



**Automatic
Electric Ltd.**

**Electrical Measuring
Instruments**



Multifunction Meter AE 9000S with Ethernet Connectivity & Precision Measurement Class 0.2

1. Product Perspective

The meter offers simple user-friendly Programming of Voltage, current, and power Measurement parameters using a menu driven interface. Status of all parameters can be viewed through 30 main Screens on the 3 line, 4 digits LED display. The AE - 9000S has digital Ethernet Communication Port for TCP-IP and is ideal for Energy Management System.

2. Operation

AE - 9000S offers high functionality and uncomplicated operation. AE - 9000S measures all the values needed to monitor power and Energy. A five-button interface on the front panel gives simple access to the measuring, display and configuration screens. With the help of "▲" & "▼" (navigation key) buttons, user can access total 53 major electrical parameters. The parameters to be viewed through display screens.

3. Product Features

- ▶ Fully programmable CT and PT ratio.
- ▶ Fully programmable selection of three phase 3 wire or 4 wire configuration.
- ▶ Programmable Single & Three phase system configuration.
- ▶ The true RMS measurement.
- ▶ Display and communication of up to 53 parameters through 30 screens / pages.
- ▶ KVA & KW Demand Measurements. Demand interval can be set from 5 to 30 minutes.
- ▶ Password protection.
- ▶ Simultaneously three parameters can be viewed
- ▶ Phase angle & Phasor angle measurement.
- ▶ Separate registers for Import and Export energy measurement.
- ▶ Energy summation (Import + Export) for Active, Reactive & Apparent Energy.
- ▶ Display Previous Energies (before the energies were reset).
- ▶ Ethernet Port for communication.
- ▶ Pulse output for Total Active energy
- ▶ Confirm to IP54 (front face)
- ▶ Run Hr. & ON Hr display.
- ▶ LED and Memory test facility.
- ▶ High quality LED display.
- ▶ Simple menu driven.
- ▶ Real Time clock
- ▶ Universal Auxilliary Power Supply.

4. Monitors

- ▶ Voltage- Line - Line , Line - Neutral & System voltage.
- ▶ Current- Individual Phase, Average
- ▶ Frequency
- ▶ Power (Active, Reactive and Apparent)
- ▶ Energy (Active, Reactive and Apparent)
- ▶ Power Factor(per phase & average along with phase & Phasor angle)
- ▶ Maximum demand - (Active & Apparent)
- ▶ Min & Max values for voltage & current

5. Display Parameters

- ▶ Volts L 1 - N
- ▶ Volts L2 - N
- ▶ Volts L3 - N
- ▶ Volts L 1 - L2
- ▶ Volts L2 - L3
- ▶ Volts L3 - L1
- ▶ System Volts
- ▶ Current L 1
- ▶ Current L2
- ▶ Current L3
- ▶ System Current
- ▶ Average Frequency
- ▶ Power Factor - Per phase & Average
- ▶ Phase & Phasor Angle
- ▶ System kW
- ▶ Total & Per Phase Power - Active, Reactive & Apparent.
- ▶ Active Energy kWh (8 digit resolution)
- ▶ Reactive Energy kVAh (8 digit resolution)
- ▶ Separate Import & Export Energy-Active, Reactive & Apparent.
- ▶ Previous Energy Register - Active, Reactive & Apparent. (Import & Export).
- ▶ Energy summation (Import+ Export) for Active, Reactive & Apparent Energy
- ▶ KW & KVA Maximum Demand
- ▶ Run Hr Import
- ▶ Run Hr Export
- ▶ Run Hr.Total
- ▶ ON Hr.
- ▶ Date & Time (RTC).
- ▶ Min & Max values of system voltage & current

6. System Input

Designed for all low, medium and high voltage switchgear and distribution systems. The AE-9000S has customer programmable PT and CT ratio capability. Both primary & secondary are configurable. The standard nominal inputs Voltage are 440 or 110 V AC (L-L) & Current - 1A or 5 A AC.

7. Typical Applications

- ▶ Energy Generation & Distribution Systems
- ▶ Industrial & Commercial Generator sets.
- ▶ Building management System.
- ▶ Energy Management System.
- ▶ Control & Monitoring Systems.
- ▶ Process Control.
- ▶ Switch Gear.

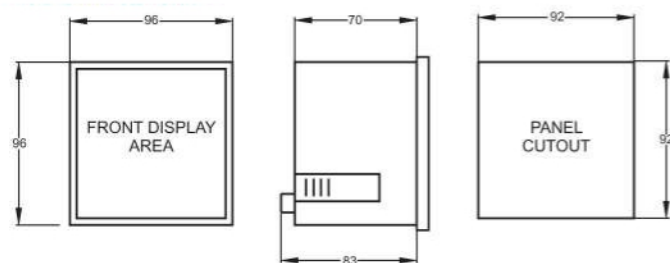
8. Specifications

Type	1 / 3 - Phase - 3 - wire / 4wire (Programmable through front panel Switches).
Input voltage V AC	110V or 415 V (L-L)
Voltage Overload	1.5 times for 10 sec
Input Current A AC	1A or 5A
Current Overload	50A max for 3 sec
Auxiliary supply	AC / DC: 85 V - 300 V.
Burden	For Voltage / Current - 0.2 VA max per Volt / Amp input, Auxiliary - 3VA max.
Frequency	45 Hz - 55Hz
Resolution	RMS 4 digit, Integral 8 digit
Accuracy Class	0.2S
Ethernet communication	Modbus TCP - IP Baud rates - 4800, 9600, 19200, 38400.
Pulse output	Potential free pulse output for Total Active Energy with 100ms +/- 10 ms ON period. 3600 pulses / kWh.
Isolation	2k VAC isolation for 1min. between communication and other circuit.
Demand Interval	Programmable from 5 to 30 Minutes. (In steps of 1 Minute)
Environmental	Operating Temp. -10 to +70 °C. Storage temp. -20 to +85°C, Humidity 95% RH non condensing.
Mechanical Size	Bezel : 96 x 96 mm, 144 x 144 Depth : 83mm behind Bezel
Protection	IP54 for front Display.
Conform to	IS 1248 - Part1, IS13875, IEC- 61000-4-2, IEC61000-4-5, IEC61000-4-6.
Casing	ABS
Keypad	5 Functional keys
LED Indication	31 individual LED's for parameter information

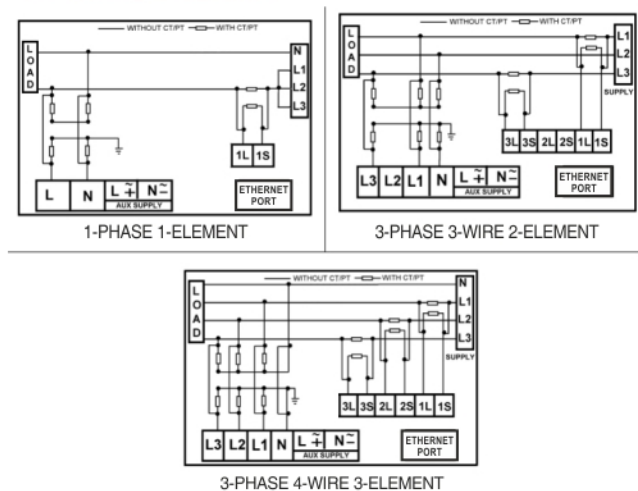
9. Digital Communication

An Ethernet communication Port is available for direct connection to SCADA systems (EMS / BMS) using the Modbus TCP - IP protocol. Remote monitoring enables the user to record the systems parameters in real time basis.

10. Dimensions :



11. Wiring Diagram :



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