



TECHNICAL SPECIFICATION

PARAMETER SPECIFICATION

Input Signal	3Ø 3 Wire / 3Ø 4Wire / 1Ø 2Wire
CT Primary	up to 9999A (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.
On Hour	9999 Hour
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
Net Kwh	000.000 - 99999999 MWh
Total Kwh	000.000 - 99999999 MWh
Kvah Total	000.000 - 99999999 MVAh
Import Kvarh	000.000 - 99999999 MVARh
Export Kvarh	000.000 - 99999999 MVARh
Lag Kvarh	000.000 - 99999999 MVARh
Lead Kvarh	000.000 - 99999999 MVARh
Total 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)

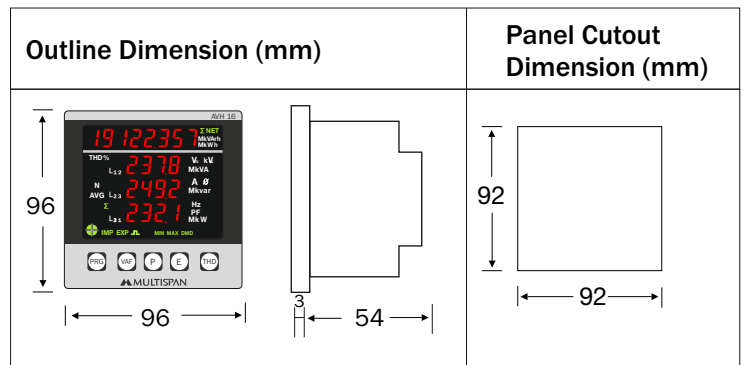
ENVIRONMENT CONDITION:

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

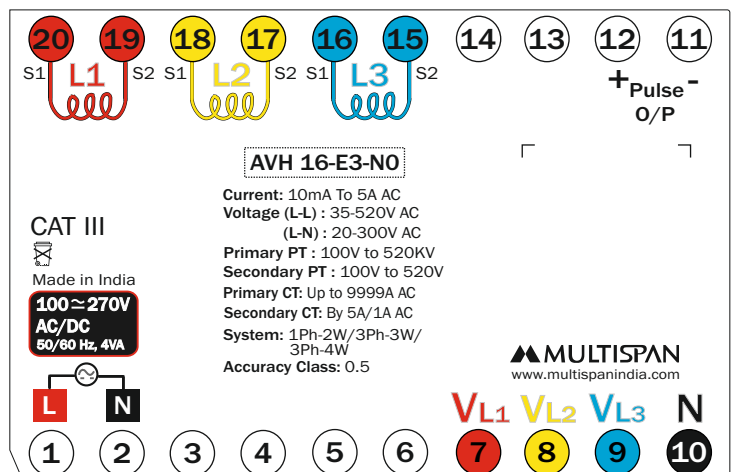
DIMENSION :

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	   or 
To Enter into enter setting	 Long Press
PARAMETER SETTING MODE	
To Set Parameter Value	
To Increment parameter value	
To Decrement parameter value	
To Exit from parameter setting	
To Scroll & Hold	 Press 5 Sec

Resolution

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

INSTALLATION GUIDELINES

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

MECHANICAL INSTALLATION GUIDELINES

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, oils 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

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.

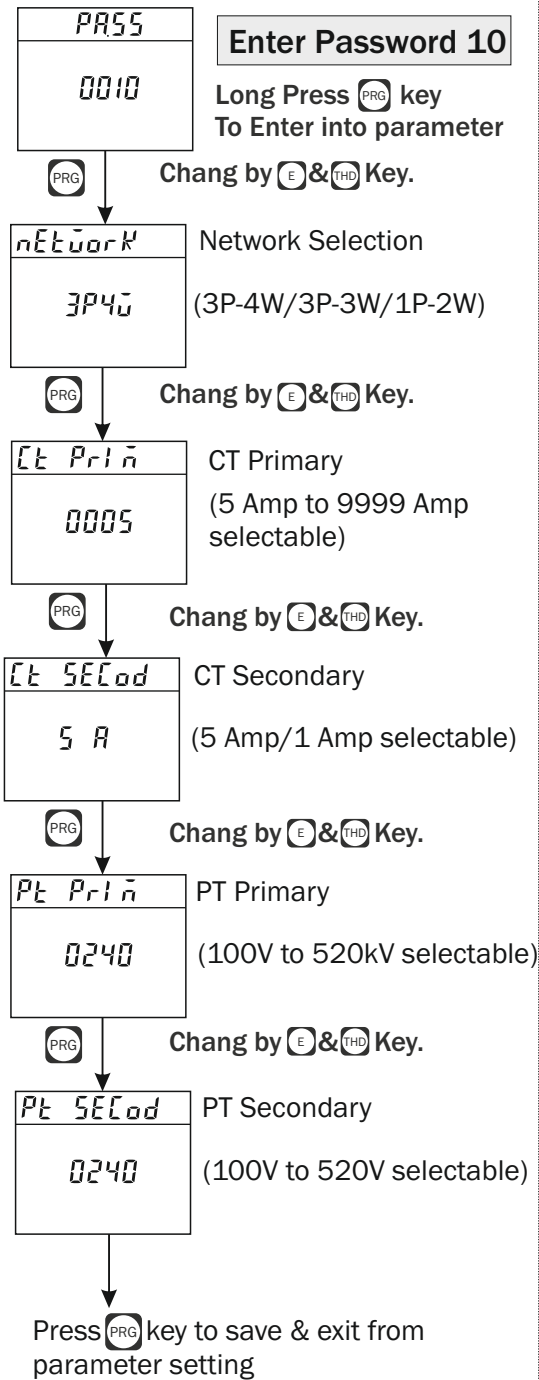
WARNING GUIDELINES



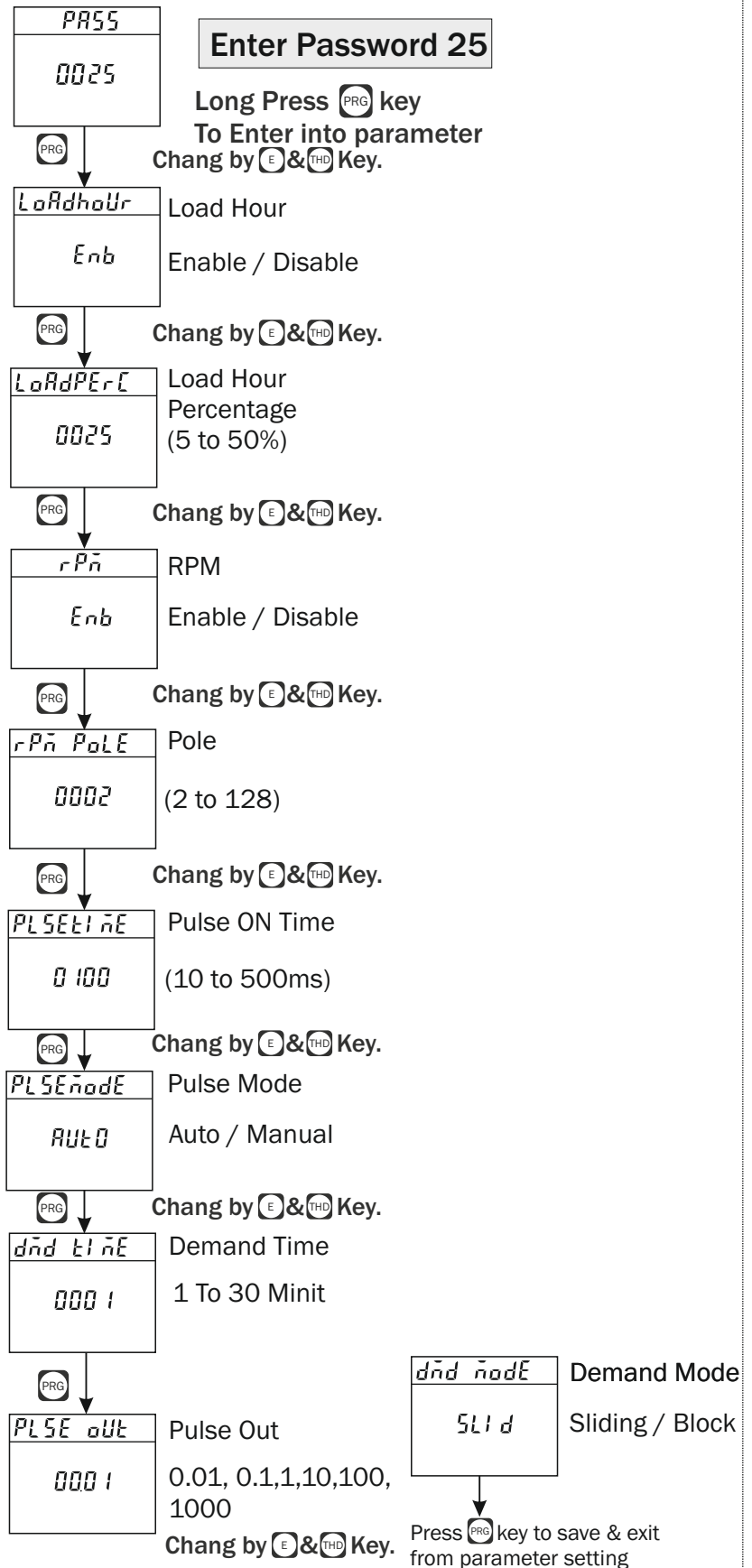
WARNING : Risk of electric shock.

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.

Basic Parameter Setting :
Network, CT/PT Selection.



Advance Parameter Setting : Load Hour %, No Load Hour, RPM, Demand, Pulse Output



Reset Parameter : kWh, kVAh, kvarh, Load Hour, No Load Hour, Max kW, Max kVA, Max kVAr, Max Voltage Amp, Max Demand, Power Intrup On Hour, Min Voltage

PASS
15

Enter Password 15

Long Press **PRG** key
To Enter into parameter

PRG Chang by **E** & **THD** Key.

rEST
ALL
YES
(Yes/No)

PRG Chang by **E** & **THD** Key.

rEST
kWh
YES
(Yes/No)

PRG Chang by **E** & **THD** Key.

rEST
kVAh
YES
(Yes/No)

PRG Chang by **E** & **THD** Key.

rEST
kVArh
YES
(Yes/No)

PRG Chang by **E** & **THD** Key.

rEST
Load Hour
YES
(Yes/No)

PRG Chang by **E** & **THD** Key.

rEST
No Load Hour
YES
(Yes/No)

PRG Chang by **E** & **THD** Key.

rEST
Reset On Hour
no
(Yes/No)

PRG Chang by **E** & **THD** Key.

rEST
Reset Power Intrup
no
(Yes/No)

PRG Chang by **E** & **THD** Key.

Continue

rEST
Reset Max Demand
no
(Yes/No)

PRG Chang by **E** & **THD** Key.

rEST
Reset Max KW
no
(Yes/No)

PRG Chang by **E** & **THD** Key.

rEST
Reset Max KVA
no
(Yes/No)

PRG Chang by **E** & **THD** Key.

rEST
Reset Max KVAR
no
(Yes/No)

PRG Chang by **E** & **THD** Key.

rEST
Reset Max Amp, Voltage
no
(Yes/No)

PRG Chang by **E** & **THD** Key.

rEST
Reset Minimum Voltage
no
(Yes/No)

Press **PRG** key to save & exit from parameter setting

DISPLAY PAGES for Key

1) Voltage L-N

9420 1254 kWh
L₁ 2419 V_{L-N}
L₂ 2384
L₃ 2405

2) Voltage L-L

9420 1254 kWh
L₁₂ 4185 V_{L-L}
L₂₃ 4126
L₃₁ 4162

3) Current

9420 1254 kWh
L₁ 4999 A
L₂ 5001
L₃ 4890

4) Neutral Current, Frequency

9420 1254 kWh
N 0012 A
5000 Hz

5) PF L1,L2,L3

9420 1254 kWh
L₁ 0983
L₂ 0982
L₃ 8981 PF

6) System PF

942 12902 kWh
546n PF
Σ 0989 PF

7) LVI Angle

942 12902 kWh
L₁ 0602
L₂ 0582 θ
L₃ 0573

8) L1 Voltage Ampere, PF

9420 1254 kWh
L₁ 2412 V_{L-N}
4983 A
0989 PF

9) L2 Voltage Ampere, PF

9420 1254 kWh
L₂ 2402 V_{L-N}
4963 A
0983 PF

10) L3 Voltage Ampere, PF

9420 1254 kWh
L₃ 2452 V_{L-N}
4973 A
0993 PF

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

9420 1254 kWh
AVG 2402 V_{L-N}
4963 A
0983 PF

12) L12 Voltage Ampere, PF

9420 1254 kWh
L₁₂ 4222 V_{L-L}
4953 A
0993 PF

13) L23 Voltage Ampere, PF

9420 1254 kWh
L₂₃ 4222 V_{L-L}
4963 A
0983 PF

14) L31 Voltage Ampere, PF

9420 1254 kWh
L₃₁ 4202 V_{L-L}
4963 A
0983 PF

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

9420 1254 kWh
AVG 4202 V_{L-L}
4963 A
0983 PF

16) Max Voltage L-N

9420 1254 kWh
L₁ 2419 V_{L-N}
L₂ 2384
L₃ 2405

17) Min Voltage L-N

9420 1254 kWh
L₁ 2419 V_{L-N}
L₂ 2384
L₃ 2405

18) Max Voltage L-L

9420 1254 kWh
L₁₂ 4185 V_{L-L}
L₂₃ 4126
L₃₁ 4162

19) Min Voltage L-L

9420 1254 kWh
L₁₂ 4185 V_{L-L}
L₂₃ 4126
L₃₁ 4162

20) Max Current

9420 1254 kWh
L₁ 4999 A
L₂ 5001 A
L₃ 4890

21) Load Hour

9420 1254 kWh
LHr 5
213 → H
53 → M

22) No Load Hour

9420 1254 kWh
nHr 5
150 → H
01 → M

23) RPM

9420 1254 kWh
rPn
3000

DISPLAY PAGES for Key

1) kW PER PHASE

9420 1254 kWh
L₁ 1184 k
L₂ 1168 k
L₃ 1152 kW

2) KVA PER PHASE

9420 1254 kWh
L₁ 1209 kVA
L₂ 1192 k
L₃ 1176 k

3) kvar PER PHASE

9420 1254 kWh
L₁ 0296 k
L₂ 0239 kvar
L₃ 0236 k

4) L1 KVA, KVAr, KW

9420 1254 kWh
L₁ 1184 kVA
.268 kvar
1052 kW

5) L2 KVA, KVAr, KW

9420 1254 kWh
L₂ 1209 kVA
.232 kvar
1176 kW

6) L3 KVA, KVAr, KW

9420 1254 kWh
L₃ 1279 kVA
.212 kvar
1176 kW

7) Total kW,kVA,kvar

9420 1254 kWh
Σ 3577 kVA
0257 kvar
3504 kW

8) Max kW PER PHASE

9420 1254 kWh
L₁ 1184 k
L₂ 1168 k
L₃ 1152 kW

9) Max kVA PER PHASE

9420 1254 kWh
L₁ 1209 kVA
L₂ 1192 k
L₃ 1176 k

10) Max kvar PER PHASE

9420 1254 kWh
L₁ 0296 k
L₂ 0239 kvar
L₃ 0236 k

11) Max Total Power kW,kVA,kvar

9420 1254 kWh
Σ 3577 kVA
0257 kvar
3504 kW

12) Max Demand kW,KVA

9420 1254 kWh
3577 kVA
Σ 3504 kW
MAX DEM

13) Power Intrap

9420 1254 kWh
Power
IntrP
0001

14) On Hour

9420 1254 kWh
onhr
0047

DISPLAY PAGES for Key

1) Import kWh

9420 1254 kWh
Σ 3577 kVA
0257 kvar
3504 kW

2) Export kWh

9528 1254 kWh
Σ 3577 kVA
0257 kvar
3504 kW

3) NET kWh

9528 1254 kWh
Σ 3577 kVA
0257 kvar
3504 kW

4) Total kWh

9528 1254 kWh
Σ 3577 kVA
0257 kvar
3504 kW

5) Total kvah

1938 1624 kWh
Σ 3577 kVA
0257 kvar
3504 kW

6) Import kvarh

9528 1254 kWh
Σ 3577 kVA
0257 kvar
3504 kW

7) Export kvarh

1938 1624 kWh
Σ 3577 kVA
0257 kvar
3504 kW

8) Leg kvarh - Scrolling Display for Energy Value & Message

1938 1624 kWh
Σ 3577 kVA
0257 kvar
3504 kW

9) Lead kvarh - Scrolling Display for Energy Value & Message

1938 1624 kWh
Σ 3577 kVA
0257 kvar
3504 kW

10) Total kvarh

1938 1624 kWh
Σ 3577 kVA
0257 kvar
3504 kW

1) Voltage(LN) THD%


9528 1254 kWh
THD% 0077 V_{L-N}
L₁ 0057
L₂ 0004

2) Current THD%

1938 1624 kWh
THD% 0577 A
L₁ 0257
L₂ 0504

3) Individual Harmonics Up to 32 Order

ordEr 02
THD% 0577 V_{L-N}
L₁ 0257
L₂ 0504

Order Change By Press  Key Up To 32 Order.