


Containerized oxygen production

Giving oxygen autonomy to field hospitals



Air Liquide offers autonomous oxygen generator units to supply field hospitals and eliminate logistics restraints.

These units provide an endless supply and guarantee a quality of oxygen compliant with the ISO/FDIS 10 083.

Key benefits

- ✓ Autonomy
- ✓ Robust and reliable, adapted to harsh environments
- ✓ Easy to operate (fully automatic filling ramp)
- ✓ Direct connection to hospital network
- ✓ Road, rail, sea and air transportable
- ✓ Silent
- ✓ Few customer utilities
- ✓ Reduced maintenance
- ✓ Compliant with military standards (GAM EG13) and medical directive 93/42/EEC

How does it work?

The module employs an oxygen concentrator system capable of producing breathable clean, dry, oil free oxygen enriched air from atmospheric air.

The installation of the technical equipment can be broken down into two parts, a gaseous oxygen production unit with the associated oxygen supply system for field hospitals allowing to be connected directly to medical oxygen network (outlet 10 bar) and a high-pressure filling system for oxygen cylinders (200 bar). The distribution pressure may be set at the second expansion point in order to obtain between 4 and 5 bar at the end of the line in the vicinity of the patient. An automatic changeover system is installed so as to enable a continuous supply to the field hospital in the event of failure of the oxygen production unit, from a back-up supply plant within the container consisting of type B50 cylinders, with this system representing the first back-up level.

These cylinders (or tank) are filled when the unit is started up in situ, and then as needed. The quantity of oxygen corresponds to use at a flow rate of 15 m³/h, with the target of 10 hours' autonomy. The back-up is engaged automatically. In addition to the first back-up level, a second back-up system can be installed outside of the 20 foot ISO container. This second back-up is engaged automatically in the event of failure of the oxygen production unit.

A set of equipment comprising a booster assembly and distribution manifolds is able to provide high-pressure filling of medical oxygen cylinders. The oxygen filling system proposed provide a flow rate of 15 m³/h, for filling a variety of cylinder capacities up to 200 bar.

A gases distribution network can be supplied with each oxygen production module.



Technical characteristics and performances

- Oxygen flow: 15 m³/h (from sea level to 2 000 m), can be increased to 30 Nm³/h during ten hours, using internal back-up
- Oxygen purity: 93% +/-3% according to US and EU pharmacopeia
- Outlet pressure: 10 bar
- Cylinders high-pressure filling: 207 bar (3000 PSI)
- PLC controlled
- Size: 20 feet ISO container
- Optional remote diagnosis
- Operational from -32°C till +55°C (40°C with 90% HR)
- Ten hours autonomy back-up

Customer utilities

- Power supply: 400 V TRI 50 Hz current source (local distribution network or a generator)
- Consumption: 80 kW

Contact

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Creative Oxygen

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Main components

- Two PSA's (Pressure Swing Adsorption) lines
- Two high-pressure oxygen compressors
- Two air compressors
- Two climatic units
- Filtration and drying air treatment device
- On-line paramagnetic oxygen analyzer
- Atmosphere analyzer
- Air and oxygen tanks
- A set of 10 m³ cylinders for back-up
- An automatic regulation and control assembly for the equipment
- External filling ramp: 17 connectors on four manifolds
- Vacuum pump to clean cylinders before filling
- Radio remote alarm
- 20-feet ISO container insulated and air-conditioned
- Canopy to protect the filling ramp against rain, sun and sand
- An oxygen network with flexible piping, reducers... (details on demand)

Associated services

- Preventive and curative maintenance
- Technical assistance
- Spare parts
- Training

World leader in gases, technologies and services for Industry and Health, Air Liquide is present in 80 countries with more than 50,000 employees and serves more than 2 million customers and patients. Oxygen, nitrogen and hydrogen have been at the core of the company's activities since its creation in 1902. Air Liquide's ambition is to be the leader in its industry, delivering long-term performance and acting responsibly.