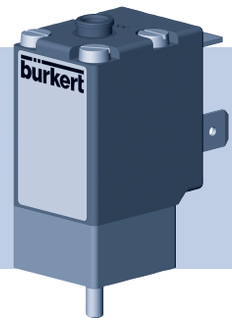
Type 0301

3/2-Way Mini Solenoid Valve
3/2-Wege-Mini-Magnetventil
Électrovanne mini à 3/2 voies



Operating Instructions
Bedienungsanleitung
Manuel d'utilisation

EN

Table of Contents

1 THE OPERATING INSTRUCTIONS

The operating instructions contain important information.

- Read the instructions carefully and follow the safety instructions.
- Keep the instructions in a location where they are available to every user.

The liability and warranty for Type 0301 are void if the operating instructions are not followed.

1.1 Symbols

DANGER!

Immediate danger! Serious or fatal injuries.

WARNING!

Possible danger! Serious or fatal injuries.

CAUTION!

Danger! Moderate or minor injuries.

NOTE!

Warns of damage to property.

Important tips and recommendations.

Refers to information in these operating instructions or in other documentation.

- Designates instructions for risk prevention.

→ Designates a procedure which you must carry out.

1.2 Definitions of terms

The term “device” used in the instructions always refers to Type 0301.

2 AUTHORIZED USE

Type 0301 is designed for blocking, dosing, filling and venting neutral gaseous and liquid media.

- Do not use the device outdoors.
- Use according to the authorized data, operating conditions, and conditions of use specified in the contract documents and operating instructions.
- Do not use the device in potentially explosive areas.
- Use the device only in conjunction with third-party devices and components recommended and authorized by Bürkert.
- Use device only when in perfect condition and always ensure proper storage, transportation, installation and operation.
- Use the device only as intended.

2.1 Restrictions

If exporting the system/device, observe any existing restrictions.

2.2 Approvals

The approval rating on the Bürkert type labels refers to Bürkert products.

e 1
03 5791

Devices which must bear the type approval mark were approved at the Federal Motor Transport Authority (Kraftfahrtbundesamt) under the type approval number

e1*72/245*2006/96*5791*00

and are put into circulation with the indicated type approval mark.
An excerpt of the type approval is available from the address below.

Bürkert Werke GmbH
CQ-Approval Management,
Christian-Bürkert-Str. 13-17,
D-74653 Ingelfingen

3 BASIC SAFETY INSTRUCTIONS

These safety instructions do not take into account any contingencies and events which may arise during the installation, operation and maintenance of the devices.

Risk of injury from high pressure in the system or device.

- Before working on the system or device, switch off the pressure and vent and drain lines.

Risk of injury due to electric shock.

- Before working on the system or device, switch off the power supply and secure to prevent reactivation.
- Observe applicable accident prevention and safety regulations for electrical equipment.

If switched on for a prolonged time, risk of burns or fire due to hot device surface.

- Keep the device away from highly flammable substances and media and do not touch with bare hands.

Risk of injury due to malfunction of valves with alternating current (AC).

Sticking core causes coil to overheat, resulting in a malfunction.

- Monitor process to ensure function is in perfect working order.

General hazardous situations.

To prevent injuries:

- Feed in only those media specified in Section „4“.
- The device may be operated only when in perfect condition and in consideration of the operating instructions.
- Do not make any internal or external changes on the device and do not subject it to mechanical stress.
- Secure to prevent unintentional actuation.
- Only trained technicians may perform installation and maintenance work.
- The valves must be installed in accordance with the regulations applicable in the country.
- After an interruption in the power supply, ensure that the process is restarted in a controlled manner.
- Observe the general rules of technology.

4 TECHNICAL DATA

The following values are indicated on the type label:

- **Voltage** (tolerance ±10 %) and **current type**
- **Coil power consumption** (active power in W, at operating temperature)
- **Pressure range**
- **Operating principle**
- **Orifice**
- **Port connection**
- **Valve body material** (MS = brass, PA = polyamide)
- **Seal material**

4.1 Conformity

The solenoid valve Type 0301 conforms to the EC directives according to the EC Declaration of Conformity.

4.2 Standards

The applied standards, which are used to demonstrate compliance with the EC Directives, are listed in the EC type test certificate and/or the EC Declaration of Conformity.

4.3 Operating conditions

WARNING!

Risk of injury from high pressure and discharge of medium.

- Do not use Type 0301 outdoors.
- Avoid heat sources, which may cause the permissible temperature range to be exceeded.

Ambient temperature	NBR -10 – +55 °C FKM -10 – +55 °C EPDM -30 – +55 °C
Degree of protection	IP65 in accordance with DIN EN 60529 or IEC 60529 with connected and installed cable plug, e.g. Bürkert Type 2507

4.4 Mechanical data

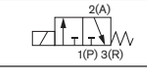
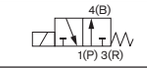
Dimensions	see data sheet
Coil material	epoxide
Port connections	Flange with hollow screw G1/8

4.5 Fluidic data

Media: Neutral, gaseous and liquid media which do not attack housing and seal materials

Medium temperature	NBR -10 – +90 °C FKM -10 – +100 °C EPDM -30 – +90 °C
Viscosity	max. 21 mm²/s
Switching times	
Opening	12 ms
Closing	8 ms

Switching times [ms]:
Measurement on the valve output at 6 bar and +20 °C as per ISO 12238
Opening: Pressure build-up 0 – 90%
Closing: Pressure reduction 100 – 10%

Circuit functions (CF)		
C (NC)		3/2-way valve; closed in rest position, output A unloaded
D (NO)		3/2-way valve, in rest position, output B pressurized

4.6 Electrical data

Connections	DIN EN 175301-803 (DIN 43650) shape B: for cable plug Type 2507 Wire connection on request
Operating voltage	12 V DC, 24 V DC 24 V / 50 Hz, 230 V / 50 Hz
Voltage tolerance	± 10%
Nominal power	AC 9 VA (pull-in), 6 VA (operation) DC 4 W or 2 W
Nominal operating mode	long-term operation, ED 100% for block assembly: 2 W long-term operation on request 4 W intermittent operation 60% (30 min)

4.7 Type label

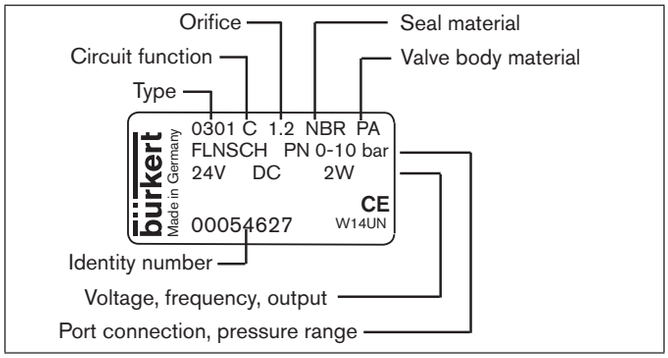


Fig. 1: Description of the type label (example)

5 INSTALLATION

DANGER!

Risk of injury from high pressure in the system or device.

- Before working on the system or device, switch off the pressure and vent and drain lines.

Risk of injury due to electric shock.

- Before working on the system or device, switch off the power supply and secure to prevent reactivation.
- Observe applicable accident prevention and safety regulations for electrical equipment.

WARNING!

Risk of injury from improper installation.

- Installation may be carried out only by trained technicians and with the appropriate tools.
- Secure system against unintentional activation.
- Following installation, ensure a controlled restart.

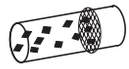
5.1 Fluid Installation

DANGER!

Risk of injury from high pressure in the system or device.
- Before working on the system or device, switch off the pressure and vent and drain lines.

Any installation position is possible, preferably with coil face up.

→ Prior to installation check pipelines for dirt and clean if necessary.
→ If required, install a dirt trap to prevent malfunctions.



Mesh size:
0.2 – 0.4 mm

Observe the flow direction of the valve.
from 1(P) → 2(A) (CFC) or
from 1(P) → 2(B) (CFD)

Valve with flanged connection:

→ Remove cover plate.

WARNING!

Risk of injury due to discharge of medium.
- Ensure that the supplied seals are correctly seated in the valve.
- Ensure that the manifold is even.
- Ensure that the surface quality of the manifold is adequate.

The solenoid valve can be attached by means of the two through-holes for cylinder head screws M3 x 45.

→ Attach the solenoid valve using two cylinder head screws M3 x 45 (maximum tightening torque: 1 Nm).

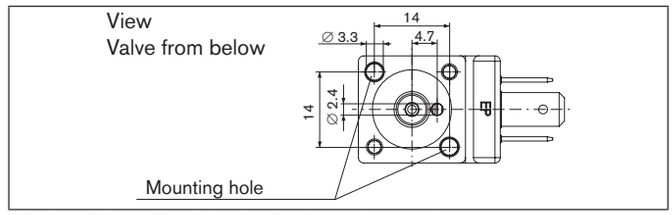


Fig. 2: Dimensional drawing for flanged connection

Installing the manifold:

Do not mount solenoid valves of the CFC and CFD on a joint manifold.
Solenoid valves of the CFC may be mounted together with Type 0201.

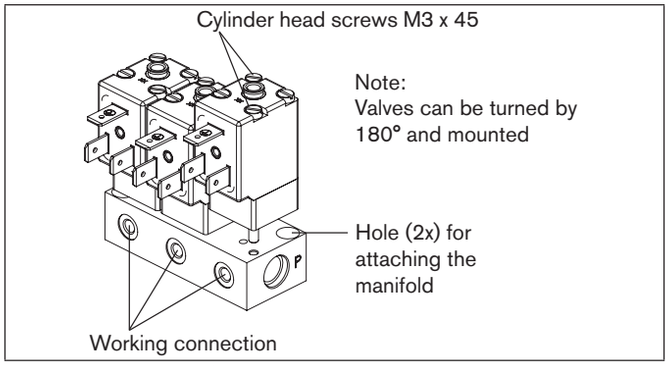


Fig. 3: Installing manifold

Attaching the manifold

The manifold can be attached from above or below using cylinder head screws M4. When installing from above, remove the two outer solenoid valves (loosen the two cylinder head screws which are not indicated).

WARNING!

Risk of injury due to discharge of medium.
- Ensure that the supplied seals are correctly seated in the valve housing.

→ Remove cover plate.
→ Attach solenoid valves to manifold using cylinder head screw M3 x 45 (see „Fig. 3“; maximum tightening torque: 1 Nm).
Valves can be turned by 180° and mounted.
→ Seal working connections which are not required with sealing plugs.

Manifolds can be connected in a row using connection nipples.

Attaching the manifold:

→ Use PTFE tape as the seal material.

NOTE!

Caution risk of breakage.
- Do not use valve as a lever arm.

→ Hold the device with a suitable tool (open-end wrench) on the valve body and screw into the pipeline.

5.2 Electrical installation with cable plug

DANGER!

Risk of injury due to electric shock.
- Before working on the system or device, switch off the power supply and secure to prevent reactivation.
- Observe applicable accident prevention and safety regulations for electrical equipment.

If the protective conductor is not connected, there is a risk of electric shock.
- Always connect protective conductor and check electrical continuity between coil and valve body.

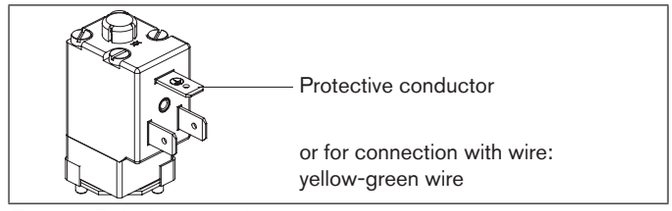


Fig. 4: Protective conductor

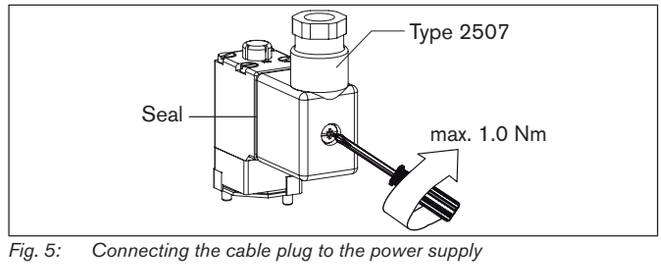


Fig. 5: Connecting the cable plug to the power supply

The cable plug can be turned by 4 x 90° and inserted.

→ Connect terminals.
→ Connect protective conductor.
→ Attach seal and check for correct fit.
→ Mount cable plug (DIN EN 175301-803 (DIN 43650), shape B) and screw tight, observing the maximum tightening torque 1 Nm.
→ Check electrical continuity between coil and valve body (protective conductor function).

6 DISASSEMBLY

DANGER!

Risk of injury from high pressure in the system or device.
- Before working on the system or device, switch off the pressure and vent and drain lines.

Risk of injury due to electric shock.
- Before working on the system or device, switch off the power supply and secure to prevent reactivation.
- Observe applicable accident prevention and safety regulations for electrical equipment.

Risk of injury from improper disassembly.
- Disassembly may only be carried out by authorized technicians and with the appropriate tools.

→ Turn off the pressure and vent the lines.
→ Switch off the power supply.
→ Remove cable plug (if required).
→ To remove the valve, loosen the two screws only.
→ Remove valve from manifold.

7 MAINTENANCE, TROUBLESHOOTING

DANGER!

Risk of injury from high pressure in the system or device.
- Before working on the system or device, switch off the pressure and vent and drain lines.

Risk of injury due to electric shock.
- Before working on the system or device, switch off the power supply and secure to prevent reactivation.
- Observe applicable accident prevention and safety regulations for electrical equipment.

If switched on for a prolonged time, risk of burns or fire due to hot device surface.
- Keep the device away from highly flammable substances and media and do not touch with bare hands.

Risk of injury from improper maintenance work.
- Maintenance may only be carried out by authorized technicians and with the appropriate tools.
- Secure system against unintentional activation.
- Following maintenance, ensure a controlled restart.

7.1 Malfunctions

If malfunctions occur, check whether
→ the device has been installed according to the instructions,
→ the electrical and fluid connections are correct,
→ the device is not damaged,
→ all screws have been tightened,
→ the voltage and pressure have been switched on,
→ the pipelines are clean.

Malfunction	Possible cause
Valve does not switch	Short circuit or coil interrupted
	Core or core area dirty
Valve does not close	Inner compartment of the valve is dirty

If the valve still does not switch, please contact your Bürkert Service representative.

8 SPARE PARTS

CAUTION!

Risk of injury and/or damage due to the use of incorrect parts.
Incorrect accessories and unsuitable spare parts may cause injuries and damage the device and the surrounding area.
- Use original accessories and original spare parts from Bürkert only.

9 TRANSPORTATION, STORAGE, DISPOSAL

NOTE!

Transport damage.
Inadequately protected devices may be damaged during transportation.
- Protect the device against moisture and dirt in shock-resistant packaging during transportation.
- Prevent the temperature from exceeding or dropping below the permitted storage temperature.

Incorrect storage may damage the device.
- Store the device in a dry and dust-free location.
- Storage temperature -40 – +80 °C.

Damage to the environment caused by device components contaminated with media.
- Dispose of the device and packaging in an environmentally friendly manner.
- Observe applicable disposal and environmental regulations.