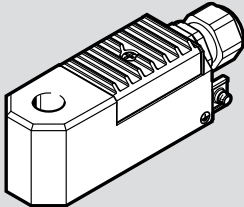


VACC-S13-18-K4-...-...ME

Solenoid coil



FESTO

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Operating instruction

8174645
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8174645

Translation of the original instructions

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1 Identification EX

Identification			Certificates
	Ex eb mb IIC T6/T5/T4 Gb Ex tb IIIC T85°C/T95°C/T130°C Db		IECEx BVS 15.0075X
	 II 2G II 2D	Ex eb mb IIC T6/T5/T4 Gb Ex tb IIIC T85°C/T95°C/T130°C Db	BVS 15 ATEX E 029 X
	 II 2D II 2G	Ex eb mb IIC T6/T5/T4 Gb Ex tb IIIC T85°C/T95°C/T130°C Db	TÜV 21 UKEX 7015 X

Tab. 1: Identification EX

2 Certified products

Voltage	Type
24 V DC/AC	VACC-S13-18-K4-1UF-...ME
24 V DC/AC	VACC-S13-18-K4-1U-...ME
110 V DC/AC	VACC-S13-18-K4-2U-...ME
230 V DC/AC	VACC-S13-18-K4-3U-...ME
60 V DC/AC	VACC-S13-18-K4-27U-...ME

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 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

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

- Solenoid coil includes an internal protective device.
- 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 breaking capacity of the fuse insert must be equal to or greater than 250 A.

- 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

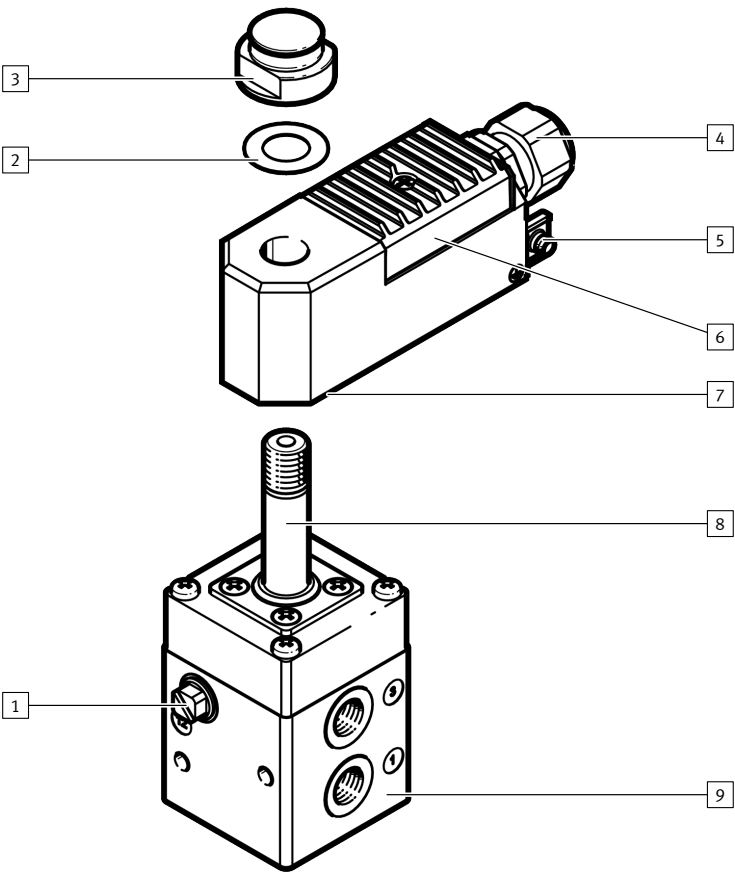


Fig.1

- | | |
|--|---|
|  Port 12 (only for external pilot air supply) |  Cover, terminal housing |
|  Spring washer |  Solenoid coil |
|  Vent screw/retaining nut |  Armature guide tube |
|  Cable connector (with cap nut) |  Solenoid valve |
|  Protective earth connection | |

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 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

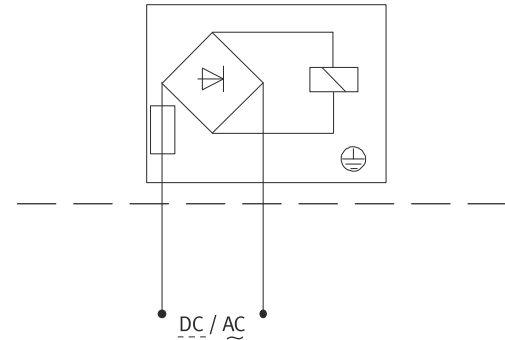


Fig. 2: VACC-S13-18-K4-1UF-...ME

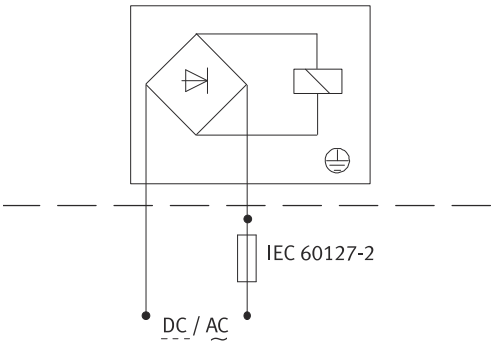


Fig. 3: VACC-S13-18-K4-...-...ME

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.

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

Operate solenoid coil only with fuses connected in series.

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	[mm²]	0.75 ... 1.5			
Cable-Ø	[mm]	7 ... 13			
Cable entry thread K4		M20x1.5			
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