

GAS DETECTOR

ORION® MULTIGAS DETECTOR



Connect gas. Don't hold the hose within 1 cm of the end.

Screw down the calibration nozzle



SPECIFICATIONS

Manufacturer: MSA
Model: Orion® Multigas Detector
Sensors: Oxygen, carbon monoxide, hydrogen sulphide, combustible gases (% of LEL)
Power: 3 x AA alkaline batteries (Duracell® MN1500 or Energizer E91)
Warm up time: 25 seconds

CHALLENGE TEST RESULTS

The allowable range is shown in brackets.

Combustible gas: 58% (52 – 64%)
Oxygen: 15% (13 – 17%)
Carbon monoxide: 300 ppm (270 – 330 ppm)
Hydrogen sulphide: 10 ppm (9 – 12 ppm)

WEEKLY INSPECT AND TEST

The following test must be conducted in clean air, away from any air contaminants.

- ▶ Inspect the case and its contents for wear or damage, and ensure the inventory is correct.
- ▶ Press and release the **On/Off/Page** button. After warmup, the **Zero** flag will flash for about ten seconds. Do not continue if the Orion shows contaminants are present.

WARNING: Zeroing the Orion in contaminated air causes the unit to recognise that atmosphere as normal. Do not zero the unit in contaminated air.

- ▶ Zero the unit by pressing the **On/Off/Page** button whilst the **Zero** flag is flashing.
- ▶ Once the LEL, CO, and H₂S readings reach 0% or 0 ppm, and the O₂ reading is at approx 20.8%, the **Zero** flag disappears. The Orion is now in instant reading mode.

CONDUCTING THE WEEKLY CHALLENGE TEST

- ▶ Locate the calibration nozzle stored inside the kit and screw it to the air inlet port on top of the detector (as shown above).
- ▶ Locate the calibration gas and check the cylinder expiry date; if current, connect the regulator, attach the calibration hose, fully open the regulator, and attach to the calibration nozzle. Expose the detector to the calibration gas for a maximum of two minutes. (The readings should stabilise within that period.)
- ▶ As the unit goes into alarm, acknowledge each alarm by pressing **Change/Reset**. When the readings stabilise ensure they are within the allowable range as indicated in the challenge test results table above.
- ▶ Remove the hose, turn off the regulator, and run the Orion until the display shows clean air.
- ▶ If the challenge test fails, conduct a field calibration (consult recommended practice for details).

CAUTION: DO NOT turn the unit off until sensors are clear of contaminants and the display shows clean air.

- ▶ Test the Orion's pump (Leak Test) by connecting the air sampling wand and clear hose to the unit. Block the end of the wand with a finger. A red light will flash, an audible alarm will sound, and the **Pump** flag displays. Remove your finger and acknowledge the alarm by pressing **Change/Reset**. If the pump alarm doesn't activate, there may be a leak. Consult the recommended practice for details.

<Continued overleaf>

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CLEARING PEAK, TWA AND STEL READINGS

Clear peak, minimum, TWA and STEL readings after conducting the challenge test. To do this:

- ▶ With the instrument operating in clear air; press the **Page** button once.
- ▶ The **Peak** flag will display, and the display gives peak readings for each head, recorded since the unit was turned on, (or since they were last cleared).
- ▶ Press and hold **Change/Reset** button, until the **Change** flag appears. The **Peak** flag will now flash.
- ▶ Press the **Page** button to confirm; all the peak and min readings will reset.
- ▶ Follow the same procedures on the STEL and TWA pages to clear those readings.

SEAL: Place the plastic seal so that the seal breaks when the case is opened.

INVENTORY

- 1 x Orion® gas detector (including rubber cover and neck strap, complete with 3 batteries)
- 1 x recommended practice
- 1 x air sampling wand fitted with water stop
- 1 x air sampling hose (clear)
- 1 x calibration gas cylinder
- 1 x small regulator and black rubber hose
- 1 x small tool kit containing:
 - MSA screwdriver/allen key
 - Duracell® MN1500 or Energizer E91 batteries (3 min)
 - calibration nozzle
 - spare water stop filters (3 min)
 - quick reference card
 - dust filters.

CALIBRATION GAS

Calibration gas is automatically supplied by MSA before the cylinder expiry date. Contact Gas Help if:

- you haven't received a new cylinder by the expiry date on the old cylinder
- your cylinder runs out before the expiry date.

Return empty and expired calibration gas cylinders to MSA after you have received a replacement. This is a one-for-one swap. Before transport, take the cylinder outside – away from doors and windows – and bleed it empty.

NOTE: If the cylinder is empty, you won't require dangerous goods documentation.

NOTE: Empty cylinders are required for quality control and equipment management purposes.

DOWNLOADING DATA

If the Orion is used at an incident where there is a near miss, injury or a fatality, the Orion must be quarantined and the data downloaded. Ensure no data is lost.

Data is downloaded by infrared connection to a PC. If you require data to be downloaded, contact Gas Help or the HMRU Technical Service Centre. A replacement will be issued.

ENQUIRIES

Call Gas Help on 0407 663491, 24 hours.

For more information on operating the Orion, see *Recommended practice: Four-head gas detector: MSA Orion* on Station Portal.