



# Sustainable control:

## RELIABLE VALVE TECHNOLOGY

Valves for hydrogen applications



# The müller coax group

## Your strong global partner

Around  
**350**  
employees

**8**  
subsidiaries

**44**  
countries

**30+**  
distribution partners

Production and  
development in  
**Forchtenberg**

The müller coax group is the world's leading valve manufacturer in the coaxial valve technology and high pressure valves. Made in Germany – developed and produced exclusively in Germany at the headquarters in Forchtenberg, our valves impress customers worldwide in a range of industries. With individuality, customer focus and over 60 years of market knowledge, with müller coax you will experience a valve manufacturer that takes on new challenges and develops customized solutions.

Hydrogen as an alternative energy source of the future harbours great potential and our valve technology helps you to unlock this potential like no other can.



## Why coax®?

### Experience

Valves from müller coax have proven themselves over decades in handling hydrogen.

### Variety

Valve solutions across the entire hydrogen value chain: Hydrogen production, storage, refueling, test facilities, use in the industrial sector and chemical industry

### Wide product range

Existing solutions offer maximum quality, safety and efficiency.

### Customized valve solutions

We develop specific solutions adapted to your requirements.

## Our solution for your challenges

### H<sub>2</sub> challenges

Hydrogen can diffuse through metals, which is why they lose their strength. This process – referred to as hydrogen embrittlement – can be prevented by using suitable materials, such as austenitic steels (316 or 316L).

When combined with oxygen, hydrogen can form an ignitable mixture. In order to ensure safety, especially in enclosed spaces, the tightness of installed components is of key significance.

Having a low energy density in relation to its volume, hydrogen is compressed for storage and for the refueling process. The initial pressure of the hydrogen is constantly increased, which is why pressures of various intensity have to be controlled.

### coax® offers

- The use of hydrogen-resistant materials
- Careful selection of materials, especially of the media wetted parts
- Durable and reliable valve technology

- 100% tightness to the outside and at the valve seat thanks to coaxial valve technology
- Additional vacuum test ensures tightness
- 100% testing of all valves supplied by coax guarantees unique quality

- Pressure-balanced design allows valve switching from 0 bar
- Valve tightness, even when back pressures are applied
- Bi-directional flow in the valve enables medium return










# coax® solutions – VALVES FOR HYDROGEN

A product portfolio with over 60,000 valve variants underlines our expertise and variety. Due to constant increasing requirements, incessantly more complex product certifications are required. müller coax provides a corresponding range of certificates, such as ATEX or SIL3, which allow for reliable and process safe use in safety areas. For the range of valves for hydrogen applications presented below, numerous options are available to our customers

depending on the requirements, such as terminal boxes, limit switches, mounting brackets or special connections. In addition to 2/2 way valves, 3/2 way valves are also suitable for certain applications, as well as their installation in modules or valve manifolds. Our valve solutions are as individual as your requirements. Get in touch with us for a personal consultation.

Series		Type	Construction	Pressure range	Orifice	Connection	Material	Kv value	Possible Applications	Advantages
High pressure lateral valves		PCD-H 10	2/2 way valve, externally controlled	0-500 bar	DN 10 mm	Thread	Brass, stainless steel	1,5 m³/h	Hydrogen refueling stations  Test benches	Short and compact design, low weight
		KBS 15	2/2 way valve, direct acting	0-500 bar	DN 1,5-3 mm	Thread	Brass (nickel plated), stainless steel	0,066-0,312 m³/h		High pressures and high flow, pressure balanced (switch from 0 bar, regardless of differential pressure)
High pressure coaxial valves		KB 15	2/2 way valve, direct acting	0-400 bar	DN 2-8 mm	Thread	Stainless steel/ steel (nickel plated)	0,102-1,44 m³/h		100% tightness (Vacuum leak rate up to 10 <sup>-6</sup> mbar *l/s)
coaxial valves		MK/ FK	2/2 way valve, direct acting	0-100 bar	DN 10-80 mm	Thread/ Flange	Stainless steel, steel (nickel plated), brass	1,6-70 m³/h	Electrolysis  Pressure swing adsorption	
		VMK/ VFK/ FCF/ FMX	2/2 way valve, externally controlled	0-100 bar	DN 8-250 mm	Thread/ Flange	Stainless steel, steel (nickel plated), brass	1,6-650 m³/h		Fuel cells  Gas turbines  Test benches

This is an information summary. For details on the individual series, please refer to the associated data sheets.





[www.co-ax.com](http://www.co-ax.com)

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