

1 OPERATING INSTRUCTIONS

The operating instructions contain important information.

- ▶ Read the instructions carefully and pay particular attention to the safety instructions.
- ▶ Store the instructions in such a way that they are available to all users.
- ▶ The liability and warranty for the Type 6013 device will be invalidated if the operating instructions are not followed.

1.1 Symbols

→ Designates a procedure which you must carry out.

Warning of injuries:



DANGER!

Imminent danger! Serious or fatal injuries.



WARNING!

Potential danger! Serious or fatal injuries.



CAUTION!

Danger! Moderate or minor injuries.

Warning of damage:

NOTE!

2 INTENDED USE

Unauthorised use of the Type 6013 solenoid valve may be dangerous to people, nearby equipment and the environment.

The device is designed for blocking, dosing, filling and ventilating neutral gaseous and liquid media.

- ▶ In potentially explosive environments, the device must only be used in accordance with the specifications on the separate Ex type label. The additional information and safety instructions relating to Ex areas enclosed with the device must be adhered to when deploying the device.
- ▶ Do not use devices without a separate Ex type label in potentially explosive atmospheres.
- ▶ When using the device, observe the authorised data, and the operating and usage conditions specified in the contract documents and in the operating instructions.
- ▶ Use the device only in conjunction with third-party devices and components recommended or approved by Bürkert.
- ▶ Prerequisites for safe and trouble-free operation include correct transport, storage and installation as well as careful operation and maintenance.
- ▶ Use the device only as intended.

2.1 Definition of the term “device”

The term “device” used in these instructions always refers to the Type 6013 solenoid valve.

3 BASIC SAFETY INSTRUCTIONS

These safety instructions do not take into consideration any contingencies and events that may arise during installation, operation and maintenance.



High pressure danger.

- ▶ Switch off the pressure before working on the device or system. Vent or empty the lines.

Danger from electrical voltage.

- ▶ Before working on the device or system, switch off the power supply. Secure it against reactivation.
- ▶ Observe the applicable accident prevention and safety regulations for electrical devices.

Danger of burns and risk of fire.

Continuous operation may result in a hot device surface.

- ▶ Only touch the device when wearing protective gloves.
- ▶ Keep the device away from highly flammable substances and media.
- ▶ Do not obstruct heat dissipation required for operation.

Destruction of the coil due to overheating.

- ▶ Electrically connect coil with mounted housing only.
- ▶ In the case of alternating voltage, pay attention to movable core.

To prevent injuries/damage to property, observe the following:

- ▶ Do not feed in any aggressive or highly flammable media.
- ▶ Do not modify the device.
- ▶ Secure the system/device against unintentional activation.
- ▶ Installation and maintenance work may be carried out by authorised technicians only, with the appropriate tools.
- ▶ After an interruption in the electrical or pneumatic supply, ensure that the process is restarted in a controlled manner.
- ▶ Do not subject the body to mechanical stress.
- ▶ Observe the general rules of technology.

4 TECHNICAL DATA

4.1 Standards and directives

The device complies with the valid EU harmonisation legislation. In addition, the device also complies with the requirements of the laws of the United Kingdom.

The harmonised standards that have been applied for the conformity assessment procedure are listed in the current version of the EU Declaration of Conformity/ UK Declaration of Conformity.

4.2 Operating conditions



WARNING!

Heat sources or temperature fluctuations may cause malfunctions or leaks.

- ▶ When using the device outdoors, protect it from adverse weather conditions.
- ▶ Avoid heat sources which may cause the permissible temperature range to be exceeded.

Permitted medium temperature (for general purpose valves without UL approval):

Circuit function	Seal material	Medium temperature
A	FKM	-10...+100°C (PA coil) -10...+120°C (epoxide coil)
	PTFE/graphite	-10...+180°C
B	FKM	-10...+100°C (AC) -10...+120°C (DC)

Ambient temperature: -10...+55°C

Viscosity: 21 mm/s

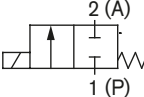
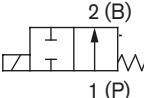
Degree of protection: IP65 according to EN 60529 with cable plug

Media: Neutral gaseous and liquid media that do not attack the body and seal materials (see resistance table at country.burkert.com). Check resistance in each individual case.

4.3 Fluidic data (for UL approved valves)

Temperature-/fluid ratings General Purpose Valve							
	Seal Designation	Seal material	Fluid Temperature		Ambient Temperature		Fluids
			[°F]	[°C]	[°F]	[°C]	
Non-hazardous fluids	FF (IB46/IB76)	Low temp. FKM	-40...+212°F	-40 ... +100°C	-40...+131°F	-40 ... +55°C	Air, Inert gas
	FF	FKM	+14...+212°F	-10 ... +100°C	+14...+131°F	-10...+55°C	Air, Inert gas
			+32...+212°F	-0 ... +100°C	+32...+131°F	0...+55°C	Water
	AA	EPDM	-22...+212°F	-30...+100°C	-22...+131°F	-30...+55°C	Air, Inert gas, Steam
			+32...+212°F	-0 ... +100°C	+32...+131°F	0...+55°C	Water
	EG, EF	PTFE + Graphite, PTFE + FKM	-40...+266°F	-40 ... +130°C	-40...+131°F	-40 ... +55°C	Air, Inert gas, Steam
			+32...+212°F	-0 ... +100°C	+32...+131°F	0...+55°C	Water
	BB	NBR	+14...+194°F	-10 ... +90°C	+14...+131°F	-10...+55°C	Air, Inert gas, Steam
+32...+194°F			0 ... +90°C	+32...+131°F	0...+55°C	Water	
Hazardous fluids	BB	NBR	+14...+194°F	-10... +90°C	+14...+131°F	-10...+55°C	No.2 Fuel Oil
	FF	FKM	+14...+248°F	-10...+120°C	+14...+131°F	-10...+55°C	

Temperature-/fluid ratings Safety Shutoff Valve							
	Seal Designation	Seal material	Fluid Temperature		Ambient Temperature		Fluids
			[°F]	[°C]	[°F]	[°C]	
Hazardous fluids	FF	FKM	-4...+150°F	-20...+66°C	-4...+131°F	-20...+55°C	No.2 Fuel Oil
							Diesel/Biodiesel (B6-20)
							Biodiesel (B99.9/B100)

Circuit functions	
A (NC)	 <p>2 (A) 1 (P)</p> <p>2/2-way valve, normally closed</p>
B (NO)	 <p>2 (B) 1 (P)</p> <p>2/2-way valve, normally open</p>

Pressure range:

see type label

Port connection:

Type 6013: G1/8, G1/4, G3/8, flange
Type 6013A: G1/8, G1/4

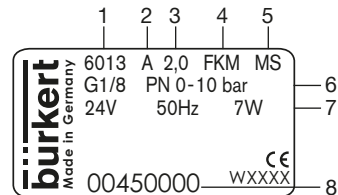
4.4 Approvals

The valve is approved as a General Purpose or Safety Shutoff Valve. See labelling on the valve.

4.5 Type label (example)



Observe the data for voltage, current type and pressure listed on the type label.



1	Device type	2	Circuit function
3	Orifice	4	Seal material
5	Body material	6	Connection, nominal pressure class
7	Voltage, frequency, output	8	Order number

4.6 Electrical data

Connections:	DIN EN 175301-803 Design A for cable plug Type 2509 or Type 2518
Operating voltage:	Type 6013: 24 V DC $\pm 10\%$, max. residual ripple 10% 24 V/50 Hz, 230 V/50 Hz Type 6013A: 24 V DC $\pm 10\%$, max. residual ripple 10% 230 V/50 Hz Voltage tolerance: $\pm 10\%$
Nominal power:	WWA: 8 W (5 W, 10 W) WWB: AC 7 W (9 W), DC 8 W Impulse version DC: 7 W
Nominal operating mode:	Continuous operation, duty cycle 100% for block installation: 5 W continuous operation a. A. 8 W intermittent operation 60% (30 min)

5 INSTALLATION

5.1 Safety instructions



DANGER

High pressure danger.

- ▶ Switch off the pressure before working on the device or system. Vent or empty the lines.

Danger from electrical voltage.

- ▶ Before working on the device or system, switch off the power supply. Secure it against reactivation.
- ▶ Observe the applicable accident prevention and safety regulations for electrical devices.



WARNING!

Risk of injury due to improper installation.

- ▶ Installation work may be carried out by authorised technicians only, with the appropriate tools.

Risk of injury due to unintentional activation of the system and uncontrolled restart.

- ▶ Secure the system against unintentional activation.
- ▶ Following installation, ensure a controlled restart.

5.2 Fluidic installation

Installation position: any, preferably actuator face up.

Flow direction (for normally closed/Safety Shutoff Valves): The letters on the valve body state the pressure (P) and outlet (A).

For normally open valves (not for Safety Shutoff Valves): The letters on the valve body state the pressure (P) and outlet (B).

→ Clean pipelines and flange connections.

→ Install dirt trap at the valve inlet (0.2...0.4 mm).



Observe flow direction: from 1 (P) → 2(A) (WWA)
from 1(P) → 2(B) (WWB).

Valve with threaded connection:

→ Use PTFE tape as a seal material.

NOTE!

Caution! Risk of breakage!

▶ Do not use the coil as a lever arm.

→ Hold the valve using a corresponding open-end wrench and screw into the pipeline.

Valve with flange connection:

→ Remove cover plate.

→ Loosen nut and remove coil.



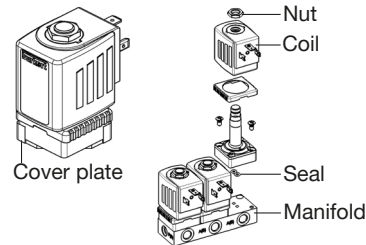
WARNING!

Danger due to escaping medium!

Leaking connections if the seals are not fitted precisely, if the manifold is uneven or if the surface quality of the manifold is inadequate.

- ▶ Make sure that the seals provided fit the valve properly.
- ▶ Make sure that the manifold is even, with adequate surface quality.

- Insert the seal into the valve body.
- Screw valve body to manifold (max. 1.5 Nm).
- Mount coil and attach nut (max. 5 Nm).



5.3 Electrical installation



WARNING

Danger from electrical voltage.

- ▶ Before working on the device or system, switch off the power supply. Secure it against reactivation.
- ▶ Observe the applicable accident prevention and safety regulations for electrical devices.

If there is no protective conductor function between the coil and the body, there is a risk of electric shock.

- ▶ Always connect protective conductor.
- ▶ Check electrical continuity between coil and body.



You can find information about the Type 2509 and 2518 cable plugs in their operating instructions at country.burkert.com



Observe voltage and current type according to type label.

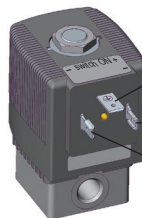
→ Check that the seal is properly fitted.

→ Screw cable plug tightly onto the coil (max. 1 Nm).

Impulse design control unit



Correct polarity is a requirement for the function of the device: observe labelling on the top of the coil. Impulse time at least 50 ms.



Protective conductor connection

Terminal 2

Terminal 1

Polarity	Description	Terminal assignment
- Switch ON +	Valve (P-seat) is opened	(+) on terminal 2, (-) on terminal 1
+ Switch OFF -	Valve (P-seat) is closed	(+) on terminal 1, (-) on terminal 2



Only use cable plug without electrical wiring for impulse versions.

5.4 Rotate the coil



WARNING!

Risk of injury due to electric shock.

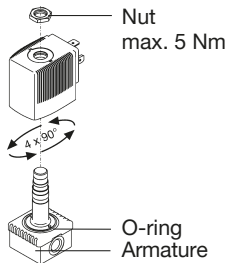
If there is no protective conductor function between the coil and the body, there is a risk of electric shock.

- ▶ Check the protective conductor function after installing the coil.

Overheating, risk of fire.

Connecting the coil without installing the armature will lead to overheating and will destroy the coil.

- ▶ Only connect the coil after the armature has been installed.



The coil can be rotated 4 x 90° (only 2 x 180° with block installation).

Procedure:

- Loosen the nut.
- Rotate the coil.
- Tighten the nut using an open-end wrench (tightening torque max. 5 Nm).

6 MAINTENANCE, TROUBLESHOOTING

6.1 Safety instructions



WARNING!

Risk of injury due to improper maintenance work.

- ▶ Maintenance work may be carried out by authorised technicians only, with the appropriate tools.

Risk of injury due to unintentional activation of the system and uncontrolled restart.

- ▶ Secure the system against unintentional activation.
- ▶ Ensure a controlled restart after maintenance is completed.

6.2 Faults

Check in case of faults:

- Port connections
- Operating pressure
- Operating voltage and valve control

If the valve still does not actuate, please contact your local Bürkert branch.

7 DEACTIVATION

7.1 Safety instructions



DANGER!

High pressure danger.

- ▶ Switch off the pressure before working on the device or system. Vent or empty the lines.

Danger from electrical voltage.

- ▶ Before working on the device or system, switch off the power supply. Secure it against reactivation.
- ▶ Observe the applicable accident prevention and safety regulations for electrical devices.



WARNING!

Risk of injury due to improper disassembly.

- ▶ Disassembly work may be carried out by authorised technicians only, with the appropriate tools.

7.2 Disassembly

- Switch off pressure and drain lines.
- Switch off electrical voltage.
- Remove the cable plug.

Valve with threaded connection:

- Hold the valve on the valve body using an open-end wrench and unscrew from the pipeline.

Valve with flange connection:

- Loosen nut and remove coil.
- Remove the valve body from the manifold.

8 SPARE PARTS



CAUTION!

Risk of injury and/or damage due to incorrect parts.

Incorrect accessories and unsuitable spare parts may cause injuries and damage to the device and the area around it.

- ▶ Use only original accessories and original spare parts from Bürkert.

The coil and armature can be ordered as a complete set using the device's identification number.

Wearing part set on request.

9 TRANSPORTATION, STORAGE, DISPOSAL

NOTE!

Transport damages.

- ▶ Use shock-resistant packaging to protect the device against moisture and dirt during transport.
- ▶ Avoid exceeding or dropping below the permitted storage temperature.
- ▶ Protect the electrical interfaces of the coil and the pneumatic connections from damage by placing protective caps on them.

Incorrect storage may damage the device.

- ▶ Store the device in a dry and dust-free location.

Storage temperature: $-40\dots+80^{\circ}\text{C}$.

Environmentally friendly disposal



- ▶ Follow national regulations regarding disposal and the environment.
- ▶ Collect electrical and electronic devices separately and dispose of them as special waste.

Further information at country.burkert.com.

country.burkert.com

MAN 1000265425 ML Version: BStatus: RL (released | freigegeben) printed: 05.04.2023