



TECHNICAL SPECIFICATION

PARAMETER SPECIFICATION

Input Signal	3Ø 3 Wire / 3Ø 4Wire / 1Ø 2Wire
CT Primary	up to 6000A (Programmable)
CT Secondary	5 Amp/1 Amp selectable
PT Primary	100V to 520kV (Programmable)
PT Secondary	100V to 520V (L-L) (Programmable)
PF Avg. & Per Phase	0.100 - 1.000
Frequency (Hz)	45.00 - 60.00 Hz
Load hours	9999.59 Hrs/Min.
No load hours	9999.59 Hrs/Min.
RPM	3600 RPM @ 60 Hz & 2 pole

POWER

KW Total	0.000 - 9999 MW
kW Per Phase	0.000 - 9999 MW
kVA Total	0.000 - 9999 MVA
kVA Per Phase	0.000 - 9999 MVA
kVAr Total	0.000 - 9999 MVAR
kVAr Per Phase	0.000 - 9999 MVAR

ENERGY

Import Kwh	000.000 - 99999999 MWh
Export Kwh	000.000 - 99999999 MWh
Kvah Total	000.000 - 99999999 MVAh
Import Kvarh	000.000 - 99999999 MVArh
Export Kvarh	000.000 - 99999999 MVArh

DISPLAY & KEY :

Display	Upper	8 Digit, 7 Seg 0.40", RED LED
	Lower	4 Digit, 3 Line 7 Seg 0.40", RED
Key	PROGRAM, VAF, POWER, ENERGY, THD%	

AUXILIARY SUPPLY :

Supply voltage	100 to 270V AC/DC, 50/60Hz
Power consumption (VA RATING)	Approx 4 VA @ 230V AC MAX

ACCURACY:

Class 0.5 (Standard)	
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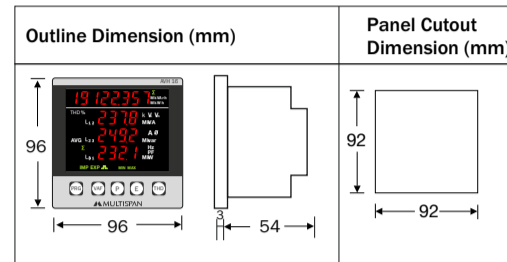
ENVIRONMENT CONDITION:

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

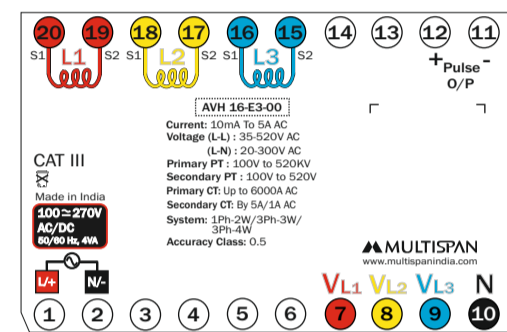
DIMENSION :

Size	96 (H) x 96 (W) x 54 (D) mm
Panel Cutout	92 (H) x 92 (W) mm

MECHANICAL INSTALLATION



TERMINAL CONNECTION



KEY OPERATION

FUNCTION	PRESS KEY
OPERATOR MODE	
To view different pages	ⓧ VAF ⓧ P ⓧ E or ⓧ THD
To Enter into enter setting	ⓧ PRG Long Press
PARAMETER SETTING MODE	
To Set Parameter Value	ⓧ PRG
To Increment parameter value	ⓧ P
To Decrement parameter value	ⓧ THD
To Exit from parameter setting	ⓧ PRG

Resolution

PT Ratio x CT Ratio	Pulse/Kwh
<15	0.01Kwh
<150	0.1Kwh
<1500	1Kwh
<15000	10Kwh
<150000	100Kwh
>150000	1000Kwh

INSTALLATION GUIDELINES

- This equipment, being built-in-type, normally becomes a part of main control panel and in such case the terminals do not remain accessible to the end user after installation and internal wiring.
- 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.

MECHANICAL INSTALLATION GUIDELINES

- Prepare the panel cutout with proper dimensions as shown above.
- Fit the unit into the panel with the help of clamp given.
- The equipment in its installed state must not come in close proximity to any heating source, caustic vapors, oils steam, or other unwanted process byproducts.
- 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.
- 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.

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.

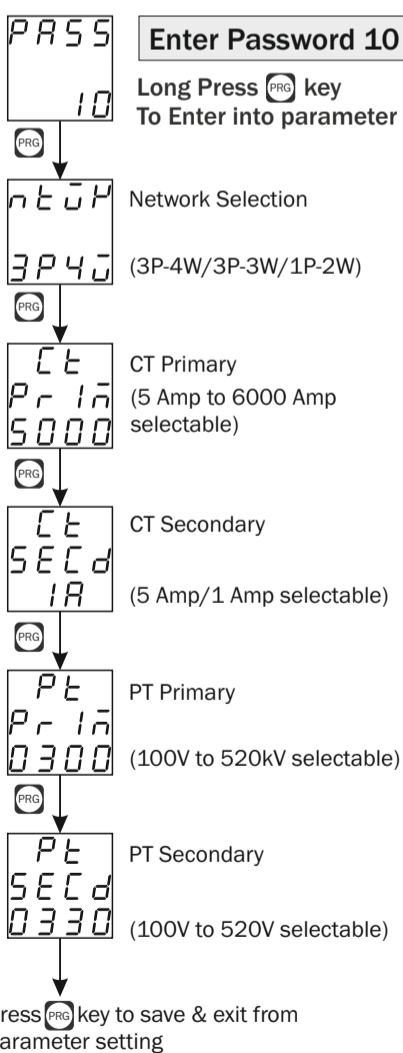
WARNING GUIDELINES

WARNING : Risk of electric shock.

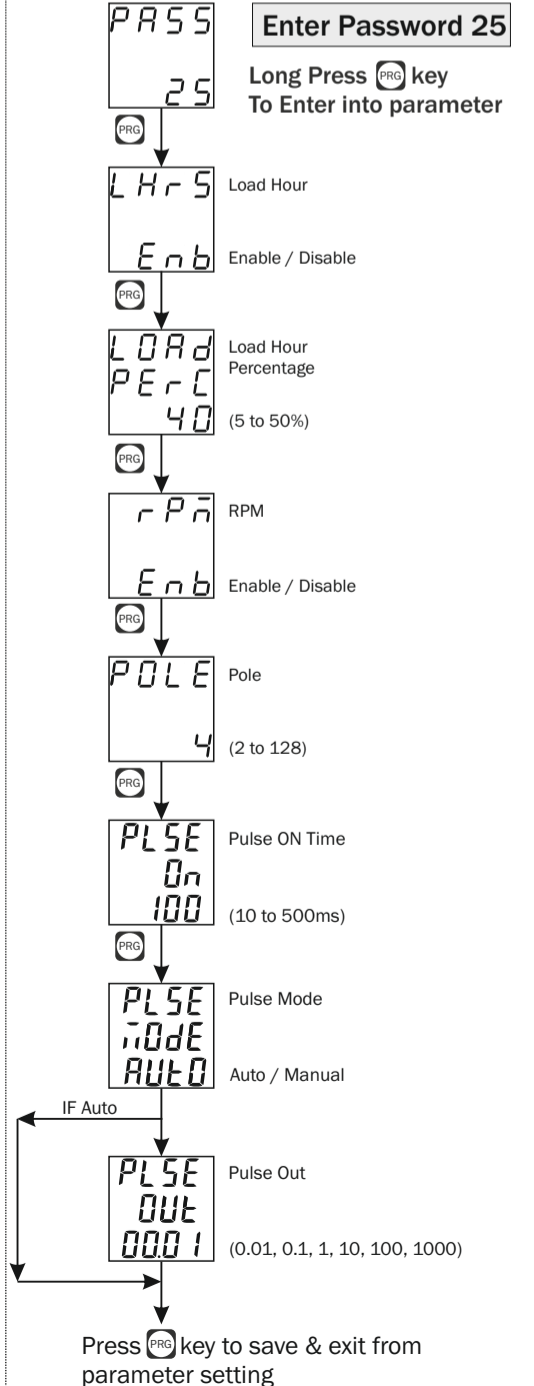
- To prevent the risk of electric shock, power supply to the equipment must be kept OFF while doing the wiring arrangement. Do not touch the terminals while power is being supplied.
- To reduce electro magnetic interference, use wire with adequate rating and twists of the same of equal size shall be 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

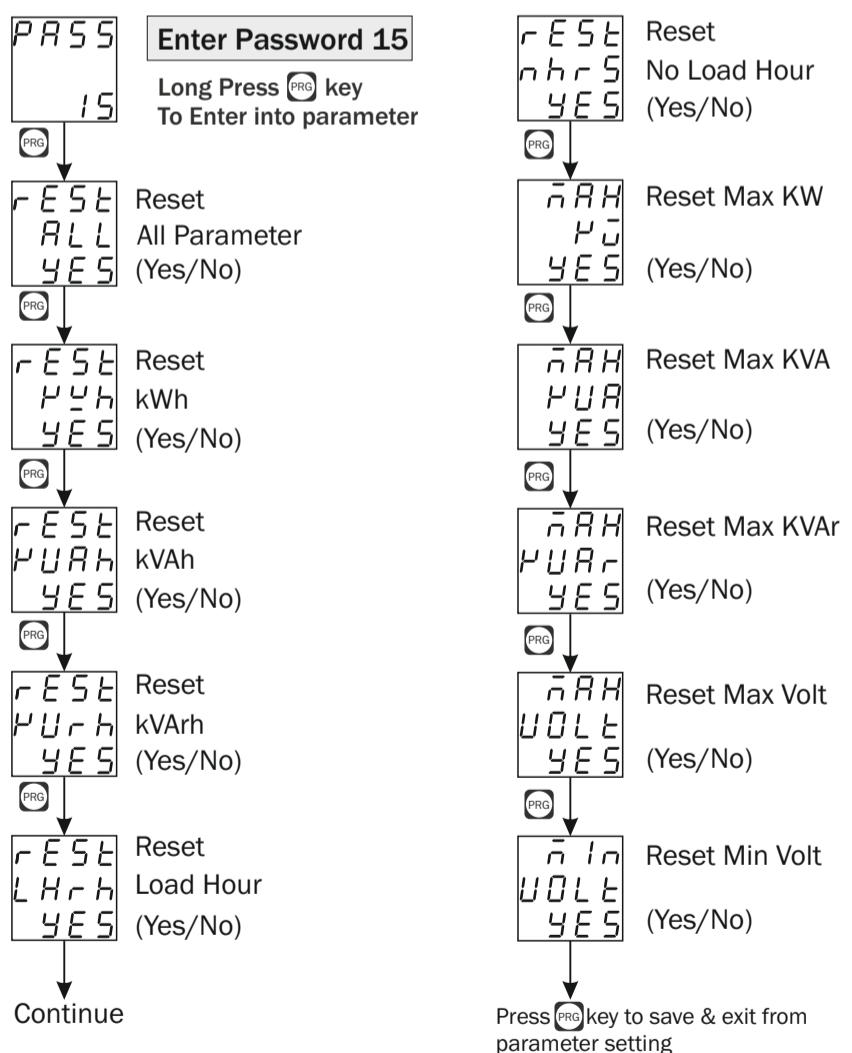
Basic Parameter Setting : Network, CT/PT Selection.



Advance Parameter Setting : Load Hour %, No Load Hour, RPM.

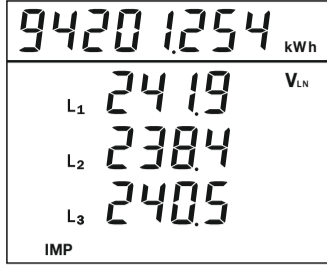


Reset Parameter : kWh, kVAh, kvarh, Load Hour, No Load Hour, Max kW, Max kVA, Max kVAr, Max Voltage, Min Voltage



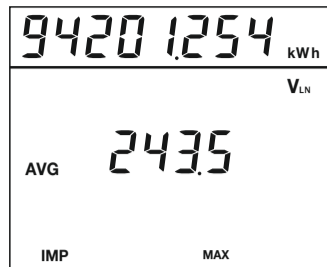
DISPLAY PAGES for **ⓧ** Key

1) Voltage L-N



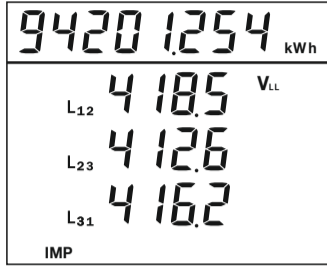
	3P-3W	3P-4W
Energy Value		
Display Line 1	NA	VRN
Display Line 2	NA	VYN
Display Line 3	NA	VBN

9) Max Voltage L-N



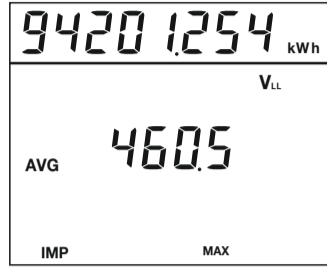
	3P-3W	3P-4W
Energy Value		
Display Line 1	-	-
Display Line 2	-	MAX VALUE
Display Line 3	-	-

2) Voltage L-L



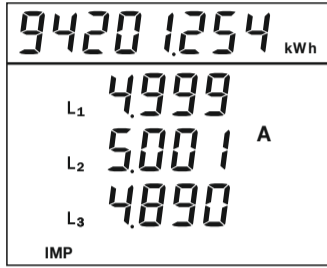
	3P-3W	3P-4W
Energy Value		
Display Line 1	Vry	Vry
Display Line 2	Vyb	Vyb
Display Line 3	Vbr	Vbr

10) Max Voltage L-L



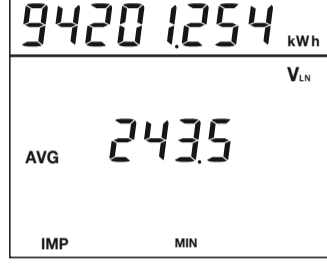
	3P-3W	3P-4W
Energy Value		
Display Line 1	-	-
Display Line 2	MAX VALUE	MAX VALUE
Display Line 3	-	-

3) Current



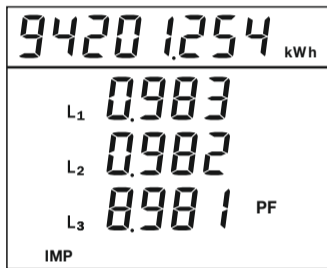
	3P-3W	3P-4W
Energy Value		
Display Line 1	I L1	I L1
Display Line 2	I L2	I L2
Display Line 3	I L3	I L3

11) Min Voltage L-N



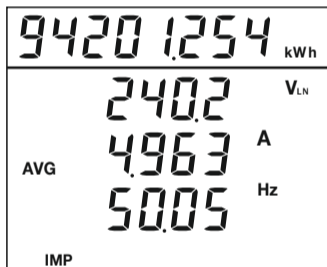
	3P-3W	3P-4W
Energy Value		
Display Line 1	-	-
Display Line 2	-	MIN VALUE
Display Line 3	-	-

4) PF L1,L2,L3



	3P-3W	3P-4W
Energy Value		
Display Line 1	-	L1 PF
Display Line 2	-	L2 PF
Display Line 3	-	L3 PF

5) AVG V(L-N)-A-F



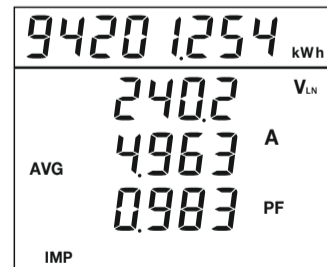
	3P-3W	3P-4W
Energy Value		
Display Line 1	-	VLN AVG
Display Line 2	-	I AVG
Display Line 3	-	sys freq

6) AVG V(L-L)-A-F



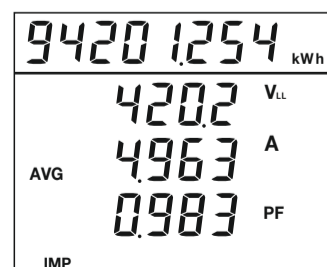
	3P-3W	3P-4W
Energy Value		
Display Line 1	VLL AVG	VLL AVG
Display Line 2	I AVG	I AVG
Display Line 3	sys freq	sys freq

7) AVG V(L-N)-A-PF



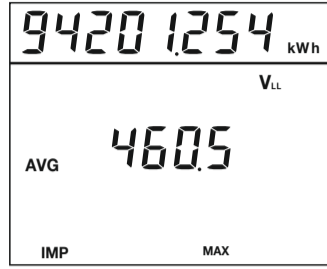
	3P-3W	3P-4W
Energy Value		
Display Line 1	-	VLN AVG
Display Line 2	-	I AVG
Display Line 3	-	sys PF

8) AVG V(L-L)-A-PF



	3P-3W	3P-4W
Energy Value		
Display Line 1	VLL AVG	VLL AVG
Display Line 2	I AVG	I AVG
Display Line 3	sys PF	sys PF

12) Min Voltage L-L



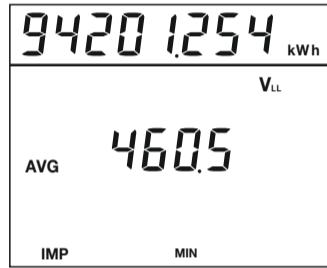
	3P-3W	3P-4W
Energy Value		
Display Line 1	-	-
Display Line 2	MIN VALUE	MIN VALUE
Display Line 3	-	-

13) Load Hour



	3P-3W	3P-4W
Energy Value		
Display Line 1	Load Hour	Load Hour
Display Line 2	Value Hour	Value Hour
Display Line 3	Value Min	Value Min

14) No Load Hour



	3P-3W	3P-4W
Energy Value		
Display Line 1	no Load Hour	no Load Hour
Display Line 2	Value Hour	Value Hour
Display Line 3	Value Min	Value Min

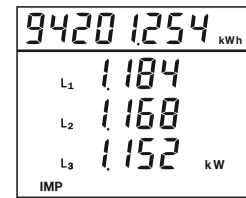
15) RPM



	3P-3W	3P-4W
Energy Value		
Display Line 1	RPM	RPM
Display Line 2	Value	Value
Display Line 3	-	-

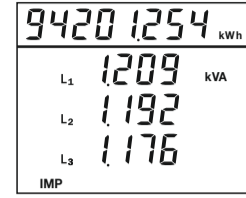
DISPLAY PAGES for **Ⓟ** Key

1) kW PER PHASE



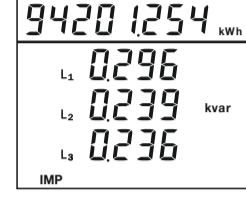
	3P-3W	3P-4W
Energy Value		
Display Line 1	-	L1 KW
Display Line 2	-	L2 KW
Display Line 3	-	L3 KW

2) kVA PER PHASE



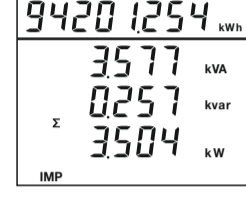
	3P-3W	3P-4W
Energy Value		
Display Line 1	-	L1 KVA
Display Line 2	-	L2 KVA
Display Line 3	-	L3 KVA

3) kvar PER PHASE



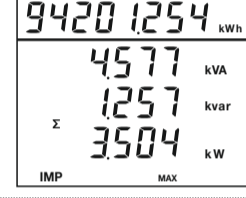
	3P-3W	3P-4W
Energy Value		
Display Line 1	-	L1 KVAR
Display Line 2	-	L2 KVAR
Display Line 3	-	L3 KVAR

4) Total kW,kVA,kvar



	3P-3W	3P-4W
Energy Value		
Display Line 1	Total KVA	Total KVA
Display Line 2	Total KVAR	Total KVAR
Display Line 3	Total KW	Total KW

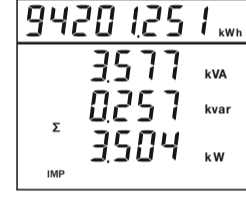
5) Max kW,kVA,kvar



	3P-3W	3P-4W
Energy Value		
Display Line 1	Max KVA	Max KVA
Display Line 2	Max KVAR	Max KVAR
Display Line 3	Max KW	Max KW

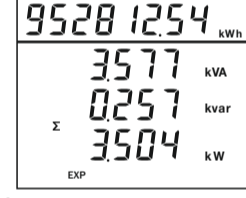
DISPLAY PAGES for **Ⓠ** Key

1) Import Kwh



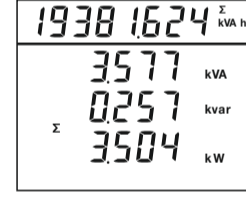
	3P-3W	3P-4W
Import Kwh		
Display Line 1	Total KVA	Total KVA
Display Line 2	Total KVAR	Total KVAR
Display Line 3	Total KW	Total KW

2) Export kwh



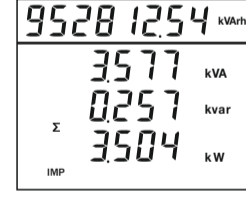
	3P-3W	3P-4W
Export Kwh		
Display Line 1	Total KVA	Total KVA
Display Line 2	Total KVAR	Total KVAR
Display Line 3	Total KW	Total KW

3) Total kvah



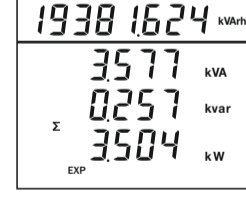
	3P-3W	3P-4W
Total kvah		
Display Line 1	Total KVA	Total KVA
Display Line 2	Total KVAR	Total KVAR
Display Line 3	Total KW	Total KW

4) Import kvarh



	3P-3W	3P-4W
Import Kvarh		
Display Line 1	Total KVA	Total KVA
Display Line 2	Total KVAR	Total KVAR
Display Line 3	Total KW	Total KW

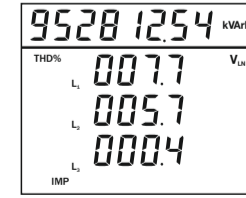
5) Export kvarh



	3P-3W	3P-4W
Export Kvarh		
Display Line 1	Total KVA	Total KVA
Display Line 2	Total KVAR	Total KVAR
Display Line 3	Total KW	Total KW

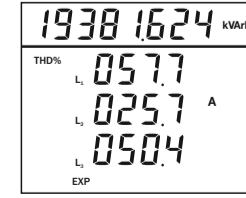
DISPLAY PAGES for **Ⓡ** Key

1) Voltage(LN) THD%



	3P-3W	3P-4W
Import Kvarh		
Display Line 1	L12 THD%	L1 THD%
Display Line 2	L23 THD%	L2 THD%
Display Line 3	L31 THD%	L3 THD%

2) Current THD%



	3P-3W	3P-4W
Export Kvarh		
Display Line 1	L1 THD%	L1 THD%
Display Line 2	L2 THD%	L2 THD%
Display Line 3	L3 THD%	L3 THD%