



SEALLESS PUMPS SUPPORT THE EXPANSION OF GREEN HYDROGEN

Momentum is building around green hydrogen's potential to deliver a clean energy solution that will contribute to future global decarbonisation.

With a greater understanding of the scope for the wider use of green hydrogen across industry, transport, heating and power generation, business and government-led investment is accelerating to meet these opportunities.



Understanding large scale hydrogen plant solutions

Working with global leaders who are rapidly developing their hydrogen manufacturing expertise. HMD Kontro, collaborates through an understanding of the process of electrolysis, the most widely used method of large-scale renewable hydrogen production.

As our clients adapt their electrolysis technologies to build more powerful equipment at lower costs, thereby further enhancing their green hydrogen manufacturing capabilities, HMD Kontro can complement this industry development by providing modified or bespoke pumping solutions, which can fully integrate with, and value to, the electrolysis process.





HMD Kontro sealless pumps provide engineered solutions to meet application needs

Green Hydrogen is typically produced through water electrolysis utilising alkaline or PEM electrolyzers.

An electrolyser unit integrates a number of components such as the electrical transformer, the electrical rectifier, the lye loop, water tank, piping and pumps to ensure hydrogen production occurs at the required flow rate, pressure and purity.

HMD Kontro sealless pumps are engineered to work in corrosive environments at high temperatures, with specific pressures and certain concentrations of chemicals. All our pumps can be modified or adapted to create customised solutions to suit the application needs and have intrinsic compatibility with electrolyzers.

Key requirements demanded by the electrolysis process versus sealless pump compatibility

Electrolysis Requirements		Sealless pump benefits
Demanding power output	✓	Wide performance range
High operating pressure	✓	Pressures up to 185 bar
Low electrical consumption	✓	Zero loss shell
Safety	✓	No mechanical seals, or product emission
Small footprint	✓	Space saving close coupled design
Robust materials	✓	Different metallurgies available
Corrosive liquids	✓	Total product containment

EXAMPLE APPLICATION

A pump used in the recirculation of lye in the electrolyser will pump lye into the stack, from there it enters the separators before entering the lye heat exchangers, and finally returns to the pump.

The pump is working in a very corrosive environment at temperatures of 90°C, pressures of 40 bar and a concentration of KOH (potassium hydroxide) at 30 wt%.



WHY CHOOSE A SEALLESS PUMP FOR AN ELECTROLYSER?

As specialists in the provision of magnetic drive pumps, in industries where performance and environmental integrity are key, HMD Kontro provides an effective alternative to traditional mechanical seal pumps and offers multiple benefits ranging from leak-free operation to minimal maintenance requirements.

A sealless pump is a conventional centrifugal pump without packed glands or mechanical seals.

Complete fluid containment

In conjunction with the main casing, the static containment shell of a magnetic drive pump forms a completely sealed liquid and pressure boundary with high chemical and thermal resistance. The sealless technology provides total fluid containment which in turn greatly reduces the risks of product emissions or leaks.

Reliable solution with no seals or seal support systems

Using the latest technology, HMD Kontro is able to offer the widest selection of sealless pumps available, with ability to adapt to suit specific application requirements. HMD Kontro representatives are on hand to provide support during the selection stage to ensure high performance and reliability with the pumping solution.

As there are no seals or seal support systems, such as associated connections or instrumentation, choosing an HMD Kontro sealless pump can simplify the specification process, as well as installation, commissioning and ongoing operation.

Increased MTBF and lower operation costs

HMD Kontro pumps are easy to maintain and service on site. As there are no seals to replace or maintain, our pumps benefit from reduced running costs as well as less downtime. These factors, along with longer MTBF intervals due to increased reliability, leads to significantly lower overall pump life-cycle costs.

Compliance to industry standards

HMD Kontro magnetic drive pumps are designed to adhere to ISO, API, ASME and ANSI standards. Being industry-certified means that global quality programmes have been met, together with conformity to environmental and occupational and safety specifications.

Global availability

By operating a global delivery model, client costs are minimised and customised orders across international manufacturing plants can be fulfilled. Our clients benefit from increased flexibility, and an on-hand same day local support service, anywhere in the world.



SERVICE BENEFITS AND LONG TERM ADVANTAGES

Cost Saving

Specifying sealless can achieve the savings that are needed from initial concept to the daily manufacturing output, optimising total lifecycle costs.

The simple design of sealless magnetic drive pumps shortens the installation and commissioning stages, allowing faster project completion, and reduces HazOps (Hazard and Operability) and SIL (Safety Integrity Level) requirements.

Once up and running, sealless pumps offer reduced downtime, because of less maintenance and no need for seal changes, all of which contributes to improved plant utilisation and profitability.

Safety Solved

Pumping hazardous chemicals requires careful handling and consideration of the risks involved.

With total product containment, EH&S (Environmental Health & Safety) needs are met, with no need for EPA monitoring, plus all the safety benefits on site.

Due to the reduced possibility of leakages, liabilities are reduced and insurance costs are lowered.

Service Delivered

Our After Sales team, together with our Channel Partners around the world, can help to optimise the performance and through life experience of using our pumps.

We assist with installation and commissioning, ensure the smooth contract execution and swift provision of all the appropriate documentation, and optimise your spare inventory and operating efficiency using the benefit of our experience.

Sale and Support

For more information on how HMD Kontro's sealless pumps can integrate into green hydrogen production methods and provide reliable, durable and safe liquid pumping solutions, please contact our Channel Partner or Representative local to you or HMD Kontro directly.

HMD Kontro Sealless Pumps

Marshall Road
Hampden Park Industrial Estate
Eastbourne, East Sussex, BN22 9AN
United Kingdom
Phone: +44 (0)1323 452000
Fax: +44 (0)1323 503369
Email: info@hmdkontro.com
www.hmdkontro.com

Sundyne Headquarters
Sundyne LLC
14845 West 64th Avenue
Arvada, Colorado 80007
USA
1-866-Sundyne
Phone: 1 303 425 0800
Fax: 1 303 940 2911
www.sundyne.com

Sundyne France
Sundyne International S.A
13-15, Bld, Eiffel - B.P. 30
21604 Longvic Cedex
France
Phone: +33 (0)3 80 38 33 00
Fax: +33 (0)3 80 38 33 66

Sundyne Spain
Sundyne Marelli Bombas, S.R.L.
Ctra, Madrid-Toledo, Km. 30.8
45200 Illescas
Toledo, Spain
Phone: +34 925 53 45 00
Fax: +34 925 51 16 00

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