





Direct-acting 2/2-way plunger valve up to 900 bar

- · Hydrogen-resistant screwed fluid housing
- Function test with forming gas at nominal pressure
- Explosion-proof design ATEX and IECEx
- Inspection holes for monitoring the process seal
- Normally Open (NO) versions on request

Product variants described in the data sheet may differ from the product presentation and description.

Type description

The valve type 6080 is a direct-acting plunger valve for hydrogen applications. The plunger guiding tube and stopper are screwed together to increase the pressure resistance in contact with hydrogen. Certified 3.1 materials suitable for hydrogen and carbon-coated magnetic steels are used. Each valve is subject to a functional test at maximum nominal pressure. The external leakage at nominal pressure is 5x 10-5 mbar I/s. On request, the push-over coil can be provided as a Zone 1 or Category 2 explosion-proof version.



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1. General technical data

Material Seal PCTFE/PTFE Sody Stainless steel 1.4404 Coil Powder-coated steel Fightness Permissible internal leakage rate Permissible external leakage rate S × 10 ⁻⁵ mbar l/s at 20 bar, 5 × 10 ⁻⁵ mbar l/s at nominal pressure Permissible external leakage rate 5 × 10 ⁻⁵ mbar l/s Max. switching cycles regarding eakage rates Max. absolute switching cycles service) Pressure Pressure Pressure Pressure level PN 900 bar Oiffice DN 0.5 and DN 0.7 A Further information can be found in chapter "7.4. Ordering chart" on page 8. Chapter of Dromation can be found in chapter "2. Circuit functions" on page 4. Chermal insulation class of solenoid coil	Product properties	
Seal PCTFE/PTFE Sody Stainless steel 1.4404 Coil Powder-coated steel Fightness Permissible internal leakage rate Permissible external leakage rate Ax. switching cycles regarding eakage rates Max. absolute switching cycles service) Pressure Pressure Pressure level Differential pressure 1) Differential pressure 2 Differential pressure 3 Differential pressure 4 Differential pressure 5 Differential pressure 6 Differential pressure 7 Differential pressure 7 Differential pressure 7 Differential pressure 8 Differential pressure 9 Differential pressure 1 Differential press	Dimensions	Further information can be found in chapter "5. Dimensions" on page 5.
Stainless steel 1.4404 Powder-coated steel Fightness Permissible internal leakage rate Permissible external leakage rate Permissible external leakage rate Adx. switching cycles regarding eakage rates Max. absolute switching cycles service) Pressure Pressure level Pricesure Pressure level Differential pressure Differential pressure Differential pressure Pressure Pressure level Differential pressure Differential pressure Differential pressure Differential pressure Differential pressure Circuit function A Further information can be found in chapter "7.4. Ordering chart" on page 8. Circuit function A Further information can be found in chapter "2. Circuit functions" on page 4. Class H Class H	Material	
Powder-coated steel Powder-coated steel Powder-coated steel Powder-coated steel 2 × 10 ⁻³ mbar l/s at 20 bar, 5 × 10 ⁻⁵ mbar l/s at nominal pressure 5 × 10 ⁻⁵ mbar l/s Ax. switching cycles regarding eakage rates Max. absolute switching cycles service) Pressure Pressure level Pressure level Pressure level Differential pressure ¹⁾ Differential pressure ¹⁾ Differential pressure on the pressure on the pressure of the pressure	Seal	PCTFE/PTFE
Powder-coated steel Powder-coated steel Pightness Permissible internal leakage rate Permissible external leakage rate Aux. switching cycles regarding eakage rates Max. absolute switching cycles Service) Pressure Pressure Pressure level Pifferential pressure Differential pressure Circuit function A Further information can be found in chapter "2. Circuit functions" on page 4. Class H Class H	Body	Stainless steel 1.4404
Permissible internal leakage rate 2 × 10 ⁻³ mbar l/s at 20 bar, 5 × 10 ⁻⁵ mbar l/s at nominal pressure 5 × 10 ⁻⁵ mbar l/s 4 × 50.000 at Δp = 100200 bar 5 × 10.000 (1 year) at Δp = 100200 bar 6 × 100.000 (1 year) at Δp = 100200 bar 7 × 100.000 (1 year) at Δp = 100200 bar 8 × 100.000 (1 year) at Δp = 100200 bar 9 × 100.000 (1 year) at Δp = 1002	Coil	Powder-coated steel
Permissible internal leakage rate 2 × 10 ⁻³ mbar l/s at 20 bar, 5 × 10 ⁻⁵ mbar l/s at nominal pressure 5 × 10 ⁻⁵ mbar l/s 4 × 50.000 at Δp = 100200 bar 5 × 10.000 (1 year) at Δp = 100200 bar 6 × 100.000 (1 year) at Δp = 100200 bar 7 × 100.000 (1 year) at Δp = 100200 bar 8 × 100.000 (1 year) at Δp = 100200 bar 9 × 100.000 (1 year) at Δp = 1002	Tightness	
Permissible external leakage rate Max. switching cycles regarding eakage rates Max. absolute switching cycles reservice) Pressure Pressure level Differential pressure 1 Dirfice DN 0.5 and DN 0.7 A Further information can be found in chapter "2. Circuit functions" on page 4. Class H Class H	Permissible internal leakage rate	2×10^{-3} mbar I/s at 20 bar, 5×10^{-5} mbar I/s at nominal pressure
Max. switching cycles regarding eakage rates Max. absolute switching cycles service) Pressure Pressure level Differential pressure 1.) Drifice DN 0.5 and DN 0.7 A Further information can be found in chapter "7.4. Ordering chart" on page 8. Drifice DN 0.5 and DN 0.7 A Further information can be found in chapter "2. Circuit functions" on page 4. Class H Class H	· ·	•
Pressure Pressure level PN 900 bar Differential pressure 1 O900 bar Further information can be found in chapter "7.4. Ordering chart" on page 8. Drifice DN 0.5 and DN 0.7 Circuit function A Further information can be found in chapter "2. Circuit functions" on page 4. Chermal insulation class of solenoid coil	Max. switching cycles regarding leakage rates	\sim 50.000 at Δp = 100200 bar
Pressure level Oifferential pressure 1) Oifferential pressure 1	Max. absolute switching cycles (service)	~ 100.000 (1 year) at Δp = 100200 bar
Oifferential pressure 1) O900 bar Further information can be found in chapter "7.4. Ordering chart" on page 8. Drifice DN 0.5 and DN 0.7 Circuit function A Further information can be found in chapter "2. Circuit functions" on page 4. Chermal insulation class of solenoid coil	Pressure	
Further information can be found in chapter "7.4. Ordering chart" on page 8. Drifice DN 0.5 and DN 0.7 Circuit function A Further information can be found in chapter "2. Circuit functions" on page 4. Chermal insulation class of solenoid coil	Pressure level	PN 900 bar
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Circuit function A Further information can be found in chapter "2. Circuit functions" on page 4. Chermal insulation class of solenoid coil		·
Further information can be found in chapter "2. Circuit functions" on page 4. Class H Class H		
solenoid coil	Circuit function	
Performance data	Thermal insulation class of solenoid coil	Class H
	Performance data	
Outy cycle 100 % continuous operation	Duty cycle	100 % continuous operation
Electrical data	Electrical data	
Operating voltage 24 V/DC, 24 V/50 Hz, 24 V/60 Hz, 230 V/50 Hz (other voltages on request)	Operating voltage	24 V/DC, 24 V/50 Hz, 24 V/60 Hz, 230 V/50 Hz (other voltages on request)
/oltage tolerance ±10 %	Voltage tolerance	±10 %
Medium data	Medium data	
Operating medium ²⁾ Hydrogen	Operating medium ^{2.)}	Hydrogen
Medium temperature -40 °C+80 °C	Medium temperature	-40 °C+80 °C
/iscosity Max. 22 mm²/s	Viscosity	Max. 22 mm ² /s
Process/Port connection & communication	Process/Port connection & commu	unication
Electrical connection Male cable plug according to DIN 43650 Terminal box M16×1.5 (ATEX)	Electrical connection	, ,
Port connection G 1/4	Port connection	G 1/4
Approvals and conformities	Approvals and conformities	
Degree of protection IP65 according to DIN 60529	Degree of protection	IP65 according to DIN 60529
Explosion protection Further information can be found in chapter "3.4. Explosion protection" on page 4.	Explosion protection	Further information can be found in chapter "3.4. Explosion protection" on page 4.
Others Further information can be found in chapter "3.5. Others" on page 4.	Others	Further information can be found in chapter "3.5. Others" on page 4.
invironment and installation	Environment and installation	
nstallation position Actuator upright or horizontal	Installation position	Actuator upright or horizontal
Ambient temperature - 20 °C+ 50 °C	Ambient temperature	- 20 °C+ 50 °C

- $1.) \ \ Pressure \ data: overpressure \ to \ atmospheric \ pressure, depending \ on \ orifice, \ tightness \ seal \ or \ nominal \ pressure$
- 2.) Medium resistance according to material combination



2. Circuit functions

Symbol	Description
T W 11 (P)	Circuit function A (CF A) 2/2-way solenoid valve Direct-acting
	Normally closed

3. Approvals and conformities

3.1. General notes

- The approvals and conformities listed below must be stated when making enquiries. This is the only way to ensure that the product complies with all required specifications.
- Not all available versions can be supplied with the below mentioned approvals or conformities.

3.2. Conformity

In accordance with the Declaration of Conformity, the product is compliant with the EU Directives. This includes the following directives:

- Pressure equipment directive 2014/68/EU category IV
- Machinery directive 2006/42/EC

3.3. Standards

The applied standards which are used to demonstrate compliance with the EU Directives are listed in the EU-Type Examination Certificate and/or the EU Declaration of Conformity.

3.4. Explosion protection

Approval	Description
$\langle \epsilon_{x} \rangle$	Optional: Explosion protection As a category 2 device suitable for zone 1/21 and zone 2/22 (optional).
IECEX	ATEX: II 2G Ex e mb IIC T4 Gb II 2D Ex tb mb IIIC T130 °C Db
тм	IECEx: Ex e mb IIC T4 Gb Ex th mb IIIC T130 °C Db

3.5. Others

Hydrogen

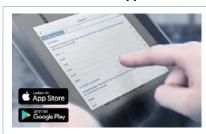
Conformity	Description
H ₂	Suitability for hydrogen The products are suitable for use with gaseous hydrogen, according to the manufacturer's declaration. ISO 19880 - 3: Gaseous hydrogen - Refuelling stations - Part 3: Shut-off devices
	 SAE J2601: Fueling Protocols for Light Duty Gaseous Hydrogen Surface Vehicles → 700 bar SAE J2601-2: Fueling Protocol for Gaseous Hydrogen Powered Heavy Duty Vehicles → 350 bar
	 ISO 14687: Characteristics of hydrogen as a fuel - specification of the product DIN 17124: Hydrogen as a fuel
	SAE J2719: Hydrogen Purity

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4. Materials

4.1. Bürkert resistApp



Bürkert resistApp - Chemical resistance chart

You want to ensure the reliability and durability of the materials in your individual application case? Verify your combination of media and materials on our website or in our resistApp.

Start chemical resistance check

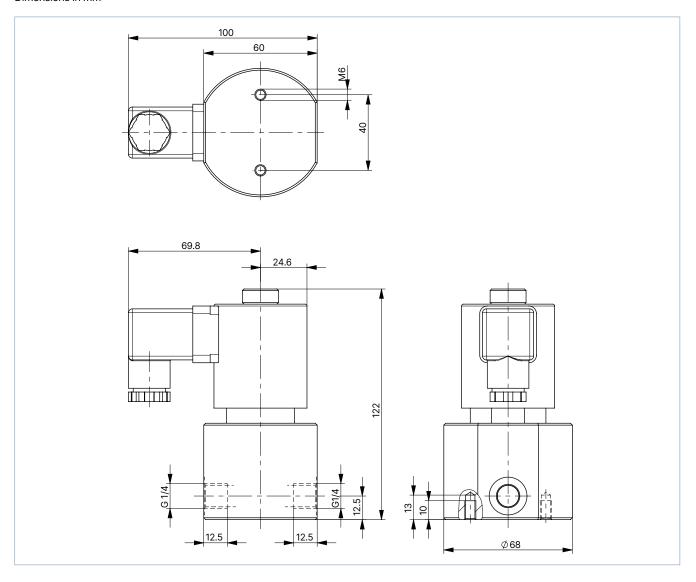
5. Dimensions

5.1. Threaded version

Standard version

Note:

Dimensions in mm

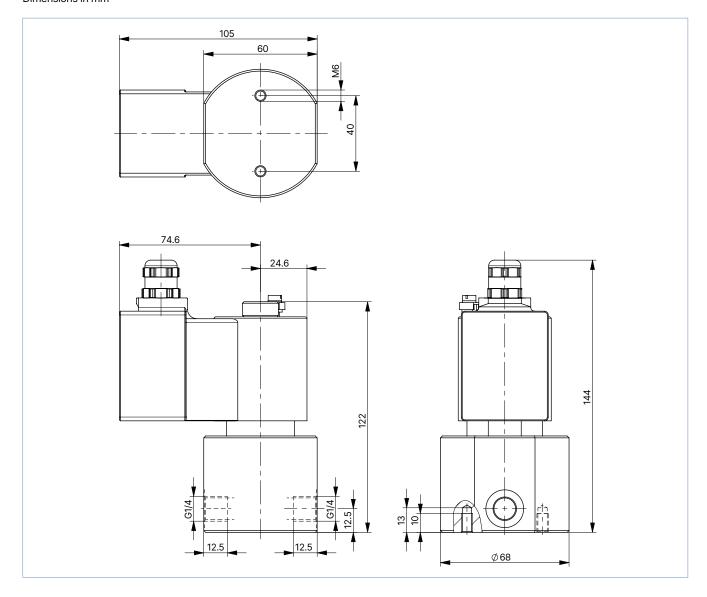




ATEX/IECEx terminal box version

Note:

Dimensions in mm





6. Performance specifications

6.1. Power consumption

Note:

The cable plug for AC valves contains an integrated rectifier.

Coil size	Cold performance		
[mm]	[W]		
77 (M)	46		
77 (M) ATEX	30		

7. Ordering information

7.1. Bürkert eShop



Bürkert eShop - Easy ordering and quick delivery

You want to find your desired Bürkert product or spare part quickly and order directly? Our online shop is available for you 24/7. Sign up and enjoy all the benefits.

Order online now

7.2. Bürkert product filter



Bürkert product filter - Get quickly to the right product

You want to select products comfortably based on your technical requirements? Use the Bürkert product filter and find suitable articles for your application quickly and easily.

Try out our product filter

7.3. Bürkert Product Enquiry Form



Bürkert Product Enquiry Form - Your enquiry quickly and compactly

Would you like to make a specific product enquiry based on your technical requirements? Use our Product Enquiry Form for this purpose. There you will find all the relevant information for your Bürkert contact. This will enable us to provide you with the best possible advice.

Fill out the form now

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7.4. Ordering chart

Standard version

Note:

Other versions are available on request.

Circuit function	Port connection	Orifice	K _v value water	Pressure range	Article no.				
					024/DC	024/AC	230/AC		
		[mm]	[m³/h]	[bar]	[V/Hz]	[V/Hz]	[V/Hz]		
Stainless steel body, internal G-thread, seal material PCTFE+PTFE, cable head with integrated rectifier for AC included in scope of delivery									
CF A	G 1/4	0.5	0.015	0900	20092947 🖼	20093197 🖼	20093199 🖼		
2/2-way solenoid valve Direct-acting Normally closed		0.7	0.020	0500	20093200 頃	20093201 関	20093202 頃		

ATEX/IECEx terminal box version

Circuit function	Port connection	Orifice	K _v value water	Pressure range	Article no.			
					024/DC	024/AC	230/AC	
		[mm]	[m³/h]	[bar]	[V/Hz]	[V/Hz]	[V/Hz]	
Stainless steel body, internal G-thread, seal material PCTFE+PTFE								
CF A	G 1/4	0.5	0.015	0900	20093203 🖼	20093206 🖼	20093207 🖼	
2/2-way solenoid valve Direct-acting Normally closed		0.7	0.020	0500	20093208 頃	20093209 頃	20093210	