

Hand lever valves VHER, NPT


FESTO



Key features



Powerful

-  - Flow rate
600 ... 3800 l/min

Versatile

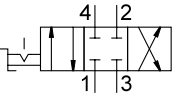
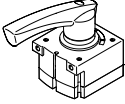
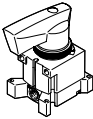
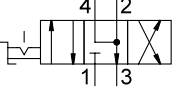
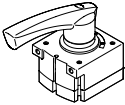
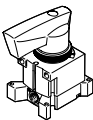
- 4/3-way valve
mid-position closed
mid-position exhausted
- Connection:
1/8 NPT, 1/4 NPT, 1/2 NPT
- 3/3-way valve
The hand lever valve VHER can be used as a 3/3-way valve by sealing port 2

Practical

With these valves it is possible to stop single-acting cylinders (3/3-way valve) or double-acting cylinders (4/3-way valve) within the stroke range.

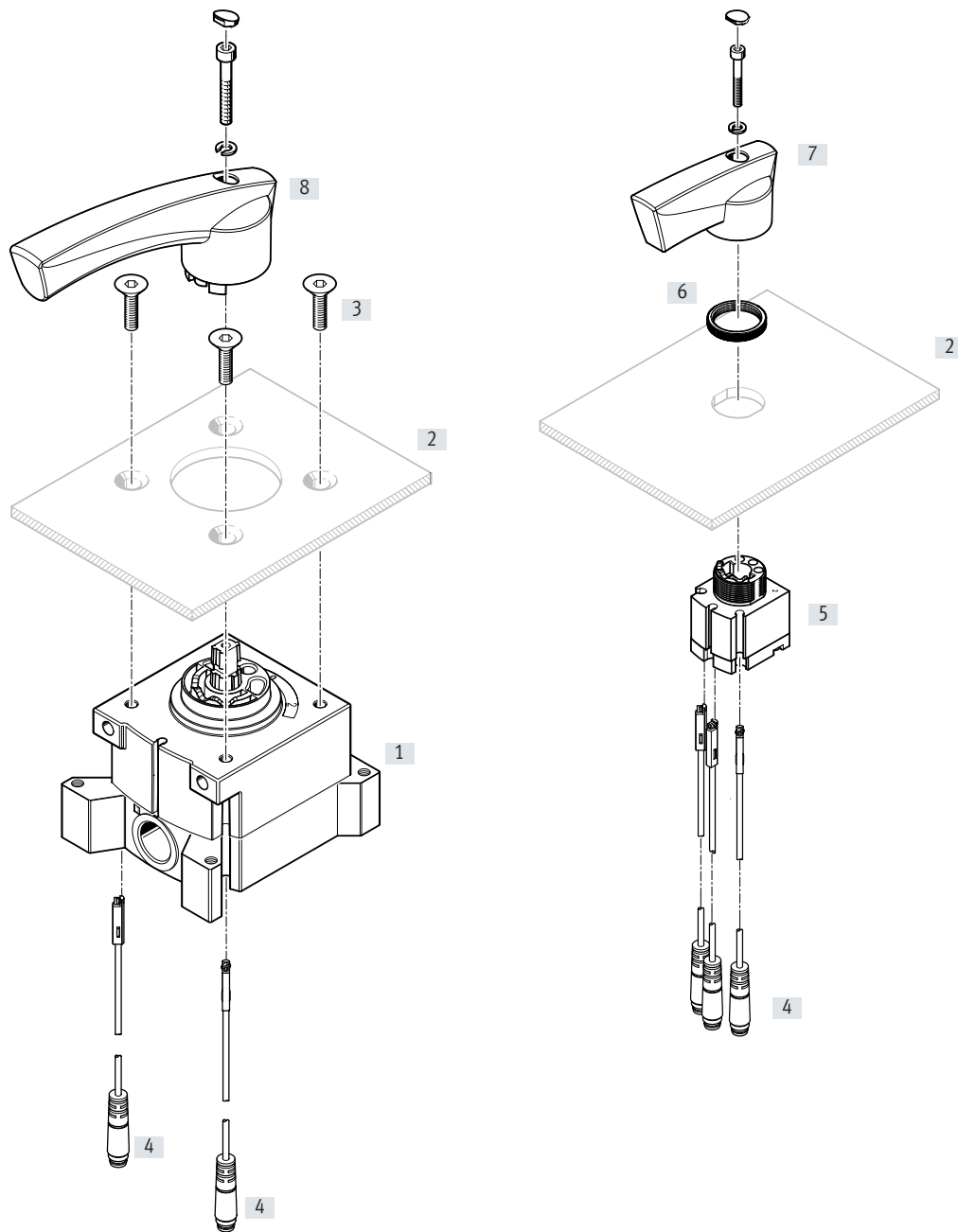
With mid-position closed, the drive piston moves until the forces are in equilibrium.
With mid-position exhausted the piston can be moved manually; only the frictional forces have to be overcome.

Product range overview

Function	Design	Type	Nominal flow rate [l/min]	Hand lever	→ Page/ Internet
	Connection underneath, mid-position closed				
		VHER-H-B43C-B-N18	800	Metal	7
		VHER-H-B43C-B-N14	1500	Metal	7
		VHER-H-B43C-B-N12	3800	Metal	7
	Connection at the side, mid-position closed				
		VHER-H-B43C-N18	600	Metal	7
VHER-H-B43C-N14		1150	Metal	7	
VHER-H-B43C-N12		3200	Metal	7	
	Connection underneath, mid-position exhausted				
		VHER-H-B43E-B-N12	3800	Metal	7
	Connection at the side, mid-position exhausted				
	VHER-H-B43E-N12	3200	Metal	7	

Peripherals overview

Control panel installation

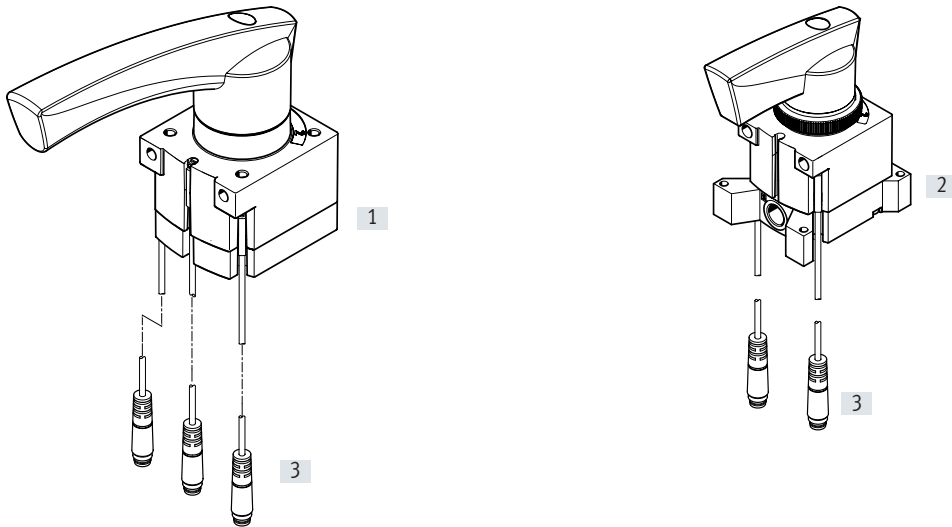


Component parts and accessories	Brief description	→ Page/Internet
[1] Hand lever valve VHER	Connection size 1/8 NPT, 1/4 NPT, 1/2 NPT (pneumatic connections at the side)	7
[2] Control panel	Not included in the scope of delivery	-
[3] Mounting screws ¹⁾	Not included in the scope of delivery	-
[4] Proximity switch SM...-10-...-L-...	Not included in the scope of delivery (electrical connection, in-line outlet)	17
[5] Hand lever valve VHER	Connection size 1/8 NPT, 1/4 NPT, 1/2 NPT (pneumatic connections underneath)	7
[6] Knurled nut	Control panel mounting	-
[7] Actuating lever	Small, metal	-
[8] Actuating lever	Large, metal	-


1) For design reasons, it is not possible for every hand lever valve VHER to be screwed to a control panel on the lever side using mounting screws.

Peripherals overview

Mounted valves with accessories



Component parts and accessories	Brief description	→ Page/Internet
[1] Hand lever valve VHER	Connection size 1/8 NPT, 1/4 NPT, 1/2 NPT with metal lever (pneumatic connections underneath)	7
[2] Hand lever valve VHER	Connection size 1/8 NPT, 1/4 NPT, 1/2 NPT with metal lever (pneumatic connections at the side)	7
[3] Proximity switch SM...-10-... -L-...	Not included in the scope of delivery (electrical connection, in-line outlet)	17

 **Note**

For design reasons, it is not possible for every hand lever valve VHER to be screwed to a control panel on the lever side using mounting screws.

Type codes

001	Series	
VHER	Hand lever valve with detent	

002	Product version	
	Standard	

003	Actuation type	
H	Hand lever, top	




004	Valve function	
B43C	4/3-way valve, detenting, mid-position closed	
B43E	4/3-way valve, detenting, mid-position open	

005	Flow direction	
	Standard	

006	Connection direction	
	On the side	
B	Underneath	

007	Pneumatic connection	
N18	1/8 NPT	
N14	1/4 NPT	
N12	1/2 NPT	

Data sheet

-  Flow rate
600 ... 3800 l/min
-  Pressure
-0.95 ... +10 bar
-  Temperature range
-20 ... +80°C

**General technical data**

Connection size		1/8 NPT	1/4 NPT	1/2 NPT	
Valve function		4/3-way, detenting, mid-position closed or exhausted			
Design		Rotary slide valve			
Sealing principle		Hard			
Type of mounting		Option of front panel mounting or through-holes			
Type of control		Direct			
Actuation type		Manual			
Actuating lever (can be removed)		Metal			
Actuator lock		None			
Switching position indication		Via accessories			
Mounting position		Any			
Flow direction		Non-reversible			
Non-overlapping		Yes			
Exhaust air function		Can be throttled			
Standard nominal flow rate	Connection at the side [l/min]	600	1150	3200	
	Connection underneath [l/min]	800	1500	3800	
Nominal width	[mm]	6	8	12	
Pneumatic connection 1, 2, 3, 4		1/8 NPT	1/4 NPT	1/2 NPT	
Actuating torque at 6 bar		[Nm]	0.9	2	5

Operating and environmental conditions

Connection size		1/8 NPT	1/4 NPT	1/2 NPT
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]		
Note on the operating/pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)		
Operating pressure	[bar]	0 ... 10 (vacuum only permitted at port 3)		
Ambient temperature	[°C]	-20 ... +80		
Temperature of medium	[°C]	-20 ... +80		
Corrosion resistance class CRC ¹⁾		2		

1) Corrosion resistance class CRC 2 to Festo standard FN 940070

Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

Proximity switches for switching position indication

Connection size	Connection direction	Type
		SME-10-... -L-...
1/8 NPT	Underneath	■
	At the side	-
1/4 NPT	Underneath	■
	At the side	-
1/2 NPT	Underneath	■
	At the side	-

Data sheet

Operation with different pressures

Vacuum operation

The direction of flow of the valves VHER-B43 is clearly defined and cannot be reversed.

Vacuum must only be connected to port 3 in order to maintain the direction of flow.

Vacuum operation at port 3:
-0.95 ... 0 bar

Note
A filter must be installed upstream of valves operated in vacuum mode. This prevents any foreign matter in the intake air getting into the valve (e.g. when operating a suction cup with connector).

During vacuum operation, the valve function changes from exhausted (VHER...-B43E...) to pressurised (VHER...-B43U...) and vice versa.

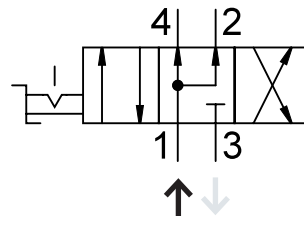
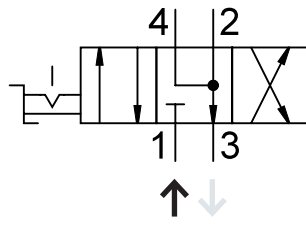
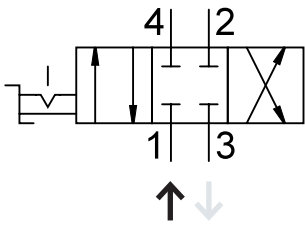
Note
Vacuum must not be connected to port 1.

With vacuum operation:
Mid-position closed
(VHER...-B43C...)

With vacuum operation:
Mid-position pressurised
(VHER...-B43U...)

With vacuum operation:
Mid-position exhausted
(VHER...-B43E...)

Connections with vacuum:



- Vacuum is generated by connecting vacuum generator to port 3
- Exhaust (or pressurisation) takes place via port 1
- Vacuum operation (e.g. suction cup) takes place at port 2 (or 4)

(During normal operation: mid-position closed VHER...-B43C...)

(During normal operation: mid-position exhausted VHER...-B43E...)

(During normal operation: mid-position pressurised VHER...-B43U...)

Dual-pressure operation

Valves VHER-B43 are suitable for dual-pressure operation.

Please note that for design reasons compressed air may only be applied to port 1 and 3.

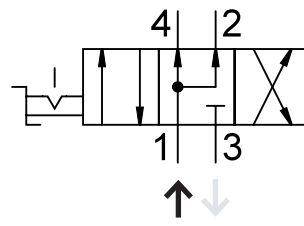
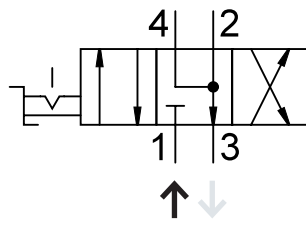
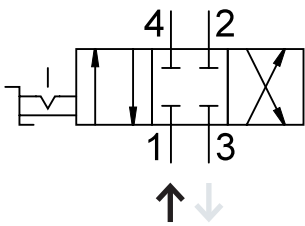
Note
In the case of dual-pressure operation, the higher pressure must always be applied to port 1.

Mid-position closed
VHER...-B43C...

Mid-position exhausted
VHER...-B43E...

Mid-position pressurised
VHER...-B43U...

Connections with dual-pressure operation:



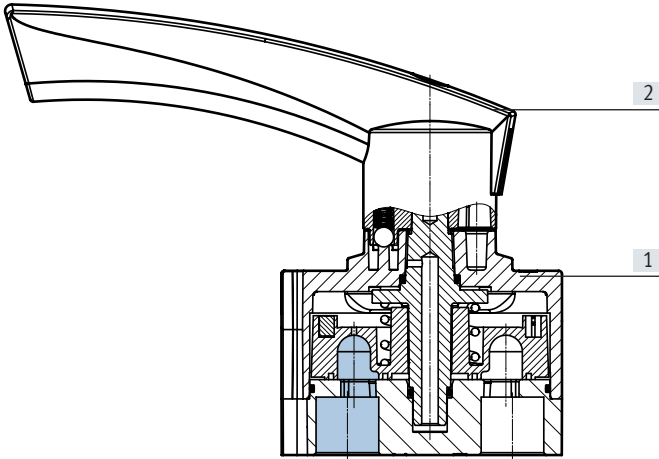
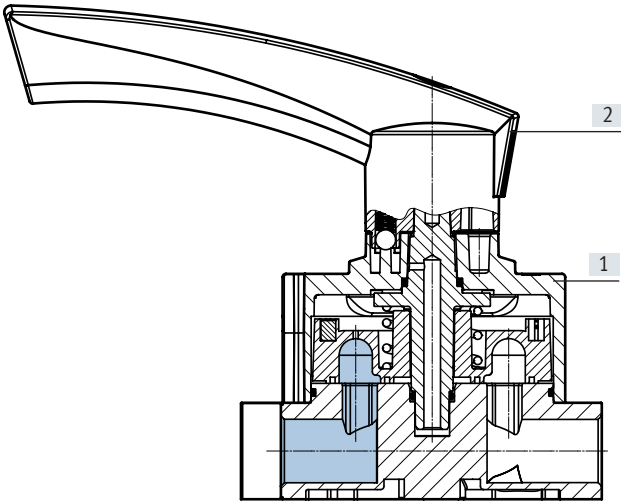
- Supply port: port 1 (high pressure)
- Supply port: port 3 (lower pressure)

Data sheet

Sectional view

Hand lever valve VHER-H-B43-...

Hand lever valve VHER-H-B43...-B-...



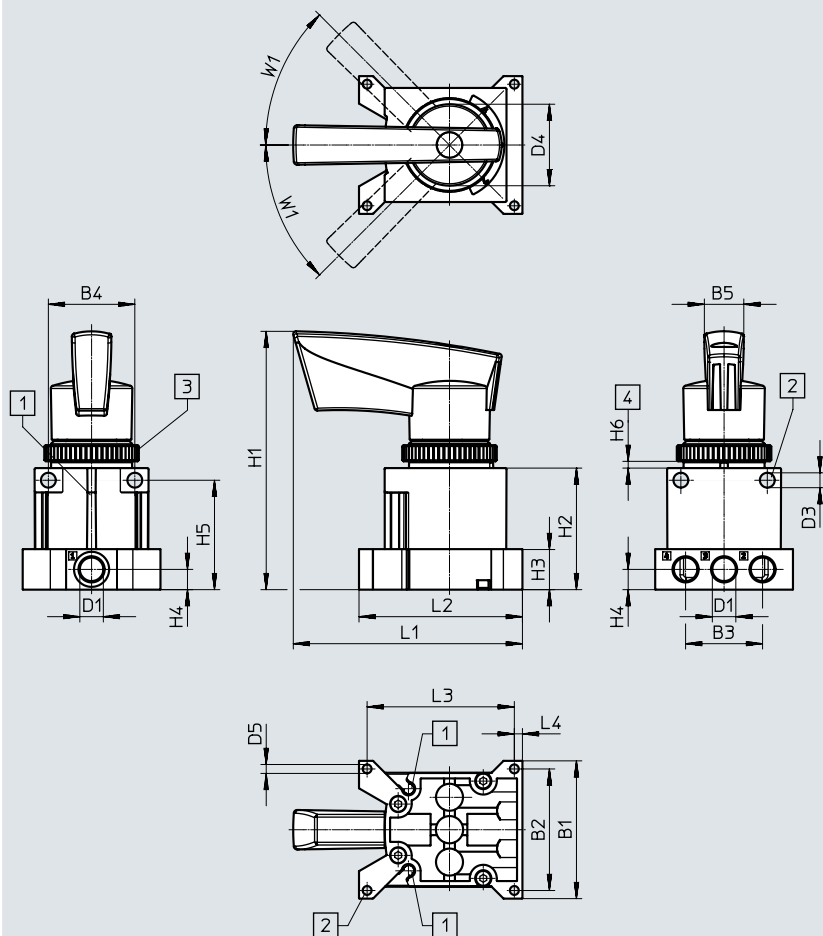
Materials		
[1]	Housing	Die-cast aluminium
[2]	Actuating lever	Metal (die-cast aluminium)
-	Seals	NBR
-	Note on materials	RoHS-compliant
-	Note on materials	Free of copper and PTFE

Data sheet

Dimensions

Download CAD data → www.festo.com

Pneumatic connection 1/8 NPT, at the side



[1] Slot for proximity switch SM...-10...

[2] Mounting hole

[3] Knurled nut M30

[4] Control panel

Type	B1	B2	B3	B4	B5	D1	D3 ∅	D4 ∅	D5 ∅
VHER-H-B43...-N18	51	45	28.5	32	14.6	1/8 NPT	5.5	30.2	3.3

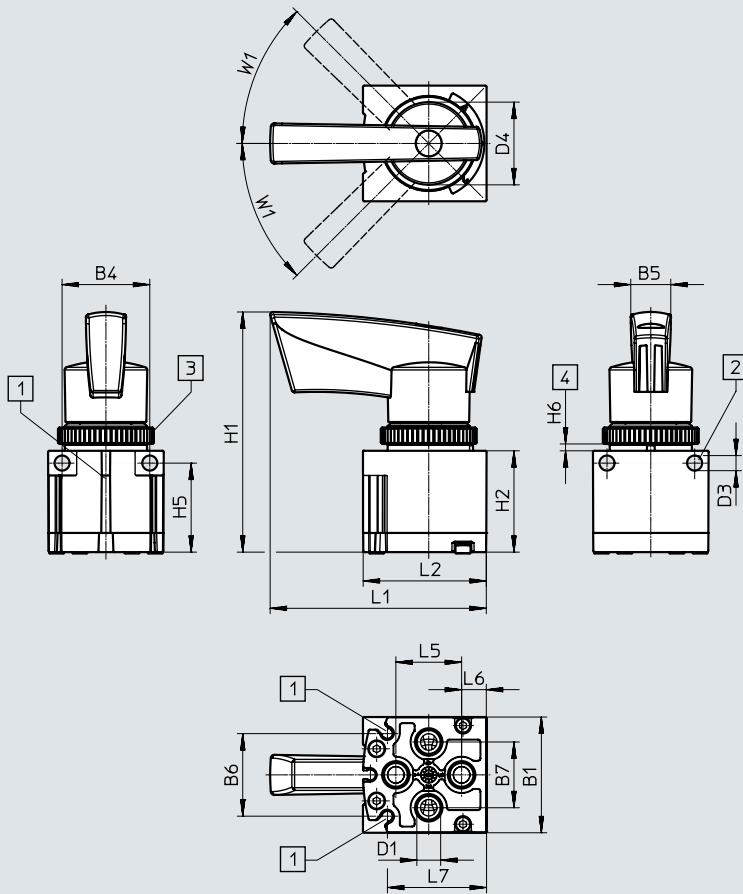
Type	H1	H2	H3	H4	H5	H6		L1	L2	L3	L4	W1
						min.	max.					
VHER-H-B43...-N18	95.6	45	15	7.5	40.5	2	4	84.9	60.5	54.5	3	45°

Data sheet

Dimensions

Download CAD data → www.festo.com

Pneumatic connection 1/8 NPT, underneath



[1] Slot for proximity switch
SM...-10...

[2] Mounting hole

[3] Knurled nut M30

[4] Control panel

Type	B1	B4	B5	B6	B7	D1	D3 ∅	D4 ∅
VHER-H-B43...-B-N18	42.2	32	14.6	30.4	24	1/8 NPT	5.5	30.2

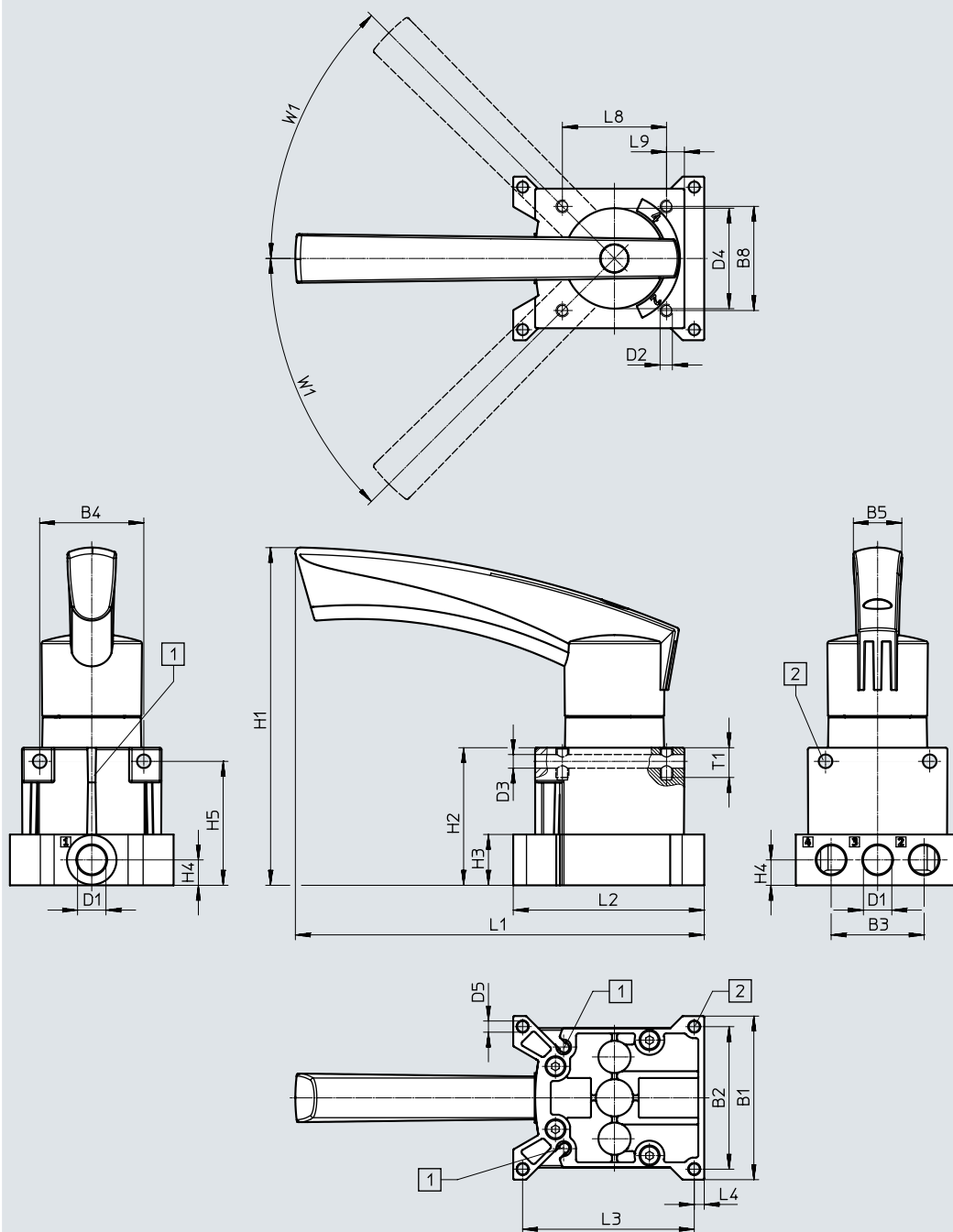
Type	H1	H2	H5	H6		L1	L2	L5	L6	L7	W1
				min.	max.						
VHER-H-B43...-B-N18	87.6	37	32.5	2	4	78.6	44.9	24	9	36.2	45°

Data sheet

Dimensions

Download CAD data → www.festo.com

Pneumatic connection 1/4 NPT, at the side



[1] Slot for proximity switch
SM...-10...

[2] Mounting hole

Type	B1	B2	B3	B4	B5	B8	D1	D2	D3 ∅	D4 ∅	D5 ∅
VHER-H-B43...-N14	66	57.5	37.5	42	19.5	42	1/4 NPT	M5	5.5	40.5	4.5

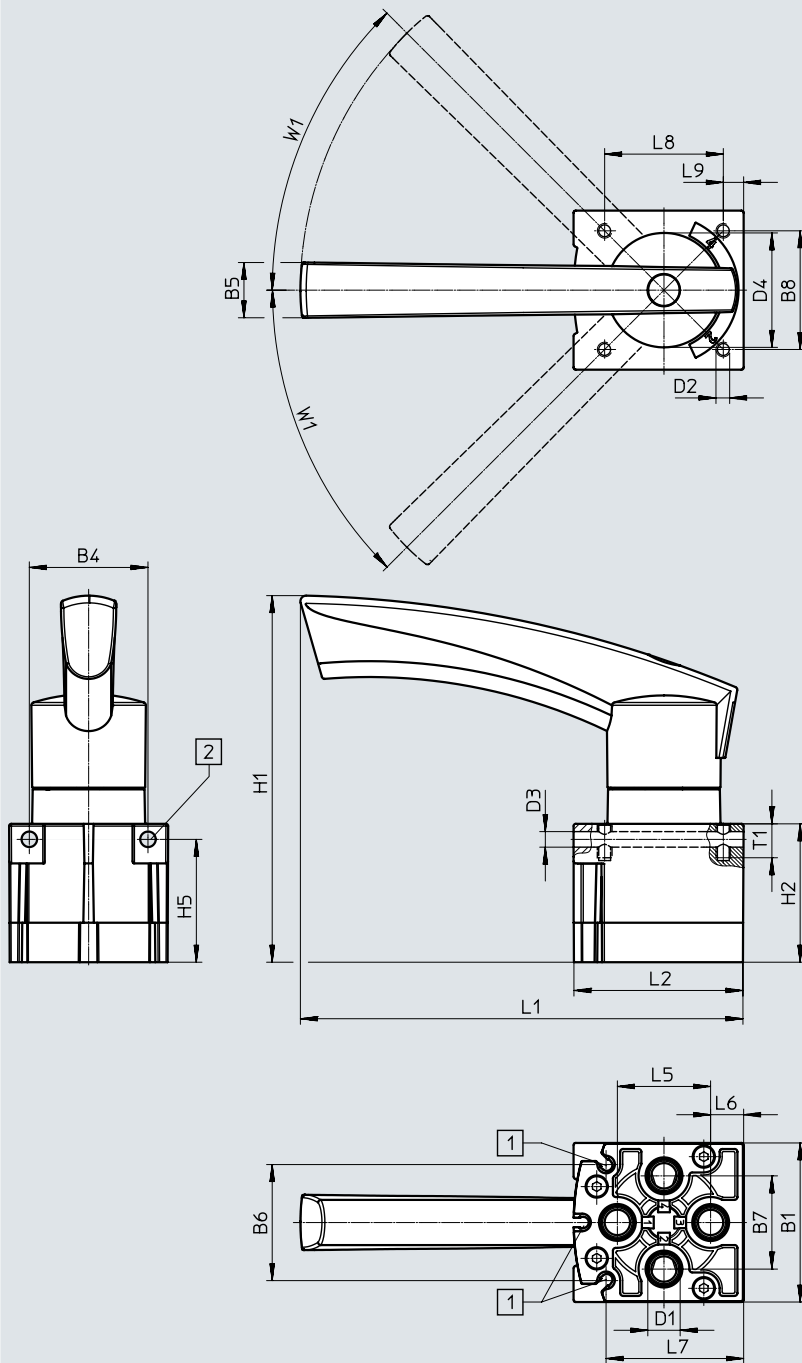
Type	H1	H2	H3	H4	H5	L1	L2	L3	L4	L8	L9	T1	W1
VHER-H-B43...-N14	136.3	55.5	20.5	10.3	50	164.8	77	69.2	4	42	7.2	12	45°

Data sheet

Dimensions

Download CAD data → www.festo.com

Pneumatic connection 1/4 NPT, underneath



[1] Slot for proximity switch
SM...-10...

[2] Mounting hole

Type	B1	B4	B5	B6	B7	B8	D1	D2	D3 ∅	D4 ∅
VHER-H-B43...-B-N14	56.3	42	19.5	40.4	33	42	1/4 NPT	M5	5.5	40.5

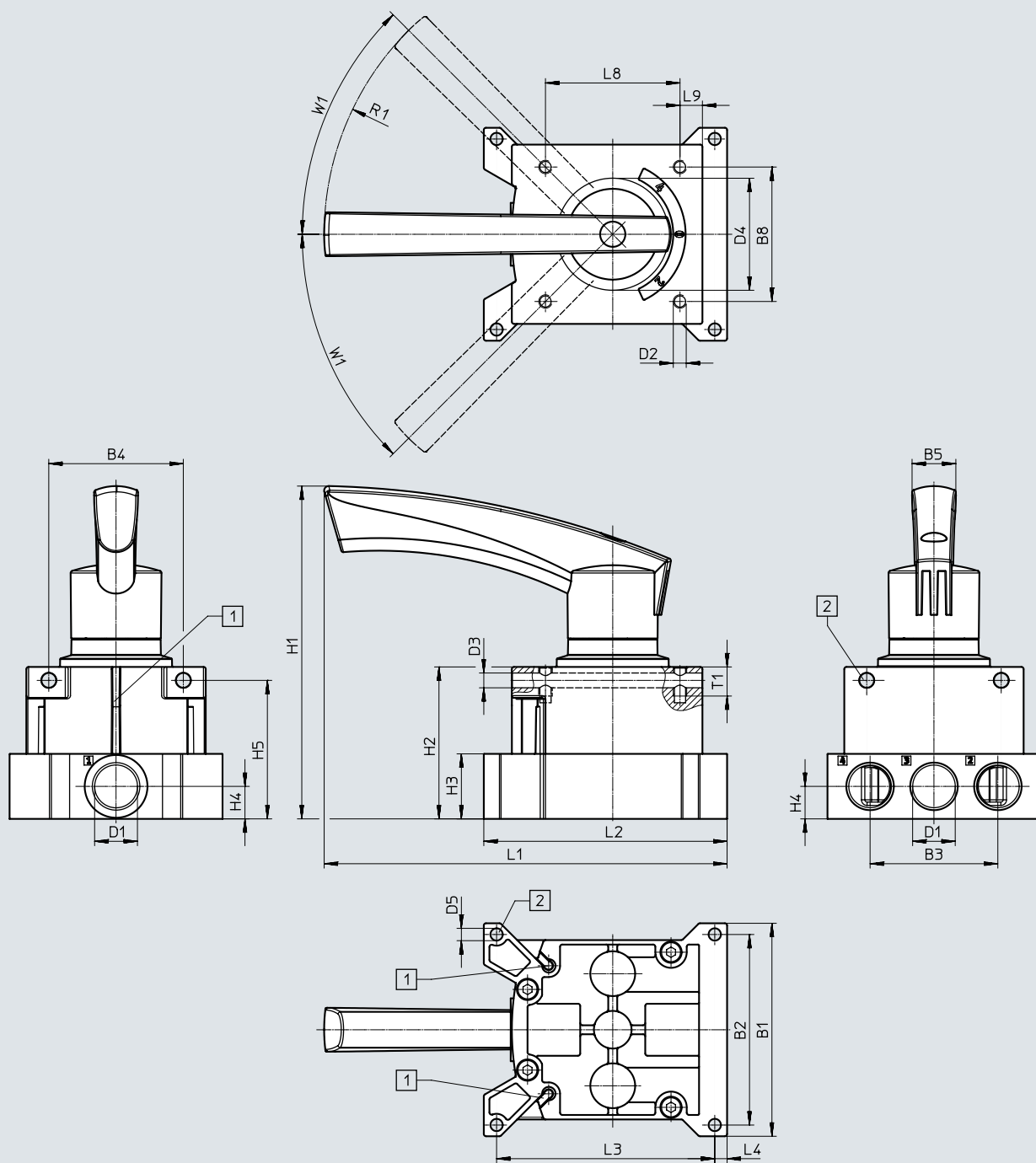
Type	H1	H2	H5	L1	L2	L5	L6	L7	L8	T1	W1
VHER-H-B43...-B-N14	129.8	49	43.5	156.6	59.8	33	11	48.2	42	12	45°

Data sheet

Dimensions

Download CAD data → www.festo.com

Pneumatic connection 1/2 NPT, at the side



[1] Slot for proximity switch
SM...-10...

[2] Mounting hole

Type	B1	B2	B3	B4	B5	B8	D1	D2	D3 ø	D4 ø	D5 ø
VHER-H-B43-...-N12	95	85	57	60	19.5	60	1/2 NPT	M5	6.6	51	5.5

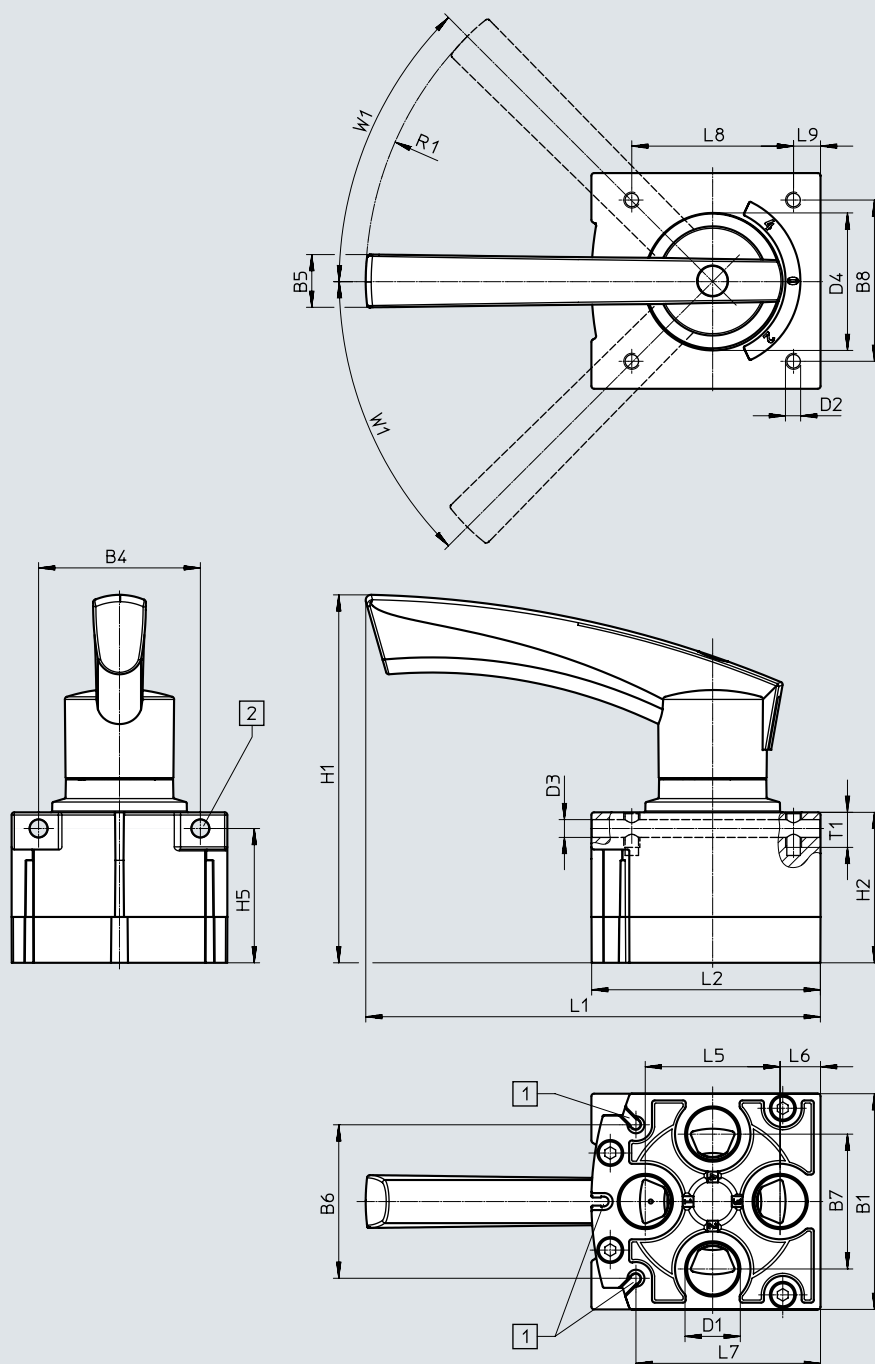
Type	H1	H2	H3	H4	H5	L1	L2	L3	L4	L8	L9	R1	T1	W1
VHER-H-B43-...-N12	149	68	29	14.5	61.8	180	108.8	97.3	5.5	60	10	128	13	45°

Data sheet

Dimensions

Download CAD data → www.festo.com

Pneumatic connection 1/2 NPT, underneath



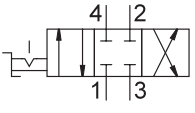
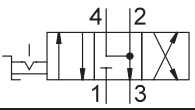
[1] Slot for proximity switch
SM...-10...

[2] Mounting hole












Type	B1	B4	B5	B6	B7	B8	D1	D2	D3 ∅	D4 ∅
VHER-H-B43-...-B-N12	80	60	19.5	56.9	50	60	1/2 NPT	M5	6.6	51

Type	H1	H2	H5	L1	L2	L5	L6	L7	L8	L9	R1	T1	W1
VHER-H-B43-...-B-N12	136.5	55.8	49.8	168.8	84.8	50	15	68.5	60	10	128	13	45°

Ordering data


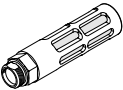

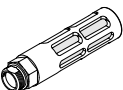
Ordering data – Hand lever valves						
Circuit symbol	Description	Pneumatic connection	Width [mm]	Weight [g]	Part no.	Type
4/3-way valve¹⁾						
	Mid-position closed	Underneath	42	220	3488213	VHER-H-B43C-B-N18
			56	510	3520389	VHER-H-B43C-B-N14
			80	860	3192086	VHER-H-B43C-B-N12
		At the side	51	260	3488212	VHER-H-B43C-N18
			66	560	3520365	VHER-H-B43C-N14
95	1010		3192085	VHER-H-B43C-N12		
	Mid-position exhausted	Underneath	80	860	3192088	VHER-H-B43E-B-N12
		At the side	95	1010	3192087	VHER-H-B43E-N12

1) The hand lever valve can be used as a 3/3-way valve by sealing port 2.

Ordering data – Push-in fittings						
Description	Connection			Part no.	Type	PU ¹⁾
Pneumatic connection: underneath, external hexagon						
	1/8 NPT	NPT thread with sealing ring for (short version)	Tubing O.D. 1/8 "	533270	QBM-1/8-1/8-U	10
			Tubing O.D. 5/32 "	572305	QBM-1/8-5/32-U	10
	1/8 NPT	NPT thread with sealing ring for	Tubing O.D. 5/32 "	533271	QB-1/8-5/32-U	10
	1/4 NPT	NPT thread with sealing ring for	Tubing O.D. 1/4 "	533276	QB-1/4-1/4-U	10
			Tubing O.D. 5/32 "	567772	QB-1/4-5/32-U	10
			Tubing O.D. 3/16 "	533275	QB-1/4-3/16-U	10
			Tubing O.D. 5/16 "	533277	QB-1/4-5/16-U	10
	1/2 NPT	Male thread with external hexagon for	Tubing O.D. 3/8 "	533283	QB-1/2-3/8-U	5
			Tubing O.D. 1/2 "	533284	QB-1/2-1/2-U	5
Pneumatic connection: underneath, internal hexagon						
	1/8 NPT	NPT thread with sealing ring for	Tubing O.D. 5/16 "	572319	QB-1/8-5/16-I-U	10
			Tubing O.D. 1/4 "	572318	QB-1/8-1/4-I-U	10
			Tubing O.D. 5/32 "	572317	QB-1/8-5/32-I-U	10
			Tubing O.D. 3/16 "	572315	QB-1/8-3/16-I-U	10
	1/4 NPT	NPT thread with sealing ring for (short version)	Tubing O.D. 1/8 "	572306	QBM-1/4-1/8-U	10
	1/4 NPT	NPT thread with sealing ring for	Tubing O.D. 1/4 "	572320	QB-1/4-1/4-I-U	10
			Tubing O.D. 5/16 "	572321	QB-1/4-5/16-I-U	10
			Tubing O.D. 3/8 "	572322	QB-1/4-3/8-I-U	10
	1/2 NPT	NPT thread with sealing ring for	Tubing O.D. 1/2 "	572326	QB-1/2-1/2-I-U	5
Pneumatic connection: at the side, internal hexagon						
	1/8 NPT	NPT thread with sealing ring for	Tubing O.D. 1/4 "	572318	QB-1/8-1/4-I-U	10
			Tubing O.D. 5/32 "	572317	QB-1/8-5/32-I-U	10
	1/4 NPT	NPT thread with sealing ring for	Tubing O.D. 1/4 "	572320	QB-1/4-1/4-I-U	10
			Tubing O.D. 5/16 "	572321	QB-1/4-5/16-I-U	10
			Tubing O.D. 3/8 "	572322	QB-1/4-3/8-I-U	10
	1/2 NPT	NPT thread with sealing ring for	Tubing O.D. 1/2 "	572326	QB-1/2-1/2-I-U	5

1) Packaging unit

Accessories

Ordering data – Silencers							
Description	Connection	Material			Part no.	Type	PU ¹⁾
		Screwed trunnion	Cushioning insert	Housing			
Pneumatic connection: underneath							
	1/8 NPT	Wrought aluminium alloy	PE	Die-cast aluminium	12638	U-1/8-B-NPT	1
	1/4 NPT	Wrought aluminium alloy	PE	Die-cast aluminium	12639	U-1/4-B-NPT	1
	1/2 NPT	Wrought aluminium alloy	PE	Die-cast aluminium	12741	U-1/2-B-NPT	1
Pneumatic connection: at the side							
	1/8 NPT	Wrought aluminium alloy	PE	Die-cast aluminium	12638	U-1/8-B-NPT	1
	1/4 NPT	Wrought aluminium alloy	PE	Die-cast aluminium	12639	U-1/4-B-NPT	1
	1/2 NPT	Wrought aluminium alloy	PE	Die-cast aluminium	12741	U-1/2-B-NPT	1

1) Packaging unit

Ordering data – Proximity switches								
	Outlet direction of connection	Measuring principle	Switching output	Electrical connection	Cable length [m]	Part no.	Type	PU ¹⁾
Plug M8x1, 3-pin	0.3	173212	SME-10-SL-LED-24	1				

1) Packaging unit

Ordering data – Blanking plugs					
	Description	Connection	Part no.	Type	PU ¹⁾
1/4 NPT	174165	B-1/4-NPT	1		
1/2 NPT	31785	B-1/2-NPT	1		

1) Packaging unit

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