



Frequently Asked Questions

Q. What is the Meridian Universal Gas Detector?

A. The Meridian Universal Gas Detector from Scott Safety offers an innovative next generation gas detection solution. Meridian offers a single detector head that supports combustible and toxic sensors. Additionally, Meridian can support up to three sensors per transmitter. Designed with ease of use in mind, Meridian significantly reduces your upfront investment as well as your ongoing maintenance costs. Its modular design and support for multiple communication protocols allow you to integrate it easily into your existing infrastructure and future proof your investment. With global regulatory approvals, and SIL-2 certification from TUV-Rheinland, Meridian ensures best in class performance and safety.



Q. Why is the Meridian a truly universal gas detector?

A. In addition to a common user interface for combustible and toxic gas detection, the Meridian Universal Gas detector has a single detector head that supports all its sensor types, electrochemical, catalytic bead, infrared as well as solid state sensors. The Meridian offers a single set of accessories that supports all applications. These attributes contribute to ease of use, ease of maintenance and lowers the overall cost of the gas detection system.

Q. What types of housings are available?

A. The Meridian Universal Gas Detector is available in copper free aluminum and 316 stainless steel housing. The aluminum housing is painted with aluminum white RAL9006, which is grey in appearance.

Q. What global regulatory approvals does the Meridian have?

A. The Meridian gas detector is certified using the highest international standards for global use. Its global regulatory approvals include: IECEx, cCSAus, ATEX, INMETRO, FCC, INDUSTRY CANADA, CE, ANATEL, MARINE DIRECTIVE - SHIP'S WHEEL, ABS SIL-2 (Third Party Certification by TUV-Rheinland)

Q. What area classification does the Meridian have?

A. The Meridian is certified for use in the following area classifications:
Class I Div. 1 Group ABCD, Class II Div. 1 Group EFG, Class III Equipment Group I/II,
Zone 0/20 & Zone 1/21, IIC

Q. What is the operating temperature range for the Meridian?

A. The Meridian is designed to operate in extreme climates with an operating temperature range of -40°C to +75°C. Note that not all Meridian sensors operate to the full transmitter operating range. For information on sensor operating temperature ranges, please consult the Meridian Universal Gas Detector User Manual.

Q. What is the Meridian's SIL rating and what value does that provide?

A. Designed with safety and reliability in mind, the Meridian Universal Gas Detector is suitable for use in SIL-2 and SIL-3-rated systems under the IEC 61508 standards, certified by TUV Rheinland, an independent third-party agency. Meridian's third party SIL certification validates that it meets the most rigorous standards for reliability and performance and confirms its ability to reduce the potential for downtime and increase the safety factor in your operation.

Q. Is the Meridian available in 2 Wire (Loop Powered) as well as 3-4 Wire?

A. The Meridian Universal Gas Detector is available in both 2 Wire as well as 3-4 Wire making it easy to deploy in your existing infrastructure.

Q. What are the differences between the 2 Wire (Loop Powered) platform and the 3-4 Wire platform?

A. While the 3-4 Wire platform offers the full range of capabilities of the Meridian Universal Gas Detector, the 2 Wire (loop powered) platform is designed to be a low powered solution. The 2 Wire platform supports one electrochemical sensor per transmitter and offers 4-20mA communication only. It does not include back light, or an LCD heater option on the transmitter display.

3M™ Meridian Universal gas detector

FAQ

Q. Is it true that the Meridian can support up to three sensors?

A. The Meridian 3-4 Wire platform can support up to 3 sensors. Each sensor can be installed remotely from the transmitter up to 100 feet. This can significantly reduce your upfront capital expenditure and installation costs. Furthermore, each Meridian sensor connected to the transmitter provides its own independent 4-20mA output to the DCS thereby ensuring greater reliability and safety of your operation. For guidance on sensor combinations allowed for multi sensor configurations to meet intrinsic safety requirements, please refer to the Meridian Universal Gas Detector User Manual.

Q. What are the voltage considerations when wiring the Meridian?

A. The operating voltage required at the Meridian Universal Gas Detector 2 Wire platform is 18-30 VDC. The operating voltage required at the 3-4 Wire Meridian Gas Detector is 10-30 VDC.

Q. What communication options are available with the Meridian?

A. The Meridian Universal Gas Detector supports a number of communication protocols making it easy to integrate it in any environment. It offers 4-20mA and Modbus RTU over RS-485 as standard communication with any configuration. Its modular design allows you to easily add communication options by adding the respective communication expansion card. Available communication options are HART protocols.

Q. What types of sensors are available with the Meridian?

A. The Meridian Universal Gas Detector supports a full range of combustible and toxic gases. Its single detector head supports a number of sensor types including electrochemical sensors for oxygen and toxic gas detection; infrared and catalytic bead sensors for combustible gases.

Q. What is unique about Meridian toxic sensors and their Range Invariant Calibration?

A. Unlike traditional toxic electrochemical sensors, the Meridian electrochemical sensors are range agnostic and can offer multiple predefined ranges. You can calibrate a toxic sensor to a particular gas level and then make adjustment to the range later without having to re-calibrate the sensor to the new range. This sensor design also provides flexibility in easily calibrating sensors where a specific gas range is inaccessible or unavailable.

For example, to optimize maintenance workload, you can calibrate sensors in a batch in the lab and set them to a default range. Upon installation, the range on the sensors can be adjusted to the requirements of the specific location. The range on the sensor can be readjusted anytime to the set of pre-defined ranges by the end user.

Q. What value does bench calibration provide?

A. Sensor calibration, while absolutely necessary, can be a very challenging and time-consuming activity. With the Meridian Universal Gas Detector, you can calibrate the sensors in a lab environment in a batch and install them in the field later without having to re-calibrate them in the field. This flexibility reduces operational hazards and offers significant efficiencies in your maintenance workload reducing the overall cost of ownership.

Q. What is unique about Scott Rock Solid toxic sensors?

A. The Meridian Universal Gas Detector supports a full portfolio of electrochemical sensors to support a wide range of toxic gases. The Meridian sensor portfolio also includes the Scott Rock Solid™ sensors, a proprietary line of electrochemical sensors which have an increased specificity to target gases, reduced zero drift, and reduced oxygen requirements. This allows the Rock Solid sensors to detect gases at very low concentrations without the increased risk of false alarms.

Q. Why choose infrared technology versus catalytic bead technology for combustible monitoring?

A. While a catalytic bead sensor can detect a wide range of combustible gases, its sensitivity diminishes over time and requires more frequent calibration to ensure accuracy. An infrared sensor, on the other hand, responds to fewer gases but their sensitivity remains stable over a longer period of time. The value of the infrared sensor resides in its reduced maintenance requirements, extended sensor life, and overall lower cost of ownership.

Q. Are the Meridian sensors hot swappable?

A. The Meridian Universal Gas Detector is designed to be intrinsically safe. All Meridian sensors, whether electrochemical, catalytic bead, infrared are hot swappable in hazardous location without the requirement to power down the transmitter. All Meridian sensors easily plug in and out making maintenance easy and quick. This capability offers significant operational efficiencies in sensor maintenance with no impact to production down time.

Q. Is the Sensor Self Test (SST) available with the Meridian?

A. The Sensor Self Test (SST) functionality is not available with the Meridian Universal Gas Detector.

Q. Is there a blind transmitter option with the Meridian?

A. The Meridian Universal Gas Detector offers a blind transmitter option with the 3-4 Wire platform. The blind transmitter does not include the standard transmitter display for gas readings and configuration control. It only provides LEDs for fault and alarm activations. In addition to 4-20mA and Modbus communication protocol, the blind transmitter comes standard with the HART protocol, so that routine maintenance tasks such as sensor calibrations, and managing configurations can be performed using an off the shelf HART hand-held communicator.

Q. What accessories are available with the Meridian?

A. The Meridian Universal Gas Detector offers a single set of accessories to support both combustible and toxic applications. The following Meridian accessories are available for purchase with the Meridian Universal Gas Detector:

- Calibration Adapter that easily attaches to the sensor housing to deliver calibration gas to the detector head.
- Flow Cell which allows customers to bring a gas sample to the sensor.
- Duct Mount Adapter to easily remote mount sensors onto ventilation ducts to verify exhaust or inlet air is free of toxic or combustible gas.
- Deluge Guard to protect the sensor from heavy rain and water spray from plant wash down routines.
- Sun Shield to deflect direct sunlight from the Meridian Gas Detector which reduces glare on the display and also reduces the internal temperature of the transmitter.
- Adapter Plate with predefined cut outs, which allows you to easily replace older gas detectors with the Meridian for retrofit applications.
- Sensor Simulator that serves as a useful commissioning and troubleshooting tool to locally simulate the concentration of gases to trigger a response from the detector. You can use it to verify alarm set points, relay activations, communications and other troubleshooting tasks.

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Q. What controllers are compatible with the Meridian?

A. The Meridian uses industry standard wired and wireless communication protocols to communicate making it easy to integrate with any controller, PLC, or DCS. The Meridian seamlessly integrates with the Scott 7200, 7400, 7600 and 7800 Controller platforms.

Q. What types of information is available from the Meridian and what value does it provide?

A. The Meridian Universal Gas Detector provides an event driven log with information on gas concentration, alarm activation and deactivation, temperature, sensor installation and calibration dates, among other useful data to support routine maintenance, diagnostics and troubleshooting.

Q. What trend information is available?

A. The Meridian Universal Gas Detector can display a gas concentration trend line from its data log. You can view the trend for intervals of 2 min, 60 min, 1 day or 7 days.

Q. Is there a wireless option for the Meridian?

A. The Meridian Universal Gas Detector offers wired communication protocols. Meridian's industry standard wireless communication protocol options offer greater reliability than proprietary wireless communication protocols. Options include WiredHART.

Q. What languages are supported on the Meridian user interface?

A. Designed for global use, the Meridian Universal Gas Detector supports multiple languages making it easily accessible to the local workforce. The transmitter user interface and documentation are available in Chinese, English, French, Portuguese, Russian, and Spanish.

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