



Gas | Flame | Fire Detection Systems

An ISO 9001:2015 Certified Company

ARCIS-U25 FLAME DETECTOR



SENSOR SPECIFICATIONS

Model	ARCIS-I25 Series and ARCIS-U25 Series
Detection Object	Combustion of hydrocarbons and non-carbonaceous substances (Such as gasoline, alcohol, natural gas, hydrogen, etc.)
Detection Principle	ARCIS-I25 / ARCIS-3I25: Multi-beam IR sensing with temporal and spectral analysis to validate flame. ARCIS-U25 Series: Dual-spectrum fusion, both UV and IR must be detected to confirm flame. Logic processed by STM32G0B1RET6.
Spectral Range	ARCIS-U25: UV: 185 nm ~ 260 nm ARCIS-I25 and Series: IR: 4.48 μm ~ 5.0 μm ARCIS-U25 Series: UV: 185 nm ~ 260 nm IR: 4.48 μm ~ 5.0 μm
Output Signal	Relay Outputs: 2x SPDT, 5A @ 230VAC or 5A @ 30VDC Analog Output (DAC + XTR111): 0–20 mA loop
Response Time (Sensor)	Level I: 6–10s (Fast alarm, non-interference) Level II: 15–18s (Reliable, clean environments) Level III: 22–26s (Reliable in interference) Level IV: 3–4s (Demonstration mode)
Logic Judgment	ARCIS-I25 / ARCIS-3I25: Multibeam IR correlation (IR only) ARCIS-U25 Series: OR Logic: Valid flame when both UV and IR signals are active
Adjust Method	Magnetic rod-based configuration (no contact required)
Detecting Distance	60 metres at 0.3m × 0.3m flame source (fuel: n-heptane)
Operating Environment	Temperature: –20°C ~ +60°C Humidity: 15% ~ 90% RH (non-condensing)
Dimensions	Sensor: Ø 56 mm × H 21.5 mm System: Approx. 150 mm × 100 mm × 60 mm
Electrical Supply	Input Voltage: 18–30V DC Internal Regulation: 5V and 3.3V Total Power Consumption: < 2.5W
Fault Detection & Recovery	Fault Input: Active LOW Auto Reset: Voltage Regulator Based Control On Fault: Relays disabled, 2 mA analog output

ENCLOSURE SPECIFICATIONS

Enclosure of Transmitter	Flameproof (FLP) / Explosion Proof (Exd)
MOC of Transmitter	Aluminium Die Cast
Type of Ingress Protection	IP66 as per IS/IEC 60529:2001 (Reaffirmed 2014)
Size	131 × 145 × 184 mm (Approx.)
Weight	1.9 Kg (Approx.)
Electrical Connection	M20 × 3
Mounting	Canopy / Pipe Mount

ELECTRICAL SPECIFICATIONS

Supply Voltage	12–32 VDC, 24 VDC Nominal
Power Dissipation	≤ 1.0 Watt (at 5V ZRP module + DAC, relays, etc.)
Supply Current	Typically, 40–100 mA @ 24 VDC
Electrical Connections	3C × 1.5 mm² copper, shielded & armoured cable
Overvoltage Protection	Yes, up to 36 VDC transient tolerance
Analog Output (4–20 mA)	250 Ω max. load (including cable resistance)

Approval & Certification

Certification	Tested for Ex'db IIC T6 Gb, Extb IIIC T85°C Db IP66 from CIMFR, Dhanbad & PESO Approval*
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