

EPS 16 ATEX 1121 X, IECEx EPS 16.0053X

Solenoid coil Type 06xx

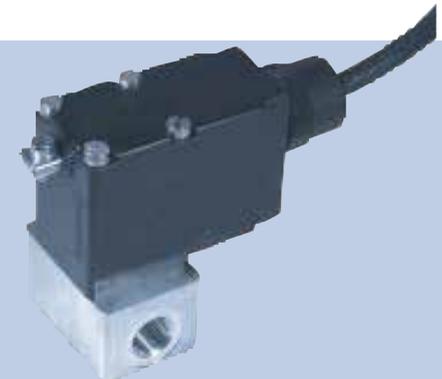
Magnetspule Typ 06xx

Bobine magnétique Type 06xx

Device with II 2G/D Ex approval

Geräte mit II 2G/D Ex Zulassung

Appareils avec mode de protection II 2G/D Ex



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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Operating Instructions 1701/00_EU-ML_00810564 / Original DE

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1 OPERATING INSTRUCTION

The operating instructions describe the entire life cycle of the device. Keep these instructions ready to hand at the operation site.

Important safety information.

- ▶ Carefully read these instructions.
- ▶ Observe in particular the safety instructions, authorized use and operating conditions.
- ▶ Persons, who work on the device, must read and understand these instructions.

1.1 Definition of terms / abbreviation

In these instructions, the term “device” always refers to the solenoid coil Type 06xx.

- **Ex area:** stands for potentially explosive area.
- **Ex approval:** stands for approval in the potentially explosive area.

1.2 Symbols



DANGER!

Warns of an immediate danger.

- ▶ Failure to observe the warning may 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.



Important 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 AUTHORISED USE

Unauthorized use of the device may be dangerous to people, nearby equipment and the environment.

The solenoid coil Type 06xx is used to activate valves which control the gaseous or liquid media.

- ▶ The device is used exclusively as a solenoid valve for the media permitted according to data sheet and for use in explosion groups IIC and IIIC, categories 2G and 2D and temperature classes T4 and T5.
- ▶ The solenoid coil 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.
- ▶ The applied protection class is encapsulation Ex mb.
- ▶ The device may be used as a category 2 device in gas pumps to control gasoline.
- ▶ The faultless and reliable operation of the system assumes correct transportation, correct storage and installation as well as careful operation and maintenance. Any other use is regarded as **unauthorized**. Bürkert is not liable for any resulting damage. The user alone bears the risk.
- ▶ Only use the device for its intended purpose.

2.1 Explosion protection approval

The explosion protection approval is only valid if you use the modules and components authorized by Bürkert, as described in these operating instructions.

The solenoid coil Type 06xx may be used only in combination with the valve types released by Bürkert, otherwise the explosion protection approval will be terminated. If you make unauthorized changes to the system, the modules or components, the explosion protection approval will also be void.

The EU-type examination certificate EPS 16 ATEX 1121 X and IECEx EPS 16.0053X respectively

Bureau Veritas
Businesspark A96
86842 Türkheim, Germany

Manufacture is audited by (CE 0102):

PTB (Physikalisch Technische Bundesanstalt)
Bundesallee 100
38116 Braunschweig

The EU Type Examination Certificate is available online at:
www.burkert.com

3 BASIC SAFETY INSTRUCTIONS

These safety instructions do not consider any contingencies or incidents which occur during installation, operation and maintenance. The operator is responsible for observing the location-specific safety regulations, also with reference to the personnel.



Danger – high pressure.

- ▶ Before loosening the lines and valves, turn off the pressure and vent the lines.

Risk of electric shock.

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

Risk of burns and risk of fire if used during long-term operation through hot device surface.

The solenoid coil can get very hot during long-term operation.

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

Risk of explosion.

Following assembly, the solenoid coil is part of a closed system. If used in the potentially explosive area, there is a risk of explosion if the system is opened during operation.

- ▶ Do not remove or open the system during operation.

Risk of explosion 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.
- ▶ Do not use the device in areas where there are powerful charge-generating processes, mechanical reaming and cutting processes, the spraying of electrons (e.g. in the vicinity of electrostatic coating equipment) as well as pneumatically conveyed dust.
- ▶ Clean the device surface by gently wiping it with a damp or antistatic cloth only.

To avoid the risk of explosion, the following must be observed for operation in explosion-risk areas:

- ▶ Information on the temperature class, ambient temperature, degree of protection and voltage on the type label for explosion-risk areas.
- ▶ Installation, operation and maintenance may only be performed by qualified specialists.
- ▶ The applicable safety regulations (including national regulations) as well as general technical standards must be observed during setup and operation.

- ▶ Repairs may only be performed by the manufacturer.
- ▶ The device must not be exposed to any mechanical and/or thermal loads which exceed the limits specified in the operating instructions.

General hazardous situations.

To prevent injury, ensure:

- ▶ Secure system/equipment against unintentional activation.
- ▶ Observe the direction of flow during installation.
- ▶ After an interruption in the power supply or pneumatic supply, ensure that the process is restarted in a defined or controlled manner.
- ▶ Don't use the device as a lever when screwing the valve into the line.
- ▶ Do not make any changes to the devices.

4 GENERAL INFORMATION

4.1 Contact addresses

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@burkert.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

Operating instructions and data sheets for Bürkert products are available online at: www.burkert.com

5 APPLICATION CONDITIONS

5.1 Special conditions



DANGER!

Risk of explosion 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 antistatic cloth only.

- When using the solenoid coil in gas pumps, the material of the valve body must be made of metal.
- The solenoid coil is available in 2 mechanical versions: Open / Close version and proportional-acting version (solenoid core opens depending on the electrical current applied). Both solenoid drives are purely mechanical variants and have identical safety data.
- Solenoid coil is cast with the core guide pipe of the armature. The system is always closed.
- Solenoid coil is suitable for individual assembly and block assembly.
- 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 a potentially explosive area.

- Do not use solenoid coil in areas where highly charge-generating processes, mechanical reaming and separating processes and the spraying of electrons (e.g. in the vicinity of electrostatic coating devices) occur or where dust is pneumatically conveyed.

5.2 Operating conditions

Meet the following requirements for operation of the solenoid coil.

5.2.1 Minimum dimensions

Valve body:

- 32 mm x 32 mm x 10 mm (L x W x H)

A larger valve body with a better heat-dissipation capability may be used at any time.

5.2.2 Materials



DANGER!

Risk of explosion.

When using the system, only valve bodies made of metal can guarantee the required safety.

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

Valve body:

- For use in gas pumps:
Metal (brass, aluminium or stainless steel)

- Other applications:
Metal (brass, aluminum, stainless steel) or plastic (e. g. polyamide PA 6 GV)

5.3 Operating temperature range

For each type observe the operating temperature range specified in the electrical data.

5.4 Assembly conditions

The solenoid coil Type 06xx is suitable for individual assembly and block assembly. The connection lines must be laid securely to protect against damage.



Observe the specifications in the chapter technical data.

5.5 Dimensions

Type	Length (mm)	Width (mm)	High (mm)
06xx	96	32	59

5.6 Use in gas pumps



DANGER!

Risk of explosion.

Following assembly, the solenoid coil is part of a closed system. If used in the potentially explosive area, there is a risk of explosion if the system is opened during operation.

- ▶ Do not remove or open the system during operation.
- ▶ Have repair work on the valve body performed by the manufacturer only.

Solenoid valves together with the coil Type 06xx may be used as category 2 devices only for the control of gasoline 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.

When using the system as a category 2 device, only valve bodies made of metal can guarantee the required safety for the control of gasoline in gas pumps.

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

6 TECHNICAL DATA



DANGER!

Risk of explosion.

Dangerous situations can result if the technical safety data and values specified on the type label aren't observed or cannot be met.

- ▶ The degree of protection and temperature class for use of the device must be observed.

Exceeding the voltage specified on the type label creates a safety hazard since it can lead to overheating of the device!

- ▶ Don't connect the device to a higher voltage than that specified on the type label.

6.1 Conformity

The device conforms with the EU Directives according to the EU Declaration of Conformity (if applicable).

6.2 Standards

The applied standards, which verify conformity with the EU Directives, can be found on the EU-Type Examination Certificate and / or the EU Declaration of Conformity (if applicable).

6.3 Electrical data

Type	064x	065x
Nominal voltage	24...240 V	
Current type	AC/DC	
Rated current	0.58...0.034 A	0.42...0.025 A
Nominal power	7 W	5 W
Temperature class	T4	T5
Ambient temperature Individual assembly	-40...+60 °C	-40...+50 °C
Ambient temperature Block assembly	-40...+45 °C	-40...+40 °C
Voltage tolerance	± 10 %	

6.4 Electrical connection

- Material: Electron beam cross-linked polyolefin copolymer
- Operating temperature range: -55...+145 °C for fixed installation
- Minimum bending radius: 4 x outer diameter for fixed installation
- Outside diameter: 6.2 mm
- Design: 3 x stranded copper wire
0.75 mm² / LNPE
- Halogen free in accordance with IEC 60754-1.
- Tested according to DIN EN 13617-1 for use in gasoline pumps.

6.5 Type label for explosions-risk areas

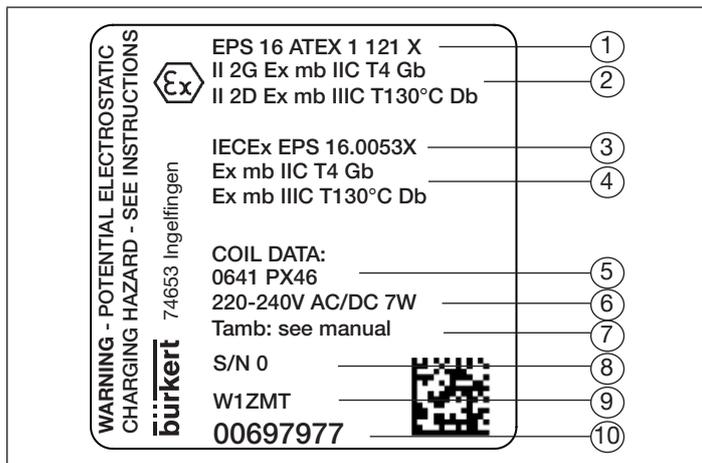


Fig. 1: Description of the type label for explosion-risk areas (example)

Legend:

Position	Description
1	ATEX, Certificate issuer and certificate number
2	ATEX, Explosion protection labelling
3	IECEX, Certificate issuer and certificate number
4	IECEX, Explosion protection labelling
5	Type label with Ex-code
6	Nominal voltage, nominal power
7	Ambient temperature range
8	Serial number
9	Date of manufacture
10	Identification number

7 INSTALLATION AND REMOVAL

7.1 Safety instructions

DANGER!

Danger – high pressure.

- ▶ Before loosening the lines and valves, turn off the pressure and vent the lines.

Risk of electric shock.

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

Risk of explosion.

Following installation, the solenoid coil is part of a closed system. If used in the potentially explosive area, there is a risk of explosion if the system is opened during operation.

- ▶ Do not remove or open the system during operation.

Risk of short-circuit due to damaged connection lines.

- ▶ Securely lay the connection lines of the solenoid coil and protect against damage.

Risk of burns or risk of fire if used during long-term operation through hot device surface.

- ▶ Do not touch the device unless wearing protective gloves.
- ▶ Keep the device away from highly flammable substances and media.

DANGER!

Risk of explosion 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.
- ▶ Do not use the device in areas where there are powerful charge-generating processes, mechanical reaming and cutting processes, the spraying of electrons (e.g. in the vicinity of electrostatic coating equipment) as well as pneumatically conveyed dust.
- ▶ Clean the device surface by gently wiping it with a damp or antistatic cloth only.

WARNING!

Risk of injury from improper installation.

- ▶ Installation may be carried out by authorized technicians only.
- ▶ Installation may be carried out with the appropriate tools.
- ▶ Secure system from unintentional activation.
- ▶ Following installation, ensure a controlled restart.
- ▶ Securely lay the connection line of the solenoid coil and ensure adequate strain relief.

7.2 Installation of the solenoid valve



Detailed installation instructions can be found in the operating instructions of the respective valve and/or online at: www.burkert.com

Installation position: any, coil preferably upwards.

→ Clean any dirt from the pipelines and flanged connections.



WARNING!

Risk of explosion due to leaking connections.

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

Risk of burns or chemical burns from discharge of medium.

Medium, which is discharged due to leaking connections, may result in injuries.

▶ Carefully seal connection line.

→ Connect dirt trap upstream.

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

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



Important for function of the device:
Observe direction of flow.

7.3 Electrical connection



DANGER!

Risk of electric shock.

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

There is a risk of electric shock if there is no electrical contact between the metal parts of the valve and the protective conductor of the coil.

- ▶ Always connect the protective conductor.
- ▶ Test for continuity between the protective conductor of the coil and the core guide tube of the valve.



The connection cable is encapsulated with the solenoid coil Type 06xx and cannot be removed.

Observe the indicated voltage according to the type label.

7.4 Removal

WARNING!

Danger – high pressure.

- ▶ Before loosening the lines and valves, turn off the pressure and vent the lines.

Risk of electric shock.

- ▶ Before reaching into the 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 removal.

- ▶ Removal may be carried out by authorized technicians only and with the appropriate tools.

Risk of injury from medium discharged due to leaking connections.

- ▶ Carefully seal the connection lines.

→ Separate the electrical connections.

→ Separate the valve body from the pipeline.

NOTE!

Malfunctions due to dirt.

- Remove the old PTFE tape from the connections during re-installs. Tape residue must not get into the pipeline.

8 START-UP

WARNING!

Risk of injury from improper operation.

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

- ▶ Before start-up, ensure that the operating personnel are familiar with and completely understand the contents of the operating instructions.
- ▶ Observe the safety instructions and intended use.
- ▶ Only adequately trained personnel may start up the equipment or the device.

Before starting up the device, 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 REPAIR

9.1 Maintenance work

The device are maintenance-free when operated under the conditions described in this manual.

9.2 Repair



Danger due to improper repairs.

The safety and functionality of the 06xx coil and corresponding solenoid valve following a repair are only given if the repair work was performed by the manufacturer.

- ▶ Only have the device repaired by the manufacturer.

9.3 Troubleshooting

If malfunctions occur, ensure 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,
- the pipelines are free.

10 TRANSPORTATION, STORAGE, DISPOSAL

NOTE!

Transport damages.

Inadequately protected equipment may be damaged during transport.

- During transportation protect the device against wet and dirt in shock-resistant packaging.
- Avoid exceeding or dropping below the allowable storage temperature.

Incorrect storage may damage the device.

- Store the device in a dry and dust-free location!
- Storage temperature: -40...+55 °C.

Damage to the environment caused by device components contaminated with media.

- Ensure the device and packaging are disposed of in an environmentally sound manner.
- Observe applicable regulations relating to refuse disposal and the environment.

www.burkert.com