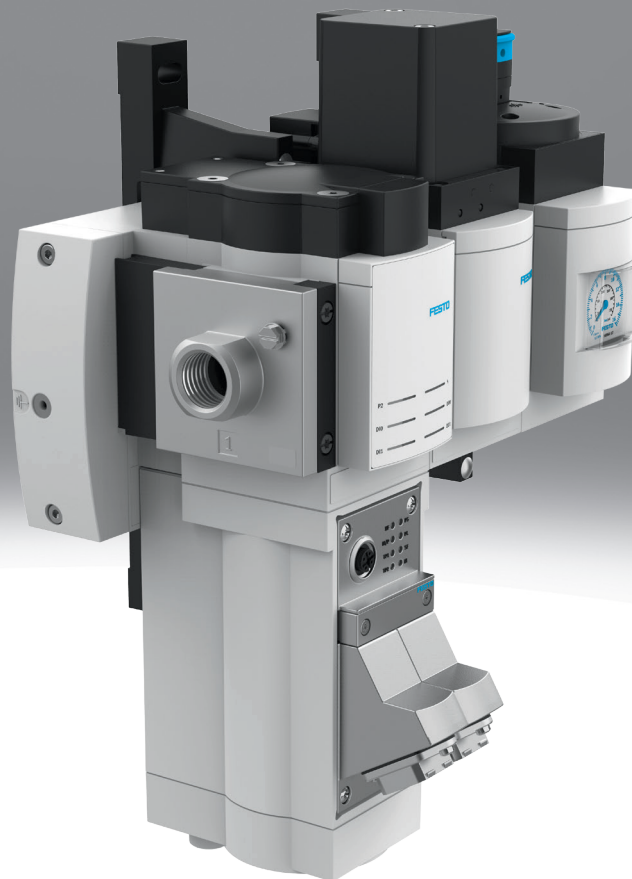


## Energy efficiency module MSE6

**FESTO**

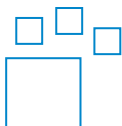


## Characteristics

### At a glance

- The energy efficiency module MSE6-C2M monitors consumption, regulates and shuts off the compressed air when production is inactive, and ensures a soft restart because the pressure does not fall below a specific level.
- The energy efficiency module MSE6-D2M monitors the compressed air consumption and shuts off the compressed air supply after production has stopped for a certain amount of time.
- The energy efficiency module MSE6-E2M monitors the compressed air consumption and shuts off the compressed air supply after production has stopped for a certain amount of time.

### Ordering data - modular system



Configurable product

This product and all its product options can be ordered online via the configurator.

### Function

#### [C2M] Energy efficiency module

MSE6-C2M regulates to the adjustable normal setpoint pressure, automatically shuts off and then regulates to the adjustable setpoint for standby pressure if the flow rate falls below the limit value for a prolonged period.

- Shuts off and regulates the pressure as controlled by the user
- Has a parameterisable slew rate limit for setpoint pressure
- Collecting and providing measurement data: output pressure, pressure change (to monitor for leaks), flow rate and air consumption
- Limit value monitoring for pressure (lower and upper limit value), pressure change in shut-off mode (upper limit value) and flow rate (upper limit value)
- 2 digital inputs
- 2 digital outputs
- Channel-based status indicator via LED
- Parameterisable special functions
- Fieldbus connection PROFINET IO via integrated fieldbus node, EtherNet/IP via integrated fieldbus node or EtherCAT via integrated fieldbus node
- CPX extension interface row 1 for connecting an MSE6-D2M or connecting digital and analogue CPX-EA modules (only MSE6-C2M-...-M)

#### [D2M] Energy efficiency module

Automatic shut-off if the flow rate falls below the limit value for an extended period of time

- Shuts off and pressurises as controlled by the user
- Collecting and providing measurement data: output pressure, pressure change (to monitor for leaks), flow rate and air consumption
- Limit value monitoring for pressure (lower and upper limit value), pressure change in shut-off mode (upper limit value) and flow rate (upper limit value)
- Profinet IO, EtherNet/IP or EtherCAT fieldbus connection via the fieldbus node of the MSE6-C2M-...-M or CPX terminal controlled by the CPX extension
- CPX extension interface row 2 for connection to an MSE6-C2M-...-M or to a CPX terminal with CPX extension interface row 1

#### [E2M] Energy efficiency module

MSE6-E2M shuts off automatically if the flow rate falls below the limit value for an extended period of time.

- Shuts off and pressurises as controlled by the user
- Collecting and providing measurement data: output pressure, pressure change (to monitor for leaks), flow rate and air consumption
- Limit value monitoring for pressure (lower and upper limit value), pressure change in shut-off mode (upper limit value) and flow rate (upper limit value)
- Fieldbus connection PROFIBUS DP via integrated fieldbus node, EtherNet/IP via integrated fieldbus node or EtherCAT via integrated fieldbus node

### Electrical system expansion

A CPX IO module consists of an electronics module, an interlinking block and a connection block. There are several options to choose from. The possible combinations of these modules as well as information and ordering data for additional accessories (end plate with CPX extension, tie rod and mounting accessories) can be found in the CPX documentation. → Internet: cpx

## Characteristics

### Manual override

[HB] Detenting with accessories

With the manual override, a C2M can, when de-energised, switch the pressure  $p_2 = p_1$  using the AHB-MD/MF/MV plug-on kit available as an accessory.

### Measured value display

With or without pressure gauge

[RG] Integrated pressure gauge with red/green scale

Two adjustable red segments above the pressure gauge scale along with the printed green segment enable the required pressure range to be limited.

### Pneumatic connection

Various connection sizes can be selected using the configurator.

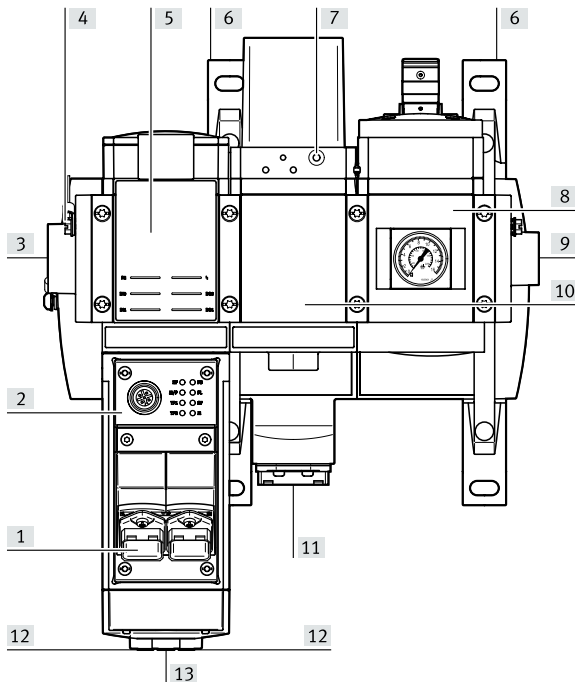
## Type code

<b>001</b>	<b>Series</b>	
<b>MSE</b>	Modular standard, electric	
<b>002</b>	<b>Size</b>	
<b>6</b>	Grid dimension 62 mm	
<b>003</b>	<b>Function</b>	
<b>C2M</b>	Energy efficiency module	
<b>D2M</b>	Energy efficiency module	
<b>E2M</b>	Energy efficiency module	
<b>004</b>	<b>Flow measuring range</b>	
<b>5000</b>	Max. 5000 l/min	
<b>005</b>	<b>Electrical actuation</b>	
<b>FB13</b>	Fieldbus node for PROFIBUS DP	
<b>FB36</b>	Fieldbus node for Ethernet/IP	
<b>FB37</b>	Fieldbus node for EtherCAT®	
<b>FB43</b>	Bus node for PROFINET IO with M12 connection	
<b>FB44</b>	Bus node for PROFINET IO with RJ45 connection	
<b>CBUS</b>	Internal electrical control	
<b>006</b>	<b>Electrical inputs/outputs</b>	
	None	
<b>D</b>	2 digital inputs, 2 digital outputs	
<b>007</b>	<b>Electrical system expansion</b>	
	No CPX extension connection	
<b>M</b>	CPX extension connection row 1 (master)	
<b>S</b>	CPX extension connection row 2 (slave)	

<b>008</b>	<b>Manual override</b>	
<b>HB</b>	Detenting with accessories	
	None	
<b>009</b>	<b>Measured value display</b>	
	No display	
<b>A4</b>	Adapter for EN pressure gauge 1/4, without pressure gauge	
<b>A8</b>	Adapter for EN pressure gauge 1/8, without pressure gauge	
<b>AG</b>	MS pressure gauge standard scale	
<b>RG</b>	Integrated pressure gauge with red/green scale	
<b>VS</b>	Cover plate	
<b>010</b>	<b>Alternative pressure gauge scale</b>	
	MS pressure gauge	
<b>BAR</b>	bar	
<b>MPA</b>	MPa	
<b>011</b>	<b>Electrical connection</b>	
	Standard	
<b>AMI</b>	Operating voltage plug push-pull, AIDA	
<b>M12L4</b>	Operating voltage plug M12, L-coded, 4-pin	
<b>M12L5</b>	Operating voltage plug M12, L-coded, 5-pin	
<b>VCB</b>	Power supply via C-bus	
<b>012</b>	<b>Pneumatic connection</b>	
<b>AGD</b>	Connecting plate G1/2	
<b>AGE</b>	Connecting plate G3/4	

## Datasheet

## General technical data – MSE6-C2M



The main components of the product are: fieldbus node, flow sensor, proportional-pressure regulator and shut-off valve with pressure sensor. The fieldbus interface enables it to be connected to a higher-order controller, e.g. a system or machine controller. The connection for the CPX extension series 1 can be used to connect certain devices with the CPX extension series connection 2, e.g. the MSE6-D2M or CPX-EA modules.

- [1] Fieldbus interface
- [2] Fieldbus node
- [3] Pneumatic connection 1: Compressed air input
- [4] Earthing connection
- [5] Flow sensor
- [6] Mounting bracket
- [7] Manual override (MSE6-C2M-...-HB only)
- [8] Shut-off valve with pressure sensor and pressure gauge
- [9] Pneumatic connection 2: Compressed air output
- [10] Proportional-pressure regulator
- [11] System supply
- [12] Connection for electrical inputs/outputs
- [13] Connection CPX extension series 1 (MSE6-C2M-...-M only)

Pneumatic connection, port 1 <sup>1)</sup>	G1/2, G3/4
Pneumatic connection, port 2	G1/2, G3/4
Mounting position	Horizontal +/-5°
Valve function	2/2 open, single solenoid

1) Pneumatic connection 1, 2: G3/4 possible via sub-base

## Electrical data – MSE6-C2M

Electrical connection	4-pin M12x1, L-coded to EN 61076-2-111	5-pin M12x1, L-coded to EN 61076-2-111	5-pin AIDA push-pull
Operating voltage DC load voltage	21.6 ... 28.8 V		
Operating voltage range DC electronics/sensors	18 ... 30 V		
Reverse polarity protection	For operating voltage connections		
Degree of protection	IP65, With plug socket		
Number of inputs	2		
Number of outputs	2		
Switching logic for inputs	PNP (positive switching)		
Switching logic for outputs	PNP (positive switching)		
Field bus interface	2x socket, M12x1, 4-pin, D-coded		2x RJ45 push-pull socket, AIDA

## Standard nominal flow rate – MSE6-C2M

Standard nominal flow rate (standardised to DIN 1343) <sup>1)</sup>	4,500 ... 7,000 l/min
---	-----------------------

1) Measured at p1 = 10 bar and p2 = 6 bar, Δp = 1 bar

## Datasheet

## Operating and environmental conditions – MSE6-C2M

Operating pressure	0.35 ... 1.3 MPa
Operating pressure	3.5 ... 13 bar
Operating pressure	50.75 ... 188.5 psi
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]
Note on operating and pilot medium	Lubricated operation not possible
Ambient temperature	0 ... 50°C
Media temperature	0 ... 50°C
Storage temperature	-10 ... 60°C
Corrosion resistance class CRC <sup>1)</sup>	–
CE mark (see declaration of conformity) <sup>2)</sup>	To EU EMC Directive, In accordance with EU RoHS Directive
UKCA marking (see declaration of conformity) <sup>3)</sup>	To UK instructions for EMC, To UK RoHS instructions
Approval	RCM trademark
KC mark	KC-EMV

1) More information [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

2) More information [www.festo.com/catalogue/mse6](http://www.festo.com/catalogue/mse6) → 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

3) More information [www.festo.com/catalogue/mse6](http://www.festo.com/catalogue/mse6) → 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

## Display/operation – MSE6-C2M

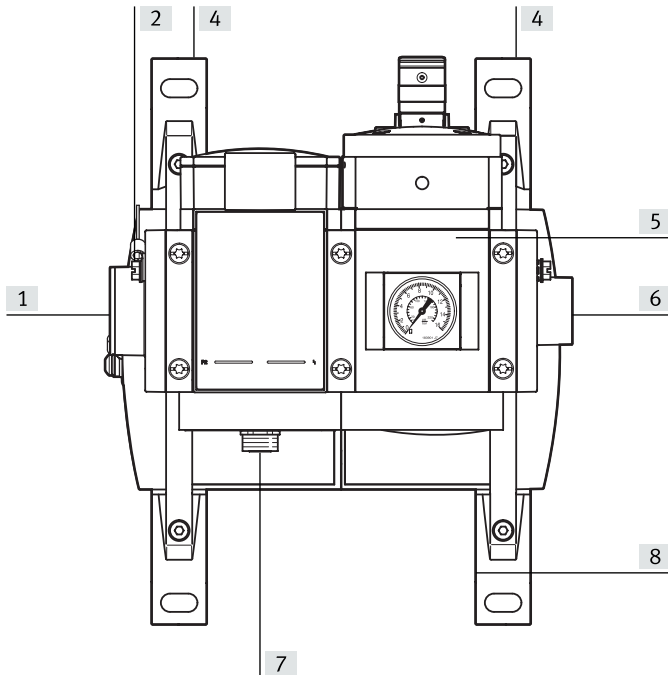
Start value for flow rate measuring range	50 l/min
End value for flow rate measuring range	5,000 l/min
Accuracy of flow rate	± (3% o.m.v. + 0.3% FS)
Start value for pressure measuring range	0 MPa
Start value for pressure measuring range	0 bar
Start value for pressure measuring range	0 psi
End value for pressure measuring range	1.4 MPa
End value for pressure measuring range	14 bar
End value for pressure measuring range	203 psi
Accuracy in ± % FS	3 %FS
Displayable units	kPa, l, l/min, m3, mbar, psi, scf, scfm

## Materials – MSE6-C2M

Material housing	Die-cast aluminium
Material covering	PA-reinforced
Material cover	PA-reinforced
Material seals	NBR
LABS (PWIS) conformity	VDMA24364-B1/B2-L

## Datasheet

## General technical data – MSE6-D2M



The product consists of the main components flow sensor and shut-off valve with pressure sensor. It has a CPX-Extension Series 2 connection for connection to a decentralized, remote fieldbus node with CPX-Extension Series 1 connection, e.g. MSE6-C2M-...-M or CPX terminal.

- [1] Pneumatic connection 1: Compressed air input
- [2] Earth connection
- [3] Flow sensor
- [4] Mounting bracket
- [5] Shut-off valve with pressure sensor and pressure gauge
- [6] Pneumatic connection 2: Compressed air output
- [7] CPX extension series 2 connection

Pneumatic connection, port 1	G1/2, G3/4
Pneumatic connection, port 2	G1/2, G3/4
Mounting position	Horizontal +/-5°
Valve function	2/2 open, single solenoid

## Electrical data – MSE6-D2M

Operating voltage DC load voltage	18 ... 28.8 V
Operating voltage range DC electronics/sensors	18 ... 30 V
Reverse polarity protection	For operating voltage connections
Degree of protection	IP65, With plug socket

## Standard nominal flow rate – MSE6-D2M

Standard nominal flow rate (standardised to DIN 1343) <sup>1)</sup>	4,500 l/min
---	-------------

1) Measured at p1 = 6 bar and p2 = 5 bar, Δp = 1 bar

## Datasheet

**Operating and environmental conditions – MSE6-D2M**

Operating pressure	0.35 ... 1.3 MPa
Operating pressure	3.5 ... 13 bar
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]
Note on operating and pilot medium	Lubricated operation not possible
Ambient temperature	0 ... 50°C
Media temperature	0 ... 50°C
Storage temperature	-10 ... 60°C
Corrosion resistance class CRC <sup>1)</sup>	–
CE mark (see declaration of conformity) <sup>2)</sup>	To EU EMC Directive, In accordance with EU RoHS Directive
UKCA marking (see declaration of conformity) <sup>3)</sup>	To UK instructions for EMC, To UK RoHS instructions
Approval	RCM trademark
KC mark	KC-EMV

1) More information [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

2) More information [www.festo.com/catalogue/mse6](http://www.festo.com/catalogue/mse6) → 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

3) More information [www.festo.com/catalogue/mse6](http://www.festo.com/catalogue/mse6) → 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

**Display/operation – MSE6-D2M**

Start value for flow rate measuring range	50 l/min
End value for flow rate measuring range	5,000 l/min
Accuracy of flow rate	± (3% o.m.v. + 0.3% FS)
Start value for pressure measuring range	0 MPa
Start value for pressure measuring range	0 bar
Start value for pressure measuring range	0 psi
End value for pressure measuring range	1.4 MPa
End value for pressure measuring range	14 bar
End value for pressure measuring range	203 psi
Accuracy in ± % FS	3 %FS
Displayable units	kPa, l, l/min, m3, mbar, psi, scf, scfm

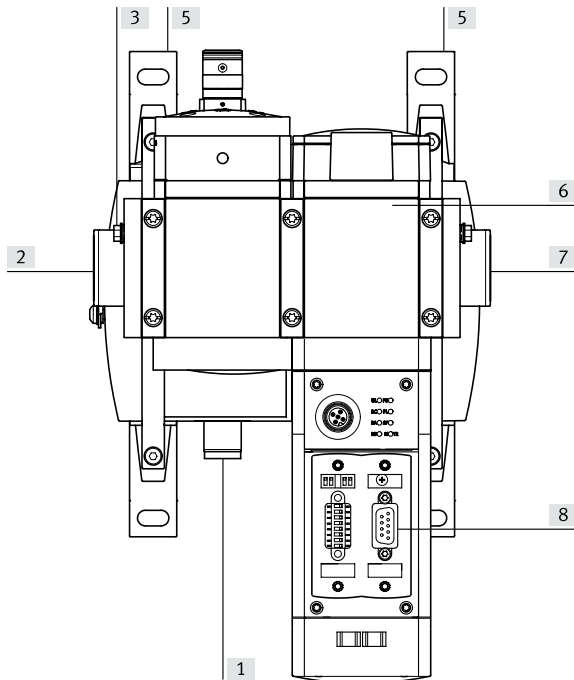
**Materials – MSE6-D2M**

Material housing	Die-cast aluminium
Material covering	PA-reinforced
Material cover	PA-reinforced
Material seals	NBR
LABS (PWIS) conformity	VDMA24364-B1/B2-L



## Datasheet

## General technical data – MSE6-E2M



The MSE6-E2M consists of the following main components: shut-off valve, flow sensor, pressure sensor and bus node. The fieldbus interface enables it to be connected to a higher-order controller, e.g. a system or machine controller.

- [1] System supply
- [2] Pneumatic connection 1: Compressed air input
- [3] Earth connection
- [4] Shut-off valve for opening up and shutting off the system supply air
- [5] Mounting bracket
- [6] Sensor module for measuring pressure, flow rate and consumption
- [7] Pneumatic connection 2: Compressed air output
- [8] Fieldbus interface

Pneumatic connection, port 1 <sup>1)</sup>	G1/2, G3/4
Pneumatic connection, port 2	G1/2, G3/4
Mounting position	Horizontal +/-5°
Valve function	2/2 open, single solenoid

1) Pneumatic connection 1, 2: G3/4 possible via sub-base

## Electrical data – MSE6-E2M

Electrical actuation	Fieldbus node for PROFIBUS DP	Fieldbus node for Ethernet/IP	Fieldbus node for EtherCAT®	Bus node for PROFINET IO with M12 connection	Bus node for PROFINET IO with RJ45 connection
Electrical connection	4-pin, M18, Plugs				
Operating voltage DC load voltage	18 ... 26.4 V				
Operating voltage range DC electronics/sensors	18 ... 30 V				
Reverse polarity protection	For operating voltage connections				
Degree of protection	IP65, With plug socket				
Field bus interface	Sub-D socket, 9-pin	2x socket, M12x1, 4-pin, D-coded			2x RJ45 push-pull socket, AI-DA

## Standard nominal flow rate – MSE6-E2M

Standard nominal flow rate (standardised to DIN 1343) <sup>1)</sup>	4,500 l/min
---	-------------

1) Measured at p1 = 6 bar and p2 = 5 bar, Δp = 1 bar

## Datasheet

**Operating and environmental conditions – MSE6-E2M**

Operating pressure	0.35 ... 1 MPa
Operating pressure	3.5 ... 10 bar
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]
Note on operating and pilot medium	Lubricated operation not possible
Ambient temperature	0 ... 50°C
Media temperature	0 ... 50°C
Storage temperature	-10 ... 60°C
Corrosion resistance class CRC <sup>1)</sup>	–
CE mark (see declaration of conformity) <sup>2)</sup>	To EU EMC Directive, In accordance with EU RoHS Directive
UKCA marking (see declaration of conformity) <sup>3)</sup>	To UK instructions for EMC, To UK RoHS instructions
Approval	RCM trademark
KC mark	KC-EMV

1) More information: [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

2) More information [www.festo.com/catalogue/mse6](http://www.festo.com/catalogue/mse6) → 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

3) More information [www.festo.com/catalogue/mse6](http://www.festo.com/catalogue/mse6) → 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

**Display/operation – MSE6-E2M**

Start value for flow rate measuring range	50 l/min
End value for flow rate measuring range	5,000 l/min
Accuracy of flow rate	± (3% o.m.v. + 0.3% FS)
Start value for pressure measuring range	0 MPa
Start value for pressure measuring range	0 bar
Start value for pressure measuring range	0 psi
End value for pressure measuring range	1.4 MPa
End value for pressure measuring range	14 bar
End value for pressure measuring range	203 psi
Accuracy in ± % FS	3 %FS
Displayable units	kPa, l, l/min, m3, mbar, psi, scf, scfm

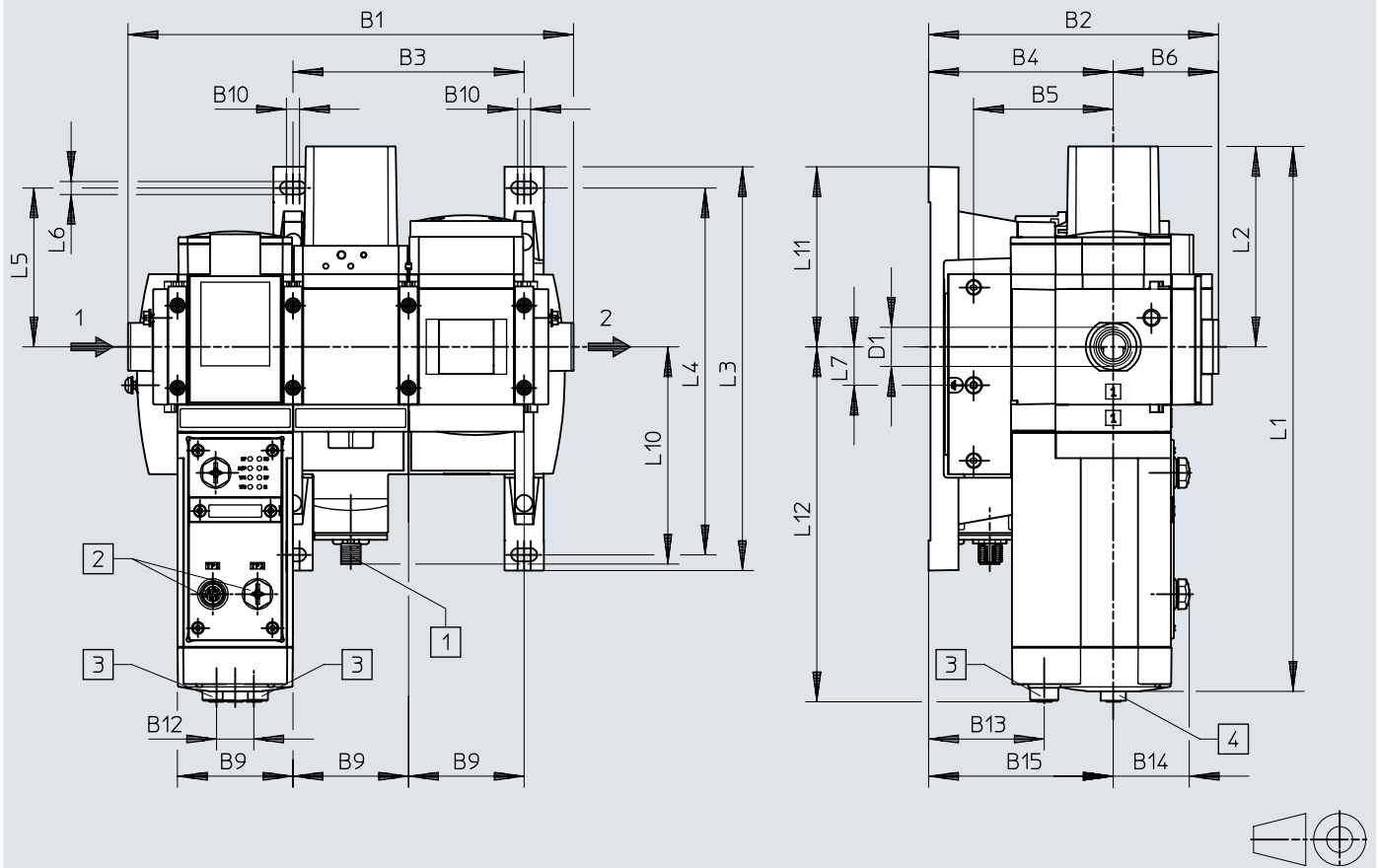
**Materials – MSE6-E2M**

Material housing	Die-cast aluminium
Material covering	PA-reinforced
Material cover	PA-reinforced
Material seals	NBR
LABS (PWS) conformity	VDMA24364-B1/B2-L

## Dimensions

Dimensions – MSE6-C2M – fieldbus node FB43 for PROFINET IO with port M12x1, 4-pole

Download CAD data → [www.festo.com](http://www.festo.com)



- [1] M12L socket, 4/5-pin
- [2] 2x M12x1 plug, 4-pin RJ45
- [3] 2x M12x1 socket, 5-pin RJ45
- [4] 2x M12x1 plug, 8-pin

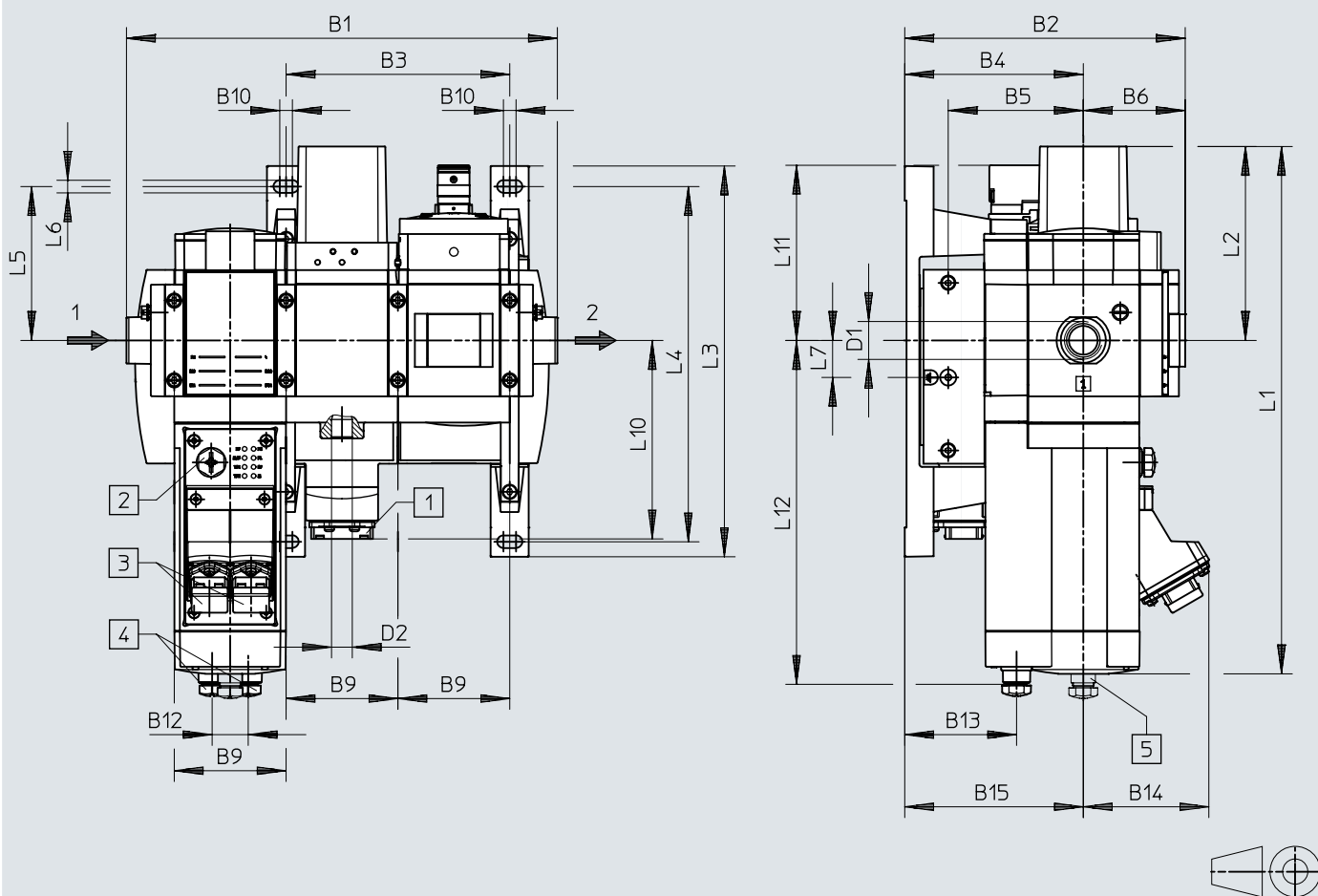
	B1	B2	B3	B4	B5	B6	B9	B10	B12	B13	B14	B15
MSE6-C2M-...-FB43-...	239	155,5	124	99	74,9	56,5	62	7	20	62	40,8	99

	D1	L1	L2	L3	L4	L5	L6	L7	L10	L12
MSE6-C2M-...-FB43-...	G1/2	292,4	107,5	216,6	196,9	85,3	7	20,7	116,5	190,4

## Dimensions

Dimensions – MSE6-C2M – fieldbus node FB44 for PROFINET IO with RJ45 port

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- [1] RJ45 push-pull socket, AIDA
- [2] 5-pin plug M12x1
- [3] 2x RJ45 push-pull socket, AIDA
- [4] 2x M12x1 plug, 5-pin
- [5] M12x1 plug, 8-pin (only MSE6-C2M-...-FB44-D-M-RG)

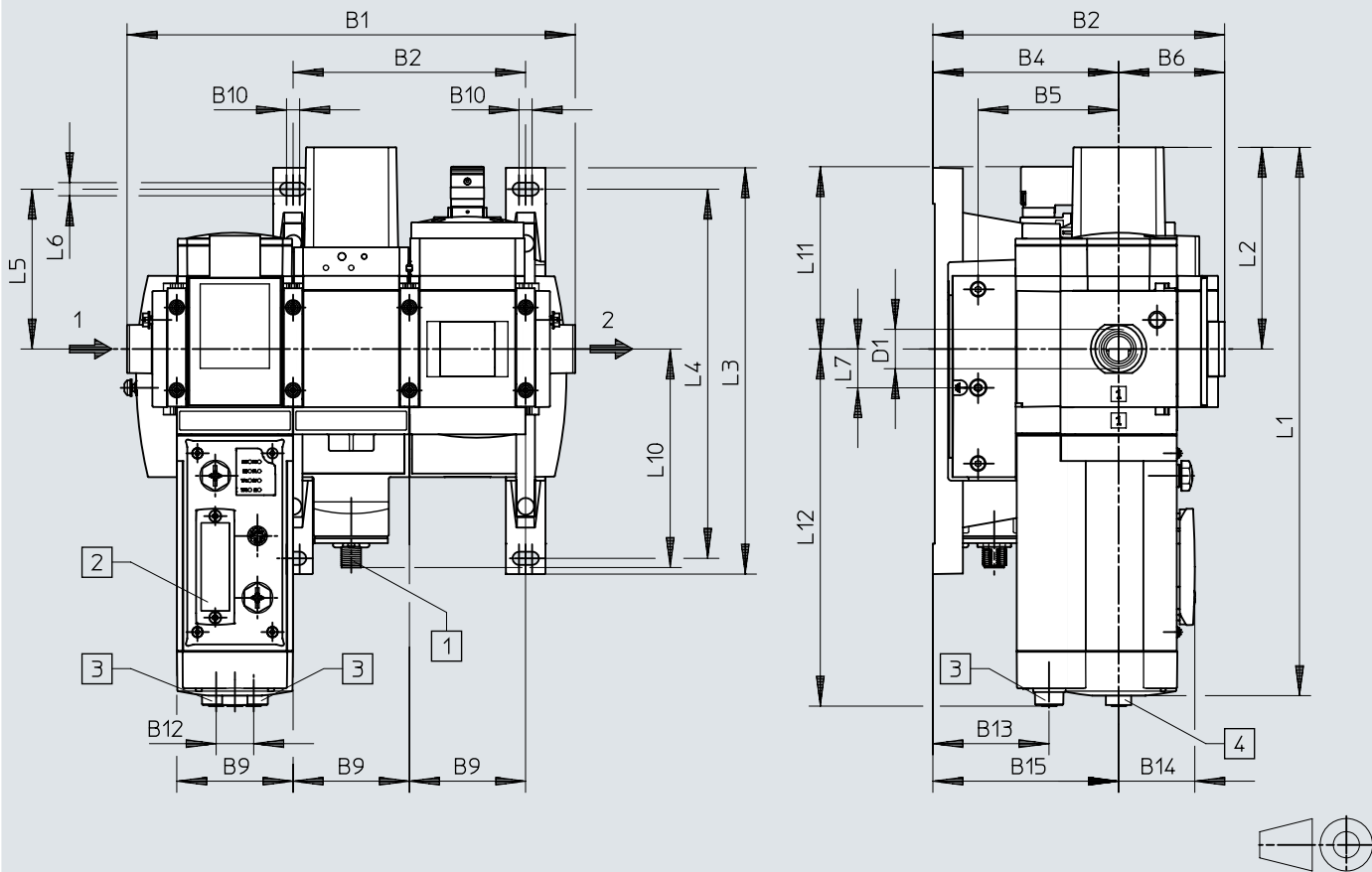
	B1	B2	B3	B4	B5	B6	B9	B10	B12	B13	B14	B15
MSE6-C2M-...-FB44-D-RG	239	155,5	124	99	74,9	56,5	62	7	20	62	69,2	-
MSE6-C2M-...-FB44-D-M-RG												99

	D1	D2	L1	L2	L3	L4	L5	L6	L7	L10	L11	L12
MSE6-C2M-...-FB44-D-RG	G1/2	G1/4	292,4	107,5	216,6	196,9	85,3	7	20,6	110	97,2	190,4
MSE6-C2M-...-FB44-D-M-RG												

## Dimensions

Dimensions – MSE6-C2M – fieldbus node FB36/37 for EtherNet/IP, EtherCAT

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- [1] M12L socket, 4/5-pin
- [2] 2x M12x1 plug, 4-pin RJ45
- [3] 2x M12x1 socket, 5-pin RJ45
- [4] 2x M12x1 plug, 8-pin

	B1	B2	B3	B4	B5	B6	B9	B10	B12	B13	B14	B15
MSE6-C2M-...-FB36/FB37-...	239	155,5	124	99	74,9	56,5	62	7	20	62	40,8	99

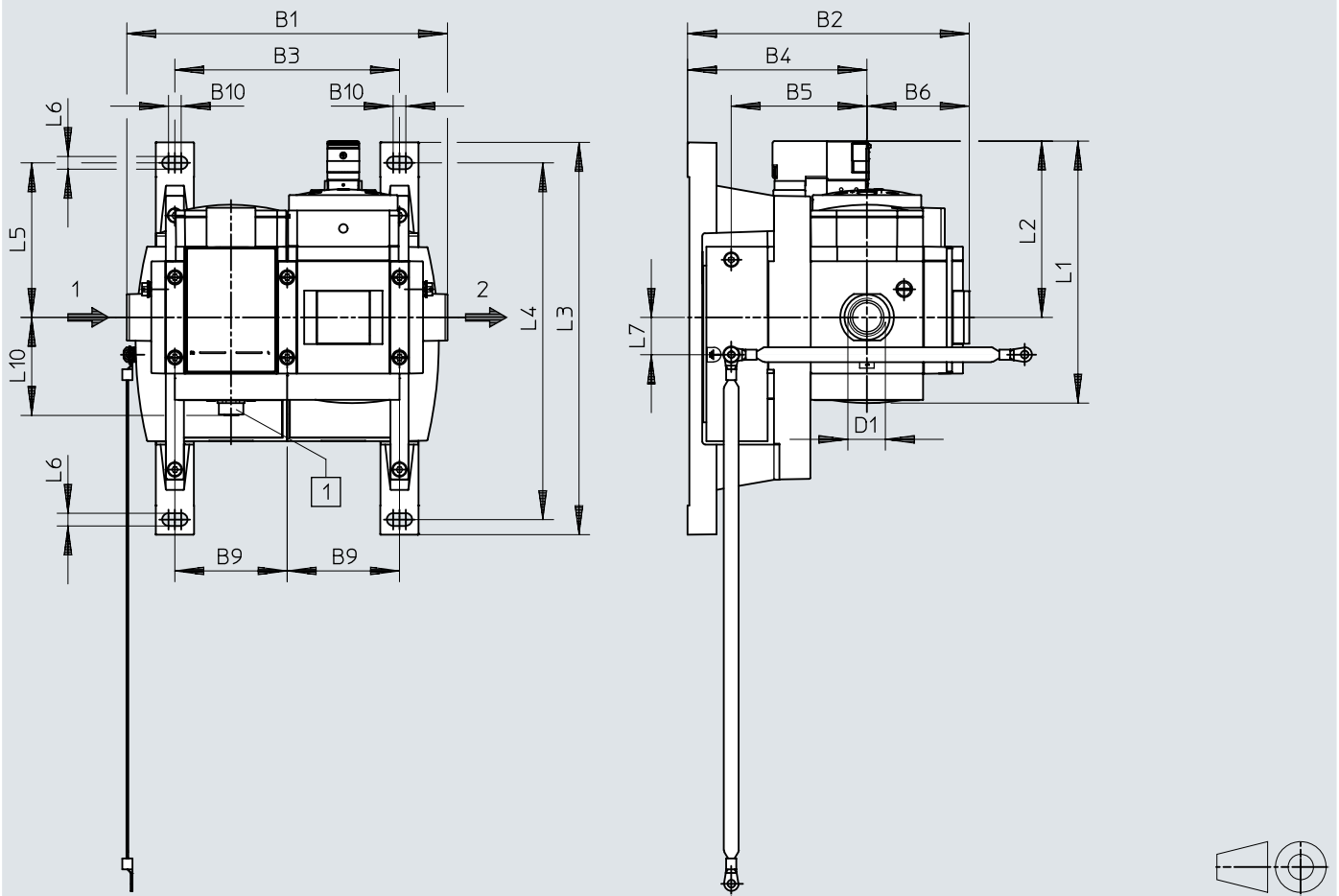
  

	D1	L1	L2	L3	L4	L5	L6	L7	L10	L11	L12
MSE6-C2M-...-FB36/FB37-...	G1/2	292,4	107,5	216,6	196,9	85,3	7	20,7	116,5	97,3	190,4

## Dimensions

### Dimensions – MSE6-D2M

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[1] M12x1 plug, 8-pin

	B1	B2	B3	B4	B5	B6	B9	B10
MSE6-D2M-...-CBUS-S-RG	177	155,5	124	99	74,9	56,5	62	7

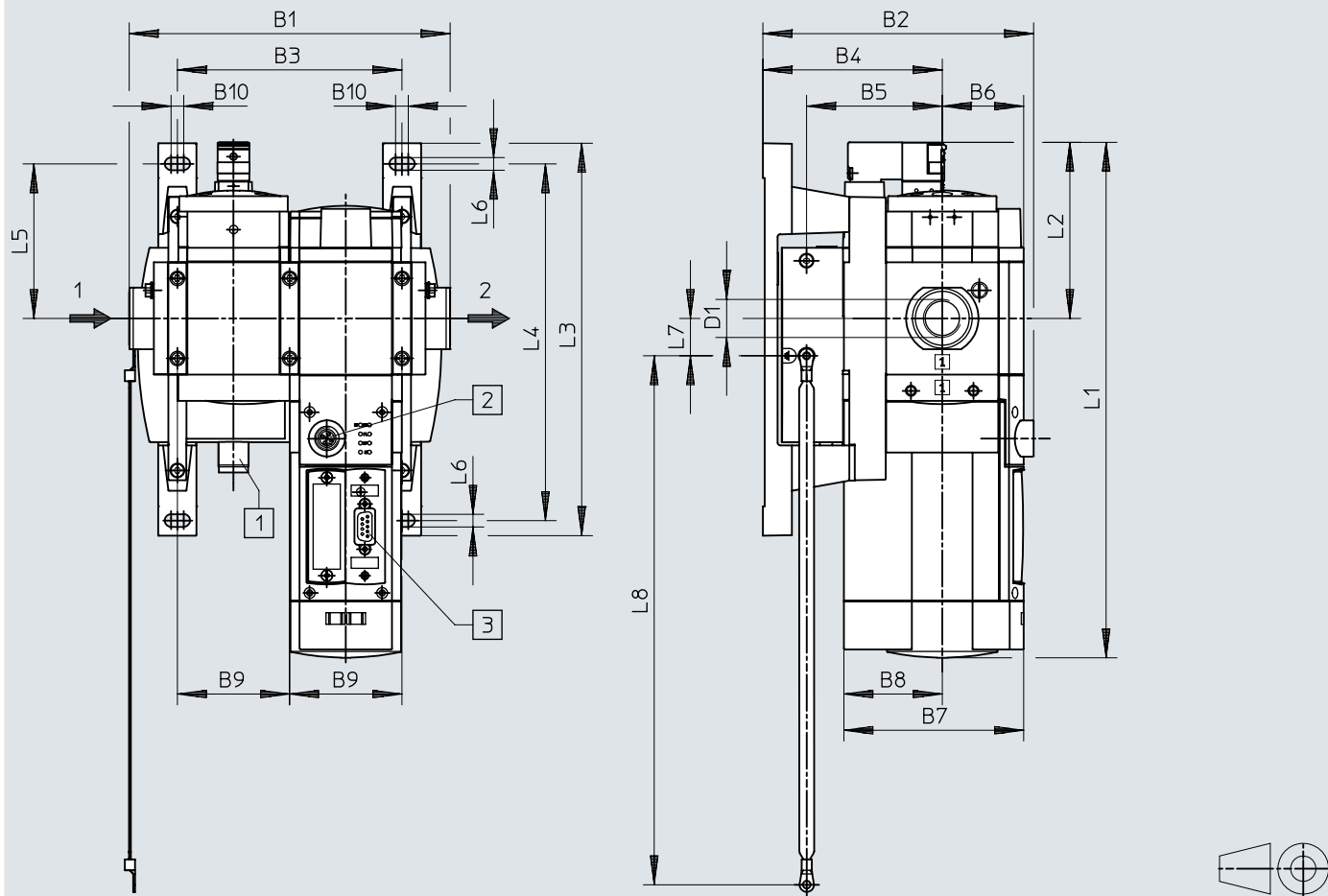
  

	D1	L1	L2	L3	L4	L5	L6	L7	L10
MSE6-D2M-...-CBUS-S-RG	G1/2	144,6	97,3	216,6	196,9	85,3	7	20,6	54,1

## Dimensions

Dimensions – MSE6-E2M – fieldbus node FB13 for PROFIBUS DP

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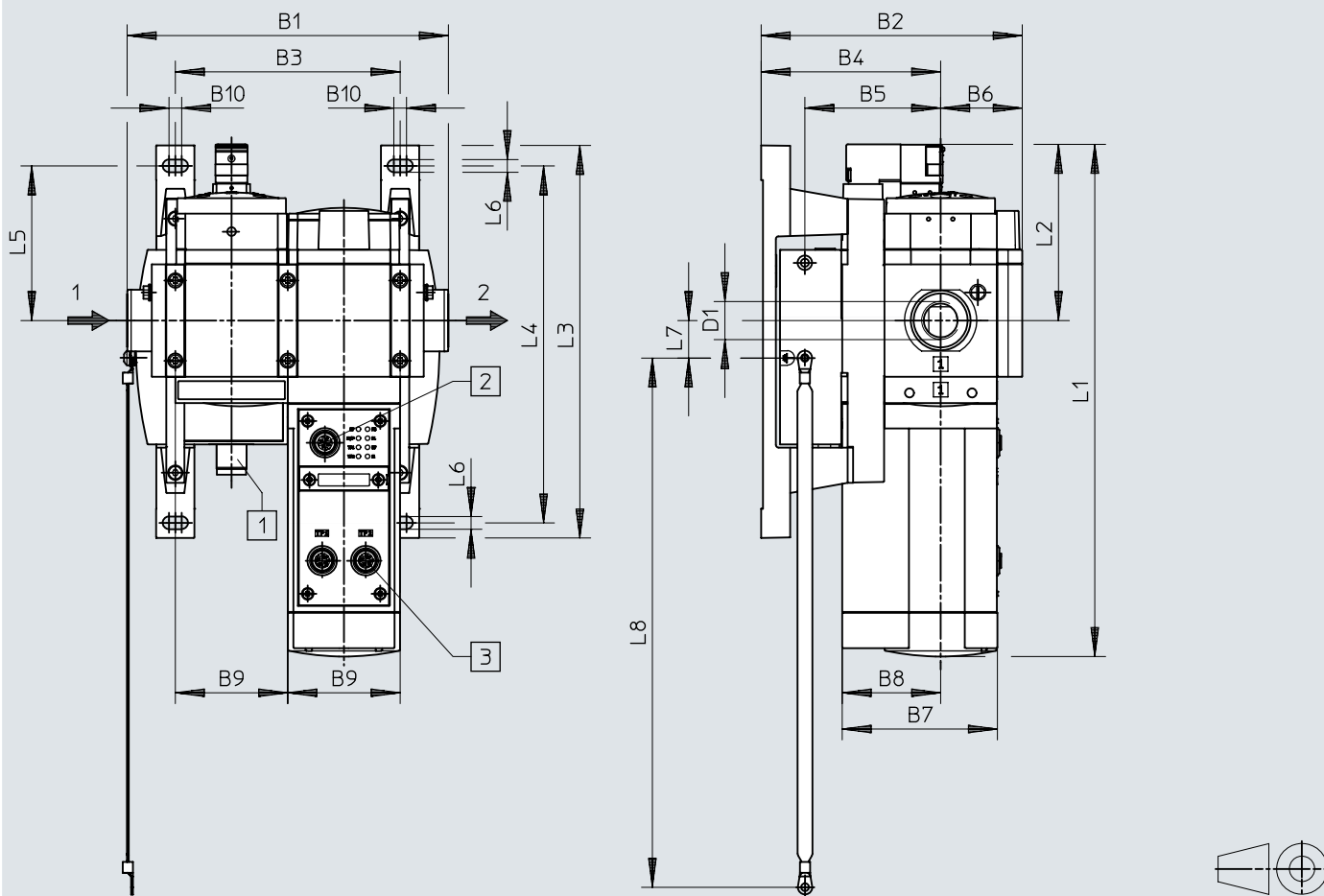
- [1] M18x1 plug, 4-pin
- [2] Socket M12x1, 5-pin
- [3] Sub-D socket, 9-pin

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
MSE6-E2M-...-FB13	178	150	124	99	75	45	100	55	62	7
	D1	L1	L2	L3	L4	L5	L6	L7	L8	
MSE6-E2M-...-FB13	G1/2	285	98	217	197	86	7	21	292	

## Dimensions

Dimensions – MSE6-E2M – fieldbus node FB43 for PROFINET IO with M12 port

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- [1] M18x1 plug, 4-pin
- [2] 5-pin plug M12x1
- [3] 2x socket M12x1, 4-pin, D-coded

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
MSE6-E2M-...-FB43	178	145	124	99	75	45	86	55	62	7

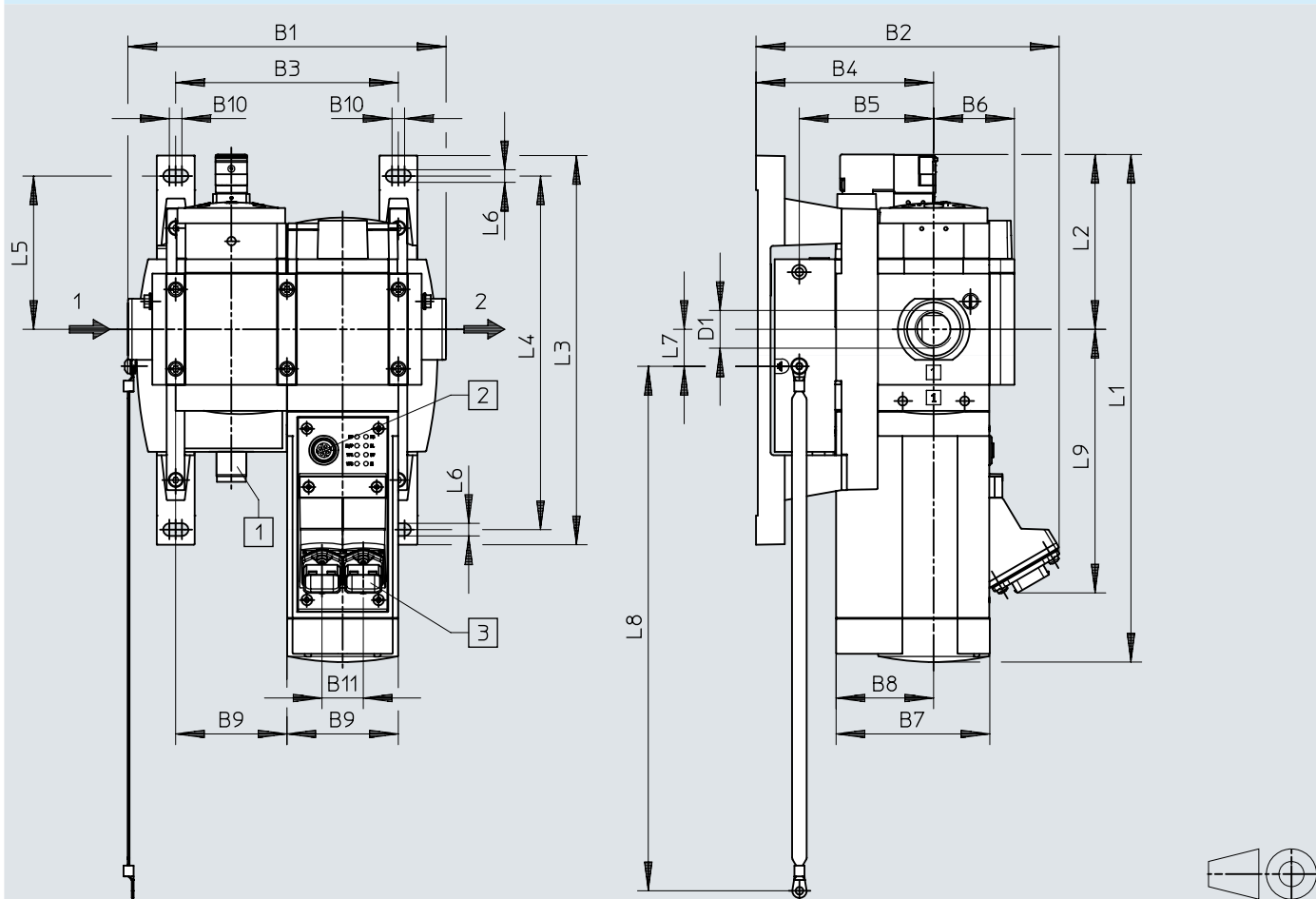
	D1	L1	L2	L3	L4	L5	L6	L7	L8
MSE6-E2M-...-FB43	G1/2	285	98	217	197	86	7	21	292



## Dimensions

Dimensions – MSE6-E2M – fieldbus node FB44 for PROFINET IO with RJ45 connection

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- [1] M18x1 plug, 4-pin
- [2] 5-pin plug M12x1
- [3] MS6-E2M-...-FB44: 2x RJ45 push-pull socket, AIDA

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
MSE6-E2M-...-FB44	178	170	124	99	75	45	86	55	62	7	23

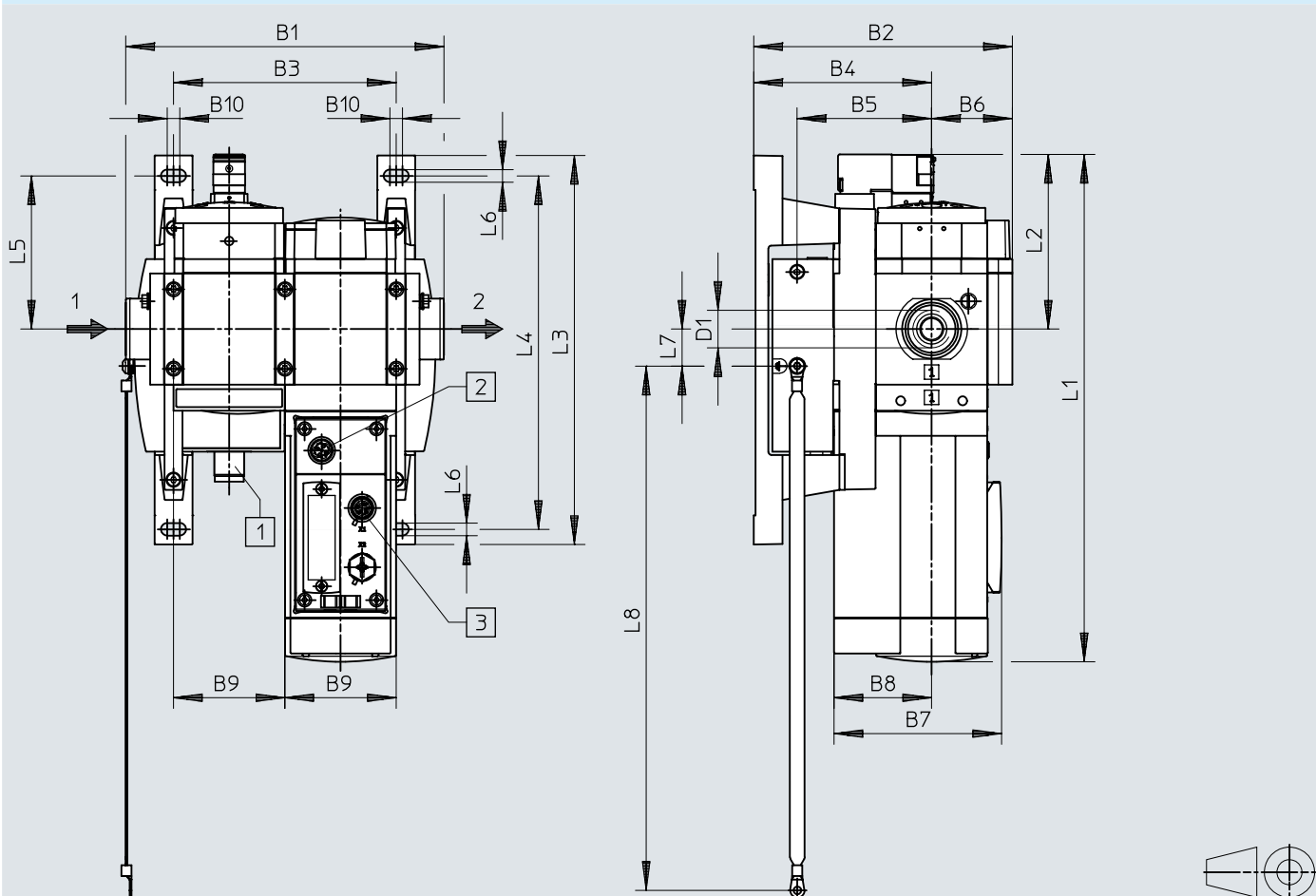
  

	D1	L1	L2	L3	L4	L5	L6	L7	L8	L9
MSE6-E2M-...-FB44	G1/2	285	98	217	197	86	7	21	292	147

## Dimensions

Dimensions – MSE6-E2M – fieldbus node FB36 for EtherNet/IP and FB37 for EtherCAT

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- [1] M18x1 plug, 4-pin
- [2] Socket M12x1, 5-pin
- [3] 2x socket M12x1, 4-pin, D-coded


	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
MSE6-E2M-...-FB36/FB37	178	145	124	99	75	45	94	55	62	7


	D1	L1	L2	L3	L4	L5	L6	L7	L8
MSE6-E2M-...-FB36/FB37	G1/2	285	98	217	197	86	7	21	292


## Ordering data

Ordering data – MSE6-C2M-...-FB43/44						
	Pneumatic connection, port 1	Electrical connection	Field bus interface	Product weight	Part no.	Type
	G1/2	5-pin, AIDA push-pull	2x RJ45 push-pull socket, AIDA	4,550 g	8157909	MSE6-C2M-5000-FB43-D-M-RG-BAR-AMI-AGD


Ordering data – MSE6-C2M-...-FB43/44 with CPX extension						
	Pneumatic connection, port 1	Electrical connection	Field bus interface	Product weight <sup>1)</sup>	Part no.	Type
	G1/2	4-pin, M12x1, L-coded to EN 61076-2-111	2x socket, M12x1, 4-pin, D-coded	4,455 g	8169407	MSE6-C2M-5000-FB43-D-M-RG-BAR-M12L4-MQ1-AGD
		5-pin, AIDA push-pull	2x RJ45 push-pull socket, AIDA	4,550 g	8157908	MSE6-C2M-5000-FB44-D-M-RG-BAR-AMI-AGD
		5-pin, M12x1, L-coded to EN 61076-2-111	2x socket, M12x1, 4-pin, D-coded	4,455 g	8157912	MSE6-C2M-5000-FB43-D-M-RG-BAR-M12L5-MQ1-AGD
	G3/4	5-pin, AIDA push-pull	2x RJ45 push-pull socket, AIDA	4,550 g	8217138	MSE6-C2M-5000-FB44-D-M-HB-RG-BAR-AMI-AGE


1) MSE6-C2M-...-HB: with manual override


Ordering data – MSE6-C2M-...-FB36/37 with CPX extension						
	Pneumatic connection, port 1	Electrical connection	Field bus interface	Product weight	Part no.	Type
	G1/2	4-pin, M12x1, L-coded to EN 61076-2-111	2x socket, M12x1, 4-pin, D-coded	4,395 g	8169406	MSE6-C2M-5000-FB36-D-M-RG-BAR-M12L4-AGD
		5-pin, M12x1, L-coded to EN 61076-2-111			8157913	MSE6-C2M-5000-FB36-D-M-RG-BAR-M12L5-AGD

Ordering data – MSE6-D2M				
	Pneumatic connection, port 1	Product weight	Part no.	Type
	G1/2	2,700 g	8085453	MSE6-D2M-5000-CBUS-S-RG-BAR-VCB-AGD


## Ordering data

Ordering data – MSE6-E2M-....-FB13 for PROFIBUS DP					
	Pneumatic connection, port 1	Field bus interface	Product weight	Part no.	Type
	G1/2	Sub-D socket, 9-pin	3,300 g	<b>2465321</b>	<b>MSE6-E2M-5000-FB13-AGD</b>

Ordering data – MSE6-E2M-....-FB43/FB44 for PROFINET IO					
	Pneumatic connection, port 1	Field bus interface	Product weight	Part no.	Type
	G1/2	2x socket, M12x1, 4-pin, D-coded	3,250 g	<b>8157910</b>	<b>MSE6-E2M-5000-FB43-AGD</b>
		2x RJ45 push-pull socket, AIDA	3,450 g	<b>8157911</b>	<b>MSE6-E2M-5000-FB44-AGD</b>

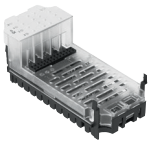
Ordering data – MSE6-E2M-....-FB36/37 for EtherNet/IP, EtherCAT®					
	Pneumatic connection, port 1	Field bus interface	Product weight	Part no.	Type
	G1/2	2x socket, M12x1, 4-pin, D-coded	3,300 g	<b>3992150</b>	<b>MSE6-E2M-5000-FB37-AGD</b>
				<b>3990296</b>	<b>MSE6-E2M-5000-FB36-AGD</b>

Ordering data – Modular product system			
	Short type code	Part no.	Type
	MSE6	<b>2839638</b>	<b>MSE6</b>


Ordering data – Electronics modules, digital input modules						
	Number of inputs	Switching logic for inputs	Nominal operating voltage DC	Product weight	Part no.	Type
	4	PNP (positive switching)	24 V	39 g	<b>195752</b>	<b>CPX-4DE</b>

## Ordering data

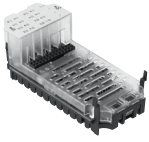
## Ordering data – Electronics modules, digital input modules

	Number of inputs	Switching logic for inputs	Nominal operating voltage DC	Product weight	Part no.	Type
	8	PNP (positive switching)	24 V	39 g	<b>195750</b>	<b>CPX-8DE</b>


## Ordering data – Electronic modules, digital output modules

	Number of outputs	Switching logic for outputs	Nominal operating voltage DC	Product weight	Part no.	Type
	4	PNP (positive switching)	24 V	42 g	<b>195754</b>	<b>CPX-4DA</b>
	8			49 g	<b>541482</b>	<b>CPX-8DA</b>

## Ordering data – Electronic modules, digital input/output modules

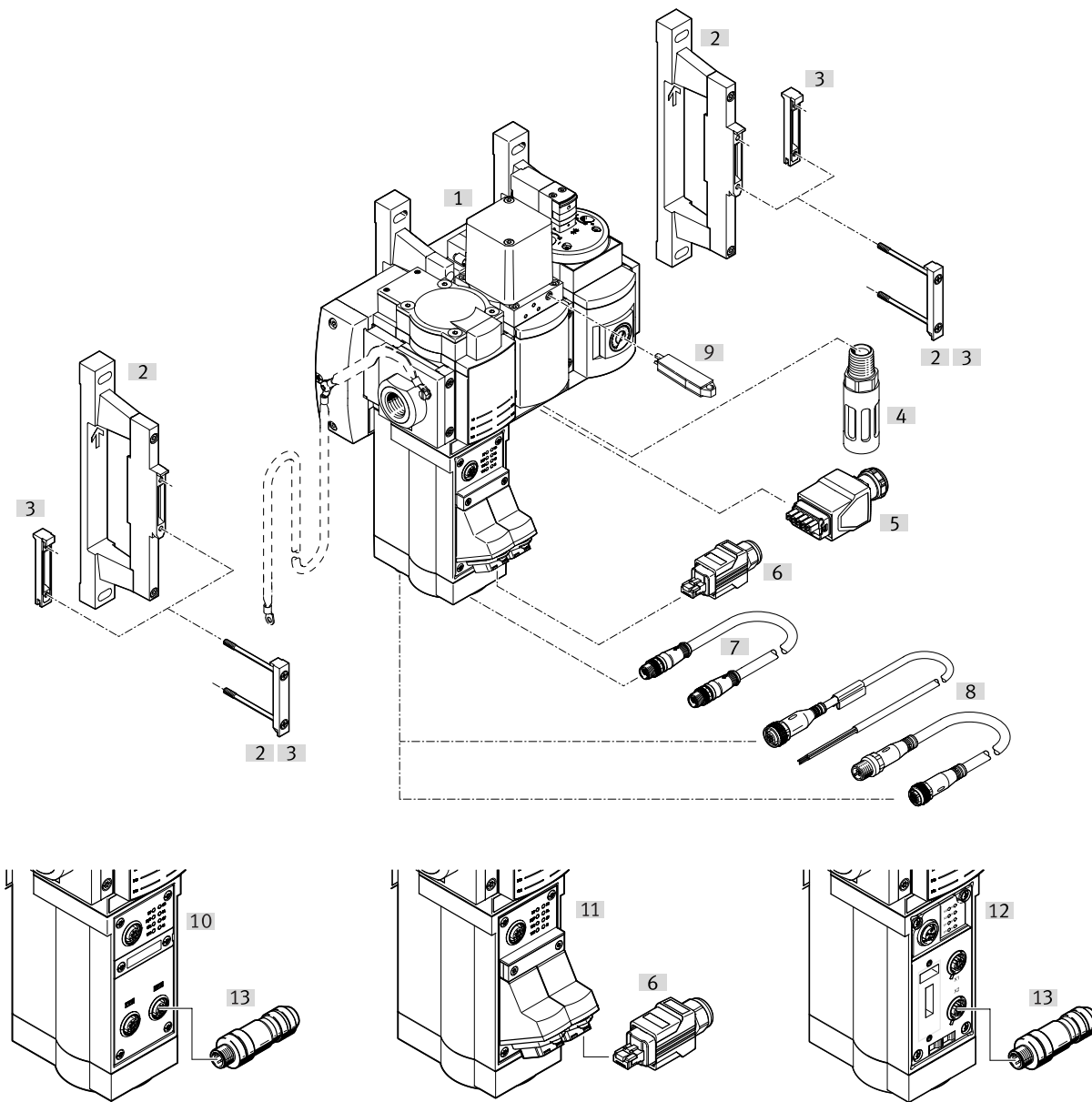
	Number of inputs	Number of outputs	Switching logic for outputs	Product weight	Part no.	Type
	8	8	PNP (positive switching)	48 g	<b>526257</b>	<b>CPX-8DE-8DA</b>

## Ordering data – Electronic modules, analogue modules

	Number of inputs	Number of outputs	Nominal operating voltage DC	Product weight	Part no.	Type
		2	24 V	49 g	<b>526170</b>	<b>CPX-2AA-U-I</b>
	4			46 g	<b>573710</b>	<b>CPX-4AE-U-I</b>

## Peripherals

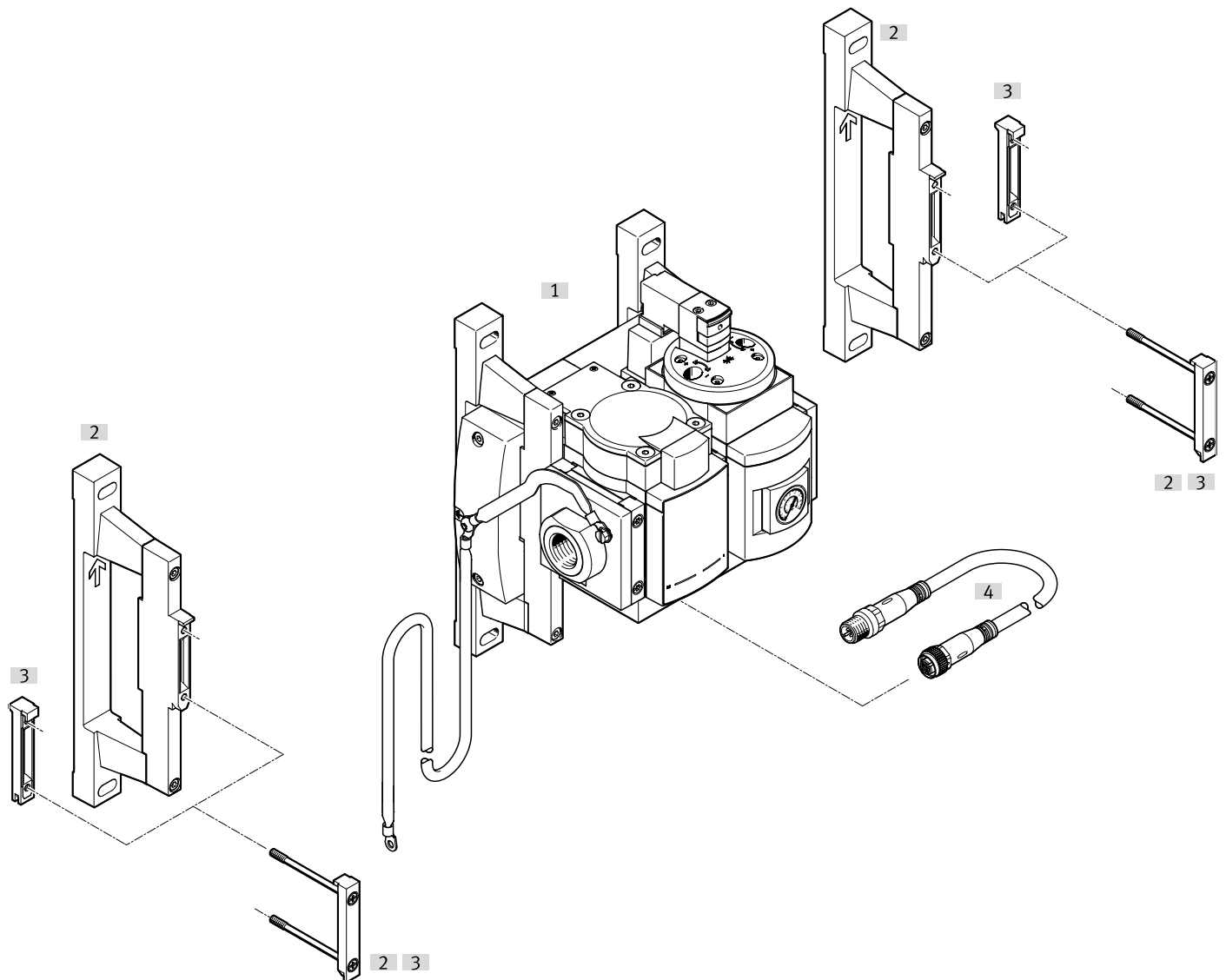
### Peripherals overview – MSE6-C2M



Accessories		→ Link
Type/order code	Description	
[1] Energy efficiency module MSE6-C2M		<a href="#">mse6-c2m</a>
[2] Wall mounting-SET MS6-WPG	Same wall gap for combinations with series MS6 and MSE6	<a href="#">25</a>
[3] Module connector MS6-MV-EX	For connecting the modules	<a href="#">25</a>
[4] Silencer U	For noise reduction	<a href="#">25</a>
[5] Power supply socket NECU-M-PP	For system supply	<a href="#">25</a>
[6] Plug FBS-RJ45	For bus node FB44 for PROFINET IO	<a href="#">25</a>
[7] Connecting cable NEBC-F12G8	For CPX extension (only MSE6-C2M-...-M)	<a href="#">26</a>
[8] Connecting cable NEBA-M12	For electrical inputs/outputs	<a href="#">26</a>
[9] Manual override AHB-MD/MF/MV	for MSE6-C2M-...-HB	<a href="#">27</a>
[10] Fieldbus node FB43	For PROFINET IO with M12 connection	<a href="#">mse6-c2m</a>
[11] Fieldbus node FB44	For PROFINET IO with RJ45 connection	<a href="#">mse6-c2m</a>
[12] Fieldbus node FB36	For EtherNet/IP, fieldbus node FB37 for EtherCAT®	<a href="#">mse6-c2m</a>
[13] Plug NECU-M-S-D12G4	For fieldbus node FB43 for PROFINET IO, fieldbus node FB36 for EtherNet/IP, fieldbus node FB37 for EtherCAT®	<a href="#">26</a>

## Peripherals

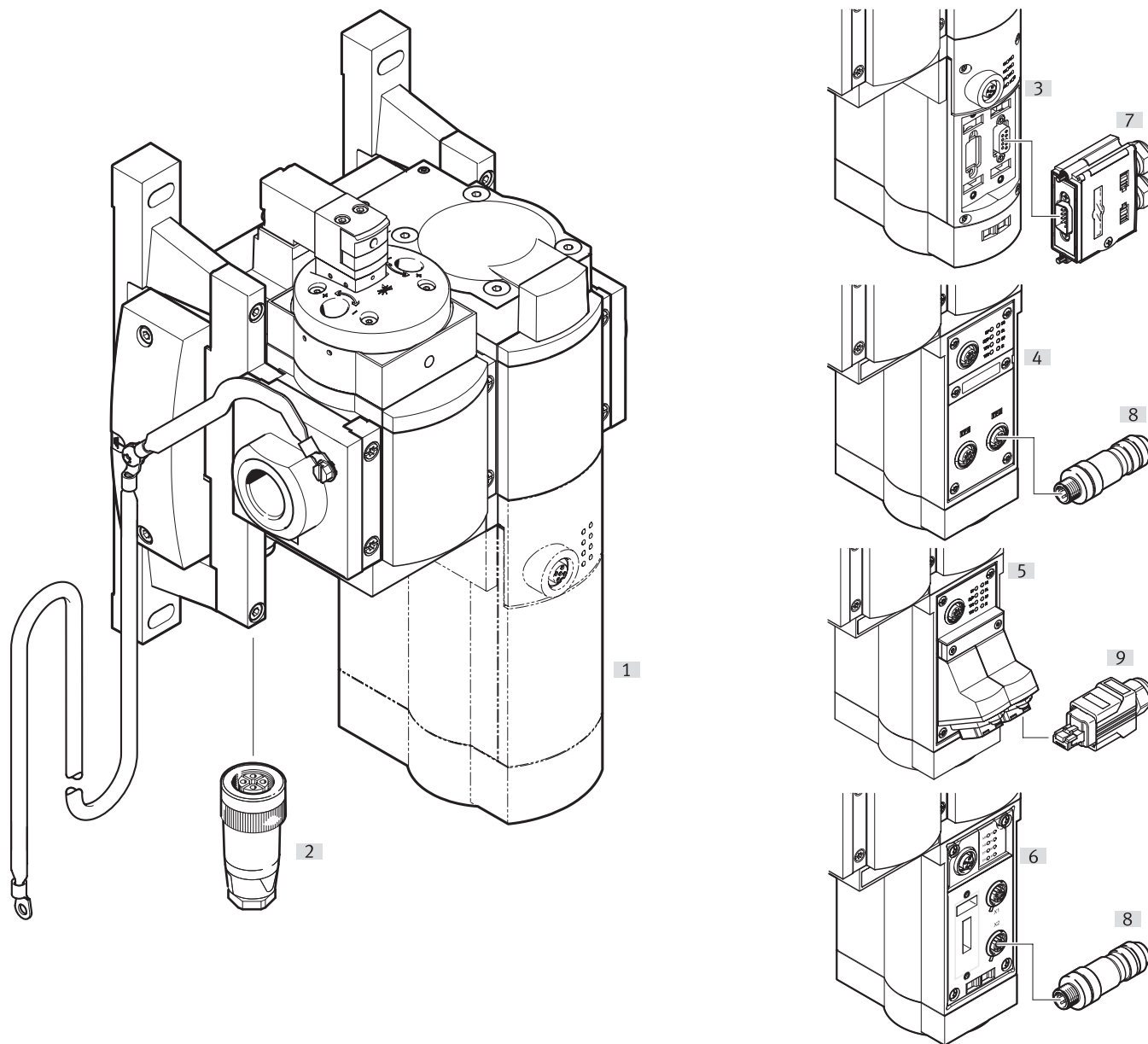
## Peripherals overview – MSE6-D2M



Accessories			→ Link
Type/order code	Description		
[1] Energy-efficiency module MSE6-D2M			<a href="#">mse6-d2m</a>
[2] Wall mounting-SET MS6-WPG	Same wall gap for combinations with series MS6 and MSE6		<a href="#">25</a>
[3] Module connector MS6-MV-EX	For connecting the modules		<a href="#">25</a>
[4] Connecting cable NEBC-F12G8	For CPX extension (only MSE6-C2M-...-M)		<a href="#">26</a>

## Peripherals

### Peripherals overview – MSE6-E2M

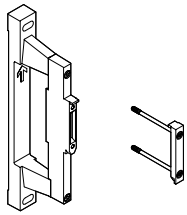


Accessories		→ Link
Type/order code	Description	
[1] Energy efficiency module MSE6-E2M		<a href="#">mse6-e2m</a>
[2] Plug socket NTSD	For system supply	26
[3] Fieldbus node FB13	For PROFIBUS DP	<a href="#">mse6-e2m</a>
[4] Fieldbus node FB43	For PROFINET IO with M12 connection	<a href="#">mse6-e2m</a>
[5] Fieldbus node FB44	For PROFINET IO with RJ45 connection	<a href="#">mse6-e2m</a>
[6] Fieldbus node FB36	For EtherNet/IP, Fieldbus node FB37 for EtherCAT®	<a href="#">mse6-e2m</a>
[7] Plug FBS-SUB-9		25
[8] Plug NECU-M-S-D12G4	For fieldbus node FB43 for PROFINET IO, fieldbus node FB36 for EtherNet/IP, fieldbus node FB37 for EtherCAT®	26
[9] Plug FBS-RJ45	For bus node FB44 for PROFINET IO	25
[10] Wall mounting SET MS6-WPG	For same wall gap for combining series MS6 and MSE6 (without illustration)	25
[11] Module connector MS6-MV-EX	For connecting the modules (without illustration)	25

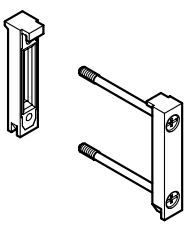


## Accessories

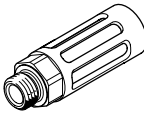
## Wall mounting SET MS6-WPG

	Short type code	Product weight	Part no.	Type
	MS6-WPG	245 g	8072794	MS6-WPG

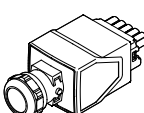
## Module connector MS6-MV-EX

	Short type code	Product weight	Part no.	Type
	MS6-MV-EX	54 g	541543	MS6-MV-EX

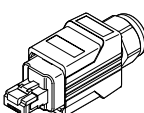
## Silencer U

	Short type code	Product weight	Part no.	Type
	U	17 g	6842	U-1/4-B

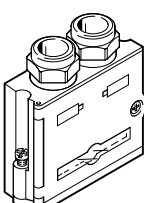
## Power supply socket NECU-M-PP

	Electrical connection 1, used connections/cores	Electrical connection 1, connector system	Additional functions	Product weight	Part no.	Type
	5	Connection pattern PP, coding on pins 2 and 5	Fulfils requirements according to AIDA	109 g	5195383	NECU-M-PPG5PP-C1-PN

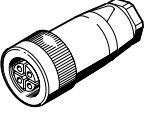
## Plug FBS-RJ45


	Note on fieldbus interface	Product weight	Part no.	Type
	PROFINET	60 g	552000	FBS-RJ45-PP-GS

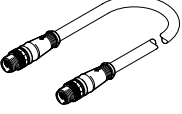
## Plug FBS-SUB-9

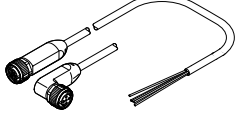
	Field bus interface	Protocol	Product weight	Part no.	Type
	2x 2 spring-loaded terminals	PROFIBUS	60 g	532216	FBS-SUB-9-GS-DP-B


## Accessories

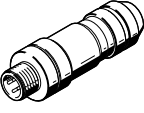
Plug socket NTSD (straight)					
	Electrical connection	Operational voltage range AC	Product weight	Part no.	Type
	4-pin, Straight socket, Screw terminal	250 V	25 g	<b>18493</b>	<b>NTSD-GD-9</b>
			31 g	<b>18526</b>	<b>NTSD-GD-13,5</b>

Plug socket NTSD (angled)					
	Electrical connection	Operational voltage range AC	Product weight	Part no.	Type
	4-pin, Angled socket, Screw terminal	250 V	30 g	<b>18527</b>	<b>NTSD-WD-9</b>

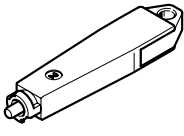
Connecting cable NEBC-F12G8					
	Electrical connection 1, used connections/cores	Cable length	Product weight	Part no.	Type
	8	0.25 m	47 g	<b>564189</b>	<b>NEBC-F12G8-KH-0.25-N-S-F12G8</b>
		0.5 m	69 g	<b>564190</b>	<b>NEBC-F12G8-KH-0.5-N-S-F12G8</b>
		1 m	113 g	<b>564191</b>	<b>NEBC-F12G8-KH-1-N-S-F12G8</b>
		1.5 m	154 g	<b>564192</b>	<b>NEBC-F12G8-KH-1.5-N-S-F12G8</b>
		2 m	200 g	<b>576015</b>	<b>NEBC-F12G8-KH-2-N-S-F12G8</b>

Connecting cable NEBA-M12 – open end					
	Electrical connection 2, connector system	Cable length	Product weight	Part no.	Type
	Open end	2.5 m	76 g	<b>8078251</b>	<b>NEBA-M12W5-U-2.5-N-LE5</b>
			85 g	★ <b>8078242</b>	<b>NEBA-M12G5-U-2.5-N-LE5</b>
		5 m	142 g	★ <b>8078243</b>	<b>NEBA-M12G5-U-5-N-LE5</b>
			143 g	<b>8078252</b>	<b>NEBA-M12W5-U-5-N-LE5</b>

Connecting cable NEBA-M12 – angled (modular product system)						
	Electrical connection 1, connector system	Electrical connection 2, connector system	Cable length	Cable characteristic	Part no.	Type
	M12x1, A-coded to EN 61076-2-101, M8x1, A-coded, to EN 61076-2-104, Open end, Diameter 8 mm, A-coded to EN 61076-2-104	M12x1, A-coded to EN 61076-2-101, M8x1, A-coded to EN 61076-2-104, Open end	0.3 ... 30 m	Suitable for energy chains/robot applications, Abrasion-resistant, Low adhesion, Flame-retardant and self-extinguishing	<b>8078221</b>	<b>NEBA-</b>

Plug NECU-M-S-D12G4					
	Electrical connection 1	Electrical connection 2	Product weight	Part no.	Type
	Straight plug connector, M12x1, 4-pin, D-coded, screenable	Screw terminal, can be screened	44.3 g	<b>543109</b>	<b>NECU-M-S-D12G4-C2-ET</b>

## Accessories

Manual override AHB-MD/MF/MV					
	Type of mounting	LABS (PWIS) conformity	Corrosion resistance class CRC <sup>1)</sup>	Part no.	Type
	Snapping in	VDMA24364-B2-L	2 - Moderate corrosion stress	<b>157651</b>	<b>AHB-MD/MF/MV</b>

1) More information [www.festo.com/x/topic/kbk](http://www.festo.com/x/topic/kbk)