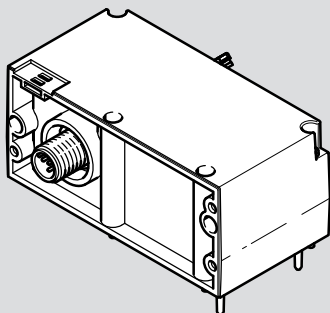
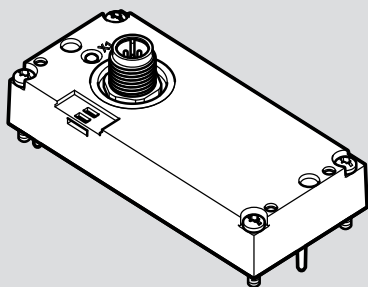


VAEM-L1-S-...-PT(L)

Electrical interface

FESTO

Operating instruc-
tion



8196010

8196010

2023-07i

[8196012]

Translation of the original instructions

IO-Link is a registered trademark of its respective trademark holder in certain countries.

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1 Applicable documents



All available documents for the product → www.festo.com/sp.

Document	Product	Content
Operating instructions	Valve terminal VTUG	Information on the design and installation of the valve terminals

Tab. 1: Applicable documents

2 Safety

2.1 Safety instructions

- Only use the product in its original condition without unauthorised modifications.
- Only use the product if it is in perfect technical condition.
- Take into account the ambient conditions at the location of use.
- Before working on the product, switch off the power supply and secure it against being switched on again.
- Store the product in a cool, dry environment protected from UV and corrosion. Keep storage times short.

2.2 Intended use

The product is intended as an electrical interface between an IO-Link master and a VTUG valve terminal.

Use only in an industrial environment. Outside industrial environments, e.g. in commercial and residential/mixed-use areas, it may be necessary to take measures to suppress radio interference.

2.3 Training of qualified personnel

Work on the product should only be conducted by qualified personnel. The qualified personnel must be familiar with installation of electrical control systems.

3 Additional information

- Contact the regional Festo contact if you have technical problems → www.festo.com.
- Accessories and spare parts → www.festo.com/catalogue.

4 Product overview

4.1 Product design

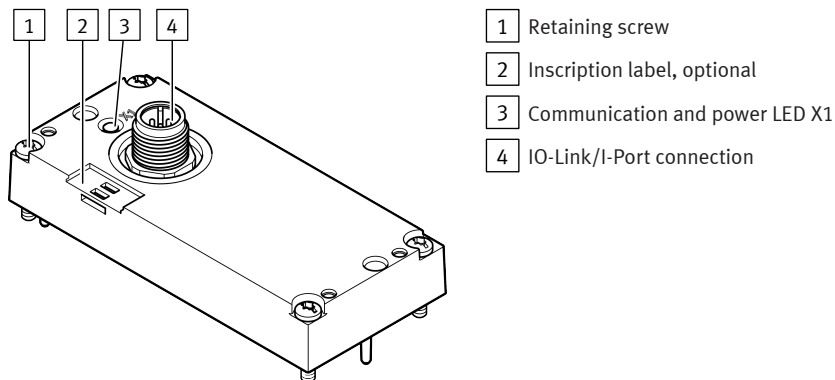


Fig. 1: Product design VAEM-L1-S-...-PT

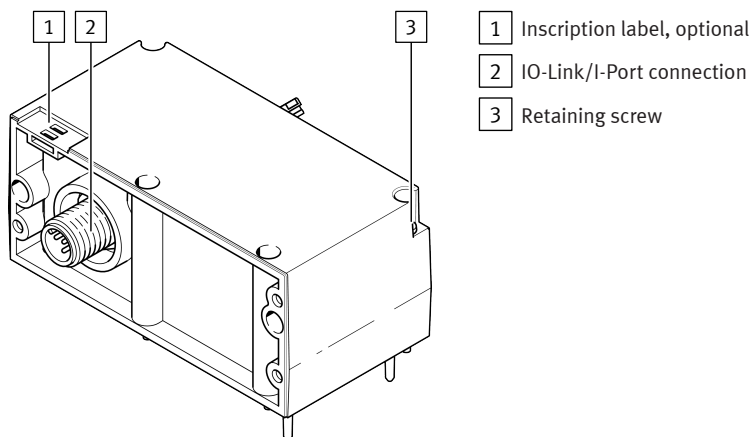


Fig. 2: Product design VAEM-L1-S-...-PTL

4.2 Function

The module is an interface for direct connection to the fieldbus by mounting the CTEU bus node or connects a VTUG valve terminal to a IO-Link master or an I-Port master in IO-Link mode. Status messages and error messages are displayed via LED displays on the module and reported to the IO-Link master or I-Port master.

5 Assembly

NOTICE

Damage to internal electronics.

Damage to components and malfunctions due to incorrect handling.

- Observe the handling specifications for electrostatically sensitive devices.
-
- Assemble the module with the retaining screws provided on the terminal strip of the valve terminal VTUG.

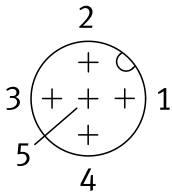
PT	PTL
0.7 Nm ±20 %	0.3 Nm ± 20 %

6 Installation

Power is supplied via the IO-Link master or I-Port master.
The electrical interface is grounded via the valve terminal → 1 Applicable documents.

Pin allocation

The product can only be connected to a IO-Link master or I-Port master with port class B. The electrical connection is made via a 5-pin M12 plug with A coding. The individual pins on the electrical connection are assigned as follows:

Connection	Pin	Allocation	Function
	1	24 V _{EL/SEN} (PS)	Operating voltage supply
	2	24 V _{VAL/OUT} (PL)	Load voltage supply
	3	0 V _{EL/SEN} (PS)	Operating voltage supply
	4	C/Q	Data communication
	5	0 V _{VAL/OUT} (PL)	Load voltage supply
		Housing, FE	Functional earth (optional)

Tab. 2: Pin allocation IO-Link interface/I-Port interface

7 Commissioning

Download IODD file

If the electrical interface is operated as an IO-Link device, download the corresponding device description file → www.festo.com/sp.

Switching on

Switch on the power supply on the IO-Link master or I-Port master. Connected devices are recognised automatically.
If commissioning is successful, the LED X1 behaves as follows:

Meaning (up to Rev 07)	Meaning (from Rev. 08)
 green light	 flashing green

Tab. 3: Luminous behavior of LED X1

8 Diagnostics

All diagnostic messages are forwarded to the IO-Link master or I-Port master as an event code.

EventCode	IO-Link SpecName	Description	Remedy
0x5000	IOL_EVENT_DEVICE_HARDWARE_FAULT	Hardware error	– Contact support. – Replace device.
0x5110	IOL_EVENT_PRIMARY_SUPPLY_VOLTAGE_OVERRUN	Overvoltage PS	– Check power supply of IO-Link master/I-Port master.
0x5111	IOL_EVENT_PRIMARY_SUPPLY_VOLTAGE_UNDERRUN	Undervoltage PS	– Check power supply of IO-Link master/I-Port master.
0x5112	IOL_EVENT_SECONDARY_SUPPLY_VOLTAGE_FAULT	Overvoltage/undervoltage PL	– Check power supply of IO-Link master/I-Port master.
0x7710	IOL_EVENT_SHORT_CIRCUIT	Short circuit	– Check the connected sensor/consumer/wiring.
0x8CA3	IOL_EVENT_CONDITION_COUNTER	Cycle counter limit reached	– Clear or reset counters. – Change valves.
0xFF91	IOL_EVENT_FF91_DS_UPLOAD_REQ	Firmware update error	– Contact support.

Tab. 4: Diagnostic messages

The meaning of the LED display depends on the revision of the firmware. The revision of the firmware can be called up on the IO-Link master or I-Port master.

LED X1	Meaning (up to Rev 07)	Meaning (from Rev. 08)
 green light	Normal operating status	Data communication faulty.
 flashing green	Data communication faulty.	Normal operating status
 Flashes alternately red/green	24-V load voltage supply.	–
 flashing red	Device error	
 red light	24-V load voltage supply and data communication faulty.	24-V load voltage supply. Data communication faulty.
 Off	No 24 V operating voltage supply or undervoltage	

Tab. 5: LED X1

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If the IO-Link loses data communication, the valve states are retained.

9 Technical data

VAEM-L1-S-...	-PT	-PTL
Certificates, declaration of conformity	➔ www.festo.com/sp	
Operating voltage PS and valve [V DC]	24 ± 25%	
Logic supply PS [mA]	30	
Valve supply [mA]	30	
Ambient temperature [°C]	-5 ... +50	
Degree of protection in accordance with EN 60529	IP67	
IO-Link interface/I-Port interface		
Specification	V1.1, V1.0 compatible	
Baud rate	COM 2, 38.4 kBit	

Technical data

VAEM-L1-S-...		-PT	-PTL
Output data			
VAEM-L1-S-8	[Byte]	2	
VAEM-L1-S-16	[Byte]	4	
VAEM-L1-S-24	[Byte]	6	

Tab. 6: Technical data

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