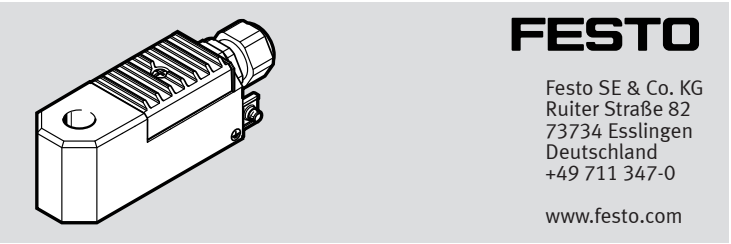


VACC-S13-18-K4-...-NM4ME
Solenoid coil



Operating instructions

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Translation of the original instructions
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1 Identification EX

Table with 3 columns: Identification mark, Certificate, and Certification logos (Segurança, DNV, INMETRO). It lists various identification marks and their corresponding certificates.

Tab. 1

2 Certified Products

Table with 2 columns: Voltage and Type. It lists various voltage ratings (24 V DC/AC, 110 V DC/AC, 230 V DC/AC, 60 V DC/AC) and their corresponding product types.

Tab. 2

3 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.

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 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.

4.2 Intended use

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

4.3 Identification X: special conditions

VACC-S13-18-K4-1UF-...ME

- Solenoid coil includes an internal protective device.
- Only use specified solenoid valves.
- The range of application is dependent on the ambient temperature.
- Observe the permitted mounting position of the solenoid coil -> 10 Technical data.
- Protect the device from electrostatic discharge.

VACC-S13-18-K4-...U-...ME

- Only operate solenoid coils with fuses connected in series -> 10 Technical data.
- The interruption rating of the fuses must be equal to or greater than 1500 A.
- Only use specified solenoid valves.
- The range of application is dependent on the ambient temperature.
- Observe the permitted mounting position of the solenoid coil -> 10 Technical data.
- 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 bridge rectifier limits the switch-off overvoltage.

6 Assembly

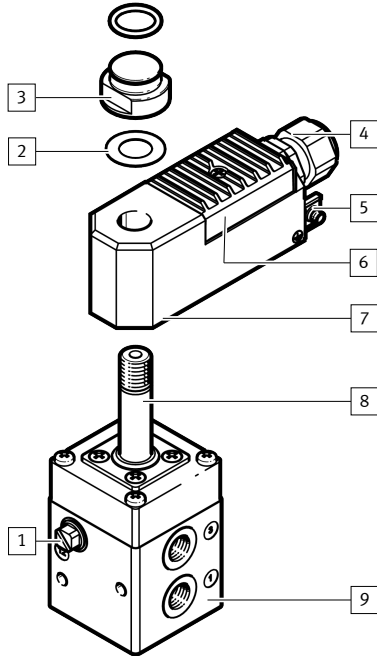


Fig.1

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

6.1 Mechanical

When loosening the cap nut, prevent the cable connector from working loose. Note 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. Release terminal housing cover.
4. Connect electrical cables to the terminals. Note polarity (tightening torque 2 ... 3 Nm).
5. Connect the solenoid coil to the equipotential bonding by the inner or outer protective earth connection.
6. Close terminal housing cover (tightening torque 0.6 ... 0.7 Nm).
7. With external pilot air supply, use connection 12.
8. 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 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 suitable filter adapter.
10. Use suitable exhaust protection.

6.3 Electrical

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

Electrical connection diagram

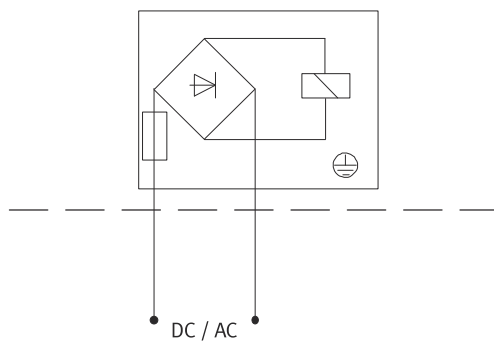


Fig. 2: VACC-S13-18-K4-1UF...ME

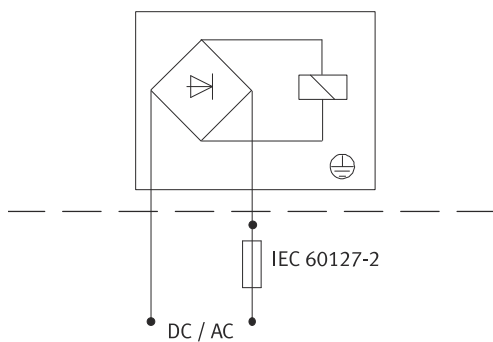


Fig. 3: VACC-S13-18-K4-...-ME

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

Electrostatic discharge may generate combustible sparks.

The product may become electrostatically charged. The surface coating of the solenoid valve is not electrically conductive.

- Prevent electrostatic charging of the product with appropriate installation and cleaning measures.
- Include the solenoid valve and solenoid coil in the system equipotential bonding.
- Prevent processes that could generate charges.
- Do not operate the device in areas subjected to accelerated particle flows.

NOTICE

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

With VACC-S13-18-K4-...U-...ME:

Operate solenoid coils only with upstream fuses.

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					
		VACC-1U	VACC-27U	VACC-2U	VACC-3U
Electrical critical limits					
Nominal voltage U _N	[V DC/AC]	24	60	110	230
Type of voltage	[Hz]	Alternating voltage (40 ... 65 ± 2%) DC or undulating voltage			
Nominal power	[W/VA]	1.8/1.8			
Duty cycle		100% (continuous operation)			
Degree of protection		IP65			
Overvoltage category		III in accordance with IEC 60664-1			
Limitation of switch-off overvoltage (internal)		Bridge rectifier			
Resistance R ₂₀	[Ω]	263	2060	6600	30000
Current consumption I ₂₀	[mA]	86	28	17	8
Fuse for variant 1UF		installed (in accordance with IEC 60127)	–		
Fuse connected in series in accordance with IEC 60127	[mA]	200	80	32	
Temperature class at ambient temperature T _a					
–30 °C ≤ T _a ≤ +50 °C		T6, T85 °C			
–30 °C ≤ T _a ≤ +60 °C		T5, T95 °C			
–30 °C ≤ T _a ≤ +60 °C		T4, T130 °C			
Storage temperature		–20 °C ≤ T _a ≤ +90 °C			
Relative humidity		95% (non-condensing)			
Connecting cable					
Conductor cross section [mm ²]		0.75 ... 1.5			
Cable-Ø [mm]		7 ... 13			
Cable entry thread K4		M20 x 1.5			
Assembly		Individual mounting or block mounting (grid 40 mm)			
Materials					
Housing		Polyamide (glass-fibre reinforced)			
Sealing compound		Polyurethane			
Mounting position with solenoid valve used					
VOFC 3/2-way valve		Any Sealing compound points to the valve body			
VOFC 5/2-way valve		Longitudinal side of the valve body Sealing compound points to the valve body			

Tab. 3