MULTI FUNCTION METER

MULTISPAN MFM - 13

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	
kWH Total	000.000 - 999999999.999 kWh
kVAh Total	000.000 - 999999999.999 kVAh
kVArh Total	000.000 - 999999999.999 kVArh

DISPLAY & KEY :

Display	4 Digit,3 Line 0.57" RED
Key	SET/ENT,VAF,P/E, INC, DEC

DIMENSION :

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

AUXILIARY SUPPLY :

Supply voltage	12V - 60V DC

ACCURACY:

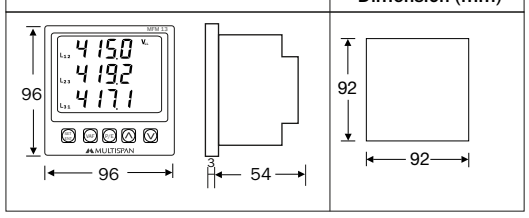
Class 0.5 (Standard)

ENVIRONMENT CONDITION:

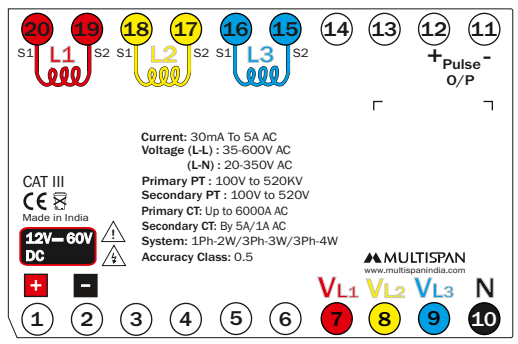
Operating Temp.	0°C to 55°C
Relative Humidity	UP to 95% RH (non-condensing)
Protection Level (AS Per Request)	IP-65 (Front side) As per IS/IEC 60529 : 2001

MECHANICAL INSTALLATION

Outline Dimension (mm)	Panel Cutout Dimension (mm)



TERMINAL CONNECTION



KEY OPERATION

FUNCTION	PRESS KEY
OPERATOR MODE	
To view VAF Pages	VAF
To view Power & Energy Pages	P/E
To scroll & hold pages	Press ∧ + ∨ For 5Sec
PARAMETER SETTING MODE	
To Set Parameter Value	Press SET ENT For 5 Sec
To Increment parameter value	∧
To Decrement parameter value	∨
To Exit from parameter setting	SET ENT

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.

PARAMETER SETTING

Long Press SET ENT key

Enter Password 10

PASS 10

PRG

nEtP — Network Selection

3P3U / 3P4U / 1P2U

PRG

CT — CT Primary

PrIn 5000 — (5 Amp to 6000 Amp selectable)

PRG

CT — CT Secondary

SECd 1A / 5A — (5 Amp/1 Amp selectable)

PRG

Pt — PT Primary

PrIn 300 — (100V to 520kV selectable)

PRG

Pt — PT Secondary

SECd 330 — (100V to 520V selectable)

PRG

MODE — Mode selection

bASE / Adun — (Basic / Advance)

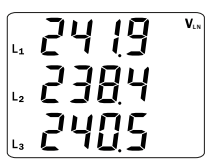
Press PRG key to save & exit from parameter setting

BASIC MODE PAGES

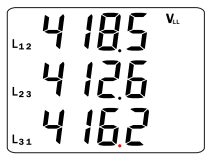
VAF Pages :

Press VAF key to change page

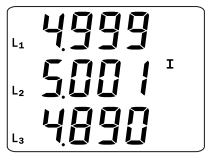
1) Voltage L-N



2) Voltage L-L

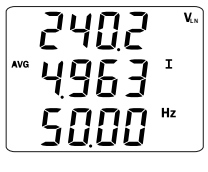


3) Current

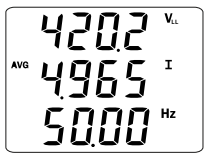


4) System Frequency

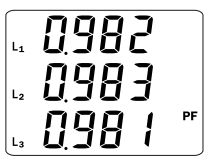
5) AVG V(L-N)-A-F



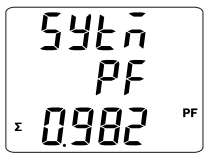
6) AVG V(L-L)-A-F



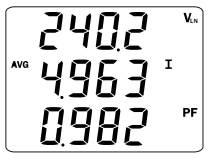
7) PF L1L2L3



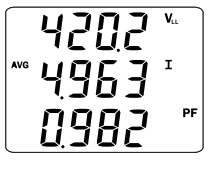
8) System PF



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



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

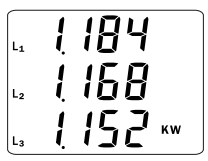


Note : In 3P-3W Page 2,3,4,6,8,10 will display

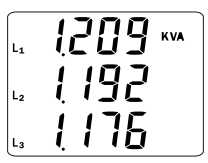
POWER & ENERGY Pages :

Press P/E key to change page

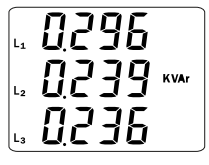
1) kW PER PHASE



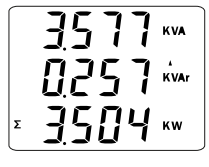
2) kVA PER PHASE



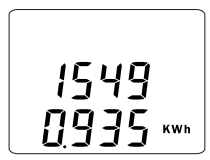
3) kvar PER PHASE



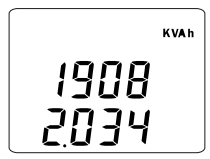
4) TOTAL kVA,kvar,kW



5) kWh Total



6) kvah Total

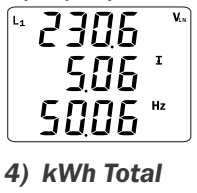


7) kvarh Total

Note : In 3P-3W Page 4,5,6,7 will display

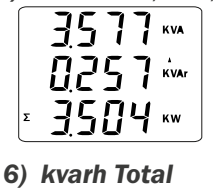
1Phase 2 wire Pages

1) V(L-N)-A-F

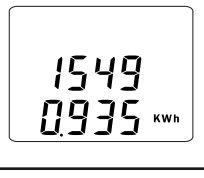


2) V(L-N)-A-PF

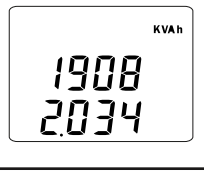
3) TOTAL kVA,kvar,kW



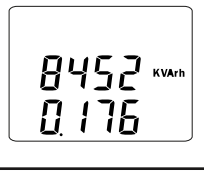
4) kWh Total



5) kvah Total



6) kvarh Total

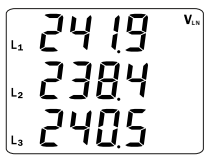


ADVANCE MODE PAGES

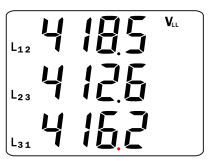
VAF Pages :

Press VAF key to change page

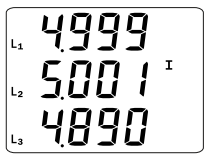
1) Voltage L-N



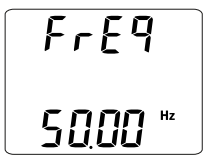
2) Voltage L-L



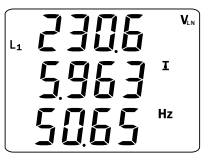
3) Current



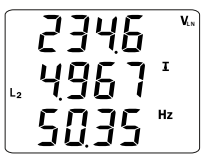
4) System Frequency



5) Line 1 V(L-N)-A-F

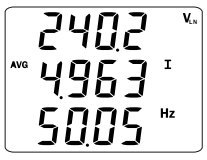


6) Line 2 V(L-N)-A-F

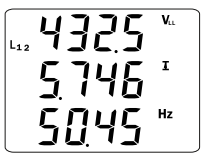


7) Line 3 V(L-N)-A-F

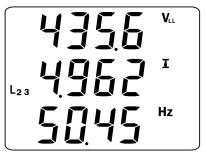
8) AVG V(L-N)-A-F



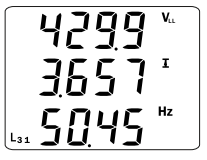
9) Line 12 V(L-L)-A-F



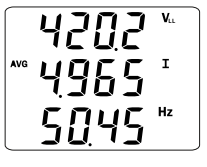
10) Line 23 V(L-L)-A-F



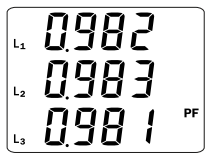
11) Line 31 V(L-L)-A-F



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

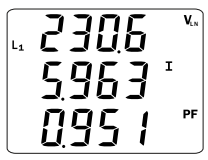


13) PF L1 L2 L3

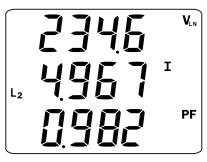


14) System PF

15) Line 1 V(LN)-A-PF

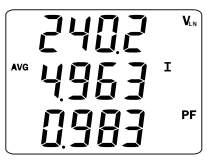


16) Line 2 V(LN)-A-PF

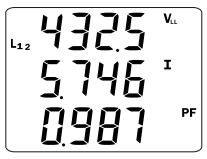


17) Line 3 V(LN)-A-PF

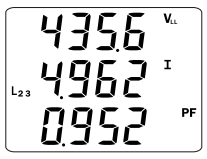
18) AVG V(LN)-A-PF



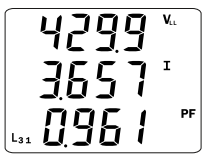
19) Line12 V(LL)-A-PF



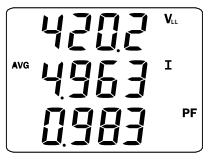
20) Line23 V(LL)-A-PF



21) Line31 V(LL)-A-PF



22) AVG V(LL)-A-PF

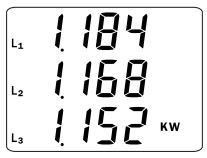


Note : In 3P-3W Page 2,3,4,9,10,11,12,14, 22 will display

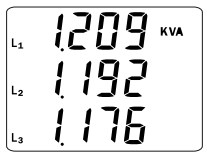
POWER & ENERGY Pages :

Press P/E key to change page

1) kW PER PHASE

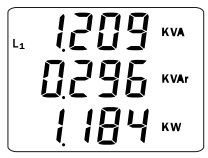


2) kVA PER PHASE

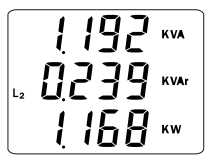


3) kvar PER PHASE

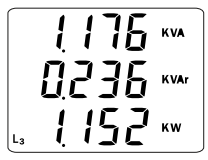
4) Line 1 kVA,kvar,kW



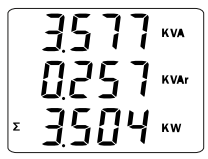
5) Line 2 kVA,kvar,kW



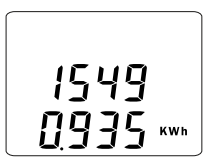
6) Line 3 kVA,kvar,kW



7) TOTAL kVA,kvar,kW



8) kWh Total



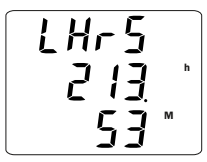
9) kvah Total

10) kvarh Total

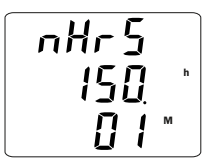
Note :
In 3P-3W Page 7,8,9,10 will display

Press ∧ OR ∨ to View Load Hour & RPM

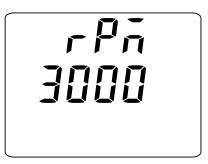
1) Load Hour



2) No Load Hour



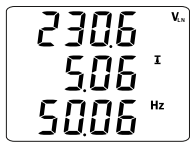
3) RPM



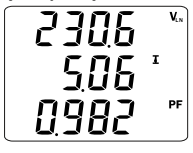
1Phase 2 wire Pages

VAF Pages :

1) V(L-N)-A-F

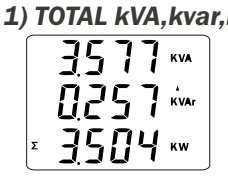


2) V(L-N)-A-PF



Power & Energy Pages :

1) TOTAL kVA,kvar,kW

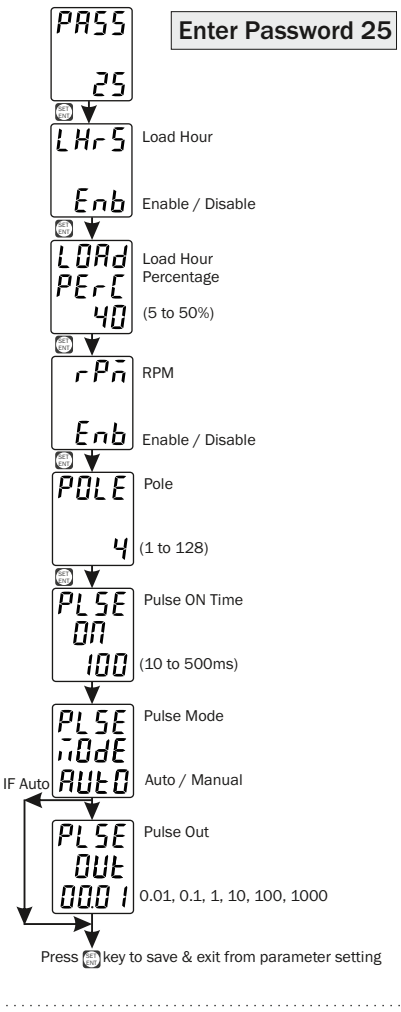


2) kWh Total

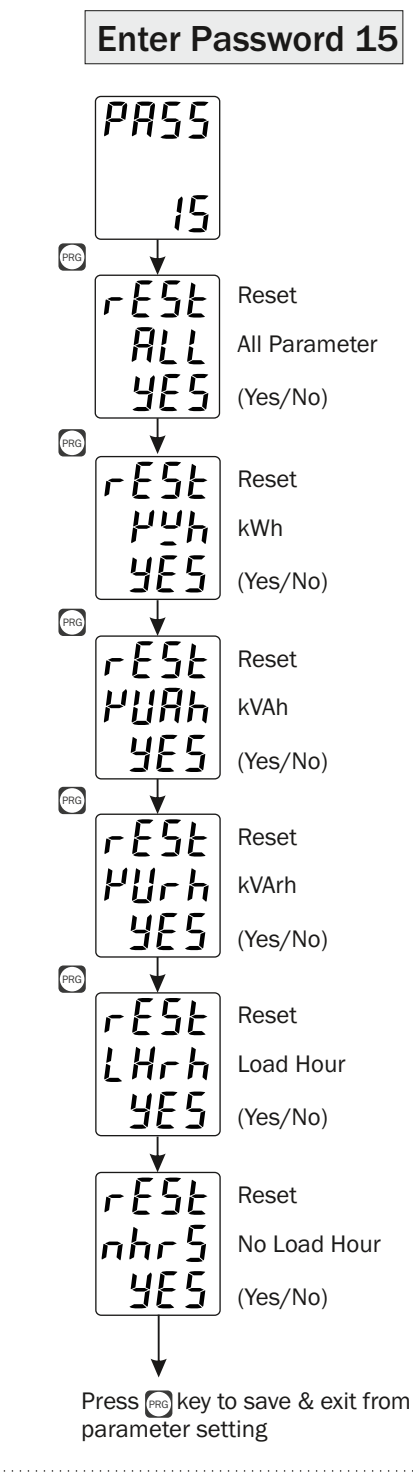
3) kvah Total

4) kvarh Total

LOAD HOUR & RPM



RESET SETTINGS



Product improvement and upgrade is a constant procedure.
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