



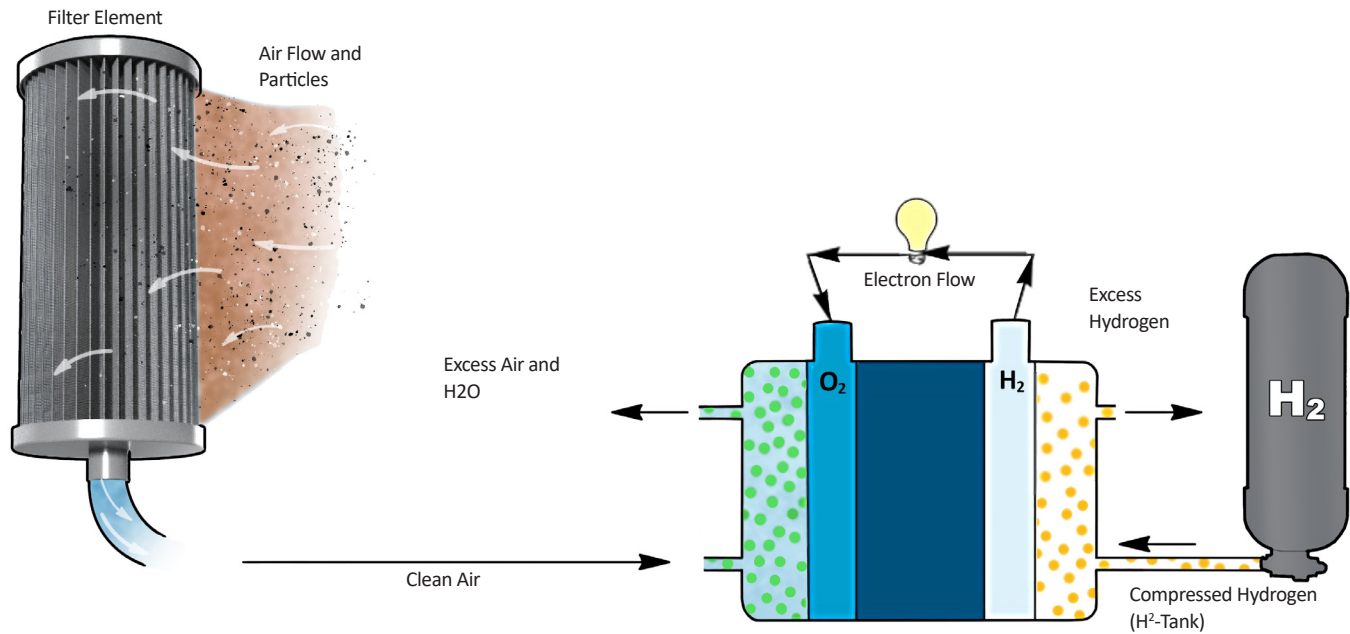
Cathode Filters and Silencers

FST-GMAC, FS, SLCR-Series



protecting your equipment • protecting your environment

Cathode Protection for Fuel Cells



Fuel Cell Filtration

Fuel cells represent one of the most important technologies of the future worldwide for storing energy from renewable sources over short or long periods of time. After the hydrogen is obtained through the process of electrolysis, it can then be used again in another system to generate electrical energy in combination with oxygen. In this process, the oxygen provided to the system is supplied to the fuel cell cathode from the immediate environment, initiating the chemical process to generate electricity.

The problem with this process, however, is that coarse and fine particles, salts, nitrogen, and sulfur oxides, as well as other harmful gases also enter the system from the ambient air, attacking the components of a fuel cell system and thus leading to shorter service life and greater performance weakness in the long term. For this reason, Solberg has developed specific filters for fuel cell systems which, through different filtration stages, enable the trapping of particles and, at the same time, chemical adsorption. This interaction ensures complete protection of the system and allows the fuel cell, whether it is a mobile or stationary unit, to operate efficiently over a long period of time.

Cathode Filter: FT / FST – GMAC-Series



Solberg's GMAC filter element, a chemical vapor adsorption element, is specifically designed to protect fuel cell cathodes. Our solutions are available in combination with a wide range of housings and connections and in various sizes and designs from Solberg.

- GMACZ: 1 micron, 99+% efficiency
- Specially pleated cathode filter elements with different layers and separation levels for smooth protection of your fuel cell system
- Standard and custom solutions available (please contact us to discuss your specific requirements)
- Can be used in the smallest installation space
- Easy sealing for good integration into the fuel cell system
- Wide flow range available: 5m³/h - 14000m³/h
- Pressure drops typically less than 6 mbar - pressure drop curves available on request
- Optimized surface for low pressure drops and long filter lifetime
- ISO11155-2 (previously DIN 71460) - tested
- Low installation and maintenance effort

Pre-filter as an option:

If the environments in which the fuel cell system is used are harsh, it is often worthwhile to have a pre-filter that removes coarse particles such as sand and dust before the airflow then continues to the fine filter unit. Solberg's ***SpinMeister Series*** uses centrifugal force to separate contaminants from the air stream, after which the cleaner air is drawn into the lower chamber and passed on. This option can be used in many variants and in combination with different filter media.

Filter Silencers and Silencers for Fuel Cells

Rotating equipment such as vacuum pumps, blowers, and compressors deliver air comprised of oxygen to the fuel cell cathode. This equipment generates sound waves of various frequencies, which are targeted by our silencing technology. Moreover, the equipment and fuel cell requires gas purity. Optimal systems incorporate Solberg's single and dual-purpose filtration, silencing, and filter silencing technology.

FS-Series

The FS series offers an optimal combination of intake filtration and sound attenuation, which is specifically optimized for reciprocating machines. The unique method of silencing with tubes is very versatile and can be individually adapted to disturbing frequencies. Only robust steel constructions are used, which are also suitable for outdoor installation.



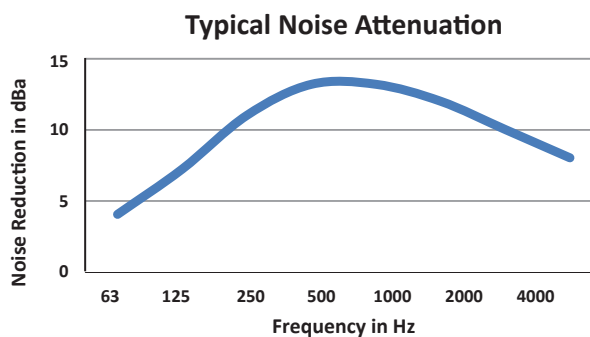
SLCR-Series



Tubular absorption silencers can be used on compressors and at the inlet or outlet of regenerative/side channel blowers.

Typical Noise Attenuation

See table for typical noise attenuation of filter silencers. It may vary due to the wide range of applications, installations and machines.



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All model offerings and design parameters are subject to change without notice. Please contact your Solberg sales representative for the most up-to-date information.

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