A. u. K. Müller

Sanitary

Fascinating Valve Technology

Fascinated by Valve Technology

A. u. K. Müller has more than 70 years experience in the customer oriented development and manufacture of solenoid valves, control equipment and speciality valves.

Initially a family business, we have grown internationally into a respected leading manufacturer of valve technology with about 190 employees at the headquarters in Düsseldorf and sales representations in the UK and France.

With many years of extensive experience drawn from our wide range of products out in the market, we can quickly develop tailor made innovative valve solutions for the specific needs of our customers.

Specialized Valve Solutions for Fluid Control

Individual problems require individual solutions and we have developed thousands of bespoke innovative product systems and specifications in partnership with our customers. Our high quality components are designed for use in applications where product reliability and performance is critical in maintaining your reputation.

We have extensive experience in providing valves and components to a wide range of industry sectors, including:

- **Sanitary**
- **Vending**
- **Medical Technology**
- **Industry**
- **Agriculture/Food**
- **Environmental Technology**

We do not believe in just ‚selling a valve'. The integration of our product into your application is the result of detailed analysis of the ambient
environment, operating parameters and specification requirements. This enables us to offer individually optimized solutions to suit even the most complex fluid applications. Such tailored valve design ensures a long product life expectancy and utmost reliability, in turn reducing your service costs significantly. Features such as low power consumption and minimal noise emission levels of our products support an efficient overall design of your equipment.

All customer sectors will benefit from our cross-industry experience and development expertise, which has formed the basis of our products for many years.

From the first draft to series delivery, we deliver in consistently high quality **„Made in Germany".**

We Keep Things Flowing in Valve Technology

Each process starts with your ideas and specification requirements. Together we develop individual concepts and designs using our extensive resources and the skills of our experienced engineers.

Ultimately this process results in the development of innovative products and complete systems which exceed usual market standards and expectations.

Our team of designers and engineers work as a team to creatively realise your ideas in the shortest possible time scale. The use of modern technologies and techniques for structural analysis, fluid and electromagnetic simulations and rapid prototyping builds quality and reliability into every stage of the development process.

We are constantly researching and evaluating materials, our products and the way they are manufactured. Changes are constantly being implemented to every area to ensure we stay one step ahead and ensure the ongoing outstanding functionality and operational reliability of our products.

Over the years our products and inventions have set standards and redefined markets resulting in the granting of many patents.

Modern Production and Measurement Technologies

Our modern manufacturing and testing technologies, in-house production and the multi-industry exchange of experience of our 190 dedicated staff within the Dusseldorf factory enable both, you and us, to stay at the forefront in the marketplace.

More than 60% of total turnover is achieved in our export markets, supported by our sales subsidiaries in the UK and France.

Get into the fascinating world of valve technology and be inspired. You will find that a valve is much more than just a “component”.

Individual & Suitable

Our strength is the development and manufacture of your custom-fit and application-specific valve solution!

Thanks to many years of experience in innovation and a very high level of vertical integration, we are able to respond precisely and efficiently to our customers' wishes. Our detailed knowledge of customer applications as well as the applicable standards and regulations helps us to do this. Our know-how is supplemented by the use of the latest technologies in production and in the test field.

For this purpose, our portfolio offers comprehensive approval options:

NSF KTW SVGW SSIGE WRAS ACS

Examples of use:

Challenge: Robust material combination of plastic and metal

A customer wants a material combination of plastic and metal for the servo valves. With the drinking water certification of the plastic and the stability of the brass, an optimal solution for the customer-specific assembly situation should be developed.

Solution:

Thanks to our many years of expertise in the expansion degrees of metals and plastics, as well as with the help of our highly modern production line, especially in the field of injection moulding, we were able to present a valve that combines the best of both worlds in a very short time.

A brass metal thread, which has been firmly integrated into the plastic housing, provides the necessary stability during assembly, and all components that come into contact with the medium are made of drinking water-certified plastic.

Challenge: Development of a new operational logic

A customer needs a new mechanical operating logic for his sanitary application in order to set new impulses in the industry. Up to now, sanitary fittings have mostly been operated with rotary and pull movements. Instead, the customer wants a push-button operation.

Solution:

A. u. K. Müller was able to offer a customer-specific exclusive solution, taking into account its experience in the development of servo valves. In close cooperation with the customer, it was possible to develop a robust solution for a wide range of applications within the set time frame. In the process, the high requirements for drinking water conformity were successfully implemented. The special task of separating the media between the actuator and the core was a clearly solvable task for our development.

Your challenge is our fascination with valve technology.

Valve Solutions and Accessories

for Electronic Faucets

Digital water management is nowadays an integral part of public washrooms. Apart from the ability to save water, the focus also lies on the improvement of hygiene by using non-contact faucets. Due to these advantages, electronic faucets are now increasingly moving into private households. As a German quality manufacturer, A. u. K. Müller offers, with its large product range of different plastic valves adapted to sanitary applications, a variety of valve solutions for electronic faucets in the following application areas:

- **Kitchen**
- **Wash basin**
- **Shower, shower panel and wellness shower**
- **Bath tub**
- **Toilet und urinal as well**
- **Whirlpool**

As a matter of course, the offered products confirm to the standards and carry the appropriate approvals for use with drinking water. Thus, we are already supporting you at the component level in the standard conformance of your final product design.

Cartridge Valves

Cartridge valves, plugged or screwed into the corresponding faucet, control the flow of water in a reliable and energy saving manner. Latching versions work consistantly for years before a battery has to be replaced.

Infrared Sensors and Accessories

We offer, in addition, infrared sensors and control units, including accessories for the voltage supply, such as battery sockets, power supplies and cables. Therefore, the customer can obtain complete system solutions from a single source. The infrared sensors and control units are provided with numerous adjustment and operating modes. Depending on the type, these are, for example, stadium mode, enforced flush, adjustable flushing times, sensor range adjustment and maximum flushing time.

Customer Specific Solutions

Based on our long-term expertise and innovative product portfolio for the various sanitary applications, we offer our OEM customers the reliable realization of customer specific components or system solutions from design to the finished product.

50.007.101 bi
further information on 14

Accessories
You can find power supplies, sensors and cables on the pages 16 - 17

Shower Taps

Whether shower or wellness shower, A. u. K. Müller supplies the right valve solution from a single source. The compact design guarantees the greatest possible freedom of design, in line with the idea: „You specify the design, we provide the appropriate technology".

The bistable valves can also be operated for several years without a power cable connection by means of a battery.

In addition to intuitive installation, the focus is on market-specific approvals that enable worldwide use.

Accessories
You can find power supplies, sensors and cables on the pages 16 - 17

50.005.101 bi
further information on 14

Wash Basin Taps

From the valve to the sensor to the power supply: A. u. K. Müller offers the complete package for your touchless washbasin fitting. The compact design and easy installation give you the greatest possible design freedom.

The strengths of this valve are particularly evident in public areas, especially due to its long service life and low energy consumption. The valve's properties are rounded off by its good resistance to thermal and chemical disinfection as an additional hygiene aspect.

The combination of high-performance materials enables a large number of market-specific approvals and thus worldwide use.

62.005.126
further information on page 15

Shower Toilets

Servo-controlled valves from A. u. K. Müller are suitable for use in shower toilets due to their compact design. The use of high-performance materials enables worldwide certifications.

Precise integration into your specific application is realised through various interface options

50.013.806 mono/bi
further information on page 14

50.013.101 mono/bi
further information on page 14

Bathtub Filling

Feel-good at the touch of a button.
Solenoid valves with a nominal width of 13 not only allow the bathtub to be filled quickly. Thanks to the electronic control of the valves, there are no limits to comfort functions such as automatic filling or remote control through integration into the Smart Home.

By programming a maximum filling volume, overfilling can be prevented even without supervision. If the operation is to be limited to a certain group of users, these valves are also suitable.

Examples of applications are public areas such as wellness facilities or nursing homes.
The low energy consumption of the bistable valve allows long-lasting use even without mains voltage. Due to the market-specific approvals, worldwide use is possible.

CARTRIDGE- / SANITARY VALVES MONO- / BISTABLE

	Series Nominal width	Kv (l/min)	p-Operation (bar)	T-Medium (°C)	T-Ambient (°C)	Connection thread	
	**50.005.102** DN 5	10	0,5 - 10	5 - 70	5 - 60	M20 x 1 (stainless steel)	
	50.005.101 DN 5	11	0,5 - 10	5 - 70	5 - 60	M22 x 2	
	**50.005.850** DN 5	7,5	0,5 - 10	5 - 70	5 - 60	Screw/clamp fastening	
	50.007.101 DN 7	22,3	0,5 - 10	5 - 70	5 - 60	M28 x 1	
	**50.009.101** DN 9	24	0,5 - 10	5 - 70	5 - 60	M29 x 1,5	
	50.013.101 DN 13	46	0,5 - 10	5 - 70	5 - 60	M38 x 2	

AXIAL VALVES MONO- / BISTABLE

	Series Nominal width	Kv (l/min)	p-Operation (bar)	T-Medium (°C)	T-Ambient (°C)	Connection thread
	**51.005.125** DN 5	4,6 - 7,5 depending on connection type	0,5 - 10	5 - 70	5 - 60	connector 4, 6, 8 mm plug connections Ø14,8 or Ø8,4 mm
	**51.007.125** DN 7	12	0,5 - 10	5 - 70	5 - 50	G 1/2 flange to Ø 8 mm plug connector

SERVO-CONTROLLED 2/2-WAY SOLENOID VALVES MONO- / BISTABLE

	Series Nominal width	Kv (l/min)	p-Operation (bar)	T-Medium (°C)	T-Ambient (°C)	Connection thread
	**50.007.806** DN 7	14	0,5 - 10	5 - 70	5 - 60	G 1/2
	**50.013.806** DN 13	36	0,5 - 10	5 - 70	5 - 60	G 3/4

SERVO-CONTROLLED 2/2-WAY SOLENOID VALVES MONO- / BISTABLE

	Series Nominal width	Kv (l/min)	p-Operation (bar)	T-Medium (°C)	T-Ambient (°C)	Connection thread
	**62.005.126** DN 5	6	0,2 - 10	5 - 90	5 - 70	G3/8 to nozzle Ø 11,5 mm further connection variants available

MANUAL CARTRIDGE VALVES

	Series Nominal width	Kv (l/min)	p-Operation (bar)	T-Medium (°C)	T-Ambient (°C)	Connection thread	
	**50.005.801** DN 5	7,9	0,5 - 10	5 - 75	5 - 75	M22 x 2	
	50.007.801 DN 7	17,3	0,5 - 10	5 - 75	5 - 75	M28 x 1 M29 x 1,5	
	**50.009.801** DN 9	21,5	0,5 - 10	5 - 75	5 - 75	M29 x 1,5	
	62.005.826 DN 5	7,5	0,3 - 10	5 - 90	5 - 60	G3/8 to nozzle Ø 11,5 mm	

WATER TRACK (COMBINATION OF SHUT-OFF PLUG, CARTRIDGE VALVE AND OPTIONAL DIRT STRAINER)

	Series Nominal width	Kv (l/min)	p-Operation (bar)	T-Medium (°C)	T-Ambient (°C)	Connection thread
	**52.007.126** DN 7 without dirt strainer	18	0,5 - 10	5 - 30	5 - 60	G 1/2
	**52.007.2xx** DN 7 with dirt strainer	18	0,5 - 10	5 - 30	5 - 60	G 1/2

MINIATURE VALVES MONO- / BI-STABIL

	Series Nominal width	Kv (l/min)	p-Operation (bar)	T-Medium (°C)	T-Ambient (°C)	Interface	
	**19.00x.287** DN 0,5	0,13	0 - 10	5 - 70	5 - 60	bayonet connection	
	19.00x.287 DN 0,8	0,31	0 - 10	5 - 70	5 - 60	bayonet connection	

CONTROLLING DEVICES

	Series Nominal width	Kv (l/min)	p-Operation (bar)	T-Medium (°C)	T-Ambient (°C)	Connection thread	
	**10.00x.126** DN 4,2	9,5	0 - 3	5 - 80	5 - 60	G 1/2 or G 3/8	
	10.010.126 DN 10	20	0 - 10	5 - 80	5 - 60	G 3/8 or G 1/2 or G 3/4	

ACCESSORIES

SENSORS (INFRARED / PIEZO)

	Series	Operation voltage	Output voltage	Applications	Detection range	
	**IRS-WT-MSx-x**	6 V, 9 V or 12 V	5,5 V DC	flushing devices, sanitary taps	40 - 400 mm	
	IRS-WT-x/ IRS-UWS-WC	6 V, 9 V or 12 V	5 V DC	flushing devices, sanitary taps	40 - 300 mm	
	**IRS-UWS-U**	6 V, 9 V or 12 V	5 V DC	flushing devices, sanitary urinal, toilet and shower shower taps	200 - 800 mm	
	IRS-UWS-x Piezo button	through IRS-UWS-x		flushing devices, sanitary urinal, toilet and shower shower taps	-	

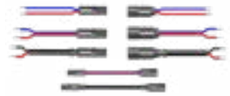
POWER SUPPLY (PLUG-IN AND IN-WALL POWER SUPPLY UNITS)

	Series	Maximum output power (W)	Nominal input voltage	Output voltage	Operating frequency range	
	**UPS-01**	20	100-240 V AC	12 V DC ±5%	47-63 Hz	
	IRS-PS-x	10	100-240 V AC	12 V DC ±5%	47-63 Hz	

POWER SUPPLY (BATTERY)

	Series	Battery Type	Type of construction	Battery connection	Cable	Cable length (mm)
	**Battery compartment**	For holding 6V CR-P2 lithium 9V E-block	Elastomer pocket or plastic housing	integrated	2 x 0,25 mm²	125

SANITARY CABLES / CABLES WITH ENERGY STORAGE

	Series	Maximum permissible operating voltage	Nominal current (A)	Contact resistance (mOhm)	Protection class
	**Serie SC 1**	30 V AC 42,5 V DC	5	10	IP 68 according to DIN EN 60529:2014-09
	**Serie SC 2**	16 V DC	5	10	IP 67 according to EN 60529

CARTRIDGE VALVE BODY ADAPTER

	Series Nominal width	Kv (l/min)	p-Operation (bar)	T-Medium (°C)	T-Ambient (°C)	Connection thread	
	**50.007.126** DN 7	depending on the valve used	0,5 - 10	5 - 70	5 - 60	G 1/2 or G 3/4	
	50.009.126 DN 9		0,5 - 10	5 - 70	5 - 60	G 3/4	
	**50.007.52x** DN 7		0,5 - 10	5 - 70	5 - 60	G 1/2 or G 3/4	

MANUAL SHUT-OFF VALVES

	Series Nominal width	Kv (l/min)	p-Operation (bar)	T-Medium (°C)	T-Ambient (°C)	Connection thread
	**52.009.100** DN 9 Shut-off element 8 mm hexagon socket	57	0 - 10	5 - 90	5 - 60	G 1/2, G 3/4
	**52.009.200** DN 9 Shut-off element handle	57	0 - 10	5 - 90	5 - 60	G 1/2, G 3/4

DIRT STRAINER

	Series Nominal width	Kv (l/min)	p-Operation (bar)	T-Medium (°C)	Admissible pressure loss (bar)	
	**12.010.300** (DN 10)	20	0 - 10	5 - 90	6	
	12.010.500 (DN 10) with shut off flow capability	17				
	12.017.400 (DN 17)	79	0 - 10	5 - 90	6	
	12.017.500 (DN 17) with shut off flow capability	70				
	**12.017.800** DN 17	51	0 - 10	5 - 90	depending on version	

FLOW REGULATORS [P-OPERATION 1 - 10 BAR]

	Series	Outer diameter (mm)	Flow range (l/min)	T-Medium (°Celsius)	Socket	Star-shaped regulating element	Regulating element / Elastomer
	**MR 04**	19	5,0 - 20,0	5 - 65	PA	POM	EPDM
	**MR 05**	9,5	0,5 - 9,0	5 - 65	POM	POM	EPDM
	**MR 06**	19	0,5 - 9,0	5 - 65	POM	POM	EPDM
	**MR 12**	9,5	4,0 - 5,0	5 - 90	-	PA 6/6	NBR or FKM
	**MR 19**	19	3,5 - 22,0	5 - 98	PEI	PEI	EPDM or FKM

MOUNTING FLANGE

	Type	Ident.-Number	Application area	Features
	Flange	010660	Solenoid valves, Float valves	easy mounting, secure hold in the housing, can be mounted on mounting bracket

Short form	Material	General chemical resistance*	Special features
Listing of Applied High Performance Plastics, its Chemical Resistance and Features:			
PA 66	Polyamide, typically in use with up to 35% glass fiber reinforcement	Resistant to fats, oils, waxes, fuels, weak bases, aliphatic and aromatic hydrocarbons. Resistant, i.e. corrosion resistant to aqueous solutions of many inorganic chemicals (salts, alkalis).	Generally suitable for potable water applications to Tm 23 °C. Useable for other applications up to Tm 90 °C (194 °F). Only limited suitability for USA (Chloramine-T containing water).
PA 6/6 (PPA)	Polyphthalamide, typically in use with up to 40 % glass fiber reinforcement	Very good chemical resistance with exception of concentrated acids and aggressive chemicals such as cresols, hexafluoroiso-propanol or trifluoroacetic acid.	Generally suitable for drinking water applications and other applications up to Tm 90 °C (194 °F). Better suited for USA (Chloramine-T containing water) than PA 66.
PEEK	Polyether ether ketone	Resistant to most chemicals. Not resistant to concentrated sulfuric and nitric acid as well as certain halogenated hydrocarbons.	High wear resistance, excellent high temperature properties. Applicable for sterilization process.
PEI	Polyether imide	Resistant to most chemicals. Not resistant to aromatic hydrocarbons, oxidizing acids, strong alkalis, tri- and perchlorethylenes, and acetone.	Ideal for food applications (FDA, NSF 51). Biocompatible variant possible.
POM	Polyoxymethylene	Good resistance to numerous chemicals: Resistant to diluted acids (pH> 4) as well as diluted bases, aliphatic, aromatic and halogenated hydrocarbons, oils and alcohols. Resistant to concentrated acids and hydrofluoric acid as well as oxidizing agents.	Operating temperature up to max. 85 °C (185 °F) continuous, optionally with KTW / W270 hot water. If the component is subjected to mechanical stress, the application temperature must not exceed 65 °C (149 °F) (deformation in water applications possible).
PPE/PPO	Polyphenyl ether, with up to 20 % glass fiber reinforcementl	Good chemical resistance to acids and alkalis and many cleaning agents, lack of oxidative resistance from 100 ° C.	Generally suitable for potable water applications and other applications up to Tm 90 ° C (194 °F). Very suitable for USA (Chloramine-T containing water), but with regard to the UL temperature declaration of the materials (depending on the variant Tm <= 65 ° C (149 °F)) can only be used to a limited extent.
PPSU	Polyphenyl sulfone	Resistant to most chemicals, with a moderate resistance to aliphatic and aromatic hydrocarbons (PAH), not resistant to ketones. Better chemical resistance than PEI.	Excellent temperature characteristics (saturated steam appli-cations up to 143 ° C (289 °F)), good hot steam sterilisability and resistance to detergents and disinfectants, suitable for food applications (NSF 61 and 51 as well as (EC) No. 1935/2004).
PTFE	Polytetrafluoro-ethylene	Universal chemical resistance except for liquid alkali metals and some fluorine compounds.	The smooth surface reduces the adherence of precipitated lime from the medium as a valve seat for boiler dispense valves. Applied as bellow, a complete media separation to the plunger is implemented.
PVDF	Polyvinylidene fluoride	Excellent chemical resistance comparable to PTFE. However, moderate resistance to alkalis, not resistant to gasoline.	The UL application temperature is restricted to a generic temperature of Tm 50 °C (122 °F) for use in the USA.
Listing of Applied Sealing and Membrane Material, its Chemical Resistance and Features:			
EPDM	Ethylene-Propy-lene-Diene-Rubber	Good resistance to diluted acids and alkalis. Resistant to aliphatic, aromatic and chlorinated hydrocarbons (oils, fats, fuels) and strongly oxidizing acids. Due to the instability to oils and fats, be careful when using cleaning agents (i.e. added fragrance oils)!	Preferred sealing material in potable water installations. High resistance to hot water and steam. Operating temperature range from -45 to + 150 °C (- 49 to + 302 °F).
FKM/FPM	Fluoro Elastomers	Resistant to oil and many chemicals, with very good resistance to acids and alkalis.	Excellent temperature resistance from -20 to + 220 °C (- 4 to + 428 °F).
VMQ	Silicone Rubber	Oil resistance corresponds approximately to that of NBR. Low resistance against alkalines.	Excellent temperature resistance - 40 to + 200 °C (- 40 to + 392 °F), but not transferable to hot water or steam. Very suitable for food applications.
FMQ/FVMQ	Fluoro-Silicone-Rubber	Improved resistance to oils, fuels and solvents compared to VMQ.	Wide operation temperature range from -60 to + 200 °C (-76 to + 392 °F).
NBR	Nitrile-Butadien-Rubber	Good resistance to oils, fuels, mineral oils, greases, vegetable and animal fats.	Not approved for potable water. Good temperature resistance from - 40 to + 130 °C (- 40 to + 266 °F) .
Listing of Applied Coil Material, its Chemical Resistance and Features:			
PBT	Polybutylene terephthalate	Similar to the properties of PET, but better resistance to hot water than PET.	For coil bobbin and encapsulant with insulation class 155 °C (311 °F), class F.
Resin	Epoxy resin	Resistant to diluted acids and alkalis; Hydrochlorofluorocar-bons; toluene; alcohols; fuels, benzene, mineral oils, fats (selec-tion). For cycloaliphatic resins good UV resistance. Resistant to hot water. Not resistant to concentrated acids and alkalis, ammonia; esters, ketones, acetone (selection).	For coil encapsulation with insulation class 155 °C (311 °F), class F.
PET	Polyethylene terephthalate	Resistant to diluted acids, aliphatic and aromatic hydrocarbons, oils, fats and alcohols but not to halogenated hydrocarbons and ketones. Instable against hot water and alkalies.	For coil bobbin and encapsulant with insulation class 180 °C (356 °F), class H.

* The material resistance data is only given as an initial orientation value. In case of doubt, the suitability should be looked up in more detailed tables, e.g. Bürkle "Chemical Resistance of Plastics" or, as a matter of fact, directly by means of life tests. When using material stability tables, it is important to note that the chemical resistance is usually determined by individual chemicals but not by mixtures. The suitability test should therefore always be determined individually for the chemical mixture (external laboratory test).

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