Product Information

Dispense valve, proportional
DN 8

A. u. K. Müller

Solenoid valves
Control valves
Special valves and systems

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Series 46.008.111 prop



Characteristics

- Proportional valve, direct acting
- Plunger separated by diaphragm from medium
- PTFE valve seat to inhibit scale build up
- Long term performance capability
- Suitable for food and hot water appliances
- Works from zero pressure
- Complete drainage of valve outlet after shut off
- Other hydraulic connections on request
- Easy to assemble and service
- Coil change without opening of medium circuit, coil can be mounted 4 x 90°
- High operating safety by the use of high quality and 100% final testing of the products
- Approved variants according to NSF/ANSI standard 169

Applications

- Hot/cold drink dispensers
- Dosing systems
- Water treatment devices

Possible approvals

Approved versions available on request:

- KTW/W270
- NSF 169
- Others on request

Description

2/2-way solenoid proportional valve of nominal diameter DN 8 for controlled liquid dispense. This valve is direct acting and normally closed (NC). This control valve is particularly suitable for demanding dosing tasks due to its good response characteristics.

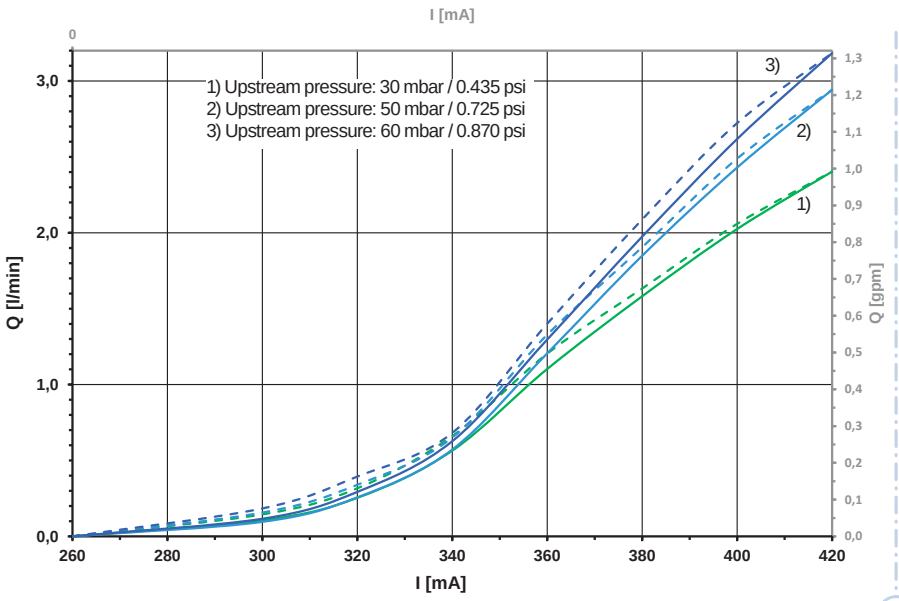
Valves of this design are medium separated seat valves, where the plunger is separated by a diaphragm from the medium. The valve seat is made of scale build up inhibiting PTFE.

The valve is controlled by a PWM signal (pulse width modulation). The pulse duty factor of the PWM signal determines the coil current and therefore the opening behaviour of the valve. Thus, it can be continuously adjusted to a value between 0 and 100% of the maximum flow rate by altering the coil current.

Also, control by an adjustable current source is possible.

The valve is also available in other PSU housing variants on request and is distinguished primarily by its food grade and hot water capability.

typical performance curve

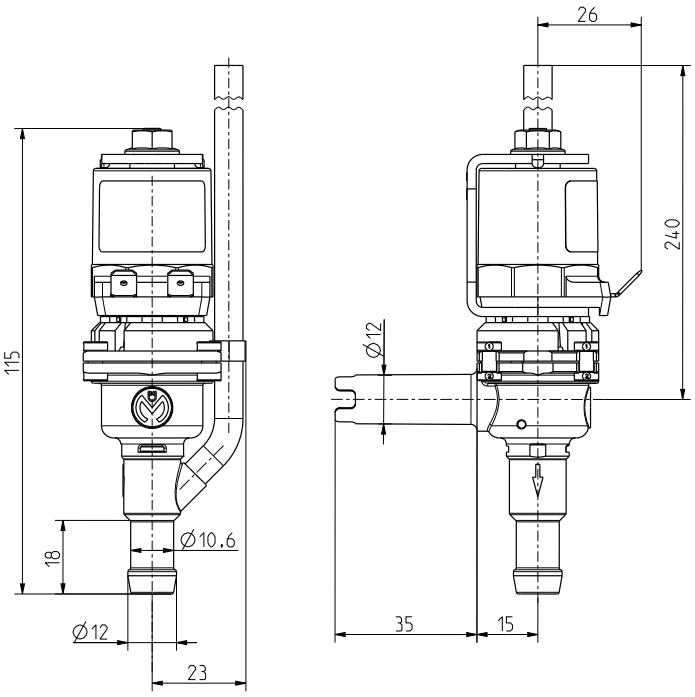


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Other housing options with other fluidic connectors on request.

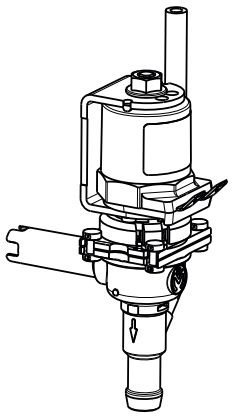
Technical Data

Type	proportional valve		
Construction	2/2-way single chamber angle valve, direct acting		
Function	NC (normally closed)		
Fitting position	coil upwards		
Media	cold and heated potable water and physically and chemically similar media		
T-Medium	98	°C max.	
T-Ambient	70	°C max.	
DN	8	mm	
p-Operating	0 - 60	mbar	
Flow max.	4,0	l/min	
Coil type	MS.006 MS.024, MS.025 on request		
Nominal voltages*	24	V DC	
	other on request		
Min. coil current	100	mA	rms
Max. coil current	420	mA	rms
Typical values of adjustment characteristics PWM control**			
Nominal frequency PWM	200	Hz	
Hysteresis	< 5 %		
Repeatability	1,5 % of end value (420 mA)		
Sensitivity	1,2 % of end value (420 mA)		
Duty cycle	100 %		
Nominal power	20	W	
Protection Type	IP 00, higher on request		
Coil connections	flat tabs 6,3 x 0,8 mm others on request		
Insulation class	F	according to EN 60730	
Protection class	I	according to EN 60730 (for incorporation in class I)	

* The compensation of the magnetic coil heating by current regulation is recommended.
** The characteristics of the control behaviour also depend on the conditions of use.

Materials

Valve body	PSU
Valve seat	PTFE
Plunger guide	stainless steel
Plunger and spring	stainless steel
Membrane	VMQ FMQ on request
Sealings	VMQ
Coil coating	PBT, PET or epoxy resin

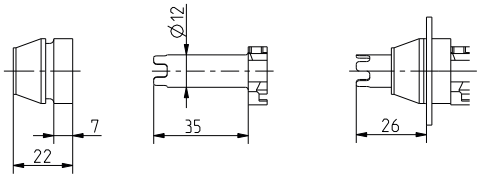


Options

Seal for mounting valves to boiler tank wall

Ident: 006722





MS.006 (IP00)	
MS.024 (IP65)	
MS.025 (IP67, IP68)	

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PWM - Pulse Width Modulation

The control can be realized by a PWM signal with a supply voltage of 24 VDC and a pulse duty factor ≤ 70% (not included).

During operation, a minimum current is required to open the valve. At a pulse duty factor below 15 % the valve will remain closed.

The pulse duty ratio tp / T of the PWM signal determines the coil current and therefore the opening behaviour of the valve. By changing the coil current the flow of the fluid is continuously adjusted to a value between 0 and 100 % of the maximum flow rate.

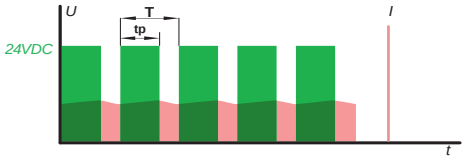
Also, control by an adjustable current source is possible.

As the coil heats during its operation, there is a corresponding increase in coil resistance. With a set duty cycle for the PWM, this effect reduces the current and the resulting flow rate. A controllable current source will maintain the set flow rate independently of the coil temperature

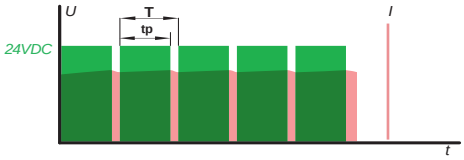
The same result can also be achieved by readjustment of the duty cycle of the PWM actuation, whereby the coil heating will be compensated and an improved flow control is achieved.

The valve can be operated continuously (ED 100%) to a maximum coil current of 420 mA.

Please contact us to determine the appropriate parameters for your application.



tp/T **≤ 70%** [1/T=200Hz] PWM => **lower current**



tp/T **≥ 70%** [1/T=200Hz] PWM => **higher current**

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