

QUARTAS-500

Single Zone Aspirating Smoke Detector

AVA PREVENT

The Quartas 500 series offers industry-leading aspirating smoke detection technology, combining exceptional performance with cost-efficiency, specifically engineered for compact environments.



- Alarm Sensitivity Range: 0.005~20% obs/m
- Four Alarm Levels
- 7 Relay Outputs
- 3 in 1 Control/Display/Programmer Front Panel
- RS485 Network (500s Model)
- Support Modbus RTU Open Protocol (500s Model)
- Listings / Approvals



The Quartas utilizes a **high-power Blue LED** as its detection light source, ensuring exceptional sensitivity to small smoke particles during the incipient stage of a fire. The short wavelength of 470 nm blue light is highly responsive to smaller particles, making the Blue LED an optimal choice for detecting particles across a wide range of sizes, from the smallest to the largest.

Employing Large Volume "**Three-Dimension**" detection, Quartas utilizes a specially engineered smoke chamber structure, resulting in a significantly large total scattered light signal. This enables a more accurate representation of the actual concentration of smoke in the air.

The Quartas **Smart Smoke Level** (SSL) algorithm automatically activates upon power-up of the device. Operating continuously, 24/7, it gathers data on background particle levels. The algorithm calculates the average background particle level and uses it as the reference point (zeroing) for detection, ensuring consistent performance and minimizing nuisance alarms.

The Quartas **3-in-1 Display** provides a versatile interface for monitoring operational conditions, executing control functions, and programming detector parameters.

- **Display Mode:** The Display Mode delivers real-time data including smoke value, Normalized flow value as a percentage, Flow Raw value, Device address, Active Events & codes. It provides 20 segment smoke level bargraph, 4 Fire Alarm Indicators, 4 Faults Indicators and the Isolator Indicator
- **Programmer Mode:** In Programmer Mode, users can configure all functional parameter settings such as alarm threshold adjustments, Fan speed alterations, and address changes.
- **Control Mode:** The Control Mode enables users to execute various actions including Reset, Isolate/De-isolate, Silence, and LED Test.



Quartas 3 in 1 Front Panel

Specification

Smoke Detection Principle

- Forward Light Scattering Mass Detection

Smoke Detection Range

- 0.001~25% obs/m

Alarm Sensitivity Range:

- 0.005~20% obs/m

Area Coverage

- 1860m²

Aspirator Speed

- 1 ~ 10

Pipe Length (Linear)*:

- 100m

Pipe Length (Branched)*:

- 240m

EN54-20 Class A/B/C*:

- 30/60/60

Sampling Pipe

- Material: ABS/UPVC
- OD: 25mm

Alarm Levels and Time Delay

- Alert (0~60 sec.)
- Action (0~60 sec.)
- Fire-1 (0~60 sec.)
- Fire-2 (0~60 sec.)

Environment Smoke Learning

- 24hours, 365days Non-Stop Smoke Background Level Learning

Flow Detection Principle:

- Heat Mass Detection

Flow Monitoring

- Pipe Flow Normalize to 100%
- Flow High and Flow Low Fault
- Adjustable Flow Detection Sensitivity

**Note: Per EN54-20 Class A Sensitivity. Please refer to AVA design manual for the details about pipe length and the number of sampling holes.*

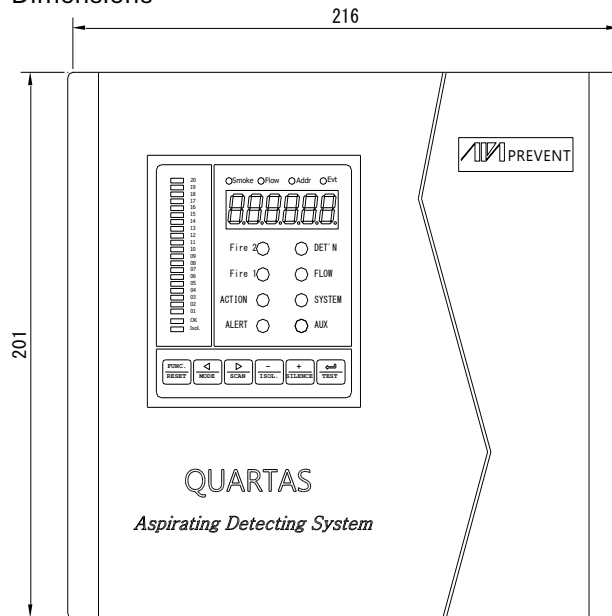
The AvaFlow air sampling pipe network design tool can be used to calculate the maximum transport time and sampling hole sensitivity.

QUARTAS-500

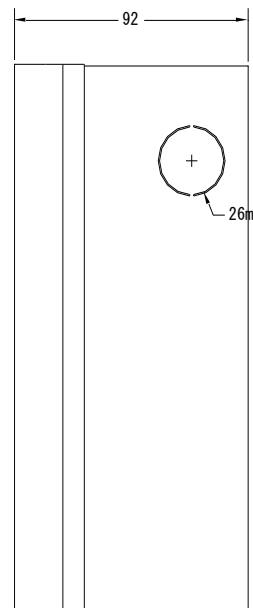
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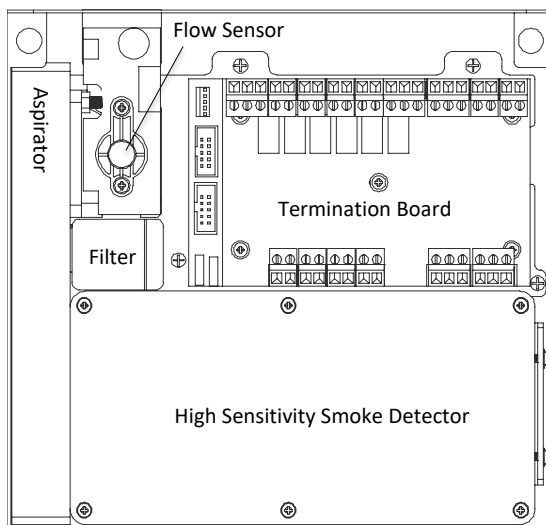
Dimensions



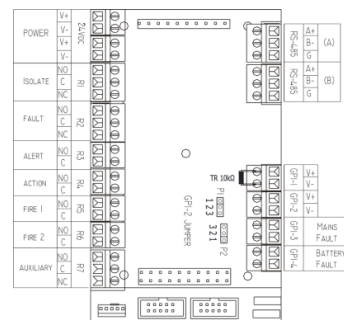
Unit: mm



Internal Structure



Termination Board



Relay Output

- 7 Relays on Termination Board (Configurable)
- Rating: 2A@30 VDC

General Purpose Inputs

- 4xGPIs (Configurable)
- GPI Functions:
 - Reset/Isolate/Silence/Test/Scan/Mains Fault/Battery Fault/Power Fault
 - Sensitivity Mode 1/Sensitivity Mode 2/UDI-1/UDI-2/UDI-4/UDI-5

*Note: UDI, User Defined Input

Communication(500s Model)

- RS-485 Network
- Maximum number of devices on Network: 250
- Built in repeater
- Maximum cable length between two adjacent devices: 1.2km
- Support Modbus RTU open protocol

Event Logs

- Number of Events: 183,000
- Event Type:
 - Alarm/Fault/Operation/Smoke/Flow/Auxiliary Gas Sensors

Operating Conditions

- Ambient Temp: 0~40 °C
- Tested : -30 °C ~ +55 °C
- Sampling Air Temp: -20~60 °C
- Humidity: 10~95% RH Non-Condensing

Power

- 24 ± 4.8 Vdc
- 216mA ~ 366mA

Dimension(WHD)

- 216mm x 201mm x 92mm

IP Rating: IP51

Weight

- Net Weight: 2.5kg

Ordering Information

Part No.	Description
Quartas-500s	Single pipe ASD, Network
Quartas-500r	Single pipe ASD, Relay only