On/off / soft-start valves HE/HEE/HEP/HEL, D series

FESTO



Туре		Size	Pneum	Pneumatic connection								Pressure regulation range [bar]			Grade of filtration				
													0.5	0.5	2.5				
		-	M5	M7	G1/8	G1/4	G3/8	G1/2	G3/4	G1	QS4	QS6	7	12	12	0.01	1	5	40
Service units		LM:	1		I			1	1	1	1		1		1		1	1	
FRC/FRCS		Micro	•	•	•	-	-	-	-	-	•	•	•	-	-	-	-	•	-
		Mini	-	-	•	•	•	-	-	-	-	-	•	•	-	-	-	•	•
		Midi	-	-	-	-	•	•	•	-	-	-	•	•	-	-	-	•	•
		Maxi	-	_	_	_	_		•		_	_	•	•	-	_	_	•	
Service unit combi	nations																		
FRC-K		Micro	-																
		Mini	l -	-		•	-	-	-	-	-	-	-			-	-	-	-
		Midi	-	-	-	•	•	•	-	-	-	-	-	•	•	-	-	-	-
		Maxi	-	-	-	-	-	•	•	-	-	-	-	•	•	-	-	-	-
LFR-K		Micro	-																
		Mini	-	-		•	-	-	-	-	-	-	-			-	-	-	-
		Midi	-	-	-	•	•	•	-	-	-	-	-	•	•	-	-	-	-
		Maxi	-	-	-	-	-	•	•	-	-	-	-	•	•	-	-	-	-
Indicided decises																			
Individual devices Filter regulators		Micro	T _	_		T -		1	_	1				_	1	Ι	1	Т_	т—
LFR/LFRS			•	•	-		-	-		-	•	•	-		-	-	-	-	-
LI K/ LI KS		Mini	-	-	•	-	•	-	-	_	-	-	-	-	-	-	-	-	-
		Midi	-	-	-	•	•	-	-	-	-	-	-	•	-	-	-		-
	Ψ	Maxi	-	-	-	_	-				-	-		•	_	_	_		
Filters		Micro	-			-	-	-	-	-			-	-	-	-	-		_
LF		Mini	-	-				-	-	-	-	-	-	-	-	-	-		
		Midi	-	-	-	•		•	•	-	-	-	-	-	-	-	-	•	-
		Maxi	-	-	-	-	-	•	•	•	-	-	-	_	-	-	-		-
Fine and micro		Micro	-		1				1	· · · · · ·	-						1		
filters		Mini	-	-			•	-	-	_	-	-	-	-	_	•	•	-	-
LFMA/LFMB		Midi	-	_	-			•	•	_	-	-	-	_	-	•	•	<u> </u>	-
		Maxi	-	_	_	-	-	-		-	-	-	_	_	_	-		-	-
Activated carbon		Micro	-		1				1		-						1		1
filters		Mini	-	_				_	—	_	_	_	_	-	_	_	_	-	-
LFX		Midi	-	_	_		-	-		_	-	-	_	_	_	-	<u> </u>	-	-
		Maxi	-	-	_	-	-	-		-	-	-	_	_	_	-	l –	-	-
Filter		Micro	-		1			1		1					1			1	1
combinations		Mini	-	_		•	•	_	<u> </u>	-	-	-	_	_	_	•		-	-
LFMBA		Midi	-	-	-		-	-		-	-	-	-	_	-	-		-	-
		Maxi	-	_	_	-	-	•			-	-	-	_	_			-	-
	T							<u> </u>		<u> </u>						<u> </u>			<u> </u>
Pressure		Micro		-	•	-	-	-	-	-	-	-	•	-	-	-	-	-	-
regulators		Mini	-	-		-	-	-	-	-	-	-	•	•	-	-	-	-	-
LR/LRS		Midi	-	-	-	•	•	•	•	-	-	-	•	•	-	-	-	-	-
	- CO	Maxi	_	_	_	-	_				-	_			_	_	_	-	_

Туре	Size	Bowl g	uard	Conder	nsate dra	ain	Pressu		Actuat	or lock	Supply	/ voltage		Options			→ Page/ Internet
		Metal bowl guard	Plastic bowl	Manual	Semi-automatic	Fully automatic	With pressure gauge	Without pressure gauge	Rotary knob with latch	Rotary knob with integrated lock	24 V DC	110 V AC	230 V AC	Directly actuated pressure regulator with integrated return flow function	Pilot actuated pressure regulator with integrated return flow function	Differential pressure display	
Service units																	
FRC/FRCS	Micro	-	•	•		_				-	-	-	-	-	-	-	frc
	Mini	•	-	•	-	•	•		•	•	-	-	-	-	-	-	1
	Midi	-	-	•	-	•	•	•	•		-	-	-	-	-	-	
	Maxi	-	-	•	-		•	•			-	-	-	•	•	-	
Service unit comb	inations																
FRC-K	Micro	Τ -				-											frc
	Mini	•	-	•	-			T -	•	-	•	T -	-	_	_	-	1
	Midi		-	•	-		•	<u> </u>		 -		-	-	-	-	 -	1
	Maxi	-	-		-			<u> </u>		<u> </u>		-	-			-	
LFR-K	Micro	-			1		-			1	1		1			1	lfr
	Mini		-		-			_				-	-	-	-	_	1
	Midi		-	•	-	•		-	•	•		-	-	-	-	-	
	Maxi		-	•	-	•		-	•	•		-	-	•	•	-	1
Individual device	-				•		•		•							•	
Filter regulators	Micro	T -				T -				T -	Ι -	T -	T -	T -	I -	Ι-	lfr
LFR/LFRS	Mini	-	-		-		+-	+-			-	-	_	_	_	-	- ""
,	Midi		-	<u> </u>	-		<u>-</u>	<u>-</u>	-		-	-	-	_	_	 	-
	Maxi	+-	-	-	-		<u>-</u>	<u>-</u>	-		-	 	-		•	<u> </u>	-
								<u> </u>	<u> </u>								
Filters	Micro	-	•	•	•	-	-	-	-	-	-	-	-	-	-	-	lf
LF	Mini	•	-	•	-	•	-	<u> </u>	-	-	-	-	-	-	-	-	
	Midi	•	-	•	-	•	-	-	-	-	-	-	-	-	-	-	
	Maxi	•	-	•	-		-	_	-	-	-	-	-	_	-	-	
Fine and micro filters	Micro	<u> </u>		Τ_	1	Т_	1	1	1	1	1	1	1		1	T _	lfma, lfmb
LFMA/LFMB	Mini	-	-	•	-	-	-	-	-	-	-	-	-	-	-	-	-
	Midi	-	-	•	<u> </u>	-	-	-	-	-	-	-	- -	-	-	-	-
Activated carbon	Maxi Micro	-	-	•	_	•		-		_				_	-	•	lfx
filters	Mini	-	_	Τ_	Ι -		Τ -	Τ -	1 -	Ι -	_	Τ -	Ι -	T -	l –	Ι -	- "^
LFX	Midi	+ -	-	 -	<u>-</u>	 	+ -	+-	 -	 -	+-	+-	-	_	_	+ -	1
	Maxi	+ -	_	+-	- -	+ -	+ -	+-	+ -	 	+	+-	 -		_	 	-
Filter	Micro	<u>-</u>						1			1		1	I	1		lfmba
combinations	Mini	•	-	•	_		Ι -	_	T -	T -	-	T -	T -	_	_		1
LFMBA	Midi	•	-	•	-	•	-	-	-	-	-	-	-	_	_		1
	Maxi		-	•	-		-	 -	-	-	-	 -	-	_	-		1
							1	1	1	1	1				1		1
Pressure	Micro	-	-	-	-	-	•	•	•	-	-	-	-	-	-	-	lr
regulators LR/LRS	Mini	-	-	-	-	-	•	•	•	•	-	-	-	•	-	-	1
LR/ LRJ	Midi	-	-	-	-	-	•	•	•	•	-	-	-	•	-	-	1
	Maxi	-	-	-	-	-	-		-		-	-	-		•	-	

Туре		Size	Pneumati	connection	n	I			T		I	ı	Pressure r range [bar]	regulation
					64/0	64/4	52/0	54/2	62/4	-	051	054	0.5	0.5
		-	M5	M7	G1/8	G1/4	G3/8	G1/2	G3/4	G1	QS4	QS6	7	12
Individual devices	; T	Micro	1	1										
Pressure regulators		Micro Mini	-	_	T -		_	-	T -	_	_	_	1 _	
LRB/LRBS		Midi	_	_	_	-	•	_	_	_	_	_	-	•
	070	Maxi	_	_	_	_	-	_		_	_		-	•
Pressure regulator		Micro	-											
manifolds		Mini	-	_				_	_	_	_	_		
LRB-K		Midi	-	_	_	-	-		_	_	-	-	-	•
	010	Maxi	-		1	1	1	I	<u> </u>	I.	1			1
Lubricators		Micro		•		_	_	_	_	_			_	_
LOE		Mini	-	_	-	•	•	_	_	_	-	-	_	_
		Midi	_	_	_	-	-		-	_	_	_	_	_
		Maxi	_	_	_	-		-	-	-	-	-	_	_
- / 60			1	1				_		_				
On/off valves HE		Micro	-		T	1			1	I	1	1	1	1
пс		Mini	-	-	•	-	•	-	-	-	-	-	-	-
		Midi	-	-	-	-	•	-	-	-	-	-	-	-
On/off valves		Maxi Micro	-	_	_		_	•	-	•	_	-	_	_
HEE		Mini	-	_	-	-		_	l –	_	_	_	1 -	-
		Midi	_	_	_	-	-	•	-	_	_	_	_	_
		Maxi	_	_	_	_	_	-	-	•	-	_	_	_
On/off valves	-	Micro	_			<u> </u>		-		-				<u> </u>
HEP		Mini	-	_	-	-		_	_	_	_	_	_	_
		Midi	 -	_	_	•	-			_	-	_	_	_
		Maxi	_	_	_	_	_		•	•	_	_	_	_
Soft-start valves	_	Micro	-		l	1			1	l	<u> </u>	1	1	1
HEL		Mini	-	-	•		•	-	_	-	-	_	_	_
		Midi	-	-	-	-	•	•	-	-	-	-	-	-
		Maxi	-	-	-	-	-		-	-	-	-	-	-
Membrane air		Micro	<u> </u>	· 										
dryers		Mini	<u> </u>											
LDM1		Midi	-											
		Maxi	-	_	_	_	_	-	-	-	_	_	_	_
Branching	. <u> </u>	Micro	<u> </u>	I										
modules		Mini	-	_	-	-			_	_	_		_	_
FRM		Midi	_	_	-	-	-	-		_	_	_	_	_
		Maxi	_	_	_	_	_	-	-	-	_	-	_	_
Distributor block		Micro	_	_	_	_	_	_	_	_	_	_	_	_
FRZ		Mini	-	_	_	-	_	_	_	_	-	-	_	-
		Midi	-	-	-	-		-	-	-	-	-		-
		Maxi	-	_	-	-	_	_	-	_	-	-	_	-

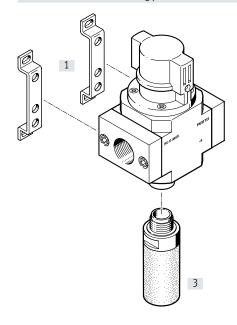
Туре	Size	Bowl guard	I	Pressure in	dicator	Actuator lo	ck	Supply vol	tage		Options		→ Page/ Internet
		Metal bowl guard	Plastic bowl	With pressure gauge	Without pressure gauge	Rotary knob with latch	Rotary knob with integrated lock	24 V DC	110 V AC	230 V AC	With non-return function	Pressure switch	
Individual devices													
Pressure	Micro	-											lrb
regulators	Mini	-	-	-	•	•	•	-	-	-	-	-	
LRB/LRBS	Midi	-	-	-	•		•	-	-	-	-	-	
	Maxi	-	-										
Pressure regulator	Micro	-											lrb
manifolds	Mini	-	-	-	•	•	-	-	-	-	-	-	_
LRB-K	Midi	-	-	-	•	•	-	-	-	_	-	-	
	Maxi	-	_										
Lubricators	Micro	_		_		l -	_	_	1 -	_	_	_	loe
LOE	Mini		_	_		_	-	_	-	-	-	_	1
	Midi		_	_	-	_	_	_	_	_	-	_	-
ı	Maxi	•	-	_	-	_	_	_	_	_	-	_	1
On/off valves	Micro	-											6
HE	Mini	-	-	-	•	•	-	-	-	-	-	-	_
	Midi	-	-	-	•	•	-	-	-	-	-	-	_
0.15	Maxi	-	-	-	•	•	_	_	-	_	-	_	
On/off valves HEE	Micro	-		1	1	1	1	1	1	1	1	1	12
псс	Mini	-	-	-	•	-	-	-	•	-	-	-	_
	Midi	-	-	-	•	-	-	-	•	-	-	-	
0 / . 11	Maxi	_	-	_	•	_	_	•	•		_	_	10
On/off valves HEP	Micro Mini	-		1		1		1	1	1	1	1	18
пер		-	-	-	-	-	-	-	-	-	-	-	-
	Midi	-	-	-	-	-	-	-	-	-	-	-	-
Soft-start valves	Maxi	-	-	_	•	-	_	_	-	_	_	_	24
HEL	Micro Mini	-	_	_	-	T -	_	T -	_	T -	T -	_	24
	Midi	_	_	_	-	_	_	_	_	_	_	_	+
ı	Maxi	_	-		-	_	-	_	_	_	_		+
		L	L					<u> </u>		<u> </u>			
Membrane air	Micro	-		<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>		<u> </u>	<u> </u>	<u> </u>	ldm1
dryers	Mini	-	1										_
LDM1	Midi	-		1		1		1	1	1		1	1
	Maxi	•	_	_	•	-	_	-	-	-	-	_	
Branching	Micro	_								,			frm
modules	Mini	-	-	_	-	_	_	_	-	_	-	•	1
FRM	Midi	-	_	-	•	-	-	-	-	-	•	•	1
	Maxi	-	-	-	-	-	-	-	-	-	•	•	1
Distributor block	Micro	-	-	-	-	-	-	-	-	-	-	-	frz
FRZ	Mini	-	-	_		_	-	-	-	-	-	_	1
	Midi	-	-	-		-	-	-	-	-	-	-	1
	Maxi	-	-	_		_		_	-	_	<u> </u>	_	1

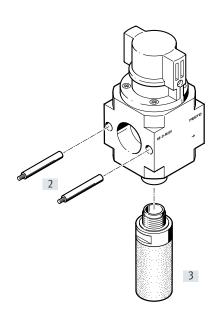
Peripherals overview

Mini/Midi/Maxi

Individual unit with connecting plates

Individual unit without connecting plates, for service unit combination





Moun	ting attachments and accessories					
		Single device		Combination		→ Page/Internet
		With connecting plates	Without connecting plates	With connecting plates	Without connecting plates	
[1]	Mounting bracket HFOE	-	-	•	-	hfoe-d
[2]	Threaded bolt (included in the scope of delivery) FRB	-	-	•	•	frb-d
[3]	Silencer U	•	•	•	•	36

Type codes

001	Series
HE	Shut-off valve
1	In a second
002	Valve function
2	2/2-way valve
3	3/2-way valve
003	Pneumatic connection 1
1/8	Male thread R1/8
1/4	Male thread R1/4
3/8	Male thread R1/4 Male thread R3/8
•	·
3/8	Male thread R3/8
3/8	Male thread R3/8 Male thread R1/2
3/8 1/2 QS-6	Male thread R3/8 Male thread R1/2 Push-in connector 6 mm

004	Pneumatic connection 2	
	Same size push-in connector as pneumatic connection 1	
1/8	Male thread R1/8	
1/4	Male thread R1/4	
3/8	Male thread R3/8	
QS-6	Push-in connector 6 mm	
QS-8	Push-in connector 8 mm	
QS-10	Push-in connector 10 mm	
QS-12	Push-in connector 12 mm	

On/off valves HE, D series, metal design

Datasheet

Function



Flow rate
1000 ... 6500 l/min
Temperature range



- 3/2-way manual shut-off valve
- The unit is exhausted when switched off
- Ducted exhaust air possible via a threaded connection
- The switching position is recognisable
- Commercially available padlock for security

General technical data	neral technical data													
Size	Mini	Mini			Midi					Maxi	Maxi			
Pneumatic connection 1, 2	G1/8	G1/4	G3/8	_1)	G1/4	G3/8	G1/2	G3/4	_1)	G1/2	G3/4	G1	_1)	
Pneumatic connection 3	G1/8		•		G1/4			,	•	G3/8		•		
Design	Piston sp	ool												
Actuation type	Manual													
Type of mounting	With acce	essories												
	In-line in	stallation												
Mounting position	Any													
Air purity class at the output	Compres	sed air to I	SO 8573-1	:2010 [7:4	:4]									
	Inert gas	es												
Valve function	3/2-way	valve, bista	able											
Manual override	None													
Exhaust function	Cannot b	Cannot be throttled												
Flow direction	Not reversible													
Sealing principle	Soft													

¹⁾ Without connecting plates

 $^{| \ |}$ Note: This product conforms to ISO 1179-1 and ISO 228-1.

Characteristic flow rate values										
Size	Mini			Midi				Maxi		
Pneumatic connection 1, 2	G1/8	G1/4	G3/8	G1/4	G3/8	G1/2	G3/4	G1/2	G3/4	G1
Standard nominal flow rate qnN1) [l/m	in]									
In main flow direction 1 → 2	1000	1500	1600	2600	3200	3600	3800	5600	6000	6500
C value [l/s*bar]										
In main flow direction 1 → 2	4.4	7.2	7.5	9.9	15.7	17	17.3	23.7	26.8	25.9
b value										
In main flow direction 1 → 2	0.44	0.28	0.27	0.45	0.3	0.3	0.42	0.32	0.35	0.37

¹⁾ Measured at p1 = 6 bar and $\Delta p = 1$ bar.

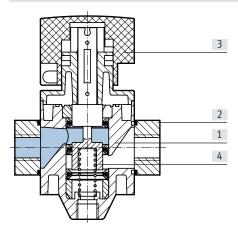
Operating and environmental conditions								
Operating pressure	[bar]	016						
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]						
		Inert gases						
Note on the operating/		Lubricated operation possible (in which case lubricated operation will always be required)						
pilot medium								
Ambient temperature	[°C]	-10 +60						
Temperature of medium	[°C]	-10 +60						
Corrosion resistance class CRC ¹⁾		2						

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

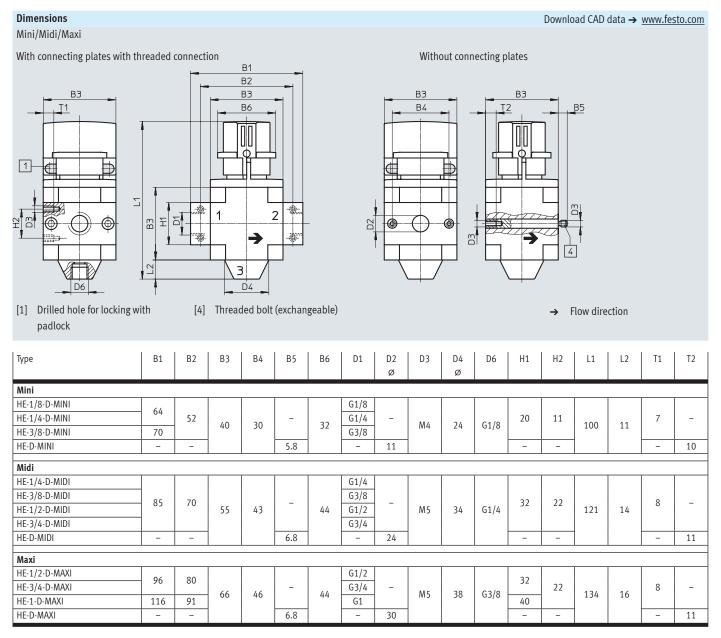
Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

Weight [g]			
Size	Mini	Midi	Maxi
On/off valve	192	511	796

Materials Sectional view



On/of	On/off valve							
[1]	Housing	Die-cast aluminium						
[2]	Connecting plates	Die-cast zinc						
[3]	Rotary knob	PA						
[4]	Piston	Stainless steel						
-	Seals	NBR						
Note o	on materials	RoHS-compliant						



[•] Note: This product conforms to ISO 1179-1 and ISO 228-1.

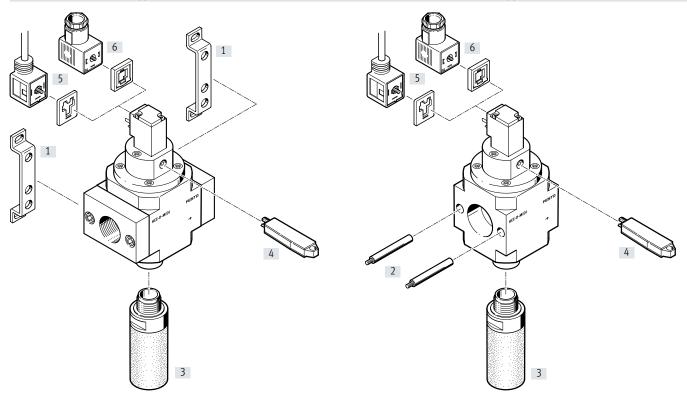
Ordering dat	ta		
3/2-way valv	re, normally closed		
Size	Connection	Part no.	Туре
Without con	necting plates		
Mini	-	170681	HE-D-MINI
Midi	-	170682	HE-D-MIDI
Maxi	-	170683	HE-D-MAXI
Connecting	plates with threaded coni	nection	
Mini	G1/8	162806	HE-1/8-D-MINI
	G1/4	162807	HE-1/4-D-MINI
	G3/8	162808	HE-3/8-D-MINI
Midi	G1/4	186513	HE-1/4-D-MIDI
	G3/8	162809	HE-3/8-D-MIDI
	G1/2	162810	HE-1/2-D-MIDI
	G3/4	162811	HE-3/4-D-MIDI
Maxi	G1/2	186514	HE-1/2-D-MAXI
	G3/4	162812	HE-3/4-D-MAXI
	G1	162813	HE-1-D-MAXI

Peripherals overview

Mini/Midi/Maxi

Individual unit with connecting plates

Individual unit without connecting plates, for service unit combination



Mour	ting attachments and accessories					
		Single device		→ Page/Internet		
		With connecting plates	Without connecting plates	With connecting plates	Without connecting plates	
[1]	Mounting bracket HFOE	•	-	-	-	hfoe-d
[2]	Threaded bolt (included in the scope of delivery) FRB	-	-	•	•	frb-d
[3]	Silencer U	•	•	•	•	36
[4]	Manual override non-detenting AHB-MD/MF/MY	•	•	•	•	36
[5]	Plug socket with cable KMEB-1	•	•	•	•	36
[6]	Plug socket MSSD-EB	•	•	•	•	36

Type codes

001	Series	
HEE	On/off valve, electric	
002	Pneumatic connection	
	None	
1/8	Female thread G1/8	
1/4	Female thread G1/4	
3/8	Female thread G3/8	
1/2	Female thread G1/2	
3/4	Female thread G3/4	
1	Female thread G1	

003	Version	
D	D series, metal	
004	Size	
MINI	Grid dimension 40 mm (without connecting plates)	
MIDI	Grid dimension 55 mm (without connecting plates)	
MAXI	Grid dimension 66 mm (without connecting plates)	
005	Rated operating voltage	
24	24 V DC	
110	110 V AC	
230	230 V AC	

On/off valves HEE, D series, metal design

Datasheet





- 11

Flow rate 1000 ... 6500 l/min



Temperature range −10 ... +60°C



Operating pressure 2.5 ... 16 bar



- Electric on/off valve for pressurising and exhausting pneumatic systems
- With solenoid coil, without plug socket
- Choice of three voltage ranges
 Ducted exhaust possible via a threaded connection with silencer
- Manual override, non-detenting and detenting (using override tool AHB-MD/MF/MV)
- Solenoid head can be repositioned by 4 x 90°

General technical data	1				1					1			
Size	Mini	Mini Midi						Maxi					
Pneumatic connection 1, 2	G1/8	G1/4	G3/8	_1)	G1/4	G3/8	G1/2	G3/4	_1)	G1/2	G3/4	G1	_1)
Pneumatic connection 3	G1/8	•	•	•	G1/4			•		G3/8		•	,
Design	Piston s	pool											
Actuation type	Electrica	ıl											
Type of mounting	With acc	essories											
	In-line ir	nstallation											
Mounting position	Any												
Air purity class at the output	Compressed air to ISO 8573-1:2010 [7:4:4]												
	Inert gas	ses											
Valve function	3/2-way	valve, clos	sed, monos	stable									
Signal status indication	With acc	essories											
Manual override	Detentin	ıg											
Exhaust function	Cannot b	e throttle	d										
Reset method	Mechani	ical spring											
Type of control	Piloted												
Flow direction	Not reve	rsible											
Sealing principle	Soft												

¹⁾ Without connecting plates

Note: This product conforms to ISO 1179-1 and ISO 228-1.

Electrical data		
Characteristic coil data	24	24 V DC: 3.0 W; perm. voltage fluctuations ±10%
	110	110 V AC: 50/60 Hz; pick-up power 5.0 VA; holding power 3.7 VA; permissible voltage fluctuation ±10%
	230	230 V AC: 50/60 Hz; pick-up power 5.0 VA; holding power 3.7 VA; permissible voltage fluctuation –14%/+10%
Electrical connection		Plug, to EN 175301-803, type C
Degree of protection for solen	oid coil	IP65
Duty cycle	[%]	100

Characteristic flow rate values										
Size	Mini			Midi				Maxi		
Pneumatic connection 1, 2	G1/8	G1/4	G3/8	G1/4	G3/8	G1/2	G3/4	G1/2	G3/4	G1
Standard nominal flow rate qnN ¹⁾ [l/mi	n]									
In main flow direction 1 → 2	1000	1500	1600	2600	3200	3600	3800	5600	6000	6500
In relief direction 2 → 3	1000			2000			3000			
C value [l/s*bar]										
In main flow direction 1 → 2	4.4	7	7.3	9.7	15.7	17	17.3	24.2	28	27.6
b value										
In main flow direction 1 → 2	0.44	0.31	0.28	0.47	0.33	0.3	0.41	0.3	0.32	0.32

¹⁾ Measured at p1 = 6 bar and Δp = 1 bar.

Operating and environmental co	onditions				
Supply voltage		24 V DC		110 V AC	230 V AC
Operating pressure	[bar]	2.5 16			
Operating medium		Compressed air to ISO 8573-1:201	10 [7:4:4]		
		Inert gases			
Note on the operating/		Lubricated operation possible (in v	which case lu	ubricated operation will always be required)	
pilot medium					
PWIS conformity		VDMA24364-B1/B2-L			
Ambient temperature	[°C]	-10 +60			
Temperature of medium	[°C]	-10 +60			
Corrosion resistance class CRC ¹⁾		2			
CE marking (see declaration of co	nformity) ²⁾	-		To EU Low Voltage Directive	
UKCA marking (see declaration of	f conformity) ²⁾	-		To UK regulations for electrical equipment	

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

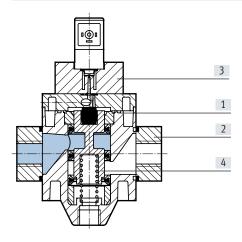
Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

²⁾ More information www.festo.com/catalogue/hee \rightarrow Support/Downloads.

Weight [g]			
Size	Mini	Midi	Maxi
On/off valve	223	500	800

Materials

Sectional view



On/o	ffvalve	
[1]	Housing	Die-cast aluminium
[2]	Connecting plates	Die-cast zinc
[3]	Solenoid and intermediate plate	PA
[4]	Piston	Stainless steel
-	Seals	NBR
Note	on materials	RoHS-compliant

Dimensions Download CAD data → www.festo.com Mini/Midi/Maxi, with connecting plates with threaded connection В2 ВЗ В4 1 \Box <u>....</u> 1 B3 Ξ \oplus [1] Manual override D6 D4 Flow direction Mini/Midi/Maxi, without connecting plates ВЗ ВЗ В4 В6 [1] Manual override Threaded bolt (exchangeable) 4 Flow direction Туре B5 В6 D1 D2 D3 D4 D6 Н1 H2 L1 T2 Ø Ø Mini HEE-1/8-D-MINI 64 52 40 17 30 G1/8 24 G1/8 20 11 104 11 HEE-1/4-D-MINI G1/4 HEE-3/8-D-MINI 70 G3/8 10 HEE-D-MINI 5.8 11 HEE-1/4-D-MIDI 85 70 55 17 43 G1/4 M5 34 G1/4 32 22 122 14 8 HEE-3/8-D-MIDI G3/8 HEE-1/2-D-MIDI G1/2 HEE-3/4-D-MIDI G3/4 HEE-D-MIDI 6.8 24 11 Maxi HEE-1/2-D-MAXI 96 80 66 17 G1/2 M5 38 G3/8 32 22 135 16 8 46 HEE-3/4-D-MAXI G3/4 HEE-1-D-MAXI 116 91 G1 40 HEE-D-MAXI 6.8 30 11

Note: This product conforms to ISO 1179-1 and ISO 228-1.

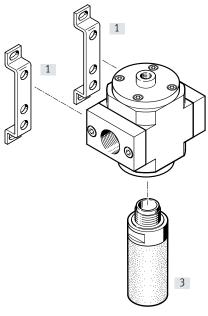
Ordering da	ta								
3/2-way valv	e, normally closed								
Size	Connection	24 V DC			110 V AC		230 V AC		
		Part no.	Туре		Part no.	Туре	Part no.	Туре	
Without con	necting plates								
Mini	-	172956	HEE-D-MINI-24		172957	HEE-D-MINI-110	172958	HEE-D-MINI-230	
Midi	-	172959	HEE-D-MIDI-24		172960	HEE-D-MIDI-110	172961	HEE-D-MIDI-230	
Maxi	-	172962	HEE-D-MAXI-24		172963	HEE-D-MAXI-110	172964	HEE-D-MAXI-230	
Connecting	plates with threaded cor	nnection							
Mini	G1/8	165068	HEE-1/8-D-MINI-24				165070	HEE-1/8-D-MINI-230	
	G1/4	165071	HEE-1/4-D-MINI-24				165073	HEE-1/4-D-MINI-230	
	G3/8	165074	HEE-3/8-D-MINI-24				172940	HEE-3/8-D-MINI-230	
Midi	G1/4	186515	HEE-1/4-D-MIDI-24				186516	HEE-1/4-D-MIDI-230	
	G3/8	172941	HEE-3/8-D-MIDI-24	Ī			172943	HEE-3/8-D-MIDI-230	
	G1/2	172944	HEE-1/2-D-MIDI-24				172946	HEE-1/2-D-MIDI-230	
	G3/4	172947	HEE-3/4-D-MIDI-24				172949	HEE-3/4-D-MIDI-230	
Maxi	G1/2	186518	HEE-1/2-D-MAXI-24				186519	HEE-1/2-D-MAXI-230	
	G3/4	172950	HEE-3/4-D-MAXI-24				172952	HEE-3/4-D-MAXI-230	
	G1	172953	HEE-1-D-MAXI-24				172955	HEE-1-D-MAXI-230	

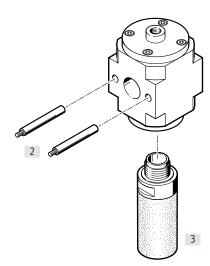
Peripherals overview

Mini/Midi/Maxi

Individual unit with connecting plates

Individual unit without connecting plates, for service unit combination





Moun	Mounting attachments and accessories												
		Single device		Combination		→ Page/Internet							
		With connecting	Without connecting	With connecting	Without connecting								
		plates	plates	plates	plates								
[1]	Mounting bracket HFOE	-	-	-	-	hfoe-d							
[2]	Threaded bolt (included in the scope of delivery) FRB	-	-	•	•	frb-d							
[3]	Silencer U	•	•	•	•	36							

Type codes

001	Series	
HEP	On/off valve	
002	Pneumatic connection	
	None	
1/8	Female thread G1/8	
1/4	Female thread G1/4	
3/8	Female thread G3/8	
1/2	Female thread G1/2	
3/4	Female thread G3/4	
1	Female thread G1	

Version	
D series, metal	
Size	
Grid dimension 40 mm (without connecting plates)	
Grid dimension 55 mm (without connecting plates)	
Grid dimension 66 mm (without connecting plates)	
	D series, metal Size Grid dimension 40 mm (without connecting plates) Grid dimension 55 mm (without connecting plates)

On/off valves HEP, D series, metal design

Datasheet





- M - Fl

Flow rate 800 ... 6500 l/min

Temperature range−10 ... +60°C

- 📥

Operating pressure 0 ... 16 bar



 Pneumatically actuated on-off valve for pressurising and exhausting pneumatic systems The valve can be used as an individual device or in combination with other D-series modules

General technical data																
Size	Mini	Mini Midi								Maxi						
Pneumatic connection 1, 2	G1/8	G1/4	G3/8	_1)	G1/4	G3/8	G1/2	G3/4	_1)	G1/2	G3/4	G1	_1)			
Pneumatic connection 3	G1/8	•	•		G1/4			•		G3/8	•					
Pilot air port 12	G1/8				`											
Design	Piston sp	ool														
Actuation type	Pneumat	ic														
Type of mounting	With acce	essories														
	In-line installation															
Mounting position	Any															
Air purity class at the output	Compres	sed air to	ISO 8573-1	1:2010 [7:4	4:4]											
	Inert gases															
Valve function	3/2-way	valve, clos	sed, monos	table												
Manual override	None															
Exhaust function	Cannot b	e throttle	d													
Reset method	Mechani	Mechanical spring														
Flow direction	Not rever	sible														
Sealing principle	Soft															

¹⁾ Without connecting plates

 $^{| \ |}$ Note: This product conforms to ISO 1179-1 and ISO 228-1.

Characteristic flow rate values										
Size	Mini			Midi				Maxi		
Pneumatic connection 1, 2	G1/8	G1/4	G3/8	G1/4	G3/8	G1/2	G3/4	G1/2	G3/4	G1
Standard nominal flow rate qnN¹¹ [l/min]										
In main flow direction 1 → 2	1000	1500	1600	2600	3500	3900	4100	5600	6000	6500
In relief direction 2 → 3	800	800					2400			
C value [l/s*bar]							-			
In main flow direction 1 → 2	4.3	7.2	7.7	10.1	15.5	16.6	16.2	24.2	28	27.6
b value										
In main flow direction 1 → 2	0.48	0.34	0.3	0.46	0.33	0.4	0.47	0.3	0.32	0.32

¹⁾ Measured at p1 = 6 bar and Δp = 1 bar.

Operating and environmental cor	nditions	
Operating pressure	[bar]	016
Pilot pressure	[bar]	316
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]
		Inert gases
Note on the operating/		Lubricated operation possible (in which case lubricated operation will always be required)
pilot medium		
Ambient temperature	[°C]	10 +60
Temperature of medium	[°C]	-10 +60
Corrosion resistance class CRC ¹⁾		2

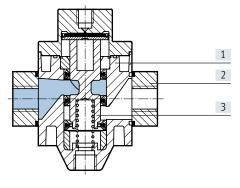
¹⁾ Corrosion resistance class CRC 2 to Festo standard FN 940070

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.

Weight [g]			
Size	Mini	Midi	Maxi
On/off valve	223	500	800

Materials

Sectional view



On/o	ffvalve	
[1]	Housing	Die-cast aluminium
[2]	Connecting plates	Die-cast zinc
[3]	Piston	Stainless steel
-	Seals	NBR
Note	on materials	RoHS-compliant

Dimensions Download CAD data → www.festo.com Mini/Midi/Maxi With connecting plates with threaded connection Without connecting plates В1 В2 ВЗ ВЗ D5 В4 L1 B3 3 D4 [1] Threaded connection for pilot [4] Threaded bolt (exchangeable) Flow direction air (12) В1 B2 D1 D2 D3 D4 D5 L2 T1 T2 Туре В3 В4 B5 D6 Н1 H2 L1 Ø Ø Mini HEP-1/8-D-MINI G1/8 64 HEP-1/4-D-MINI 52 G1/4 20 11 40 30 24 16 G1/8 73.8 M4 11 HEP-3/8-D-MINI 70 G3/8 HEP-D-MINI 5.8 11 10 Midi HEP-1/4-D-MIDI G1/4 HEP-3/8-D-MIDI G3/8 85 70 32 22 8 HEP-1/2-D-MIDI G1/4 55 43 G1/2 M5 34 32 94.6 14 HEP-3/4-D-MIDI G3/4 HEP-D-MIDI 6.8 24 11 Maxi HEP-1/2-D-MAXI G1/2 96 80 32 HEP-3/4-D-MAXI G3/4 22 8 M5 66 46 38 16 G3/8 95.6 16 HEP-1-D-MAXI 116 91 G1 40 HEP-D-MAXI 6.8 30 11

 $[\]mbox{\ }\mbox{\ }\$

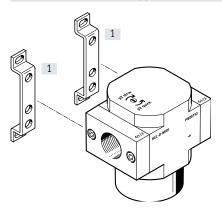
Ordering da	ta		
3/2-way valv	e, normally closed		
Size	Connection	Part no.	Туре
Without con	necting plates		
Mini	-	193242	HEP-D-MINI
Midi	-	193249	HEP-D-MIDI
Maxi	-	193257	HEP-D-MAXI
Connecting	plates with threaded conn	ection	
Mini	G1/8	193243	HEP-1/8-D-MINI
	G1/4	193244	HEP-1/4-D-MINI
	G3/8	193245	HEP-3/8-D-MINI
Midi	G1/4	193250	HEP-1/4-D-MIDI
	G3/8	193251	HEP-3/8-D-MIDI
	G1/2	193252	HEP-1/2-D-MIDI
	G3/4	193253	HEP-3/4-D-MIDI
Maxi	G1/2	193258	HEP-1/2-D-MAXI
	G3/4	193259	HEP-3/4-D-MAXI
	G1	193260	HEP-1-D-MAXI

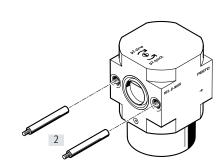
Peripherals overview

Mini/Midi/Maxi

Individual unit with connecting plates

Individual unit without connecting plates, for service unit combination





Mount	ing attachments and accessories					
		Single device		Combination		→ Page/Internet
		With connecting	Without connecting	With connecting	Without connecting	
		plates	plates	plates	plates	
[1]	Mounting bracket	_	_	-	_	hfoe-d
	HFOE	_		_		
[2]	Threaded bolt (included in the scope of delivery) FRB	-	-	•	•	frb-d

Type codes

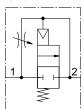
001	Series	
HEL	Soft-start valve	
002	Pneumatic connection	
	None	
1/8	Female thread G1/8	
1/4	Female thread G1/4	
3/8	Female thread G3/8	
1/2	Female thread G1/2	
3/4	Female thread G3/4	
1	Female thread G1	

Version	
D series, metal	
1	
Size	
Grid dimension 40 mm (without connecting plates)	
Grid dimension 55 mm (without connecting plates)	
Grid dimension 66 mm (without connecting plates)	
	D series, metal Size Grid dimension 40 mm (without connecting plates) Grid dimension 55 mm (without connecting plates)

Soft-start valves HEL, D series, metal design

Datasheet





The duration of the pressure build-up is set using the restrictor attached to the valve cap.

The or according to the valve cap.

The outlet pressure p2 rises slowly in accordance with the restrictor setting. The main seat opens when the switch-through pressure is reached.

- Pneumatically actuated soft-start valve for slowly pressurising and venting pneumatic systems (for use with on/off valves HE and HEE)
- The drives move slowly and reliably into the initial position
- Sudden and erratic movements are avoided
- Main seat opening at approx. 50% of input pressure
- Adjustable switching time delay

General technical data														
Size	Mini				Midi					Maxi	Maxi			
Pneumatic connection 1, 2	G1/8	G1/4	G3/8	_1)	G1/4	G3/8	G1/2	G3/4	_1)	G1/2	G3/4	G1	_1)	
Design	Piston sp	ool				•	•	`	•			•		
Actuation type	Pneumati	ic												
Type of mounting	With acce	ssories												
	In-line installation													
Mounting position	Any	Any												
Air purity class at the output	Compressed air to ISO 8573-1:2010 [7:4:4]													
	Inert gases													
Valve function	2/2-way v	alve, closed	d, monost	able										
Manual override	None			,										
Exhaust function	Can be th	rottled												
Reset method	Mechanic	al spring												
Type of control	Direct													
Flow direction	Not revers	sible												
Sealing principle	Soft													

¹⁾ Without connecting plates

 $[\]mbox{\ensuremath{|\hspace{-1.6pt}|}}$ Note: This product conforms to ISO 1179-1 and ISO 228-1.

Characteristic flow rate values										
Size	Mini			Midi				Maxi		
Pneumatic connection 1, 2	G1/8	G1/4	G3/8	G1/4	G3/8	G1/2	G3/4	G1/2	G3/4	G1
Standard nominal flow rate qnN1) [l/mi	n]									
In main flow direction 1 → 2	1000	1500	1600	2600	3200	3600	3800	5600	6000	6500
C value [l/s*bar]										
In main flow direction 1 → 2	4.5	7.1	7.6	9	16.5	19.8	20.5	26.9	33.9	28.3
b value	<u> </u>									
In main flow direction 1 → 2	0.46	0.41	0.3	0.59	0.39	0.37	0.48	0.36	0.38	0.54

¹⁾ Measured at p1 = 6 bar and $\Delta p = 1$ bar.

Operating and environmental cor	Operating and environmental conditions				
Operating pressure	[bar]	316			
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]			
		Inert gases			
Note on the operating/		Lubricated operation possible (in which case lubricated operation will always be required)			
pilot medium					
Ambient temperature	[°C]	-10+60			
Temperature of medium	[°C]	-10 +60			
Corrosion resistance class CRC ¹⁾		2			

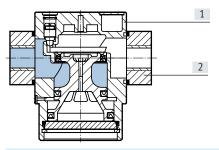
¹⁾ Corrosion resistance class CRC 2 to Festo standard FN 940070

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.

Weight [g]			
Size	Mini	Midi	Maxi
Soft-start valve	126	270	394

Materials

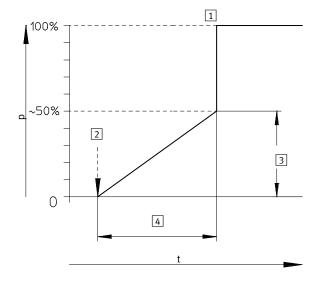
Sectional view



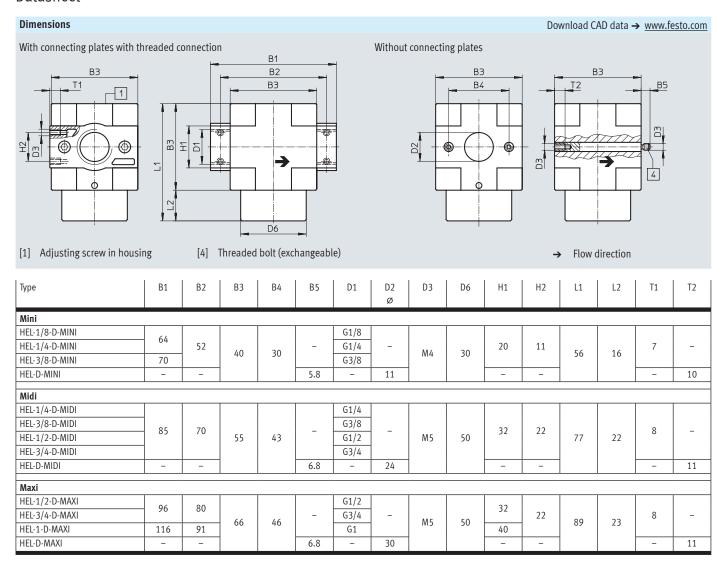
Soft-s	Soft-start valve				
[1]	Housing	Die-cast aluminium			
[2]	Connecting plates	Die-cast zinc			
- Seals		NBR			
Note	on materials	RoHS-compliant			

Switching point

Pressure p as a function of time t



- [1] Operating pressure p2 (= p1)
- [2] Start signal
- [3] Gradual pressure build-up
- [4] Switching time delay



 $[\]mbox{\ensuremath{\psi}}$ Note: This product conforms to ISO 1179-1 and ISO 228-1.

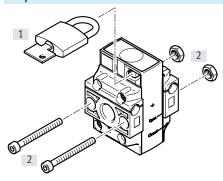
Ordering da	ta		
2/2-way valv	e, normally closed		
Size	Connection	Part no.	Туре
Without con	necting plates		
Mini	-	170690	HEL-D-MINI
Midi	-	170691	HEL-D-MIDI
Maxi	-	170692	HEL-D-MAXI
Connecting	plates with threaded conn	ection	
Mini	G1/8	165076	HEL-1/8-D-MINI
	G1/4	165077	HEL-1/4-D-MINI
	G3/8	165078	HEL-3/8-D-MINI
Midi	G1/4	186521	HEL-1/4-D-MIDI
	G3/8	165079	HEL-3/8-D-MIDI
	G1/2	165080	HEL-1/2-D-MIDI
	G3/4	165081	HEL-3/4-D-MIDI
Maxi	G1/2	186522	HEL-1/2-D-MAXI
	G3/4	165082	HEL-3/4-D-MAXI
	G1	165083	HEL-1-D-MAXI

Туре	!	Size	Pneumatic connection		Pressure regulation range [bar]	Grade of filtration	
			G1/4	G1/2	0.5 7	5	40
Service units							
FRC		Mini	•	-		•	•
Service unit combin	nations				·		
FRC-K		Mini	•	-	-	-	
LFR-K		Mini	•	-	•	-	
Individual devices							
Filter regulators LFR		Mini	•	-	•	•	•
Pressure regulators LR		Mini	•	-	•	-	-
Pressure regulator manifolds LRB-K		Mini	-		•	-	-
On/offvalves HE		Mini	•	-	-	-	-

Туре	Size Condensate drain		Pressure indicato	Pressure indicator		Actuator lock Regulating functions			
		Manual	Semi-automatic	With pressure gauge	Without pressure gauge	Rotary knob with latch	With secondary exhausting	With return flow function	
Service units		'				'	'	'	
FRC	Mini	•	•	•	-	•	•	•	frc
Service unit combi	nations								
FRC-K	Mini	•	-	•	-	•	•	•	frc
LFR-K	Mini	-	-	-	-	-	•	•	lfr
Individual devices									
Filter regulators LFR	Mini	-	•	•	•	•	•	•	lfr
Pressure regulators LR	Mini	-	-		•	•	•	•	lr
Pressure regulator manifolds LRB-K	Mini	-	-	-	•				lrb
On/offvalves HE	Mini	-	-	-	-	-	-	-	32

Peripherals overview

Peripherals overview



Moun	ing attachments and accessories	
		→ Page/Internet
[1]	Padlock	36
	LRVS-D	
[2]	Socket head screw with hex nut for mounting with the following service unit component	-
	(2 included in the scope of delivery) DIN 912-M4X40-8.8/DIN 934-M4-6AU	
-	Socket head screw for wall mounting (2 included in the scope of delivery)	-
	DIN 84-M4X45-4.8	

Type codes

Type codes

001	Series	
HE	On/off-exhaust valve	
002	Pneumatic connection	
1/4	Female thread G1/4	
	· · · · · · · · · · · · · · · · · · ·	'

003	Version	
DB	D series, polymer	
004	Size	
MINI	Grid dimension 40 mm (without connecting plates)	

On/off valves HE, D series, polymer

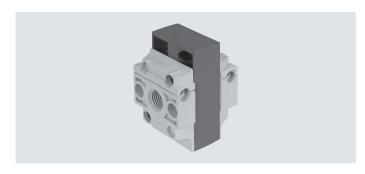
Datasheet





Flow rate
2300 l/min
Temperature range
-5 ... +50°C

Operating pressure
0 ... 10 bar



- 3/2-way manual shut-off valve
- The switching position is recognisable
- Commercially available padlock for security

General technical data	
Size	Mini
Pneumatic connection 1, 2	G1/4
Design	On/off valve
Actuation type	Manual
Type of mounting	In-line installation
	Via through-hole
Mounting position	Any
Air purity class at the output	Compressed air to ISO 8573-1:2010 [7:4:4]
	Inert gases
Valve function	3/2-way valve, bistable
Actuator lock	Padlock (optional)
Manual override	None
Exhaust function	Cannot be throttled
Type of control	Direct
Sealing principle	Soft

Characteristic flow rate values	
Pneumatic connection 1, 2	G1/4
Standard nominal flow rate qnN ¹⁾ [l/min	1]
In main flow direction 1 → 2	2300
In relief direction 2 → 3	700
C value [l/s*bar]	
In main flow direction 1 → 2	6.3
b value	
In main flow direction 1 → 2	0.28

¹⁾ Measured at p1 = 6 bar and Δp = 1 bar.

Operating and environmental co	nditions	
Size		Mini
Operating pressure	[bar]	010
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]
		Inert gases
Note on the operating/		Lubricated operation not possible
pilot medium		
Ambient temperature	[°C]	_5 ÷50
Temperature of medium	[°C]	_5 ÷50
Corrosion resistance class CRC ¹⁾		1

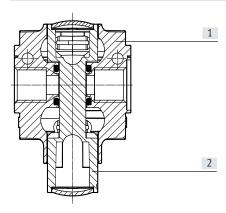
¹⁾ Corrosion resistance class CRC 1 to Festo standard FN 940070

Low corrosion stress. Dry internal application or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, or parts which are covered in the application (e.g. drive trunnions).

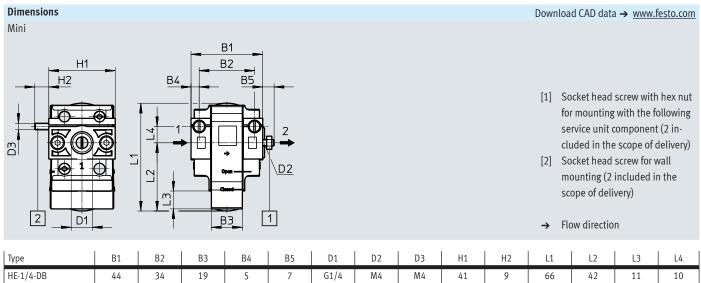
Weight [g]	
Size	Mini
On/off valve	66

Materials

Sectional view



On/off	valve	Mini
[1]	Housing	Reinforced PA
[2]	Piston spool	POM
-	Seals	FPM
Note o	n materials	RoHS-compliant



Ordering data			
Size	Connection	Part no.	Туре
Mini	G1/4	3563687	HE-1/4-DB-MINI

Accessories

	Description	Electrical connection		Type of mounting for ca	able connection	Part no.	Туре
	For HEE	3-pin		Clamping screws	Clamping screws		MSSD-EB
		4-pin		Insulation displaceme	nt technology	192745	MSSD-EB-S-M14
ata –	Plug socket with cabl	le KMFB					Datasheets → Inte
	Description	Operating voltage	Electrical connection	Switching status indication	Cable length [m]	Part no.	Type
	For HEE	24 V DC	3-pin	LED	2.5	151688	KMEB-1-24-2.5-LED
9					5	151689	KMEB-1-24-5-LED
					10	193457	KMEB-1-24-10-LED
		230 V AC	3-pin	_	2.5	151690	KMEB-1-230AC-2.5
					5	151691	KMEB-1-230AC-5
ta –	Illuminating seal MEE	B-LD	Operating	voltage range		Part no.	Datasheets → Into
	· ·	th cable KMEB and plug sock				151717	MEB-LD-12-24DC
	MSSD-EB			/AC - 100/		454740	MED ID 220AC
			230 V DC/	AC ±10%		151718	MEB-LD-230AC
	-						
ta –	Manual override AHB	-MD/MF/MV					1-
ta –	Description					Part no.	Туре
nta –	Description	e and lock manual override				Part no. 157651	Type AHB-MD/MF/MV
ta – .	Description						
ta	Description						
3	Description Turn 90° to actuate						AHB-MD/MF/MV
3	Description	e and lock manual override					AHB-MD/MF/MV
3	Description Turn 90° to actuate Silencer U Pneumatic connec	e and lock manual override				157651	AHB-MD/MF/MV Datasheets → Type
3	Description Turn 90° to actuate	e and lock manual override				157651 Part no.	AHB-MD/MF/MV Datasheets →
3	Description Turn 90° to actuate Silencer U Pneumatic connec	e and lock manual override				157651 Part no. 6841	AHB-MD/MF/MV Datasheets → Type U-1/8-B
3	Description Turn 90° to actuate Silencer U Pneumatic connect G1/8 G1/4	e and lock manual override				Part no. 6841 6842	Datasheets → Type U-1/8-B U-1/4-B
3	Description Turn 90° to actuate Silencer U Pneumatic connect G1/8 G1/4 G3/8	e and lock manual override				Part no. 6841 6842 6843	Datasheets → Type U-1/8-B U-1/4-B U-3/8-B
3	Description Turn 90° to actuate Silencer U Pneumatic connect G1/8 G1/4 G3/8 G1/2	e and lock manual override				Part no. 6841 6842 6843 6844	Datasheets → Type U-1/8-B U-1/4-B U-3/8-B U-1/2-B
anta –	Description Turn 90° to actuate Silencer U Pneumatic connect G1/8 G1/4 G3/8 G1/2 G3/4 G1	e and lock manual override				Part no. 6841 6842 6843 6844 6845	Datasheets → Type U-1/8-B U-1/4-B U-3/8-B U-1/2-B U-3/4-B
ata -	Description Turn 90° to actuate Silencer U Pneumatic connect G1/8 G1/4 G3/8 G1/2 G3/4	e and lock manual override				Part no. 6841 6842 6843 6844 6845	Datasheets → Type U-1/8-B U-1/4-B U-3/8-B U-1/2-B U-3/4-B

Festo - Your Partner in Automation





1 Festo Inc.

5300 Explorer Drive Mississauga, ON L4W 5G4 Canada

Festo Customer Interaction Center

Tel: 1877 463 3786 Fax: 1877 393 3786



2 Festo Pneumatic

Av. Ceylán 3, Col. Tequesquináhuac 54020 Tlalnepantla, Estado de México

Multinational Contact Center

01 800 337 8669



3 Festo Corporation

1377 Motor Parkway Suite 310 Islandia, NY 11749



Regional Service Center

7777 Columbia Road Mason, OH 45040

Festo Customer Interaction Center

1 800 993 3786 1 800 963 3786 customer.service.us@festo.com







www.festo.com/socialmedia

