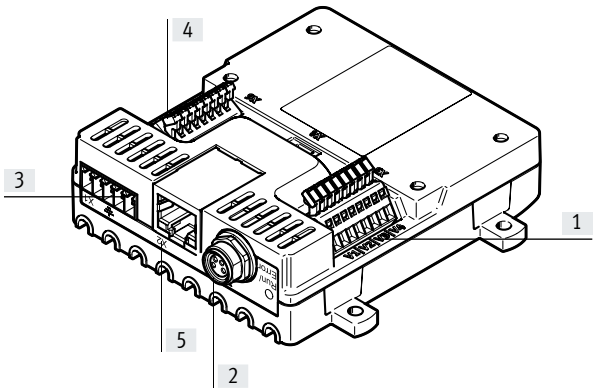
Valve control module VAEM

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

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

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

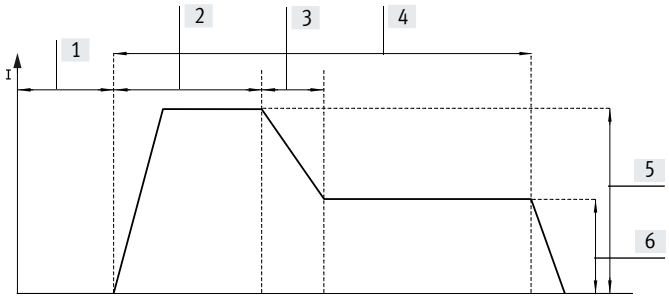
Key features

Function

Holding current reduction

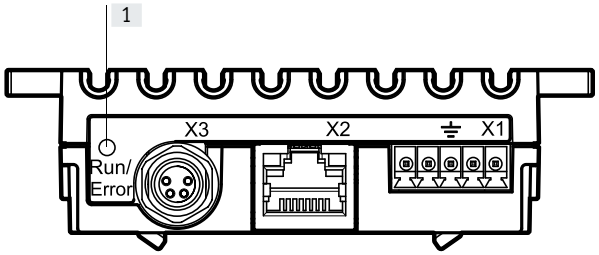
The integrated holding current reduction reduces the current consumption to the set holding current after the adjustable pickup time has elapsed. This:

- 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



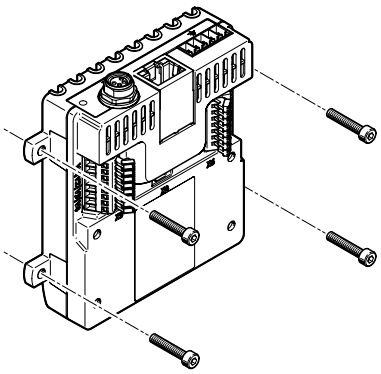
[1] Status indicator LED

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

Key features

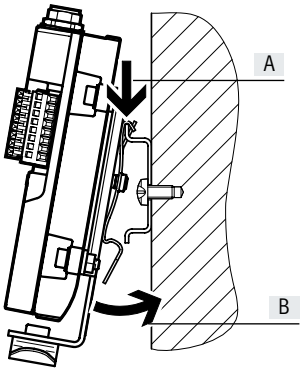
Mounting

Wall mounting



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

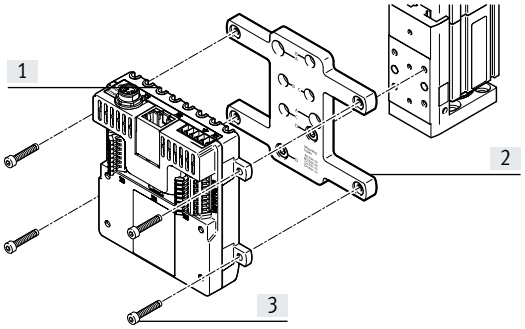
H-rail mounting



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).

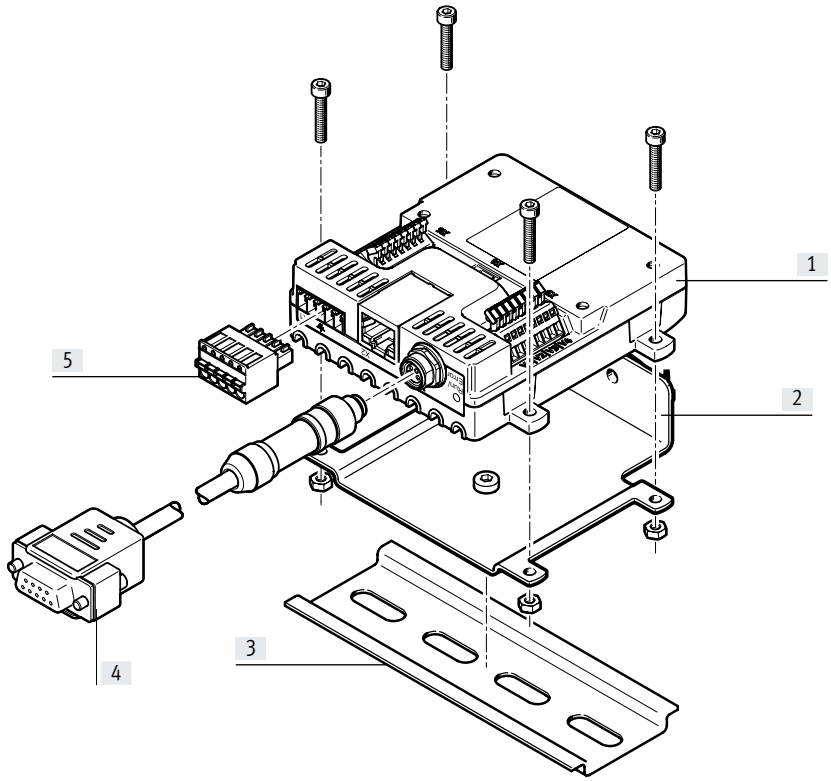
Mounting on a drive with adapter plate



[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

- ϟ - 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

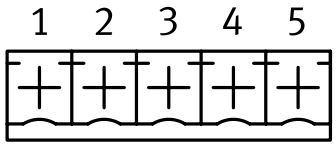
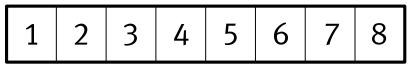
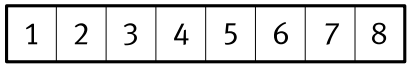
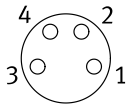
1) Corrosion resistance class CRC 0 to Festo standard FN 940070
No corrosion stress. Applies to small, visually unimportant standards-based parts such as threaded pins, circlips and clamping sleeves which are usually only available on the market in a phosphated or burnished version (and possibly oiled) as well as to ball bearings (for components < CRC 3) and plain bearings.

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.

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

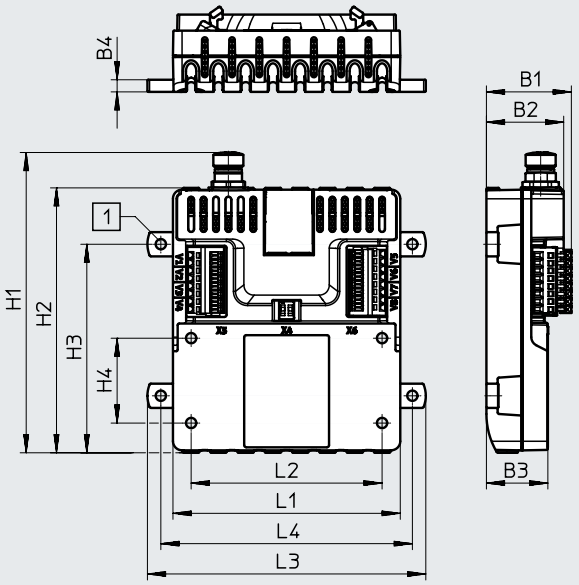
Data sheet

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

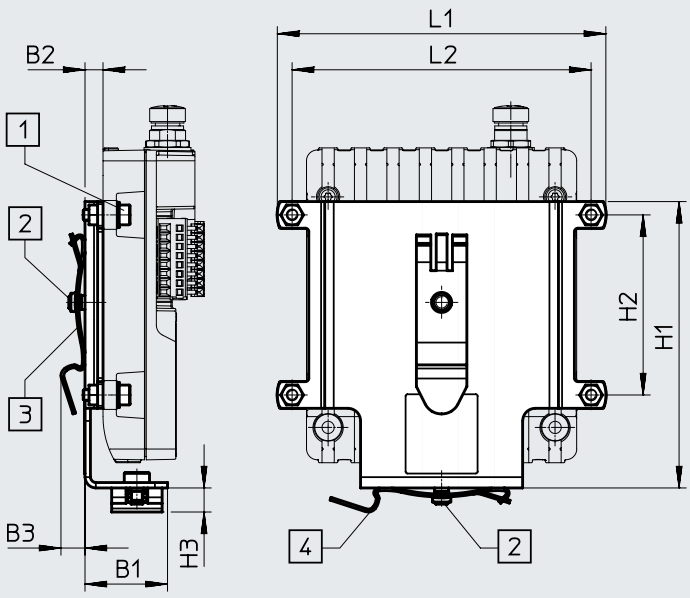


[1] Mounting holes Ø 3.4 for M3 socket head screw

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] Ø 3.2 for M3 socket head screw

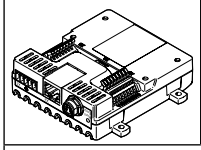
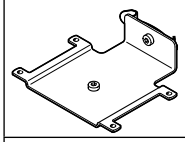
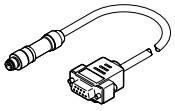
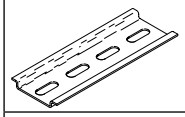
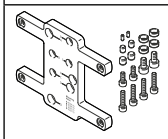
[2] Ø 4.2 for M4 socket head screw

[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 valve control module VAEM on the electric slides EGSK-20, EGSK-26, EGSC-25, EGSC-32		**8140776**	**EHAM-MA-E19-25-V3**