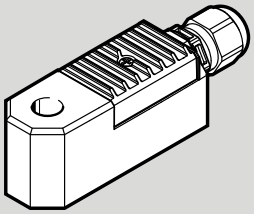
VACC-S13-11-K4-1-...A
Solenoid coil



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Instructions | Operating

8099232
2019-06
[8099234]

8099232

Translation of the original instructions

1 Identification EX

Identification mark		
Ex	II 2G	Ex ia IIC T6, T5 Gb
Ex	II 2D	Ex ia IIIC T80°C, T95°C IP65 Db

Tab. 1

2 Certified products

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

Tab. 2 Certified solenoid coils

3 Safety

3.1 General safety instructions

- The solenoid coils can be used in combination with the specified solenoid valves in zones 1 and 2 for potentially explosive gas atmospheres and in zones 21 and 22 for potentially explosive dust atmospheres.
- Operate the solenoid valve with compressed air only.
- The device is not intended for use with other fluids.
- Observe the specifications on the product labelling.
- Do not commission the solenoid coil until after assembly.
- Observe the operating conditions.
- Extraction of the operating medium outside the potentially explosive area.
- Installation and commissioning should only be carried out by qualified electrical specialists.

3.2 Intended use

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

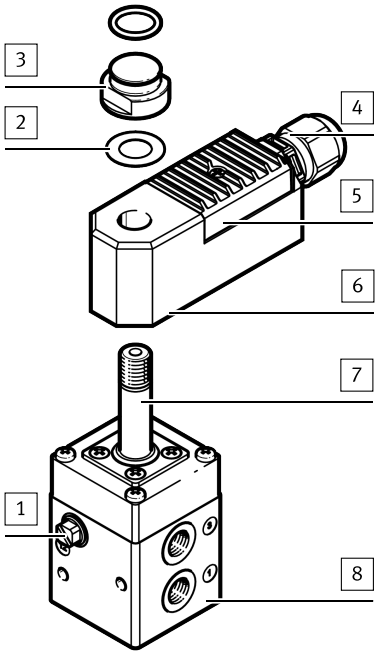
3.3 Identification X: special conditions

- 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 IIC or Ex ib IIC intrinsically safe circuit.
- Protect the device from electrostatic discharge.

4 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.

5 Assembly



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

Fig. 1

5.1 Mechanical

When loosening the cap nut, prevent the cable connector from working loose.
Take note of 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 cover of clip-on housing.
4. Connect electrical cables to the terminals. Observe polarity (tightening torque 2 ... 3 Nm).
5. Close the cover of the clip-on housing (tightening torque 0.6 ... 0.7 Nm).
6. With external pilot air supply, use connection 12.
7. Seal unused openings with blanking plugs or slot covers.

NOTICE!

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

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5.2 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. Use only fittings with cylindrical threaded lugs and sealing rings or cutting 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-AF-G14-N14-MF.
10. Use exhaust protection VABD-D3-SN-G14.

5.3 Electrical

1. Only use an unsheathed cable with an outside diameter of 7 ... 13 mm for the installed cable fitting M20 x 1.5.
2. Pay attention to polarity.
3. To avoid the ingress of water, tighten fitting and locking ring with an open-ended spanner until sufficient sealing force has been attained.
4. Use strain relief.

Electrical connection diagram

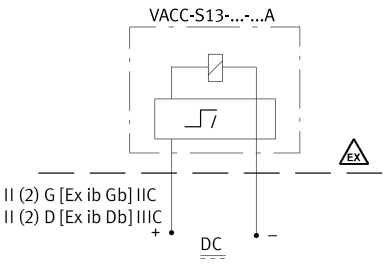

Fig. 2

6 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.

7 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.

NOTICE!

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

8 Disassembly

When loosening the cap nut, prevent the cable connector from working loose.
1. Switch off the power supply.
2. Open cover of clip-on housing.
3. Disconnect electrical cables from terminals.
4. Close cover of clip-on housing.
5. Loosen the retaining nut. Remove solenoid coil.

9 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

Operating conditions		
Protective circuit		Integrated
Connecting cable		
Conductor cross section	[mm²]	0.75 … 1.5
Cable diameter	[mm]	7 … 13
Cable entry thread		M20 x 1.5
Temperature class at ambient temperature T_a		
–30 ≤ Ta ≤+50 °C		T6, T80 °C
–30 ≤ Ta ≤+65 °C		T5, T95 °C
Storage temperature	[°C]	–30 … +80
Duty cycle		100 % (continuous operation)
Degree of protection		IP65 in accordance with EN 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		Polyamid 6 (glass-fibre reinforced)
Sealing compound		Polyurethane

Tab. 3