ALTAIR® Fresh-Air Setup

Per MSA's product literature, fresh air setup (FAS) needs to be performed regularly on oxygen sensors to compensate for normal sensor aging effects.

If FAS is not performed, sensor drift may eventually cause instruments to incorrectly report low oxygen concentration. In alarm mode, continuous audible, visual, and vibrating alarms will rapidly deplete batteries.

For details on fresh-air setup, please reference Chapter 4 of the Altair Single-Gas Detector instruction manual (P/N 10068081).
www.msanorthamerica.com/catalog/product500497.html

If you have further questions, please contact your local MSA distributor or MSA's Customer Service Center at 1-800-MSA-2222

HOW TO PERFORM A FAS ON THE ALTAIR® SINGLE-GAS DETECTOR WITH OXYGEN SENSOR:

1. To enter calibration mode, make sure you are in fresh, uncontaminated air.
2. In normal operating mode, press the TEST button.
3. When "TEST""GAS" "?" displays, press and hold the TEST button to enter calibration mode.
4. Press the TEST button at the "FAS" "?" screen to perform a calibration at 20.8% O2.

   NOTE: This procedure must be performed in fresh, uncontaminated air. Do not breathe on the sensor while performing this function.
5. If the unit successfully calibrated, then "OK" will display. *(If the display does not read "OK", after repeating procedure, then remove the instrument from service.)*
6. Perform a bump test to confirm operation and activate the "√".

Online interactive training on the ALTAIR O2 Fresh-Air Setup, as well as other MSA products and applications, can be found at **www.MSAnet.com/MSA-U**.

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ID 0802-72-MC / Sept 2009

ALTAIR® Maintenance-Free Single-Gas Detector

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Innovative CO, H2S, or O2 detectors operate for over two years maintenance-free. One-button operation with no sensor or battery changes necessary. Triple alarm system provides visual, audible, and standard vibrating alarms. Rubberized armor housing provides extra durability, superior dust and water protection (IP 67), and great RFI performance.

CO, H2S, or O2 detection. Over two years' service life, maintenance free!

MSA's ALTAIR Single-Gas Detector provides over two years of maintenance-free performance (depending upon alarm minutes used). Long life, cost-effective single-gas detectors offer outstanding dust and water protection and feature a distinctive triple alarm system. Two bright LEDs and piercing audible alarm with standard vibrating alarm help to ensure that no alarm condition goes unnoticed. Rubberized armor housing and one-button operation provide durability and ease of use. Units will not deactivate after two years of operation; instead will perform as long as battery capacity and sensor performance allow. Built-in calibration feature enables users to potentially further extend instrument life. ALTAIR Single-Gas Detectors are part of MSA's ALTAIR Detector family of products.

- Factory-calibrated detector with warranted two-year service life (1080 alarm minutes)
- Maintenance-free; no sensor or battery changes necessary
- Easy bump check and built-in calibration feature
- Bump check confirmed with checkmark on instrument LCD, displayed for 24 hours
- High-capacity battery
- Event recorder stores 25 latest events automatically in instrument memory
- Built-in IR communications enables interface MSA Link™ Software
- Built-in gas delivery adapter for gas response tests (no cal cap to lose)
- Rated to IP67 for dust and water ingress

Maintenance-Free Service Life

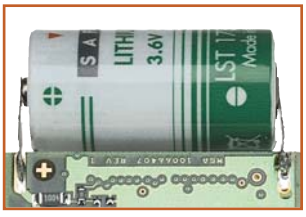
Factory-calibrated detector provides warranted two-years or 1080 alarm minutes (18 hours) of service life with no maintenance. No sensor or battery changes are needed. Built-in gas delivery adapter means no misplaced accessories when conducting gas response tests, avoiding hidden replacement costs.

Bump Check Made Easy

By confirming **Gas Test** with a single button press, the unit allows for a simple bump check to be recorded and displayed onscreen via a checkmark for 24 hours. This checkmark is confirmation of not only an electronic circuit check but also of sensor response. While it is only necessary to perform a bump test to ensure proper sensor response, ALTAIR Single-Gas Detector offers built-in calibration as required in some facilities.

Long-Life Battery

Long-life lithium battery offers significantly more capacity than its closest competitor and far outlasts the two minutes of alarm mode per day standard. ALTAIR Single-Gas Detector units will not deactivate after two years of operation but will continue to deliver performance as long as battery capacity and sensor performance allow. No other maintenance-free single-gas detector in its class can beat this performance.



Sensors

Patented, MSA-built Button® Cell toxic gas sensors feature stainless steel construction and contain solid electrolyte, virtually eliminating sensor leakage. Extremely small and thin sensor profile allows ALTAIR Single-Gas Detectors to deliver high performance in a very small package. Toxic gas sensors provide stability for the unit's service life. ALTAIR Single-Gas Detector oxygen version accommodates industry-standard fast-responding 20 Series oxygen sensor and is UL, cUL, ATEX, and Australian standards-approved.

Built-in IR Communication

ALTAIR Single-Gas Detectors record the 25 latest alarm events automatically, offering a great tool for alarm condition assessment: just connect it to your MSA InfraRed adapter using standard, built-in IR communication. Alarm set points can be adjusted manually prior to the unit's activation or through IR link after activation.

Rugged Clip

ALTAIR Single-Gas Detectors use a proven suspension clip to be worn anywhere in the breathing area: on the helmet, belt, and many other places. MSA's rugged clip design keeps unit attached during even the roughest use.

Easy-To-Read Display

ALTAIR Single-Gas Detectors offer a simple, easy-to-read display. Large numeric display allows users to count down service life, alarm conditions, set points, peak reading, and hours in alarm since activation with accuracy and confidence. O2 version display helps users to identify current levels as well as highest and lowest readings at a glance. Users can perform fresh air setup and reset peak readings with the touch of a button.

Water and Dust Resistance

ALTAIR Single-Gas Detectors are highly water- and dust-resistant and are tested to IP67. Simple yet effective design uses rubberized armor to seal units from water and dust ingress, providing a tight seal and exceeding the industry-average rating.

ALTAIR QuickCheck® Station

ALTAIR QuickCheck Stations are inexpensive test stations for ALTAIR and ALTAIR Pro Gas Detectors. Available in manual and automatic versions, this test station quickly verifies instrument alarm system functionality and then performs a gas response test (bump check).

Galaxy® Automated Test System

The Galaxy Automated Test System for the ALTAIR and ALTAIR Pro Gas Detectors is a complete instrument calibration and record retention system. Options such as industry-standard memory card, wired networking, and receipt printing allow this flexible system to be configured to meet your needs.

Distinctive Alarm System

Triple alarm system leaves no doubt for users in alarm situations. Audible alarm sounds at an average of 95 dB@1 foot and is designed to be distinctive among other workplace sounds. Alarm's extended frequency range covers a wide sound spectrum even when used by tone-deaf individuals. Visual alarm features dual, super-bright LEDs on unit's top and are visible from all angles and when worn inside the pocket. Numeric display shows LO or HI alarm status. Vibrating alarm comes standard and emits a pulse when in alarm mode that calls additional attention to users.

Durability

Extra-thick rubberized housing withstands accidental drops and provides resistance to water ingress. Metal screw inserts offer stability over the unit's lifetime. MSA's focus on reliability, ease of use, and durability are key design elements of ALTAIR Single-Gas Detectors.

The ALTAIR Single-Gas Detector's unique design combined with its highly competitive price makes it the clear choice when selecting maintenance-free single-gas detection instruments. No other single-gas detector in its class logs and stores as many alarm events as this unit. ALTAIR Single-Gas Detectors are designed and manufactured by MSA, the most trusted name in the safety products industry.

Specification

Weight	4.0 oz including clip
Dimensions	3.4" x 2.0" x 1.0"

Gases and Measuring Ranges

Gas	***Range***
Oxygen	0-25% by vol
Carbon Monoxide	0-500 ppm
Hydrogen Sulfide	0-100 ppm

Alarms	Average >95 dB @ 30 cm, Ultra - LEDs, vibrating alarm standard
Warranty	2 years or 1080 minutes (18 hrs) of alarm under normal conditions
Instrument Life	>2 years at an average of 2 minutes of alarm per day
Operating T Range	-20ºC to +50ºC
Humidity	10-95% RH non-condensing
Ingress Protection	IP67
Event Logging	25 latest events
Certifications	
US and Canada	Class 1, Division 1, Groups A, B, C and D
Europe	ATEX II 2G EEx ia IIC T4 -20ºC to +50ºC
Australia	Ex ia IIC T4 -20ºC to +50ºC

Ordering Information

Instrument Type - Standard Models

Instrument Type	P/N	1st Alarm	2nd Alarm
Carbon monoxide (CO)	10092522	25 ppm	100 ppm
Hydrogen sulfide (H2S)	10092521	10 ppm	15 ppm
Oxygen (O2)	10092523	19.5% Vol	23% Vol

Instrument Type - Alternate Set Point Models

Instrument Type	P/N	1st Alarm	2nd Alarm
Carbon monoxide (CO)	10071334	30 ppm	60 ppm
	10071335	35 ppm	100 ppm
	10071336	35 ppm	400 ppm
	10071337	50 ppm	200 ppm
	10071338	100 ppm	300 ppm
Hydrogen sulfide (H2S	10071340	10 ppm	20 ppm
	10071361	5 ppm	10 ppm
	10071362	8 ppm	12 ppm
	10071363	7 ppm	14 ppm
Oxygen (O2)	10071364	19.5% Vol	18% Vol

Accessories and Spare Parts

710882	Cylinder, 60 ppm CO
473180	Cylinder, 300 ppm CO
467897	Cylinder, 40 ppm H2S, RP
711062	Cylinder, 40 ppm H2S, Econo-Cal® Gas
467895	Regulator, 0.25 lpm
10040002	Clip, suspender (standard)
10069894	Clip, stainless steel
10041105	Cellphone clip
10041107	Lanyard kit
710946	MSA Link Software with IR (for event log)
10030325	Tubing, 16"
10073346	Hardhat clip
10076704	Automatic ALTAIR QuickCheck Station
10076692	Manual ALTAIR QuickCheck Station

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MSA R.I.T.E. **Portable Instruments Maintenance Training Program**

Repairing **I**nstruments **T**raining and **E**ducation

MSA's Authorized Instrument Service Center program for Portable Gas Detection Instruments

The MSA **R.I.T.E.** Training program is designed for our Channel Partner and end-user repair and maintenance programs. It is intended for technicians, certified by MSA to conduct maintenance and repair of MSA Portable Instruments.

This Authorized MSA Technician Level training program is specially designed for those individuals who are, or will be, assigned to maintain and repair MSA Gas Detection Instruments on a frequent basis and have the mechanical and electrical aptitude, experience and skill-set to perform the work require.

Successful completion of the **R.I.T.E.** program certifies an organization as an MSA Authorized Instrument Service Center, enabling **R.I.T.E.** certified repair technicians to perform the highest level of maintenance and repair on MSA Instruments.

MSA offers classes on-site for our Channel Partner and end-users, or at one of our MSA facilities located in Pittsburgh PA, Chicago IL, Houston TX, Toronto ON, and Edmonton AB.

Requests for private on-site classes will be handled on a case-by-case basis and are dependent on the number of personnel attending and the number of MSA Portable Instruments to be covered.

This *1.5 day* Certified initial training session will cover all the MSA Portable Instruments that you, our Channel Partner or end-user, may service as an MSA Authorized Instrument Service Center. All training will be focused on the repair, maintenance and servicing of the MSA Portable Gas Detection Instruments. This hands-on training will cover calibration, maintenance, application, service and repair and will include all the accessories used with each product.

All attendees are responsible for their registration fee, all travel arrangements including, transportation, meals and lodging for the classes.

Included in the training fee is:

- Conducted by an MSA factory trained instructor.
- Access to the **R.I.T.E.** Repair and Maintenance website.
- Use of all classroom instruments, tools, Calibration equipment and other related hardware.
- Lunch on day 1 and refreshments during breaks.

At the completion of training, each attendee must successfully complete a written examination based upon information presented during the class.

Based upon final examination results and evaluation by the instructor of the attendee's performance during the class, MSA will issue individual certificates and notify the sponsoring organization as to its certification as an MSA Authorized Instrument Service Center.

Class size will be kept at a maximum of eight (8) attendees so as to provide consistent high quality of instruction to each attendee.

Each MSA Authorized Instrument Service Center should appoint a Maintenance administrator for its maintenance and repair program. This individual will be responsible to maintain:

- The proper facilities, equipment and trained personnel to provide quality service on MSA Instruments
- Appropriate up-to-date instruction manuals, procedures, tools, calibration equipment, and any other equipment needed to perform portable instrument repair and maintenance in accordance with MSA's instructions and procedures.
- A quality of service at the highest possible level.

MSA R.I.T.E. Recertification is required every 3 years from the last training date printed on the certificate. MSA **R.I.T.E.** Authorized Instrument Service Center's will also be periodically audited by an MSA qualified and trained representative to determine whether the facility is qualified to be re-certified.

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Requirements for MSA **R.I.T.E.** Authorized Portable Gas Detection Instrument Service Centers

Requests for NEW MSA **R.I.T.E.** "Certified" Instrument Service Centers must receive authorization from MSA's Regional and Corporate management and must comply with the following requirements:

- Provide facilities, equipment and competent personnel to meet MSA service standards.
- Sign-off on the MSA **R.I.T.E.** Service Agreement and complete the registration form prior to training being scheduled.
- Assure that technically qualified personnel successfully complete the MSA **R.I.T.E.** Certified Repairing Instruments Training & Education class under the instruction of an MSA authorized and qualified instructor.
- Will not appoint or utilize any sub-agent or subcontractor for the purpose of providing service on MSA products.
- Assign a Program Administrator who shall ensure that:
  - The Service Center complies with MSA's procedures and recommendations
  - MSA Manuals and support materials are kept current.
  - Maintenance and repair questions are communicated to MSA for resolution.
  - The quality of the Service Center meets or exceeds MSA's minimum service standards.
  - MSA is notified immediately of any changes regarding the ability of the Service Center to meet the MSA Authorized Instrument Service Center requirements or maintain its status as an MSA Authorized Instrument Service Center.

IMPORTANT: *These requirements also apply to the addition of new locations by the parent company of an existing MSA Authorized Instrument Service Center. Once approved by MSA's Sales and Training Departments, all new **R.I.T.E.** facility training is scheduled with a confirming purchase order number or credit card.*

Contact us at: training@msasafety.com or call 1-866-347-6093
See our web page at http://us.MSAsafety.com/training/RITE

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Why is bump testing your portable gas detector important for safety?

Whitepaper

WE KNOW WHAT'S AT STAKE.

Why is bump testing your portable gas detector important for safety?

Why is bump testing your portable gas detector before each day's use a matter of safety?

Portable gas detection is an important part of a workers' safety equipment for certain environments and jobs. However, the accuracy and function of portable gas detectors can be reduced, impeded, or otherwise impacted over time, which could affect the instrument's ability to reliably warn and help protect against gas hazards. For example, environmental influences and harsh application conditions can affect the functionality of gas detectors. Those affects can be gradual over time or they can be more sudden. Also, those affects can sometimes be reversed and are sometimes permanent.

Bump testing the gas detector should alert the user of a nonfunctioning sensor

The traditional bump test consists in checking the instrument's ability to respond to a target gas within a given amount time. If the instrument does not respond or responds outside the test parameters, then something is affecting the instrument's functioning. For example, dirt or mud could block the gas inlet of an instrument. Some detectors on the market are not able to proactively warn you that gas entries are blocked. In cases such as these, a fully functioning sensor simply will not see gas. A bump test will indicate whether the sensor's function has been affected and give you the opportunity to identify the blockage, which may not be visible to the human eye.

To help users confirm that a bump test was done, the MSA ALTAIR family of gas detectors uniquely shows a Bump Test checkmark on their display for 24 hours after a successful bump test. A bump test quickly confirms whether the gas entries are free, and if your sensor is functioning.

Bump test frequency is often stipulated by national or corporate regulations

Bump testing before each days' use is generally a recommended, and sometimes required, safety practice to verify proper instrument operation. For example, the European standard EN 60079-29-2 and the International Standard IEC 60079- 29-2 stipulates a functional check for gas detectors before each day of use. The German BG RCI (Employers' Liability Insurance Association for Raw Materials and Chemical Industry) also requires a functional check before each day of use, in their code of practices T021 and T023.

Why is calibrating your gas detector important?

Calibration is the adjustment of the sensor(s) output to match the known traceable calibration gas concentration. It gives you an opportunity to provide optimum accuracy of the instrument. It can be performed if high accuracy is desired and also if a bump test fails. Calibration is important since all sensors on the market can have some amount of drift over time and are subject to potential uncontrollable effects such as over-exposures, poisoning, physical shocks, extreme environmental changes etc. These types of events could affect the sensor's effectiveness. MSA recommends calibration at least every six months; however, many countries and/or organizations have their own calibration guidelines that may require more frequent calibrations.

What other benefits come from proper calibration and bump testing of gas detectors?

1. Safety

Proper calibrations and bump tests help verify that a gas detector is working properly. If a gas detector is not properly maintained, the results may not be accurate which can impact the health and safety of workers entering a potentially hazardous space or environment.

2. Compliance

Regular calibrations are required for compliance under certain state and federal laws or industry standards. Verifying gas detectors are working can help prevent fines associated with non-compliant detector usage.

3. Productivity

Properly calibrated and bump tested gas detectors can help reduce the risk of costly incidents or work stoppages from gas leaks or exposure. For example, early detection of a gas leak during routine maintenance could help prevent costly and time-consuming projects such as replenishing leaking gases, repairing and replacing equipment following possible explosions, or remediation and cleaning up from large leaks that could harm workers, the environment, and surrounding communities.

How to help simplify maintenance and compliance of your portable gas detector fleet?

Staying up-to-date with the latest connected gas detection solutions is one way to help simplify the maintenance – including calibrations and bump tests – and compliance of your fleet. The ALTAIR io™ 4 Connected Gas Detector is a connected device that comes with built in cellular connectivity and integration with Grid software and the ALTAIR io™ Dock. Key features include:

1. Enhanced Fleet Management and Monitoring

Grid software provides a suite of powerful fleet management and monitoring capabilities including over-the-air updates for all of your devices, lifetime cloud logs with full device history, and fleet cloud configurations to align with your organisation's SOP. Grid Fleet Manager provides proactive safety management, dashboard overviews and record-keeping.

Available in multiple languages, Grid Fleet Manager is designed for proactive safety management; gas exposure email alerts, direct data input, live filtering, test and exposure queries, collecting and printing reports. These features allow the managers to have greater control over the user's ALTAIR family of gas detectors, including the newest, fully connected ALTAIR io™ 4.

2. Automated Calibrations and Bump Tests

The ALTAIR io Dock helps further simplify calibration and bump testing procedures. When an ALTAIR io 4 device is in the Dock, the unit knows when it needs a calibration or bump test based on settings established by the user, and automatically performs the appropriate function. All compliance reporting is sent immediately to the Grid, helping to minimise the risks associated with manual record keeping or data file management.

3. Anticipated Calibration Gas Refills

MSA+ Autofill – an option with an MSA+ subscription including ALTAIR io 4 devices and Grid – can help ensure you have the right gas ready when you need it for daily bump tests and fleet calibrations. Autofill allows you to spend less time planning and managing inventory while avoiding unnecessary downtime due to expired or empty cylinders. The ALTAIR io Dock automatically sends an alert when your cal gas supply is running low. With the click of a button, replacement cylinders will arrive at the designated location within days.

Why is bump testing your portable gas detector important for safety?

Amplify safety with automated test systems for bump testing and calibration of your gas detectors

MSA's GALAXY GX2 Automated Test System is an automated docking and calibration station provides simple, intelligent testing and calibration for non-connected portable gas detectors from the ALTAIR, ALTAIR 2X, ALTAIR PRO, ALTAIR 4XR and ALTAIR 5X range of detectors.

The easy-to-use automated test stand can offer high performance as either a stand-alone unit, or an integrated portable detector management system, allowing data access and control of the ALTAIR family gas detector fleet.

The ALTAIR io Dock enables calibration and bump testing which can help to improve compliance and safety dedicated to Altair io 4 Connected Gas Detector. What's more, the io Dock offers full connectivity without interacting with end-user IT infrastructure. Grid Live Monitoring is a cloud-based application, allowing control room operators to monitor gas readings, check the status of alarms in real-time and monitor worker locations if this feature is required. They can also interact directly with workers through push-to-device alarms and notifications, or efficiently coordinate single or mass evacuations. Live monitoring could reduce response time by up to 50%, enhancing workplace safety and potentially saving costs which are associated with delayed reactions to hazardous situations.

Both GALAXY GX2 and io Dock supports:

- Colour touch screen for ease of setup and viewing
- Extremely simple to use; testing starts automatically without touching a single button
- Simultaneous testing of up to ten instruments, optimised for use with MSA XCell® Sensors and can provide up to 50% cost of ownership reduction
- At-a-glance indicators include low calibration gas volume, expiration warnings and test stand status.

Are you ready to streamline your gas detector's compliance and maintenance? Click here to learn more about our solutions.

ALTAIR 2XP H_2S with XCell Pulse Technology Features the first stand-alone bump test, which eliminates the need for bottled gas!

- Bump test anytime, anywhere
- Based on proven science and patented sensor capabilities

MSA operates in over 40 countries worldwide. To find an MSA office near you, please visit ***MSAsafety.com/offices***.

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