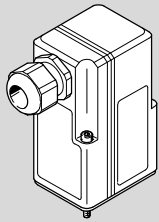


Pilot valve

VACC-P3-0.09-K4-1-EX4A

II 2G Ex ia IIC T6, T5 Gb
II 2D Ex ia IIIC T85 °C, T125 °C Db



FESTO

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Operating instructions
(Original instructions)

8073433
2017-06b
[8073435]



Pilot valve VACC-P3-009-K4-1-EX4A English

For all available product documentation → www.festo.com/pk

1 Function

The pilot valve consists of a pressure regulator and a pneumatically actuated 3/2-way NC valve, which is controlled by a 2/2-way NO solenoid valve. The pilot valve can be rotated by 180° and/or replaced via the pneumatic interface between the pilot valve and the solenoid valve. The pilot valve is appropriate for use with PROFIBUS PA.

2 Application

- The pilot valve has been designed for pilot control of Festo solenoid valves.
- Use medium according to specifications → Technical data.
- The device is not intended to be used with other fluids.
- The device can be used under the stated operating conditions in zones 1 and 2 of explosive gas atmospheres and in zones 21 and 22 of explosive dust atmospheres.



Note

Label X: special conditions

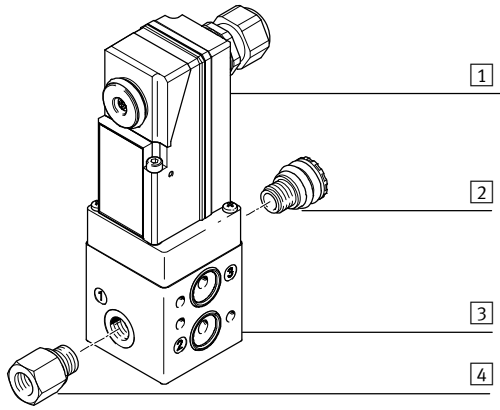
- The pilot valve needs to be effectively protected from electrostatic charge.
- Use only non-flammable gases as medium.

- Only use specified solenoid valves.
- The range of application is dependent on the ambient temperature.
- The device must be connected to a certified Ex ia or Ex ib power circuit.

3 Requirements for product use

- Installation and commissioning must be carried out by qualified electrical specialists, in accordance with the operating instructions.
- Use the device in its original status, without any unauthorised modifications. The certification is no longer valid if the device is altered in any way by anyone other than the manufacturer.

4 Mounting



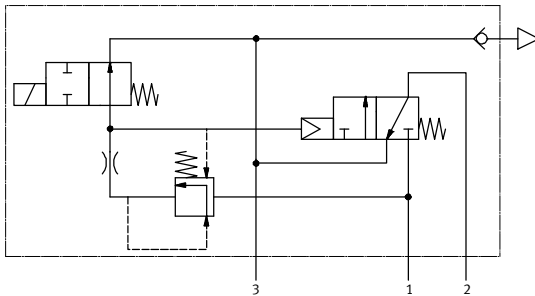
- | | |
|---------------------------|-----------------------|
| 1 Pilot valve VACC-P3 | 3 Solenoid valve VOFC |
| 2 Venting protection VABD | 4 Filter adapter NPFV |

Fig. 1

4.1 Pneumatic

1. Mount connecting cables and fittings properly. Before commissioning, remove residues, such as chips, rust and water.
2. Switch off pressure to the compressed air lines.
3. Only use screw connections with cylindrical threaded journals and washers or self-tapping rings.
4. Do not use PTFE or hemp fibres on the threads.
5. Insert all sealing rings supplied with the NAMUR mounting kit between solenoid valve and drive or mounting plate.
6. If port 1 with control signal < 2 bar, then supply auxiliary energy > 2 bar to port 12.
7. Do not use anti-friction coating or lubricant.
8. The dew point of the compressed air must lie below the specified lowest operating temperature of the system.
9. Use filter adapter NPFV-AF-G14-G14-MF or NPFV-AFG14-N14-MF.
10. Use exhaust protection.
VABD-D3-SN-G14 for G1/4 and 1/4NPT
VABD-D3-SN-N12 for G1/2 and 1/2NPT

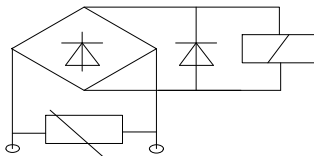
Pneumatic connection diagram



4.2 Electrical

1. Open terminal housing.
2. For mounted cable screw connection M 20 x 1.5, use only unsheathed cable with outer diameter 5...9 mm.
3. Connect electrical cables to terminals: any polarity.
4. Connect to the supply voltage using a two-core cable (max. copper cross-section: 1.5 mm²). The cable must be suitable for the corresponding ambient temperature. Any self-heating at the cable entry is negligible.
5. Use strain relief.
6. Close terminal housing (2 ... 3 Nm).

Electrical connection diagram



Note

The surface coating of the solenoid valves is electrically non-conductive.

- Ensure potential equalisation through the use of appropriate mounting measures.

5 Commissioning

- Observe the specifications on the product labelling.
- Do not commission the pilot valve until after mounting.

Warning

The discharge of electrostatically charged parts can lead to ignitable sparks.

- Prevent electrostatic discharge by taking appropriate installation and cleaning measures.
- Build the solenoid valve and solenoid coil into the system's equipotential bonding.
- Prevent charge-generating processes that are stronger than manual rubbing of surfaces.

Note

Escaping exhaust air can swirl up dust and create an explosive dust atmosphere.

Note

Particulate matter in the compressed air can cause electrostatic charges.

Note

Dimension the intrinsically safe circuit, taking account of the permissible electrical limit values → Technical data.

6 Operation

- Observe the operating conditions.
- Comply with permissible limit values → Technical data.
- Draw in operating medium outside potentially explosive areas.

7 Dismantle mechanically

1. Disconnect the compressed air supply.
2. Unfasten mounting screw.

8 Dismantle electrically

1. Switch off the power supply.
2. Open the cover of the terminal housing.
3. Disconnect electrical cables from terminals.
4. Close the cover of the terminal housing.
5. Disconnect cable fitting.
6. Remove the electrical connecting cable.

9 Maintenance and care

Note

Strong charge-generating processes can charge non-conductive layers and coatings on metal surfaces.

- Changes or repairs to the solenoid coil are not permitted.
- The device is maintenance-free.

10 Certifications

Region/country	Certificate no.
International	IECEX BVS 14.0063X
Europe	BVS 14 ATEX E098 X
Korea	KGS15-GA4BO-0565X
China	NEPSI GYJ17.1233X
Brazil	INMETRO DNV 17.0041 X

Fig. 2

11 Technical data

Operating conditions		
Power supply only from certified intrinsically safe circuits Ex ia or Ex ib.		
Electrical limit values		
Max. input voltage U _i	V	40
Max. input current I _i	mA	200
Max. power P _i	mW	650
Effective internal inductance L _i		Negligibly low
Effective internal capacity C _i		Negligibly low
Resistance R ₂₀	Ω	3360 ± 5 %
Nominal voltage U _N	V DC	6.4 ... 40
Nominal current I _N	mA	1.5 ... 9.2
Nominal power P _N	mW	9 ... 370
Duty cycle		100 % (continuous operation)
Degree of protection		IP50 in accordance with EN60529
Overvoltage category		III in accordance with EN 60664-1
Connecting cable		
Conductor cross-section		0.75 ... 1.5 mm ²
Cable diameter		5 ... 9 mm
Cable entry thread		M20 x 1.5
Temperature class at surface temperature T _a		
−40 ≤ T _a ≤ +30 °C		T6, T85 °C
−40 ≤ T _a ≤ +70 °C		T5, T125 °C
Storage temperature	°C	−30 ... +80
Relative humidity		95 % (non-condensing)
Pressure range	bar	2 ... 6
Media		– Dry filtered compressed air – Instrument air – Nitrogen or other neutral gases
Air consumption	Nm ³ /h	< 0.3
Assembly		Individual mounting
Mounting position		Any
Materials		
Housing		Polybutylene terephthalate with 30 % glass fibre
Solenoid coil		Polybutylene terephthalate with 30 % glass fibre
Winding		Cu
Seals		NBR, VMQ, EPDM

Fig. 3