



Your valve made by ARI®
ari-armaturen.com

BIOGAS

INDUSTRIAL VALVES FOR EFFICIENT AND SAFE PROCESSING



+

ARI® STEVI®
ARI® SAFE
ARI® ZEDOX®



SAFE AND EFFICIENT BIOGAS PROCESSING

The use of biomethane as a renewable energy source is an important factor in achieving climate neutrality and reducing CO2 emissions. Companies that wish to use this valuable resource efficiently need engineered solutions for processing biogas that are reliable, safe and sustainable.

For many years, ARI-Armaturen has been a nationally and internationally leading manufacturer and supplier of high-quality industrial valves for biogas processing.

The benefits of ARI®'s industrial valves for biogas processing:

- ✔ Durch Thanks to the space-saving design and flexible handling, ARI® valves are easy to integrate in existing infrastructures as well as in compact container solutions. This reduces the installation costs and increases the flexibility and scalability of your plants.
- ✔ High adaptability to varying biogas grades and versatility when handling different types of waste enable consistent energy production and a more efficient use of your plant.
- ✔ Our certified quality with robust, long-lasting materials guarantees reliable performance and reduces your long-term maintenance costs.
- ✔ Compliance with all statutory environmental legislation means that ARI® valves ensure sustainable operating processes.
- ✔ The stable pressure ratios and maximum tightness of ARI® valves, even in demanding environments, increase the operational safety and minimise the risk of leaks and downtime.

ENGINEERED VALVES FOR SUSTAINABLE PROCESSES – MADE BY ARI®

Control valve **STEVI® Vario**

Control valves for membrane filtration systems used in biogas processing must be specially designed for each operation site because the composition and substance properties (molar masses) of the gases vary in each case. ARI®'s control valve STEVI® Vario can be flexibly adjusted to the medium and enables consistently high production and optimised gas processing – irrespective of the specific property of the biogas.

Thanks to its compact construction, the STEVI® Vario control valve is ideally suited to the space-limited environment of a container. The STEVI® Vario can also be flexibly used under difficult operating conditions and for more demanding control tasks – for example in versions with electric actuators or in systems designed for explosion protection. As gases in flow and pressure regulators are not always safe, the STEVI® Vario ensures stable and safe operation.

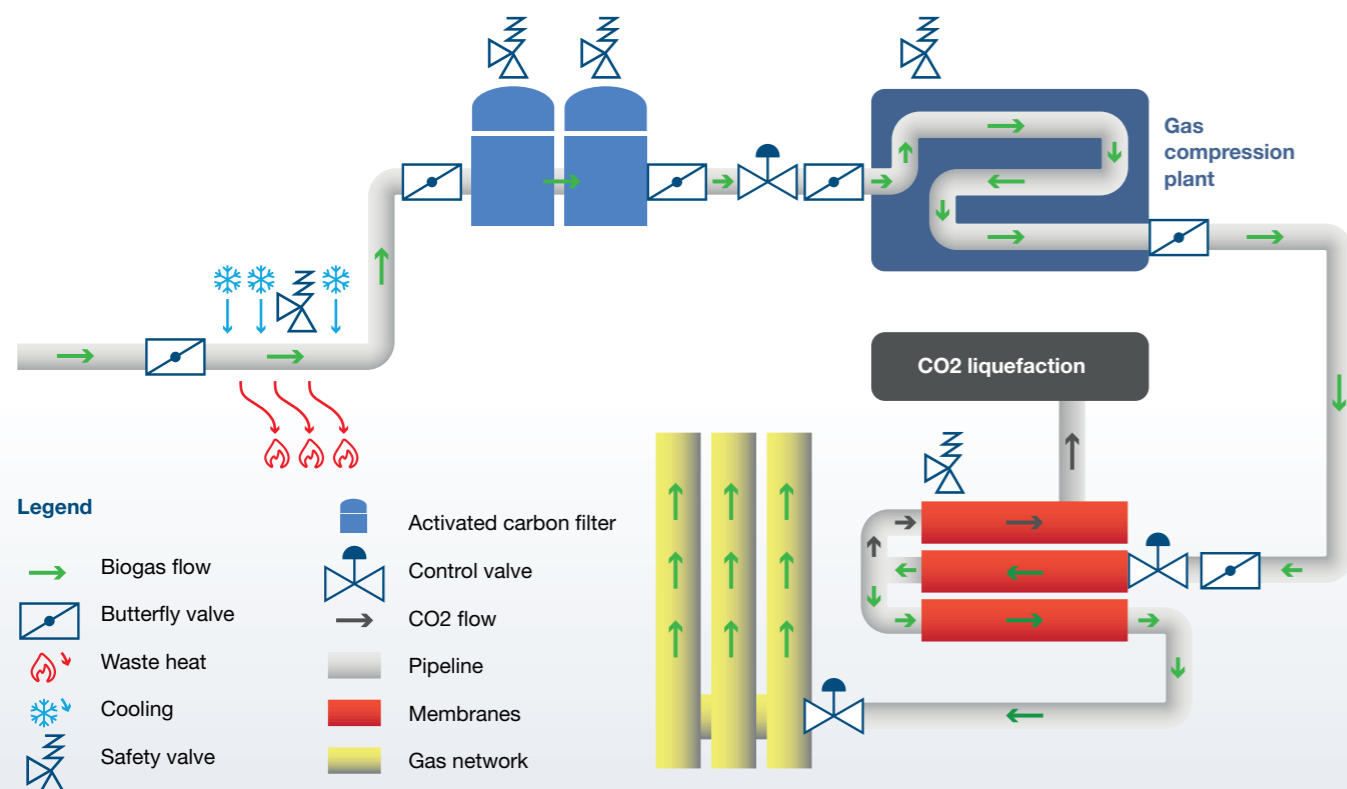
Safety valve **SAFE**

It is particularly important in the gas compression stage of biogas processing to include a safeguard. SAFE safety valves from ARI® prevent a pre-defined overpressure being exceeded in the event of automatic opening and they protect your plant. Once the pressure has been reduced, they re-close completely. The high resistance of the stainless steel housing and the high performance of the SAFEs guarantee reliable operation and minimise maintenance.

Butterfly valve **ZEDOX®**

The maximum tightness of the metallic sealing in ARI®'s ZEDOX® butterfly valve reduces the risk of gas leaks and ensures plants operate safely and efficiently. The double offset disc design also increases the service life and reduces wear, thereby minimising potential downtime as well as maintenance costs. Stainless steel is also the most suitable version here.

PROCESSES IN BIOGAS PROCESSING



Biogas – The green alternative to conventional energy generation

Energy potential of biogas

Biogas is produced when organic matter ferments under the exclusion of air and is converted into water, CO₂ and methane. The proportion of methane (CH₄) is between 50 and 65 % depending on the biomass composition. To ensure biogas can be fed into the gas infrastructure, the quality of the gas needs to be elevated to the level of natural gas which contains at least 96 % methane. This requires the raw biogas at the plant location to be processed in a downstream plant.

Processed biogas can be used anywhere that natural gas is used currently. As the released CO₂ has already been removed from the atmosphere through photosynthesis of the biomass, biogas is virtually climate-neutral. The fermented biomass is used in regional agriculture as a valuable fertiliser, replacing mineral-based, energy-intensive fertilisers, as the fermentation process retains the key soil nutrients of carbon, nitrogen, potassium oxide and phosphate.

Biogas processing

During processing, biogas is dried, desulphurised, the methane content is increased, and carbon dioxide and other components are removed. First, the biogas is cooled and dehydrated, with the resulting waste heat being used for other processes. Impurities and other gases are then removed using a double-chamber activated carbon filter.

Following this pre-treatment step, a three-stage membrane technology is used to purify the biogas. In the first stage, CO₂ is separated from the methane. In the subsequent stages, the membranes get increasingly finer, causing two gases to separate: Highly concentrated CO₂ and methane gas. The CO₂ can be liquefied in other processes and used for other purposes, the methane is further processed. An additive gas is introduced in the final stage to adjust the energy content of the biomethane and produce the typical gas odour. The biomethane can then be fed into the gas network.

PRODUCT OVERVIEW

The compact control valve for demanding regulating functions

STEVI® Vario

- ✓ Compact design
- ✓ Flexible adaptation to the medium
- ✓ Stainless steel housing ensures resistance
- ✓ Ideal handling thanks to 360° actuator rotation
- ✓ Vibration prevention even for higher differential pressures
- ✓ DN 15 - DN 100 / NPS 1/2" - 4"
- ✓ PN 16 - PN 40 / ANSI 150



Das Sicherheitsventil für Ihre Anwendung

SAFE

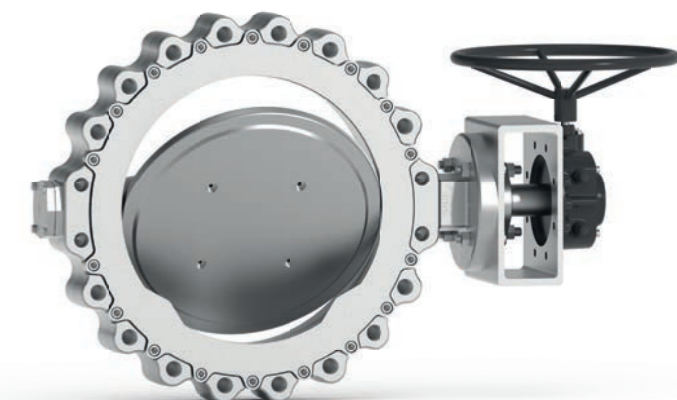
- ✓ Stainless steel housing offers high resistance from DN 15 to DN 250
- ✓ Safe response behaviour
- ✓ High performance
- ✓ Compliance with tightness requirement according to TA-Luft and ISO 15848-1
- ✓ Type-tested according to EN ISO 4126-1 and VdTÜV 100
- ✓ NPS 1/2" – 8"
- ✓ Flange PN 16–40, ANSI Class 150–300, Thread 1/2"–1" PN 100 / ANSI Class 600
- ✓ Backpressure compensation and redundant sealing thanks to balanced bellows from 0.3 bar
- ✓ Conforms to the chemical industry requirements NE167 (PAS1085)



The double off set high-performance butterfly valve for metallic sealing

ZEDOX®

- ✓ Reliably tight according to leakage class A EN12266
- ✓ Double off set disc design
- ✓ Long service life thanks to the seat ring being protected against negative flow factors.
- ✓ Metallic sealing principle
- ✓ DN 80 - DN 1600 / NPS 3" - 64"
- ✓ PN 10 - 40 / ANSI 150

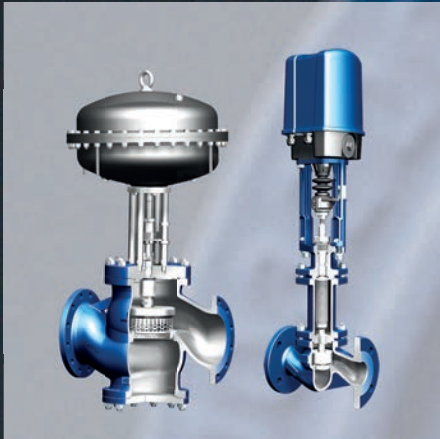


ARI® Product Variety



Profit from our one-stop shop philosophy.

At ARI®, we stand for reliability, passion for technology and personal commitment to our customers. Our high-quality products are specifically manufactured to meet your individual requirements: Your valve made by ARI®. Please don't hesitate to ask for more information, we look forward to advising you.



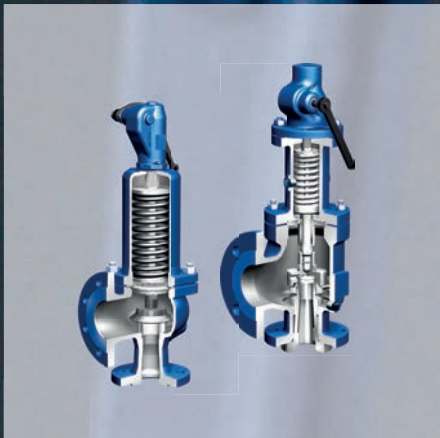
Control Valves



Globe Valves



Butterfly Valves



Safety Relief Valves



Steam Traps



System Solutions



Your valve made by ARI®
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