

Mass flow controller VEFC

FESTO



Characteristics

At a glance

Description:

- The low-noise piezo technology consumes minimal energy, has compact dimensions and is suitable for a wide range of applications

Benefits:

- Very low power consumption
- High dynamic response
- Very low self-heating
- Completely silent
- Excellent price/performance ratio
- Sturdy and durable
- Linear control behaviour
- Small installation space and low weight

Operating mode:

- VEFC is a flow control valve. The flow rate is controlled in a closed control loop.
- The setpoint value for the flow rate can be specified via an analogue interface, and the current actual value is also fed back in analogue form.
- The flow rate is measured using the differential pressure method.

Range of applications:

- The proportional flow control valve VEMD is used to control the flow rate of air and inert gases proportionally in relation to a given setpoint value.
- A filter may need to be installed downstream for applications with special requirements, for example with regard to technical cleanliness and being free from particles.

Type code

001	Series	
VEFC	Mass flow controller	
002	Directional control valve type	
L	In-line valve	
003	Valve function	
6	2/2-way valve, normally closed	
004	Flow rate range	
100	100 l/min	
200	200 l/min	
005	Pressure range	
D31	0 ... 7 bar	

006	Pneumatic connection 1	
G14	G1/4	
MFS14	Front metal seal 1/4"	
Q10	Push-in connector 10 mm	
R14	R1/4	
007	Pneumatic connection 2	
G14	G1/4	
MFS14	Front metal seal 1/4"	
Q10	Push-in connector 10 mm	
R14	R1/4	
008	Bus protocol/activation	
MR	Modbus® RTU	
009	Electrical connection	
M1	Multi-pin with SUB-D plug	

Datasheet

General technical data

Pneumatic connection, port 1	G1/4	R1/4	QS-10	Front metal seal 1/4"
Pneumatic connection, port 2	G1/4	R1/4	QS-10	Front metal seal 1/4"
Valve function	2-way proportional flow control valve			
Type of actuation	Electric			
Flow direction	Non-reversible			
Display type	LED			
Reverse polarity protection	For operating voltage			
Protection against direct and indirect contact	PELV			
Product weight	30 g			
Dimensions (W x L x H)	24 mm x 130 mm x 97 mm	24 mm x 114.6 mm x 97 mm	24 mm x 152.8 mm x 97 mm	
Suitability for the production of Li-ion batteries	Metals with more than 5% by mass of copper, zinc or nickel by mass are excluded from use. Exceptions are nickel in steel, chemically nickel-plated surfaces, printed circuit boards, cables, electrical plug connectors and coils			
Instructions on use	The product is suitable for industrial purposes only. Measures to eliminate radio interference may be required in residential areas., For indoor use only			
Note on the measured variable	Dynamic characteristic values according to SEMI E17 with preset "fast". The dead time, the step response and the settling time may increase when the setpoint is changed from a closed valve state or when the back pressure is above atmospheric pressure.			

Electrical data

Nominal operating voltage DC	24 V
Operational voltage range DC	24 V
Max. current consumption	65 mA
Max. electrical power consumption	1.6 W
Overvoltage category	II
Residual ripple	± 10%
Setpoint value input	0 - 10 V 4 - 20 mA
Buffer time for voltage failure of logic supply	10 ms
Electrical connection 1, function	Power supply
Electrical connection 1, connection type	Plugs
Electrical connection 1, connector system	Sub-D
Electrical connection 1, number of connections/cores	9

Datasheet

Operating and environmental conditions

Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4] Inert gases
Operating pressure	0.6 MPa
Operating pressure	6 bar
Overload pressure	0.8 MPa
Overload pressure	8 bar
Burst pressure	1.4 MPa
Burst pressure	14 bar
Inlet pressure 1	0.3 ... 0.7 MPa
Inlet pressure 1	3 ... 7 bar
Flow rate control range	5 ... 200 l/min
Degree of protection	IP20
Relative air humidity	5 - 85% Non-condensing
Climatic category	3K22 to EN 60721
Nominal altitude of use	<= 2000 m NHN
Media temperature	5 ... 50°C
Ambient temperature	5 ... 50°C
Storage temperature	-20 ... 60°C
Total accuracy	1.5%FS
Reproducibility	0.2 %FS
Linearity	1.5 %FS
Hysteresis	0.15 %FS
Pollution degree	2
Approval	RCM trademark
CE mark (see declaration of conformity) ¹⁾	To EU EMC Directive In accordance with EU RoHS Directive
UKCA marking (see declaration of conformity) ²⁾	To UK instructions for EMC To UK RoHS instructions
KC mark	KC-EMV
KC Approval No. EMC/Radio	R-R-FTO-KC-2024-1003
LABS (PWIS) conformity	VDMA24364 zone III
Total leakage	0.6 l/h
Note on total leakage	Standardised according to SEMI E16 tested with CDA

1) For information about the area of use, see the declaration of conformity at: www.festo.com/catalogue/... -> Support/Downloads.

If the devices are subject to usage restrictions in residential, commercial or light industrial environments, further measures for reducing the emitted interference may be necessary.

2) For information about the area of use, see the declaration of conformity at: www.festo.com/catalogue/... -> Support/Downloads.

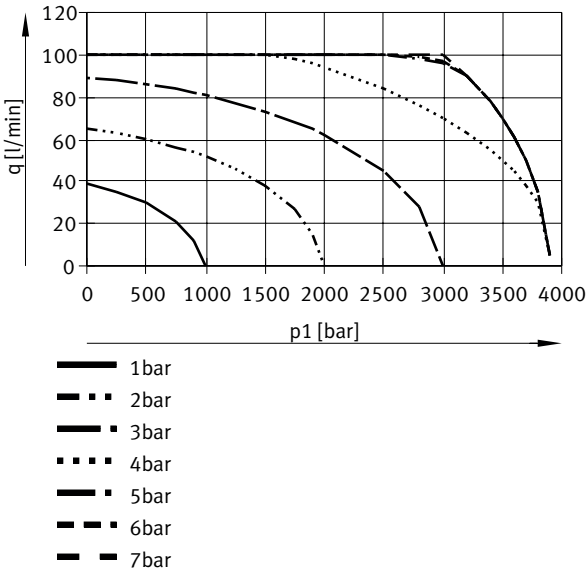
If the devices are subject to usage restrictions in residential, commercial or light industrial environments, further measures for reducing the emitted interference may be necessary.

Materials

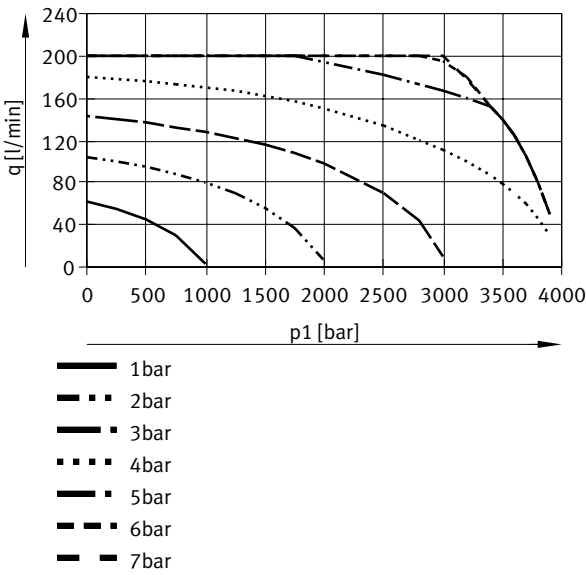
Note on materials	RoHS-compliant
Fire test material	UL94 HB

Datasheet

VEFC-L-6-100-...



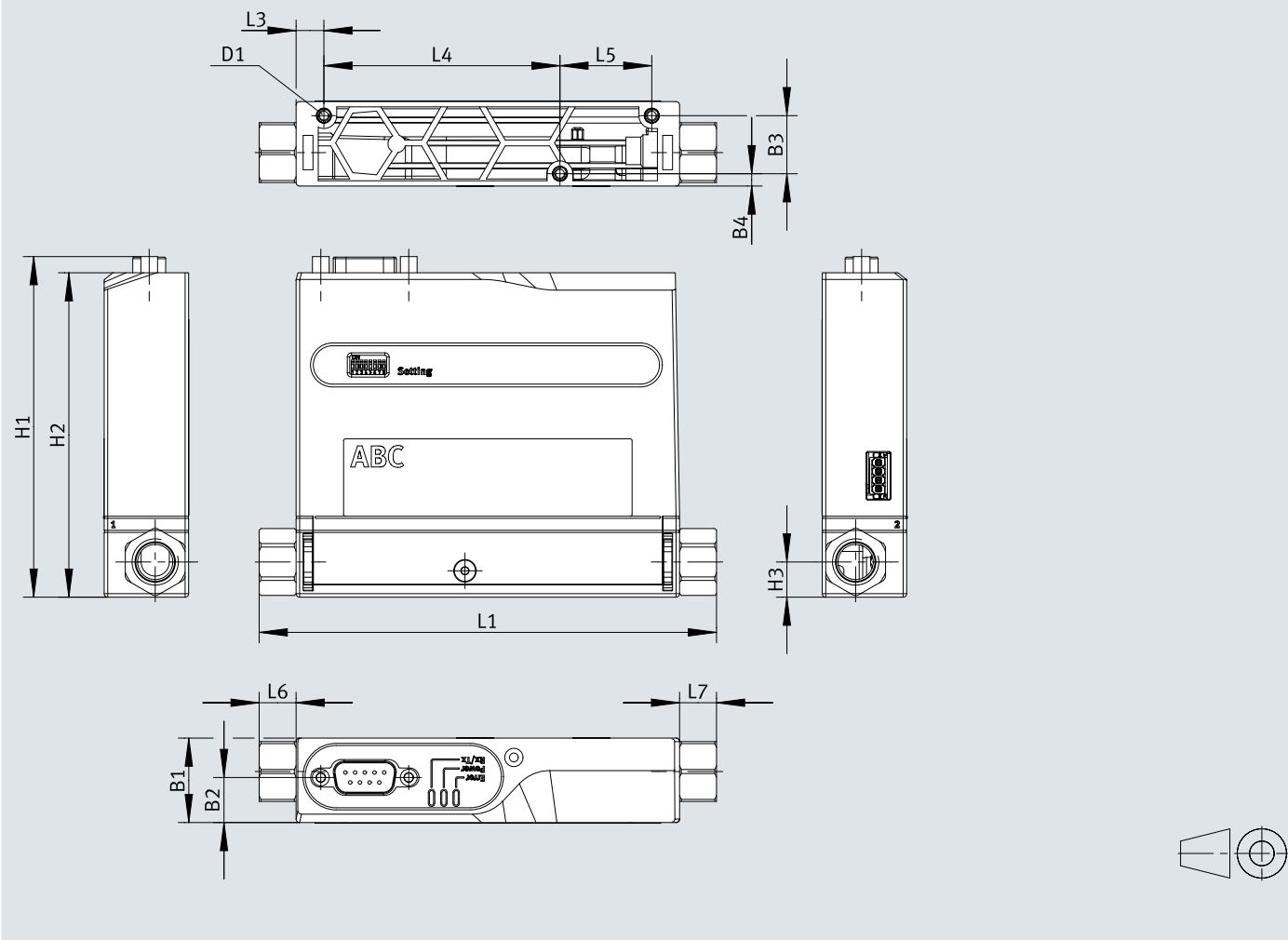
VEFC-L-6-200-...



Dimensions

Dimensions – Mass flow controller VEFC

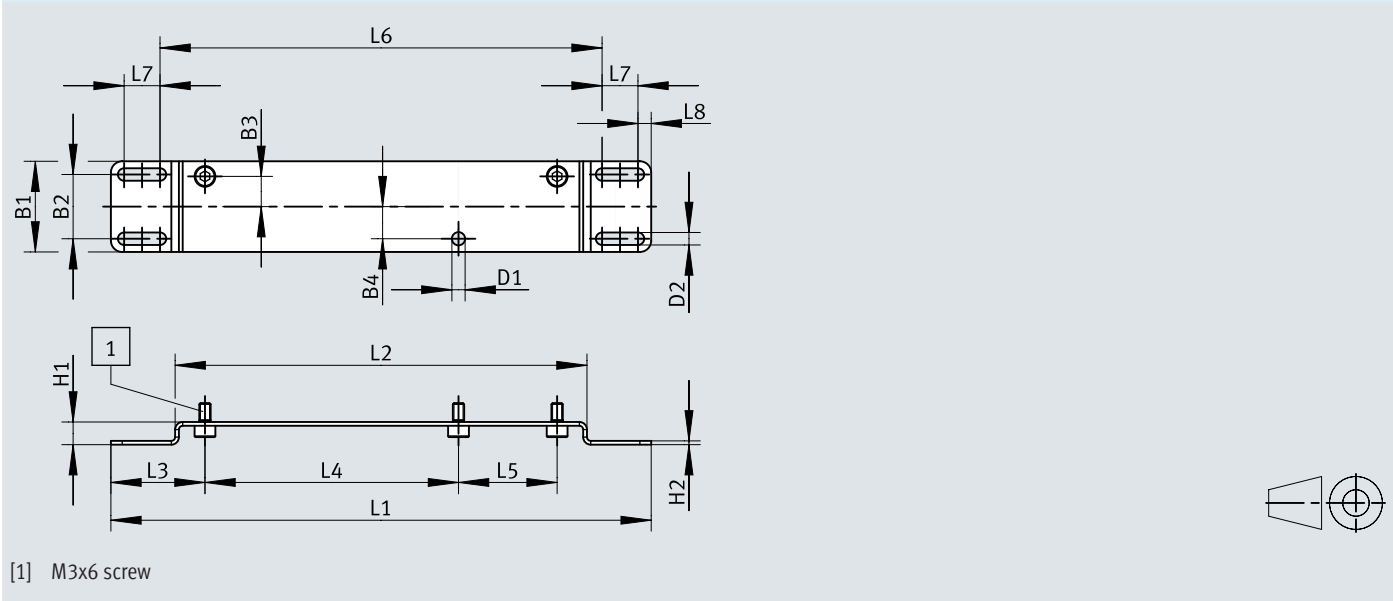
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	B1	B2	B3	B4	D1	H1	H2	H3	L1	L3	L4	L5	L6	L7
VEFC-L-6-200-D31-MFS14-MFS14-MRM1	24	12,8	16,5	3,5	M3	96,8	92,2	10	152,8	7,9	67,1	26,1	21,9	21,9
VEFC-L-6-200-D31-Q10-Q10-MRM1									114,6				2,8	2,8
VEFC-L-6-200-D31-G14-G14-MRM1									130				10,5	10,5
VEFC-L-6-200-D31-R14-R14-MRM1									130				10,5	10,5
VEFC-L-6-100-D31-MFS14-MFS14-MRM1									152,8				21,9	21,9
VEFC-L-6-100-D31-Q10-Q10-MRM1									114,6				2,8	2,8
VEFC-L-6-100-D31-G14-G14-MRM1									130				10,5	10,5
VEFC-L-6-100-D31-R14-R14-MRM1									130				10,5	10,5

Dimensions

Dimensions – Mounting kit VAME Download CAD data www.festo.com



	B1	B2	B3	B4	D1	D2	H1	H2	L1	L2	L3	L4	L5	L6	L7	L8
	±0,1				∅			±0,1	±0,3							
VAME-P20-24-K	24	17	8	8,5	3,5	3,3	6	1	143	109	24,9	67,1	26,1	117	9,5	3,5

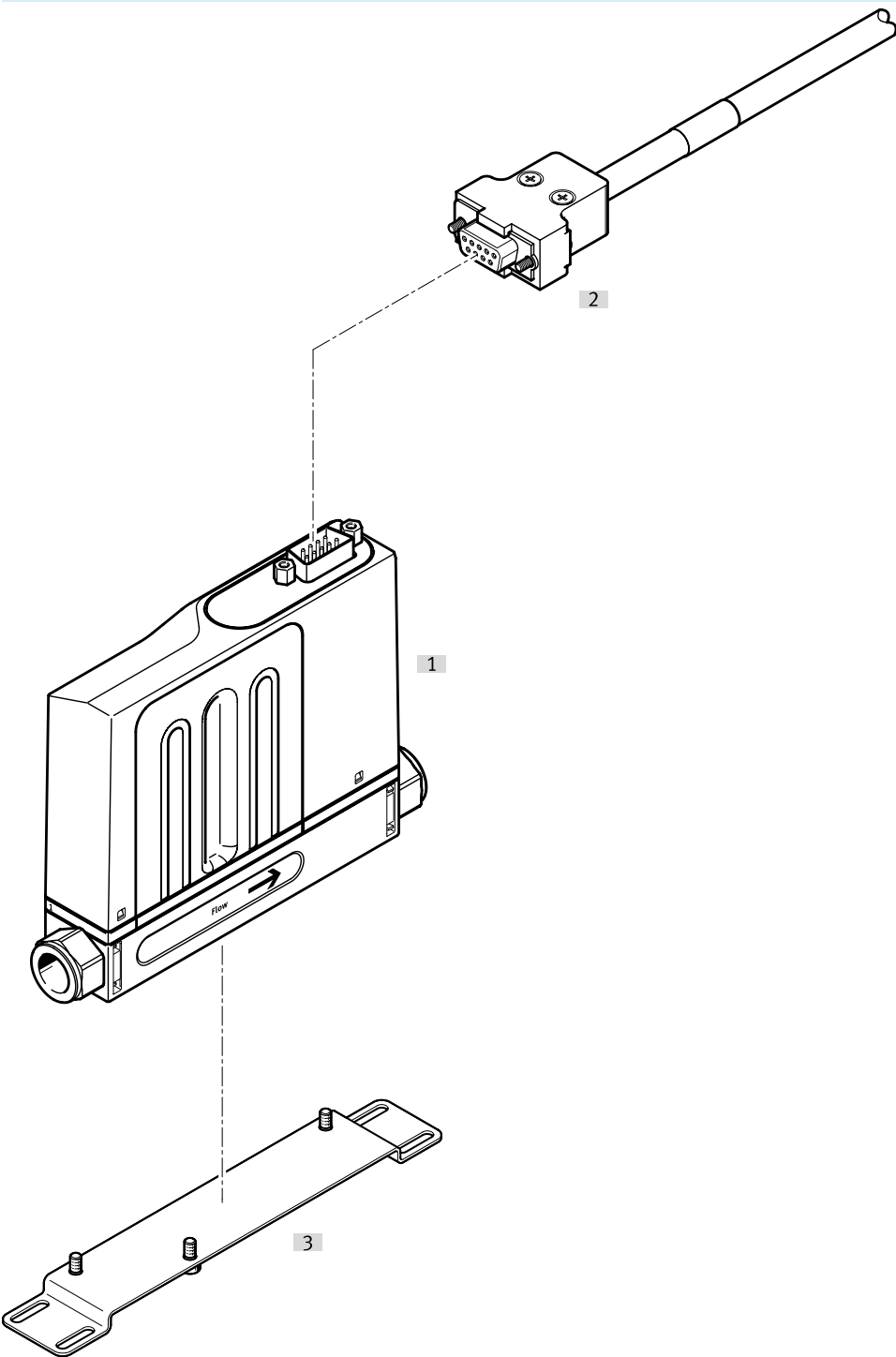
Ordering data

Mass flow controller VEFC, flow rate up to 100 l/min					Link vefc
	Pneumatic connection, port 1	Pneumatic connection, port 2	Flow rate control range	Part no.	Type
	G1/4	G1/4	5 ... 100 l/min	8204592	VEFC-L-6-100-D31-G14-G14-MRM1
	R1/4	R1/4		8204593	VEFC-L-6-100-D31-R14-R14-MRM1
	QS-10	QS-10		8204591	VEFC-L-6-100-D31-Q10-Q10-MRM1
	Front metal seal 1/4"	Front metal seal 1/4"		8204590	VEFC-L-6-100-D31-MFS14-MFS14-MRM1

Mass flow controller VEFC, flow rate up to 200 l/min					Link vefc
	Pneumatic connection, port 1	Pneumatic connection, port 2	Flow rate control range	Part no.	Type
	G1/4	G1/4	10 ... 200 l/min	8204587	VEFC-L-6-200-D31-G14-G14-MRM1
	R1/4	R1/4		8204588	VEFC-L-6-200-D31-R14-R14-MRM1
	QS-10	QS-10		8204586	VEFC-L-6-200-D31-Q10-Q10-MRM1
	Front metal seal 1/4"	Front metal seal 1/4"		8204585	VEFC-L-6-200-D31-MFS14-MFS14-MRM1

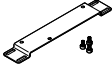
Peripherals

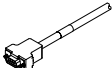
Peripherals overview



Accessories		→ Link
Type/order code	Description	
[1] Mass flow controller	VEFC	vefc
[2] Connecting cable	KMP6-09P-8-...	11
[3] Mounting kit	VAME-P20-24-K	11

Accessories

Mounting kit				
	Dimensions (W x L x H)	Product weight	Part no.	Type
	24 mm x 143 mm x 6 mm	12 g	8210178	VAME-P20-24-K

Connecting cable				
	Product weight	Cable length	Part no.	Type
	248 g	2.5 m	531184	KMP6-09P-8-2,5
	454 g	5 m	531185	KMP6-09P-8-5
	864 g	10 m	531186	KMP6-09P-8-10