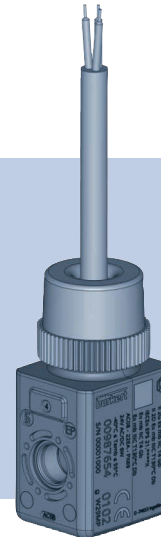


EPS 21 ATEX 1 128 X, IECEx EPS 21.0045X
Solenoid coil Type AC08
Magnetspule Typ AC08
Bobine magnétique Type AC08

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 2106/00_EU-ML_00815400 / Original DE



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1 OPERATING INSTRUCTION

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.

Operating instruction contain important information.

- ▶ Read the operating instructions carefully and follow the safety instructions in particular.
- ▶ Operating instructions must be available to each user.
- ▶ The liability and warranty for the device are void if the operating instructions are not followed.

1.1 Definition of terms

In these instructions, the term “device” always refers to the solenoid coil AC08.



In these instructions, the abbreviation “Ex” always refers to “potentially explosive”.

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 AUTHORIZED USE

The solenoid coil AC08 is used to activate valves which control the gaseous or liquid media.

- ▶ Use the device for its intended purpose only. Non-intended use of the device may be dangerous to people, nearby equipment and the environment.
- ▶ A valve controlled by the solenoid coil AC08 may be used solely for the media specified in the data sheet and for use in explosion group IIC category 2G and/or explosion group IIIC category 2G, and temperature class T4.
- ▶ The solenoid coil may be used only for the applications designated in chapter „6 Application conditions of the devices“ and in conjunction with third-party devices and components recommended and authorized by Bürkert.
- ▶ The type of protection is encapsulation Ex “m” for coils with cable connection.
- ▶ Correct transportation, correct storage as well as correct installation, commissioning, operation and maintenance are essential for reliable and problem-free operation.
- ▶ When using the device, observe the permitted data, operating conditions and application conditions. This information can be found in the contractual documents, the operating instructions and on the type label.

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 AC08 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.

EC-type examination certificate and IECEx certificate were issued by:

Bureau Veritas
 Consumer Products
 Services
 Germany GmbH
 Businesspark A96
 86842 Türkheim

Solenoid coil AC08:

EPS 21 ATEX 1 128 X,
 IECEx EPS 21.0045X

Production will be audited by:

CE 102
 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.
- ▶ Do not touch the device with bare hands.

Risk of explosion.

The solenoid coil and valve body form a closed system after installation. When used in potentially explosive atmosphere, there is a risk of explosion if the system is opened in the operating state.

- ▶ 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 potentially explosive atmosphere.

- ▶ Take suitable measures to ensure that no electrostatic discharges can build up in the potentially explosive atmosphere.
- ▶ 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 potentially explosive atmosphere:

- ▶ Information on the temperature class, ambient temperature, degree of protection and voltage on the type label for potentially explosive atmosphere.
- ▶ 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.

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 solenoid coil AC08 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 PRODUCT DESCRIPTION

5.1 Structure of the solenoid coil

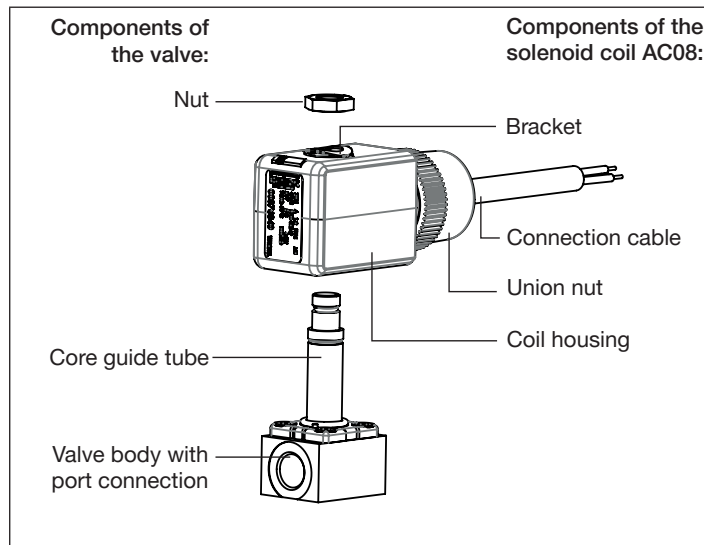


Fig. 1: Structure of the solenoid coil Type AC08

5.2 Function

The solenoid coil type AC08 is an electromagnetic valve actuator for various Bürkert valves. As a so-called top-mounted coil, it is separated 100 % from the valve. The valve is a closed system even if the coil is removed.

Alternating current or direct current control is possible.

The coil is placed over the core guide tube of the valve and attached with a nut. It is positively locked to prevent turning relative to the valve.

The electrical connection cable exits perpendicular to the coil axis. The cable is permanently integrated in the coil. The union nut is not designed to be removed.

An electrical contact is made between the metal components of the valve and the coil at the interface between the coil and the valve. All metal components must be grounded via the protective conductor in the connection cable.

6 APPLICATION CONDITIONS OF THE DEVICES

6.1 Special conditions



WARNING

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 potentially explosive atmosphere.

- ▶ Take suitable measures to ensure that no electrostatic discharges can build up in the potentially explosive atmosphere.
- ▶ 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.

6.2 Operating conditions

The valve provides a cooling function for the solenoid coil. The solenoid coil may not be operated without a valve. The valve body must meet the following requirements:

- Material
Metal (brass, aluminum, stainless steel) or polyamide

- Minimum dimensions
20 mm x 20 mm x 10 mm

A larger valve body with a higher heat-dissipating capability can be used at any time.

6.3 Operating temperature range



Observe the operating temperature range specified in the electrical data for all types.

7 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.

7.1 Conformity



Conformities for the device can be viewed on the Bürkert homepage at www.burkert.com

7.2 Specifications for hazardous area

Solenoid coil Type AC08 with specifications for hazardous area:



Type label with valve specifications

	EPS 21 ATEX 1 128 X	①
	II 2G Ex mb IIC T4 Gb	②
	II 2D Ex mb IIIC T130°C Db	
	IECEx EPS 21.0045X	③
	Ex mb IIC T4 Gb	④
	Ex mb IIIC T130°C Db	
	AC08 - 22EA - PX69	⑤
	24V AC/DC 6W	⑥
	-40°C ≤ Tamb ≤ +55°C	⑦
bürkert	00987654	⑧
	S/N 00001000	⑨
	0102	⑩
	g W29MP	

D-74653 Ingelfingen

Fig. 2: Solenoid coil Type AC08 with specifications for hazardous area

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	Order number
9	Serial number
10	Date of manufacture

Tab. 1: Description data for hazardous area

7.3 Electrical data



DANGER

Risk of explosion due to overheating.

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

Direct and alternating voltage, available nominal voltages from 12 V to 240 V, frequency 0 Hz to 60 Hz

Code	Temperature class	Ambient temperature range	Nominal power [W]
PX69	T4/T130 °C	-40...+55 °C	6.0

Tab. 2: Electrical data of the solenoid coil

7.3.1 Electrical connection

Material ¹⁾ :	Silicone
Operating temperature range ¹⁾ :	-55...+150 °C for fixed installation
Outside diameter ¹⁾ :	10 x outer diameter for fixed installation
Outside diameter ¹⁾ :	6.3 mm
Design / function:	3 x stranded copper wire 0.5 mm ² / LNPE

Halogen free in accordance with IEC 60754-1

Variants	Internal code
Permanently installed cable	JJ04 + JWxx ²⁾

¹⁾ Specifications as per the manufacturer

²⁾ Different cable lengths

8 INSTALLATION AND REMOVAL

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

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

Risk of short-circuit due to damaged connection cable.

- ▶ The coil connection cable have to be fixed and protected against damage.

Risk of explosion.

The solenoid coil and valve body form a closed system after installation. When used in potentially explosive atmosphere, there is a risk of explosion if the system is opened in the operating state.

- ▶ The system must not be disassembled during operation.

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 potentially explosive atmosphere.

- ▶ Take suitable measures to ensure that no electrostatic discharges can build up in the potentially explosive atmosphere.
- ▶ 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 and with the appropriate tools.
- ▶ Secure system from unintentional activation.
- ▶ Following assembly, ensure a controlled restart.

8.1 Install valve



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

8.2 Connect device electrically


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 AC08 and cannot be removed.
Observe the indicated voltage according to the type label.

Wire color	Pin assignment
green-yellow	Protective conductor
brown	Phase / positive pole (+)
blue	Neutral conductor / negative pole (-)

Tab. 3: Pin assignment

8.3 Remove device

WARNING

Risk of injury from improper removal.

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

Risk of injury due to media escaping from leaky connections.

- ▶ Seal the connection lines carefully.

→ 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.

9 START-UP



WARNING

Risk of injury from improper operation.

- ▶ Before start-up, ensure that the operating personnel are familiar with and completely understand the contents of the operating instructions.
- ▶ 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.

10 MAINTENANCE, TROUBLESHOOTING



WARNING

Danger due to improper repairs.

The safety and functionality of the AC08 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.

10.1 Maintenance work

The solenoid coil AC08 is maintenance-free if the operating conditions are observed.

10.2 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,
- all screws have been tightened.

11 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 and dropping below the allowable storage temperature.

Incorrect storage may damage the device.

- ▶ Allowable storage temperature: $-40\dots+80$ °C.
- ▶ Store the device in a dry and dust-free location.

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