Valve control module VAEM

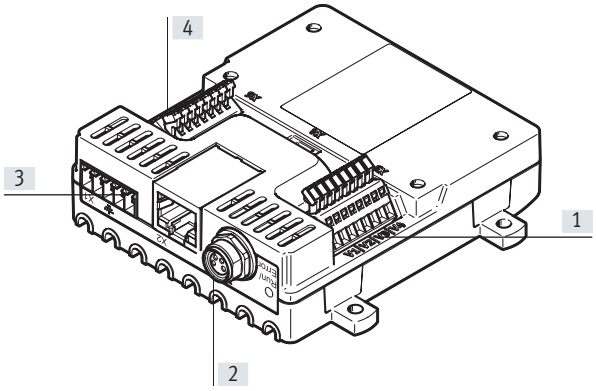
NEW

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) 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

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
- 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

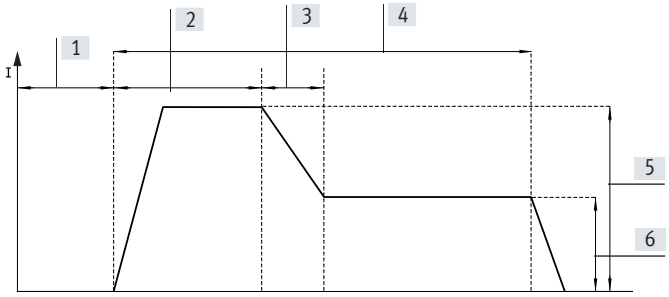
Characteristics

Function

Holding current reduction

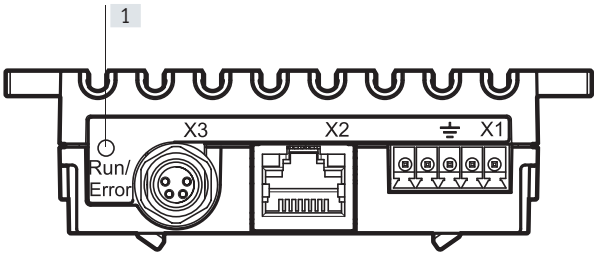
The integrated holding current reduction reduces the current consumption to the set holding current after the adjustable pickup time has elapsed. This:

- 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

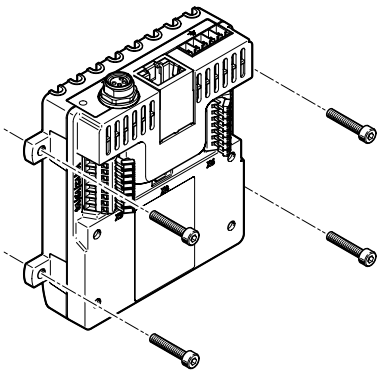
The LED status indicator allows the operating status of the valve control module to be monitored.

NEW

Characteristics

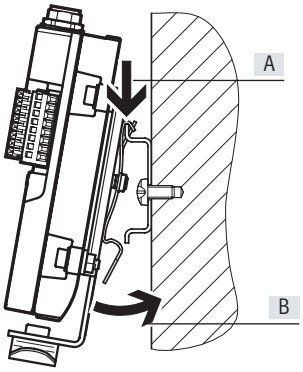
Mounting

Wall mounting



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

H-rail mounting

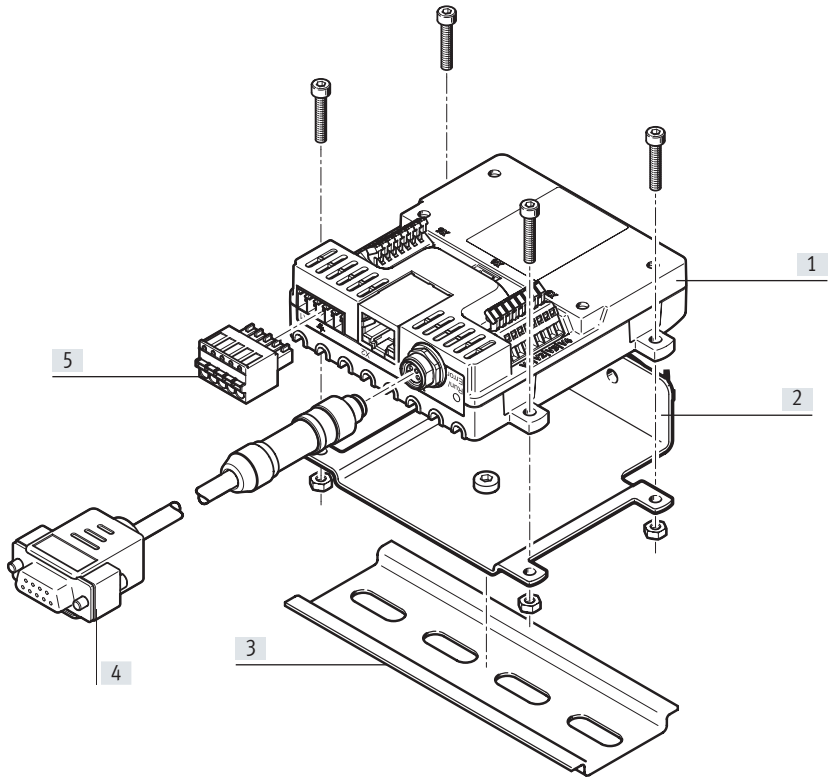


The H-rail mounting VAME-V3-H consists of a mounting bracket and a clamp:

- 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

NEW

Type codes

001	Series	
VAEM	Electrical module	

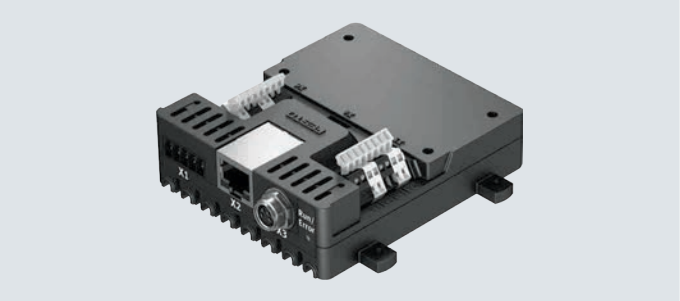
002	Module function	
V	Valve control	

003	Valve control	
S8	Individual connection 8x	

004	Bus protocol/activation	
RS2	RS232	
EPRS2	EtherNet and RS232	

Data sheet

- ⏚ - 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 output
Mounting position		Any
Control elements		DIP switch for transmission 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		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 ... 0.5

Technical data – Electrical components		
Nominal operating voltage	[V DC]	24
Permissible voltage fluctuations	[%]	± 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]	27
Power supply		
Connection technology		Plug pattern L8
Number of pins/wires		5
Function		Digital trigger input
		Power supply
Connection type		Plug

Data sheet

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
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

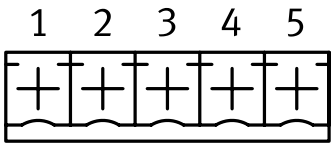
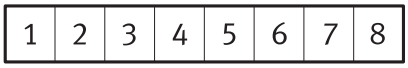
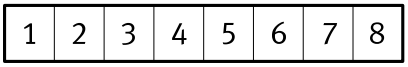
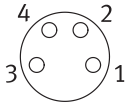
1) Corrosion resistance class CRC 0 to Festo standard FN 940070
No corrosion stress. Applies to small, visually unimportant standard parts such as threaded pins, circlips and clamping sleeves which are usually only available on the market in a phosphated or burnished version (and possibly oiled) as well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

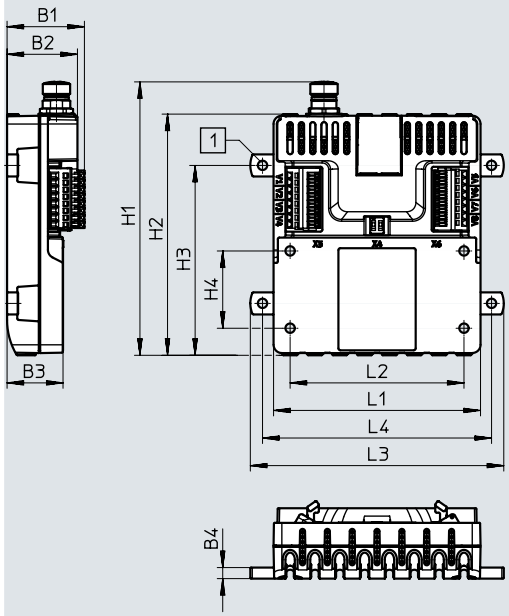
Data sheet

Connecting elements

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

Data sheet

Dimensions Download CAD data ➔ www.festo.com

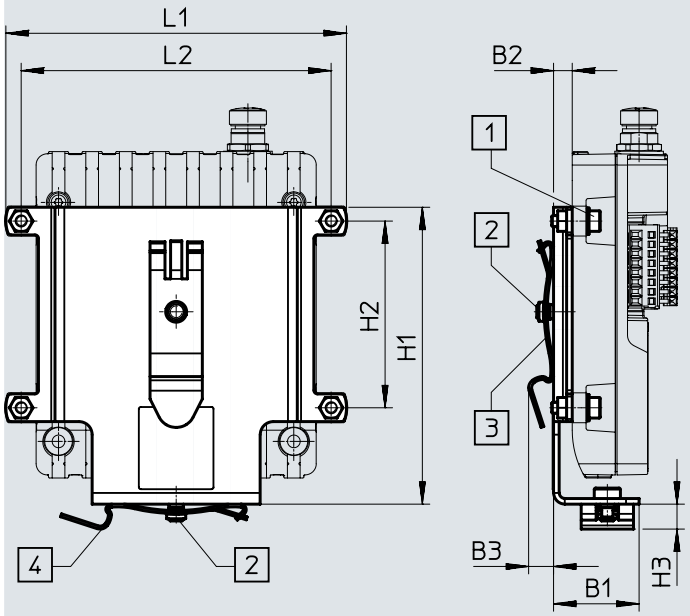


[1] Mounting holes with a diameter of 3.4 for M3 socket head screw

Type	B1	B2	B3	B4	H1	H2	H3	H4	L1	L2	L3	L4
VAEM-V-S8RS2	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] Diameter of 3.2 for M3 socket head screw

[2] Diameter of 4.2 for M4 socket head screw

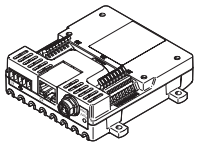
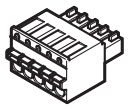
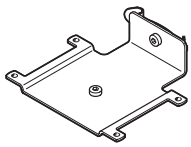
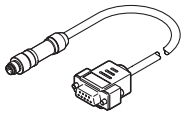
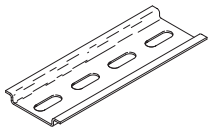
[3] Mounting position of clamp at the rear

[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	**8088993**	**VAEM-V-S8RS2**
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**

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