Ziegler

Redefine Innovative Metering

Technical Datasheet

ZAM PSAF N

Power Monitoring Meter

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ZAM PSAF N measures important electrical parameters in 3 phase 4 wire, 3 phase 3 wire, 1 phase 2 wire and 1 phase 3 wire (split-phase) network. It displays many parameters at a glance. It measures electrical parameters like Voltage, Current, Frequency and Power Factor. The instrument has one optional built in relay output which can be configured as limit output. MODBUS RTU over RS-485 is built in for remote monitoring and configuration.

Product Features:

- **True RMS measurement**
  The instrument measures distorted waveform up to 15th harmonic
- **Front panel keys**
  Two keys are useful for easy setup navigation and changing setup parameters
- **Storage of parameters**
  The instrument stores minimum and maximum values of System Voltage, System Current. Also Run Hour, ON Hour number of AUX interrupts are stored.
- **Display**
  - 3 Line, 4 Digit bright Red LED display and indication LEDs
  - Display can be configured for automatic scrolling of parameters or manual scrolling through keys as per requirement and application of user.
- **On site programmable**
  It is possible to program primary, secondary of external potential transformer (PT) & primary, secondary of external current transformer (CT) ,Autoscroll via front panel keys and MODBUS.
- **MODBUS (RS485) Output**
  - Rs485 output enables the instrument to transmit all the Measured parameters over standard MODBUS protocol
  - The instrument can be configured baud rate, Device address via Keys and MODBUS communication.
- **Demand**
  - The Instrument integrates demand value for Active Power (kW), Apparent Power (kVA), Reactive Power (kVar) and Current (A).
  - The demand integration time can be configured from 5 to 60 minutes.
- **Limit (Alarm) Output**
  - Potential free 1NO contact
  - Fully configurable trip point, hysteresis, on and off delays for Limit Output operation.
- **Compliance to International Safety standards**
  - Compliance to International Safety standard IEC 61010-1:2017
- **Auxiliary supply**
  - Higher Auxiliary power supply with voltage range 60V-300V AC/DC.
  - Lower Auxiliary power supply with voltage range 20V-60V AC/DC.
- **EMC Compatibility**
  - Compliance to International standard IEC 61326

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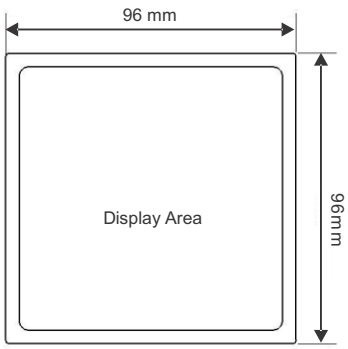
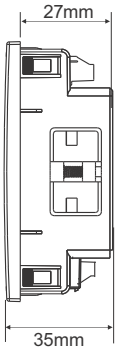
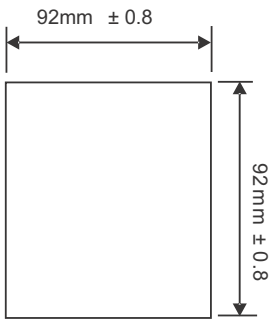
Dimensions Details :



Front View



Side View



Panel Cutout

Technical Specifications:

Input Voltage	
Nominal input voltage (AC RMS)	288.68VLN (500VLL)
System PT primary values	100VLL to 1200kVLL programmable on site. (1000MVA maximum power) (1200kVLL when CT primary ≤ 1002A)
Max continuous input voltage	120% of nominal value
Overload Indication	"-OL-" >121% of Nominal value
Nominal input voltage burden	< 0.1VA approx. per phase (at nominal 240V)
Overload Withstand	2 x rated value for 1 second, repeated 10 times at 10 second intervals
Input Current	
Nominal input current	1A / 5A onsite programmable
System CT primary values	From 1A to 9999A (1000MVA maximum power) (9999A when PT primary ≤ 120kVLL)
Max continuous input current	120% of nominal value
Overload Indication	"-OL-" >121% of Nominal value
Nominal input current burden	< 0.3VA approx. per phase (at 5A)
Overload Withstand	20 x rated value for 1 second, repeated 5 times at 5 minute intervals
Auxiliary Supply	
Higher Auxiliary supply range	60-300 V AC/DC (230V nominal)
Lower Auxiliary supply range	20-60 V AC/DC
Aux Supply frequency	45 to 65 Hz range
Auxiliary Supply burden	< 4VA approx (230V nominal)
Operating Measuring Ranges	
Current	5 … 120% of nominal value
Voltage	10 … 120% of nominal value
Power Factor	0.5 Lag ... 1 ... 0.5 Lead
Frequency	40Hz to 70Hz

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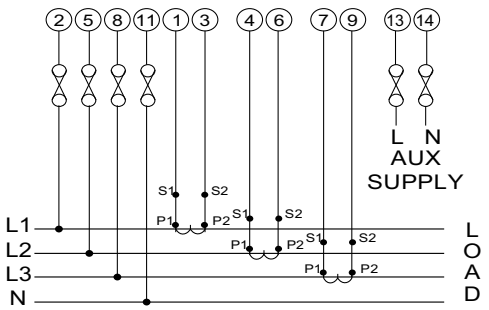
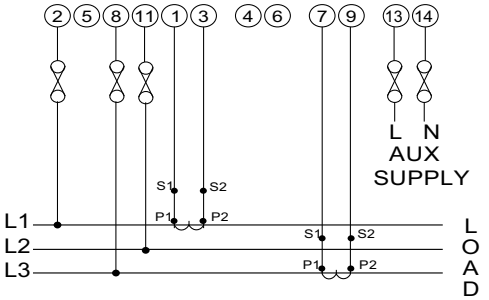
Reference Conditions for Accuracy	
Reference temperature	23°C +/- 2°C
Influence of temperature	0.025%/°C for Voltage & 0.05%/°C for Current
Input Waveform	Sinusoidal (distortion factor 0.005)
Input frequency	50/60 Hz ± 2%
Voltage range	10... 120% of nominal Value
Current range	5 ... 120% of nominal Value
Power Factor/ Phase Angle	40 ... 120% of nominal Value of Voltage 40 ... 120% of nominal Value of Current

Electrical Connection :

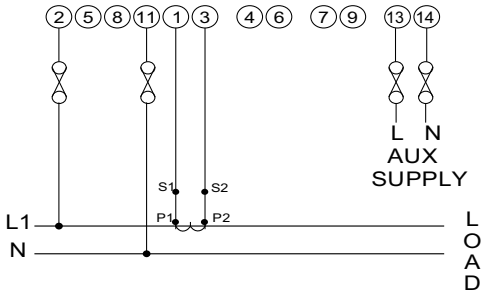
Network Types :



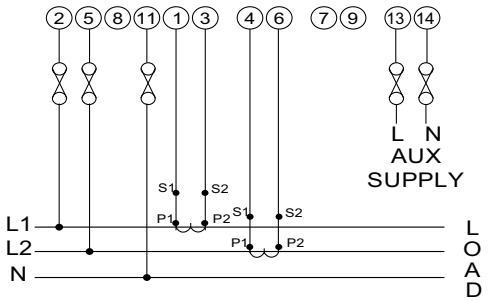
a) 3 Phase 4 Wire



b) 3 Phase 3 Wire



c) Single Phase Load (1 Phase 2 Wire)



d) Split Phase (1 Phase 3 Wire)

It is recommended that the wires used forconnections to the instrument should have lugs crimped at the end. That is, the connections shouldbe made with Lugged wires for secure connections.

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Technical Specifications:

Accuracy	
Parameter	Accuracy Class 0.5
Voltage	± 0.5% of Nominal value
Current	± 0.5% of Nominal value
Frequency	± 0.1% of mid frequency
Power Factor/ angle	±2°

Applicable Standards	
EMC	IEC 61326 - 1,Table 2
Immunity	IEC 61000-4-2, 4-3, 4-4, 4-5, 4-6, 4-8, 4-11
Emission	CISPR 11
Safety	IEC 61010-1:2017
IP for water & dust	IEC 60529
Isolation	
Pollution degree	2
Installation category	III
High voltage test :	
All Circuit Vs Surface	3.5 kV RMS, 50Hz, 1min
Input + AUX Vs Others	3.3 kV RMS, 50Hz, 1min
Input Voltage Vs Input Current	2.2 kV RMS, 50Hz, 1min
Input Vs AUX	3.3 kV RMS, 50Hz, 1min
RS 485 Vs Relay	2.2 kV RMS, 50Hz, 1min
Environmental	
Operating temperature	-10 to +60°C
Storage temperature	-25 to +70°C
Relative humidity	0... 95% RH (non condensing)
Warm up time	Minimum 3 minute
Shock (As per IEC60068-2-27)	Half sine wave, Peak acceleration 30gn (300 m/s^2), duration 18ms.
Vibration	10 ... 150 ...10 Hz, 0.15mm amplitude
Number of Sweep cycles	10 per axis
Enclosure	IP20 (Terminal side) and IP54 (Front side)
Interfaces	
Relay	250 VAC, 3A AC 30VDC, 3A DC
MODBUS	RS 485, Baud rate : 4.8k,9.6k,19.2k, 38.4k 57.6k bps (Response time > 200ms)

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Measured Parameter System wise:

√: Available x : Not Available

Sr. No.	Parameter	3 Phase 4 Wire	3 Phase 3 Wire	1 Phase	1 Phase 3 Wire
1	System Volts	√	√	√	√
2	System Current	√	√	√	√
3	Voltage L1	√	x	x	√
4	Voltage L2	√	x	x	√
5	Voltage L3	√	x	x	x
6	Voltage L12	√	√	x	√
7	Voltage L23	√	√	x	x
8	Voltage L31	√	√	x	x
9	Current L1	√	√	x	√
10	Current L2	√	√	x	√
11	Current L3	√	√	x	x
12	Frequency	√	√	√	√
13	System Power Factor	√	√	√	√
14	Power Factor L1	√	x	x	√
15	Power Factor L2	√	x	x	√
16	Power Factor L3	√	x	x	x
17	RPM	√	√	√	√
18	Min and Max System Voltage	√	√	√	√
19	Min and Max System Current	√	√	√	√
20	Run Hour	√	√	√	√
21	On Hour	√	√	√	√
22	Number of Interruptions	√	√	√	√
23	Neutral Current	√	x	x	x

Order Code :

Product Code: DE 10– 3 – 3 – 01 – 02 – X – X– 000ZG

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Z - None
S - 1 Relay Output
M - RS485
R - RS485 + 1 Relay Output

H: 60-300V AC/DC
L : 20-60V AC/DC

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