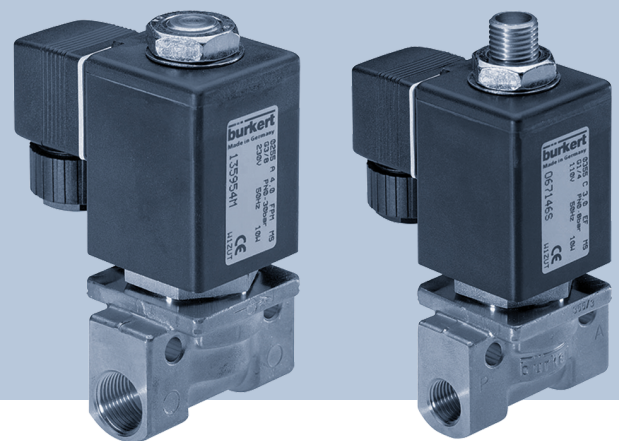


# Type 0255/0355

2/2 and 3/2-way solenoid valve



## Operating Instructions

We reserve the right to make technical changes without notice.

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Technical documentation 2507/08\_GBen\_00893044\_1011560715\_9007200266413579 / Original DE

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# 1 About this document

The document is an important part of the product and guides the user to safe installation and operation. The information and instructions in this document are binding for the use of the product.

- ▶ Before using the product for the first time, read and observe the whole safety chapter.
- ▶ Before starting any work on the product, read and observe the respective sections of the document.
- ▶ Keep the document available for reference and give it to the next user.
- ▶ Contact the Bürkert sales office for any questions.



Further information concerning the product at [Products](#).

- ▶ Enter the article number from the type label in the search bar.

The illustrations in these instructions may vary depending on the product variant.

## 1.1 Symbols



### DANGER!

Warns of a danger that leads to death or serious injuries.



### WARNING!

Warns of a danger that can lead to death or serious injuries.



### CAUTION!

Warns of a danger that can lead to minor injuries.

### NOTICE!

Warns of property damage on the product or the installation.



Indicates important additional information, tips and recommendations.



Refers to information in this document or in other documents.

- ▶ Indicates a step to be carried out.

✓ Indicates a result.

**Menu** Indicates a software user-interface text.

## 1.2 Terms and abbreviations

The terms and abbreviations are used in this document to refer to following definitions.

---

|         |                               |
|---------|-------------------------------|
| Product | Solenoid valve Type 0255/0355 |
|---------|-------------------------------|

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## 1.3 Manufacturer

Bürkert Fluid Control Systems

Christian-Bürkert-Str. 13–17

74653 Ingelfingen

GERMANY

The contact addresses are available at [Contact](#).



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-

## 2 Safety

### 2.1 Authorised Use

Improper use of Type 0255 and 0355 may be hazardous to persons, systems in the vicinity and the environment.

- ▶ The device is designed for controlling, shutting off and dosing media with a viscosity of up to 21 mm<sup>2</sup>/s.
- ▶ With a properly connected and assembled cable plug, e.g. Bürkert Type 2508, the device complies with degree of protection IP65 in accordance with DIN EN 60529/IEC 60529.
- ▶ When using the device, observe the authorised data, and the operating and usage conditions specified in the contract documents and in the operating instructions.
- ▶ Prerequisites for safe and trouble-free operation include correct transport, storage and installation as well as careful operation and maintenance.
- ▶ Only use the device as intended.

### 2.2 Basic safety instructions

These safety instructions do not make allowance for any unforeseen circumstances or incidents which may arise during installation, operation and maintenance.

#### **Danger – high pressure**

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

#### **Danger due to electrical voltage**

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

#### **Risk of burns/fire due to hot device surface if device operated continuously**

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

#### **Risk of injury from malfunctioning valves with alternating current (AC)**

A seized core causes the coil to overheat, which leads to functional failure.

- ▶ Monitor the working process for proper function.

#### **Risk of short circuit/escape of medium due to leaking fittings**

- ▶ Make sure valve seats are properly seated.
- ▶ Screw valve and connection cables together carefully.

#### **General dangerous situations**

To prevent injuries, the following must be observed:

- ▶ Do not make any internal or external changes. Secure the system/device against unintentional activation.
- ▶ Installation and maintenance must be performed by authorised technicians and with the appropriate tools.
- ▶ The process must be restarted in a defined or controlled manner after an interruption in the power supply or fluid supply.
- ▶ Do not subject the body/housing to mechanical stress.
- ▶ Observe general technological rules of thumb.

## 3 Technical data

### 3.1 Standards and directives

This product complies with the legal requirements applicable at the time of placing on the market and has been developed and tested in accordance with the relevant European directives/regulations and harmonized standards. The conformity is documented and, if necessary, supported by evidence. The EU Declaration of Conformity can be found behind the respective type on the home page [country.burkert.com](http://country.burkert.com)

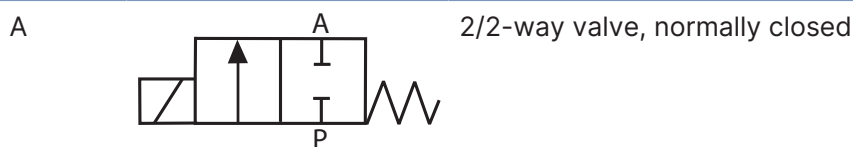
### 3.2 Operating conditions

The following values are indicated on the type label (see [Type label \[► 12\]](#)):

- Voltage (tolerance  $\pm 10\%$ )/current type
- Coil power (active power in W – at operating temperature)
- Pressure range
- Body material brass (MS), stainless steel (VA)
- Seal material FKM, EPDM, NBR, PTFE, steel

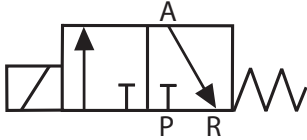
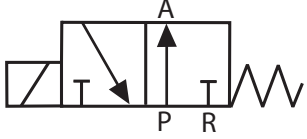
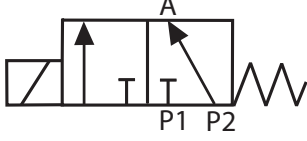
|                     |   |
|---------------------|---|
| Ambient temperature | Standard:<br>max. +55 °C<br>High temperature:<br>Type 0255 max. +250 °C<br>Type 0355 max. +200 °C |
| Storage temperature | -40 °C to +80 °C  |

#### Circuit function of Type 0255





Circuit function of Type 0355

|   |   |   |
|---|---|---|
| C |  | 3/2-way valve, normally closed, outlet A relieved                                     |
| D |  | 3/2-way valve, outlet A pressurised in rest position                                  |
| E |  | 3/2-way valve; in rest position, pressure port P2 is connected to output A. P1 closed |

|   | With AC/DC high-performance electronics  | Without electronics assemblies<br>50 Hz, 60 Hz |
|---|--|--|
| Ambient temperature (for intermittent operation, see the following image) | Maximum +70 °C   | Maximum +55 °C                                 |
| Operating mode (acc. to DIN VDE 0580)                                     | Continuous operation<br>Intermittent operation (for determining the permissible operating parameters, see the following figures)   | Continuous operation<br>Intermittent operation |
| Temperature protection switch   | The device has a resetting temperature protection switch that shuts off the device in case of impermissible heating during intermittent operation. Switch on again only after cooling down and new switch request. | without  |

Tab. 1: Electrical operating conditions

Intermittent operation for variant with AC/DC high-performance electronics

Characteristic values (acc. to DIN VDE 0580)

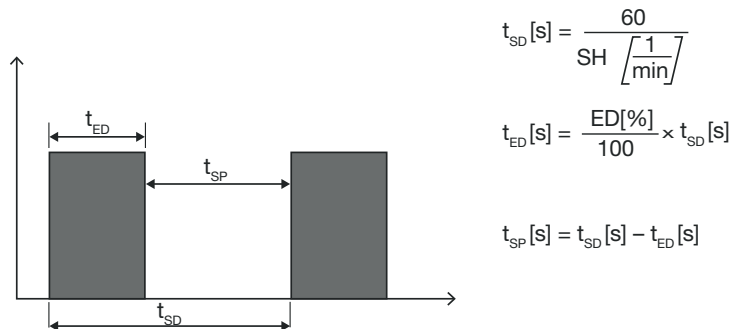


Fig. 1: Characteristic values for intermittent operation for variant with

$t_{SD}$  – cycle time  
 $t_{ED}$  – duty cycle  
 $t_{SP}$  – currentless break  
ED – relative duty cycle  
SH – switching frequency

### Permissible operating parameters

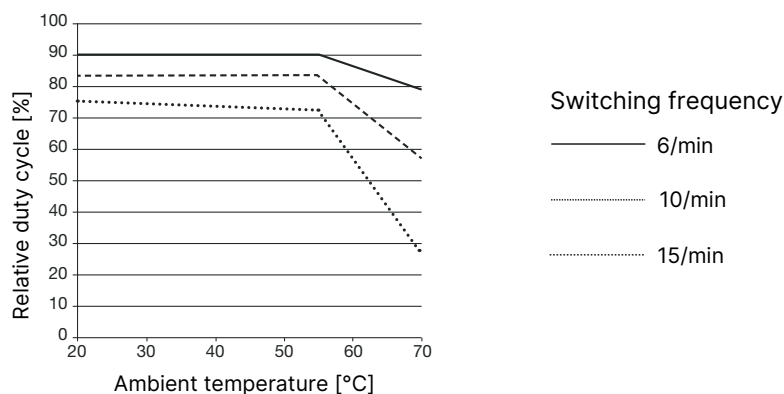


Fig. 2: Relative duty cycle dependent upon switching frequency

## 3.3 Usage conditions

|                      |  |
|----------------------|--|
| Degree of protection | IP65 in accordance with DIN EN 60529/IEC 60529 with cable plug, e.g. Bürkert Type 2508 or cable variant  |
| Operating duration   | Unless otherwise specified on the type label, the solenoid actuator is suitable for continuous operation |
| Service life         | High switching frequency and high pressure will reduce overall service life                              |



Important information to ensure functional reliability during continuous operation!  
During a long downtime it is recommended to actuate at least 1-2 switching operations per day.

## Permitted temperatures

| Coil material                       | Seal material       | Medium temperature |
|-------------------------------------|---------------------|--------------------|
| Epoxy, metal <sup>1)</sup>          | NBR                 | -10 to +90 °C      |
|                                     | FKM                 | -10 to +130 °C     |
|                                     | EPDM                | -40 to +130 °C     |
|                                     | PTFE                | -40 to +180 °C     |
|                                     | Steel <sup>2)</sup> | -40 to +180 °C     |
| Metal <sup>3)</sup>                 | Steel <sup>2)</sup> | -40 to +250 °C     |
| Coil with electronics <sup>4)</sup> |                     | max. +90 °C        |

Tab. 2: Permissible medium temperature depending on coil material and seal material

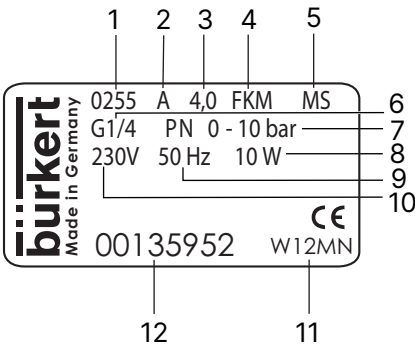
## Permitted media

| Seal material | Permitted media  |
|---------------|--|
| NBR           | Neutral media such as compressed air, water, hydraulic oil, oils and greases without additives |
| FKM           | Oxygen <sup>5)</sup> , hot air, hot oils, oils with additives, per solutions                   |
| EPDM          | Oil- and grease-free media, e.g. hot water, alkaline washing and bleaching lyes                |
| PTFE, steel   | Water, steam, organic solvents, oils, fuel, alcohols, hydraulic fluids                         |

Tab. 3: Permissible media depending on the seal material:

- 1) Coil with metal housing and copper wire winding
- 2) Seal material steel only for Type 0255
- 3) Coil with metal housing and aluminium wire winding
- 4) Switching frequency: max. 6 switching operations/min
- 5) only for special variant

3.4 Type label



|                     |                    |
|---------------------|--------------------|
| 1 Type              | 2 Circuit function |
| 3 Orifice           | 4 Sealing material |
| 5 Body material     | 6 Connection type  |
| 7 PN                | 8 Power            |
| 9 Frequency         | 10 Voltage         |
| 11 Manufacture code | 12 Article number  |

## 4 Installation

### 4.1 Safety instructions



#### **DANGER!**

Risk of injury from high pressure in the system

- ▶ Before loosening lines or valves, switch off the pressure and bleed the lines.



#### **DANGER!**

Risk of injury from electric shock

- ▶ Before reaching into the device or the system, switch off the power supply and secure it against reactivation!
- ▶ Observe the applicable accident prevention and safety regulations for electrical devices!



#### **WARNING!**

Risk of injury due to improper installation

- ▶ Installation must be carried out by authorised technicians only and with the appropriate tools!



#### **WARNING!**

Risk of injury from unintentional activation of the system and uncontrolled restart

- ▶ Secure the system against unintentional activation.
- ▶ Ensure a controlled restart after installation.

### 4.2 Before installation

Installation position: any, preferably with actuator on top.

#### **Approach:**

- ▶ Clean pipelines of any contamination.
- ▶ Install a dirt trap upstream of the valve inlet ( $\leq 500 \mu\text{m}$ ).

### 4.3 Installation

#### **NOTICE!**

Breaking hazard

- ▶ Do not use the coil as a lever arm.
- ▶ Hold the device on the body using an open-ended spanner and screw into the pipeline.



The valve body must not be installed under tension.

- ▶ Pay attention to flow direction:  
The arrow on the housing indicates the flow direction.

## 4.4 Electrical connection of cable plug

### **WARNING!**

Risk of injury from electric shock

Risk of electric shock if protective conductor not connected.

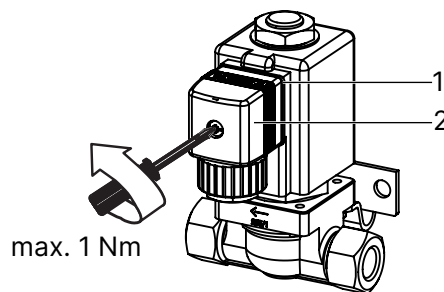
- ▶ Before reaching into the device or the system, switch off the power supply and secure it against reactivation!
- ▶ Observe the applicable accident prevention and safety regulations for electrical devices!
- ▶ Always connect the protective conductor and check electrical continuity.



Observe voltage and current type in accordance with type label.

### Approach:

- ▶ Screw cable plug tight (for approved types see data sheet), ensuring a maximum torque of 1 Nm.
- ▶ Check that the valve seat is correctly fitted.
- ▶ Connect the protective conductor and check electrical continuity.



1 Seal (ensure correct position)

2 Approved cable plug, e.g. Type 2508 or other suitable cable plug in accordance with DIN EN 175301-803 Design A

## 5 Maintenance, troubleshooting

### 5.1 Safety instructions



#### **WARNING!**

Risk of injury due to improper maintenance work

- Maintenance must be carried out by authorised technicians using the appropriate tools!



#### **WARNING!**

Risk of injury from unintentional activation of the system and uncontrolled restart

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

### 5.2 Troubleshooting

If faults occur, check whether:

- the device is installed in accordance with regulations,
- the electrical and fluid connections have been properly set up,
- the device is not damaged,
- all screws have been tightened,
- voltage and pressure have been applied,
- the pipelines are clean,
- the power supply is strong enough.

| Fault                  | Possible cause  |
|------------------------|---|
| Valve does not actuate | Short circuit or coil interrupted                       |
|                        | Inadequate power supply                                 |
|                        | Core or core area contaminated                          |
|                        | Operating pressure outside the permitted pressure range |
| Valve does not close   | Interior of the valve soiled                            |

## 6 Spare parts



### CAUTION!

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

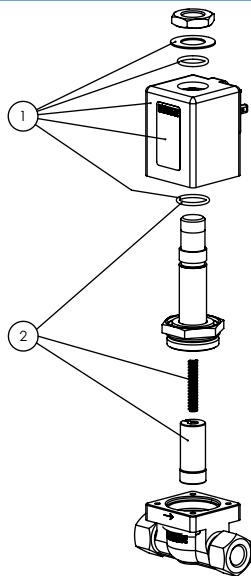
Incorrect accessories and unsuitable spare parts may cause injuries and damage the device and the surrounding area.

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

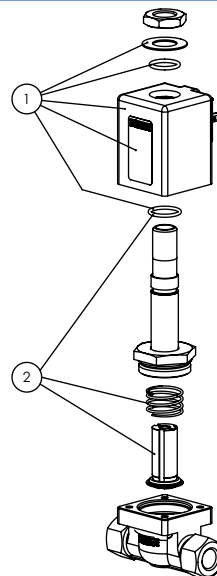
### 6.1 Ordering spare parts

Order the spare parts kits, quoting the position numbers (Item 1: Coil set; Item 2: Wearing part set) and the identification number of the device.

Type 0255



Type 0355





## 7 Logistics

### 7.1 Transport and storage

- ▶ Protect the device against moisture and dirt in the original packaging during transportation and storage.
- ▶ Avoid UV radiation and direct sunlight.
- ▶ Protect connections from damage with protective caps.
- ▶ Observe permitted storage temperature.

### 7.2 Return



No work or tests will be carried out on the device until a valid Contamination Declaration has been received.

- ▶ To return a used device to Bürkert, contact the Bürkert sales office. A return number is required.

### 7.3 Disposal

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](https://country.burkert.com)