



Installation / User Manual

APsystems eSensor

Smart Ammeter

Rev 1.0

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Introduction

eSensor is a “smart” ammeter equipped with a micro control Unit and electrical energy measurement chip as well as an LCD display, designed to provide you with comprehensive system monitoring.

Features

- ✓ Instantaneous voltage/current/power value tracing.
- ✓ Historical peak voltage/current value recording.
- ✓ Volatile memory readings for single period power generation
- ✓ Time parameter for a single time period, as well as historical cumulative operating hours
- ✓ Cumulative record of total power generated

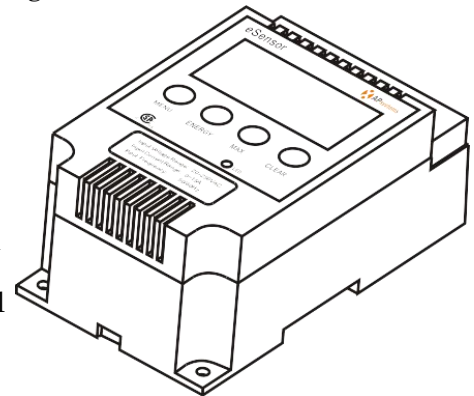


Figure 1

HMI

The panel interface is divided into three parts, the LCD screen, buttons and indicator light.

LCD

This part displays the power generation, time, and other parameters as followed:

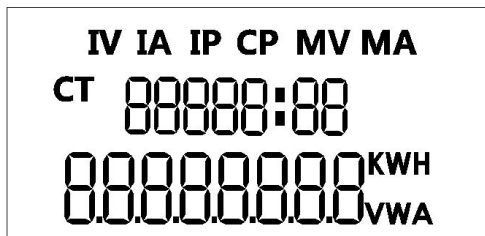


Figure 3

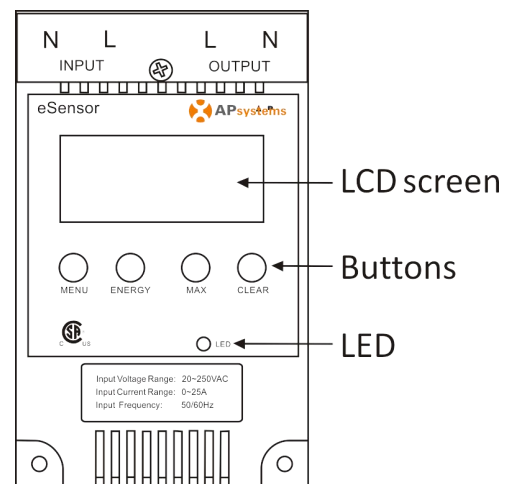


Figure 2

Buttons

The four buttons, MENU, ENERGY, MAX, CLEAR are used to display the readings about the power generation. Choose the specified period and clear all the recordings respectively.

LED

When the indicator light is on, which means the ammeter is working. When it is off, that means the ammeter is not running.

Operation

The eSensor works when it connected with power. When the indicator light and the background light are on and the LCD will update the readings in every two seconds. The default values are the instantaneous power and the current time. You can check all the readings or clear the records as your needs through using the following four buttons.

Button	Method	Parameters	Time period
MENU	Quick Press	Instantaneous power; Current cumulative generation power; Instantaneous voltage/current	Current
ENERGY	Quick Press	Historical cumulative generation power	Historical cumulative operation hours
MAX	Quick Press	Max voltage/current	Historical cumulative operation hours
CLEAR	Push for 3''	Clear all the peak value and cumulative value	

Power generation parameter

The related power generation parameters are shown at the bottom of the LCD screen. Through the three keys, MENU, ENERGY and MAX, eSensor provides seven parameters to be viewed to fulfill owners' various and real needs. When the owner operates with the buttons, the relevant parameters marks on the top of the screen and the UOM on the right bottom corner will be showed clearly on the screen. The voltage and power will be calculated in 0.1 and the current and the generated power will be done in 0.001.

Time Parameter

Time records are shown on the middle of the screen. The eSensor provides two kinds of records of the time period that are the current time (T) and cumulative time (CT). Through operating with the MENU, ENERGY and MAX can change the two periods as your demands. The smallest measurement unit is minute and the longest cumulative hours is 99999 h.

Instantaneous Power

The monitoring interface is displayed by the following picture. Its nameplate ratings is from 0-4200W.

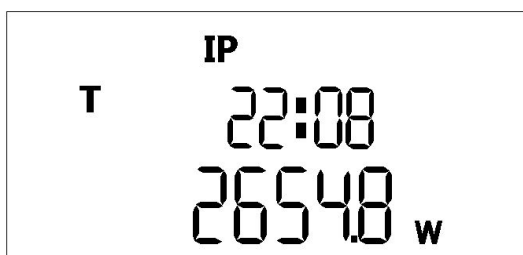


Figure 4

Operation

Current Cumulative Power

The monitoring interface is displayed by the following picture. Its ratings is 0-99999kWh.

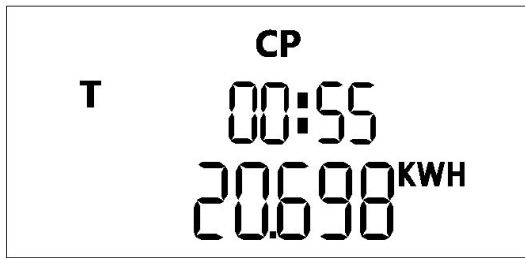


Figure 5

Instantaneous Voltage

The monitoring interface is displayed by the following picture. Its nameplate ratings is 20 -280V.



Figure 6

Instantaneous Current

The monitoring interface is displayed by the following picture. Its nameplate ratings is from 0-25A.

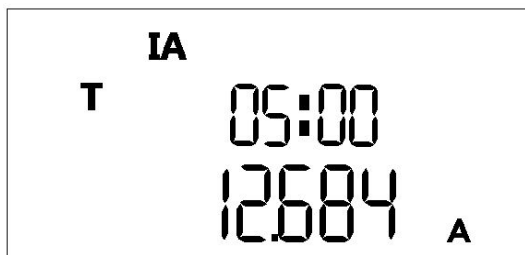


Figure 7

Max Voltage Value

Max voltage happens when the load is in the maxcurrent. The monitoring interface is displayed by the following picture.



Figure 8

Operation

Max Current Value

The monitoring interface is displayed by the following picture.



Figure 9

Cumulative power generation value

The monitoring interface is displayed by the following picture. Its ratings is from 0-99999kWh.

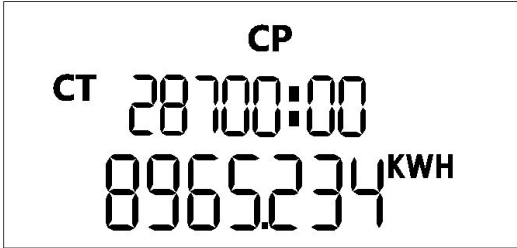


Figure 10

Installation

The user can either slide or bolt on the eSensor.

Installation with Slideway

1. Choose a slide way whose width is 35mm and thickness is no more than 2mm.
2. Pull down the flexible snap fit and fix the slide way behind the fixed snap fit.
3. Push the slide way close to the back and release the flexible snap.

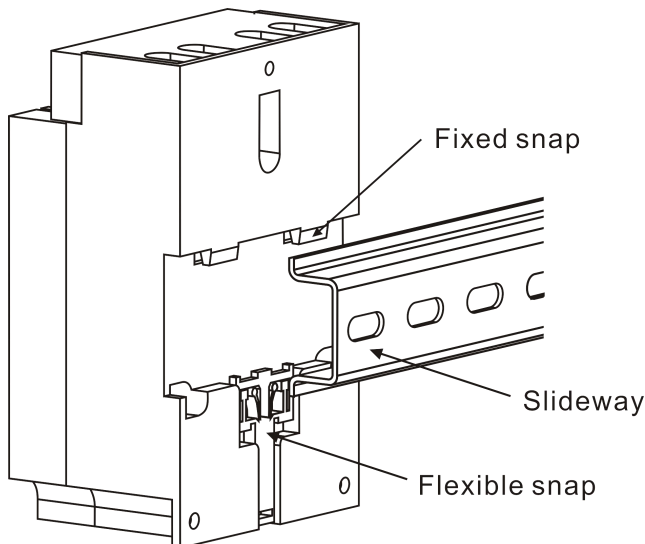


Figure 11

Installation with bolt

1. Loosen the bolts in the middle of the cover board and leave the board aside.
2. Fix the ammeter through the three $\Phi 3.4$ holes in the top, left corner and right corner with ST3.5 bolt.

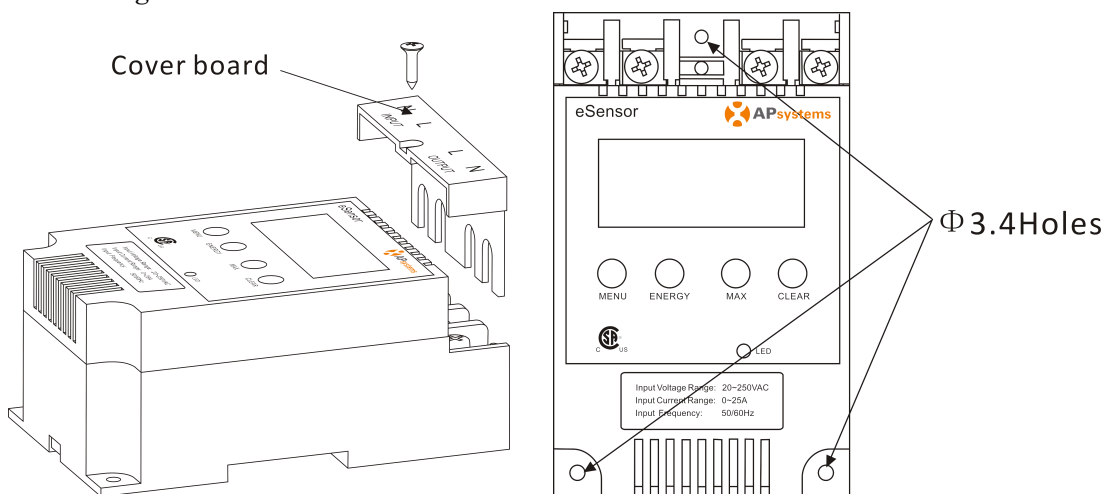
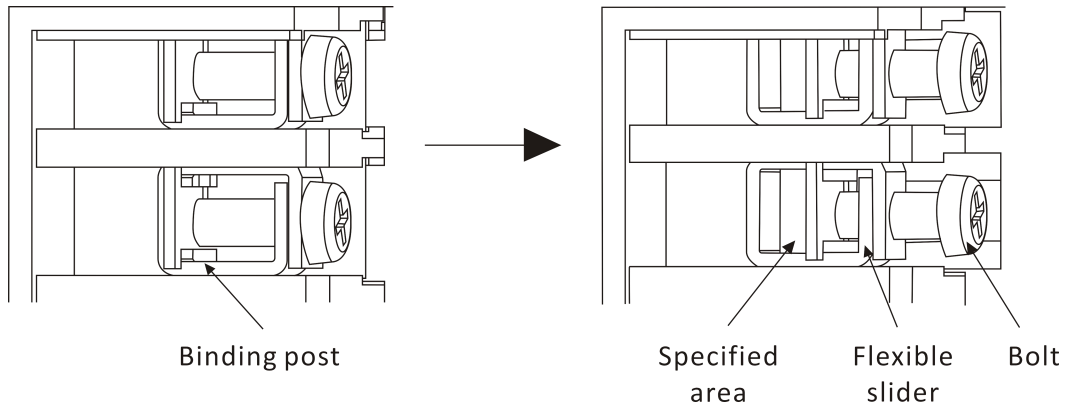


Figure 12

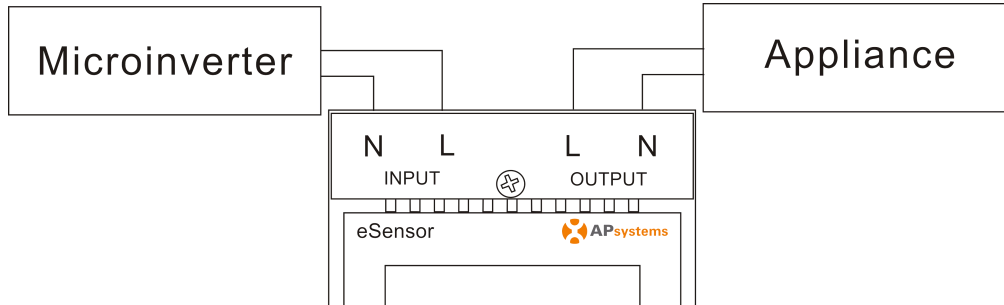
Installation

Installation wiring

1. Loosen the bolts in the middle of the cover board. You will see the four binding post.
2. Loosen the bolt and pull up the flexible slider.
3. Put the wire in specified area and tighten the bolt.
4. Refix the cover board and tighten the bolt.



The two binding posts on the left corner are used to connect with the L and N. The two right binding posts are used to connected with the grid.



Technical Data

Measuring Data

Input Voltage Range	20-250 VAC, 50/60 Hz
Input Current Range	0 - 25A
Power Range	0 - 4200W
Cumulative Energy Range	0 - 99999kWh
Cumulative Run Time Range	0 - 99999H
Measurement Accuracy	1%

Mechanical Data

Ambient Temperature Range	-20°C to +45°C
Dimensions (W × H × D)	123mm × 75mm × 54mm(4.8"×3.0"×2.1")
Cooling	Nature Convection; No Fans
Enclosure EnvironmentalRating	Indoor - NEMA 1(IP30)

Specifications subject to change without notice - please ensure you are using the most recent update found at www.APsystems.com

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