FESTO



Key features

At a glance

The sub-base VABP can be used to help implement specific switch-off behaviour when switching off the valve load voltage. It is a single-channel solution for uncoupling the drive from the

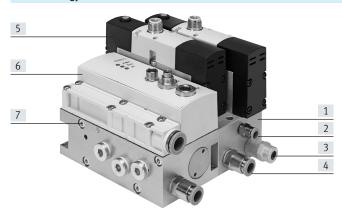
working valve. 4 switch-off functions are possible.

The sub-base is not a safety device, nor is it a complete safety solution. However, it can form part of a safety solution.

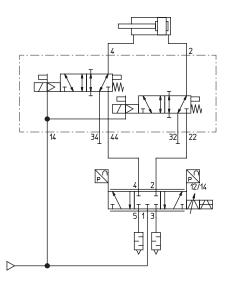
Key features:

- Compact design
- Simple installation
- Suitable for servo-pneumatic drives
- Can be attached directly to the proportional directional control valve VPWP
- Connecting cable for direct connection to the proportional directional control
- Suitable for cylinders that are controlled by 5/2- or 5/3-way valves
- For ISO valves with spring return and external auxiliary pilot air
- · Extended range of accessories:
- ISO solenoid valves with switching position sensing for producing a diagnostic rate > 60%

The technology in detail



- [1] Sub-base VABP (example with valves mounted)
- Pilot port
- Function port B [3]
- Function port A
- Solenoid valve VSVA, MN1H
- Proportional directional control valve VPWP
- [7] Retaining screws



The 4 different single-channel switch-off functions can be configured using function ports 32 (A) and 34 (B):

- Stopping a movement: blocking
- De-energising: exhausting
- Reversing with reduced speed
- Switching off power: short-circuit

Note

An application document "Demonstrating VABP protective measures" is available from the Support Portal.

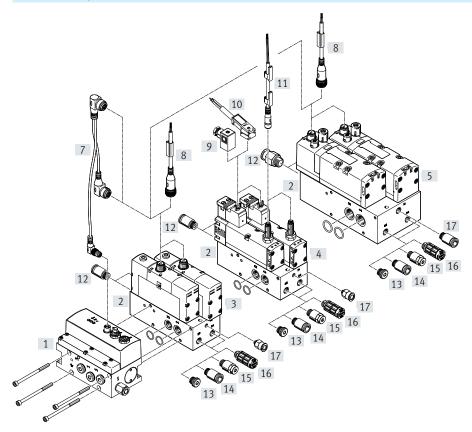
Type codes

001	Series
VABP	Sub-base
002	Allocation
S1	Version S1
S3	Version S3
003	Size
26	Size 26
1	Size 1
2	Size 2
004	Version
V1	Switching variant, emergency stop functions
005	Connection type
G	Supply air/exhaust air/pilot supply air/pilot exhaust air

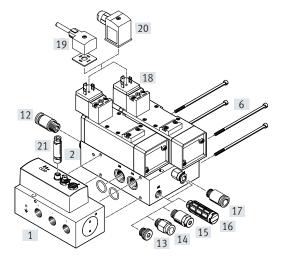
006	Pneumatic connection	
G18	G1/8	
G14	G1/4	
G38	G3/8	
007	Valve positions	
2	2 valve positions	
008	Equipment	
	Without valves	
М	With valves	
009	Electrical connection	
	None	
A1	Plug pattern type A, to EN 175301-803	
R3	M12 individual plug (5-pin)	

Peripherals overview

VABP-S3-26V1G / VABP-S1-1V1G



VABP-S1-2V1G



Peripherals overview

Acce	ssories						
		See all	See allocation table below		1	Description	→ Page/Internet
		[3]	[4]	[5]	[6]		net
[1]	Proportional directional control valve VPWP	-	•	•	-	5/3-way proportional directional control valve for applications with Soft Stop and for pneumatic positioning	vpwp
[2]	Sub-base VABP	•	•	•	•	For realising specific switch-off functions	6
[7]	Connecting cable NEDV	•	-	•	-	Connecting solenoid valve to proportional directional control valve VPWP	15
[8]	Connecting cable NEBA-M12	-	-	•	-	Connecting solenoid valve to controller. Alternative to [7]	15
[9]	Plug socket MSSD-EB	-	•	-	-	Connecting solenoid valve to controller.Alternative to [10]	15
[10]	Plug socket with cable KMEB	-	•	-	-	Connecting solenoid valve to controller.	15
[11]	Connecting cable NEBA-M8	-	•	-	-	Connecting switching position sensing system to controller	15
[12]	Push-in fitting QS	•	•	•	•	For working ports 2 and 4	15
[13]	Blanking plug B	•	•	•	•	 For function ports 32 and 34 For implementing a switch-off function 	14
[14]	Push-in fitting QS	•	•	•	•	For function ports 32 and 34 For implementing a switch-off function	15
[15]	Exhaust air flow control valve GRE	•	•	•	•	For function ports 32 and 34 For implementing a switch-off function	14
[16]	Silencer UC	-	•	-	•	 For function ports 32 and 34 For implementing a switch-off function 	14
[17]	Push-in fitting QS	•	•	•	•	For pilot air port 14	15
[18]	Solenoid coil MSN1G	-	-	-	•	For actuating the solenoid valve	14
[19]	Connecting cable KMC	-	-	-	•	Connecting solenoid valve to controller	15
[20]	Plug socket MSSD-C	-	-	-	•	Connecting solenoid valve to controller.Alternative to [19]	15
[21]	Plug NECU	-	-	-	•	For connecting the solenoid valves to the proportional directional control valve VPWP	15

Allo	Allocation table						
	Sub-base	Solenoid valve (→ page 14)	Proportional directional control valve				
[3]	VABP-S3-26V1G	VSVA-B-M52-MZH-A1-1R5L	VPWP-4/-6				
[4]	VABP-S3-26V1G	VSVA-B-M52-MZ-A1-1C1-APP ¹⁾	VPWP-4/-6				
[5]	VABP-S1-1V1G	VSVA-B-M52-MZD-D1-1R5L	VPWP-8				
[6]	VABP-S1-1V1G	MN1H-5/2-D-2-FR-S-C	VPWP-10				

¹⁾ Solenoid valve with switching position sensing

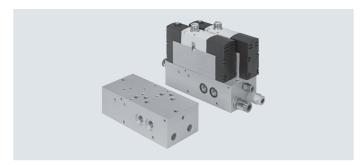
Sub-bases VABP

Datasheet

- N - Flow rate 800 ... 2000 l/min



Pressure 0 ... 16 bar



General technical data					
Туре		VABP-S3-26V1G		VABP-S1-1V1G	VABP-S1-2V1G
For proportional directional control valve		VPWP-4/-6		VPWP-8	VPWP-10
Width	[mm]	26		42	54
Pneumatic connection					
Working ports: 2, 4, 22, 44		G1/8		G1/4	G3/8
Pilot air supply: 14		M5		G1/8	G1/8
Function ports: 32, 34		G1/8		G1/8	G1/4
Standard nominal flow rate	[l/min]	800		1400	2000
Mounting position					
Product weight					
Without valves	[g]	668		1623	1950
With valves	[g]	1200		2480	3400
With solenoid valve		[1]	[2]	[3]	[4]
Valve function		5/2			
Reset method		Mechanical spring			
Type of control		Piloted			
Pilot air supply		External			
Flow direction		Reversible			
Switching position sensing		_	Yes	-	
Switching element function		-	N/C	-	
Switching output		-	PNP	-	
Nominal width		9		11	11
Actuation type	·	Electrical			
Manual override		Without or covered			
Nominal operating voltage	[V]	24			
Permissible voltage fluctuations	[%]	±10		±10	-15/±10

Operating and environmental conditions							
Туре		VABP-S3-26V1G	VABP-S1-1V1G	VABP-S1-2V1G			
Operating medium1)		Compressed air to ISO 8573	-1:2010 [6:4:4]				
Operating pressure ¹⁾	[bar]	0 16					
Pilot pressure with valves	[bar]	38					
Ambient temperature	[°C]	0 50					
Temperature of medium	[°C]	0 50					

¹⁾ Note operating range of connected components.

Materials			
Туре	VABP-S3-26V1G	VABP-S1-1V1G	VABP-S1-2V1G
Manifold rail	Wrought aluminium alloy		
O-ring	NBR		
Screws	Steel		
Note on materials	RoHs-compliant		

Configuring the switch-off functions

The sub-base is not a safety device, nor is it a complete safety solution. However,

it can form part of a safety solution.

Suitable accessories must be mounted at the function ports [32] and [34] in order to configure the different switch-off functions.

Sub-base	Silencer	Blanking plug	Exhaust air flow control valve	Push-in fitting
VABP-S3-26V1G	U-1/8	B-1/8	GRE-1/8	QS-G1/8-4, 6 or 8
VABP-S1-1V1G	U-1/8	B-1/8	GRE-1/8	QS-G1/8-4, 6 or 8
VABP-S1-2V1G	U-1/4	B-1/4	GRE-1/4	QS-G1/8-6, 8 or 10

Switch-off variants

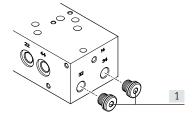
Circuit 1: Stopping a movement - blocking

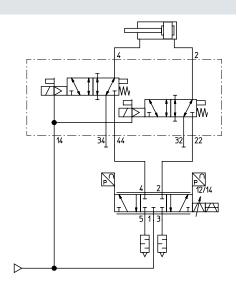
When the valves are switched off, the movement of the drive will be stopped.

Note:

- Following actuation of the switch-off function, the drive will be under pressure
- In the case of a vertical mounting position, it is possible that the payload will slowly drop







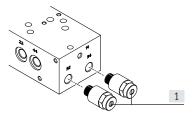
Switch-off variants

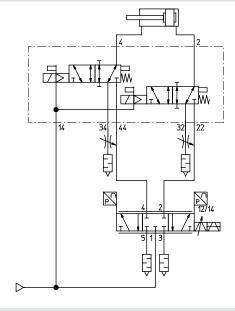
Circuit 2: De-energising - exhausting

When the valves are switched off, the drive will be exhausted.

Note:

- Not suitable for a vertical mounting position without additional safety functions
- If the exhaust air flow control valves are closed, the drive will not be exhausted
- Exhausting is also possible via the silencer
- [1] Exhaust air flow control valve or silencer



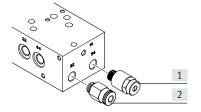


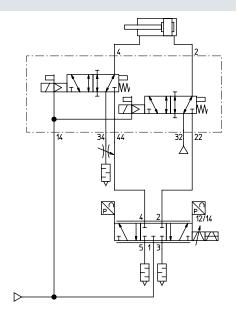
Circuit 3: Reversing (advancing) and reducing speed

When the solenoid valves are switched off, the movement of a retracting drive is reversed with simultaneous reduction of speed. The drive travels into the end position.

Note:

- The holding function is time-limited
- To generate the reversing movement even in the event of compressed air failure, an air reservoir with non-return function can be inserted at port [32] for compressed air supply.
- [1] Exhaust air flow control valve
- [2] Push-in fitting





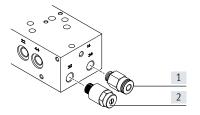
Switch-off variants

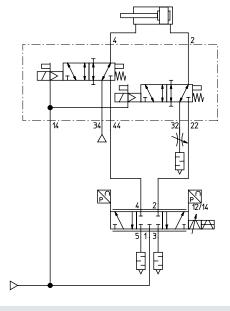
Circuit 4: Reversing (retracting) and reducing speed

When the solenoid valves are switched off, the movement of an extending drive is reversed with simultaneous reduction of speed. The drive travels into the end position.

Note:

- The holding function is time-limited
- To generate the reversing movement even in the event of compressed air failure, an air reservoir with non-return function can be inserted at port [34] for compressed air supply.
- [1] Push-in fitting
- [2] Exhaust air flow control valve



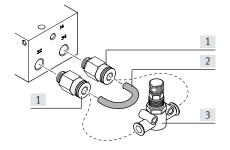


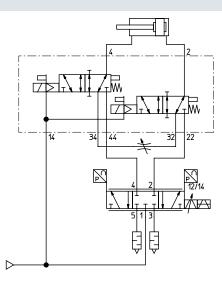
Circuit 5: Switching off power – short-circuit

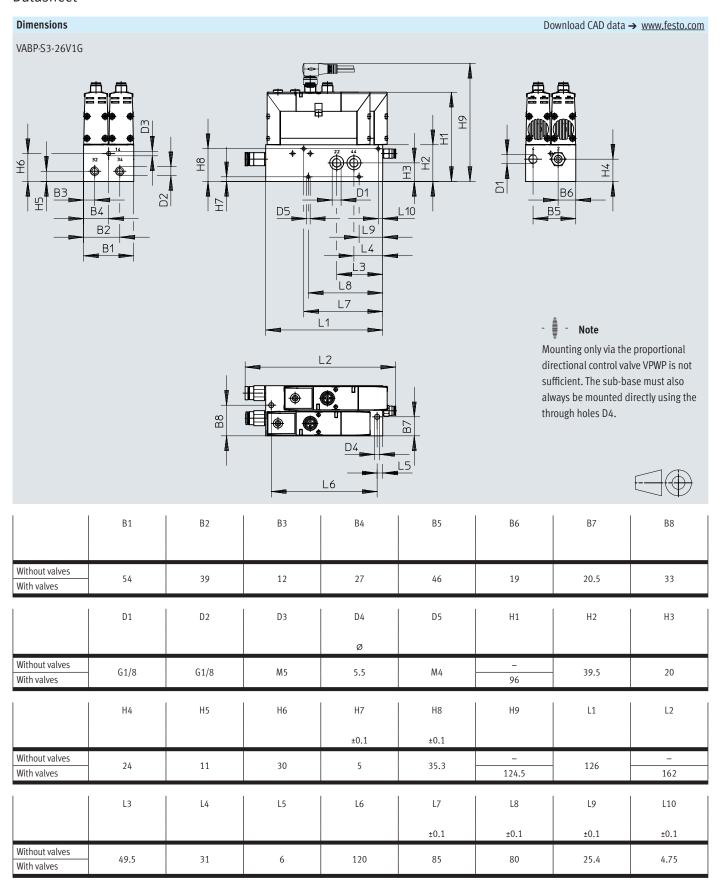
When the valves are switched off, the two chambers are interconnected. The drive comes to a stop.

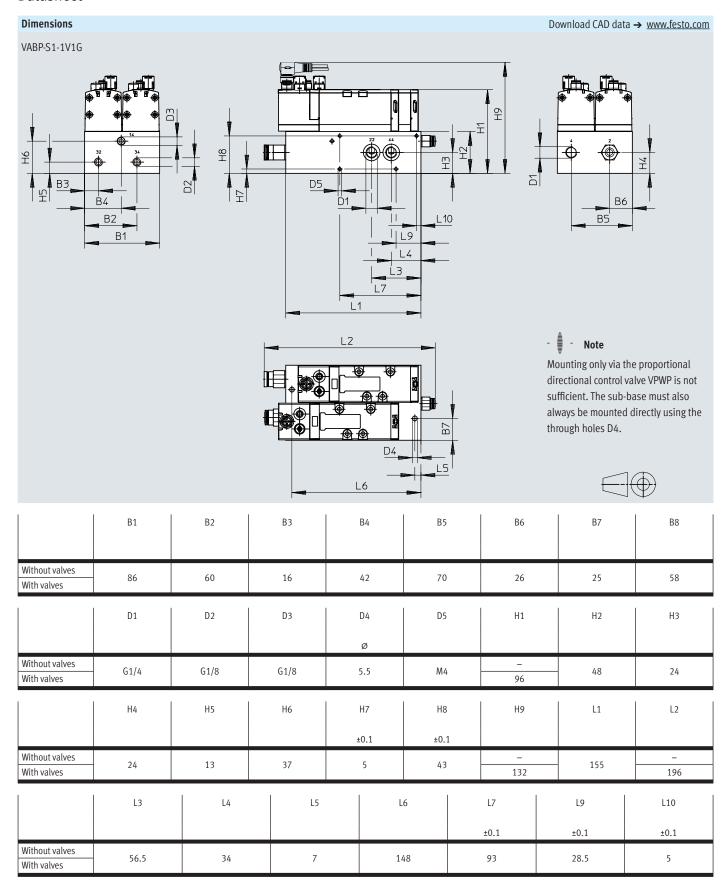
Note:

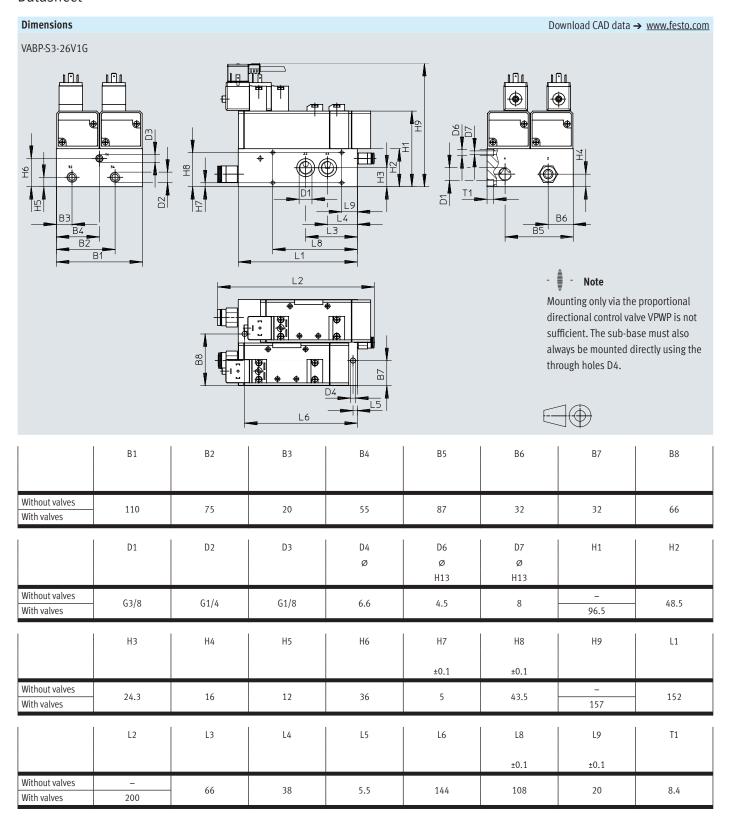
- Following actuation of the switch-off function, the drive will be under pressure
- Not suitable for a vertical mounting position without additional safety functions
- To restrict the run-out movement, it is recommended that a thin tube (4 or 6 mm) is used for connecting the ports [32] and [34] or a throttle valve (e.g. GRO...) is used.
- [1] Push-in fitting
- [2] Tubing
- [3] Throttle valve











Ordering data			
	Standard nominal flow rate	Part no.	Туре
Without valves			
<i>(</i> -	800	2605074	VABP-S3-26V1G-G18-2
	1400	2614860	VABP-S1-1V1G-G14-2
1,000	2000	2738671	VABP-S1-2V1G-G38-2
With valves	1	0.0000	LAND CO COMO CAO CAO CAO CAO CAO CAO CAO CAO CAO CA
49 91	800	2605075	VABP-S3-26V1G-G18-2M-R3
	1400	2614863	VABP-S1-1V1G-G14-2M-R3
	2000	2738672	VABP-S1-2V1G-G38-2M-A1



Note

The solenoid valve VSVA with switching position sensing must be ordered separately a page 14

Accessories

Ordering data				
	Description	Part no.	Туре	PU ¹⁾
Solenoid valve				
	For sub-base: • VABP-S3-26V1G-G18-2	534546	VSVA-B-M52-MZH-A1-1R5L	1
	For sub-base: • VABP-S3-26V1G-G18-2 • With switching position sensing via inductive proximity switch	560726	VSVA-B-M52-MZ-A1-1C1-APP	1
	For sub-base: • VABP-S1-1V1G-G14-2	561373	VSVA-B-M52-MZD-D1-1R5L	1
	For sub-base: • VABP-S1-2V1G-G38-2	159718	MN1H-5/2-D-2-FR-S-C	1
Solenoid coil	For solenoid valve:	123060	MSN1G-24DC-OD	1
	• MN1H-5/2-D-2-FR-S-C			
Blanking plug	For implementing a switch-off function	3568	B-1/8	10
		3569	B-1/4	
Silencer				
	For implementing a switch-off function	161419 165004	UC-1/8 UC-1/4	1
Exhaust air flow control valve				
	For implementing a switch-off function	10351 10352	GRE-1/8 GRE-1/4	1
Throttle valve	' 	I		
Timotte valve	For implementing a switch-off function	193973	GRO-QS-6	1

¹⁾ Packaging unit

Accessories

Ordering data				
	Description	Part no.	Туре	PU ¹⁾
Push-in fitting (use push-in fitting with	sealing ring only)			
	For pilot air port 14			
	VABP-S3-26V1G	130896	QSM-B-M5-6-20	20
	VABP-S1-1V1G	186096	QS-G1/8-6	10
	VABP-S1-2V1G	186098	QS-G1/8-8	
	For function ports 32, 34			
	VABP-S3-26V1G	186096	QS-G1/8-6	10
	VABP-S1-1V1G	186098	QS-G1/8-8	
	VABP-S1-2V1G	186099	QS-G1/4-8	
	For working ports 2, 4, 22, 44			
	VABP-S3-26V1G	186098	QS-G1/8-8	10
	VABP-S1-1V1G	186101	QS-G1/4-10	
	VABP-S1-2V1G	186103	QS-G3/8-12	
Connecting cable and plug socket with				
	Connecting solenoid valve to proportional directional control	2384165	NEDV-L2R1-V7-M12W3-K-0.1L1-N-M8W4-0.2R1	1
	valve VPWP. For the solenoid valves:			
	VSVA-B-M52-MZH-A1-1R5L			
8	• VSVA-B-M52-MZD-D1-1R5L			
	Connecting solenoid valve to controller.	8078236	NEBA-M12G5-U-2.5-N-LE3	1
	For the solenoid valves:	8078237	NEBA-M12G5-U-5-N-LE3	
	• VSVA-B-M52-MZH-A1-1R5L			
	VSVA-B-M52-MZD-D1-1R5L			
	Connecting solenoid valve to controller.	151688	KMEB-1-24-2.5-LED	1
	For solenoid valve with switching position sensing:	151689	KMEB-1-24-5-LED	
	• VSVA-B-M52-MZ-A1-1C1-APP	191009	1	
		20004	WIG 4 04 DC 0 7 15D	
(6)	Connecting solenoid valve to controller. For solenoid valve:	30931	KMC-1-24DC-2.5-LED KMC-1-24DC-5-LED	1
	MN1H-5/2-D-2-FR-S-C	30933	KMC-1-24DC-5-LED	
	WWITT-3/2-0-2-118-3-C			
	Connecting switching position sensing system to controller	8078224	NEBA-M8G3-U-5-N-LE3	1
,				
Plug and plug socket				
	Alternative connection socket for solenoid valve.	151687	MSSD-EB	1
	For solenoid valve with switching position sensing:			
	• VSVA-B-M52-MZ-A1-1C1-APP			
	Alternative connection socket for solenoid valve.	34583	MSSD-C	1
	For solenoid valve:			
	• MN1H-5/2-D-2-FR-S-C			
	Insulation displacement connector	562025	NECU-S-M8G4-HX	1
	Connecting the cable KMC to the proportional directional			
	control valve VPWP			
	Insulation displacement connector	8162299	NECB-S-M8G4-C2	1
	Connecting the cable KMC to the proportional directional			-
	control valve VPWP			

¹⁾ Packaging unit