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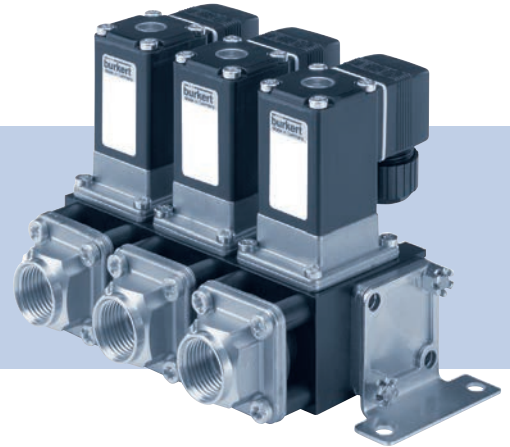
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## **ЭЛЕКТРОМАГНИТНЫЕ КЛАПАНЫ**

## Type 0287

2/2-way solenoid valve, stackable  
2/2-Wege-Magnetventil, anreihbar  
Électrovanne 2/2 voies, juxtaposable



Operating Instructions

Bedienungsanleitung  
Manuel d'utilisation

# 1 OPERATING INSTRUCTIONS


The operating instructions contain important information.


- ▶ Read the operating instructions carefully and follow the safety instructions in particular, and also observe the operating conditions.
- ▶ 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 Symbols

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

Warning of injuries:

 **DANGER!**  
Imminent danger! Serious or fatal injuries.

 **WARNING!**  
Potential danger! Serious or fatal injuries.

 **CAUTION!**  
Danger! Minor or moderately severe injuries.

Warns of damage to property:

**NOTE!**

# 2 INTENDED USE

Incorrect use of the solenoid valve Type 0287 can be dangerous to people, nearby equipment and the environment.

- ▶ The device is designed to control, shut off and meter neutral media up to a viscosity of 21 mm<sup>2</sup>/s.
- ▶ Provided the cable plug is connected and installed correctly, e.g. Bürkert Type 2508, the device satisfies protection class IP65 in accordance with DIN EN 60529 / IEC 60529.
- ▶ Use according to the permitted data, operating conditions and conditions of use specified in the contract documents and operating instructions.
- ▶ Correct transportation, correct storage and installation and careful use and maintenance are essential for reliable and problem-free operation.
- ▶ Use the device only as intended.

## 2.1 Definition of term

In these operating instructions, the term “device” always refers to the solenoid valve Type 0287.

### 3 BASIC SAFETY INSTRUCTIONS

These safety instructions do not make allowance for any contingencies and events which may arise during installation, operation and maintenance.



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

#### **Risk of burns/Risk of fire if used continuously through 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!

#### **Risk of short-circuit/escape of media through leaking screw joints!**

- ▶ Ensure seals are seated correctly.
- ▶ Carefully screw valve and connection lines together.



#### **General hazardous situations.**

To prevent injury, ensure that:

- ▶ Do not make any internal or external changes. Ensure that the system cannot be activated unintentionally.
- ▶ Installation and repair work may be carried out by authorized technicians only and with the appropriate tools.
- ▶ After an interruption in the power supply or pneumatic supply, ensure that the process is restarted in a defined or controlled manner.
- ▶ Do not put any loads on the body.

- ▶ The general rules of technology apply to application planning and operation of the device.
- ▶ The device may only be used in the explosion-protected area if an appropriate additional identification is attached to the type label. For use observe the additional information enclosed with the device together with safety instructions for the explosion risk area.

### 3.1 Warranty

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

### 3.2 Information on the internet

The operating instructions for type 0287 can be found on the internet at:



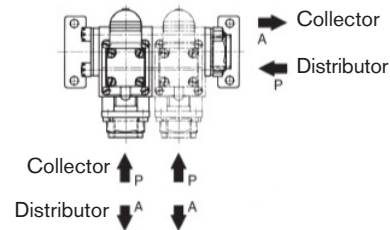
## 4 SYSTEM DESCRIPTION

### 4.1 General description

The solenoid valve modules (SV modules) are stacked in blocks with the aid of pull rods and connection pieces.

The valve has the following functions:

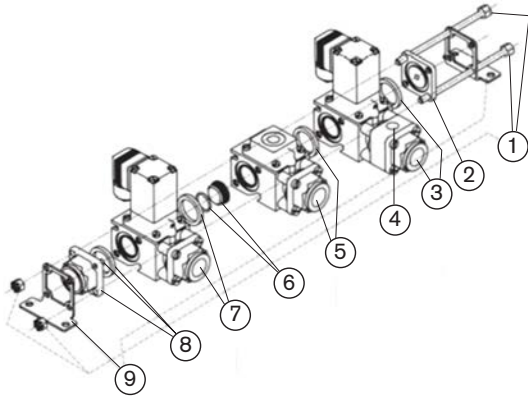
- Distributor (1 input, 2-10 outputs)
- Collector (1 output, 2-10 inputs)
- mixed (2-10 SV modules)



The SV modules with collector function have a non-return valve connected upstream as standard. As a result, the minimum pressure difference increases to 1 bar.

## 4.2 Block assembly

The following drawing shows in an example the components which belong to a block and the place where the accessories can be used.



Pos.	Description	Pos.	Description
1	2 Pull rods	6	Partition wall with O-ring
2	Dummy plate or connection without Quad ring	7	SV module with or without adapter <sup>1)</sup> or T-module with Quad ring
3	SV module with or without adapter <sup>1)</sup> or T-module <sup>2)</sup> with Quad ring	8	Dummy plate or connection with Quad ring
4	Additional connection	9	2 mounting brackets
5	SV module or T-module with Quad ring		

<sup>1)</sup> The adapter allows:

- an injecting device to be connected for taking samples
- a sensor to be installed for measuring certain physical or chemical values of the medium

<sup>2)</sup> T-module: Feed module with G1/2" connection, others on request

## 5 TECHNICAL DATA

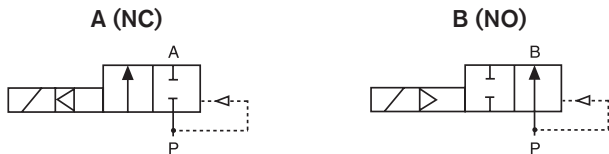
### 5.1 Operating conditions



The following values are indicated on the type label:

- Voltage (Tolerance  $\pm 10\%$ ) / Current type
- Coil power consumption (active power in W - at operating temp.)
- Pressure range
- Body material: Glass fiber reinforced polyamide, connections: Brass (MS)
- Sealing material: FKM, EPDM, NBR
- Function of the valve: Collectors or distributors can be mixed on the block

Circuit function 2/2-way valve:



Protection class: IP65 in accordance with DIN EN 60529 / IEC 60529 with cable plug, e.g. Bürkert Type 2508

### 5.2 Application conditions

Ambient temperature: max. +55 °C

Permitted medium temperature depending on seal material:

Seal material	Permitted medium temperature
NBR	0 ... +70 °C
FKM	0 ... +70 °C
EPDM	0 ... +70 °C

Permitted media depending on seal material:

Sealing material	Permitted media
FKM	Diesel and heating oil without additives, water with additives
EPDM	Oil and grease-free liquids, cold and hot water
NBR	Water

Operating duration: Unless otherwise indicated on the type label, the solenoid system is suitable for continuous operation.  
For models with a high-power coil a maximum of 6 switching operations per minute are possible. This applies to devices with power rating 80/6 W.

## Electrical operating conditions

	With high-performance electronics AC/DC	Without electronics 50 Hz, 60 Hz
Ambient temperature (intermittent duty „Fig. 2“)	max. +70 °C	max. +55 °C
Operating mode (according to DIN VDE 0580)	Long-term operation Intermittent duty (Determination of the permitted operating parameters see „Fig. 1“ und „Fig. 2“)	Long-term operation Intermittent duty
Temperature protection switch	Device has a resettable temperature protection switch which switches the device off if unacceptable heating occurs during intermittent duty. Switches on again only after cooling down and after a new switching request.	without

Tab. 1: Electrical operating conditions

## Intermittent operation for version with high-performance electronics AC/DC

Characteristic values (according to DIN VDE 0580)

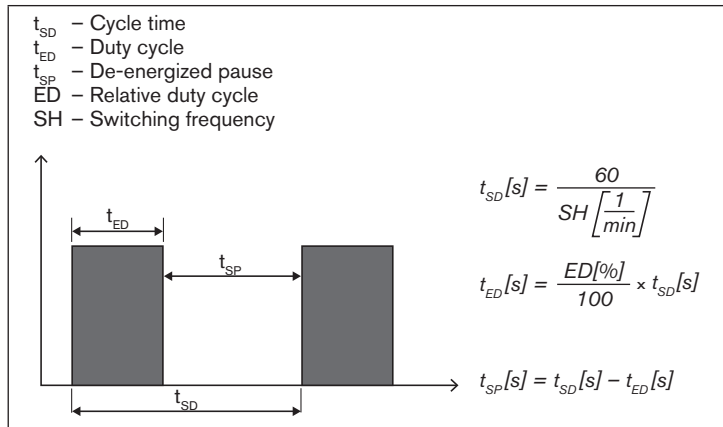


Fig. 1: Characteristic values intermittent operation for version with high-performance electronics AC/DC



## Permitted operating parameters

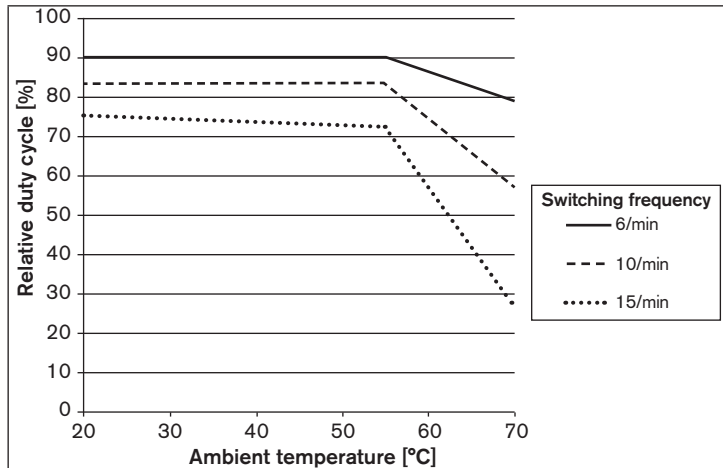


Fig. 2: Relative duty cycle (ED) depending on switching frequency and ambient temperature



**Important information for functional reliability during continuous operation:** If standstill for a long period at least 1-2 activations per day are recommended.

Service life:

High switching frequency and high pressures reduce the service life

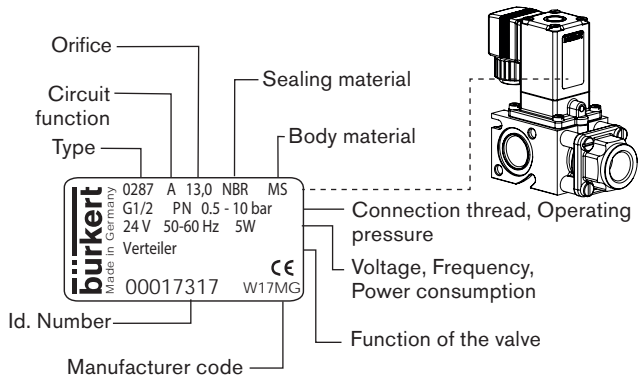
## 5.3 Conformity

In accordance with the EC Declaration of conformity, Type 0287 is compliant with the EC Directives.

## 5.4 Standards

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

## 5.5 Type label



## 6 INSTALLATION

### 6.1 Safety instructions



#### **DANGER!**

##### **Risk of injury from high pressure in the equipment!**

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

##### **Risk of injury due to electrical shock!**

- ▶ Before reaching into the device or the equipment, 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 by authorized technicians only and with the appropriate tools.

##### **Risk of injury from unintentional activation of the system and an uncontrolled restart!**

- ▶ Secure system from unintentional activation.
- ▶ Following assembly, ensure a controlled restart.

## 6.2 Before installation

Installation position: any, actuator preferably upwards.

### Procedure:

- Check pipelines for dirt and clean.
- Install a dirt filter before the valve inlet ( $\leq 400 \mu\text{m}$ ).

## 6.3 Installation

### NOTE!

#### Caution risk of breakage!

- Do not use the coil as a lever arm.

- Hold the device using a suitable tool on the body and screw into the pipeline (maximum permitted torque for line connection 40 Nm).



Valve body must not be installed under tension.  
Sealing material must not get into the device.

- Observe function of the valve (see specifications on the type label).

Devices with solder connection:

### NOTE!

#### Danger of overheating!

- During the soldering process disconnect the solder connections from the valve.

## 6.4 Electrical connection of the cable plug



### WARNING!

#### Risk of injury due to electrical shock!

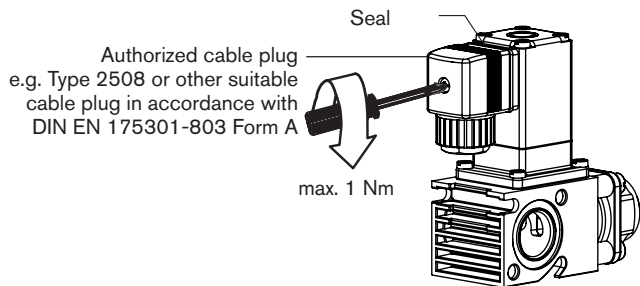
- ▶ Before reaching into the system, switch off the power supply and secure to prevent reactivation.
- ▶ Observe applicable accident prevention and safety regulations for electrical equipment.

If the protective conductor is not connected, there is a risk of electric shock!

- ▶ Always connect protective conductor and check electrical continuity.

## Procedure:

- Tighten cable plug (e.g. Type 2508 or other suitable cable plug), observing max. torque 1 Nm.
- Check that seal is fitted correctly.
- Connect protective conductor and check electrical continuity.



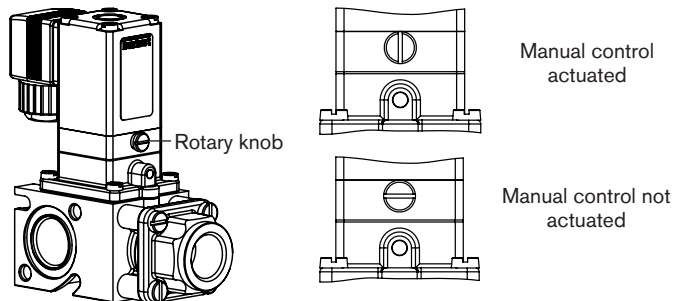
## 6.5 Manual control HA15, optional

To control the valve manually, turn the rotary knob using a screwdriver into the vertical position.

### NOTE!

#### Caution!

- Do not overturn the rotary knob.
- When the rotary knob is actuated, the valve can no longer be switched electrically.



## 7 MAINTENANCE, TROUBLESHOOTING

### 7.1 Safety instructions



#### **DANGER!**

##### **Risk of injury from high pressure in the equipment!**

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

##### **Risk of injury due to electrical shock!**

- ▶ Before reaching into the system, 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 maintenance!**

- ▶ Maintenance may be carried out by authorized technicians only and with the appropriate tools!

##### **Risk of injury from unintentional activation of the system and an uncontrolled restart!**

- ▶ Secure system from unintentional activation.
- ▶ Following maintenance, ensure a controlled restart.

### 7.2 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
	Medium pressure outside the permitted pressure range
	Core / core area is dirty
	Flow restrictor hole in diaphragm dirty
Valve does not close	Internal space of the valve is dirty

## 8 SPARE PARTS



### CAUTION!

**Risk of injury and/or damage by the use of 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.

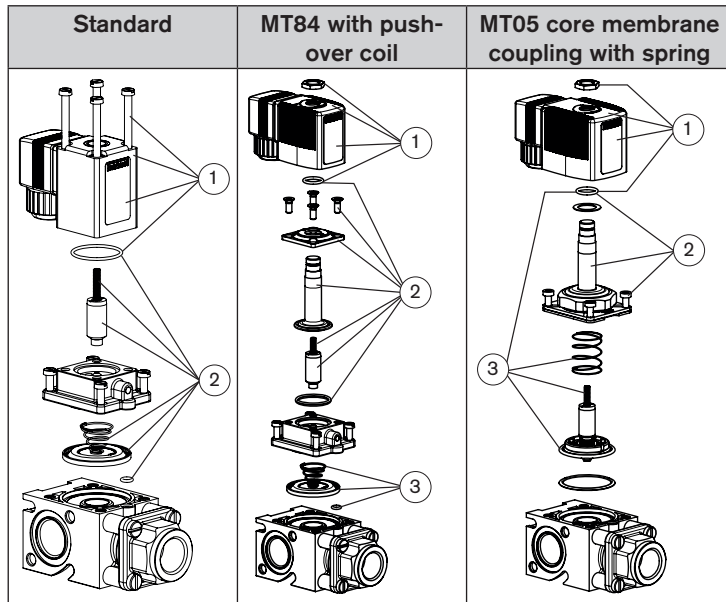
### 8.1 Ordering spare parts

The following spare parts are available for the solenoid valve Type 0287:

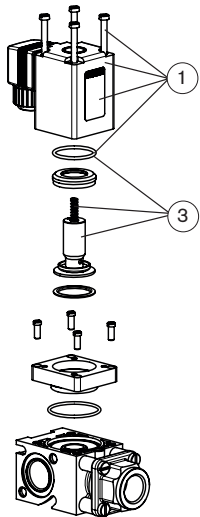
- Coil set (Pos. 1)
- Wearing parts set (Pos. 2 and Pos. 3)

Order the coil set or wearing parts set quoting the identification number of the device.

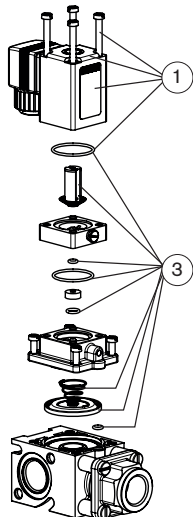
### 8.2 Overview of spare parts



MT08 core membrane  
coupling with O-ring



HA15 with manual control



## 9 TRANSPORT, 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 - +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 regulations on disposal and the environment.

