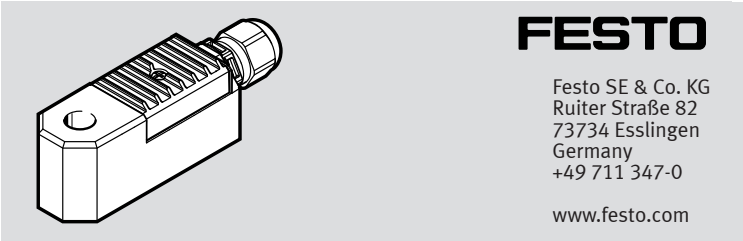


VACC-S13-11-K4-1-...A

Solenoid coil



Operating instruction

8196110
2023-05b
[8196112]



Translation of the original instructions

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1 Identification EX

Identification		Certificates
	Ex ia IIC T6/T5 Gb Ex ia IIIC T80°C/T95°C IP65 Db	IECEx BVS 15.0020 X
	II 2G II 2D Ex ia IIC T6/T5 Gb Ex ia IIIC T80°C/T95°C IP65 Db	BVS 15 ATEX E 030 X
	II 2D II 2G Ex ia IIC T6/T5 Gb Ex ia IIIC T80°C/T95°C IP65 Db	TÜV 21 UKEX 7016 X

Tab. 1: Identification EX

2 Applicable documents

NOTICE
Technical data for the product can have different values in other documents. For operation in an explosive atmosphere, the technical data in this document always have priority.

All available documents for the product → www.festo.com/sp.

3 Certified products

Operating voltage	Type
14 ... 32 V DC	VACC-S13-11-K4-1-...A

Tab. 2: Certified solenoid coils

4 Safety

4.1 General safety instructions

- The solenoid coils can be used in combination with the specified solenoid valves in zones 1 and 2 for explosive gas atmospheres and in zones 21 and 22 for explosive dust atmospheres.
- Do not commission the solenoid coil until after mounting.
- Fit a suitable valve with a suitable armature guide tube → www.festo.com/catalogue.
- Work on the product may only be carried out by qualified personnel who can evaluate the work and detect dangers.

4.2 Intended use

The solenoid coil is intended to be used to actuate valves from Festo.

4.3 Identification X: special conditions

- Protect the device from electrostatic discharge.

5 Function

When switching on the voltage, the solenoid is energised, and the valve is actuated. A built-in current pulse generator permits operation on low-power electric networks.

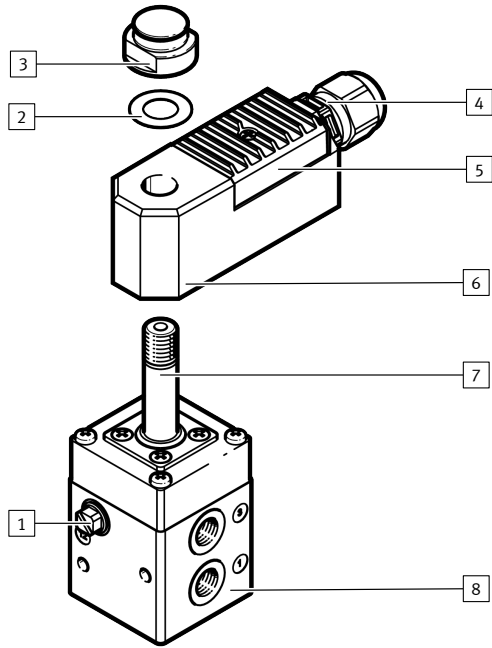


Fig. 1: Product design

- | | |
|---|---------------------------|
| 1 Port 12 (only with external pilot air supply) | 5 Cover, terminal housing |
| 2 Spring washer | 6 Solenoid coil |
| 3 Vent screw/retaining nut | 7 Armature guide tube |
| 4 Cable fitting with cap nut and reducer | 8 Solenoid valve |

6.1 Mechanical system

Prevent the cable fitting from unscrewing when loosening the cap nut. Note the tightening torque: cable fitting 2.3 Nm; cap nut 1.5 Nm

1. Push the solenoid coil and spring washer over the armature guide tube.
 - Sealing compound points to the solenoid valve.
2. Tighten vent screw. Twisting the solenoid coil is no longer possible (tightening torque 4 ... 6 Nm).
3. Open the cover of the clamping housing.
4. Connect electrical cables to the terminals. Note polarity (tightening torque 2 ... 3 Nm).
5. Close the cover of the clamping housing (tightening torque 0.6 ... 0.7 Nm).
6. With external pilot air supply use port 12.
7. Seal unused openings with blanking plugs or slot covers.

NOTICE

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

- Include the device in the system equipotential bonding.

6.2 Electrical

1. Use only a cable with outside diameter 7 ... 13 mm for the installed M20 x 1.5 cable fitting.
2. Note polarity.
3. To avoid ingress of water, tighten fitting and lock ring with an open-ended spanner until the sealing force is sufficient.
4. Use strain relief.

Electrical connection diagram

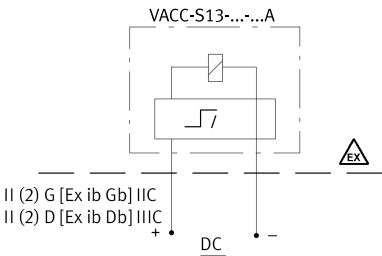


Fig.2

7 Commissioning

⚠ WARNING

Risk of injury from touching hot surfaces.

Contact with housing of the solenoid coil can cause burn injuries.

- Do not touch the housing.

⚠ WARNING

- The discharge of electrostatically charged parts can lead to ignitable sparks.
- Prevent electrostatic charging by taking appropriate installation and cleaning measures.
 - Include the device in the system’s potential equalisation. The surface coating of the solenoid valves is electrically non-conductive.
 - Prevent processes that are charge-generating.

NOTICE

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

NOTICE

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

NOTICE

- For sheathed cables, observe the following:
- Cut off the outer jacket of the cable and the sheathing at the same level.
 - Connect the sheathing at the other end to the potential equalisation.

8 Maintenance and care

⚠ WARNING

- Risk of injury due to defective solenoid coil.**
- Cracks in the housing and sealing compound impair the explosion prevention and protection.
- Check solenoid coil regularly.
 - Replace faulty solenoid coil.

⚠ WARNING

- Electrostatic discharge may generate combustible sparks.**
- The product may become electrostatically charged.
- If used in group IIC:
- Only clean the device with a damp cloth.

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

9 Disassembly

When loosening the cap nut, prevent the cable connector from working loose.

⚠ WARNING

- If the terminal housing cover is opened, explosive atmosphere may penetrate the terminal housing and be ignited due to electrically generate sparks.**
- Before opening the terminal housing cover inside the potentially explosive area:
- Switch off the power supply.

1. Switch off the power supply.
2. Release terminal housing cover.
3. Disconnect electrical cables from terminals.
4. Close terminal housing cover.
5. Loosen the retaining nut. Remove solenoid coil.

10 Technical data

Operating conditions		
Power supply only from certified intrinsically safe circuits Ex ia IIC or ib IIC.		
Electrical critical limits		
Max. input voltage U _i	[V]	≤ 32
Max. input current I _i	[mA]	≤ 200
Max. power P _i	[W]	≤ 1.2
Effective inner inductance L _i	[μH]	≈ 0
Effective inner capacitance C _i	[nF]	≈ 0
Resistance R ₂₀	[Ω]	911
Nominal voltage U _N	[V DC]	14 ... 32
Nominal current I _N	[mA]	16 ... 35
Nominal power P _N	[mW]	220 ... 1100
Protective circuit	integrated	
Connecting cables		
Conductor cross section	[mm²]	0.75 ... 1.5
Cable diameter without reducer	[mm]	7 ... 13
Cable diameter with reducer	[mm]	4 ... 8
Cable entry thread	M20 x 1.5	
Temperature class at ambient temperature T _a		
−30 ≤ T _a ≤+50 °C		T6, T80 °C
−30 ≤ T _a ≤+65 °C		T5, T95 °C
Storage temperature	[°C]	−30 ... +80
Duty cycle	100% (continuous operation)	
Degree of protection	IP65 in accordance with IEC 60529	
Overvoltage category	III in accordance with EN 60664-1	
Relative humidity	95% (non-condensing)	
Assembly	Individual mounting	
Mounting position	Any Sealing compound points to the valve body	
Materials		
Housing	Polyamide 6 (glass-fibre reinforced)	
Sealing compound	Polyurethane	

Tab. 3