



敏思传感技术有限公司

MinSi (Henan) Sensing Technology Co., Ltd.

产品承认书

SPECIFICATION

客户名称 CUSTOMER	
产品名称 PRODUCTION	Single-channelpyroelectricflamedetectorcom-bination
产品型号 MODEL	MS-FLMS-11CSPT
版本号 VERSION NO	A2.0

敏思传感技术有限公司

电话：400-8638-732

网址：[http:// www.minsisensor.com](http://www.minsisensor.com)

邮箱：[minsi@ minsensensor.com](mailto:minsi@minsensensor.com)



客户确认 CUSTOMER CONFIRMATION	审 核 CHECKED BY	编 制 PREPARED BY
	张毅	王洪波



Statement

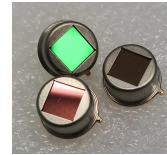
Without the written permission, any part of this manual shall not be copied, translated, stored in database or retrieval system, also can't be spread through electronic, copying, record ways.

Thanks for purchasing our product. In order to let customers use it better and reduce the faults caused by misuse, please read the manual carefully and operate it correctly in accordance with the instructions. If users disobey the terms or remove, disassemble, change the components inside the sensor, we shall not be responsible for the loss.

The color, style and size of the product you buy are subject to those of the actual product.

We are devoting ourselves to products development and technical innovation, so we reserve the right to improve the products without notice. Please confirm it is the valid version before using this manual. At the same time, users' comments on optimized using way are welcome.

Please keep the manual properly, in order to get help if you have questions during the usage in the future.



product description:

MS-FLMS-11CSPTsingle channel current type pyroelectric flame detector (combination) based on lithium tantalum acid (LiTaO₃) single crystal pyroelectric effect with low-noise operational amplifier embedded detection circuit; TO-5 metal shell package, containing two independent sensitive element chips, with thermal compensation function; with precision narrow band filter as the infrared optical window; the combination of three detectors can better eliminate the sensor system error and ambient light influence for more accurate detection. It can be widely used in flame detection, compared with the voltage type pyroelectric flame detector (combination), its detection distance is longer.

Maximum rated temperature:

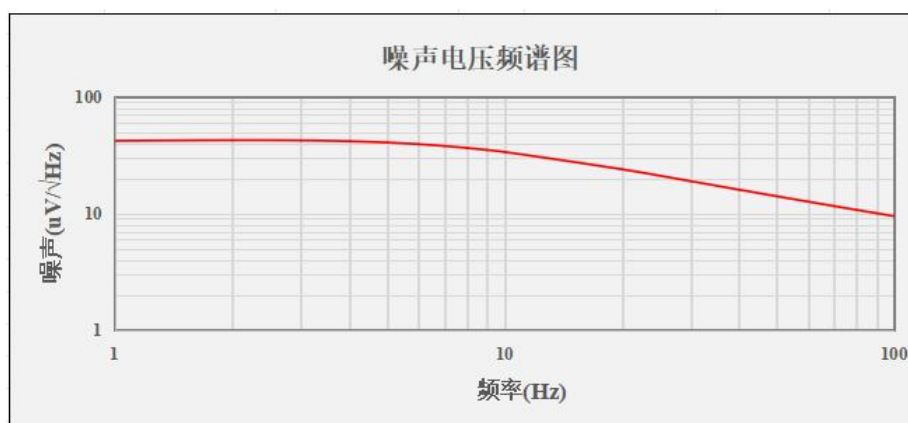
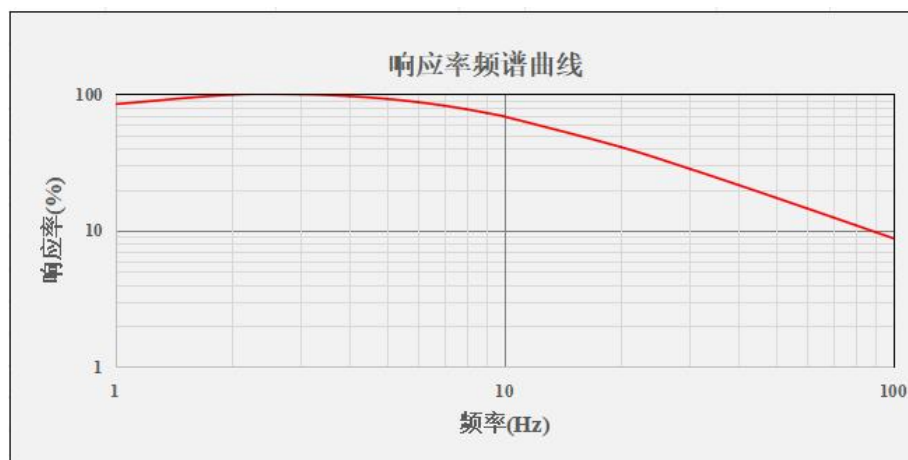
Parameter	Representative value	Unit	Remarks
Working temperature	-40 to + 85	°C	
Storage temperature	-40 to + 85	°C	

performance parameter:

Parameter		Representative value	Unit	Remarks
Window size		4.9*4.9	mm	
Compensating gage		Have		
Angle of field	Least value	120	°	
Voltage response rate	Representative value	85,000	V/W	500K, 10Hz, 25 , no window and filter
Noise	Crest value	50	uV/√Hz	10 Hz
Detectivity	Representative value	4.0*10 ⁸	cm*Hz ^{1/2} *W ⁻¹	500K, 10Hz, 25 , no window and filter
Thermal time constant	Representative value	150	ms	
Service voltage	Representative value	2~6	V	Recommended: 3.3~ 5V
Output bias voltage	Representative value	V/2 ± 10%		25°C
Output load resistance	Representative value	470	K Ω	



Detector spectral characteristics:

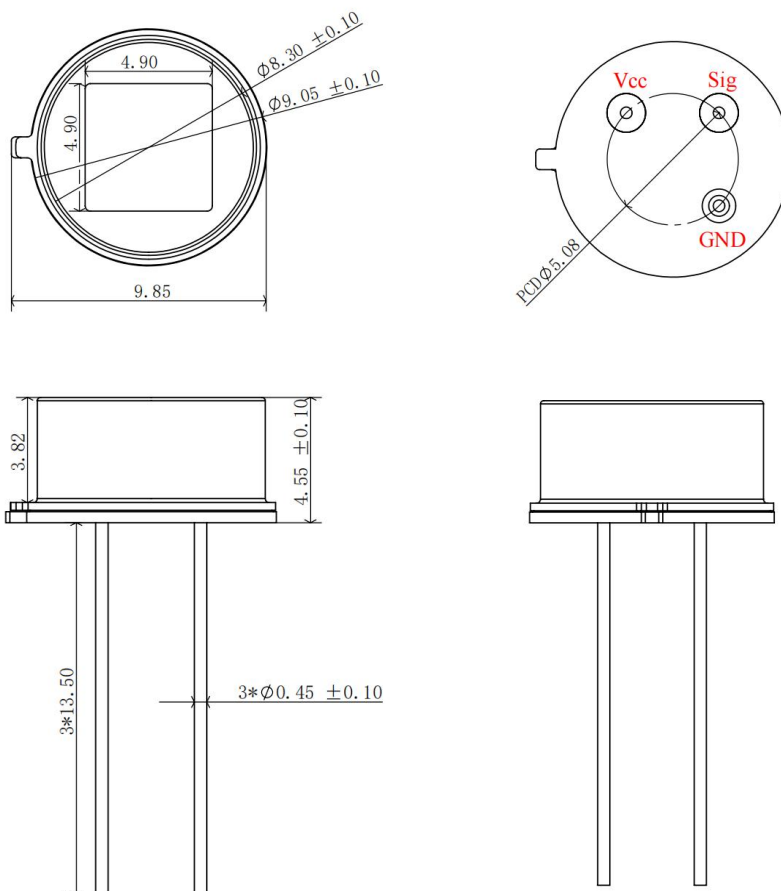


Spectral properties of the filter:

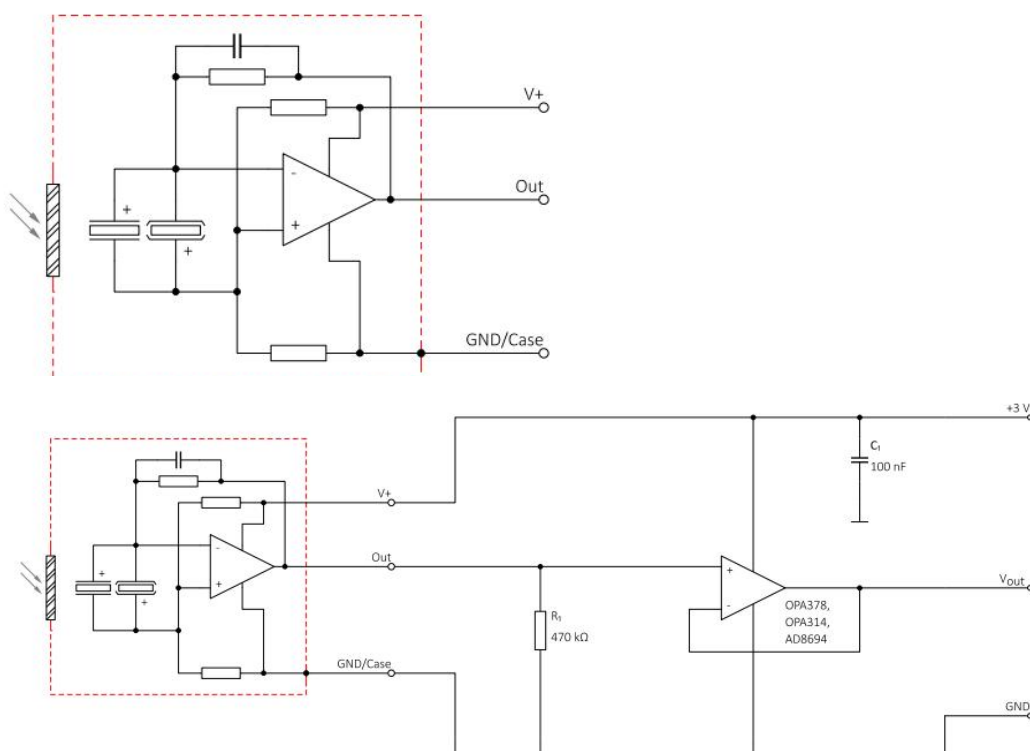
Product model	MS-FLM-11CSPT	MS-FLM1-11CSP	MS-FLM2-11CSP
Filter parameter index	CWL:4300/FWHM:600	CWL:3800/FWHM:180	CWL:5000/FWHM:220
Rejection zone	UV~11um		



Plot of the detector package dimensions



Detector internal circuit and test circuit diagram:





matters nee attention:

(1) Thermoelectric infrared detectors are typical AC working devices. When the target is still and the temperature is constant, the thermoelectric infrared detector has no signal output. The signal output is only when there is transient target movement, or temperature change, or modulation by a chopper;

(2) During the operation, use and preservation of the pyroelectric infrared detector, a rapid temperature change should be avoided, and the detector can keep operating normally when the rate of temperature change is less than $1^{\circ}\text{C} / \text{minute}$. If the detector warms up too fast, it may cause damage to the lithium tantalate glass slide;

(3) Thermoelectric infrared detector has piezoelectric, to sound, electromagnetic waves, vibration are very sensitive, the use of pyroelectric infrared detector, appropriate shock absorption and shielding is necessary;

(4) When welding the pyroelectric infrared detector, it is recommended to weld more than 4mm, the welding time should be as short as possible, and clamp the root of the pipe pin with tweezers to help heat dissipation to prevent the damage of the detector. To prevent the components from falling, and pay attention to electrostatic protection, the spare components should be dry and stored;

(5) When the pyroelectric infrared detector is operated, the temperature of the detector is changed due to the hand contact, especially after welding, so the detector needs to work again, need to wait for a period of time, until the temperature of the detector body can resume normal operation. After the detector is heated, if the power supply is connected immediately, the detector may be in the off state;

(6) The operating environment of the detector should be kept clean and tidy, avoid touching the filter directly with hand or hard objects, and keep the window clean; when there are pollutants in the window, gently wipe clean;

(7) Avoid the air tightness damage of the detector caused by the root force of the detector base.