



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
kVA _r Total	0.000 - 9999 MVA _r
kVA _r Per Phase	0.000 - 9999 MVA _r
ENERGY	
WH Total	000.000 - 999999999 MWh
Vah Total	000.000 - 999999999 MVAh
Varh Total	000.000 - 999999999 MVA _r h

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	

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

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

RS-485 MODBUS

Class 0.5 (Standard)

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

Outline Dimension (mm)	Panel Cutout Dimension (mm)
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DSM 14-M1-E3-NO

Current: 10mA To 5A AC
(L-N): 20-300V AC
Primary PT: 100V to 520V/KV
Secondary PT: 100V to 620V/KV
Primary CT: Up to 6000A AC
Secondary CT: By 5A/1A AC
System: 1Ph-2W/3Ph-3W/
3Ph-4W
Accuracy Class: 0.5

D+ D-
MODBUS

+ Pulse
O/P

CAT III
CE
Made in India

100 ≈
270V AC/DC
50/60 Hz, 4WA

DG Source
230V AC

MULTISPAN
www.multispanspan.com

V_{L1} V_{L2} V_{L3} N

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

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

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.

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.

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.

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 : 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

**Basic Parameter Setting :
Network, CT/PT Selection.**

```

graph TD
    Start[Press PRG key] --> EnterPass[Enter Password 10]
    EnterPass --> Network[Network Selection  
(3P-4W/3P-3W/1P-2W)  
Change by P & E Key]
    Network --> CTPrimary[CT Primary  
(5 Amp to 6000 Amp selectable)  
Change by P & E Key]
    CTPrimary --> CTSecondary[CT Secondary  
(5 Amp/1 Amp selectable)  
Change by P & E Key]
    CTSecondary --> PTPrimary[PT Primary  
(100V to 520kV selectable)  
Change by P & E Key]
    PTPrimary --> PTSSecondary[PT Secondary  
(100V to 520V selectable)  
Change by P & E Key]
    PTSSecondary --> End[Press PRG key to save & exit from parameter setting]
  
```

The flowchart illustrates the sequence of parameter settings. It begins with pressing the **PRG** key, leading to the **Enter Password 10** screen. From there, the user proceeds to **Network Selection** (options: 3P-4W, 3P-3W, 1P-2W), which can be changed using the **P** and **E** keys. Next is **CT Primary** selection (5 Amp to 6000 Amp), also changeable with **P** and **E** keys. This is followed by **CT Secondary** selection (5 Amp/1 Amp), again changeable with **P** and **E** keys. The process then moves to **PT Primary** selection (100V to 520kV), and finally **PT Secondary** selection (100V to 520V), both of which can be adjusted using the **P** and **E** keys. The final step is pressing the **PRG** key to save and exit the settings.

Press Key For 5 Sec

```

graph TD
    A["PASS  
25"] -- PRG --> B["Eb  
Lhr5  
Enb"]
    B -- PRG --> C["Eb  
Load  
PERC  
0025"]
    C -- PRG --> D["dG  
Lhr5  
Enb"]
    D -- PRG --> E["dG  
Load  
PERC  
0025"]
    E -- PRG --> F["rPm  
Enb"]
    F -- PRG --> G["PoLE  
0002"]
    G -- PRG --> H["PLSE  
on  
0100"]
    H -- PRG --> I["Continue"]
    
    B --- B1["EB Load Hour  
Enable / Disable  
Change by (P)&(E)Key"]
    C --- C1["EB Load Hour  
Percentage  
5 To 50%  
Change by (P)&(E)Key"]
    D --- D1["DG Load Hour  
Enable / Disable  
Change by (P)&(E)Key"]
    E --- E1["DG Load Hour Percentage  
5 To 50%  
Change by (P)&(E)Key"]
    F --- F1["RPM  
Enable / Disable  
Change by (P)&(E)Key"]
    G --- G1["Pole  
2 To 128  
Change by (P)&(E)Key"]
    H --- H1["Pulse ON Time  
10 To 500mS  
Change by (P)&(E)Key"]
    
    J["PLSE  
mode  
Auto"] --- J1["Pulse Mode  
Auto / Manual  
Change by (P)&(E)Key"]
    J -- PRG --> K["PLSE  
out  
0001"]
    K --- K1["Pulse Out  
0.01,0.1,1,10,100  
1000  
Change by (P)&(E)Key"]
    K -- PRG --> L["Press (PRG) key to save & exit from  
parameter setting"]
  
```

The flowchart illustrates the sequence of parameter settings for the device. It begins with the 'PASS 25' screen, followed by a series of settings: 'EB Load Hour', 'EB Load Hour Percentage', 'DG Load Hour', 'DG Load Hour Percentage', 'RPM', 'Pole', 'Pulse ON Time', and 'Pulse Mode'. Each setting is shown with its current value and the key sequence to change it. The sequence ends with a 'Continue' prompt.

Press Key For 5 Sec

```

graph TD
    S15[15  
PASS  
15] -- PRG --> S16[16  
rEst  
All  
no]
    S16 -- PRG --> S17[17  
rEst  
Eb  
Energy  
no]
    S17 -- PRG --> S18[18  
rEst  
dG  
Energy  
no]
    S18 -- PRG --> S19[19  
rEst  
Eb  
Uolt  
no]
    S19 -- PRG --> S20[20  
rEst  
dG  
Uolt  
no]
    S20 -- PRG --> S21[21  
rEst  
Eb  
Power  
no]
    S21 -- PRG --> S22[22  
rEst  
dG  
Power  
no]
    S22 -- PRG --> S23[23  
rEst  
Eb  
Lhrh  
no]
    S23 -- PRG --> S24[24  
rEst  
dG  
Lhrh  
no]
    S24 -- PRG --> S25[25  
rEst  
dG  
Intrup  
no]
    S25 -- PRG --> Continue[Continue]

```

15
PASS
15
PRG

16
rEst
All
no
PRG

17
rEst
Eb
Energy
no
PRG

18
rEst
dG
Energy
no
PRG

19
rEst
Eb
Uolt
no
PRG

20
rEst
dG
Uolt
no
PRG

21
rEst
Eb
Power
no
PRG

22
rEst
dG
Power
no
PRG

23
rEst
Eb
Lhrh
no
PRG

24
rEst
dG
Lhrh
no
PRG

25
rEst
dG
Intrup
no
PRG

Continue

Parameter Setting

PRG 35 Enter Password 35

Long Press PRG key
To Enter into parameter

Change by (P)&(E)Key

PRG Addr Slave Address

000 1 1 to 125
Change by (P)&(E)Key

PRG bRud Baudrate
(4800,9600,19200,38400)
Change by (P)&(E)Key

PRG P r t y Parity
None/Even/Odd
Change by (P)&(E)Key

Press PRG key to save & exit from parameter setting

DISPLAY PAGES for VAF Key

1) Voltage L-N

9420 1254 ^Σ kWh	
L ₁ 2419 V _{LN}	
L ₂ 2384	
L ₃ 2405 T1	

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

2) Voltage L-L

9420 1254 ^Σ kWh	
L ₁₂ 4185 V _{LL}	
L ₂₃ 4126	
L ₃₁ 4162 T1	

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

3) Current

9420 1254 ^Σ kWh	
L ₁ 4999	
L ₂ 5001 A	
L ₃ 4890 T1	

	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

4) PF L1,L2,L3

9420 1254 ^Σ kWh	
L ₁ 0983	
L ₂ 0982	
L ₃ 8981 PF T1	

	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

9420 1254 ^Σ kWh	
AVG 2402 V _{LN}	
4963 A	
5005 Hz T1	

	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

9420 1254 ^Σ kWh	
AVG 4202 V _{LL}	
4965 A	
5045 Hz T1	

	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

9420 1254 ^Σ kWh	
AVG 2402 V _{LN}	
4963 A	
0983 PF T1	

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

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

9420 1254 ^Σ kWh	
AVG 4202 V _{LL}	
4963 A	
0983 PF T1	

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

9) EB Max Voltage L-N

9420 1254 ^Σ kWh	
AVG Eb V _{LN}	
2401 T1	
MAX	

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

10) EB Max Voltage L-L

9420 1254 ^Σ kWh	
AVG Eb V _{LL}	
415 T1	
MAX	

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

11) EB Min Voltage L-N

9420 1254 ^Σ kWh	
AVG Eb V _{LN}	
1011 T1	
MIN	

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

12) EB Min Voltage L-L

9420 1254 ^Σ kWh	
AVG Eb V _{LL}	
1731 T1	
MIN	

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

13) DG Max Voltage L-N

9420 1254 ^Σ kWh	
AVG dg V _{LN}	
2401 T1	
MAX	

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

14) DG Max Voltage L-L

9420 1254 ^Σ kWh	
AVG dg V _{LL}	
415 T1	
MAX	

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

15) DG Min Voltage L-N

9420 1254 ^Σ kWh	
AVG dg V _{LN}	
1011 T1	
MIN	

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

16) DG Min Voltage L-L

9420 1254 ^Σ kWh	
AVG dg V _{LL}	
1731 T1	
MIN	

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

17) EB Load Hour

9420 1254 ^Σ kWh	
EbLh	
25 T1	

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

18) EB No Load Hour

9420 1254 ^Σ kWh	
EbNoLh	
3 T1	
25	

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

19) DG Load Hour

9420 1254 ^Σ kWh	
dgLh	
29 T1	

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

20) DG No Load Hour

9420 1254 ^Σ kWh	
dgNoLh	
6 T1	
45	

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

21) RPM

9420 1254 ^Σ kWh	
rPn	
3000 T1	

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

22) DG Intrup

dg	
IntrP	
0001 T1	

	3P-3W	3P-4W
Energy Value		
Display Line 1	DG	DG
Display Line 2	Intrup	Intrup
Display Line 3	1	1

DISPLAY PAGES for P Key

1) kW PER PHASE

9420 1254 ^Σ kWh	
L ₁ 1184	
L ₂ 1168	
L ₃ 1152 kW T1	

	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

9420 1254 ^Σ kWh	
L ₁ 1209	
L ₂ 1192	
L ₃ 1176 T1	

	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

9420 1254 ^Σ kWh	
L ₁ 0296	
L ₂ 0239	
L ₃ 0236 T1	

	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

9420 1254 ^Σ kWh	
Σ 3577 kVA	
0257 kvar	
3504 kW T1	

	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) EBMax kW,kVA,kvar

Eb MAX	
4577 kVA	
1257 kvar	
3504 kW T1	
MAX	

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

6) DGMax kW,kVA,kvar

dg MAX	
4577 kVA	
1257 kvar	
3504 kW T1	
MAX	

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

DISPLAY PAGES for E Key

1) EB Total kWh

9420 1251 ^Σ kWh	
3577 kVA	
0257 kvar	
3504 kW T1	

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

2) DG Total kWh

9420 1251 ^Σ kWh	
3577 kVA	
0257 kvar	
3504 kW T2	

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

3) EB Total kVAh

9528 1254 ^Σ kVA h	
3577 kVA	
0257 kvar	
3504 kW T1	

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

4) DG Total kVAh

9528 1254 ^Σ kVA h	
3577 kVA	
0257 kvar	
3504 kW T2	

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

5) EB Total kvarh

1938 1624 ^Σ kVAh	
3577 kVA	
0257 kvar	
3504 kW T1	

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

6) DG Total kvarh

1938 1624 ^Σ kVAh	
3577 kVA	
0257 kvar	
3504 kW T2	

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

NOTE :

T1 LED on For display will be show EB energy

T2 LED on For display will be show DG energy

Specifications are subject to change, since development is a continuous process.
So for more updated operating information and Support,
Please contact our Helpline: +91-7227057547 or
Email at service@multispanindia.com Ver:2201