

Valve control module VAEM

FESTO

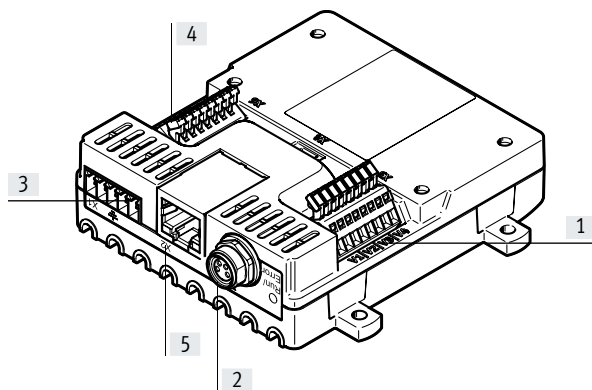


Characteristics

Overview

- 8 channels for actuating valves, can be individually controlled
- Maximum precision through current control
- High-speed valve actuation with a temporal resolution of 0.2 ms
- Very easy parameterisation and diagnostics of solenoid valves via graphical user interface (GUI)
- Control via graphical user interface (GUI), Ethernet interface or RS232 interface as well as external 24 V trigger input
- Small and easy to integrate

Design



- [1] Valve outputs 1 ... 4
- [2] RS232 interface
- [3] Power supply, trigger input
- [4] Valve outputs 5 ... 8
- [5] Ethernet interface

Function

The valve control module VAEM is an electronic control unit with integrated, adjustable holding current reduction for controlling up to 8 solenoid valves.

It communicates using the ASCII protocol via a communication interface according to the client-server principle.

Valve control function

- Setting/reading the nominal voltage
- Selecting a valve/reading the valve selection
- Setting/reading the switching time
- Setting/reading the delay time
- Setting/reading the pickup time
- Setting/reading the inrush current
- Setting/reading the holding current
- Setting/reading the current reduction time

Operating mode

Internal start

- The start command is transmitted from the software to the valve control module via the RS232 interface or the Ethernet interface
- The opening time of the selected valves is determined on the basis of the previously stored parameter values

Manual trigger

- The start command is initiated by an external trigger signal
- The opening time of the selected valves is the same as the trigger signal duration

External start

- The start command is initiated by an external trigger signal
- The opening time of the selected valves is determined on the basis of the previously stored parameter values

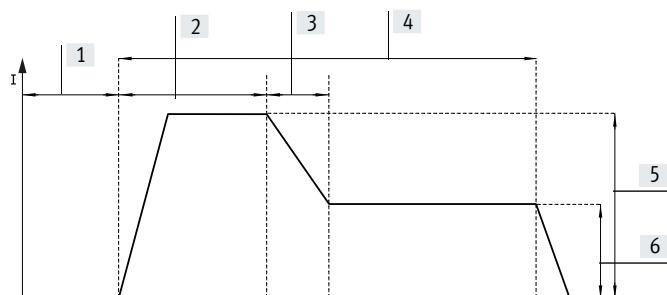
Characteristics

Function

Holding current reduction

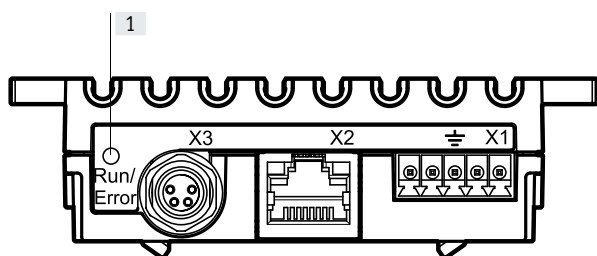
The integrated holding current reduction reduces the current consumption to the set holding current after the adjustable pickup time has elapsed. This:

- Reduces the heat development of the solenoid valve coil
- Increases the service life of solenoid valves
- Lowers power consumption
- Improves the switching times of solenoid valves



- [1] Start delay
- [2] Switching phase with inrush current
- [3] Current reduction
- [4] Operating phase
- [5] Inrush current
- [6] Holding current

Status indicator



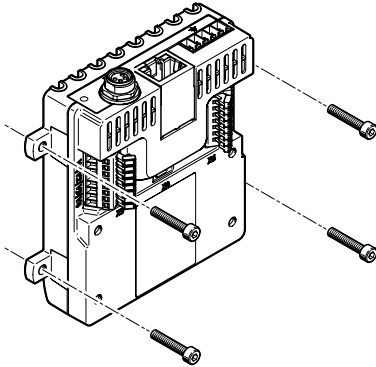
- [1] LED status indicator

The LED status indicator allows the operating status of the valve control module to be monitored.

Characteristics

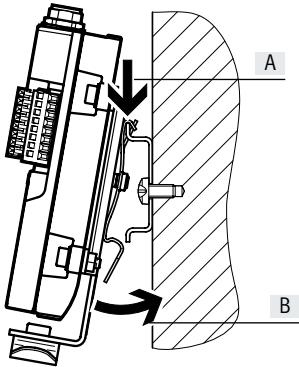
Mounting

Wall mounting



Sturdy wall mounting of the valve control module using four through-holes.

H-rail mounting

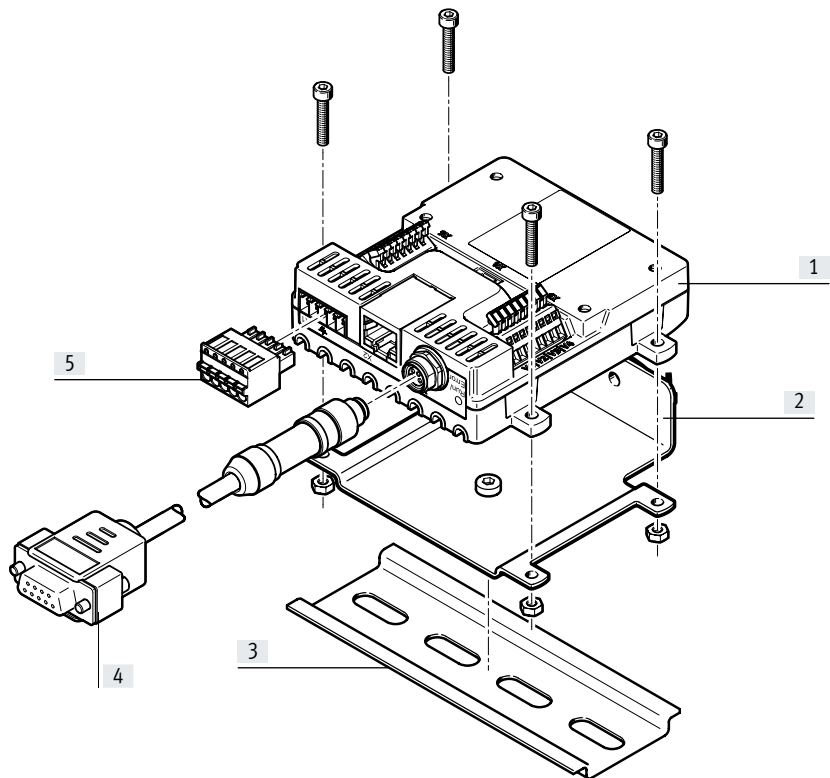


The H-rail mounting VAME-V3-H consists of a mounting bracket and a clamp:

- The clamp is screwed tightly onto the the mounting bracket (two mounting directions possible)
- The mounting bracket is screwed onto the valve control module using four screws
- The mounted unit is lowered onto the H-rail from above (arrow A) and clipped into the H-rail at the bottom (arrow B).

Peripherals overview

Valve control module VAEM



Accessories		Description	→ Page/Internet
[1]	VAEM	Valve control module	11
[2]	VAME	H-rail mounting	11
[3]	NRH-35	H-rail	11
[4]	NEBC	Connecting cable	11
[5]	NECC	Terminal strip	11

Type codes

001	Series	
VAEM	Electrical module	

002	Module function	
V	Valve control	

003	Valve control	
S8	Individual connection 8x	

004	Bus protocol/activation	
RS2	RS232	
EPRS2	EtherNet and RS232	

Data sheet

- 4 - Voltage
18 ... 24 V DC



General technical data		
	VAEM-V-S8EPRS2	VAEM-V-S8RS2
Parameterisation	Individually for each output	
Diagnostics via LED	Error	
	Run	
Diagnostics via bus	Short circuit/overload at output	
	Undervoltage in load supply	
	Wire break at output	
	Parameterization error	–
Mounting position	Any	
Control elements	DIP switch for baud rate	DIP switch for transmission rate
Max. number of outputs	8	
Communication interface		
Protocol	ASCII via RS232	RS232
Connection type	Socket	
Galvanic isolation	No	
Connection technology	M8x1, A-coded to EN 61076-2-104	
Number of pins/wires	4	
Function	Parameterisation and commissioning	Communication
Transmission rate	[kBd]	9.6 ... 115.2
Electrical connection, output		
Function	Switching output	
Connection type	2x terminal strips	
Connection technology	Spring-loaded terminal	
Number of pins/wires	8	
Conductor cross section	[mm²]	0.08 ... 0.57
Ethernet interface		
Connection type	Socket	
Connection technology	RJ45	
Transmission rate	[Mbit/s]	10/100 –
Function	Parameterisation and commissioning –	
Protocol	Modbus TCP –	

Data sheet

Technical data – Electrical components		VAEM-V-S8EPRS2	VAEM-V-S8RS2
Nominal operating voltage	[V DC]	24	
Permissible voltage fluctuations	[%]	± 10	± 15
Load voltage range	[V DC]	8 ... 24	
Inrush current, per output	[mA]	20 ... 1000	
Inrush current, total	[A]	≤ 4	
Holding current, per output	[mA]	20 ... 400	
Holding current, total	[A]	≤ 1.8	
Pickup time	[ms]	≤ 100	
Time resolution	[ms]	0.2	
Trigger level	[V]	Level 14 ... 24	
Intrinsic current consumption at nominal operating voltage	[mA]	36	27
Reverse polarity protection		For operating voltage	
Pollution degree		2	–
Power supply			
Connection technology		Circuit board connector, RM 3.5 mm	Plug pattern L8
Number of pins/wires		5	
Function		Digital trigger input	
		Power supply	
Connection type		Plug	

Technical data – Mechanical components		
Dimensions W x L x H	[mm]	92 x 100 x 28
Product weight	[g]	98
Type of mounting		With through-hole

Operating and environmental conditions		VAEM-V-S8EPRS2	VAEM-V-S8RS2
Storage temperature	[°C]	–20 ... 70	
Ambient temperature	[°C]	0 ... 50	
Degree of protection		IP20	
Corrosion resistance class CRC ¹⁾		0 - no corrosion stress	
CE marking (see declaration of conformity) ²⁾		To EU EMC Directive	
		To EU Low Voltage Directive	
Shock resistance		Shock test with severity level 2 to FN 942017-5 and EN 60068-2-27	
Vibration resistance		Transport application test with severity level 2 to FN 942017-4 and EN 60068-2-6	
Certification		RCM compliance mark	–
Relative humidity	[%]	0 – 95	–
		non-condensing	
Nominal altitude of use		≤ 2000	–

1) Corrosion resistance class CRC 0 to Festo standard FN 940070

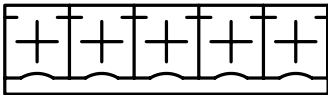
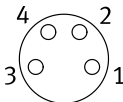
No corrosion stress. Applies to small, visually unimportant standard parts such as threaded pins, circlips and clamping sleeves which are usually only available on the market in a phosphated or burnished version (and possibly oiled) as well as to ball bearings (for components < CRC 3) and plain bearings.

2) For information about the area of use, see the EC declaration of conformity at: www.festo.com/sp → Certificates.

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

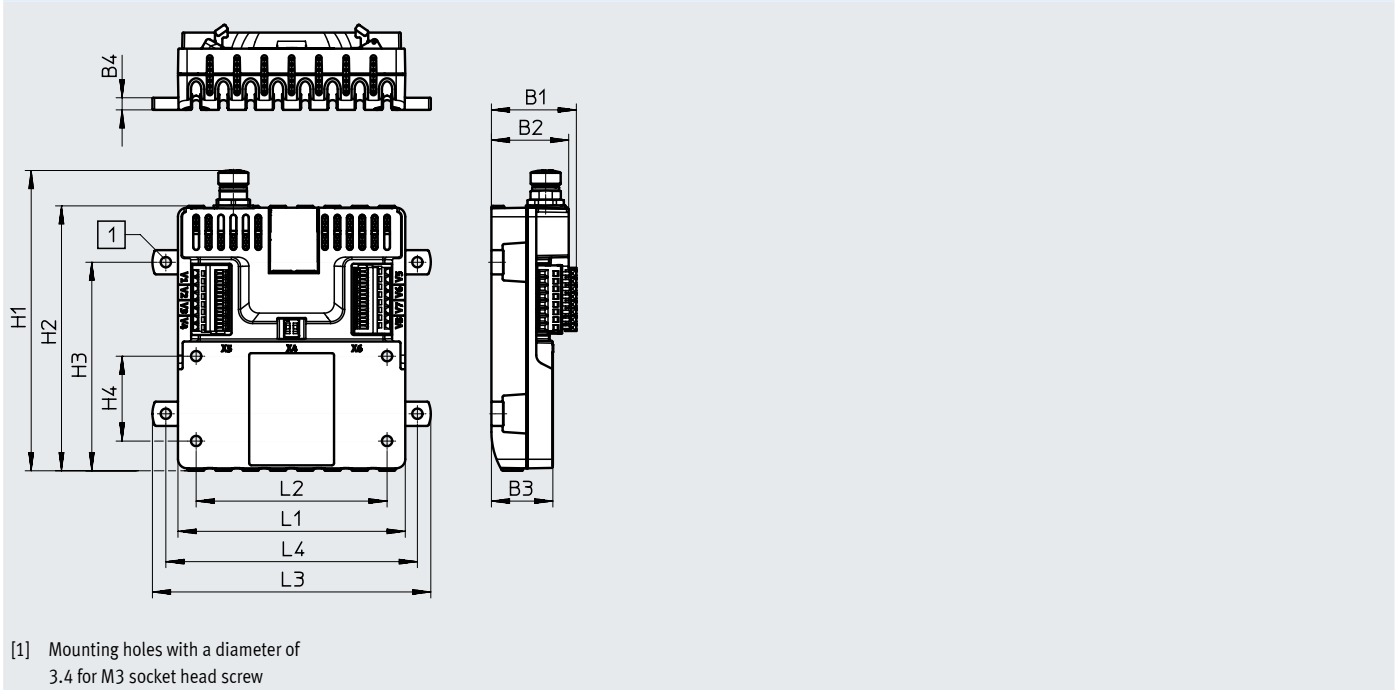
Materials		
Housing material		PA
Housing colour		Black
Note on materials		Contains paint-wetting impairment substances
		RoHS-compliant

Data sheet

Connecting elements		
Power supply, trigger input	Pin	Function
<div>12345</div> 	1	Power supply: 24 V DC
	2	Power supply: GND
	3	FE
	4	Trigger input: GND
	5	Trigger input: 24 V DC
Valve outputs 1 ... 4		
<div>12345678</div>	1	Connection of valve 1
	2	
	3	Connection of valve 2
	4	
	5	Connection of valve 3
	6	
	7	Connection of valve 4
	8	
Valve outputs 5 ... 8		
<div>12345678</div>	1	Connection of valve 8
	2	
	3	Connection of valve 7
	4	
	5	Connection of valve 6
	6	
	7	Connection of valve 5
	8	
RS232 interface		
	1	GND
	2	RxD
	3	TxD
	4	NC

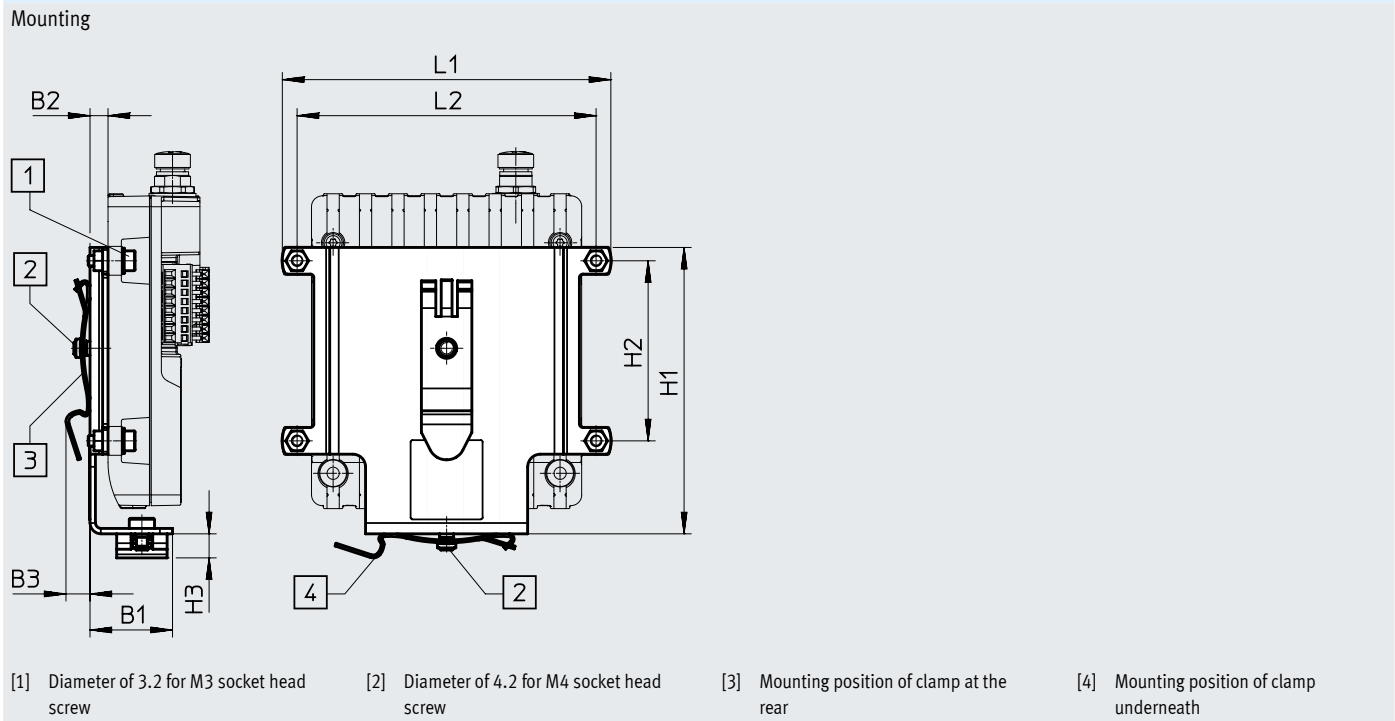
Data sheet

Dimensions Download CAD data → www.festo.com



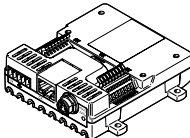
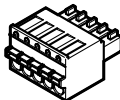
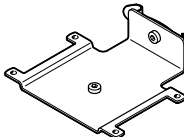
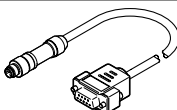
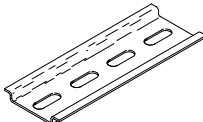
Type	B1	B2	B3	B4	H1	H2	H3	H4	L1	L2	L3	L4
VAEM	28	25.5	20.3	4	99.1	87.4	50	28	75	63	91.9	83

Dimensions Download CAD data → www.festo.com



	B1	B2	B3	H1	H2	H3	L1	L2
VAME-V3-H-M3	22.9	5	6.7	79.5	50	6.6	91.2	83

Data sheet

Ordering data		Part no.	Type
Valve control module			
	For up to 8 solenoid valves	8088993	VAEM-V-S8RS2
		8088772	VAEM-V-S8EPRS2
Terminal strip			
	For valve control module	8106756	NECC-L8G5-C1
H-rail mounting			
	For H-rail to EN 60715	8108940	VAME-V3-H-M3
Connecting cable			
	Straight plug, M8x1, A-coded	8086524	NEBC-M8G4-ES-2.5-N-SB-S1G9-RS2-S7
		8099218	NEBC-M8G4-ES-1.5-N-SB-S1G9-RS2-S7
H-rail			
	H-rail to EN 60715	35430	NRH-35-2000