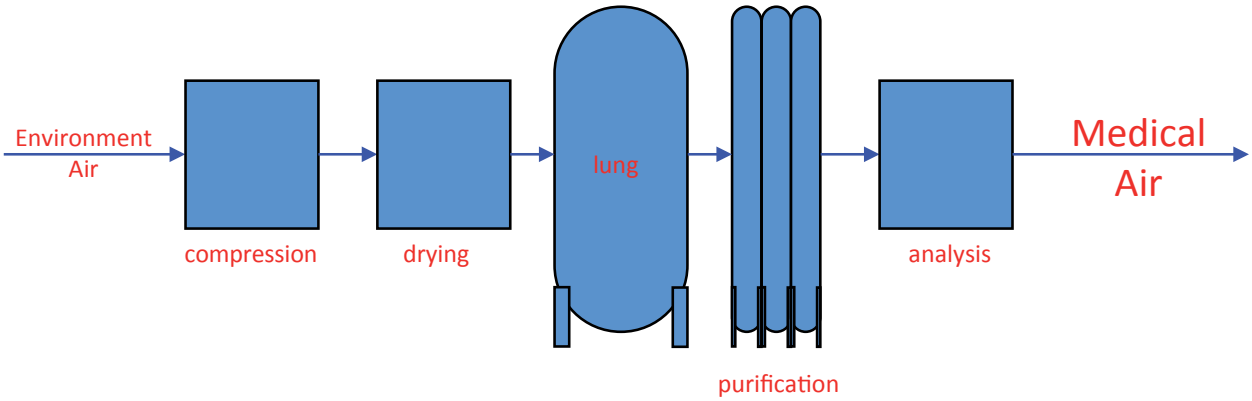
MasterEnergia

ENGINEERING

Medical Air production equipment

Medical air production

The process consists in extracting the air from the environment, compressing it and eliminating the pollutants in it.
These are removed through molecular filters and specific catalysts.
The following scheme presents the process of medical air self-production.



Medical air self-production: the reasons why.
The on-site medical air production presents the following advantages:
- Low budget operation
- No constant medical air consumption needed
- No cryogenic tanks of oxygen and nitrogen.

Medical air features

The medical air features established by the Official European Pharmacopeia are indicated in the following chart:

O_2	20,4% ÷ 21,4%
CO	< 5 ppm
CO_2	< 500 ppm
H_2O	< 60 ppm
SO_2	< 1 ppm
NO + NO_2	< 2 ppm
OIL	< 0,1 mg/m^3
ODORS AND FLAVOURS	none

AIR STATION medical air production systems

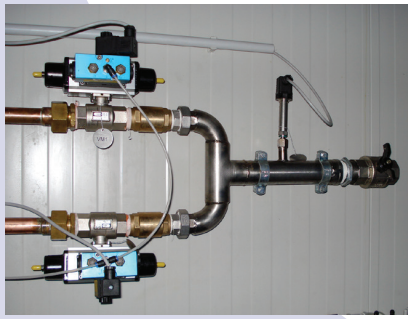
The **AIR STATION** medical air production systems are built for the on-site medical air production and respect all the standards required by the Official European Pharmacopeia.

The variety of **AIR STATION** self-producers satisfies a medical air consumption of 2.000 Nm3/h. at 1, 2, 3 sources, respecting the EN 7396-1 norm and guaranteeing a high reliability and economy level.

The **AIR STATION** producers are available in a **cabin** version or on **skid**.

In the first version the **AIR STATION** systems are equipped with a caulked and air-conditioned transportable cabin; this version is particularly recommended for clients who do not dispose of internal or suitable spaces where the system can be installed: an outdoors space where the producer can be placed and connected to an electricity supply and the medical air network will be sufficient.

Air station cabin version.



In the second version the **AIR STATION** systems are equipped with one or more self-supporting steel frameworks which are pre-fabricated and transportable by forklift truck: this version is particularly recommended for clients who dispose of internal or suitable spaces where the system can be installed: the skid should be placed and connected to an electricity supply and the medical air network.

From the front

From the side

MODEL	N. SOURCES	CAPACITY PER SOURCE	POWER	SIZE mm
CAM101S	1	10 mc/h	1x2,2 kW	L800 x P1800 x h1960
CAM102S	2	10 mc/h	2x2,2 kW	L800 x P1800 x h1960
CAM103S	3	10 mc/h	3x2,2 kW	L800 x P1800 x h1960
CAM201S	1	20 mc/h	1x3,0 kW	L800 x P1800 x h1960
CAM202S	2	20 mc/h	2x3,0 kW	L800 x P1800 x h1960
CAM203S	3	20 mc/h	3x3,0 kW	L800 x P1800 x h1960
CAM301S	1	30 mc/h	1x5,5 kW	L800 x P1800 x h1960
CAM302S	2	30 mc/h	2x5,5 kW	L800 x P1800 x h1960
CAM303S	3	30 mc/h	3x5,5 kW	L800 x P1800 x h1960
CAM401S	1	40 mc/h	1x7,5 kW	L800 x P1800 x h1960
CAM402S	2	40 mc/h	2x7,5 kW	L800 x P1800 x h1960
CAM403S	3	40 mc/h	3x7,5 kW	L800 x P1800 x h1960

The **AIR STATION** medical air production systems are managed by programmable logic devices which control the process parameters and manage the security alarms in case of anomalies.

Data analyzers constantly monitor the air quality, a programmable logic device records the parameters and sounds an alarm in case of exceedance of the limit values.

The **AIR STATION** systems are equipped with an alarm repeat system, which is connected with the alarm center of the device, and an SMS notification service.

The **AIR STATION** self-producers guarantee a high reliability and economy level service, standing by during all the time in which medical air is not requested and modifying the empty/refill interval of the compressors, in accordance with the maximum load required.

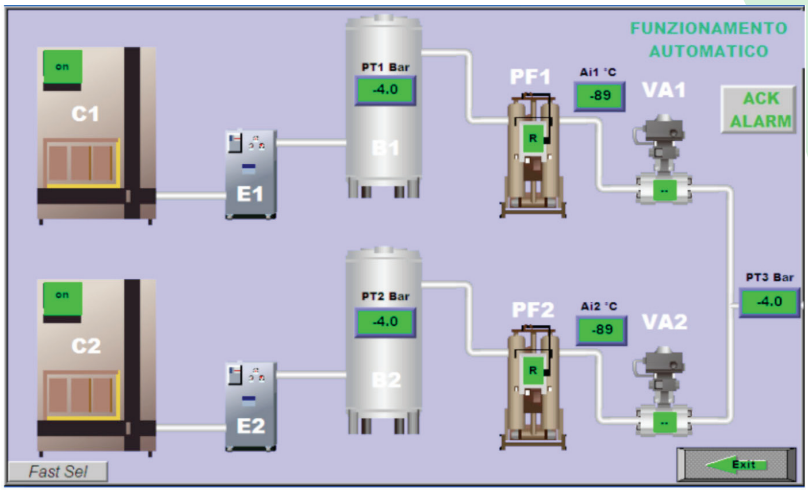




The control system of the Airstation is easy and comfortable thanks to its new software EasyView, a color touch screen 7” display that enables the following operations:

Displaying the operation parameters

- Medical air pressure
- Dew Point Analysis
- CO2 Analysis (optional)
- CO Analysis (optional)
- SO2 Analysis (optional)
- NO Analysis (optional)
- NO2 Analysis (optional)
- 02 Analysis (optional)



Synoptic

Setting the system parameters

- Workflow process
- Dew Point Set
- Alarm Set
- Available Telephone numbers entry
- Updating the maintenance data base

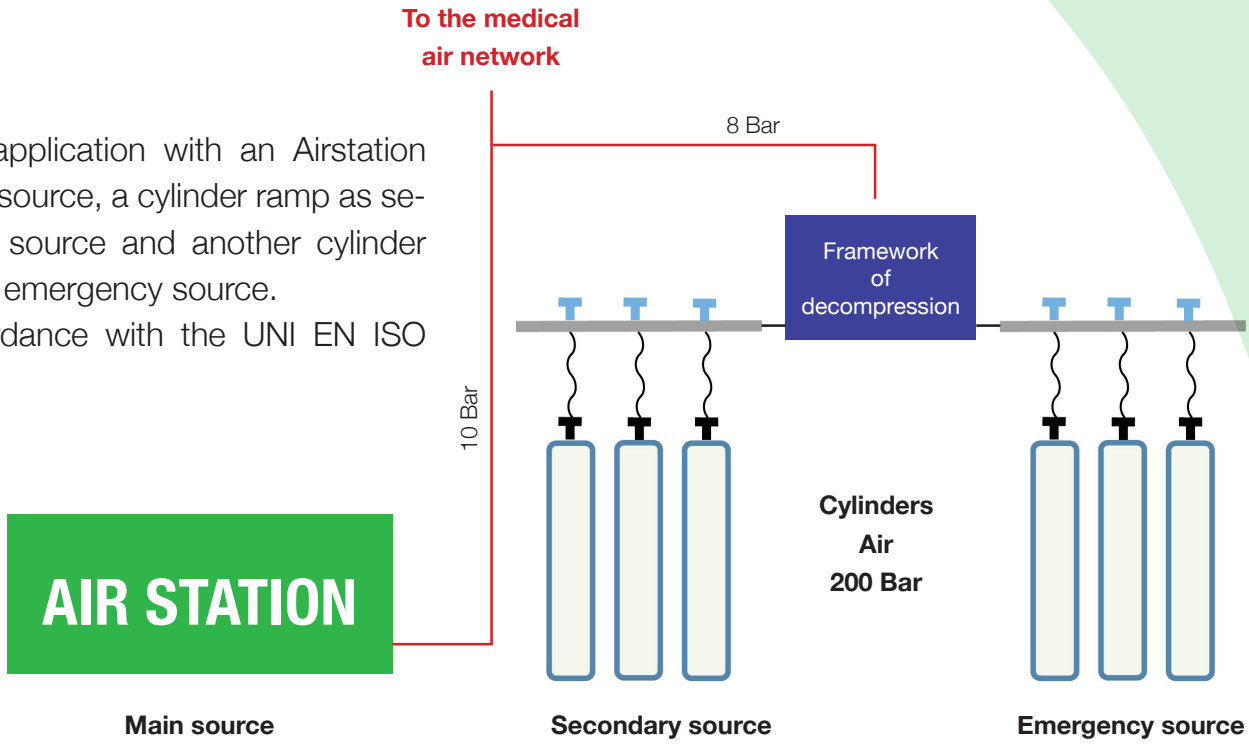
Consulting the alarm and event list

- Displaying the alarm log by date and time
- Displaying the event list by date and time
- Downloading the data on a USB flash drive in an Excel file.

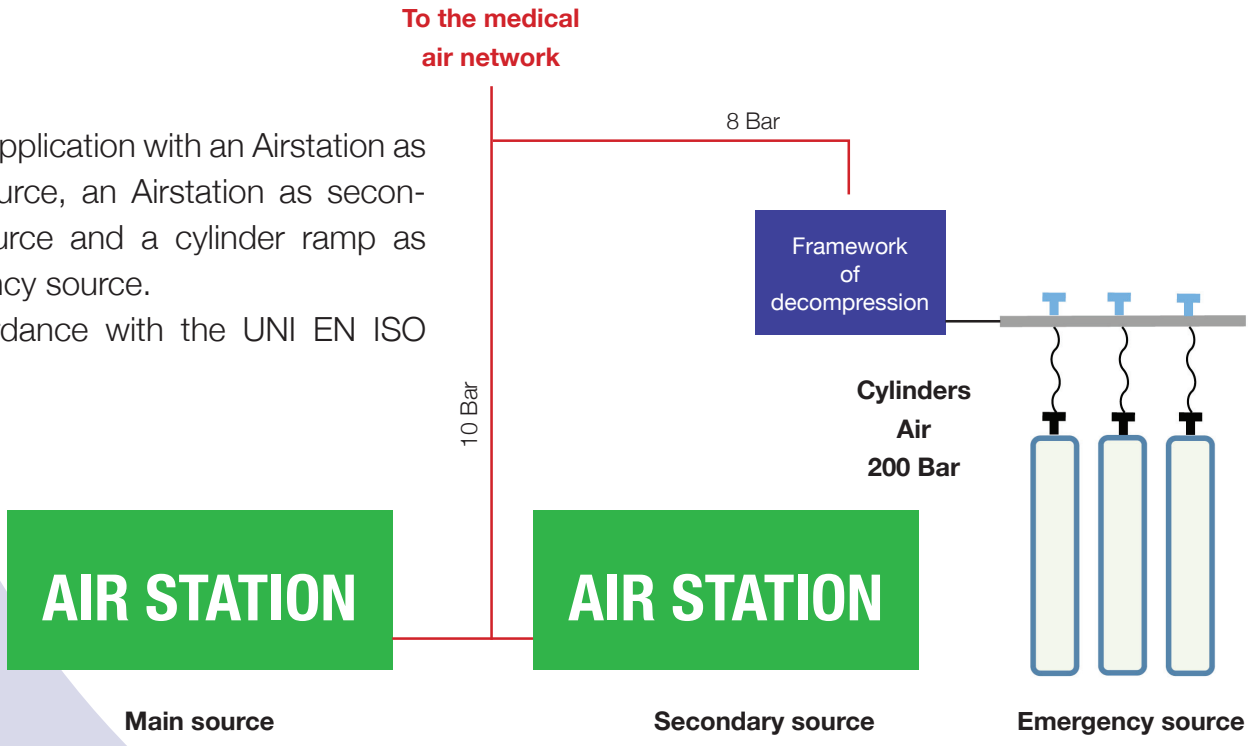
Airstation is equipped with potential-free contacts which signal breakdowns and alarms to the alarm system of the medical gas stations. Furthermore it is possible to connect Airstation to the Ethernet network of the hospital center through the Ethernet Module (optional) and display the alarms and the operating status on a different touch screen display installed in a controlled place (ex: Reception).

Thanks to the GSM module (optional) the Airstation conveys the alarm signals via SMS to more telephone numbers (Account Technician, Technical Account Manager of the hospital center, etc.). The technician who receives the alarm SMS can send the Airstation a series of SMS to:
-Reset the machinery, ex: after a sudden change of voltage
-Turn off or start again the machinery
- Silence the alarm sound; this option is useful in case the machinery is installed in an unattended place, especially in the night, and the acoustic signal disturbs the patients or other people.

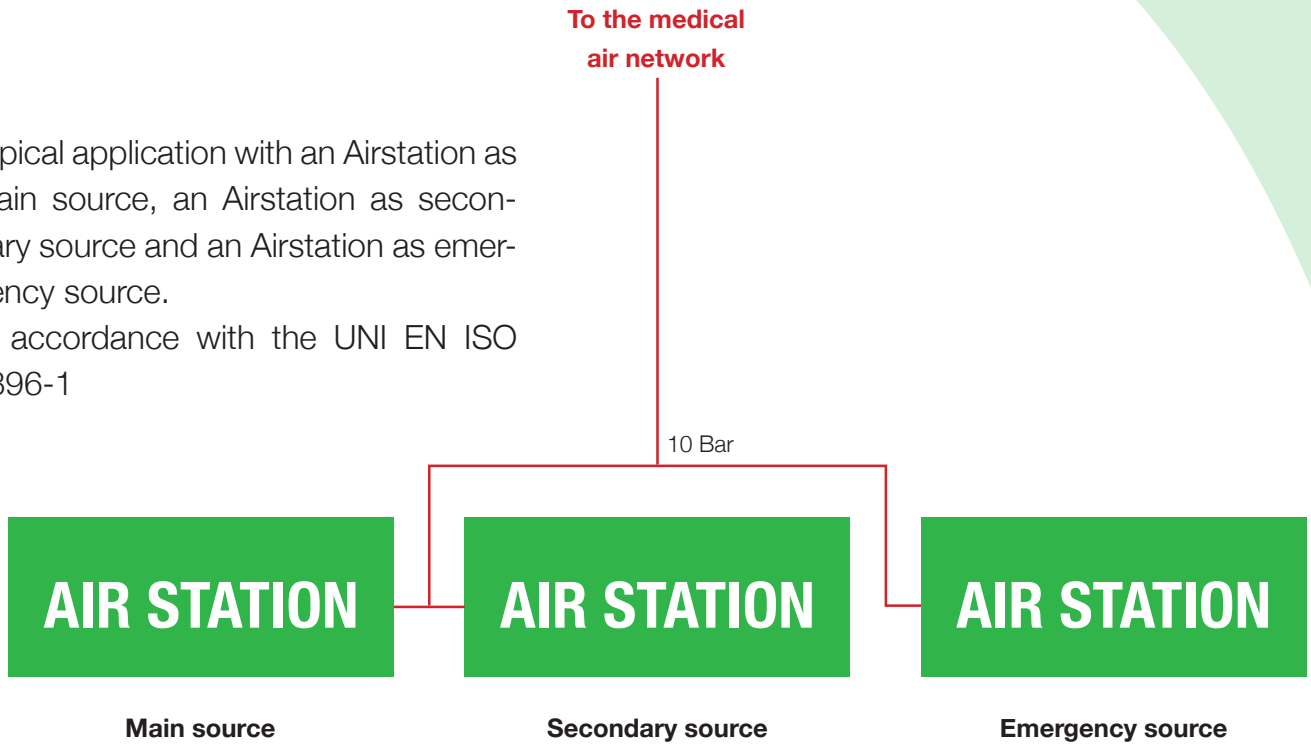
Typical application with an Airstation as main source, a cylinder ramp as secondary source and another cylinder ramp as emergency source.
In accordance with the UNI EN ISO 7396-1



Typical application with an Airstation as main source, an Airstation as secondary source and a cylinder ramp as emergency source.
In accordance with the UNI EN ISO 7396-1



Typical application with an Airstation as main source, an Airstation as secondary source and an Airstation as emergency source.
In accordance with the UNI EN ISO 7396-1



All the medical air production systems are CE marked as Medical Devices IIb class in accordance with the Directive 93/42 CEE and PED according to the G module of the Directive 97/23/CE.

MASTER ENERGIA Srl

Head Office: Via Maestri del Lavoro, 14/1

30014 CAVARZERE (VE) - Italy

Tel. e Fax (+39) 0426 997946

www.masterenergiasrl.it

General enquiries: *info@masterenergiasrl.it*

Administration: *invoice@masterenergiasrl.it*

Sales: *sales@masterenergiasrl.it*

Technical office: *engineering@masterenergiasrl.it*

Production: *production@masterenergiasrl.it*

Quality: *quality@masterenergiasrl.it*