INDUSTRIAL AND ULTRA PURE GAS PURIFICATION
GAS PURIFICATION UNIT: SERTRONIC Line

The SERTRONIC Line gas purifiers are developed to satisfy our customer needs in the most varied industrial sectors. The SERTRONIC line allows purifying air gases by catalytic technology and adsorption on molecular sieve. Purifying capacity is from some Nl/h to several thousand Nm$^3$/h for flow rate, at working pressure up to 350 barg (other on demand).

SERTRONIC line gas purifiers Type D

- **Treated gas**: Hydrogen
- **Removed impurities**: O$_2$, CO, CO$_2$, H$_2$O
- **Outlet impurities level**: 1 ppb

**Principle**: Catalysis (deoxo) + adsorption

The feed gas passes through a special catalyst to convert O$_2$ in H$_2$O like 2H$_2$ + O$_2$ → 2H$_2$O. Then, water and carbon dioxide are adsorbed through an adsorbent bed.

**Use**: Semi conductor industry, welding gases, metallurgical industry, glass industry

SERTRONIC line gas purifiers Type N

- **Treated gas**: Inert gases (N$_2$, He, Ar, Kr, Xe, Ne)
- **Removed impurities**: O$_2$, CO, CO$_2$, H$_2$O
- **Outlet impurities level**: 20 ppb

**Principle**: Catalysis (deoxo) + adsorption

The feed gas passes through a special catalyst which traps oxygen. The water and carbon dioxide are adsorbed on a molecular sieve bed.

**Use**: Protective gas, metallurgical treatment, chemical processes, petrochemical, inerting operation…

SERTRONIC line gas purifiers Type M

- **Treated gas**: Oxygen and air
- **Removed impurities**: CH$_4$, CO, CO$_2$, H$_2$O
- **Outlet impurities level**: 20 ppb

**Principle**: Catalysis + adsorption

The feed gas passes through a special catalyst at high temperature to convert hydrocarbon, H$_2$ in water and CO in water and in CO$_2$, which are adsorbed on an adsorbent bed.

**Use**: Chemical industry, fiber optics industry, laboratories…
Generally skid mounted, SERTRONIC purifiers are completely automated for a continuously production 24/24h. To simplify purifiers use and supervision, they are fully automatically driven by a touch screen PLC integrated into the control command cabinet. SERTRONIC purifiers are built according to the European safety rules DESP CE97/73, ATEX CE 94/9, insuring maximum security for the users.

**SERTRONIC line gas purifier Type EF**

Treated gas: Hydrogen, Helium  
Removed impurities: N₂, Ar, O₂, CO, CO₂, H₂O, CH₄  
Outlet impurities level: 10 ppb

**Principle:** Cryogenic adsobtion  
Gas passes through a special adsorbent at low temperature.

**Use:** Solar energy, gas industry, nuclear industry, fuel cell.

**SERTRONIC line gas purifiers Type MF OXYTOPE**

Treated gas: Air  
Removed impurities: Hydrogen isotope, THC  
Outlet impurities level: 10 ppb

**Principle:** Catalysis + adsorption  
The feed gas passes through a special catalyst at high temperature and the trough a special adsorbent layer to remove CO₂ and H₂O (T₂O). These units are gloves box mounted.

**Use:** Nuclear industry

**SERTRONIC line gas dryer Type SC**

Treated gas: Air, He, gas inert, H₂  
Removed impurities: Water  
Outlet impurities level: 100 ppb (dew point: -90°C)

**Principle:** Adsorption  
The feed gas passes through a molecular sieve which adsorbs H₂O.

**Use:** All industries requiring dry gases.
**GAS PURIFICATION UNIT: SUBTRONIC Line**

The SUBTRONIC line has been developed to satisfy the requirements of the semi-conductors industry. These purifiers eliminate impurities to a level that expected in the most advanced technologies. Performances of the UHP purifiers are regularly optimized by using materials in conformity with the last standards (ATEX, CE97/23…)

---

**SUBTRONIC line gas purifiers Type D**

Treated gas: Hydrogen
Removed impurities: O₂, CO, CO₂, H₂O
Outlet impurities level: 1 ppb
Max. flow rate: 100 Nm³/h

**Principle**: Catalysis (deoxygenation) + adsorption
The feed gas passes through a special catalyst to convert O₂ into H₂O, CO, CO₂. H₂O are removed by an adsorbent layer.

**Use**: Semi-conductor industry, welding gases, metallurgical industry, glass industry

---

**SUBTRONIC line gas purifiers Type N**

Treated gas: Inert gases (N₂, He, Ar, Kr, Xe, Ne)
Removed impurities: O₂, CO, CO₂, H₂O
Outlet impurities level: 1 ppb
Max. flow rate: 100 Nm³/h

**Principle**: Catalysis + adsorption
Gas passes through a special catalyst, water, carbon dioxide are adsorbed through an adsorbent layer.

**Use**: Lighting equipment, high quality welding, protective gases…

---

**SUBTRONIC line gas purifiers Type M**

Treated gas: Oxygen and Air
Removed impurities: CH₄, CO, CO₂, H₂O
Outlet impurities level: 1 ppb
Max. flow rate: 100 Nm³/h

**Principle**: Catalysis + adsorption
The feed gas passes through a special catalyst at high temperature to convert hydrocarbon, H₂ and CO in water and in CO₂, which are adsorbed on an adsorbent layer.

**Use**: Chemical industry, semi-conductor industry, laboratories, fiber optics industry.
Skid mounted or cabinet integrated the SUBTRONIC line purifiers are fully automatically driven by a touch screen PLC. All components integrated come from well known manufacturer, to insure a maximum reliability and a very high level of performance. The SUBTRONIC line purifiers satisfy the highest requirement of the research laboratory and electronic industry. The ultra high purity of the treated gas allows to significantly reducing production costs.

**SUBTRONIC line gas purifiers Type EF**

*Treated gas*: Hydrogen, Helium  
*Removed impurities*: N₂, Ar, O₂, CO, CO₂, H₂O, CH₄  
*Outlet impurities level*: 10 ppt  
*Max. flow rate*: 100 Nm³/h  

*Principle*: Cryogenic adsorption  
The feed gas passes through adsorbant layer at low temperature  

*Use*: Solar energy, gas industry, nuclear energy, fuel cell, laboratories

**SUBTRONIC line purifiers Type SC**

*Treated gas*: Air, He, gas inert  
*Removed impurities*: Water  
*Outlet impurities level*: < 1 ppb (dew point: -90°C)  
*Max. flow rate*: 100 Nm³/h  

*Principle*: Adsorption  
The feed gas passes through an absorbent layer which adsorbs H₂O  

*Use*: All industries requiring dry gases

**SUBTRONIC line specific gas purifier**

*Treated gas*: Nitrogen and argon (simultaneously)  
*Removed impurities*: O₂, CO, CO₂, H₂O  
*Outlet impurities level*: 1 ppb  
*Max. flow rate*: 100 Nm³/h  

*Principle*: Catalysis + adsorption  

*Use*: High quality of welding gases, inerting operation…

We study and realize any type of purifier which answers to the specific customer requirement.
POINT OF USE GAS PURIFIERS: SERTRONIC Line

The industrial SERTRONIC line had been developed to satisfy customer who needs ppm level of impurities. Contrary to most of purifiers, the SERTRONIC line point of use gas purifiers is regenerable which permit a long live time. They don’t need any power to purify, are fully recyclable, and have a very low environmental impact.

**SERTRONIC line regenerable gas purifiers**

- **Treated gas**: H₂, O₂, N₂, He, Ar, Kr, Xe, Ne, Air
- **Removed impurities**: O₂, H₂O
- **Inlet impurities level**: 100 ppm
- **Outlet impurities level**: 0.4 ppm
- **Max. flow rate**: up to 200 Nm³/h
- **Max. pressure**: up to 250 barg
- **Life Time**: up to 1 year between two regenerations.

These purifiers are regenerable in our workshop

**Principle**: Catalysis + adsorption
The feed gas passes through a special catalyst and/or adsorbent layer.

**Option**: DUAL system, inlet/outlet valves, integrated regeneration system.

**Main domain of use**: R&D laboratory, university, spatial industry, chromatography…

DUAL system had been developed to permit a continuous production of the purified gas.

Two points of use purifiers are mounted on panel, with check valves and purge valves.
POINT OF USE GAS ULTRA PURIFIER: SUBTRONIC Line

The ultra high purity SUBTRONIC line point of use gas purifier had been developed to satisfy customer who needs ppb level of impurities.
As the SERTRONIC line, the SUBTRONIC line point of gas ultra purifiers is regenerable which permit a long life time. They don’t need any power to purify, are fully recyclable, and have a very low environmental impact.

**SUBTRONIC line regenerable gas purifiers**

Treated gas: Nitrogen, argon, rare gases  
Removed impurities: CO, CO₂, O₂, H₂, CH₄

- Inlet impurities level: 100 ppm  
- Outlet level: 100 ppt

- Max. flow rate: up to 250 Nm³/h  
- Max. pressure: up to 250 barg

- Life Time: 1 year between two regenerations.

These purifiers are regenerable in our workshop

**Principle:** Catalysis (oxyding-reducing)
The feed gas passes through purifier filled with a catalyst regeneration.

**Option:** DUAL system, inlet/outlet valves, integrated regeneration system

**Main domain of use:** R&D laboratory, university, spatial industry, chromatography…

Specific design on customer request

We study and realize any type of purifier which answer to the specific customer requirement.

Our purifiers are realized in conformity with the last standards: CE97/23, ATEX…

www.sertronic.com
MAIN REFERENCES

CONTACT US

Adresse:
3 rue des Ébénistes
77200 TORCY – France

Phone and fax numbers:
Phone: 00 33 1 64 30 48 60
Fax: 00 33 1 64 30 48 61

Email:
contact@sertronic.com