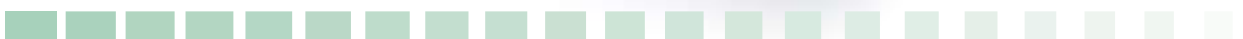


# Stephan FS Oxygen Production

The economical quality



redundant  
independant  
space-saving  
energy-saving  
low maintenance



## Optimal O<sub>2</sub> Generation Systems by Stephan

Oxygen production, using the model series FS manufactured by F. Stephan GmbH, means a safe, self-sufficient and low-maintenance supply of oxygen for clinics and private surgeries.

During the development of the system and its various components, priority was continuously given to safety and reliability, while price-relevant considerations played a secondary role. The result of these efforts is an oxygen generation system that is convincingly unmatched in the advantages and low energy costs that it provides.

Investing in a self-sufficient oxygen generation system by F. Stephan GmbH guarantees true independence from suppliers in covering your entire requirement of oxygen and compressed-air.

### Price favourable Oxygen Generation

For the production of 1 Nm<sup>3</sup> oxygen, only approximately 1kWh of electrical energy is required. The cost of covering oxygen requirements remains constant, calculable, and independent of market prices. And operating and maintenance costs are minimal.

The FS series for oxygen generation is available for an oxygen output of 10 to 240 liter/min. or 0,6 Nm<sup>3</sup>/h to 14 Nm<sup>3</sup>/h at 5 bar operating pressure. This corresponds to a daily requirement of 2 to 48 oxygen cylinders with a volume of 50 liters each at 150 bar full pressure.

### Optimal safety thanks to redundant components

The model series FS provides virtually unlimited oxygen generation in accordance with the PSA principle, and thanks to its modular design ensures the greatest possible operational safety.

Redundant O<sub>2</sub> generation units (exception: the 10-liter system) guarantees the highest level of safety for supplying medical gases in hospitals and private surgeries.

Depending on the output performance, the FS oxygen generation system of the F. Stephan GmbH consists of 2 or 3 units. Each of these units is capable of solely and independently generating oxygen, so that in the event of failure of one unit, the supply of oxygen can be ensured in any emergency.

### Self-sufficient and independent

Oxygen generation using the FS system once and for all ends the need to store and provide cylinders or liquid oxygen, and by this, eliminates the need of suppliers.

### Space-saving compact design

The structure and design of the FS series has been developed for optimal utilisation of space. Output of up to 80 liter/min. is available as a ready-to-use compact system, and requires only a minimum of installation work.





FS Modul 1



FS Modul 2



FS Modul 3





## Fully developed principle

Oxygen generation is based on the adsorption effect of molecular sieves (zeolites). Compressors compress the ambient air which is then fed alternately to the individual generator modules. Here, nitrogen is adsorbed by molecular sieves, and the oxygen is stored as a product in the oxygen tank.

Oxygen concentration amounts to a maximum of 93% +/- 3%. What remains is made up of inert gases and residual nitrogen.

## Securing the future

The model series FS is already in compliance with the regulations of the new ISO 10083 governing oxygen concentrators. This advantage of the F. Stephan GmbH safeguards the user against costly upgrading or conversion expenditure to comply with future standards and safety requirements.

## Safe and easy to operate

Control of the module is provided by the programmable operation unit FS-Control, which switches the units on or off in accordance with oxygen need and consumption. In addition, it monitors oxygen reserves and in the event of an increase in oxygen use automatically switches over to the O<sub>2</sub> reserve. Furthermore, the system ensures even distribution of operating hours to the individual modules.

Optionally, the FS-Control will also monitor the ambient air, flow volume, and transmit all alarm situations to a central monitoring system.

The oxygen concentration is permanently controlled by an oxygen monitor with a paramagnetic sensor. The oxygen sensor is maintenance-free, needs no calibration and has a service-life of approximately 5 years.

## Rack installation ensure optimal utilization of space

Especially designed for optimal use of space, the construction of the FS systems also enable oxygen generation at sites where space is at a premium. For greater output requirements, oxygen generation modules can be stacked as a rack version and integrated ready-to-use.

## Oxygen generation according to actual need

The actual need and use of oxygen is the basis for the combination of the generator module, so that a best possible supply is achieved and unnecessary oversupply can be avoided.

Oxygen generators of the FS model series are available as compact versions providing outputs of 10, 20, 40 and 80 liter/min., as well as rack versions with outputs of 120, 160 and 240 liter/min at 5 bar operating pressure.

When oxygen requirements increase, the system can be enlarged simply by integrating additional modules.

## Compressed-air generation (optional)

Decentralised helical piston compressors provide the required medical compressed-air in amounts of 2.4 Nm<sup>3</sup>/h to 500 Nm<sup>3</sup>/h for compressed-air supply in clinics and surgeries at 5 bar operating pressure (option 10 bar operating pressure). The compressors are easy to maintain and can be effortlessly replaced.

## Respiratory air treatment (optional)

Air treatment for medical respiratory air is provided according Pharmacopée Européenne 2000.

## High-pressure oxygen compression (optional)

Wherever and whenever required, the generated oxygen can be compressed by a high-pressure compressor and stored in oxygen cylinders of up to 50 liters capacity at a maximum of 150 bar.



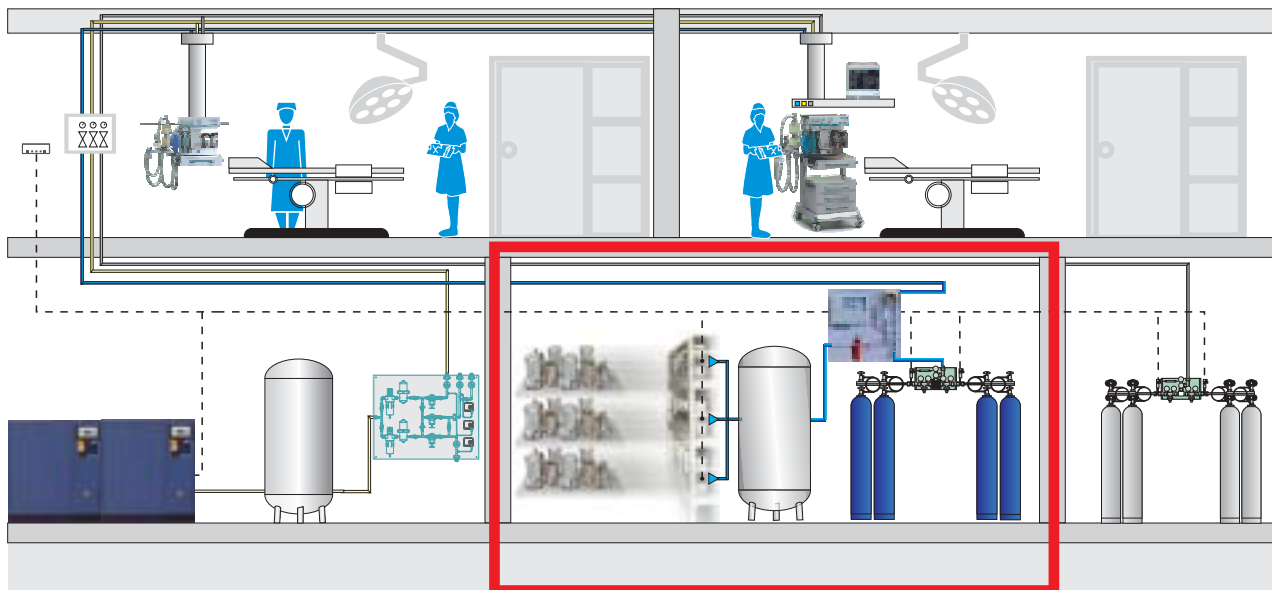


### Mobile cabinet installation

Completing a perfect solution, our technicians can install your oxygen generator into a ready-to-connect standard mobile cabinet.

The installed system undergoes thorough testing before delivery, and is ready to operate following a brief setup on site.





## FS oxygen concentrators

Model	Output	Pressure	Mains power	Dimensions H x W x D	Weight
FS 10-S stationary	10 ltr/min	5.0 bar	230/400 V 50Hz	85x60x80 cm	75 kg
FS 20-S stationary	20 ltr/min	5.0 bar	230/400 V 50Hz	130x60x80 cm	110 kg
FS 40-S stationary	40 ltr/min	5.0 bar	230/400 V 50Hz	220x60x80 cm	175 kg
FS 80-S stationary	80 ltr/min	5.0 bar	230/400 V 50Hz	130x200x80 cm	400 kg
FS 120-S stationary	120 ltr/min	5.0 bar	230/400 V 50Hz	220x200x80 cm	420 kg
FS 160-S stationary	160 ltr/min	5.0 bar	230/400 V 50Hz	220x200x80 cm	585 kg
FS 240-S stationary	240 ltr/min	5.0 bar	230/400 V 50Hz		

## High-pressure compressors for filling reserve oxygen cylinders (optional)

Type	m <sup>3</sup> /h	l/min.	Pmax/bar	kW/Volt	Kg	L x W x H
2 L	1.7	30	152	1.0/230	75	60x55x95 cm
2 H	3.4	55	152	1.0/230	75	60x55x95 cm
3 V	16	266	152	7.5/400	250	125x55x155 cm

The F. Stephan GmbH Medizintechnik offers you complete oxygen supply systems, from mobile oxygen generating units to central oxygen supply systems. We provide first-hand planning, project management, cost-benefit analysis and installation of medical oxygen supply units. Our engineers and technicians will advise you in choosing the most suitable system for your needs.