NUMENS

Professional Safety Products

405 Series flame detectors
Instruction Manual

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Website

For more information, including product datasheets and other support material, please view our website at www.numens.com

1. Summary

IR2

UV

405 series

405 Series flame detectors (short-called the flame detector as follows) provide a new generation of fire detection capability and technical standards. The flame detectors which adopt a specially designed pieces of narrow-band infrared sensors and Blind type solar daylight UV sensors can distinguish the real flame radiation and interference sources effectively and reduce the impact of environmental factors on detector extremely by means of the built-in 16-bit microprocessor and proprietary signal algorithm processing. The detector can set 5 different Sensitivity levels in order to meet more needs in different location. We collected a large number of experimental data through market research and customers' feedback. We have made a big improvement based on its existing in the hardware circuitry and software algorithms.

405 Series flame detectors contain the following two kinds:

405/IR2	dual-wavelength Infrared flame detector
405/UV	Single UV flame detector

2. Main Features

Built-in16-bit high-speed, low-power, high-performance, high-precision data processing chip. Adopt narrow-band infrared sensors and patented solar-blind UV sensor.

It has multi-level sensitivity in order to meet more occasions. Also they can detect flam mule earlier.

Detection angle can be able to reach to 120 Degree/UV (110 Degree/IR2).

Detection range can be able to reach to 35m.

The perfect algorithm combines optimally the flame detection and false alarm capabilities. Detector is fit to a variety of fuels.

Apply to heavy industry applications.

Explosion-proof designs can be used in hazardous area of industrial sites.

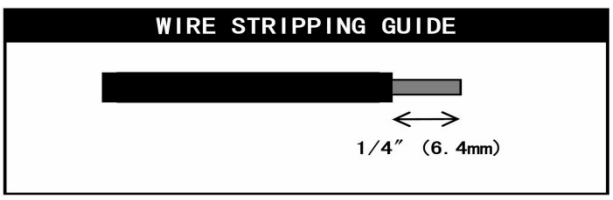
Low maintenance cost, easy to update and improve.

3. Technical parameters

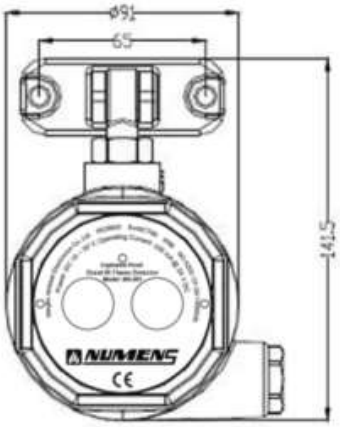
	405
Operating voltage:	DC24V (range DC18V～30V)
Operating Current:	Monitor≤25mA , Alarm≤35mA（relay）
Angle range：	120°/UV(110°/IR2)
Sensitivity level：	1~5 level adjusted
Detection range	≤35m
Output:	Delay, Alarm relay, normally open contact output, 2A@30VDC
Operating Temperature:	-10°C～55°C
Operating Humidity:	0～95％RH
Storage temperature:	-40°C～85°C
Explosion proof level:	EX d Ⅱ CT6(Explosion proof)
Protection level：	IP66
Weight：	1KG
Housing material:	Aluminum alloy, painted surfaces

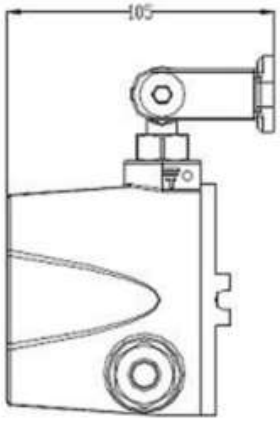
4. Structure and installation

Caution: Before installing detector, please cut off the power supply of it.
Notice: All wiring must comply with relevant standards and regulations.
Notice: Detectors are installed in Explosion proof areas, the wiring of detector should be connected by power limit and be controlled. The setting of flame detector is subject to 《automatic fire alarm design standards》 (GB50116-98).
Check whether the external cable is open circuit, short circuit fault or not.
Install the detector according to the drawing as follows, adjust appropriately the detector view angle in terms of the scope of protection.
Notice: All connections adopt more than 1.0 square wire, the end of connections cut about 6mm Isolation jacket, then connect to the terminal blocks of 405 series flame detectors.
Warning: expose lead wire too much or too less may cause wrong connection.

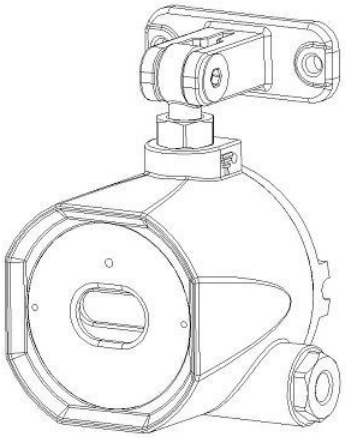


- The shape of detector(IR2/UV) as follow:

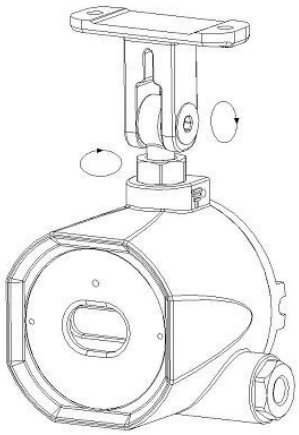




- Installation as follows:

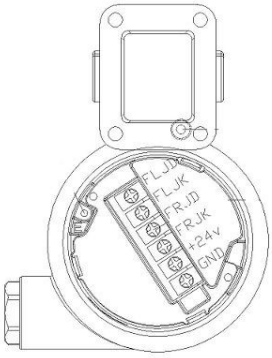


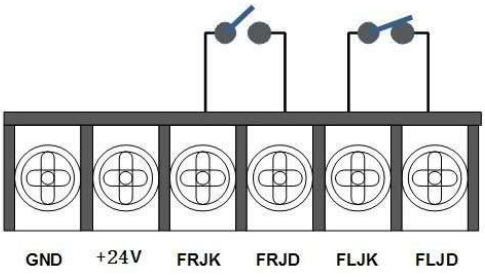
Wall surface mounting



Flip down mounting

5. Wiring





FLJD/FLJK ： Normally closed contact output of the fault relay;
FRJD/FRJK ： Normally open contact output of the alarm relay;
GND/+24V ： Dc 24V supply;

6. Package, transport and storage

The flame detector packages with carton in whose interior fills with damping foam. Flame detectors can be transported by rail, road or air transport, but should pay attention to handling, prohibit using the handling tools to hit the upper surface of the box, in order to avoid damaging to the panel of device.

7. Test

Before testing, announce the related management department that fire detector system is testing that need to cut off the maintenance area or the systemic logic control functions in order to avoid unnecessary alarm linkage. The flame detector must be tested after installation and maintenance each time.

Detector executes initializing setting after powering on, the green lamp is always on, then ends after 30 seconds. Normal operation, the number of flashes from green light represents the current sensitivity level.

Before testing, examine whether the LED flashes or not, if not flash, the detector is not powered on (check the connections), or damaged (return to repair).

Field test tool is alcohol lamp or flame simulator. Simulate fire situation until the detector alarms.

After the test, announce the related management department that the system returns to normal. If the detector can't pass these tests, you should be returned to repair.

Note: The flame detector does not have any internal parts which user can debug. Replacing any components or adjusting circuits are likely to damage the performance of the device without the manufacturer's agreement.

8. Maintaining

Important matters: Flame detector must be regular testing and maintenance in accordance with the national standards and the related regulations. Each detector must be cleaned at least once a year and be tested and maintained each month.

Before cleaning, announce the related management department that the system of flame detector will stop working temporarily for maintenance.

Cut off the area which will be maintained or the systemic logic control functions in order to avoid unnecessary alarm linkage.

Clean dust and impurities on the front of the detector by vacuum suction or compressed air.

If the lens has dirt, use the alcoholic cotton to wipe the lens, prohibit scratching the lens by hard object.

Follow the above procedure to test the detector after the cleaning of the detectors.

9. Appendix

- **405 Series flame detectors inside the package one;**
- **Instruction one;**
- **Packing list one;**
- **Accessories a pocket.**

Website

For more information, including product datasheets and other support material, please view our website a www.numens.com.

Contact Us

For sales and specific enquiries, please contact our sales office by telephone or email. Enquiries can also be submitted through our website.

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