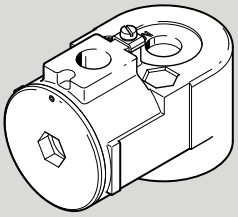
VACC-S18-...-...D
Solenoid coil



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Operating conditions I EX

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[8073475]

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Translation of the original instructions

1 Identification EX

Identification		
Ex	II 2G	Ex db IIC T* Gb
Ex	II 2D	Ex tb IIIC T* Db

Tab. 1

NOTICE!

Deviations in the identification EX are possible with national EX certifications.

2 Applicable documents

All available documents for the product ➔ www.festo.com/pk.

- Certification documents
- Assembly instructions VOFC/VOFD

3 Certified products

Type	Type
VACC-S18-25-K5-1U-...D	VACC-S18-70-K4-1U-...D
VACC-S18-25-K5-2U-...D	VACC-S18-70-K4-3U-...D
VACC-S18-25-K5-3U-...D	VACC-S18-70-K4-7U-...D
VACC-S18-25-K4-1U-...D	VACC-S18-70-K4-16U-...D
VACC-S18-25-K4-2U-...D	VACC-S18-70-K5-1U-...D
VACC-S18-25-K4-3U-...D	VACC-S18-70-K5-2U-...D
VACC-S18-18-K4-3A-...D	VACC-S18-70-K5-3U-...D
VACC-S18-18-K5-3A-...D	VACC-S18-70-K5-7U-...D

Tab. 2 Certified products

4 Safety

4.1 Safety instructions

- The solenoid coils can be used in combination with the specified solenoid valves from Festo in zones 1 and 2 for potentially explosive gas atmospheres and in zones 21 and 22 for potentially explosive dust atmospheres.
- Comply with all applicable national and international regulations.
- Installation and commissioning should only be carried out by qualified electrical specialists.
- 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 The certification is no longer valid if the device is altered in any way by anyone other than the manufacturer.

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When using solenoid valves from Festo:

- Operate the solenoid valve only with compressed air or neutral gases.
- The device is not intended for use with other fluids.
- Always draw in the operating medium outside the potentially explosive area.
- Use only solenoid valves approved for potentially explosive areas.

4.2 Intended use

- The solenoid coil is intended to be used as an actuator for solenoid valves.
- The suitability of other solenoid valves can only be determined in connection with the assessment of further components of the subsystem. These must achieve the same safety level.

4.3 Identification X: special conditions

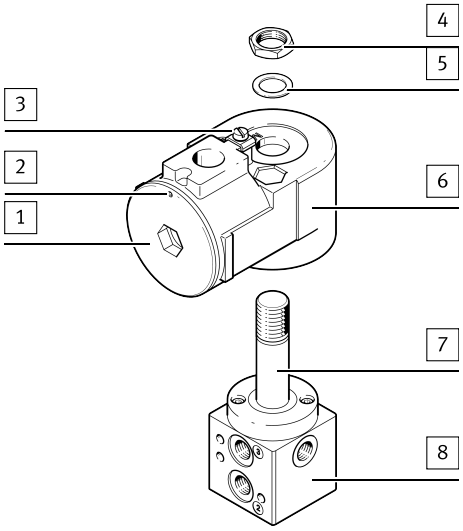
- Only use specified solenoid valves.
- The range of application is dependent on the ambient temperature.
- Connect the solenoid coils only through cable and line entries and/or pipeline systems tested and certified according to EN 60079-1 and EN 60079-31.
- Use cables with increased heat resistance: at ambient temperatures ≥ 50 °C, the temperature at the cable entry increases by 20 K.
- Only operate the solenoid coils with upstream fuses ➔ 12 Technical data and product labelling.

5 Function

When switching on the voltage, the solenoid is energised, and the valve is actuated. A built-in bridge rectifier, a built-in varistor, or a built-in diode limits the switch-off overvoltage.

6 Assembly

- When using valves from Festo: only use solenoid valves VOFD.
- For VACC-S18-70-...-...D: only use valves VOFD-L35T-..., VOFD-L40T-..., VOFD-L100T-... und VOFD-L30T-....



1	Cover of the terminal housing	5	Ribbed disc
2	Threaded pin	6	Solenoid coil
3	Protective earth connection	7	Armature guide tube
4	Retaining nut	8	Solenoid valve

Fig. 1

1. Slide the solenoid coil and ribbed disc over the armature guide tube.
2. Tighten the retaining nut until expected shock will no longer be able to turn the solenoid coil (tightening torque 15 ... 20 Nm).
3. Loosen the threaded pin (hex wrench 2 mm).
4. Open the cover of the terminal housing (hex wrench 17 mm).
5. Connect the electrical cable to the terminals (tightening torque 2 ... 3 Nm).
6. Connect the solenoid coil to the local equipotential bonding via the inner or outer protective earth connection (tightening torque 2 ... 3 Nm).
7. Tighten the cover of the terminal housing to the limit stop (hex wrench 17 mm).
8. Rotate the cover of the terminal housing back until the threaded pin is placed over the closest stop bore.
9. Tighten the threaded pin (hex wrench 2 mm).

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When using solenoid valves from Festo:
The surface coating of the solenoid valves is electrically non-conductive.

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

7 Installation

7.1 Pneumatic installation

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. Do not use anti-friction coating or lubricant.
7. The dew point of the compressed air must lie below the specified lowest operating temperature of the system.

7.2 Electrical installation

1. Any polarity is acceptable.

2. To avoid the ingress of water, tighten fitting and locking ring with an open-ended spanner until sufficient sealing force has been attained.
3. Use strain relief.

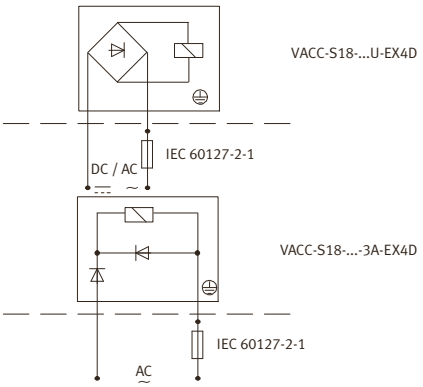

Fig. 2 Electrical connection diagram

8 Commissioning

– Observe the specifications on the product labelling.
– Operate the solenoid coil only with an upstream fuse.
– Do not commission the solenoid coil until after assembly.

⚠ 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. Note that the surface coating of the solenoid valves is electrically non-conductive.
- Prevent processes that are strongly charge-generating.

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

9 Operation

– Observe the operating conditions.
– Comply with permissible critical limits ➔ 12 Technical data.

⚠ WARNING!

Risk of injury from hot surfaces.
The surfaces on the housing of the solenoid coil can be over 80 °C.
- Do not touch the housing.

10 Maintenance and care

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

11 Dismantle electrically

⚠ WARNING!

Electrically generated sparks can ignite a potentially explosive atmosphere.
Before opening the terminal housing in the potentially explosive area:
- Switch off the power supply.

1. Switch off voltage
2. Loosen the threaded pin (hex wrench 2 mm).
3. Open the cover of the terminal housing (hex wrench 17 mm).
4. Disconnect electrical cables from terminals.
5. Close the cover of the terminal housing and tighten the threaded pin.
6. Loosen the retaining nut and remove the solenoid coil.

12 Technical data

Operating conditions		VACC--25-1U	VACC--25-2U	VACC--25-3U	VACC--70-7U	VACC--70-16U
Electrical critical limits						
Nominal voltage U_N (–15 % / +10 %)	[V DC/AC]	24	110	230	48	120
Type of voltage	[Hz ± 2 %]	Alternating voltage (40...65) DC or undulating voltage				
Power	[W]	2.5			7	7
Duty cycle		100 % (continuous operation)				
Degree of protection		IP65/67 in accordance with FN 942017-2				
Overvoltage category		III in accordance with EN 60664-1				
Fuse connected in series in accordance with IEC 60127	[mA]	250	63	32	400	160
Limitation of switch-off overvoltage (internal)		Bridge rectifier				
Resistance R_{20}	[Ω]	227	4490	20900	296	2090
Temperature class at ambient temperature T_a						
$-50 \le T_a \le +40$ °C		T6, T80 °C				
$-50 \le T_a \le +55$ °C		T5, T95 °C				
$-50 \le T_a \le +90$ °C		T4, T130 °C				
Storage temperature		–20 ... +130 °C				
Relative humidity		95 % (non-condensing)				
Connecting cable						
Conductor cross section	[mm²]	0.75 ... 1.5				
Cable diameter	[mm]	6 ... 12				
Cable entry thread K4		M20 x 1.5				
Cable entry thread K5		½ NPT				
Assembly		Individual mounting				
Mounting position		Any				
Materials						
Housing		Grey cast iron, polyester resin, wrought aluminium alloy				
Base		Galvanised steel				
Cover, terminal housing		Aluminium				

Tab. 3

Operating conditions		VACC-70--1U	VACC-70--2U	VACC-70--3U	VACC-18--3A
Electrical critical limits					
Nominal voltage U_N (–15 % / +10 %)	[V DC/AC]	24	110	230	230 V AC
Type of voltage	[Hz ± 2 %]	Alternating voltage (40...65) DC or undulating voltage			Alternating (50...60)
Power	[W]	7			1.8 VA
Duty cycle		100 % (continuous operation)			
Degree of protection		IP65/67 in accordance with FN 942017-2			
Overvoltage category		III in accordance with EN 60664-1			
Fuse connected in series in accordance with IEC 60127	[mA]	800	160	80	32
Limitation of switch-off overvoltage (internal)		Bridge rectifier			Diode
Resistance R_{20}	Ω]	76.8	1720	6580	6030
Temperature class at ambient temperature T_a					
$-50 \le T_a \le +40$ °C		T6, T80 °C			
$-50 \le T_a \le +55$ °C		T5, T95 °C			
$-50 \le T_a \le +90$ °C		T4, T130 °C			
Storage temperature		–20 ... +130 °C			
Relative humidity		95 % (non-condensing)			
Connecting cable					
Conductor cross section	[mm²]	0.75 ... 1.5			
Cable diameter	[mm]	6 ... 12			
Cable entry thread K4		M20 x 1.5			
Cable entry thread K5		½ NPT			
Assembly		Individual mounting			
Mounting position		Any			
Materials					
Housing		Grey cast iron, polyester resin, wrought aluminium alloy			
Base		Galvanised steel			
Cover, terminal housing		Aluminium			

Tab. 3