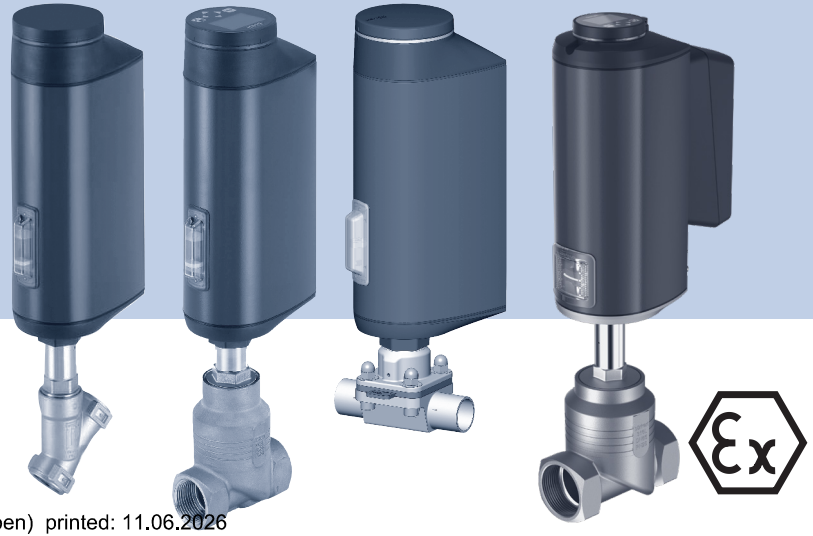
bürkert
FLUID CONTROL SYSTEMS

BVS 17 ATEX E 117 X / IECEx BVS 17.0100X

Types 3320, 3321, 3323, 3360, 3361, 3363, AE33

Electromotive valve with ATEX approval and IECEx approval
Elektromotorisches Ventil mit ATEX-Zulassung und IECEx-Zulassung
Vanne à moteur électrique avec mode de protection ATEX et IECEx



Operating Instructions

Bedienungsanleitung
Manuel d'utilisation

MAN 1000348174 EN Version: CStatus: RL (released | freigegeben) printed: 11.06.2026

We reserve the right to make technical changes without notice.
Technische Änderungen vorbehalten.
Sous réserve de modifications techniques.

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Operating Instructions 2506/03_EU-ML_00810687 / Original DE

MAN 1000348174 EN Version: CStatus: RL (released | freigegeben) printed: 11.06.2026

1 Additional instructions

The additional instructions describe the special requirements and measures for using the device in potentially explosive atmospheres. Keep these instructions in a location which is easily accessible to every user and make them available to every new owner of the device.

Important safety information!

Carefully read through these additional instructions. Pay particular attention to the following:
· the “intended use”,
· all safety instructions,
· the “special conditions of use”.
▸ The additional instructions must be read and understood.

These additional instructions contain the safety instructions as well as special information for use in potentially explosive atmospheres. All further information and descriptions of the device can be found in the respective operating instructions, which must be followed as well as the additional instructions.

The operating instructions can be found on the internet at: country.burkert.com

1.1 Definition of terms/abbreviations

The terms and abbreviations used in these instructions represent the following definitions:

Device	Electromotive valves of types 3320, 3321, 3323, 3360, 3361, 3363, AE33
AG2	Actuator size 2 with a nominal force of 1300 or 2500 N for seat sizes 3...50
AG3	Actuator size 3 with a nominal force of 7700, 10000 N or 11500 N for seat sizes 40...100
Ex area	Potentially explosive atmosphere

1.2 Symbols

The following symbols are used in these instructions.

DANGER!

Warns of immediate danger.

- Failure to observe these instructions will result in death or serious injuries.

WARNING!

Warns of a potentially hazardous situation.

- Failure to observe these instructions may result in serious injuries or death.

CAUTION!

Warns of potential danger.

- Failure to observe these instructions may result in moderate or minor injuries.

NOTE!

Warns of damage.

Important tips and recommendations.

Refers to information in these operating instructions or in other documentation.

- Designates instructions to avoid a danger.

→ Designates a procedure which you must carry out.

2 Intended use

Non-intended use of the device may be dangerous to people, nearby equipment and the environment.

The device is designed to control the flow of liquid and gaseous media. The device is not suitable for use in highly charge-generating processes.

The device (with variable code PX48) is designed for use in: Explosion group II, category 3G Ex ec, T4 and explosion group II, category 3D Ex tc, T135 °C (see information on the adhesive label for approval).

- When using, comply with the permitted data, usage and operating conditions specified in the contract documents, the operating instructions and on the device's type label.
- Do not use alkaline cleaning agents to clean the surfaces of the device.
- If the valve position has a bearing on safety concerns in the event of a power failure: Only use devices that have a SAFEPOS energy-pack (optional energy-pack).
- Use the device only in conjunction with third-party devices and components recommended or approved by Bürkert.
- The device must only be used when in perfect condition; always ensure proper storage, transportation, installation and operation.
- Use the device only as intended.

3 Particular safety instructions

To avoid the risk of explosion, the following safety instructions must be observed in addition to the safety instructions in the operating instructions:

DANGER!

Risk of explosion due to open electrical connections.

- Connect all electrical plugs and sockets to the counterpart.

Risk of explosion when removing the electrical circular plug-in connector.

- Secure cable connections that are designed with circular plug-in connector with a suitable protective sleeve.
  ATEX protective sleeve for M12 circular plug (device side), Article number 60037712
  ATEX protective sleeve for M12 circular socket (device side), Article number 60037713
  (see chap. "3.2.5").
- Only remove the electrical circular plug-in connector when the voltage is switched off.

Risk of explosion when opening the device.

- **Do not open** the device in a potentially explosive atmosphere.

Risk of explosion due to electrostatic discharge.

If there is a sudden discharge of electrostatically charged devices or persons, there is a risk of explosion in the potentially explosive atmosphere.

- Do not use the device in highly charge-generating processes.
- Use suitable measures to ensure that electrostatic charges cannot occur in the potentially explosive atmosphere.
- Clean the device surface by gently wiping it with a damp or anti-static cloth only.

Grounding the device:

- 1. Ground the actuator housing.
  The functional earth (FE) on the actuator housing must be grounded via a short line (max. 1 m) with a cross section of at least 1.5 mm^2. The metal housings of the circular plug-in connector are grounded via the actuator housing to which they are connected.
- 2. Ground the valve body.
  To ensure potential equalisation, ground the valve body to the pipe system through an electrically conductive connection.

DANGER!

Risk of explosion.

When working on the device and for use in a potentially explosive atmosphere, the following must be observed in addition to the safety instructions in the operating instructions:

- Observe the information on temperature class, ambient temperature, degree of protection and voltage on the adhesive label for approval.
- Do not use devices near gases and/or dust that have a lower ignition temperature than the one stated on the adhesive label for approval.
- Installation, operation and maintenance may only be performed by qualified personnel.
- Observe applicable safety regulations (including the national safety regulations), as well as the general rules of technical equipment, during set-up and operation.
- Do not repair the device, but replace it with an equivalent device.

- Repairs may be carried out by the manufacturer only.
- Do not subject the device to mechanical or thermal stresses which exceed the limits described in the operating instructions.
- Only use cable and cable entries that are approved for the respective area of application and are bolted in accordance with the associated assembly instructions.
- The cable glands may only be used to feed in fixed laid cables and lines.
- Use pre-assembled cable glands in accordance with the assembly instructions provided by the fitting manufacturer. Before commissioning in a potentially explosive atmosphere, check whether the cable gland has been installed as described in the accompanying assembly instructions.
- Close all unnecessary cable glands with lock screws approved for potentially explosive atmospheres.
- To maintain the type of protection, all electrical plug connections must be connected.

3.1 Special conditions of use

When used in a potentially explosive atmosphere, observe zones 2 and 22:

- Do not use the device in dusty atmospheres where intensive charging processes are to be expected.
- Ensure that the transient protection has been set to a value which does not exceed 140% of the rated peak voltage value on the supply connections of the device.
- Use the device only in an area which has minimum pollution degree 2, as defined in IEC 60664-1.

- For devices with a circular plug-in connector connection (multipole), the mating connector listed in chap. “3.2.4 Accessories for devices with circular plug-in connector connection” for the device type used and the appropriate protective sleeve must be used. The mating connectors in conjunction with the appropriate protective sleeves have been tested to determine which correspond to a lower degree of mechanical hazards and must be protected against mechanical impacts > 4 J in the installation/application. The mating connectors are not suitable for outdoor ATEX use and must be installed in such a way that they are not exposed to intense UV radiation.
- Do not open the device in a potentially explosive atmosphere.
- Only with AG2:
  At ambient temperatures > 40 °C, in addition to temperature derating, suitable measures must be taken to ensure that the temperature directly below the actuator does not exceed 65 °C in any operating situation. If the medium temperature is elevated, this can be done, for example, by insulating the pipeline.

3.1.1 Ex approval

The Ex approval is only valid if you use the modules and components approved by Bürkert as described in these operating instructions.

The devices may be used only in combination with the valve types approved by Bürkert, otherwise the Ex approval will expire.

Unauthorised changes to the system, modules or components will also render the Ex approval void.

The type examination certificates
BVS 17 ATEX E 117 X and
IECEx BVS 17.0100X

were issued by

DEKRA EXAM GmbH
Dinnendahlstraße 9
44809 Bochum

The production department audits Fiditas CE 2829
Slavka Tomerlina 44 Street
10361 Zagreb-Sesvete
Croatia/Croatia

3.1.2 Cleaning in the potentially explosive atmosphere

DANGER!

Risk of explosion due to cleaning agents

- Only use cleaning agents that are approved for cleaning in explosive atmospheres.

3.2 Special instructions for assembly and installation in a potentially explosive atmosphere

To avoid the risk of explosion, the following instructions must be observed during assembly and installation in addition to the operating instructions.

3.2.1 Instructions for electrical installation in a potentially explosive atmosphere

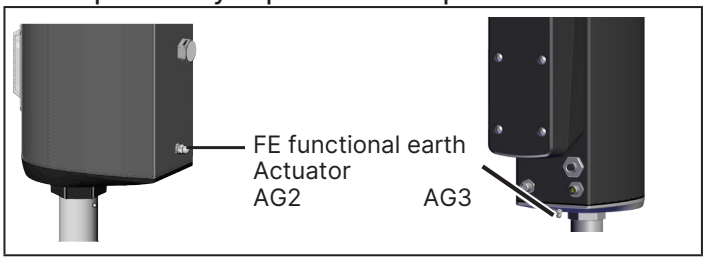

Fig. 1: Grounding, FE functional earth at actuator

Grounding the device:

- 1. Ground the actuator housing.
  The functional earth (FE) on the actuator housing must be grounded via a short line (max. 1 m) with a cross section of at least 1.5 mm^2. The metal housings of the circular plug-in connector are grounded via the actuator housing to which they are connected.

▸ 2. Ground the valve body.
To ensure potential equalisation, ground the valve body to the pipe system through an electrically conductive connection.

3.2.2 Remove display module or blind cover

The blind cover and display module are removed in the same way. The procedure is described using the blind cover as an example.

DANGER!

Risk of explosion when opening the device.

- **Do not open** the device in a potentially explosive atmosphere.
- Work that requires opening the device is carried out outside the potentially explosive atmosphere.

Unlock:

The included magnetic key is required to unlock.

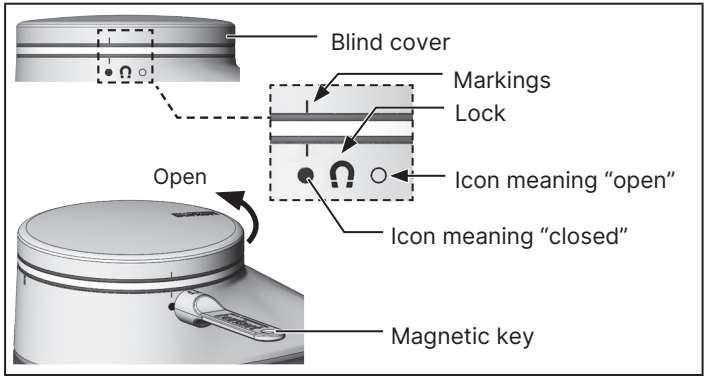

Fig. 2: Unlock blind cover or display module

→ Hold the magnetic key against the lock.
The lock unlocks with a soft click.

⚠ Risk of explosion in the potentially explosive atmosphere!

Do not remove the blind cover or display module in a potentially explosive atmosphere.

→ Keep holding the magnetic key against the lock and turning the blind cover or display module by hand until the mark above the icon is open.

NOTE!

Carefully remove the display module so that the connection cable and HMI interface are not damaged.

→ Remove the blind cover or display module.

Close the blind cover or display module:

→ Align the mark so that it stands above the open icon and fit the blind cover or display module.

→ Turn the blind cover or display module clockwise by hand until the marking is directly over the symbol for closed.
To make sure that the device is correctly closed, ensure that the interlocking engages with a gentle click.

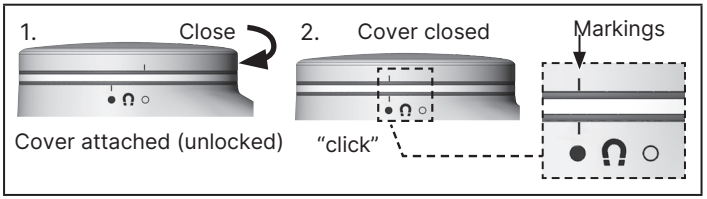

Fig. 3: Close the blind cover or display module

3.2.3 Installation instructions for cable types with cable end plug/socket

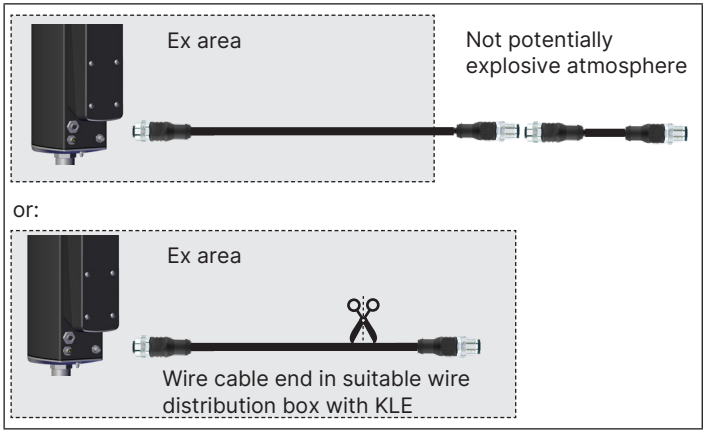

Fig. 4: Installation in potentially explosive atmosphere

3.2.4 Installation instructions for installing M12 plug connectors with protective sleeve on the device

→ Push the protective sleeve without the clamping ring over the connection cable.
The groove of the protective sleeve must point towards the opposite connector.

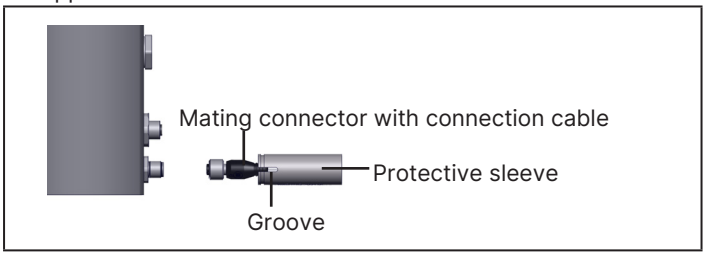

Fig. 5: Push the protective sleeve onto the cable

→ Connect the connection cable to the device.

→ Tighten the mating connector firmly.

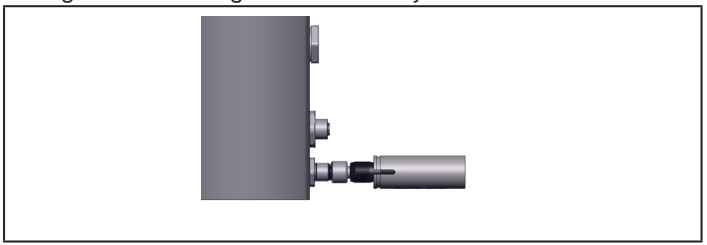

Fig. 6: Connect cable to the device

→ Place both halves of the clamping ring flush with the hexagon of the built-in connector (on the device).

→ Insert screws on the clamping ring and tighten slightly (1...3 threads).

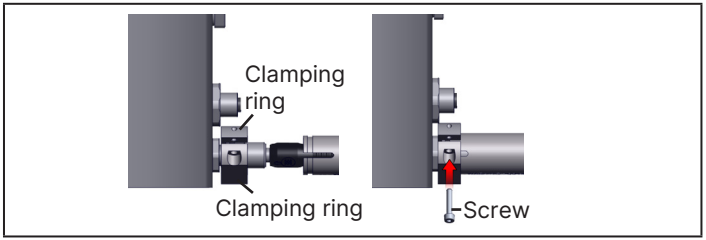

Fig. 7: Install the clamping ring

→ Push the protective sleeve under the mounted clamping ring until it stops.

→ Tighten the screws with an Allen key (tightening torque 1.3 Nm).

→ Ensure that the protective sleeve is firmly clamped and free of play.

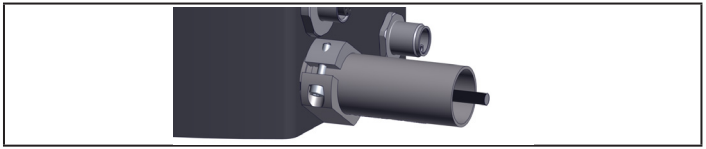

Fig. 8: Clamp the protective sleeve

NOTE!

When exposed to vibration:

Check the protective sleeve for tight fit in the event of vibration stress and regularly during operation.

If necessary, tighten the screw connection of the clamping ring. (Observe the tightening torque of 1.3 Nm)

Only for variant AG3 with X2 circular socket

Note when using variant AG3 with X2 circular socket.

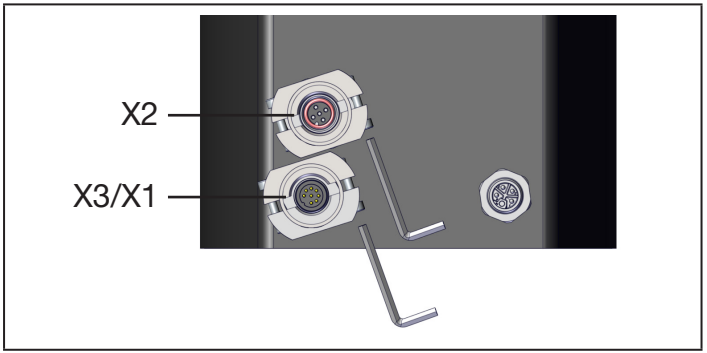

Fig. 9: Port with X2 circular socket

→ Install the X3/X1 circular plug-in connector.
Do not tighten screws so that the clamping ring can be aligned.

→ Install the X2 circular plug-in connector.

→ Align and tighten both clamping rings as shown in “Fig. 9”.

3.2.5 Accessories for devices with a circular plug-in connector connection

Depending on the device type, the electrical variant and the actuator size (AG2/AG3), the following cable types are available.

Device type	Variant	Circular plug-in connectors/ signals	Type of cable	
			AG2	AG3
332x	Analogue (without digital communication)	X1 – Circular plug M12, 8-pin, A-coded (input and output signals)	1	
		X3 – Circular plug M12, 5-pin, A-coded (operating voltage)	2A	-
		X4 – Circular plug M12, 5-pin, L-coded (actuator supply AG3)	-	2B
	With CANopen/büS communication	X3 – Circular plug M12, 5-pin, A-coded, (operating voltage + CAN)	3	
		X4 – Circular plug M12, 5-pin, L-coded (actuator supply AG3)	-	2B

Device type	Variant	Circular plug-in connectors/ signals	Type of cable	
			AG2	AG3
336x	Analogue (without digital communication)	X1 – Circular plug M12, 8-pin, A-coded (input and output signals)	1	
		X3 – Circular plug M12, 5-pin, A-coded (operating voltage)	2A	-
		X4 – Circular plug M12, 5-pin, L-coded (actuator supply AG3)	-	2B
		X2 – Circular socket M12, 5-pin, A-coded (input signal process actual value) only available with the process controller variant	4	
	With CANopen/büS communication	X3 – Circular plug M12, 5-pin, A-coded (operating voltage + CAN)	3	
		X4 – Circular plug M12, 5-pin, L-coded (actuator supply AG3)	-	2B
		X2 – Circular socket M12, 5-pin, A-coded (input signal process actual value) only available with the process controller variant	4	

Ordering information for cables and protective sleeves for the selected cable types.

Type of cable	Designation	Cable length	Article number
1	PUR connection cable with socket, straight, M12 × 1, A-coded, 8-pin, open cable end	10 m	20067626
2A	PUR connection cable with socket, straight, M12 × 1, A-coded, 5-pin, open cable end	2 m	20067627
		10 m	20067628
2B	PUR connection cable with socket, straight, M12 × 1, L-coded, 5-pin, cable end with plug	2 m	775062
		5 m	775064
		10 m	775065
3	PUR connection cable with socket, straight, M12 × 1, A-coded, 5-pin, protected for CANopen/BüS, cable end with plug	1 m	20067629
		5 m	20067630
4	PUR connection cable with plug, straight, M12 × 1, A-coded, 5-pin, open cable end	1 m	20067633
In addition, the following protective sleeves are required for each selected cable.			

Type of cable	Designation	Cable length	Article number
1...3	ATEX protective sleeve for M12 circular plug (device side)	-	60037712
4	ATEX protective sleeve for M12 circular socket (device side)	-	60037713

4 Technical data

To avoid the risk of explosion, the following technical data must be observed in addition to the technical data in the operating instructions.

4.1 Adhesive label for the potentially explosive atmosphere

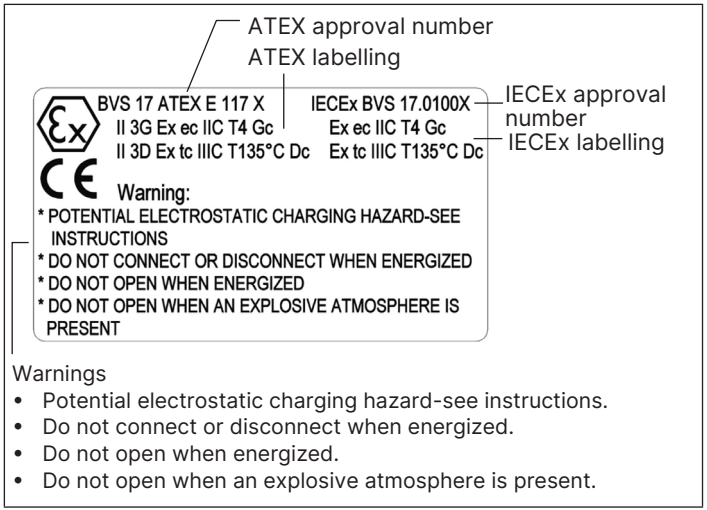

Fig. 10: Description: Adhesive label for potentially explosive atmosphere

ATEX labelling

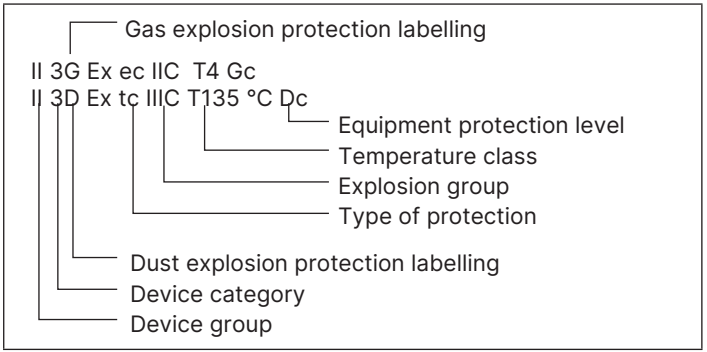

Fig. 11: Description: ATEX labelling

4.2 Standards and directives

This product meets the legal requirements applicable at the time of placing it on the market and has been developed and tested in accordance with relevant European directives/regulations and harmonised standards.

Conformity is documented and, if required, supported by evidence. The EU declarations of conformity can be found behind the respective type on the home page country.burkert.com

4.2.1 Temperature ranges in potentially explosive atmosphere

Maximum medium temperature: (observe derating diagram)
+150 °C (seat valves)
+130 °C (diaphragm valves)
Minimum medium temperature: –10 °C

Ambient temperatures AG2 (observe derating diagram)

At ambient temperatures > 40 °C, in addition to temperature derating, suitable measures must be taken to ensure that the temperature directly below the actuator does not exceed 65 °C in any operating situation. If the medium temperature is elevated, this can be done, for example, by insulating the pipeline.

Device without display: –25 °C...+65 °C
Device with display: –25 °C...+60 °C
Device with SAFEPOS energy-pack:–25 °C...+55 °C
Device with circular connector (multipole): –25 °C...+55 °C

Ambient temperatures AG3 (observe derating diagram)

Device with circular connector (multipole): –25 °C...+55 °C

The maximum permitted temperature for the environment and medium are dependent on one another. The permitted maximum temperatures must be determined using the temperature diagram.

Temperature diagrams for seat valves: Type 3320, 3321, 3360, 3361

For AG2 seat valves:
The values were determined under the following maximum operating conditions: nominal diameter DN32 at 100% duty cycle with a medium pressure of 16 bar.

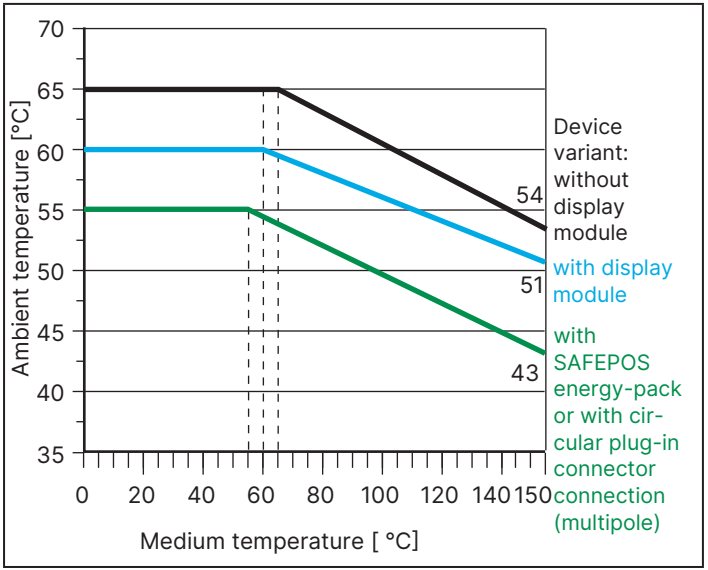

Fig. 12: AG2 seat valve temperature diagram

For AG3 seat valves:
The values were determined under the following maximum operating conditions: nominal diameter DN65 at 100% duty cycle with a medium pressure of 25 bar.

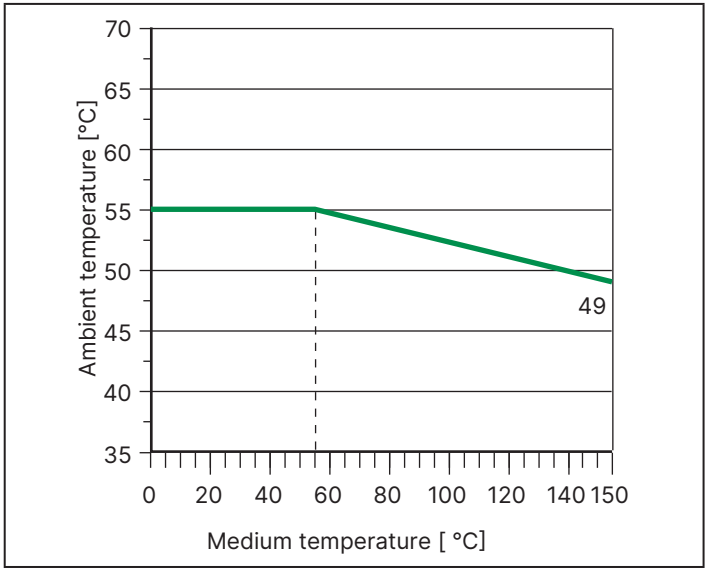

Fig. 13: AG3 seat valve temperature diagram

Temperature diagrams for diaphragm valves: type 3323, 3363

For AG2 diaphragm valves:
The values were determined under the following maximum operating conditions: diaphragm size 25 EPDM at 100% duty cycle with a medium pressure of 10 bar.

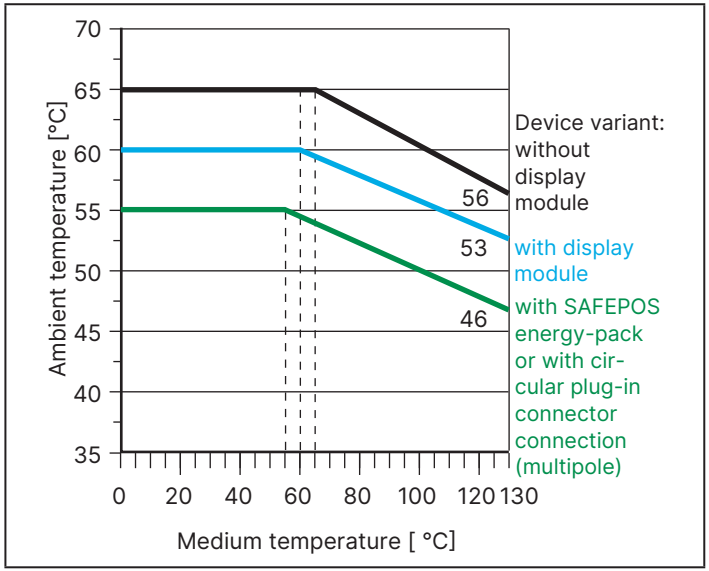

Fig. 14: AG2 diaphragm valve temperature diagram

For AG3 diaphragm valves:
The values were determined under the following maximum operating conditions: diaphragm size 65 EPDM at 100% duty cycle with a medium pressure of 10 bar.

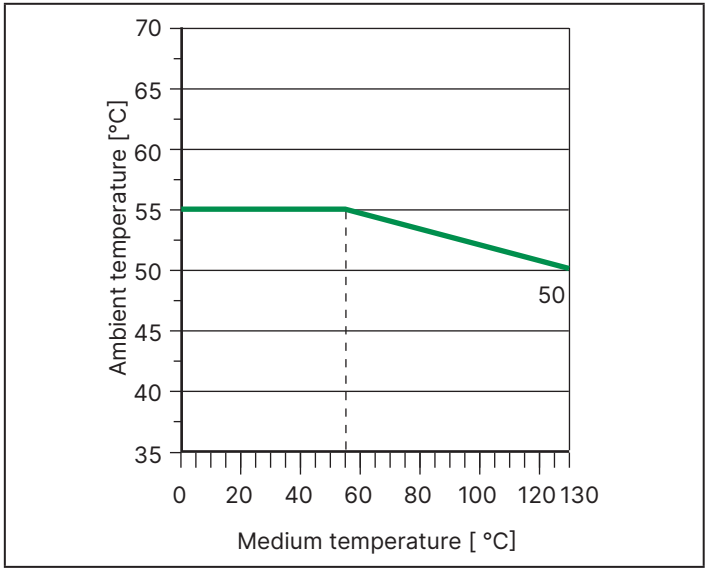

Fig. 15: AG3 diaphragm valve temperature diagram

4.2.2 Electrical data

Explosion group	Gas: IIC Dust: IIIC
Category	Constructive safety Gas: ec (increased safety) Dust: tc (protection by housing)
Temperature class	Gas: T4 Dust: T135 °C (see chap. “4.2.1 Temperature ranges in potentially explosive atmosphere” for permissible temperature ranges)

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MAN 1000348174 EN Version: CStatus: RL (released | freigegeben) printed: 11.06.2026