



# SPC-100

USER MANUAL

Rev.01

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# Product Overview

## 1-1. Characteristic

- Real-time particle monitoring and control
- Precision measurement and long-term stability
- 0.3 $\mu$ m, 0.5 $\mu$ m, 1.0 $\mu$ m, 2.5 $\mu$ m, 5.0 $\mu$ m, 10.0 $\mu$ m 6-CH particle monitoring
- 268 \* 128 mono graphic LCD applied
- Simultaneous display of particle, temperature and humidity measurements
- RS485 communication (Modbus RTU)
- Wi-Fi communication Station Mode : TCP/IP, Wi-Fi(2.4GHz) communication support

## 1-2. Applications

- Semiconductor cleanroom particle, temperature, humidity measurements
- Particle, temperature and humidity measurement in pharmaceutical and hospital cleanroom
- Various semiconductor equipment
- IAQ (Indoor Air Quality) monitoring and control device for home and industrial
- Home and industrial air conditioner

## 1-3. Specifications

Model	SPC-100
Operating Voltage	12Vdc $\pm$ 10% (DC Adapter plug: inner diameter 2.1, outer diameter 5.5PIE)
Current consumption	Max. 350mA @ 12Vdc
Operating principle	Laser scattering
Measurement particle size range	>0.3 $\mu$ m, >0.5 $\mu$ m, >1.0 $\mu$ m, >2.5 $\mu$ m, >5.0 $\mu$ m, >10 $\mu$ m
Measurement range	0 ~ 10,000,000 pcs/L (1pcs/L = 28.3pcs/cf)
Counting efficiency	$\geq$ 50%@0.3 $\mu$ m , 100%>0.5 $\mu$ m ( 0°C ~ 40°C, 50 $\pm$ 10%RH )
Temperature measuring range	-40 ~ +125°C / $\pm$ 1°C
Humidity measuring range	0 ~ 100% / $\pm$ 5.0%
Wi-Fi output Protocol	Station Mode (TCP/IP Communication)
Digital Output	RS485 Modbus
RF frequency bands	WLAN: 2412-2472 MHz / BLE: 2402-2480 MHz
Maximum RF output power	WLAN: 19.8 dBm / BLE: 9.8 dBm
Operating Temperature	10... +60°C
Storage Temperature	0... +70°C
Dimension ( W*H*D)	110*185*44.3 (Wi-Fi Without Antenna)
Weight	387g

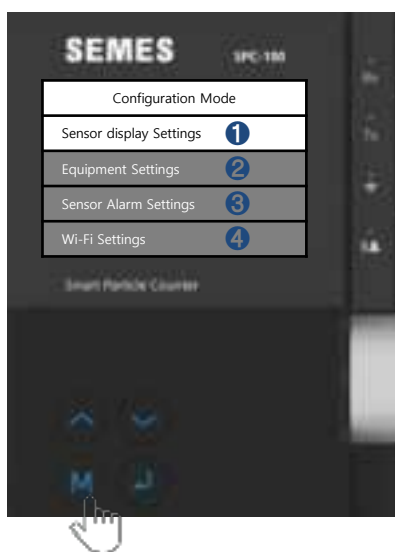
# Product Function and How To Use

## Operating configuration



KEY	KEY Name	Description
⬆	UP KEY	Move up and increase value
⬇	DOWN KEY	Move down and decrease value
M	MENU KEY	Enter configuration mode
➡	ENTER KEY	Enter

## Configuration Mode



Click the MENU button to enter configuration mode.

### ① Sensor Display Settings

Particle size range setting displayed on the initial screen

### ② Equipment Settings

Equipment Default Settings.

### ③ Sensor Alarm Settings

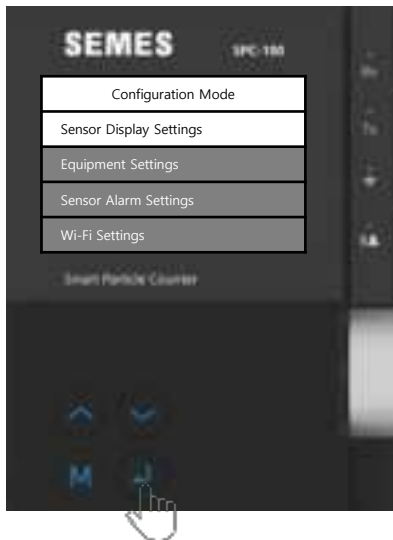
Set an alarm for each Particle Size Range.

### ④ Wi-Fi Settings

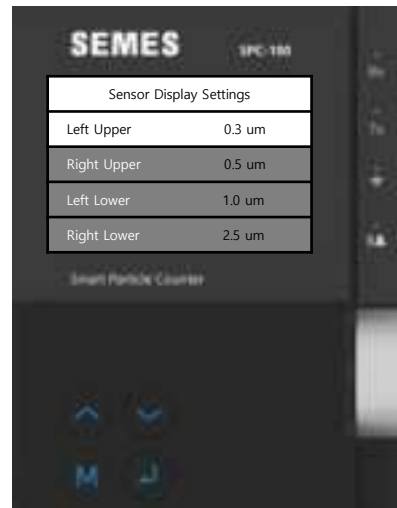
Settings required for Wi-Fi communication.

# Product Function and How To Use

## Sensor Display Settings

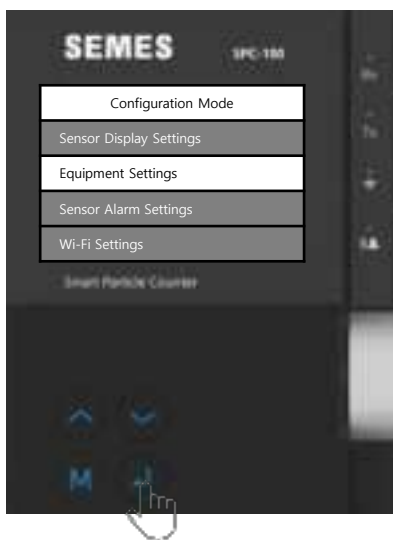


Click the ENTER button to enter Sensor Display Settings.

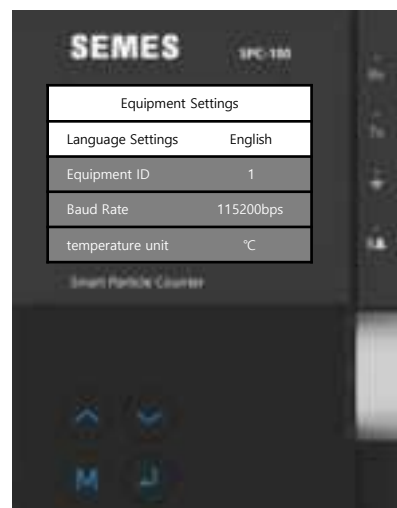


Particle size range setting displayed on the initial screen

## Equipment Settings



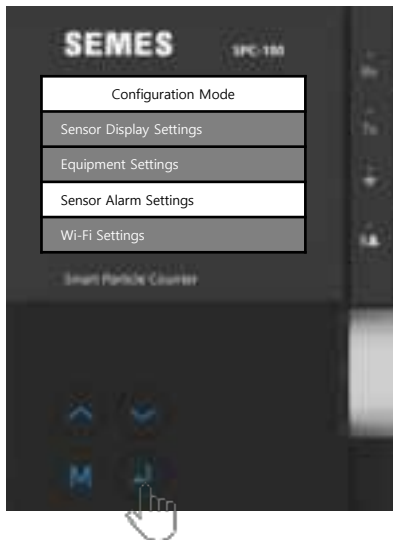
Click the ENTER button to enter Equipment Settings.



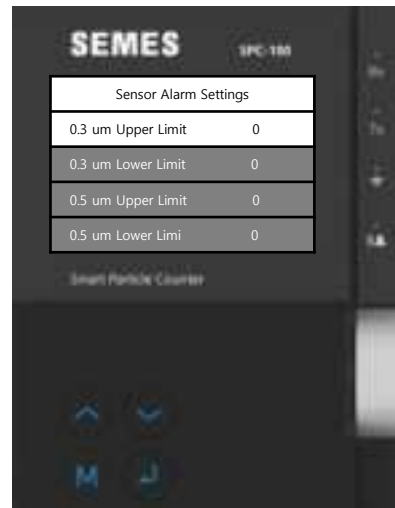
Equipment Default Settings.

# Product Function and How To Use

## Sensor Alarm Settings

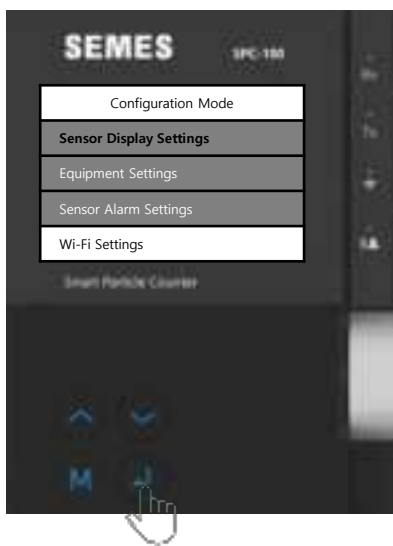


Click the ENTER button to enter Sensor Alarm Settings.

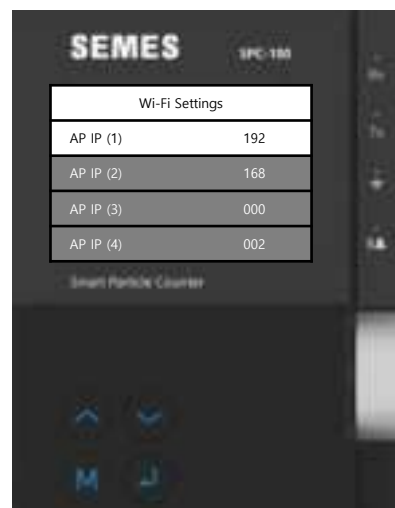


Set an alarm for each Particle Size Range.

## Wi-Fi Settings



Click the ENTER button to enter Wi-Fi Settings.



Settings required for Wi-Fi communication.

※ When using Wi-Fi mode, RS485 communication is not available.

# Product Connector Specifications

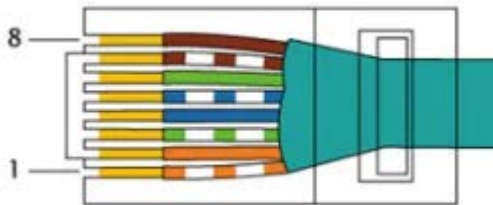
## Connector Specifications



Communication Connector  
RJ-45 8p8c (Dual)

Power Connector  
2.0PIE DC JACK (12V)

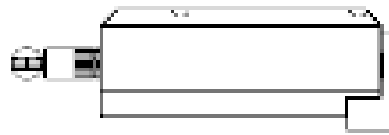
## Communication Connector Pin Map Specification



No	Pin Assigned
1	RS485-
2	RS485+
3	GND
4	GND
5	NC
6	NC
7	NC
8	NC

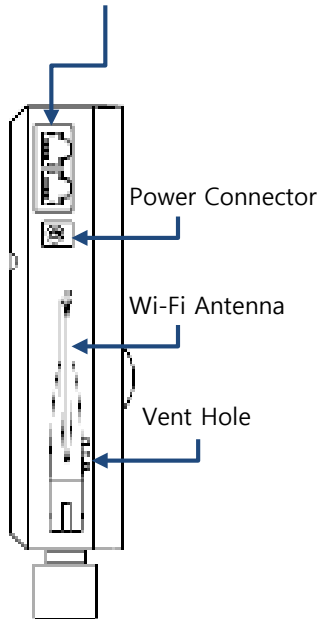
# Product Appearance

## Product Dimensions

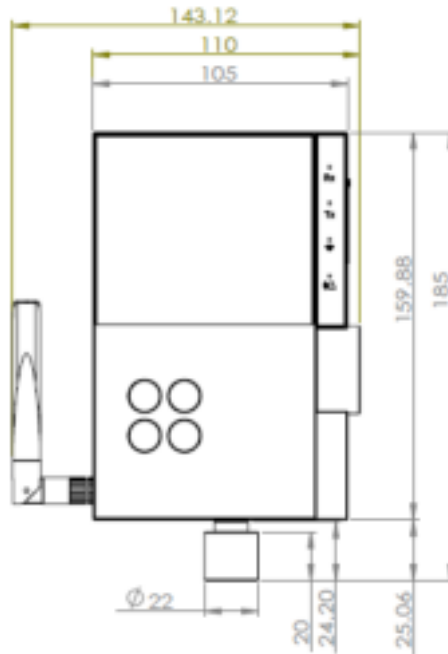


<UP>

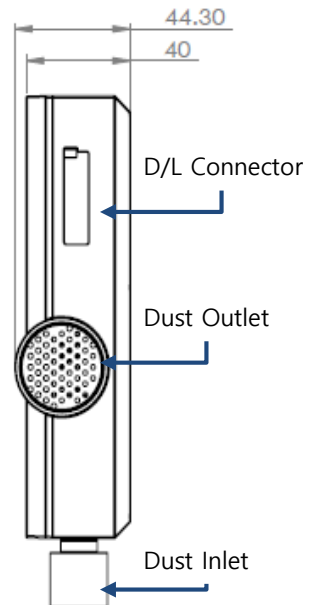
Communication Connector



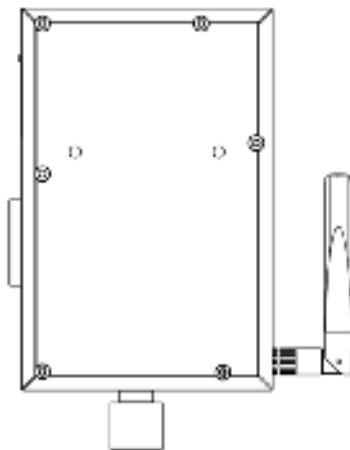
< Left Side >



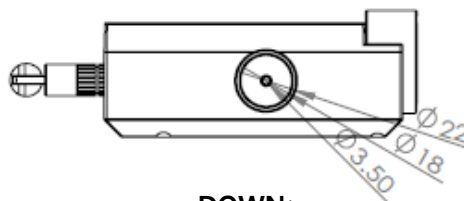
<Front>



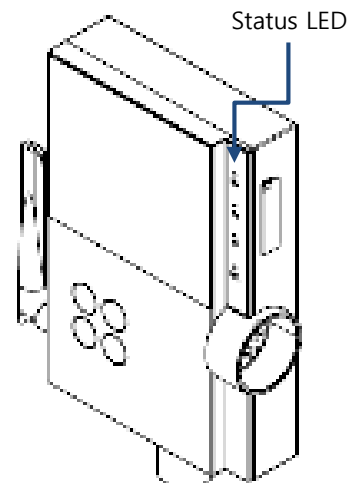
<Right Side>



<Rear>



<DOWN>



Status LED

# Products handling precaution

- There is a risk of electric shock to this product, so do not open the product while power is applied.
- Be sure to install this product on a fixed location such as a rack or panel.
- Do not touch the power plug with wet hands. It may cause electric shock or injury.
- Supply the power input within the specified rating range.
- Be careful not to let water or beverages enter the product.
- Clean regularly with a soft cloth or brush. If the dust inlet and outlet are blocked, it may cause product failure.
- To prevent inductive noise, separate wiring from high-voltage lines and power lines.
- Avoid installation in places subject to strong magnetism, noise, vibration and impact.
- When extending the sensor wire, use a shield wire and do not make it unnecessarily long.
- Sensor wire and signal wire should be wired independently away from power, power and load wires.
- Avoid using near devices that generate strong high-frequency noise (high-frequency welding machine, high-frequency sewing machine, high-frequency radio, large-capacity SCR controller).
- Some measurement errors may occur depending on the usage environment and usage method.
- Do not disassemble the product arbitrarily. (Warranty does not apply to products that have been disassembled.)
- We are not responsible for product damage outside of the warranty conditions specified by the manufacturer.
- It is recommended to calibrate once a year because it can be affected by factors such as temperature, humidity, and shock during the long-term use period.

※ Be sure to observe the contents specified in the handling precautions above as they may cause product failure.

※ The specifications and dimensions described in this user manual are subject to change without notice for improvement.



## **FCC Instructions**

### **FCC Compliance Statement**

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

### **FCC Interference Statement**

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

### **FCC Caution**

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

### **FCC Radiation Exposure Statement**

This equipment should be installed and operated with a minimum distance of 20cm between the radiator and your body.



This document contains information of products and processes in development. All information provided here is subject to change without notice. Information in this document supersedes and replaces information previously supplied in any prior versions of this document.

We do not guarantee the performance of this device in case of disassembling, operating without complying with instructions in this document.

Contact your IGS representative to obtain the latest forecast, schedule and specifications. Or It may be obtained by calling +82-2-6299-7536~7 or by visiting <http://www.igstech.kr>

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