

MSA Warranty

PULSAR Oxygen Detector

- Warranty** - MSA warrants that this product will be free from mechanical defects and faulty workmanship for a period of two (2) years from date of shipment, provided it is maintained and used in accordance with MSA's instructions and/or recommendations. MSA shall be released from all obligations under this warranty in the event repairs or modifications are made by persons other than its own or authorized service personnel or if the warranty claim results from physical abuse or misuse of the product. No agent, employee or representative of MSA has any authority to bind MSA to any affirmation, representation or warranty concerning the goods sold under this contract. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED, IMPLIED OR STATUTORY, AND IS STRICTLY LIMITED TO THE TERMS HEREOF. MSA SPECIFICALLY DISCLAIMS ANY WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE.
- Exclusive Remedy** - It is expressly agreed that Purchaser's sole and exclusive remedy for breach of the above warranty, for any tortious conduct of MSA, or for any other cause of action, shall be the repair and/or replacement at MSA's option, of any equipment or parts thereof, which after examination by MSA is proven to be defective. Replacement equipment and/or parts will be provided at no cost to Purchaser, F.O.B. MSA's Plant. Failure of MSA to successfully repair any nonconforming product shall not cause the remedy established hereby to fail of its essential purpose.
- Exclusion of Consequential Damage** - Purchaser specifically understands and agrees that under no circumstances will MSA be liable to Purchaser for economic, special, incidental or consequential damages or losses of any kind whatsoever, including but not limited to, loss of anticipated profits and any other loss caused by reason of non-operation of the goods. This exclusion is applicable to claims for breach of warranty, tortious conduct or any other cause of action against MSA.

Garantía de MSA

Detector de Oxígeno PULSAR

- Garantía** - MSA garantiza que este producto no tendrá defectos mecánicos ni elaboración defectuosa por un periodo de dos (2) años a partir de la fecha de envío, siempre que reciba mantenimiento y se le utilice de acuerdo con las instrucciones y/o recomendaciones dadas por MSA. MSA quedará libre de toda obligación bajo esta garantía en el caso de que las reparaciones o modificaciones se hagan por personal que no sea de MSA o personal de servicio autorizado, o si la reclamación de la garantía es como resultado del abuso físico o mal uso del producto. Ningún agente, empleado ni representante MSA tiene alguna autoridad de comprometer a MSA con ninguna afirmación, representación o garantía respecto a las mercancías vendidas bajo contrato. ESTA GARANTÍA SE OFRECE EN LUGAR DE TODAS LAS DEMÁS GARANTÍAS, YA SEAN EXPRESAS, TÁCITAS O REGLAMENTARIAS, Y SE LIMITA ESTRICTAMENTE A LAS CONDICIONES EXPUESTAS EN EL PRESENTE DOCUMENTO. MSA RENUNCIA ESPECÍFICAMENTE A TODA GARANTÍA DE COMERCIALIDAD O IDONEIDAD PARA UN PROPÓSITO EN PARTICULAR.
- Recurso legal exclusivo** - Queda expresamente convenido que el recurso único y exclusivo del Comprador ante la violación de la garantía antes mencionada, por cualquier conducta agravante de MSA, o por cualquier otra causa de acción, será la reparación y/o el reemplazo de cualquier equipo o pieza mencionados aquí a la discreción de MSA, si resulta estar defectuoso después de la verificación hecha por MSA. Se proporcionarán equipos y/o piezas de repuesto sin costo alguno al Comprador, libre a bordo (F.O.B) desde la fábrica de MSA. La negativa por parte de MSA de reparar satisfactoriamente cualquier producto con el que no se está conforme no deberá causar que falle el propósito esencial del recurso legal que establece el presente documento.
- Exclusión de daños emergentes** - El Comprador entiende específicamente y está de acuerdo que bajo ningún concepto MSA será responsable ante el Comprador por daños económicos, especiales, incidentales o emergentes, o pérdidas de ningún tipo, incluidas de manera exclusiva más no limitativa, la pérdida de ganancias anticipadas y cualquier otra pérdida causada por el no funcionamiento de los enseres. Esta exclusión se aplica a las reclamaciones por la violación de garantía, conducta agravante o cualquier otra causa de acción contra MSA.

Garantie MSA

Détecteur d'oxygène PULSAR

- MSA garantit** par la présente que ce produit sera indemne de défauts mécaniques et de main d'œuvre pendant une période de deux ans à compter de la date d'expédition, dans la mesure où il est utilisé et maintenu conformément aux instructions et/ou aux recommandations de MSA. MSA sera libéré de toute obligation dans le cadre de cette garantie en cas de réparations ou de modifications effectuées par des personnes autres que celles appartenant à ses services ou dûment autorisées ou si le recours en garantie provient d'un abus physique ou d'un mésusage du produit. Aucun agent, employé ou représentant de MSA n'est autorisé à associer MSA à aucune affirmation, représentation ou garantie concernant les biens vendus au titre de ce contrat. CETTE GARANTIE REMPLACE TOUTE AUTRE GARANTIE, EXPRESSE, IMPLICITE OU LEGALE, ET RESTE STRICTEMENT LIMITEE AUX TERMES CI-CONTRE. MSA DENIE SPECIFIQUEMENT TOUTE GARANTIE DE QUALITE MARCHANDE OU D'ADEQUATION A UNE UTILISATION PARTICULIERE.
- Recours exclusif** – Il est expressément convenu que le seul et unique recours pour l'acheteur en cas d'inobservation de garantie ci-dessus, en cas de conduite délictueuse de la part de MSA ou pour toute autre cause d'action, sera la réparation et/ou le remplacement, à la discrétion de MSA, de tout équipement ou pièce, qui après examen par MSA sera prouvé comme étant défectueux. Le remplacement de l'équipement et/ou des pièces sera effectué gratuitement à l'acheteur, F.O.B. usine MSA. L'incapacité par MSA de réparer avec succès tout produit non conforme ne sera pas à l'origine de l'échec du recours ici établi dans son essence.
- Exclusion des dommages indirects** – L'acheteur comprend et est spécifiquement d'accord qu'en aucune circonstance, MSA ne sera responsable envers l'acheteur quant aux pertes ou dommages indirects, économiques, spéciaux ou résultants d'aucune sorte, y compris mais sans s'y limiter, toute perte de profits anticipés et toute autre perte provoquée en raison du fonctionnement des biens. Cette exclusion est applicable aux réclamations pour inobservation de garantie, conduite délictueuse ou pour toute autre cause d'action à l'encontre de MSA.



Activate By:



Oxygen

Part No.	Description
493580	Cylinder, 5.0% Oxygen, RP
479857	Cylinder, 20.8% oxygen, RP
467895	Regulator, 0.25 lpm
711175	Regulator, 0.25 lpm Combination
10030325	Tubing, 40 cm (16")
10032389	Suspender Style Clip
10032387	Spring Wire Clip

Accessories
U.S. Patent No. 5,667,653
Patented MSA Button™ Sensor
IP Rating:
Weight:
Size:
Audible Alarm:
Operating Life:
Humidity:
Operating Temperature Range:

Certifications
- US and Canadian cUL certification for Class I, Division 1 Groups A, B, C and D
- European ATEX II 1G EX ia IIC T4 +50°C
- Australian/New Zealand (IEC) Ex ia IIC Ta +50°C

Specifications
-10 to +50° C (+14 to +122° F)
10 to 95% RH, Non condensing
2 years with average of
2 minutes of alarm per day
85 dB @ 30 cm
3.4" H x 2.0" W x 0.75" D
(8.6cm H x 5.1cm W x 1.9cm D)
2.4 oz (68 grams)
IP54

PULSAR™ Oxygen Detector

Instructions for Use and Maintenance

WARNING

Failure to follow can result in serious personal injury or death.

Do not use this detector to sample for oxygen in gases other than air.

Perform an alarm function check and a response check before each day's use. If the instrument fails either check, the instrument must be taken out of service.

Recheck response and alarm function if the instrument is subjected to physical shock.

The instrument is factory sealed and contains no user serviceable parts. Substitution of components may impair intrinsic safety.

This unit contains a lithium battery; dispose of properly.

Do not rely on the vibrating alarm (if equipped) in cold temperatures (<0°C) as the vibrating alarm may cease to operate under these conditions.

CAUTION

To prevent sensor damage, store the instrument under the following conditions:

Intermittent (24 hours)	Optimal Storage Temperature
-20 to +4°C (-4 to +40°F)	4 to 32°C (40 to 90°F)
32 to 50°C (90 to 120°F)	

Activating the PULSAR Detector

The unit must be activated before it can be used to warn the user of a potentially hazardous condition.

- To activate the personal protection instrument, press and hold the TEST button for 3 seconds. The instrument will indicate the initialization sequence by counting up 1, 2, 3 ...on the display.
- The instrument will then perform a 60 second activation countdown.

Once activated, the instrument will remain active until the months remaining counter reaches 0 or a low battery error occurs.

PULSAR Alarms

There are two alarm setpoints in the instrument. Refer to your instrument for your factory-set alarm points. The instrument is factory configured with EITHER one oxygen enrichment and one oxygen depletion alarm OR two oxygen depletion alarms.

- If the gas concentration reaches or falls below the first depletion alarm setpoint (depletion-depletion configuration) or reaches and exceeds the enrichment alarm setpoint (enrichment-depletion configuration):
 - the instrument will display and flash

"Lo" on the LCD and enter a low alarm sequence.

- The low alarm can be silenced for five seconds by pushing the TEST button or it will automatically clear once the oxygen level exceeds the setpoint (oxygen depletion) or falls below the alarm setpoint (oxygen enrichment)
- If the gas concentration reaches or falls below the second depletion alarm setpoint (depletion-depletion configuration) or reaches or falls below the depletion alarm setpoint (enrichment-depletion configuration):
 - The instrument will display and flash "Hi" on the LCD and enter a high alarm sequence.
 - The high alarm can be silenced for five seconds by pressing the TEST button or it will automatically clear once the oxygen level exceeds the setpoint

Refer to instrument markings for factory-set alarm setpoints.

PULSAR Calibration

False oxygen alarms can occur due to changes in barometric pressure (altitude changes) or extreme changes in ambient temperature. The PULSAR Detector is equipped with a feature to allow calibration at pressure and/or temperature of use. Be sure that the instrument is in known fresh air before performing a calibration.

To calibrate the oxygen sensor:

- Press and hold the TEST button for five seconds
 - the instrument displays "rc"
- Release the TEST button
- Immediately push and hold the TEST button again for five seconds
- The display will count down from 5 to 1
- The instrument will calibrate the oxygen sensor
- "dn" will be displayed to indicate a successful calibration
- The instrument will return to normal mode.

If the oxygen sensor cannot be calibrated, "Er" and "6" will alternately flash on the display. The instrument must be removed from service.

PULSAR Function Checks

Confidence Flash

The alarm lights will flash approximately every 30 seconds to indicate that the PULSAR Detector is operating.

Alarm Test (Check before each day's use)

If the TEST button is momentarily pressed, a one-second test of the alarms must occur. This test includes testing the:

- display
- alarm lights
- vibrator (if installed)
- horn

Time Remaining (Check before each day's use)

After the alarm test, the PULSAR Detector's remaining operating time (in months) will be displayed for nine seconds.

- The months remaining (24 to 0 months).
- When the months remaining reaches zero, the instrument must be taken out of service. The instrument will remain active until the TEST button is pushed three more times or until four days have elapsed, whichever comes first. After this, the instrument's alarm LEDs will light and the display will alternate between "Er" and "10". The instrument will no longer warn of hazardous gas concentrations and must be removed from service. The alarm can be silenced by pushing the TEST button.

The time remaining display will decrement faster if the instrument experiences alarms or the test feature is used more than approximately two minutes per day.

Response Check (Check before each day's use)

To ensure proper operation of the PULSAR Detector, it must be gas checked daily. To perform a response check:

- Connect one end of the calibration tubing to the response check cylinder and the other end to the fitting on the PULSAR Detector.
- Turn on the cylinder valve. The display must indicate an alarm and the alarm lights, horn and vibrator (if installed) must activate. Remove the gas, close the valve and reset the alarm.

Software Version

To view the software revision of the instrument, press and hold the TEST button for three seconds during the months remaining period. The instrument will display "rE" for 0.5 seconds, followed by the revision of the software (1-99) for 1.5 seconds.

Low Battery

Should the PULSAR Detector's battery become too low to operate the instrument:

- the alarm lights will light
- the horn will sound
- the display will alternate between "Er" and "11".

The battery has sufficient capacity to power the instrument for two years with approximately two minutes of alarms per day. Alarms beyond two minutes per day, or excessive use of the Test feature, may cause the battery alarm to occur sooner than normal.

The alarm can be silenced by pushing the TEST button.

Optional Clips

The PULSAR Detector is supplied with two mounting clips. When choosing a clip, be sure that the inlet to the sensor is not covered or obscured by clothing, paper or anything else that may prevent the sensor from being fully exposed to the atmosphere being monitored.