

AT-FD04 Explosion-Proof Thermal Imaging Flame Detector



1. Product Overview

The AT-FD04 combines visible, near-infrared, and long-wave infrared imaging with deep-learning algorithms for intelligent fire detection. It detects early-stage temperature anomalies before flames appear and supports real-time video monitoring, recording, and post-event analysis. Built with a robust explosion-proof housing, the detector ensures stable operation under high temperature, humidity, and explosive gas environments.

2. Product Features

- Infrared thermal imaging converts radiation into temperature maps for early detection.
- Integrated visible and infrared imaging enables comprehensive 3D fire monitoring.
- Configurable temperature thresholds (point, line, area) with alarm delay and accumulation.
- Independent alarm outputs for flame and temperature signals.
- Masking function for fixed heat sources to avoid false alarms.
- Excellent resistance to sunlight, electric arcs, welding, smoke, and dust.
- Detects tiny flames, response time less than 10 seconds, detection distance up to 100 meters.
- High-definition video output: 2MP, 3MP, or 5MP options.
- Stainless steel 304 housing, IP67 protection, explosion-proof grade Ex d IIC T6 Gb.

3. Application Scenarios

- Power plants (thermal, hydro, nuclear, wind)
- Oil depots, gas stations, LNG terminals



- Chemical and petrochemical facilities
- Coal mines, tunnels, and flammable dust areas
- Aerospace and ship manufacturing
- Warehouses, logistics centers, and printing plants
- Banks, data centers, and telecom stations

4. Technical Specifications

Parameter	Specification
Type	Explosion-proof
Thermal Imaging Lens	7 mm
Pixel Size	12 μ m
Spectral Range	8–14 μ m
Temperature Range	-20°C to +550°C (Options: -20°C to +150°C / +100°C to +550°C)
Thermal Sensitivity (NETD)	\leq 50 mK @ F1.0, 300K
Visible Lens	12 mm
Sensor	1/2.8" CMOS
Resolution	2MP / 3MP / 5MP optional
Minimum Illumination	0.0001 Lux @ F1.2
Video Output	ONVIF protocol, OSD display
Operating Temperature	-20°C to +70°C, \leq 95% RH (non-condensing)
Power Supply	24VDC (\pm 10%)
Explosion-proof Grade	Ex d IIC T6 Gb (C-class)
Protection Level	IP67
Housing Material	Stainless Steel 304
Dimensions	Φ 152 mm \times H280 mm
Installation	Wall / Bracket / Custom mount

5. Compliance & Certification

- GB15631–2008 "Special Fire Detectors"
- GB/T3836.2–2021 "Explosive Atmospheres – Flameproof Enclosure 'd'"
- GB/T28181–2011 "Video Surveillance Networking Technical Requirements"
- CCCF Certified | Explosion-proof Grade IIC T6 Gb | IP67 Protection

