

DATA SHEET



Sensor module for dust detection

Description



Characteristic features

- Light scattering method to detect particles bigger than 1 µm
- Stable detection of house dust and cigarette smoke
- Sensitive detection of indoor allergenes and triggers of asthma
- Long-term sensitive
- Compact dimensions, lightweight
- Easy installation and maintenance
- Inexpensive

Areas of application

- Air Purifiers
- Air-Analysis and Control-Systems
- Airconditioners
- Vents & Fans
- Smoke exhaust, smoking launches
- Innovations for allergy sufferers

Technical data

STBM-271	
Measuring principle	Light scattering method
Measuring range for particles	Particles with dimension > 1 µm
Output signal	PWM, pulse width modulation
Detectable range of concentration	0 – 1.4 mg/m ³
Operating temperature range	-10 to + 65 °C
Operating humidity range	< 95 % RH
Dimensions (W x H x D)	59 x 45 x 20 mm
Connector	2mm pitch connector type (GIL-S-5P-S2L2-EF)
Time for stabilization	One minute after power on
Power consumption	90 mA
Supply voltage	DC 5 V ±10 %
Medium to measure	Ambient air, smoke, dust, mite dust, cigarette smoke, pollen, spores and other allergenes
Article No.	STBM-271

Features

The STBM-271 is a sensor module made for detection of dust, fine dust and pollen in ambient air starting at a particle dimension of 1 µm. The highly sensitive optical sensor measures particles of smoke, dust, cigarette smoke, pollen as well as house dust spores and mite dust by the scattering of light from the particles. The built in heater provides a self-aspiration. Aspirated Air is then irradiated by the focused infrared light of a LED. An optical sensor measures the scattered light and transforms it into a pulse signal. The width of the pulses is proportional to the particle concentration.

The module offers a 2mm pitch connector type. With its dimensions of (W x H x D) 59 x 45 x 20 mm and very light weight of 25 g this sensor module is ideally suited to control Air-Purifiers, Vents and Airconditioning Systems as wells as special applications for people suffering from allergies. Beside cigarette smoke it also detects very small house dust particles and other indoor allergenes. This sensor module for dust detection provides excellent saving potential regarding automatic ventilation. For example the room ventilation can be controled in proportion to the air pollution which reduces and optimizes the hours of operation. This also applies to air ventilation in smoking areas or air conditioners.

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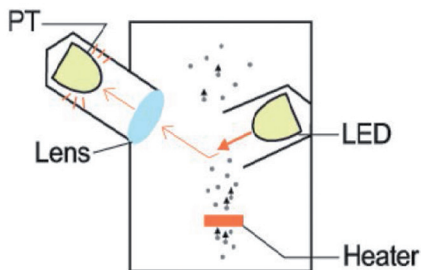


Sensor module for dust detection

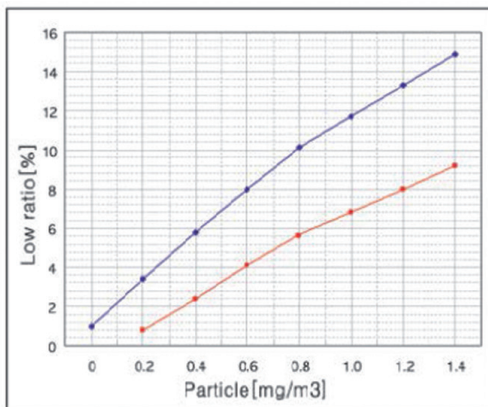
Versions

Measuring range	Concentration	Art.-No.
Particles > 1 µm	0 – 1.4 mg/m ³	STBM-271

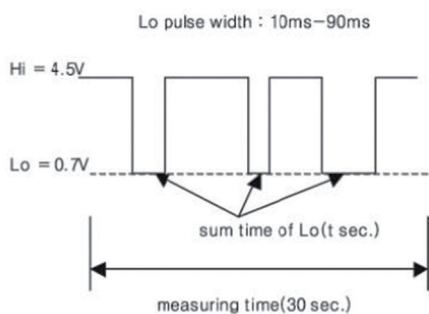
Function-Sketch



Detection of cigarette smoke

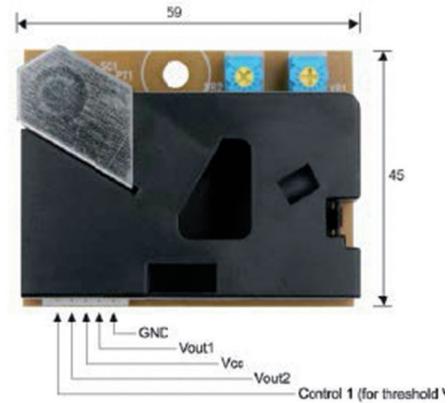


Characteristics of an output signal while detecting cigarette smoke.



$$\text{Low ratio [\%]} = \frac{t(\text{sec.})}{30(\text{sec.})} \times 100$$

PIN Description



Pin Nr.	Function
1	Control 1
2	Vout 2 output
3	Vcc, power supply
4	Vout 1 output
5	GND, ground

For further information, please visit: www.bb-sensors.com