

AirElite 4h

KO₂ closed-circuit long duration breathing apparatus



*Because every life has a **purpose...***

AirElite 4h – Closed-circuit breathing apparatus

More than 100 years of competence and experience in the field of breathing apparatus and Personal Protective Equipment made it possible for MSA to develop the AirElite 4h.

MSA has successfully applied the principle of oxygen generation from potassium hyperoxide (KO₂) for breathing air regeneration for more than 40 years.

The AirElite 4h is the state of the art successor of the AirElite 2h developed in 1995 which was the first long duration device on the market using KO₂ technology exclusively.

Together with its integrated control monitor IC-Air it forms a unique closed-circuit breathing apparatus.

Now, all the benefits of the KO₂ principle are available for long service periods of up to four hours.

Developed for practical use

In cooperation with the accreditation testing body DEKRA EXAM Ltd. and customer all over the world, all needs of fire brigades and mine rescue teams were analysed and taken into consideration. The main applications for fire brigades are tunnels, chemical plants like refineries, large storage facilities and high-rise buildings.

For mine rescue teams we offer the well established KO₂ technology for the long duration underground and rescue missions.



Safety and comfort

The safety and comfort of the user were the primary factors in the development of the AirElite 4h. A slim design, with breathing tubes at the side and close to the body for maximum freedom of movement and extremely easy breathing, make the AirElite 4h an indispensable piece of operational equipment. As it's operation and the oxygen generation is breath controlled and don't need more than the users exhalation, we reach the maximum level of safety possible. The air supplied is very user friendly as it's dry and cool.



AirElite 4h – Convincing innovative features

Comfortable and safe in use

- Slim construction which doesn't overhang the users shoulder width
- The ergonomic design offers maximum comfort by positioning the weight to the waist
- Lateral breathing tubes near to the body for easy donning and doffing
- Excellent breathing comfort: low breathing resistance, low inhalation temperature, dry breathing air
- AirElite 4h starts automatically when mask connector is disconnected from the shoulder strap
- Flexible service times dependent on breathing rate and chosen canister
- Unit is absolutely safe even if electronics fail
- Simple, pressure free breathing air regeneration in one single step
- Breath controlled air supply without regulator
- Effective air cooling with three stage cooling system
- Minimal inspection requirements:
 - quick, easy maintenance and reconditioning
- Maintenance free standby storage for up to 2 years in readiness
 - up to 8 years if canisters are in factory sealed condition



Economical – training

For economic several options are available to train the user in donning and doffing. MSA also offers an KO₂ Training kit for the most demanding training scenarios in fire schools or mine rescue training galleries.

Practically no costs for training with trainer conversion kit using ambient air.

No breathing canister consumption



Intelligent – Integrated Control

- Integrated control and display unit
- AirElite 4h is controlled and monitored electronically
- Digital consumption indication
- Three warning stages at 50 %, 20 % and 5 % remaining capacity (visual and acoustic warnings)
- Automatic motion sensor and alarm
- Manually activated emergency alarm



AirElite 4h & IC-Air



1 Electronic distributor



2 Blower



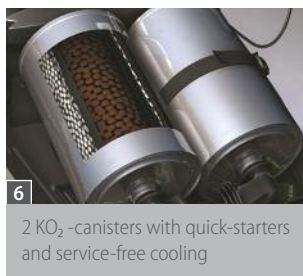
3 Rechargeable battery



4 Mask connector with auto-start



5 Consumption sensor



6 2 KO₂ -canisters with quick-starters and service-free cooling



7 Ventilation tubing and coolers



8 IC-Air control monitor

Optimized function

Exhaled air, enriched with carbon dioxide and moisture, is directed into the exhalation bag by the valve control. A blower assists the air in its passage through the air distributor and into the two parallel-connected KO₂ canisters. Inside the KO₂ canisters, with their maintenance-free cooling, the exhaled air is cleaned of carbon dioxide and humidity and enriched with fresh oxygen.

Chemical process

KO₂ is a chemical which reacts spontaneously with the moisture and carbon dioxide (CO₂) in the exhaled air. This reaction releases energy (heat) and oxygen (O₂).

At any given time, considerably more oxygen is produced than is consumed. The person wearing the unit is provided with a reserve of oxygen which enables rapid changes from light to heavy work.



AirElite 4h on KO₂ basis

- Completely breath-controlled (no mechanical control devices)
- Simple construction
- Very safe function
- Immediately ready for use
- Suitable for long periods of storage without maintenance



AirElite 4h – Safety matching economy

The AirElite 4h also sets new standards from an economic point of view. Considerably less work is required for preparation and maintenance, and because training can be done at practically no cost, your long-term operating costs will also drop.

Cost-free training as option

Using the TR conversion kit, a unit for real-life operation can be quickly and easily converted into a training unit. All of the training exercises can then be performed at practically no cost with a reusable training canister.

With high efficient particle filters training under realistic conditions in high dust environments, mist and non-toxic smoke is possible. An option for odor removal is available.



Low cost of ownership

No investment in additional assets and the low maintenance costs of the AirElite 4h reduce the cost of ownership to a minimum.



Approved safety

At MSA, the safety of the user is the top priority, and they take it well beyond the legal requirements. AirElite 4h, for example, not only satisfies the approval requirements of DIN 58652-2 and vfdb 0802 standards, but has also passed the tough "Flame Engulfment Test" for mining and fire brigades, with flying colours.



Technical specifications

Weight (without mask)	15 kg
Dimensions (casing) H x W x D	600 x 360 x 190 mm
Service time	dependent on consumption; with an average breathing rate of 30 l/min it is 4 hours; maximum 6 hours
Storage at standby	-6 °C to +60 °C
Operational temperature once in use	-15 °C to +60 °C
Breathing resistance at 30 l/min	- inhalation: -3 mbar - exhalation: +5 mbar
Inhaled air	- temperature: 30-45 °C - humidity: 20-40 % - carbon dioxide: < 1,0 vol.% (mask not considered) - oxygen: > 80 vol.%
Maximum surface temperature	temperature class T4 (< 135 °C)
Electronic controls	- EEX ia IIC T4/ATEX 94/9, needs to be EEX ia IIC T4 Ga/ATEX 94/9, Group 1, Cat. M1 Protection against dust and water: IP 67 - EMC in accordance with EN 61000-6-1 and EN 61000-6-2
Housing	polycarbonate, self-extinguishing, impact-resistant, with antistatic coating
Breathing connection	full face mask 3S-R AirElite or Advantage AirElite with MSA push-to-plug connector
Approvals	- EXAM in accordance with DIN 58652-2, - Class 240S for work and rescue - vfdb 0802 - ATEX 94/9 EC



Ordering information

10065152	AirElite 4h (less chemical oxygen canister kit and full face mask)
10065373	AirElite 4h chemical canister kit
10065153	3S-R AirElite full face mask
10065154	Advantage AirElite full face mask
10118774	Advantage 4000 AirElite full face mask
10100126	AirElite 4h trainer conversion kit HD
10151860	AirElite KO ₂ Trainer canisterset
10151861	AirElite KO ₂ Trainer housing cover
10094376	Particle filter P3 PlexTec (pack of 10)
10071650	AirElite case





Trust & Durability

For nearly 100 years our passionate mission of safety empowers us, "The Safety Company", to protect lives. We are committed to providing the latest innovative, best-in-class safety solutions that feature integrated systems capabilities and allow our customers to return "Home" safely to their families and friends.

Every day our customers place their lives in our hands. In return, we provide them with protection they can trust, and their stories become our stories. Hand in hand we partner with our customers to earn that trust.

At MSA, Every Life has a Purpose.



Thank you for reading this data sheet.

For pricing or for further information, please contact us at our UK Office, using the details below.



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Please note - Product designs and specifications are subject to change without notice. The user is responsible for determining the suitability of this product.