

Weight Type Dust Sensor

DW0001

■ Features

- Compact size for easy installation
- Can detect particles as small as 1µm in diameter
- Low power consumption



■ Introduction

The DW0001 is a weight-type dust sensor which consists of an optical sensing system, including infrared LED, photoreceiving tube, lens, shading housing, shielding case and circuit. When the airflow carrying dust particles passes through the detection area illuminated by the infrared LED, the forward scattering light is received by photoreceiving tube. After signal amplification, a voltage signal proportional to the dust concentration is output.

■ Applications

- Air purifier
- Air conditioner
- Air quality monitor

■ Electrical Parameters

1. Absolute Maximum Rating

Parameter	Mark	Rated	Unit
Voltage	Vcc	-0.3to+7	V
Transmitting Tube Controlling Terminal	Vled	-0.3 to VCC	V
Operation Temperature	Topr	-10 to +65	°C

Storage Temperature	Tsol	-20 to +80	°C
Ripple Voltage	Vrp	Max100	mV

2. Electrical, Optical Characteristic

Parameter	Mark	Condition	MIN	TYP	MAX	Unit
Detectable Partical Diameter	D	*1 *2	1.0	2.5	—	um
Sensitivity	K	*1*2*3	0.35	0.5	0.65	V/ (0.1mg/m3)
Dustless Output Voltage	Voc	*2*3	0	—	1	V
Output Voltage (Vcc=5V)	VoH	*2*3RL=4.7kΩ	3.4	—	—	V
LED Transmitting Terminal Current	ILED	*2LED terminal voltage = 0	—	10	20	mA
Input Current	Icc	*2RL =∞	—	11	20	mA

*1 Sensitivity is specified by the amount of output voltage change when dust density changes by 0.1 mg/m3.

*2 Input condition is LED input terminal

*3 Output sampling timing pulse

■ Appearance & Dimensions (Unit: mm)

