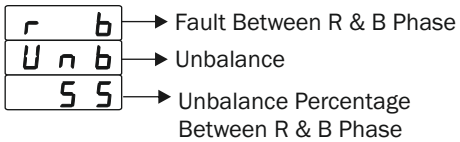


Under Frequency Fault Message

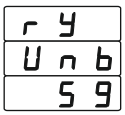


Unbalance Fault Message

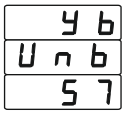
1) Unb in R Phase



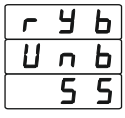
2) Unb in Y Phase



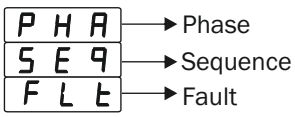
3) Unb in B Phase



4) Unb in RYB Phase

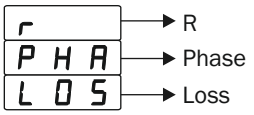


Phase Sequence Message



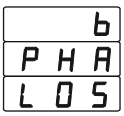
Phase Loss Message

1) R Phase loss



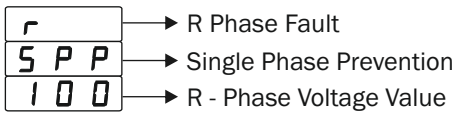
2) Y Phase loss

3) B Phase loss

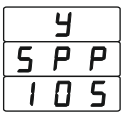


Single Phase Prevention Fault

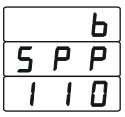
1) SPP in R Phase



2) SPP in Y Phase

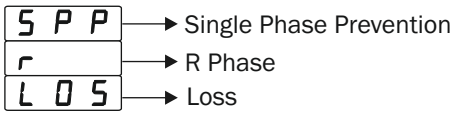


3) SPP in B Phase

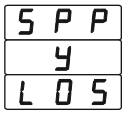


SPP Fault Due to Phase Loss

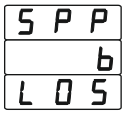
1) SPP in R Phase



2) SPP in Y Phase

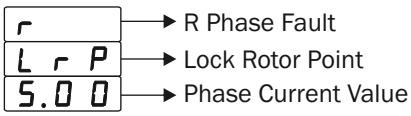


3) SPP in B Phase

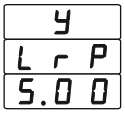


Lock Rotor Point

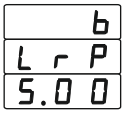
1) LRP in R Phase



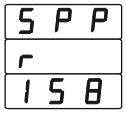
2) LRP in Y Phase



3) LRP in B Phase



Neutral Loss Message

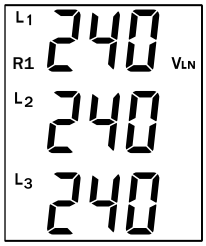


NOTE : Neutral loss Protection available Only,
In Case Of SPP Enable

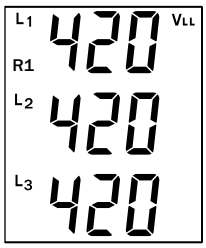
DISPLAY PAGES

3Ø - 4W NETWORK CONNECTION	3Ø - 3 W NETWORK CONNECTION	3Ø - 3W / 3 - 4W NETWORK CONNECTION

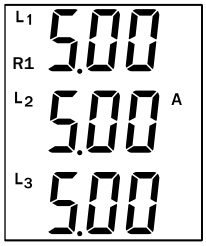
1) VLN Page



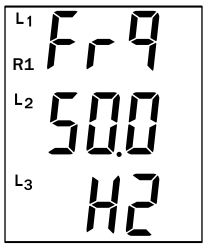
2) VLL Page



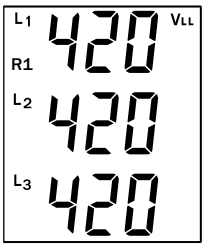
3) Amp Page



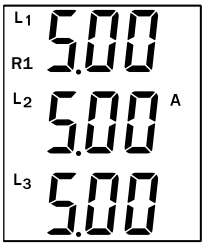
4) Frequency Page



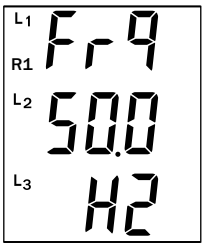
1) VLL Page



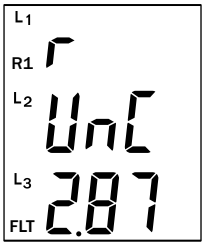
2) Amp Page



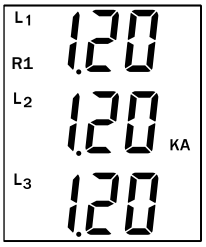
3) Frequency Page



1) Fault Massage

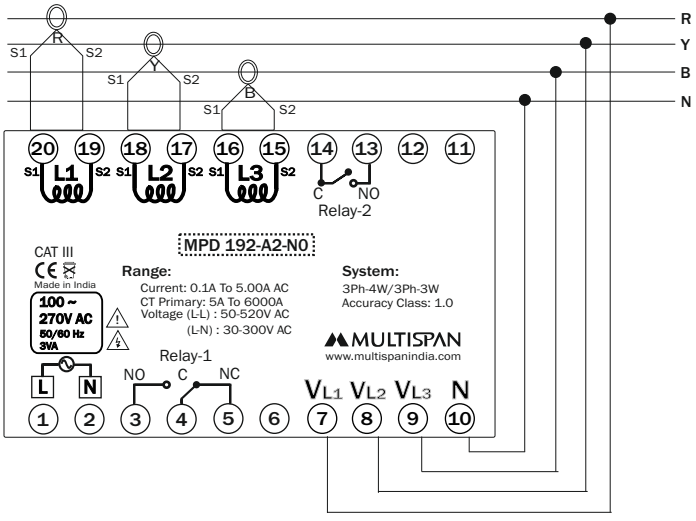


2) KA Page

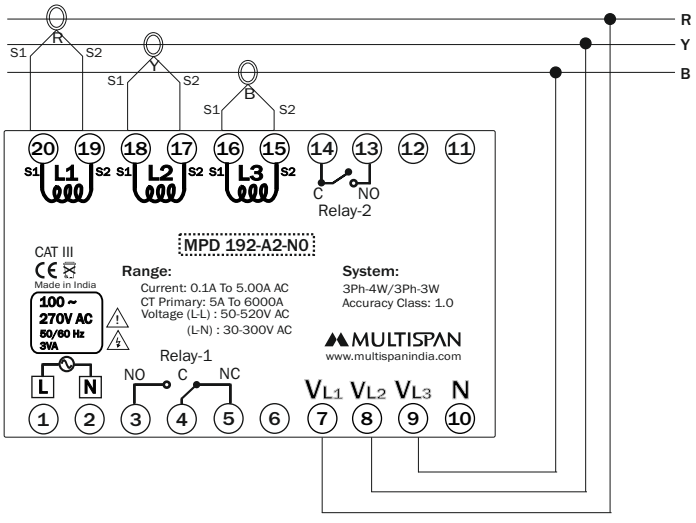


WIRING CONNECTION

1) 3 Phase - 4 Wire



2) 3 Phase - 3 Wire



Password = 19 » Power On Time & ITD Time Selection
» Under Current, Over Current, Under Voltage, Over Voltage, Under Frequency, Over Frequency

Password = 29 » Single Phase Prevention (SPP) Short Circuit, Lock Rotor Point, Unbalance Current, Phase Sequence, Phase Loss

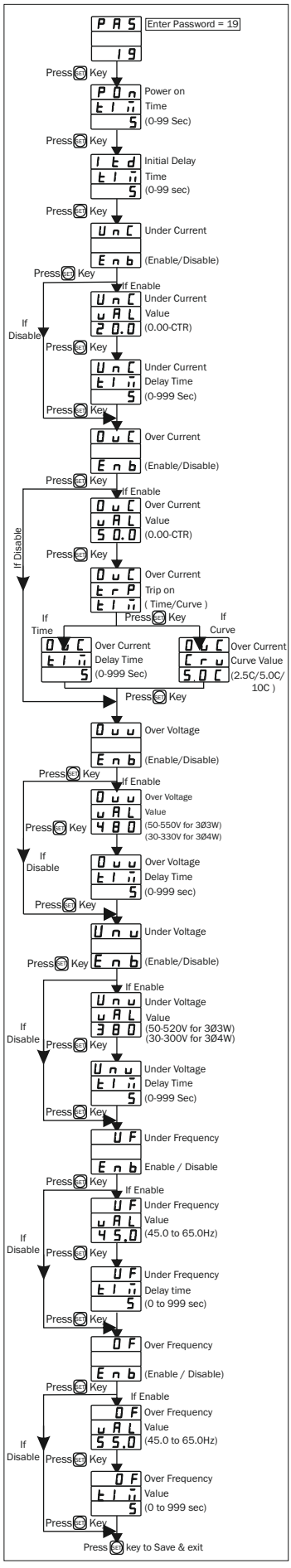
Password = 39 » Network Selection & CT Ratio Selection

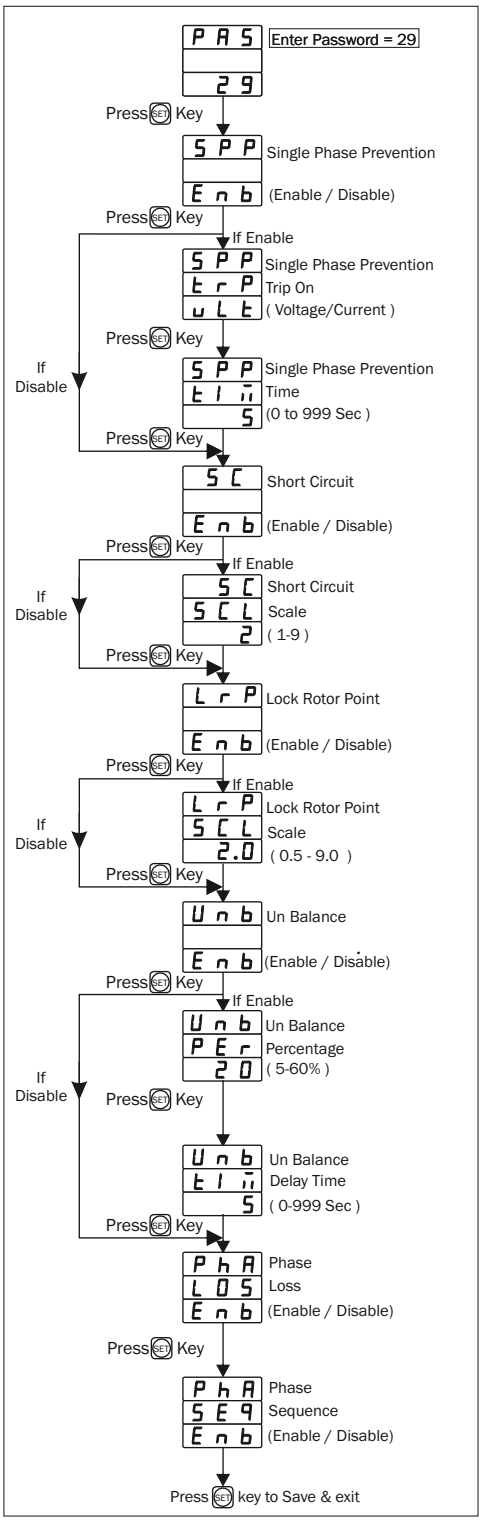
Press ⋀ & ⋁ Key Together » Reset mode , Initial Trigger, Relay Fault mode selection.

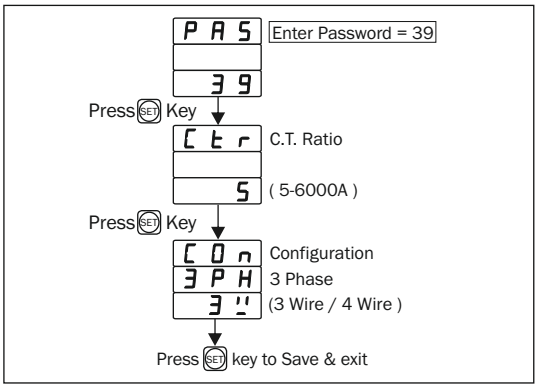
Password = 59 » Display Scrolling Time

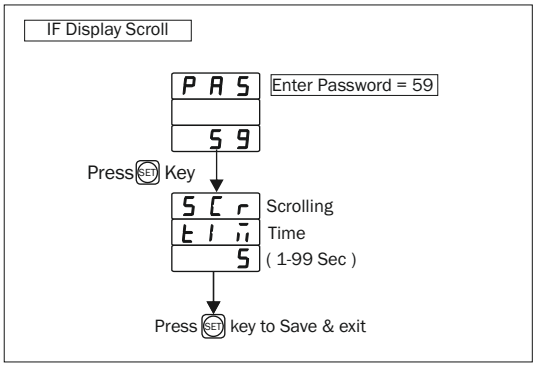
Long Press SET Key to enter into Password

PARAMETER SETTING

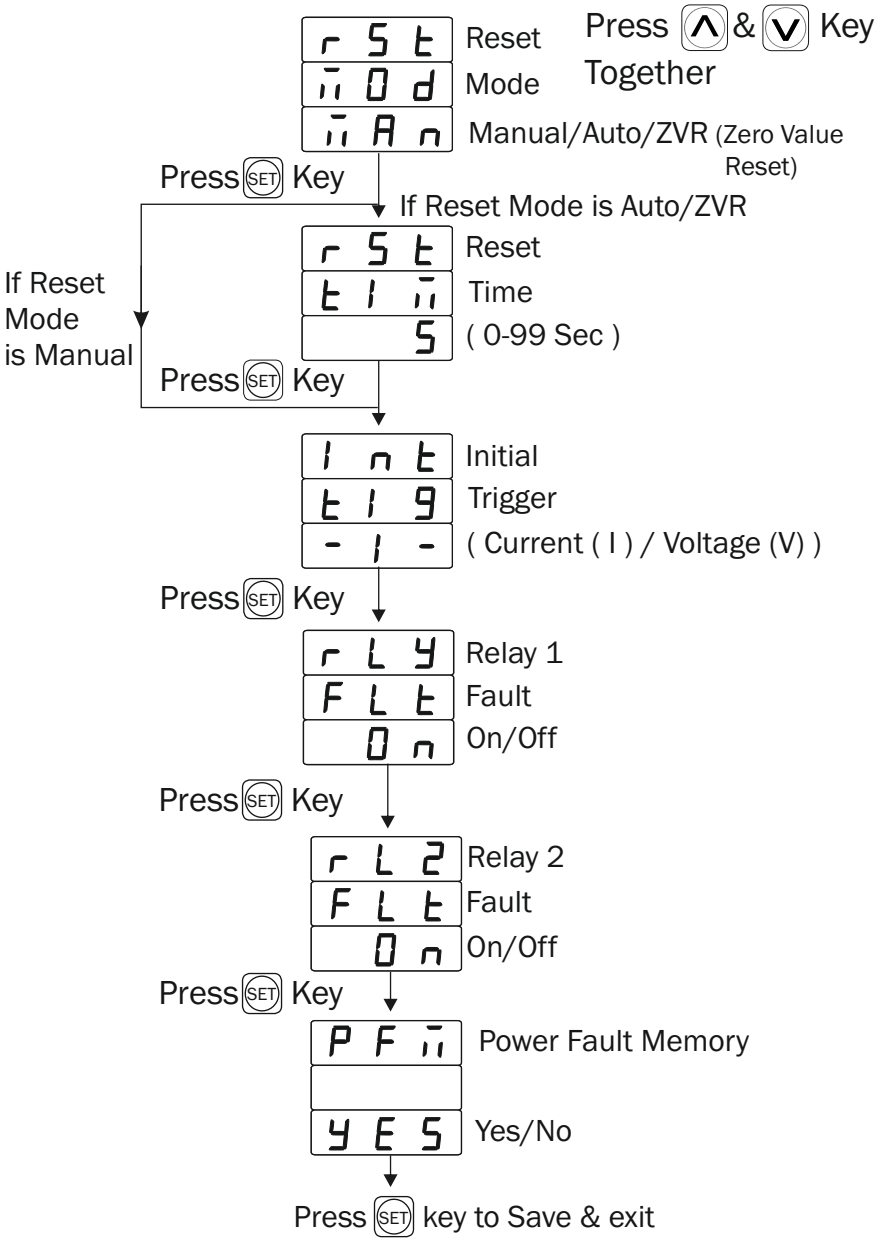








PARAMETER SETTING



NOTES

Reset Mode:

1) If Reset Mode Selected is Manual, then the Fault will Reset Manually by pressing the Reset key on the instrument.
2) If Reset Mode Selected is Auto, then the Relay will be reset after Selected Reset time once the healthy condition achieved.
3) 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.

Relay Fault:

1) If Relay fault selected is “off” than Relay will turn “off” when fault is achieved, otherwise Relay will remain turn “on”.

2) If Relay fault selected is “on” then Relay will turn “on” when fault is achieved, otherwise Relay will remain turn “off”.

Initial Trigger:

1) If Initial trigger mode “I”is selected then Relay will start working once current is applied.

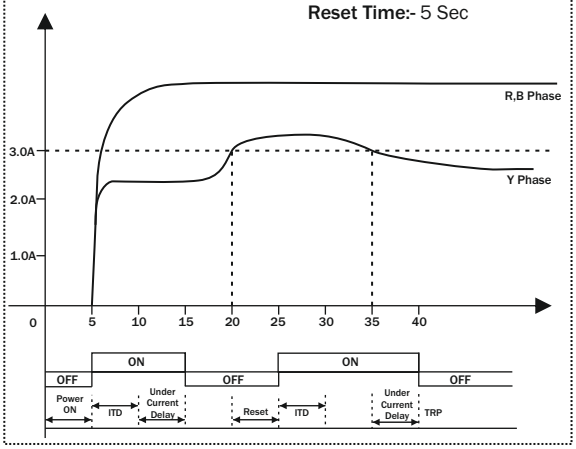
2) If Initial trigger mode “V“ is selected then Relay will start working once Voltage is applied.

CONTROL FUNCTION

Under Current

Power On:- 5 Sec
Initial Time Delay:- 5 Sec
Under Current:- Enable

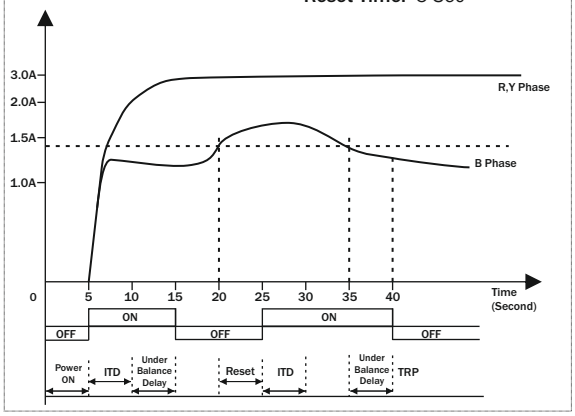
Under Current:- 3.0A
Under Current time:- 5 Sec
Relay Fault:- OFF
Reset Mode:- Auto
Reset Time:- 5 Sec



Unbalance

Power On:- 5 Sec
Initial Time Delay:- 5 Sec
Unbalance:- Enable

Unbalance Percentage:- 50%
Unbalance Time:- 5 Sec
Relay Fault:- OFF
Reset Mode:- Auto
Reset Time:- 5 Sec

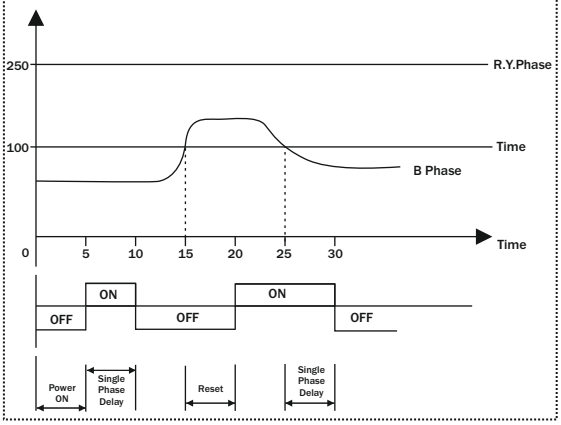


Single Phase Prevention (SPP)

(For Voltage)

Power On:- 5 Sec
Initial Time Delay:- 5 Sec
SPP:- Enable

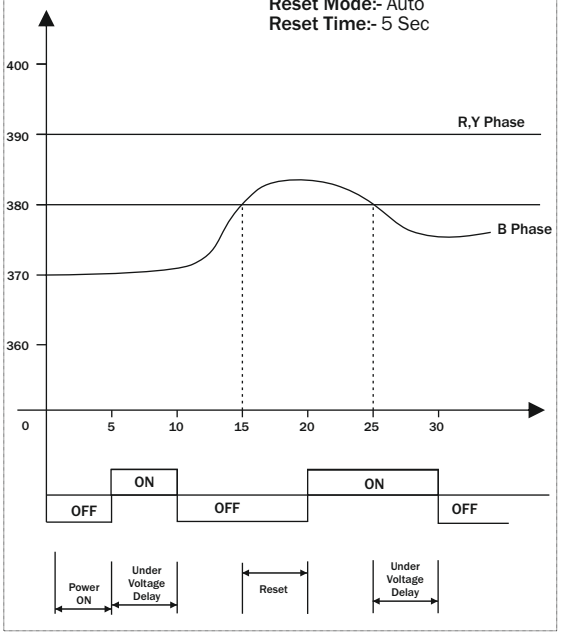
SPP Time:- 5 Sec
Reset Time:- 5 Sec
Reset Fault:- OFF
Fault Reset mode:- Auto



Under Voltage

Power On:- 5 Sec
Initial Time Delay:- 5 Sec
Under Voltage:- Enable

Under Voltage:- 380V
Under Voltage time:- 5 Sec
Relay Fault:- OFF
Reset Mode:- Auto
Reset Time:- 5 Sec

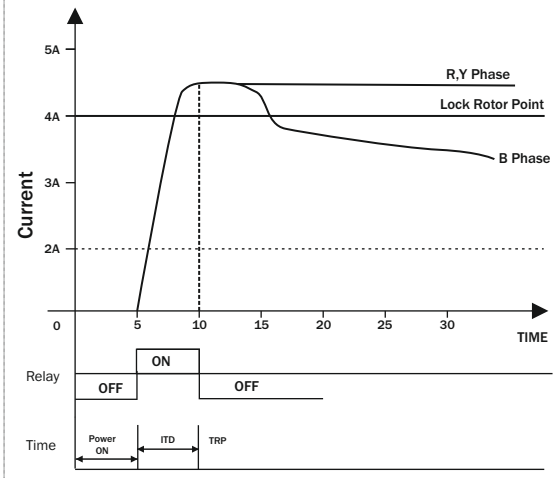


Lock Rotor Point

Power On:- 5 Sec
Intial Time Delay:- 5 Sec
Lock Rotor Point:- Enable
Over Current:- Disable

Lock Rotor Point:- 2.0
Over Current Value:- 2.0A
Relay Fault:- OFF
Reset Mode:- Auto
Reset Time:- 5 Sec

Case-1



Case-2