

Valve control module VAEM

FESTO

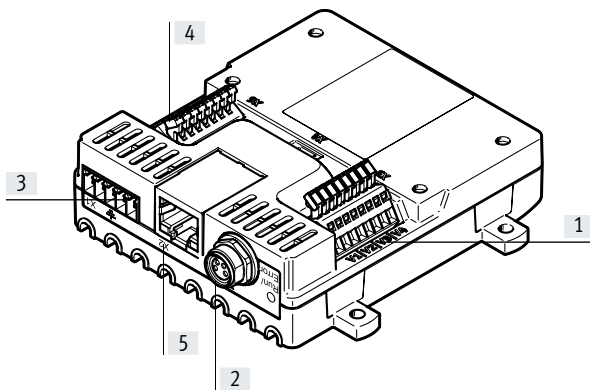


Key features

Overview

- 8 channels for actuating valves, can be individually controlled
- Maximum precision through current control
- Extremely fast valve actuation with a time 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 or 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

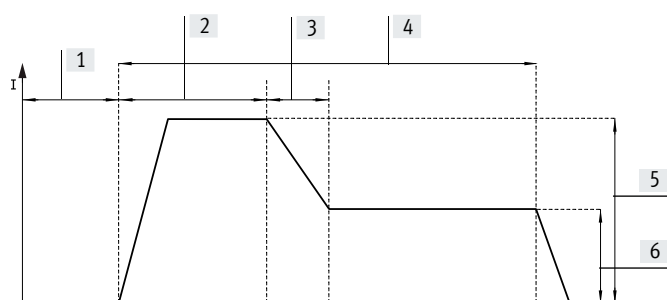
Key features

Function

Holding current reduction

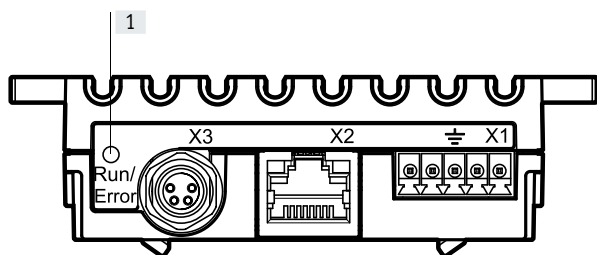
The integrated holding current reduction reduces the current consumption to the set holding current after the adjustable pickup time has elapsed. This:

- Reduces the heat generation 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



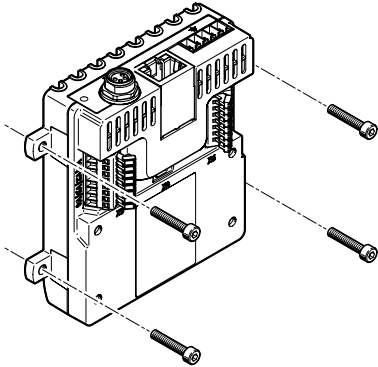
- [1] Status indicator LED

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

Key features

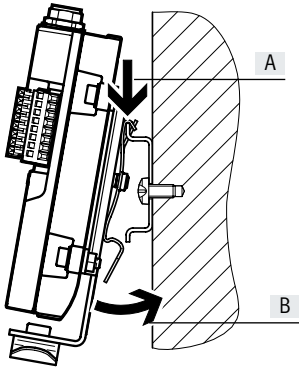
Mounting

Wall mounting



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

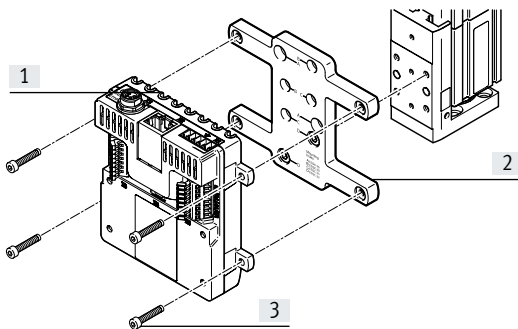
H-rail mounting



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).

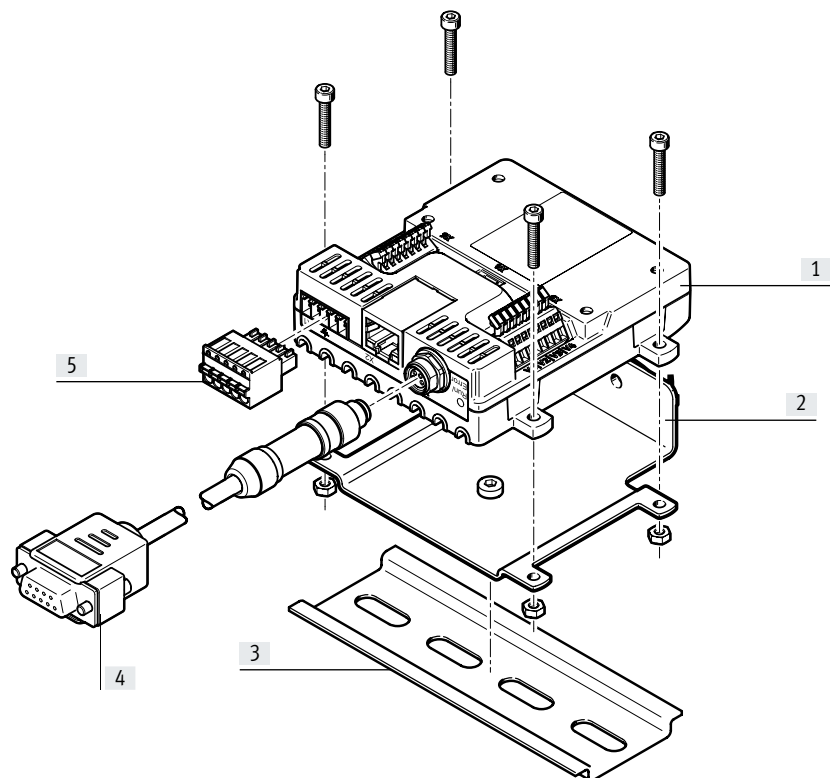
Mounting on a drive with adapter plate



- [1] Valve control module VAEM
- [2] Adapter plate
- [3] Screws

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	
EPRS2	EtherNet and RS232	

Data sheet

-  Voltage
18 ... 24 V DC

**General technical data**

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 the output
	Parameterisation error
Mounting position	Any
Control elements	DIL switch for baud rate
Max. number of outputs	8

Communication interface

Protocol	ASCII via 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
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	[mm ²] 0.08 ... 0.57

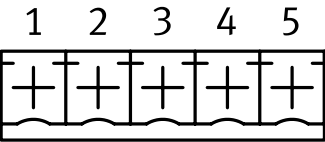
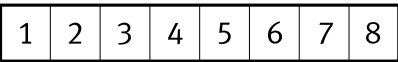
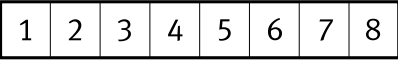
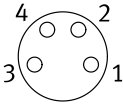
Ethernet interface

Connection type	Socket
Connection technology	RJ45
Transmission rate	[Mbps] 10/100
Function	Parameterisation and commissioning
Protocol	Modbus TCP

Data sheet

Technical data – Electrical components		
Nominal operating voltage	[V DC]	24
Permissible voltage fluctuations	[%]	± 10
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
Reverse polarity protection		For operating voltage
Pollution degree		2
Power supply		
Connection technology		PCB connector, contact spacing 3.5 mm
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		
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
UKCA marking (see declaration of conformity) ²⁾		To UK instructions for EMC To UK RoHS instructions
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 trademark
Relative humidity	[%]	0 - 95 Non-condensing
Nominal altitude of use		≤ 2000
<p>1) Corrosion resistance class CRC 0 to Festo standard FN 940070 No corrosion stress. Applies to small, visually unimportant standards-based 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.</p> <p>2) For information about the area of use, see the EC declaration of conformity at: www.festo.com/catalogue/vaem → Support/Downloads. 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.</p>		
Materials		
Housing material		PA
Housing colour		Black
Note on materials		Contains paint-wetting impairment substances RoHS-compliant

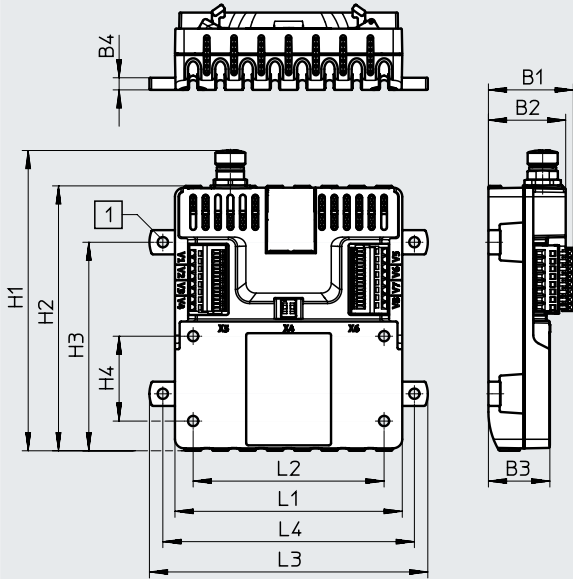
Data sheet

Connecting elements		Pin	Function
Power supply, trigger input			
	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			
	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			
	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	TxD	
	3	RxD	
	4	NC	

Data sheet

Dimensions

Download CAD data → www.festo.com



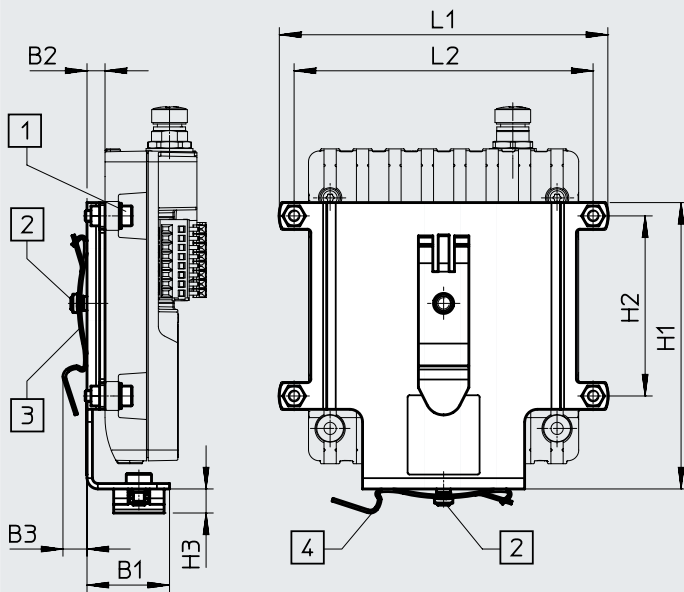
[1] Mounting holes $\varnothing 3.4$ for M3 socket head screw

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

Mounting



[1] $\varnothing 3.2$ for M3 socket head screw

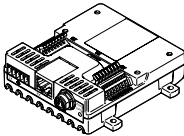

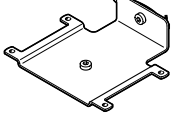
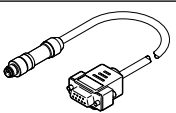
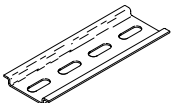
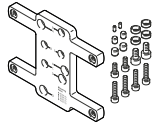
[2] $\varnothing 4.2$ for M4 socket head screw

[3] Mounting position of clamp at the rear

[4] Mounting position of clamp underneath

	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	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	1.5 m	8099218 NEBC-M8G4-ES-1.5-N-SB-S1G9-RS2-S7
		2.5 m	8086524 NEBC-M8G4-ES-2.5-N-SB-S1G9-RS2-S7
H-rail			
	H-rail to EN 60715	35430	NRH-35-2000
Adapter plate			
	To mount the dispense head VTOE on the electric slides EGSK-20, EGSK-26, EGSC-25, EGSC-32	81140776	EHAM-MA-E19-25-V3