



**Automatic
Electric Ltd.**

Electrical Measuring Instruments



Multifunction Meter

AE 9000S

Precision Measurement Class 0.2

1. Product Perspective

The meter offers simple user-friendly Programming of Voltage, Current, Power & Energy 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 RS485 Communication outputs for Modbus and is ideal for Energy Management System.

2. Operation

AE-9000S offers highly accurate 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. The "A" (navigation key) button has access to 53 major electrical 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 with variable demand interval from 5 to 30 minutes.
- ▶ Password protection.
- ▶ Simultaneously three parameters can be view
- ▶ 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).
- ▶ RS 485 interface for communication
- ▶ Confirm to IP54 (front face)
- ▶ Run Hr. & ON Hr display.
- ▶ LED and Memory test facility.
- ▶ High quality LED display.
- ▶ Simple menu driven.

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 L1 - N
- ▶ Volts L2 - N
- ▶ Volts L3 - N
- ▶ Volts L1 - L2
- ▶ Volts L2 - L3
- ▶ Volts L3 - L1
- ▶ System Volts
- ▶ Current L1
- ▶ 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 kVarh (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 415 or 110 VAC (L-L) & Current – 1A or 5AAC.

7. Typical Applications

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

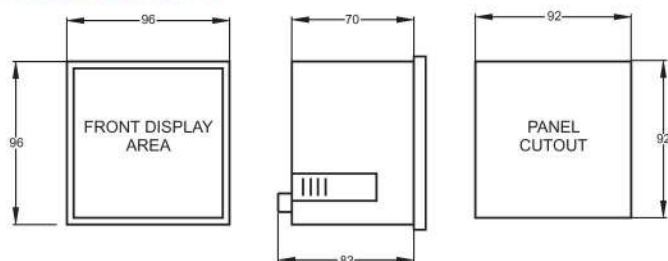
8. Specifications

Type	1 / 3-Phase-3-wire/ 4wire (Programmable through front panel).
Input voltage V AC	110V or 415 V (L-L)
Voltage Overload	1.5 time 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
RS485 communication	Two wire half duplex Baud rates - 9600,14400,19200,38400.
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 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

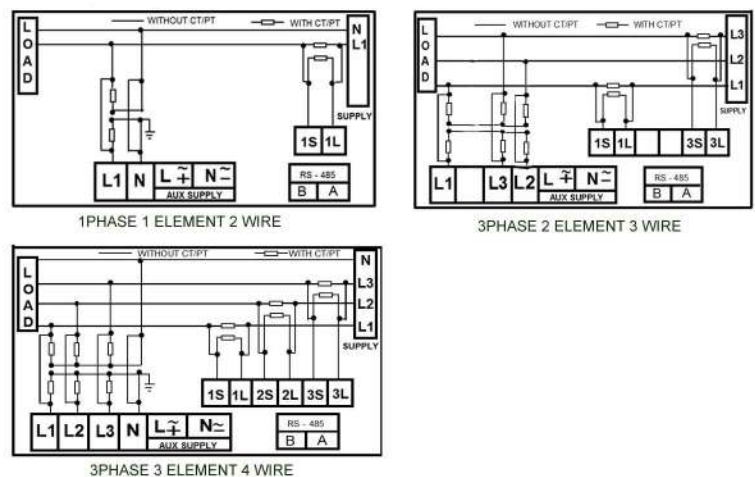
9. Digital Communication

An RS485 communication Port is available for direct connection to SCADA systems (EMS / BMS) using the Modbus RTU protocol. Remote monitoring enables the user to record the systems parameters in real time basis.

10. Dimensions:



11. Wiring Diagram :



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Note: Product innovation is a part of continuous development hence specifications are subject to change without notice. AE-9000-Datasheet/2010/09/001