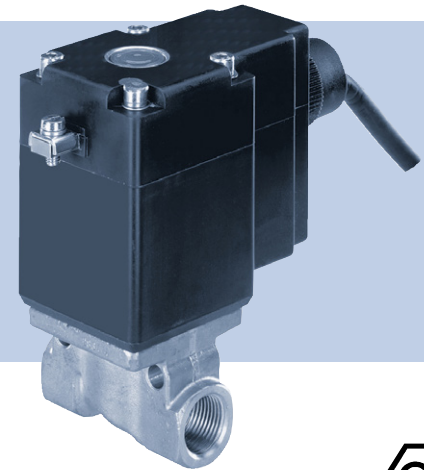


EPS 15 ATEX 1073X, IECEx EPS 15.0066X

Magnetspule Typ 072x

Device with IIC 2G Ex mb or IIC 2G Ex e mb-approval
Gerät mit IIC 2G Ex mb bzw. IIC 2G Ex e mb-Zulassung
Appareils avec mode de protection IIC 2G Ex mb et IIC 2G Ex e mb



Operating Instructions

Bedienungsanleitung
Manuel d'utilisation



We reserve the right to make technical changes without notice.
Technische Änderungen vorbehalten.
Sous réserve de modifications techniques.

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1 OPERATING INSTRUCTIONS

The operating instructions describe the entire life cycle of the device. Keep these instructions in a location which is easily accessible to every user and make these instructions available to every new owner of the device.



WARNING!

The operating instructions contain important safety information!

Failure to observe these instructions may result in hazardous situations. **The operating instructions must be read and understood.**

- ▶ Carefully read the operating instructions before using the device.
- ▶ Study in particular the chapters entitled “Authorized use”, and “General information” as well as the chapter “Application conditions”.

1.1 Symbols

To identify important information, the following symbols are used in the operating instructions:



DANGER!

Warns of an immediate danger!

- ▶ Failure to observe the warning will result in a fatal or serious injury.



WARNING!

Warns of a potentially dangerous situation!

- ▶ Failure to observe the warning may result in serious injuries or death.



CAUTION!

Warns of a possible danger!

- ▶ Failure to observe this warning may result in a moderate or minor injury.

NOTE!

Warns of damage to property!

- ▶ Failure to observe the warning may result in damage to device or equipment.



Indicates important additional information, tips and recommendations.




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

- ▶ Designates an instruction to prevent risks.
- Designates a procedure which you must carry out.

2 AUTHORIZED USE

Non-authorized use of the solenoid coil Type 072x may represent a hazard to people, nearby equipment and the environment.

- ▶ The device may be used only for the applications designated in chapter “Application conditions” and in conjunction with third-party devices and components recommended and authorized by Bürkert. Follow the directions of these operating instructions as well as the operating conditions and authorized data specified in the chapter entitled “Application conditions”.
- ▶ The device is used exclusively as a solenoid valve for media permitted according to the data sheet and for use in explosion groups IIC and IIIC, categories 2G and 2D and temperature classes T4 and 135 °C (see specifications on the  approval plate).
- ▶ The solenoid coil is available in two mechanical designs:
 - Open / Close version
 - proportional acting version (solenoid core opens depending on the electrical current applied.)Both solenoid systems are purely mechanical variants and have identical safety data.
- ▶ The applied protection class is the encapsulation EX mb.
- ▶ The solenoid coil Type 072x is used to actuate valves which control gaseous or liquid media. The coil is either encapsulated with the core feed pipe of the fitting or mounted on the core feed pipe of the fitting and secured with a nut. This always creates a closed system and the devices may also be used as a category 2 device to control gas in gas pumps. The valve bodies can be made of metal or polyamide.

- ▶ Correct transportation, proper storage and installation, and careful operation and maintenance are essential for ensuring problem-free and reliable operation of the system. Any other or more extensive usage is considered **contrary to authorized use**. Bürkert is not liable for any resulting damage. The user alone bears the risk.
- ▶ Use the device only for its intended purpose.

2.1 Explosion protection approval

The EX approval is only valid if the modules and components authorized by Bürkert are used as described in these operating instructions.

The solenoid coil Type 072x may be used only in combination with the additional components released by Bürkert, otherwise the EX approval will be voided! If any unauthorized changes are made to the device, modules or components, the EX approval will also be voided.

The EC type-examination certificate EPS 15 ATEX 1073X respectively IECEX EPS 15.0066X was issued by the

Bureau Veritas
Businesspark A96
86842 Türkheim, Germany

Production is audited (CE 0102) by:

PTB (Physikalisch Technische Bundesanstalt)
Bundesallee 100
38116 Braunschweig

2.2 Special instructions



WARNING!

Danger due to electrostatic discharge!

In the event of a sudden discharge from electrostatically charged devices or individuals, there is a risk of an explosion in the explosion-risk area.

- ▶ Take suitable measures to ensure that no electrostatic discharges can build up in the explosion-risk area.
- ▶ Clean the device surface by gently wiping it with a damp or anti-static cloth only.

3 GENERAL SAFETY INSTRUCTIONS

These safety instructions do not make allowance for any

- Contingencies and events which may arise during the assembly, operation, and maintenance of the devices.
- Local safety regulations – the operator is responsible for observing these regulations, also in relation to the installation personnel.



DANGER!

Risk of explosion!

Following installation, solenoid coil and valve body form a closed system. If used in the explosion-risk area, there is a danger of explosion if the system is opened during operation!

- ▶ The system must not be disassembled during operation.

Risk of electric shock!

There is a serious risk of injury when reaching into the equipment.

- ▶ Only trained electrical engineers may work on the electrical system.
- ▶ Before starting work, always switch off the power supply and safeguard to prevent re-activation!
- ▶ Observe applicable accident prevention and safety regulations for electrical equipment!

Risk of burns/risk of fire during long-term operation!

The solenoid coil may become very hot during long-term operation.

- ▶ Take hold of a device which has been running for a prolonged period with protective gloves only.

Danger – high pressure!

When reaching into the system, there is an acute risk of injury.

- ▶ Only skilled and instructed personnel may work on the system with suitable tools.
- ▶ Before disconnecting lines and valves, switch off the pressure and bleed the lines.
- ▶ During installation note the flow direction.
- ▶ Observe applicable accident prevention and safety regulations for pressurized devices.
- ▶ After an interruption in the power supply or fluid supply, ensure that the process is restarted in a defined or controlled manner!



WARNING!

General hazards!

- ▶ Do not use the valve fitting or the complete device as a lever to screw the valve into the line system.
- ▶ Do not physically stress the device (e.g. by placing objects on it or standing on it).
- ▶ Do not make any external modifications to the device housings. Do not paint housing parts or screws.
- ▶ Observe the generally acknowledged safety rules for resource planning and operation of the solenoid coil Type 072x and the associated solenoid valve.

Unintentional activation or unauthorized impairment of the system may cause general hazardous situations through to physical injury.

- ▶ Take appropriate measures to prevent the system from being accidentally actuated!
- ▶ Do not make any unauthorized changes to the system.



Operate the solenoid coil Type 072x and the associated solenoid valve in perfect working order only and in accordance with the operating instructions.

4 GENERAL INFORMATION

4.1 Contact address

Germany

Bürkert Fluid Control Systems
Sales Center
Christian-Bürkert-Str. 13-17
D-74653 Ingelfingen
Tel. + 49 (0) 7940 - 10 91 111
Fax + 49 (0) 7940 - 10 91 448
E-mail: info@de.buerkert.com

International

Contact addresses can be found on the final pages of the printed operating instructions.

And also on the Internet at: www.burkert.com

4.2 Warranty

The warranty is only valid if the device is used as intended in accordance with the specified application conditions.

4.3 Information on the Internet

The operating instructions and data sheets for Bürkert products can be found on the Internet at: www.burkert.com

5 APPLICATION CONDITIONS

5.1 Special conditions

- To protect each solenoid coil against short-circuit, a fuse (max. $3 \times I_b$ in accordance with IEC 127), corresponding to the rated current, or a motor protection switch with short-circuit and thermal quick release (set to rated current) must be connected upstream. This fuse may be housed in the associated supply unit or must be connected separately upstream. The rated voltage of the fuse must be equal to or greater than the indicated nominal voltage of the solenoid. The breaking capacity of the fuse insert must be equal to or greater than the maximum short-circuit current accepted at the installation location (usually 1500 A). The nominal fuse value is specified on the type label of the solenoid coil.
- If the solenoid coil Type 072x is used as a category 2 device for the control of gas in gas pumps, the valve body must be made of metal. The coil is mounted on the core feed pipe and may only be dismantled by the manufacturer. The valves always form a closed system.
- The application temperature range indicated in the "Electrical Data" (Chapter 5.2. Operating conditions) must be observed.
- The permanently installed connection line of the solenoid must be connected in a housing which meets the requirements of a recognized ignition protection type according to EN 60079-0, If the connection is made in an area where there is a risk of explosion.
- The solenoid coil Type 072x is suitable for individual assembly only.

5.2 Operating conditions

When operating the solenoid coils Type 072x, the following requirements have to be observed.

5.2.1 Materials

For the selection of materials for the system observe the application-specific, safety requirements.

Valve body:



DANGER!

Risk of explosion!

If the system is used as a category 2 device, only valve bodies made of metal can ensure the required safety **for the control of gas in gas pumps!**

- ▶ Use only valve bodies made of metal (brass, aluminum or stainless steel) for the control of gas in gas pumps with category 2 devices.
- For use in gas pumps:
Metal (brass, aluminum, stainless steel)
- Other applications:
Metal (brass, aluminum, stainless steel) or plastic (e.g. polyamide PA 6 GV...)

Sheathing of the electrical connection lines:

- Rubber hose

5.2.2 Minimum dimensions

Valve body:

56 mm x 49 mm x 36 mm (L x W x H)

A larger valve body with improved thermal conductivity may be used at any time.

5.2.3 Operating temperature range:



DANGER!

Risk of explosion!

If the max. permitted temperature values for the coil Type 072x are exceeded, there is a danger of explosion.

- ▶ It is essential to observe the temperature specifications for the coil.
- ▶ Observe any restrictions by the max. permitted values for the solenoid valve combined with the coil.

Type designation	072x
Nominal voltage [V]	24...240
Current type	AC/DC
Rated current (A)	0,625...1,2
Nominal power (W)	15
Temperature class	T4
Ambient temperature (°C)	-40...+40
Voltage tolerance (%)	±10 %

5.3 Installation conditions

The solenoid coils Type 072x are suitable for individual assembly only.

The connection lines must be laid permanently to protect against damage.



Also observe the specifications in the chapter entitled [“Technical data”](#).

5.4 Application in gas pumps



DANGER!

Risk of explosion!

Following installation, solenoid coil and valve body form a closed system. If used in the explosion-risk area, there is a danger of explosion if the system is opened during operation!

- ▶ The system must not be disassembled during operation.
- ▶ The valve body may be repaired by the manufacturer only.

Solenoid valves together with the coil Type 072x may be used as category 2 devices only for the control of gas if there is no air and no oxygen in the closed system.

- ▶ Ensure that the closed system contains no air or oxygen or cannot be penetrated by air or oxygen.
- ▶ When switching off or starting up the system, ensure that neither air nor oxygen has penetrated the system.

If the system is used as a category 2 device, only valve bodies made of metal can ensure the required safety **for the control of gas in gas pumps!**

- ▶ Use only valve bodies made of metal (brass, aluminum or stainless steel) for the control of gas in gas pumps with category 2 devices.

6 TECHNICAL DATA



DANGER!

Risk of explosion!

If the safety data and values specified on the type label are not observed or maintained, hazardous situations may be the consequence!

- ▶ Observe the protection type and temperature class when using the device.

It is a safety risk to exceed the voltage indicated on the type label, as this may cause the device to overheat!

- ▶ Do not connect the device to a higher voltage than indicated on the type label.

6.1 Type label

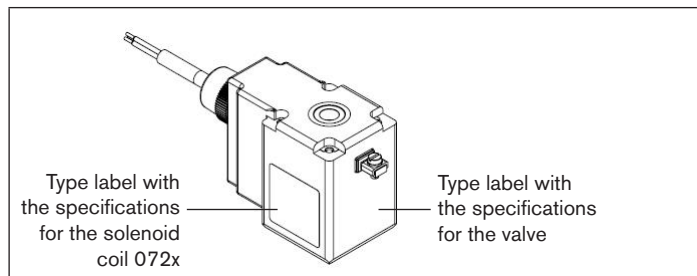


Fig. 1: Type labels for coil Type 072x

Inscription on the type label:

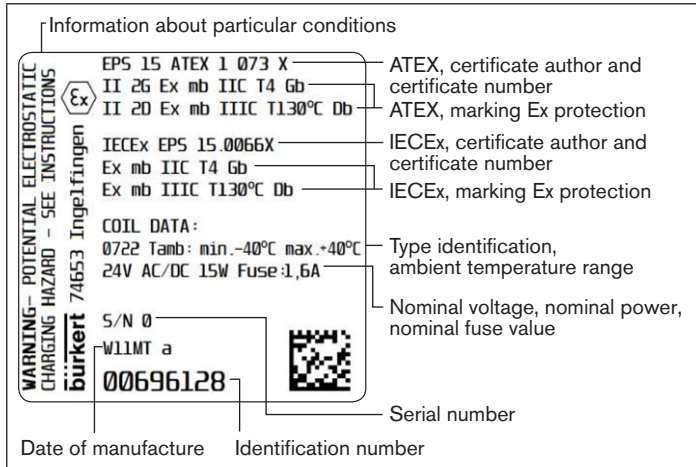


Fig. 2: Example inscription type label

6.2 Conformity

The solenoid coil Type 072x conforms to the EC directives according to the EC Declaration of Conformity.

6.3 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.

7 ASSEMBLY AND DISASSEMBLY

7.1 Safety instructions



DANGER!

Risk of explosion!

Following installation, solenoid coil and valve body form a closed system. If used in the explosion-risk area, there is a danger of explosion if the system is opened during operation!

- ▶ The system must not be disassembled during operation.

Risk of short-circuit!

Damaged connection lines may cause a short-circuit.

- ▶ The connection lines for the coil must be laid permanently and protected against damage.

Risk of burns/risk of fire during long-term operation!

The solenoid coil may become very hot during long-term operation.

- ▶ Take hold of a device which has been running for a prolonged period with protective gloves only.

Risk of electric shock!

There is a serious risk of injury when reaching into the equipment.

- ▶ The connection lines of the electromagnets must be permanently installed in such a way that they are adequately protected from mechanical damage.
- ▶ Only trained electrical engineers may work on the electrical system.
- ▶ Before starting work, always switch off the power supply and safeguard to prevent re-activation!
- ▶ Observe applicable accident prevention and safety regulations for electrical equipment!



WARNING!

Danger – high pressure!

When reaching into the system, there is an acute risk of injury.

- ▶ Only skilled and instructed personnel may work on the system with suitable tools.
- ▶ Before disconnecting lines and valves, switch off the pressure and bleed the lines.
- ▶ Observe applicable accident prevention and safety regulations for pressurized devices.
- ▶ After an interruption in the power supply or fluid supply, ensure that the process is restarted in a defined or controlled manner.
- ▶ During installation note the flow direction.
- ▶ The connection line of the solenoid coil must be permanently installed and adequate strain relief must be ensured.



DANGER!

- ▶ The operator must ensure an adequate strain relief.

7.2 Assembly



Any installation position. Preferably, the actuator should be at the top.

Prior to the installation:

→ Clean any dirt from the pipelines and flanged connections.

Assembly:



WARNING!

Risk of injury from leaking connections.

Risk of explosion!

There is a danger of explosion in tank installations if oxygen or air penetrates the medium through leaking connections.

Risk of injury from escaping medium!

Medium which escapes through leaking connections may result in injuries (e.g. burns or chemical burns).

- ▶ Carefully seal the connection lines.

→ Connect dirt trap upstream.

→ Seal pipeline connections with PTFE tape. The tape must not be dropped into the pipelines.

→ Screw in pipelines.



Important for function of the device:
Pay attention to the flow direction!

→ Check valve for leakage.

7.3 Electrical connection



DANGER!

Risk of injury due to electrical shock!

- ▶ Before reaching into the system, switch off the electrical power supply and secure to prevent reactivation!
- ▶ Observe applicable accident prevention and safety regulations for electrical equipment!

If the protective conductor contact between the coil and housing is missing, there is danger of electrical shock!

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



The connecting cable is encapsulated with the coil Type 072x and cannot be removed.

→ Observe the voltage indicated on the type label.

7.4 Disassembly



DANGER!

Risk of electric shock!

There is a serious risk of injury when reaching into the equipment.

- ▶ Only trained electrical engineers may work on the electrical system.
- ▶ Before starting work, always switch off the power supply and safeguard to prevent re-activation!
- ▶ Observe applicable accident prevention and safety regulations for electrical equipment!



WARNING!

Danger – high pressure!

When reaching into the system, there is an acute risk of injury.

- ▶ Only skilled and instructed personnel may work on the system with suitable tools.
- ▶ Before disconnecting lines and valves, switch off the pressure and bleed the lines.
- ▶ Observe applicable accident prevention and safety regulations for pressurized devices.
- ▶ After an interruption in the power supply or fluid supply, ensure that the process is restarted in a defined or controlled manner.



WARNING!

Risk of injury from leaking connections.
Risk of explosion!

There is a danger of explosion in tank installations if oxygen or air penetrates the medium through leaking connections.

Risk of injury from escaping medium!

Medium which escapes through leaking connections may result in injuries (e.g. burns or chemical burns).

- ▶ Carefully seal the connection lines.

- Disconnect electrical connections
- Disconnect the valve housing from the pipeline

NOTE!

Malfunctions as a result of contamination!

- ▶ In case of new installation, remove old PTFE tape from the connections. Residues or parts of the tape must not get into the pipeline.

8 START-UP



WARNING!

Danger due to improper operation!

Improper operation may result in injuries as well as damage to the device and the surrounding area.

- ▶ Before start-up, ensure that the operating personnel are familiar with and completely understand the contents of the operating instructions.
- ▶ In particular observe the safety instructions and intended use.
- ▶ The device/system may be started by adequately trained personnel only.

Before start-up, ensure that

- the device has been installed correctly,
- the connection has been made properly,
- the device is not damaged,
- all screws have been tightened.

9 MAINTENANCE AND REPAIRS

9.1 Maintenance

The solenoid coil Type 072x is maintenance-free if the operating conditions described in this manual are observed.

9.2 Repairs



DANGER!

Danger - improper repairs!

Following repairs, the safety and function of the coil Type 072x and the corresponding solenoid valve cannot be guaranteed unless the repairs were carried out by the manufacturer.

- ▶ Have the device repaired by the manufacturer **only!**

9.3 Troubleshooting

In the event of malfunctions, make sure that

- the device has been installed correctly,
- the connection has been made properly,
- the device is not damaged,
- the voltage and pressure have been switched on,
- all screws have been tightened,
- the pipelines are free.

10 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 to +55 °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.

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