CONSPEC®

INNOVATION THAT DIGS DEEPER.

# OPTIO AQS


## Air Quality Station Monitor

For over 50 years, Conspec has pioneered the design, development, and manufacturing of environmental and atmospheric monitoring, process control and safety technology relied upon by mining, industrial, oil & gas, and commercial operations all over the world.

Conspec's NEW Optio Air Quality Station featuring multi sensor support, enhanced alarming capabilities, multiple I/O options provide solutions that can withstand the harshest environmental and operational conditions. Where other monitors often fail, the Optio AQS flourishes, allowing mines to benefit from cost savings applications such as Ventilation Management, without compromising safety.

The Optio AQS has been designed and tested to ensure simple installation, calibration, and maintenance. The innovative design of the Optio AQS combines air quality related data such as Barometric Pressure, Relative Humidity, Air Velocity, Wet Bulb Temperature, Dry Bulb Temperature, CO, O2, CO2, CH4, etc., and a wide array of power and communications options to create an all-in-one solution which greatly reduces upfront costs by eliminating the need for multiple devices.

### BENEFITS

- Reliable & Stable Operation
- Eliminates the Need for Multiple Single Point Detectors
- Multiple Sensor Support such as O2, CO, CO2, Air Velocity, Relative Humidity, Pressure, Temperature, etc.
- Simple Sensor Replacement with No Need for Initial Calibration of Sensor
- Enhanced Alarming Capabilities
- Easy Menu Navigation - Icon Based
- Industry Standard Communication Protocols for Easy Integration
- Multiple I/O Options

### APPLICATIONS

- Coal Mining
- Mining and Tunneling
- Ventilation Management
- Safety Systems
- Fan Control Systems

OPTIO™ AQS

Reliability when every second matters.

# OPTIO™ AQS

Reliability when every second matters.

# Technical Specifications

## SENSORS

- Up to six installed sensors per monitor
- Gas Sensors
  - CO, O2, CO2, CH4, and many more
- Other Sensors
  - Wet Bulb Temperature, Dry Bulb Temperature, Barometric Pressure, Relative Humidity, Air Velocity
- Sensor extension up to 100ft (30m)

## ALARMS

- 4 Custom Alarm Levels with hysteresis and hold-to-alarm times
- Sensor Fail-High and Fail-Low alarms
- Ability to associate relay outputs with alarm levels from a single sensor, or multiple sensors using logical “AND/OR”

## I/O CAPABILITIES

- 6 Relay Outputs (250 VAC, 220 VDC, 2A)
- 6 Multi Function Ports - DI/DO/AI (0-5V, 0-3.6V)
- 2 4-20mA outputs
- Horn/Strobe configurable alarming

## INPUT POWER OPTIONS (NON-IS)

- 6-30 VDC
- 100 - 240VAC 50/60Hz
- DC Battery Pack (wireless operation)

## INPUT POWER OPTIONS (IS)

- 6-18 VDC (IECEx/ATEX)
- 6-15 VDC (MSHA)
- Battery Power for Wireless Operation (pending)

## COMMUNICATION INTERFACES (IS)

- MSHA: Conspec Trunk, RS-485. Conspec Wireless 900MHz Band (pending)
- IECEx/ATEX: Conspec Trunk, Conspec Wireless 900MHz/800MHz Band (pending)
- Com Distance up to 6km (3.75miles)

## COMMUNICATION INTERFACES (NON-IS)

- Conspec Trunk, RS-485, RS-232, Ethernet, POE, Conspec Wireless 900MHz/800MHz (pending) Band, Wi-Fi, LTE, Leaky Feeder (VHF, UHF)

## COMMUNICATION PROTOCOLS

- MODBUS RTU, MODBUS TCP, Conspec Legacy ACCESSOR

## CONFIGURATION

- Using IR remote with local LCD menu
- Via MODBUS/Conspec Legacy Accessor Register Map using Conspec OASIS software/Conspec Senturion SCADA

## MENU & DISPLAY

- Intuitive menu using graphical LCD
- Password protected (user or admin)
- Quick info screen shows device settings
- Real-time readings of multiple sensors
- Dimmable RGB backlight
- Backlight color indicates monitor status

## USER INTERFACE

- IR remote control
- 4 local tactile buttons
- Remote via Conspec OASIS Windows Configuration Software or Conspec Senturion SCADA Software

## DIMENSIONS

- 12”x15”x8” @ 12lbs (Carlon Enclosure)
- 15”x15”x8” @ 12lbs with horn/strobe (Carlon Enclosure)
- 8”x12”x4” @ 8lbs (Rose Enclosure)
- 11”x12”x4” @ 8lbs with horn/strobe (Rose Enclosure)

## POWER CONSUMPTION

- **2mA @ 15VDC** (no sensors and 10% Backlight)
- **3mA @ 15VDC** (3 EC Sensors and 10% Backlight)
- **3mA @15VDC** (1 NDIR CH4 Sensor and 10% Backlight)
- **9mA @15VDC** (1 NDIR CO2 Sensor and 10% Backlight)
- **12mA @ 15VDC** (2 EC, 1Pres/Hum/WB, 1 CH4, 1 CO2 and 10% Backlight)
- **33mA @15VDC** (1 Pellistor CH4 Sensor and 10% Backlight)

## TEMPERATURE & HUMIDITY RANGE

- -20°C to +40°C, 10-95% RH non-condensing
- Condensation recovery algorithm for NDIR $CH_4$ sensors

## WARRANTY

- One year standard warranty

## APPROVALS

- Carlon Enclosure
  - MSHA: Part 18
  - Commonwealth of Pennsylvania Approval No. BOTE 32-19
- Rose Enclosure
  - ETL-US: Class I, Division 1, Group D / Class I, Zone 0, Group IIA {AEx ia IIA Ga)/ Class II, Division 1, Group E-G / Class II, Zone 20, Group E-G (pending)
  - C-ETL: Class I, Division 1, Group D / Class I, Zone 0, Group IIA {Ex ia IIA) //Class II,Division 1, Group E-G / Class II, Zone 20, Group E-G (pending)
  - ATEX: I Ml Ex ia I Ma/Ex ia IIA Ga/ Ex ia IIIC Da (pending)
  - IECEx: Ex ia I Ma/ Ex ia IIA Ga/ Ex ia IIIC Da (pending)
  - T4 / T135°C & T ambient: -20°C to +40°C
  - SIL-1 (pending)

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