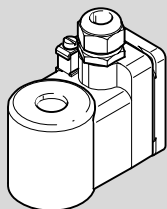


Solenoid coil

VACC-S18-...-K4-...-EX4ME



II 2G Ex emb II T6, T5, T4
II 2D Ex tD A21 IP65 T80 °C, T95 °C, T130 °C



FESTO

Festo AG & Co. KG
Ruiter Straße 82
73734 Esslingen
Germany
+49 711 347-0
www.festo.com

Operating instructions
(Original instructions)

8073493
2017-10d
[8073495]



Solenoid coil VACC-S18-...-K4-...-EX4ME English

1 Further applicable documents

- Certification documents
- VOFC/VOFD assembly instructions



For all available product documentation → www.festo.com/pk

2 Certified solenoid coils

Voltage	Type	Part no.
24 V DC/AC	VACC-S18-35-K4-1U-EX4ME	562897
110 V DC/AC	VACC-S18-35-K4-2U-EX4ME	562898
230 V DC/AC	VACC-S18-35-K4-3U-EX4ME	562899
24 V DC/AC	VACC-S18-120-K4-1U-EX4ME	3536527
110 V DC/AC	VACC-S18-120-K4-2U-EX4ME	3536565
230 V DC/AC	VACC-S18-120-K4-3U-EX4ME	3535568
60 DC	VACC-S18-120-K4-27-EX4ME	3536569
48 DC	VACC-S18-120-K4-7-EX4ME	3536573
24 V DC/AC	VACC-S18-35-K4-1UF-EX4ME	570785
24 V DC/AC	VACC-S18-120-K4-1UF-EX4ME	3535840

Fig. 1

3 Function

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

4 Application

- The solenoid coil is intended to be used as an actuator for solenoid valves.
- 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.
- 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.



Note

Label X: special conditions

- Operate the solenoid coils (except variants -1UF-) only with upstream fuses.
 - Technical data and product label
- Protect connecting cables that contain silicone or are not crack-resistant against mechanical damage.
- Protect the device from all mechanical damage.
- For solenoid coils in direct current design -7- and -27-, the maximum permissible ripple is 20 %.



Note

When using Festo solenoid valves:

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

5 Requirements for product use

- 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.

6 Commissioning

- Observe the product labelling.
- Operate solenoid coils only with upstream fuses (except variants -1UF-).
- Do not commission the solenoid coil until after mounting.



Warning

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

- Prevent electrostatic discharge by taking appropriate installation and cleaning measures.
- Include the device in the system's potential equalisation. The surface coating of the Festo solenoid valves (VOFD-...) is electrically non-conductive.
- Prevent charge-generating processes that are stronger than manual rubbing of surfaces.
- Do not mount the housing of the solenoid coils in an area of pneumatically conveyed dusts (e.g. powder jet).

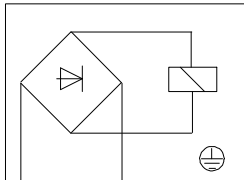


Note

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

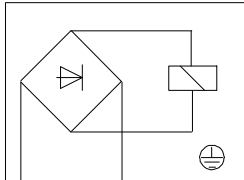
Block circuit diagrams

VACC-S18-...K4-1UF-EX4ME



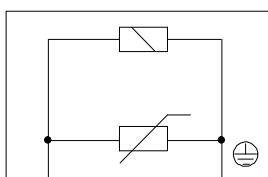
DC / AC

VACC-S18-...U-EX4ME



DC / AC

VACC-S18-...7-EX4ME



DC

IEC 60127-2-1

7 Operation

- Observe the operating conditions.
- Comply with permissible limit values → Technical data.



Note

Risk of injury from hot surfaces.

The surfaces on the housing of the solenoid coil can get hot.

- Do not touch the housing.

8 Maintenance and care



Note

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.

9 Certifications

Region/country	Certificate no.
Europe	PTB 08 ATEX 2033 X
Brazil	TÜV12.1946 X
China	NEPSI GYJ 17.1237X
Korea	KGS16-GA4BO-0755X KGS16-GA4BO-0756X

10 Technical data

		35-1U	35-2U	35-3U	35-1UF	120-1UF
Nominal voltage U_N (-15 % / +10 %)	V DC/ AC	24	110	230	24	24
Type of voltage	Hz	Alternating voltage (50 ... 60) DC / undulating voltage				
Nominal power	W/VA	3.5				12
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 upstream in accordance with IEC 60127	mA	250	63	32	–	–
Interruption rating Fuse	A	Normally \geq 1500			35	
Limitation of switch-off overvoltage (internal)		Bridge rectifier				
Resistance R_{20}	Ω	158	3250	13200	158	42.1
Current consumption I_{20}	mA	143	33	17	143	524
Temperature class at ambient temperature T_a		–				
–20 \leq $T_a \leq$ +40 °C		–	–	–	–	T4/T130°C
–20 \leq $T_a \leq$ +50 °C		T6/T80°C	T6/T80°C	T6/T80°C	T6/T80°C	–
–20 \leq $T_a \leq$ +60 °C		T5/T95°C	T5/T95°C	T5/T95°C	T5/T95°C	–
Storage temperature	°C	–20 ... +90				
Relative humidity		95 % (non-condensing)				
Connecting cables						
Conductor cross-section	mm ²	0.75 ... 2.5				
Cable diameter	mm	6 ... 12				
Cable entry thread K4		M20 x 1.5				
External earth terminal	mm ²	4				
Materials						
Housing		Steel				
Cover		Steel, PA				
Terminal housing						
Assembly		Individual mounting				
Installation position		Optional				

		120-1U	120-2U	120-3U	120-27	120-7
Nominal voltage U_N (-15 % / +10 %)		24 V DC/AC	110 V DC/AC	230 V DC/AC	60 DC	48 DC
Type of voltage	Hz	Alternating voltage (50 ... 60) DC / undulating voltage			Direct voltage	
Max. permitted ripple	%	–			20	
Nominal power	W/VA	12				
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 upstream in accordance with IEC 60127	mA	1250	315	125	500	630
Interruption rating Fuse	A	Normally \geq 1500				
Limitation of switch-off over- voltage (internal)		Bridge rectifier			Varistor	
Resistance R_{20}	Ω	42.1	902	3690	266	173
Current consumption I_{20}	mA	524	120	62	226	277
Temperature class at ambient temperature T_a		–				
–20 \leq $T_a \leq$ +40 °C		T4/ T130°C	T4/ T130°C	T4/ T130°C	T4/ T130°C	T4/ T130°C
Storage temperature	°C	–20 ... +90				
Relative humidity		95 % (non-condensing)				
Connecting cables						
Conductor cross-section	mm ²	0.75 ... 2.5				
Cable diameter	mm	6 ... 12				
Cable entry thread K4		M20 x 1.5				
External earth terminal	mm ²	4				
Materials						
Housing		Steel				
Cover, terminal housing		Steel, PA				
Assembly		Individual mounting				
Installation position		Optional				

Fig. 2