

## Type 6213 EV, 6281 EV

2/2-way solenoid valve



Operating Instructions

# 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 can be dangerous to people, nearby equipment and the environment.

- ▶ The device type 6213 EV / 6281 EV 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.
- ▶ In the case of explosion-proof devices (see rating plate or additional plate) also follow the operating instructions for the coil / pilot control.
- ▶ 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 Type 6213 EV / 6281 EV.

### 3 BASIC SAFETY INSTRUCTIONS

These safety instructions do not make allowance for any

- contingencies and events which may arise during the installation, operation and maintenance of the devices.
- local safety regulations - the operator is responsible for observing these regulations, also with reference to the installation personnel.



#### **Danger - high pressure.**

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

#### **Risk of electric 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.

#### **Risk of burns/risk of fire if used for a prolonged switch-on time 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 pipelines together.



#### **To prevent injury, ensure that:**

- ▶ Do not make any external modifications to the housing of the device. 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 fluidic 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.

### 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 and data sheets for type 6213 EV / 6281 EV can be found on the internet at:

[www.buerkert.com](http://www.buerkert.com) → Type “6213” or “6281”

## 4 TECHNICAL DATA

### 4.1 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 temperature)
- Operating pressure
- Body material: Brass (MS), Stainless steel (VA)
- Seal material: FKM, EPDM, NBR

Circuit function:

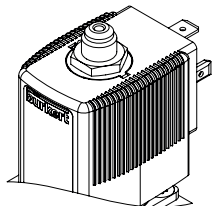
A (NC)		2/2-way valve, normally closed
A (NC)		2/2-way valve, normally closed, with manual override
B (NO)		2/2-way valve, normally open

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

## Special instructions for valves circuit function B (NO) with deaeration connection G1/8 on the coil (CF05/MX62):

The deenergized valve is open. The medium also flows off via the deaeration connection on the coil.

Valves of this design are therefore suitable for relieving compressors only.



## 4.2 Application conditions

Ambient temperature: max. +55 °C

Operating duration: Unless otherwise indicated on the type label, the solenoid system is suitable for continuous operation



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

Permitted medium temperature depending on coil and seal material:

Coil body PA/EP <sup>1)</sup>	Seal material	Medium temperature
Polyamide PA	FKM	0...+90 °C
Epoxy EP (NA38)	FKM	0...+120 °C
Polyamide PA	EPDM	-30...+90 °C
Epoxy EP (NA38)	EPDM	-30...+100 °C
Polyamide PA	NBR	-10...+80 °C

<sup>1)</sup> Marking PA and EP under electric connection

Permitted media depending on seal material:

Seal material	Permitted media <sup>2)</sup>
FKM	Per-solutions, hot oils without additives, diesel and heating oil without additives, detergent solution
EPDM	Oil and grease-free liquids, cold and warm water
NBR	Cold and warm water

<sup>2)</sup> Gaseous media at low differential pressures (e.g. compressed air and vacuum) can also be actuated in consideration (or due to restriction) of a lower tightness. We recommend prior clarification with our sales office regarding the possible application

The following values <u>must also be observed</u> for valves with UL/UR approval:		
	Medium temperature	Ambient temperature
Non-hazardous fluids (air and inert gas)	-30...+120 °C -30...+100 °C (for 6213 DN40)	-30...+55 °C
Water	0...+100 °C	0...+55 °C
Fire protection service valve (PE48)	+5...+90 °C	+5...+55 °C

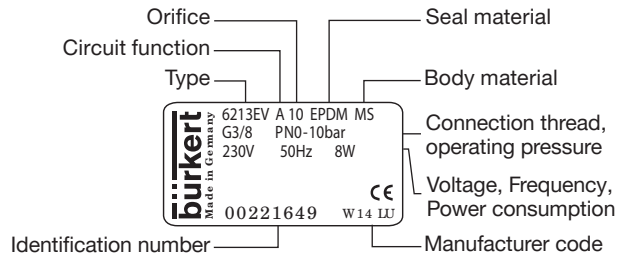
### 4.3 Conformity

In accordance with the EU Declaration of conformity, the solenoid valve Type 6213 EV / 6281 EV is compliant with the EU Directives (if applicable).

### 4.4 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).

### 4.5 Type label (Example)



## 5 INSTALLATION

### 5.1 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 pipes.

**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 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 installation, ensure a controlled restart.

### 5.2 Before installation

Installation position: any, actuator preferably upwards.

Procedure:

- Check pipelines for dirt and clean.
- Install a dirt filter before the valve inlet ( $\leq 500 \mu\text{m}$ ).

### 5.3 Installation

**NOTE!**

**Caution risk of breakage.**

- ▶ Do not use the coil as a lifting arm.

- Hold the device with a open-end wrench on the body and screw into the pipeline.
- Observe direction of flow:  
The arrow on the body indicates the direction of flow.

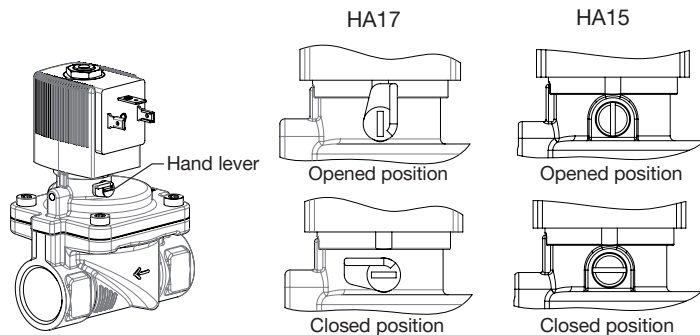
## 5.4 Manual override (optional Type 6281, Code HA15/HA17)

To control the valve manually, the hand lever under the coil must be turned into the vertical position.

### NOTE!

#### Caution.

- ▶ Do not overturn hand lever.
- ▶ When the hand lever is actuated, the valve can no longer be switched electrically.



## 5.5 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 contact between the coil and body is missing, there is danger of electrical shock.

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

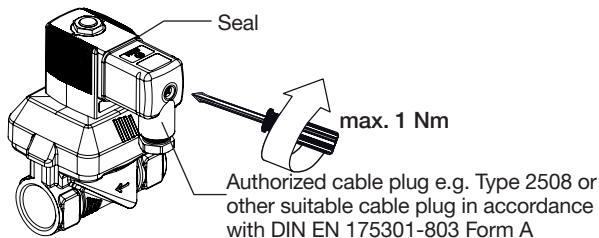
### Procedure:

- Tighten cable plug (for permitted types see data sheet), observing max. torque 1 Nm.
- Check that seal is fitted correctly.
- Connect protective conductor and check electrical continuity between coil and body.



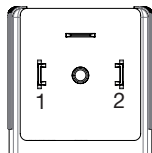


Note the voltage and current type as specified on the type label.



Pulse version (optional, Code CF 16):

- Valve opens when current pulse min. 50 ms:  
– on Pin 1, + on Pin 2
- Valve closes when current pulse min. 50 ms:  
+ on Pin 1, – on Pin 2



## 6 MAINTENANCE, TROUBLESHOOTING

### 6.1 Safety instructions



#### 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.

### 6.2 Installation of the coil



#### WARNING!

Risk of injury due to electrical shock.

- ▶ Before reaching into the system, switch off the power supply and secure to prevent reactivation.
- ▶ During installation ensure that the coil is situated firmly on the body cover so that the protective conductor connection of the coil is connected to the valve body.
- ▶ Check protective conductor contact after installing the coil.

### Escaping medium.

When a sticking nut is loosened, medium may escape.

- ▶ Do not tighten sticking nut any further.

### Overheating, risk of fire.

Connection of the coil without pre-assembled valve will result in overheating and destroy the coil.

- ▶ Connect the coil with pre-assembled valve only.

### Procedure:

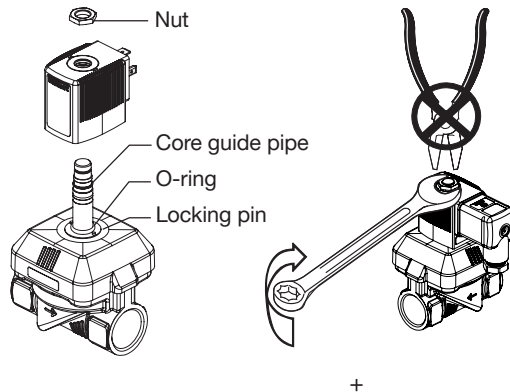
- Connect coil body to the core guide pipe.
- Screw on coil with nut. Observe torque.

### NOTE!

Device will be damaged if the wrong tools are used.

Always use a wrench to tighten nut. If other tools are used (e.g. pliers), the device may be damaged.

- Check protective conductor.



Observe torque for fastening nut (See table) !

### Torque for fastening nut:

Coil type	Coil width	Torque
AC10	32 mm resp. 40 mm	5 Nm
AC19	42 mm	10 Nm

## 6.3 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.

### Valve does not switch

Possible cause:

- Short circuit or coil interrupted.
- Core or core area dirty.
- Medium pressure outside the permitted pressure range.

### Valve does not close

Possible cause:

- Internal space of the valve is dirty.
- Small control bore in the diaphragm blocked.
- Valve opened by manual control.

## 7 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.

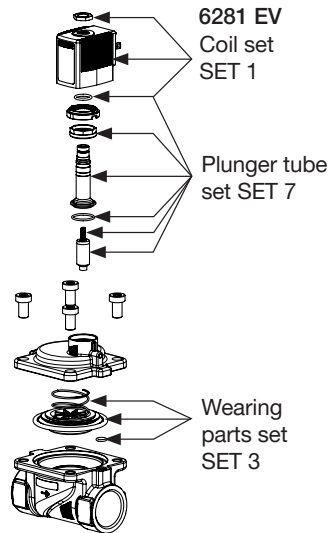
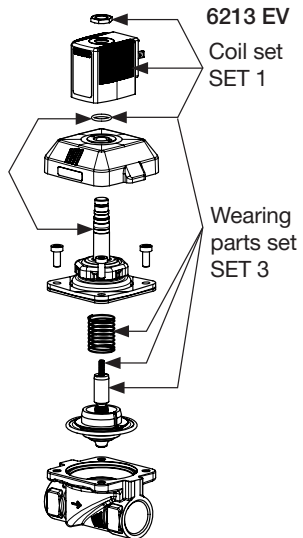
- ▶ Use only original accessories and original spare parts from Bürkert.

## 7.1 Ordering spare parts

### Replacement part sets

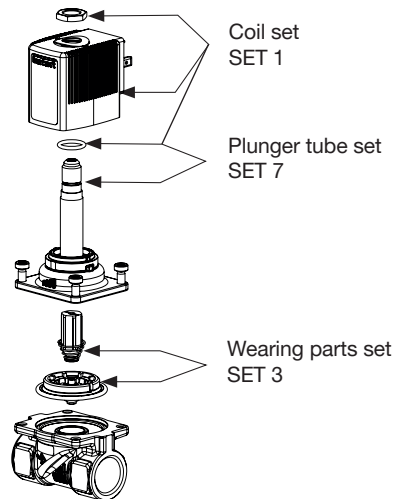
When ordering replacement part sets, quote the sets SET 1, SET 3 or SET 7 and the identification number of the device.

## 7.2 Overview of replacement part sets



## 6281 EV (MX62)

### Compressor relief valve NO



*The composition of the spare part sets may differ from the diagram depending on the model of valves.*

## 8 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.

- ▶ Observe applicable regulations on disposal and the environment.

→ Dispose of the device and packaging in an environmentally friendly manner.

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