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INTEGRATED
MINING
TECHNOLOGIES



D52 DUST MONITOR

Smart measuring in harsh locations

D52 AT A GLANCE

- Detection limits (PM10) 0.01 to 1000mg/m³
- Sensor range between 0.30µm to 10µm
- Operating temperatures range from -20 to 50 °C
- Response time <60 sec
- Self-cleaning/minimal maintenance
- Mobile and fixed installation
- Wireless or site-specific interfacing

INTELLIGENT LASER SENSING TECHNOLOGY

Air quality management in mining, manufacturing and construction industries can be complex, mainly due to the volume and range of dust source types. The D52 is an ideal monitor for harsh, hazardous, dust-intense work environments, offering accurate, real-time dust monitoring, that will protect workers, improve operational processes and ensure regulatory compliance.

The D52 Dust Monitor uses laser sensing technology to count and measure particles below 10 micrometres (<10µm) in ambient air. Particulate matter is drawn into a dust impactor where particles <10µm are separated. Separation occurs via the impactor and cyclone. The particles <10µm are measured and counted, then placed into software bins for analysis. Results are displayed on an LCD screen detailing the time-weighted average (TWA) and particulate measured for 1µm, 2.5µm and 10µm.

SCADA software provides a simple, user-friendly operating platform to enable real-time particulate matter reading per field unit and dust size grouping.

The D52 is configurable to activate automated ventilation or dust suppression system preventing worker exposure to unhealthy dust levels.



ABOUT US

M3SH Technology is a Canadian OEM committed to creating an ecosystem of intelligent and integrated products that all work together to protect people and productivity. We provide clients with real-time data collected from sensors in the harshest industrial environments. Our technologies lead to increased automation, predictive maintenance, self-optimization of process improvements and a new level of efficiency and responsiveness to customers not previously possible. M3SH Technology's goal is to empower our clients to monitor and manage risk with the best technology the industry has to offer and to prove that they have done everything in their power to manage risk to people and productivity: Intelligently. Together, We Set The Standard.



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ADVANTAGES OF THE D52 DUST MONITOR

USER-FRIENDLY WITH EASY DATA COLLECTION

Easy-to-read screen highlighting data readings and range limits.
IoT enabled with easy data transfer - wired and wireless.

SELF-CLEANING AND MINIMAL SERVICE

No pumps, no filters, and no user-serviceable parts. Frequent blast action cleans dust from within the measurement chamber. Wipe the outside casing with a lint-free cloth to ensure display screen visibility.

COMPATIBILITY & INTEGRATION

Compatible with other M3SH IoT environmental monitors, wearables and location tracking sensors. It can be implemented as part of an automated dust ventilation and suppression system.

ACCURATE AND COST-EFFECTIVE

Equal high-quality performance when compared to other high-end instruments.

POWER OPTIONS & CONFIGURATIONS

- Exia 12V DC
- Non-Exia 12/24V DC
- 85 ~ 265 VAC

COMMUNICATION OPTIONS

- RS485 Modbus RTU cable connection
- IoT / Wi-Fi (802.11 b/g/n support and 802.11 n (2.4 GHz), up to 150 Mbps)
- GSM
- M3SH network to buffer wireless connection
- Site-specific interfacing and remote connections are available

SOFTWARE OPTIONS



- Interfacing to any standard available SCADA package
- M3SH supplied SCADA with associated hardware and interfacing
- IoT interfacing options also available for far remote locations



SCADA SOFTWARE FIELD DATA

- Showing serial number, date/time and real-time particulate matter readings per unit
- Data readings against calibration benchmarks



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Intelligent Productivity Delivering Configurable Information

M20 AT A GLANCE

- Flexible configuration
- 3-binary isolated inputs & 4-voltage free relay contacts
- Power management function remotely
- Realtime data transfer
- Live line indication

The M20 offers complete electrical protection covering voltage, current, earth fault, and earth lockout protection. This ensures you can manage your operation effectively by reducing maintenance and preventing unwanted repairs.

The M20's multi-functional ability as a motor protection and management relay offers integrated protection, monitoring, and automation functions that can be used on all electric motors, regardless of size, capacity, speed, or torque.

M20-series relays offer flexible configuration, with 3-binary isolated inputs and 4-voltage free relay contacts. The M20 has a non-volatile memory (retain memory in power down) to store events with date and time stamps.

The M20E keeps the last 16 events with date, time, three-phase voltages, two-phase currents, earth leakage reading, and events.

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M550 MOTOR PROTECTION RELAY

Protecting People & Productivity

M550 AT A GLANCE

- Customizable configuration
- Comprehensive protection
- Advanced data recording
- User-friendly interface
- Robust safety features

The M550 and M560 motor protection relays offer advanced motor protection and management functionalities. The M550, known as the most advanced relay in its class, provides true RMS voltage measurement up to 1700Vac and true RMS current measurement up to 10,000 Amps per phase, along with features such as overload protection, under/over voltage protection, phase loss protection, earth leakage protection, and more.

The M550 can be configured, offering flexibility in input/output configurations, relay operations, and communication settings. Configuration options allow engineers to customize input/output connections, set trip levels, adjust timers, and configure communication settings. The relays also feature event logging with date and time stamps, allowing for analysis and troubleshooting.

The M550's Human Machine Interface (HMI) provides real-time data monitoring and adjustment options through a graphic display and user-friendly controls. Safety features include earth leakage protection and a one-year limited warranty on parts and labor.

In addition to event logging, the relays offer trending capabilities, enabling recording of voltage, current measurements, and analog inputs over time. Communication options include USB, RS485, Profibus, and Modbus RTU, allowing seamless integration into existing systems.

Built with safety in mind, the M550 incorporates emergency start functions and adheres to stringent electrical safety regulations, ensuring the protection of both personnel and equipment. With its reliable performance and adherence to industry standards, the M550 provides peace of mind in critical industrial environments.



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NM20 NOISE MONITOR

Your sound safety solution

NM20 AT A GLANCE

- Real-time noise monitoring
- Visual alert indication
- Robust and easily mountable
- Easy to clean
- No on-site calibration required

STAY AHEAD OF NOISE LEVELS

In today's bustling workplaces, monitoring noise levels is crucial for ensuring the health and safety of employees. Engineered with precision and designed for simplicity, the NM20 is your reliable companion in maintaining optimal noise levels.

NM20 delivers accurate noise level measurements, empowering you to make informed decisions to safeguard employee well-being. Whether monitoring noise levels in manufacturing facilities, construction sites, or industrial plants, the NM20 delivers reliable performance, ensuring optimal safety standards are always upheld.

Customizable alerts enable organizations to set thresholds for noise levels and receive notifications when limits are exceeded. This proactive approach empowers supervisors and safety officers to take timely action, implementing measures to mitigate noise-related risks.

The NM20 is designed for easy integration, and is seamlessly compatible with existing workplace infrastructure. Operating as a standalone device, it streamlines the implementation process, minimizing downtime and ensuring a smooth transition to enhanced safety practices.

AVAILABLE MODELS

STANDARD MODEL

The operating voltage is
115/230 VDC

INTRINSIC SAFE

For use in hazardous locations,
the NM20 can be powered from
an intrinsic safe power supply



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NM60 NOISE MONITOR

Your sound safety solution

NM60 AT A GLANCE

- Customizable warning levels
- Visual Indication
- Wireless Connection
- Up to 5 wireless sensor connections

STAY AHEAD OF NOISE LEVELS

The NM60 noise monitor offers advanced features tailored for effective noise monitoring in industrial environments. It supports connectivity with up to 5 remote noise sensors, enabling comprehensive coverage within a range of up to 100 meters from the primary monitor. The NM60 ensures safety compliance with a visual alert system using flashing red headphones to signal the requirement for hearing protection.

Users can customize warning thresholds based on specific noise levels, enhancing flexibility in monitoring noisy environments. The NM60 measures noise levels using the Equivalent Continuous A-weighted sound pressure level (LAeq), providing accurate assessments of ambient noise.

Additionally, the NM60 calculates 8-hour Time Weighted Averages (TWA), which is essential for assessing long-term exposure risks during standard work shifts. These features collectively make the NM60 an indispensable tool for maintaining workplace safety and regulatory compliance in noisy industrial settings.

AVAILABLE MODELS

STANDARD MODEL

The operating voltage is 115/230 VAC powered from an intrinsic safe power supply

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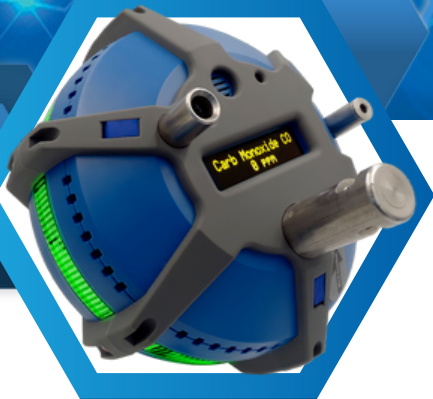
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P50 GAS MONITOR

Intelligent air sampling in hazardous environments

P50 AT A GLANCE

- Real-time measurement data visible on 16 x 2 OLED display
- Audible 93 dB alarm
- 360 Strobe LED lights
- 8 Hour battery backup
- Measurement data available, wireless or via RS485 network
- Communication to control room via SCADA software platform
- Intrinsic or non-intrinsic models available

HEALTH AND SAFETY THE INTELLIGENT WAY

The International Labor Organization (ILO) states accidents and occupational exposure to hazardous substances claim more than 2.3 million lives per year. Considering this, smart companies are turning to new innovative sensing technology to improve the day-to-day monitoring and analysis of exposure to hazardous gasses, chemicals and dangerous ambient conditions.

The P50 is an advanced multi-functional, sensor-rich device that accurately tracks work environment conditions. We designed the fixed-installation monitor to operate in extreme and hazardous environments such as explosive and gaseous atmospheres.

Configured to requirements, the P50 Environmental Monitor is configurable with up to 4 different sensors selected from an extensive list of sensing capabilities.

AVAILABLE MODELS

INTRINSIC SAFE

The operating voltage is 9 to 18VDC powered from an intrinsic safe power supply

NON-INTRINSIC SAFE

For use in non-hazardous locations

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ADVANTAGES OF THE P50 GAS MONITOR

ADJUSTABLE TO OPERATIONAL NEEDS

The P50 Gas Monitor is configured to specific requirements and includes adjustable sensor range settings.

360° VISUAL STROBE LIGHTS & AUDIBLE ALARM

360° visual indication. Four colours — red, green, yellow and blue, are standard and can be mapped to operation specifications. Audio alarm at pre-set specifications depending on requirements.

USER-FRIENDLY WITH EASY DATA COLLECTION

Easy to read screen, highlighting reading, range limits, date and time. Data transfer — wired or wireless to control room software platform.

BATTERY BACKUP

8-Hour battery backup to ensure ongoing operation. The backup battery is maintenance-free and automatically charges when connected to a supply line.

WARRANTY

One-year limited warranty on all parts and labour.

SENSOR CAPABILITIES

GASES AND CHEMICALS



OXYGEN



CARBON
MONOXIDE



CARBON
DIOXIDE



VOC's
VOLITILE
ORGANIC
COMPOUNDS



METHANE



HYDROGEN
SULPHIDE



HYDROGEN



HYDROGEN
CYANIDE



SULPHUR
DIOXIDE

AMBIENT SENSORS



AMBIENT
TEMPERATURE



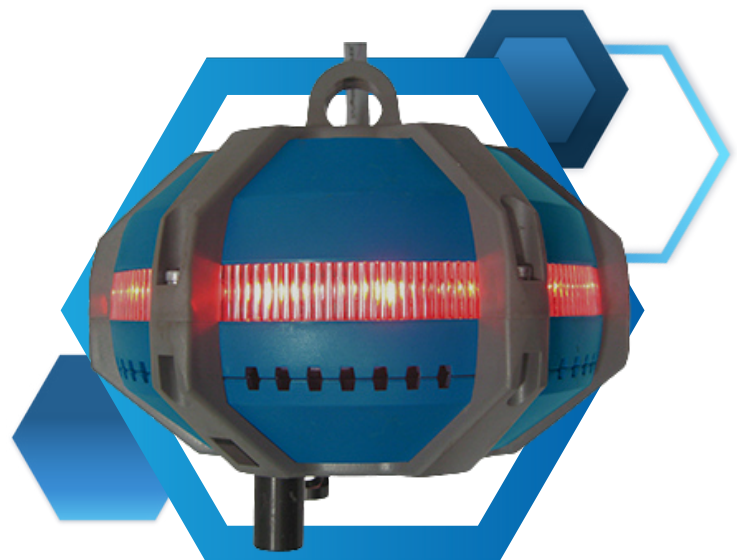
BAROMETRIC
PRESSURE



HUMIDITY



AIR
VELOCITY





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S50 SMOKE & EARLY FIRE MONITOR

Protecting People & Productivity

S50 AT A GLANCE

- Real-time measurement data visible on 16 x 2 OLED display
- Audible 93 dB alarm
- 360 Strobe LED lights
- 8 Hour battery backup
- Measurement data available wirelessly or via RS485 network
- Communication to control room via SCADA software platform

RELIABLE PERFORMANCE, EARLY WARNING AND FALSE ALARM DISCRIMINATION

The S50 Smoke & Early Fire detector alarm is a fixed installation area monitor based on intelligent sensing technology, capable of discriminating between actual fire conditions and deceptive emission sources such as hot works, welding, and diesel fumes. This attribute makes the S50 perfect for hazardous and industrial workspaces where downtime is costly.

Generating an alarm according to the 'real situation' is achieved by combining different types of sensors—a metal-oxide semiconductor sensor (MOS) and electrochemical gas sensors - with a signal rule decision system based on alarm algorithms parameters.

The S50 is built on an open-integration platform and is IoT-network enabled. Easy data transfer via RS485, Modbus-RTU and SCADA software for active in-field monitoring and reporting.

- Individual readings for ambient conditions, air quality and hazardous gasses, including smoke/VOCs, carbon monoxide, carbon dioxide and sulphur dioxide via SCADA.
- Built-in battery backup with a run-time estimate of up to 8 hours.
- The IP65-rated enclosure can be exposed to extreme temperatures -20°C to 70°C.

AVAILABLE MODELS

STANDARD MODEL

The operating voltage is 9-48VDC or 85-265VAC

INTRINSIC SAFE

Suitable for hazardous environments.
Operating voltage range 9-18VDC powered from an intrinsic safe power supply

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ADVANTAGES OF THE S50 SMOKE MONITOR

RELIABLE DETECTION

Different sensor types and multiple sensors detect the earliest evidence of combustion, including heat build-up and smoldering. Early warning with false alarm discrimination.

THE RIGHT TOOL FOR THE JOB

Designed for harsh and hazardous work environments, the S50 offers reliable performance, durability and longevity. Minimal service and maintenance required.

PLUG-AND-PLAY & NO ON-SITE CALIBRATION NEEDED

Easy to install and commission with no sensor calibration needed during installation or onsite maintenance.

EFFECTIVE AUDIBLE AND VISUAL ALARM

It comes standard with 4 alarm-light colours: Red, Green, Yellow and Blue. Red and Green are set for the default alarm settings.

INTEROPERABLE INTEGRATION

Built on open integration standards, the S50 can be integrated into a 3rd-party fire response / suppression or management overview system. The S50 can also interface with an M20 Motor Management Relay for remote and / or automated motor control to stop related fires from developing or spreading as in the case of conveyor belt fire.

S50 SENSORSAMPLING READINGS VIA SCADA



AIR
QUALITY
SCORE



TEMP/HEAT
BUILD-UP



SULPHUR
DIOXIDE



BAROMETRIC
PRESSURE



CARBON
MONOXIDE &
DIOXIDE



VOC's
INCLUDING
SMOKE

SCADA INTERFACE



- Interface to any SCADA package
- Situation Alerts
- Drift area monitoring
- Ventilation efficiency
- Alarm Management
- Sensor Service Management

