



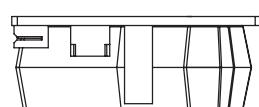
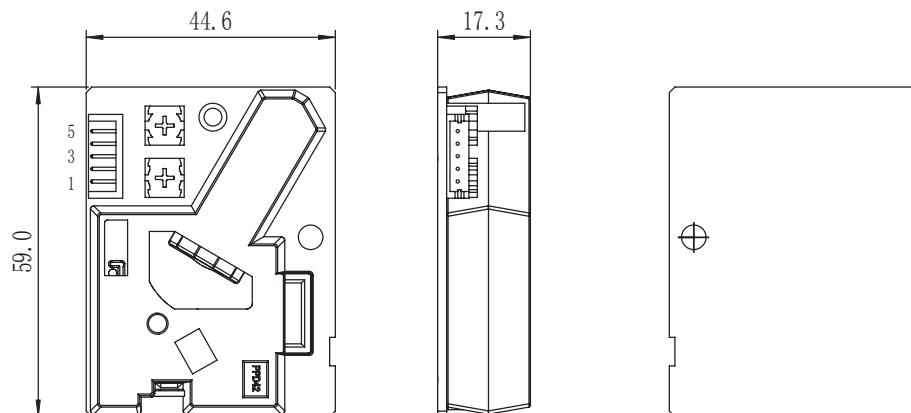
SENSOR
TECHNOLOGY

DC0001-000

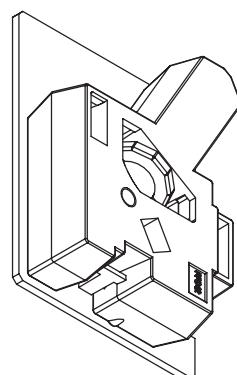
SPECIFICATIONS

■ Model:DC00-F05N-01

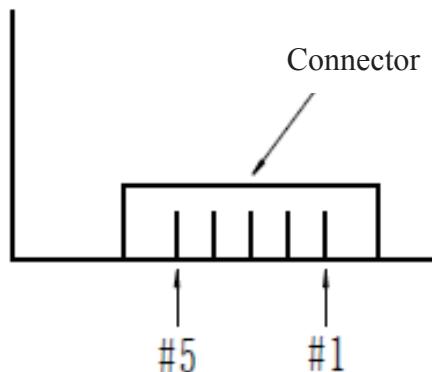
■ Appearance and Dimensions (mm)



CONNECTOR
CN:S5B-EH (JST)
1 : COMMON(GND)
2 : OUTPUT(P2)
3 : INPUT(5VDC 90mA)
4 : OUTPUT(P1)
5 : INPUT(T1) FOR THRESHOLD
FOR [P2]



■ Connection



Connector	Mark	Definition
#1	GND	Grounding wire
#2	P2	Output (P2)
#3	Vcc	Input (5VDC, 90mA)
#4	P1	Output (P1)
#5	NC	P2 control end

Illustration:

1. Output P1: the normal output pin with preset sensitivity. The smallest particle diameter that can be detected is $1\mu\text{m}$.
2. Output P2: the adjustable output pin. The sensitivity can be adjusted by the control pin. The default sensitivity is 2.5 times the sensitivity of Output P1. The smallest particle diameter that can be detected is $2.5\mu\text{m}$.
3. Control end #5: The minimum particle detection level of P2 can be adjusted by adding a resistance between this end and the GND.

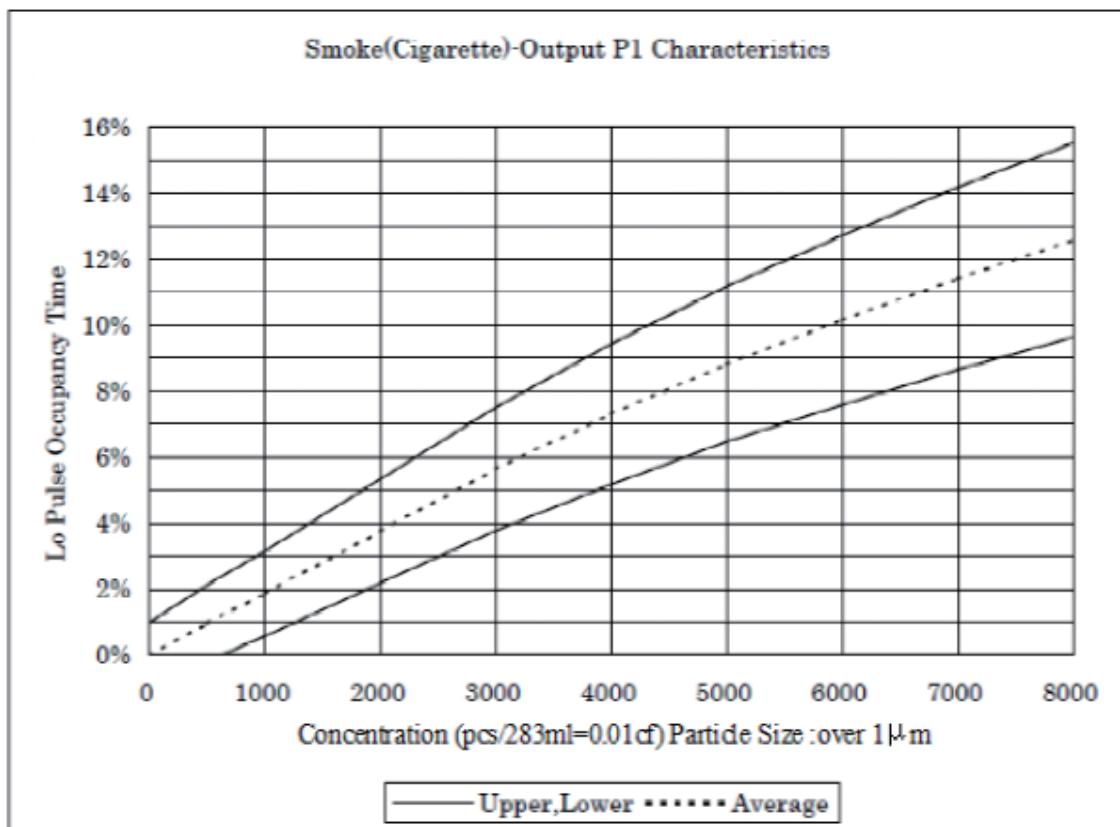
Resistance value of control end	The sensitivity of output pin P2
NULL	Default sensitivity (above $2.5\mu\text{m}$)
150K	Semi sensitivity (above $2\mu\text{m}$)
27K	The same sensitivity as the output pin P1

■ Electrical Parameters

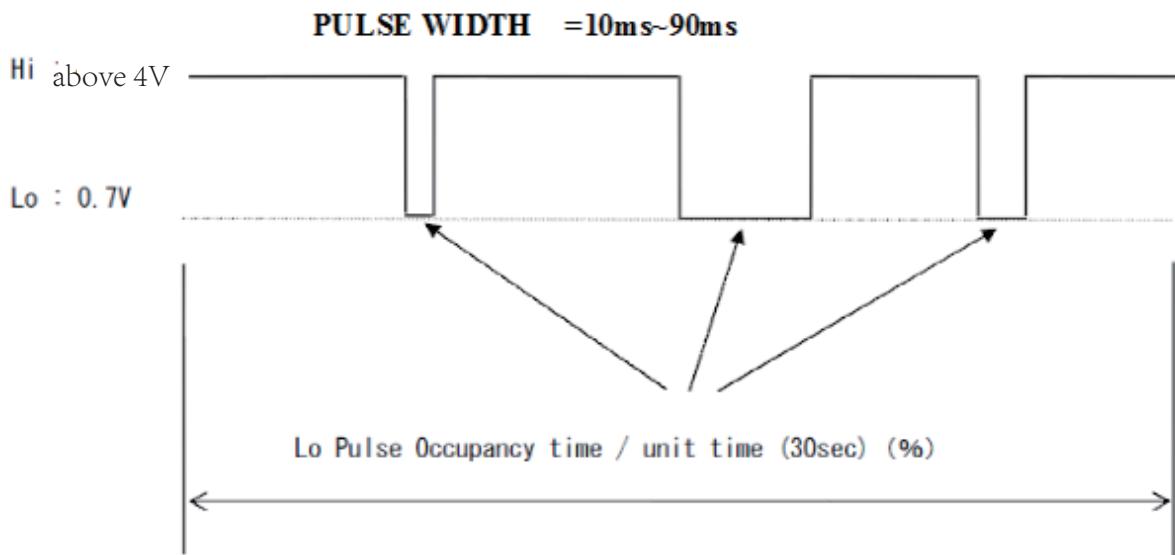
1. Absolute Maximum Rating

Parameter	Mark	Rated	Unit
Voltage	Vcc	-0.3to+7	V
Operation Temperature	Topr	-10 to 45	°C
Storage Temperature	Tstg	-30 to 60	°C
Operation Humidity	Hopr	0 to 95%	RH
Storage Humidity	Hstg	0 to 95%	RH

2. Sensor Characteristics Curve



Sensor characteristic curve



NOTE: Low Pulse Rate:RT=LT/UT*100%, pulse width output waveform PWM

3. Operating Environment

No.	Item	Content
1	Operating Power	DC 5V ±5% (CN1:Pin1=GND,Pin3=+5V) ripple voltage less than 30mV
2	Current Consumption	90mA
3	Dimensions	W59 × H45 × D18 (mm)
4	Weight	About 24g
5	Detecting particle diameter	About up to 1μm
6	Detecting concentration range	0~8000pcs/283ml
7	Output Mode	Negative logic pulse output. Lo time ratio% (unit interval 30seconds is suggested) Hi: about up to 4V; Lo: about 0.7V OP AMP ouput
8	The start time of detection	Around 1 min after power on (The Temperature stability time of resistor)

■ Precautions

- (1) The product is mainly designed for home applications. Do not use the product in medical devices, disaster prevention equipment or other applications that require high safety and high reliability.
- (2) As the product utilizes the Joule heating of resistor to generate upflow inside the housing, please use the product in vertical position ($\pm 3^\circ$).
- (3) Please consider the airflow around the sensor, as the turbulence of the upflow inside the housing could affect the sensor performance.
- (4) The lens is made of plastic material. Do not use organic solvent or abluent to clean the lens. Do not use any hard object to scratch the lens surface. For lens cleaning, sopped cotton swab may be used to wipe the lens, followed by dry cotton swab wiping.
- (5) Adjustment and inspection of this product should be performed with the triangular window closed. Please prepare a shade cover to cover the triangular window when use this product.
- (6) The power supply of this product should ensure that the ripple voltage is controlled below 30mV, especially when dynamic lighting is used to control the display LED.
- (7) Electromagnetic interference and power linear noise protection

Please make sure the metal shielding case at the top of the sensor is reliably connected with the GND of the sensor and subsequent systems to reduce external interference. The signal of the phototransistor is weak and susceptible to EMI. In order to prevent the signal received by the phototransistor from being influenced by the electromagnetic interference of the motor and the high voltage power supply, the metal shielding layer can be directly soldered to the ground wire of the system. In general, the metal shielding layer is sufficient to protect the system against the electromagnetic interference from the power supply. However, in order to prevent electromagnetic interference from power linear noise from the high pressure negative ion generator and the electrostatic precipitator, please install the dust sensor far away from the high voltage generator and pay attention to the linear noise from the noise filter.

After cleaning the cavity of the dust sensor, please cover all the holes of the case and do not let the dust enter the optical and measurement areas of the sensor.

(8) Installation

- The sensor should be installed vertically without being affected by the air flow induced by motor fan rotation. It is recommended to install the sensor on the front panel.
- Do not use the sensor at the place where there is steam, such as a bathroom or an air humidifier, as the visible vapor can be detected as particles.
- The infrared receiver tube in the dust sensor can be disturbed by the radiation of the light. Cover the central triangle hole of the dust sensor with a sponge to prevent external light from entering the lens of the sensor. (The center triangle hole has been covered with black foam at the factory.)
- Do not cover the holds at the upper and lower parts of the sensor which are used for air exchange.
- The hole in the upper center of the PCB plate is used to fix the sensor. Please use PH3 screw to fix it. Be careful and do not destroy or contact the inside of the sensor.
- The heating resistor is installed inside the dust sensor to form the air convection. The heated air flow travels from the bottom to the upper part. Therefore, the vertical installation of the dust sensor is important for the direction and velocity of the air flow into the optical region, which will affect the output signal of the dust sensor. Please maintain the vertical installation position ($\pm 3^\circ$).