MSA 10178557

MSA ALTAIR 4XR Multigas Detector User Manual

MODEL: **10178557** | BRAND: **MSA**

Introduction

The MSA ALTAIR 4XR Multigas Detector is a robust, handheld, portable gas monitor designed for critical safety applications. It is capable of simultaneously detecting up to four gases: Lower Explosive Limit (LEL), Oxygen (O2), Hydrogen Sulfide (H2S), and Carbon Monoxide (CO). Engineered for durability, this device features a tough over-molded rubber armor, is MIL-STD-810G drop protected, and boasts an IP68 rating for dust and water resistance, ensuring reliable performance in demanding environments.

Figure 1: Front view of the MSA ALTAIR 4XR Multigas Detector, showing the display and control buttons.

Key Features

- **Multigas Detection:** Equipped to measure Lower Explosive Limit (LEL), Oxygen (O2), Hydrogen Sulfide (H2S), and Carbon Monoxide (CO), designed for virtually no cross-channel interference.
- **Full-Time Traceability:** Records 500+ alarm events and 50+ hours of data (including bump and calibration records), powered by a rechargeable Li-polymer battery with 24-hour run-time.
- **Safety & Compliance:** LED indicates bump pass/fail with large on-screen cues, equipped with MotionAlert (man-down alarm) Feature, InstantAlert (manual alarm) Feature, and end-of-sensor-life warning.
- **Rugged Durability:** Tough over-molded rubber armor, survives multiple 25-ft drops onto concrete, MIL-STD-810G drop protection, certified IP68 rating, dust and waterproof.
- **Comprehensive Equipment:** Includes plug-and-play slots for MSA XCell Sensors, performance guarantee, warranty, MSA GALAXY GX2 Automated Test System and MSA Link Pro and MSA Link Software compatibility.

Setup and Calibration

Before initial use or after prolonged storage, it is essential to perform a fresh air setup (zero calibration) and a span calibration to ensure accurate readings. Always perform these procedures in a clean, fresh air environment free from contaminants.

Required Equipment:

- MSA ALTAIR 4XR Multigas Detector
- Calibration Adapter
- 0.25 L/min Regulator (C-10 fitting)
- Precision Calibration Gas Cylinder (ensure correct gas mixture and check expiration date)
- Tubing for connections

Zero Calibration (Fresh Air Setup):

1. Power on the ALTAIR 4XR detector by pressing and holding the middle button. Allow it to complete its startup sequence and warm-up procedure.
2. When prompted for a "Fresh Air Setup" (FAS), select "No" to proceed to normal operating mode. This ensures a high-quality zero calibration.
3. Once in normal operating mode, press and hold the right button until the display shows "ZERO CAL?".
4. Press the middle button to confirm "Zero Cal". The unit will enter "SENSOR REFRESH" mode. Ensure the detector is in a clean air environment, free from any gas sources or residual gas.
5. Allow the unit to complete the zero calibration. The display will indicate when it's complete.

Span Calibration:

1. Ensure the calibration gas cylinder has the correct gas mixture and is not expired. The standard MSA calibration gas mixture includes: Hydrogen Sulfide (20 ppm), Carbon Monoxide (60 ppm), Pentane Simulant (58% LEL), Oxygen (15.0%), and Nitrogen (Balance).
2. Attach the 0.25 L/min Regulator to the calibration gas cylinder. Ensure the regulator's valve is open slightly to purge any residual air before fully tightening it onto the cylinder. This prevents moisture from entering the cylinder.
3. Connect the tubing from the regulator to the calibration adapter.
4. Attach the calibration adapter to the MSA ALTAIR 4XR detector. The adapter should securely cover the sensor inlets.
5. From the normal operating mode, press and hold the right button until the display shows "SPAN CAL?".
6. Press the middle button to confirm "Span Cal". The unit will prompt for gas application.
7. Immediately turn on the gas flow from the cylinder by opening the regulator valve. The detector will begin to read the gas concentrations.
8. Monitor the display. The values for each gas (LEL, O2, H2S, CO) should stabilize near the concentrations listed on your calibration gas cylinder. The unit will indicate "SPAN PASS" when calibration is successful.
9. Once "SPAN PASS" is displayed, turn off the gas flow and remove the calibration adapter and tubing from the detector.

Figure 2: The MSA ALTAIR 4XR Multigas Detector in use, demonstrating its compact size and clear display for field applications.

Operation

After successful calibration, the ALTAIR 4XR is ready for use. The large, clear display shows real-time gas concentrations. The unit continuously monitors the environment and will activate audible, visual (LEDs), and vibrating alarms if gas levels exceed predefined thresholds or if a man-down event is detected via MotionAlert.

- **Real-time Readings:** Gas concentrations are continuously displayed.
- **MotionAlert:** Automatically activates an alarm if the user becomes immobile for a set period, indicating a potential man-down situation.
- **InstantAlert:** Allows users to manually activate an alarm to alert others to a potentially hazardous situation.

Maintenance

Regular maintenance is crucial for the longevity and accuracy of your MSA ALTAIR 4XR. Keep the device clean and free from debris. Periodically inspect the sensor inlets for blockages. The unit is compatible with MSA GALAXY GX2 Automated Test System for simplified and automated bump testing and calibration, which also helps in managing data and records.

Sensors are designed for long life but may require replacement over time. The device will provide an "end-of-sensor-life" warning. Replacement MSA XCell Sensors are available and can be easily installed in the plug-and-play slots.

Troubleshooting

If the device fails a bump test or calibration, first ensure that the calibration gas cylinder is not expired and contains the correct mixture. Check all connections for leaks. If sensor readings are erratic or consistently off, the sensor may be poisoned or at the end of its life and require replacement. For persistent issues, refer to the comprehensive troubleshooting guide in the full product manual or contact MSA support.

Specifications

Specification	Value
Brand	MSA

Specification	Value
Style	O2, H2S, CO
Power Source	Battery Powered
Color	BLACK
Product Dimensions	1.37"D x 3"W x 4.4"H
Item Weight	0.51 Pounds (8.1 ounces)
Alarm	Audible, Visual
Operating Humidity	95 percent
Upper Temperature Rating	50 Degrees Celsius
Sensor Type	Catalytic, Electrochemical
Number of Items	1
Manufacturer	MSA
Part Number	10178557
Item model number	10178557
Date First Available	January 25, 2018

Warranty and Support

This product is covered by a 4-year warranty. For more information regarding warranty claims or technical support, please visit the official MSA website or contact their customer service. Ensure to register your product to activate the warranty and receive important updates.

For additional assistance, you may also refer to the comprehensive product manual provided with your device or contact a certified MSA service center.