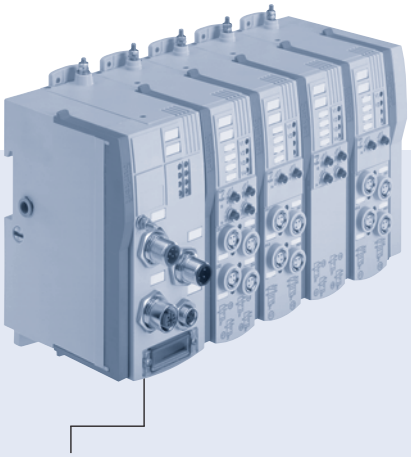
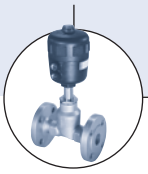
bürkert
FLUID CONTROL SYSTEMS



Modular electrical and pneumatic automation system

- decentralised automatisation without control cabinet in protection type IP65 / IP67
- modular structure, also as central station with several decentralised modules, compact design
- combination of pneumatic and electrical modules as required, including both functions on one module; for multipole or fieldbus

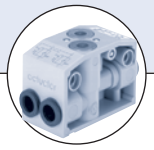
Type 8645 can be combined with ...



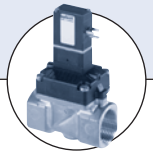
Type 2012
Process valve



Type 1062
Position feedback



Type 0498
Double pilot controlled check valve



Type 6212
Solenoid valve



Type 8175
Sensors

The automation system type 8645 is suitable for solving a multitude of control tasks thanks to its adapted, modular structure in terms of pneumatic and electrical interfaces.

Pneumatic and electrical modules can be arranged in any sequence desired, and pneumatic and electrical functions can be realised on one module for the first time.

In addition to the valve unit as a central station, it is possible to use decentralised single modules and/or to combine one central station with decentralised units. Electrical connection can either be carried out via multipole interface or via fieldbus.

The efficient coupling of innovative valve technology with highly resistant plastic casing enables high protection classes up to IP67. Control cabinets are not required.

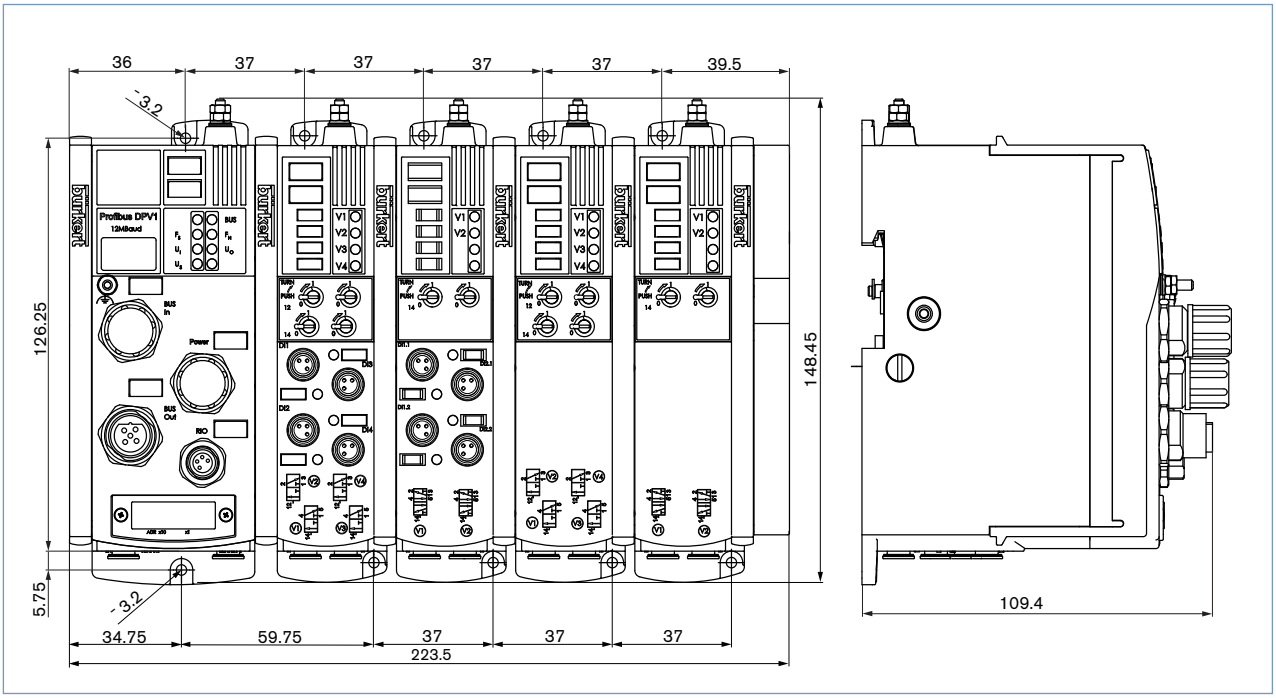
Technical data	
System structure per segment	16 DI (digital inputs) and 16 DO / PO (digital / pneumatic outputs)
max. power consumption	see *Technical data* in the operating instructions
Duty cycle	100 % ED (continuous operation)
Operating voltage	24 V DC, -15 % / +20 %
Residual ripple	2 Vss
Mounting	Wall mounting DIN rail mounting
Temperatures Ambient temperature Storage temperature	 0 ... +55 °C -20 ... +60 °C
Interference suppression Interference immunity Emitted interference	according to EMC guidelines EN 50082-2 EN 50081-2
Degree of protection	IP65 / IP67
Protection class	3 (VDE0580)
Approvals	CE

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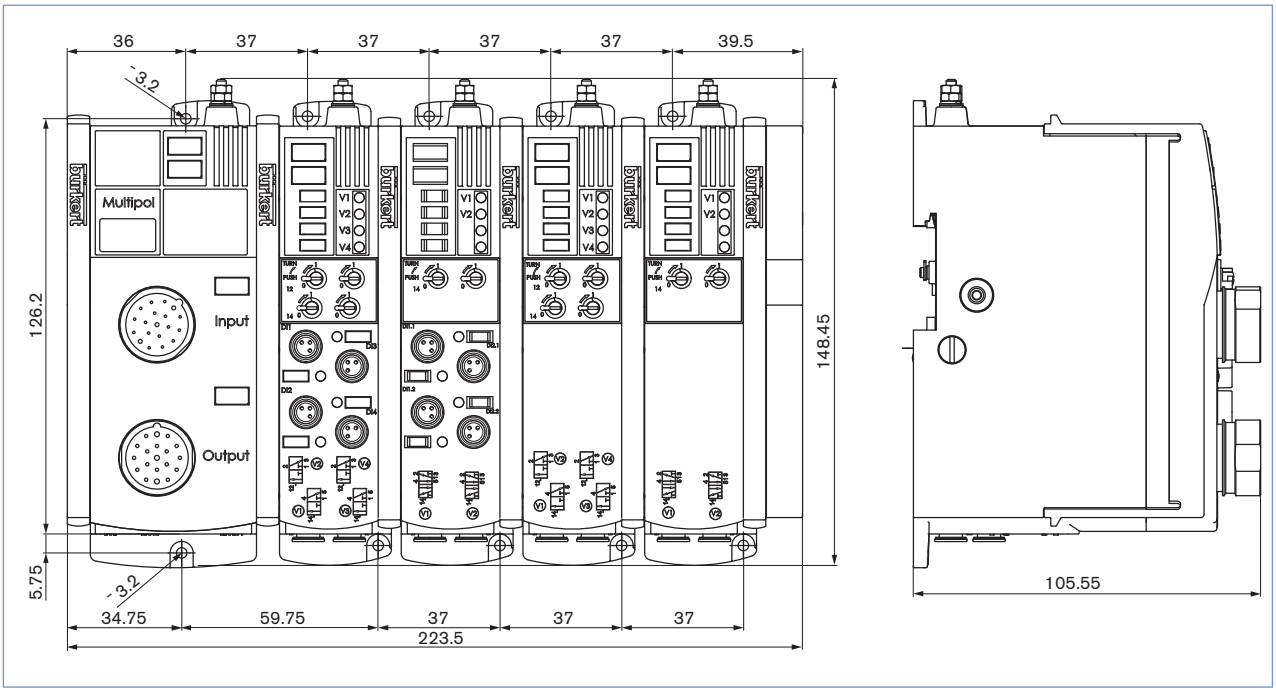
DTS 1000086880 EN Version: D Status: RL (released | freigegeben | validé) printed: 05.07.2008

Dimensions [mm]

Complete system with fieldbus module

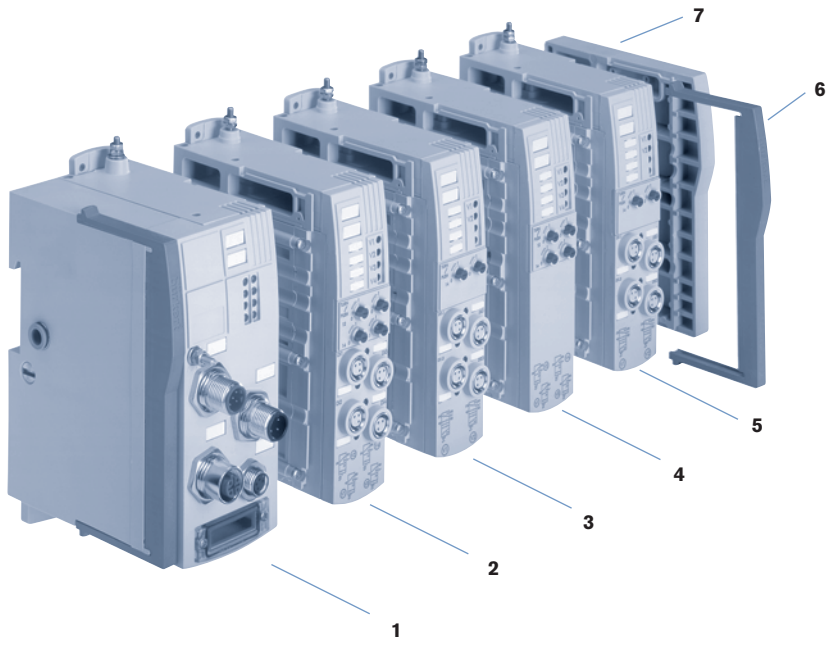


Complete system with multipole module



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Structure example



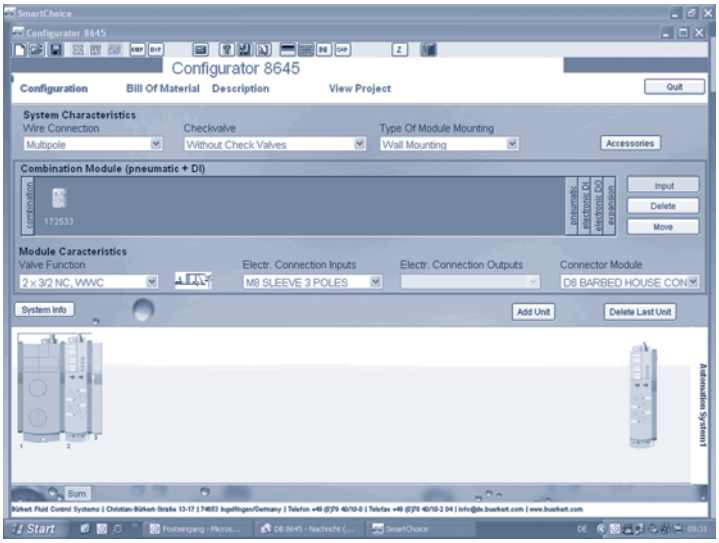
1 Fieldbus module
2 Combination module
2*2x3/2-way valve / 4 x DI[1)]
3 Combination module
2 x 5/2-way valve / 4 x DI[1)]
4 Pneumatic module
2*2x3/2-way valve
5 Combination module
2 x 5/2-way valve / 4 x DI[1)]
6 Connection bracket
7 Termination module

[1)] DI: Digital Input

Configurator

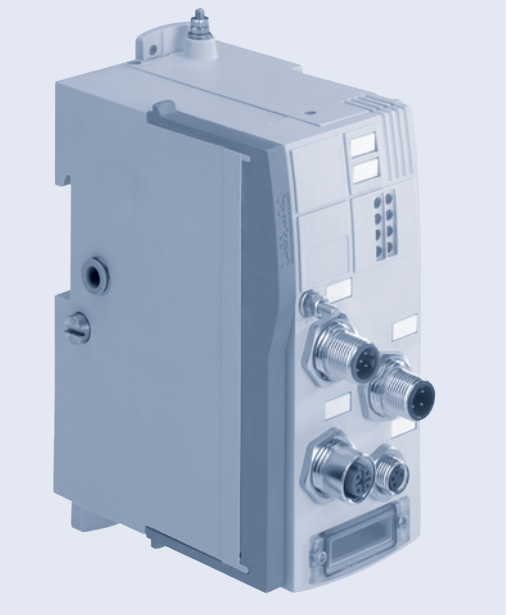
FreeLINE is a modularly structured automation system that can be precision-adapted to specific requirements. For this purpose Bürkert provides an item of software, the configurator, which enables you to put together your required configuration in a precisely structured way.
The Bürkert configurator makes it easier to create a configuration by allowing you to choose modules in the program easily and bring them together in one complete system.

In the end you have:
- the documentation concerning your configuration,
- the equipment list (including list prices),
- dimensions,
- the required diagrams,
- files in DXF format for integration into your working.



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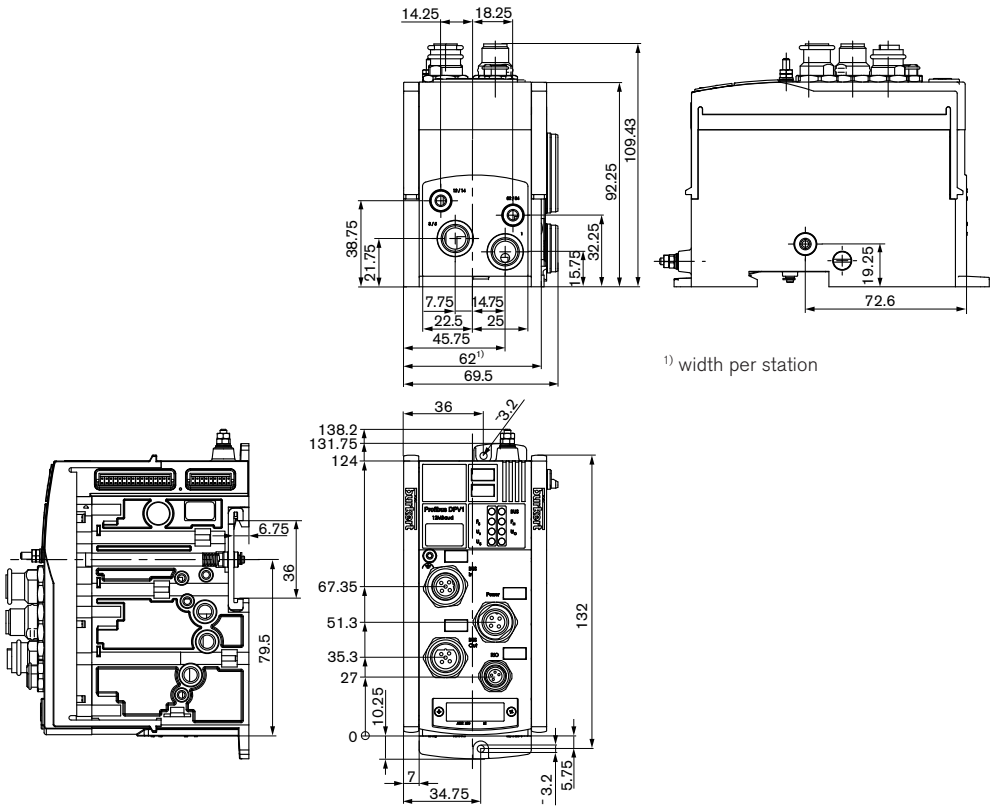
Profibus® module



The fieldbus module connects the FreeLINE automation system to a fieldbus network.
The module is used for digital networking with the higher-level control system.

Technical data	
Operating voltage	24 V -15 % / +20 %
Residual ripple	2 Vss
Current consumption	
Inputs / logic	max. 1 A
Outputs	max. 4 A (M12)
Profibus®	
Transmission rate	9.6 kBaud ... 12 MBaud
Inductances in the module	100 nH / 0.16 Ohm for incoming and outgoing bus
Electrical connections	
Power supply	M12, plug, 4-pin, max. 4 A
Profibus® incoming	M12, plug, 5-pin, b-coded
Profibus® outgoing	M12, jack, 5-pin, b-coded
RIO	M8, jack, 4-pin
Address setting	via rotary encoder switch
Address range	0 ... 99
Diagnostics	
Integrated diagnostic interface	3-pin, (RM 2.54)
Diagnostic LEDs	2 x bus status, 2 x fault indication, 3 x power supply
Pneumatic connections	
Compressed air supply	G 1/4", NPT 1/4", D10
Exhaust air	G 1/4", NPT 1/4", D10
Auxiliary control air	D6, D4, D 1/4", M5
Pilot control exhaust air	D6, D4, D 1/4", M5
Possibility of expansion in the system	up to 49 RIO participants
Material	PBT
Weight	530 g

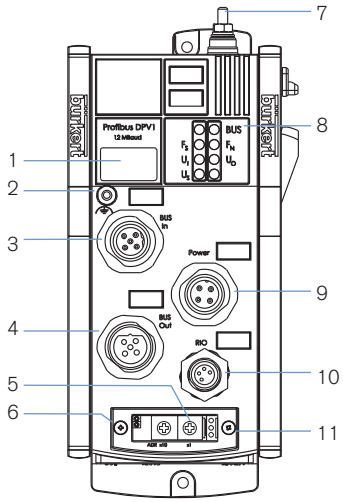
Dimensions [mm]



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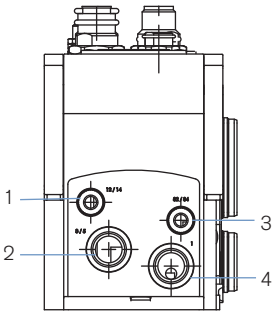
Profibus® module

Connections



1 Type plate
2 FE contact
3 *BUS IN* connection (M12-b)
4 *BUS out* connection (M12-b)
5 Rotary encoder switch (x1)
6 Rotary encoder switch (x10)
7 FE contact
8 Diagnostic/status LEDs:
BUS status
FS error select
FN error number
U_l logic voltage
U_o output voltage
U_s sensor voltage
9 *Power* connection
10 *RIO* connection (M8)
11 Diagnostic and update interface

Pneumatic connections



1 Auxiliary control air
M5, D6, D4, D1/4"
2 Exhaust air
G1/4", NPT1/4", D10
3 Pilot control exhaust air
M5, D6, D4, D1/4"
4 Compressed air supply
G1/4", NPT1/4", D10

Ordering charts

Profibus® module

Module			Item no.
Profibus®	DP V1, 12 MBaud	G1/4" version	172 353
		NPT 1/4" version	172 369

Profibus® module - Accessory

Specification			Item no.
Profibus®-DP	convertible plug connector M12 (inverse)	plug, straight	918 198
		coupling, straight	918 447
		plug, angled	on request
		coupling, angled	on request
Power supply	convertible plug connector M12, 4-pin	coupling, straight	902 552
		coupling, angled	on request
	pre-assembled plug connector M12, 4-pin	coupling, angled	on request
Terminating resistor	Profibus®	plug M12	902 553
	RIO	M8	918 742
RIO cable	M8	3 meter	902 554
		10 meter	902 555
Protecting cap	for coupling housing	M8	902 556
		M12	902 557
	for plug housing	M12	917 155

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Profibus® module

Profibus® module - Accessory (Continuation)

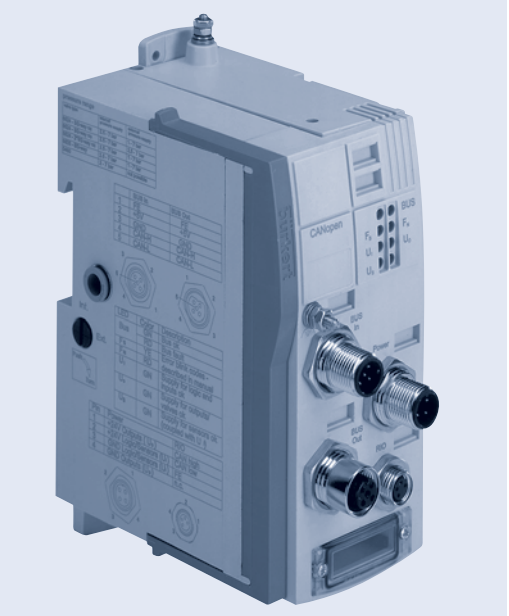
	Specification		Item no.
Set	4x plug-in couplings	D4	655 951
		D6	655 952
		D 1/4“	655 953
Blanking-off plug	for plug-in coupling	D6	015 397
Silencer		G 1/4“	650 427

Field bus module - Spare part

Specification	Item no.
Address switch cover Fieldbus module, complete	667 288

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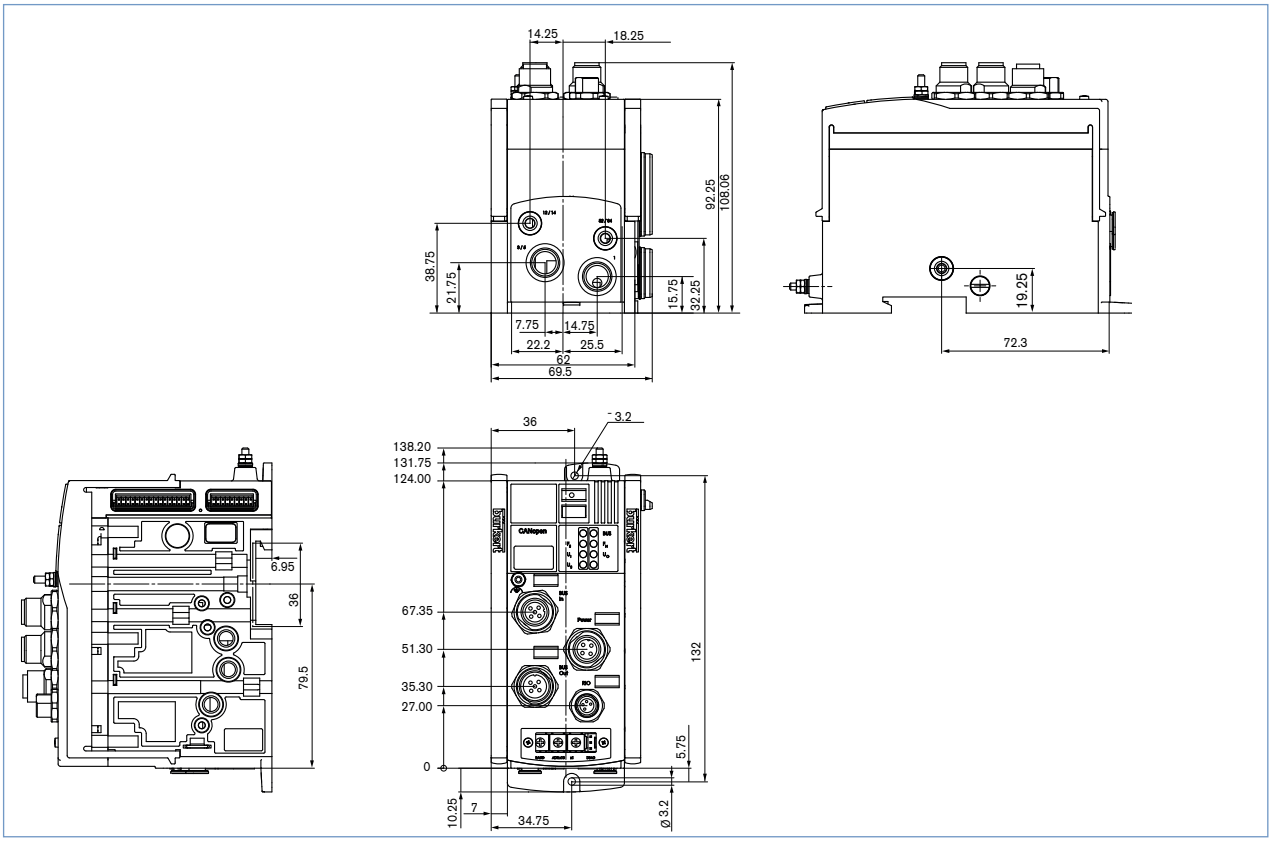
CANopen module



The fieldbus module connects the FreeLINE automation system to a fieldbus network.
The module is used for digital networking with the higher-level control system.

Technical data	
Operating voltage	24 V -15 % / +20 %
Residual ripple	2 Vss
Current consumption	
Inputs / logic	max. 1 A
Outputs	max. 4 A (M12)
CANopen	
transmission rate	20 kBaud ... 1 MBaud (via rotary encoder switch)
Electrical connections	
Power supply	M12, plug, 4-pin, max. 4 A
CANopen incoming	M12, plug, 5-pin, a-coded
CANopen outgoing	M12, jack, 5-pin, a-coded
RIO	M8, jack, 4-pin
Address setting	via rotary encoder switch
Address range	0 ... 99
Diagnostics	
Integrated diagnostic interface	3-pin, (RM 2.54)
Diagnostic LEDs	2 x bus status, 2 x fault indication, 3 x power supply
Pneumatic connections	
Compressed air supply	G 1/4", NPT 1/4", D10
Exhaust air	G 1/4", NPT 1/4", D10
Auxiliary control air	D6, D4, D 1/4", M5
Pilot control exhaust air	D6, D4, D 1/4", M5
Possibility of expansion in the system	up to 15 RIO-participants
Material	PBT
Weight	530 g

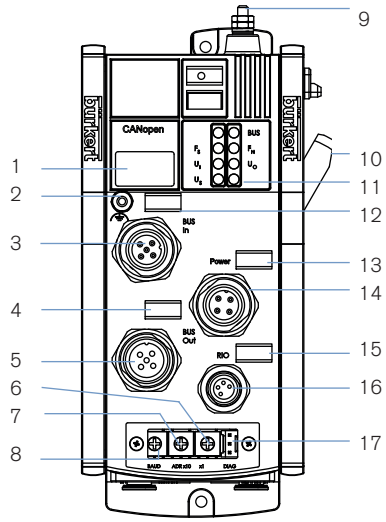
Dimensions [mm]



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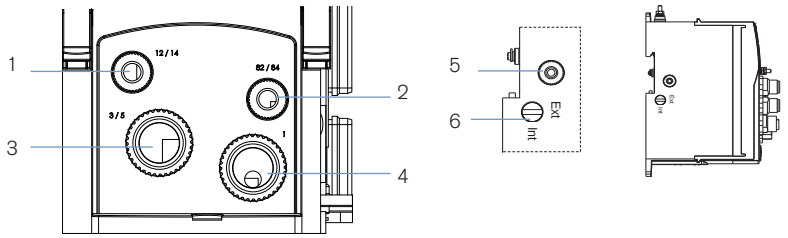
CANopen module

Connections



1 Type plate
2 Screw terminal (separate FE connection)
3 *BUS IN* connection (M12-b)
4 *BUS OUT* label panel
5 BUS OUT connection (M12-b)
6 Rotary encoder switch *(x1)*
7 Rotary encoder switch *(x10)*
8 Rotary encoder switch Baud rate
9 FE connection
10 DIN rail mounting
11 Diagnostic/status LEDs:
BUS status
FS error select
FN error number
U_i logic voltage
U_o output voltage
U_s sensor voltage
12 *BUS IN* label panel
13 *Power* label panel
14 *Power* connection
15 *RIO* label panel
16 *RIO* connection (M8)
17 Diagnostic and update interface

Pneumatic connections



1 Auxiliary control air M5, D6, D4, D1/4“
2 Pilot control exhaust air M5, D6, D4, D1/4”
3 Exhaust air G1/4”, NPT1/4”, D10
4 Compressed air supply G1/4”, NPT1/4”, D10
5 Safety vent M5, D6, D4, D1/4”
6 Switching between external and internal auxiliary control air

Ordering charts

CANopen module

Module		Item no.
CANopen	G1/4” version	174 810

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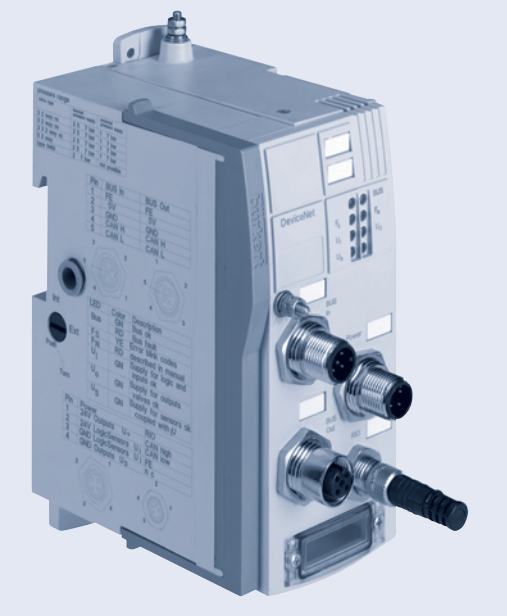
CANopen module

CANopen module - Accessory

	Specification		Item no.
CANopen	convertible plug connector M12	5-pin, coupling, straight	917 116
	convertible plug connector M12	5-pin, plug, straight	902 627
Power supply	convertible plug connector M12	4-pin, coupling, straight	902 552
	convertible plug connector M12	4-pin, coupling, angled	on request
	pre-assembled plug connector M12	4-pin, coupling, angled	on request
Terminating resistor	CANopen	M12 plug, 5-pin	902 628
	RIO	M8	918 742
RIO cable	M8	3 meter	902 554
		10 meter	902 555
Protecting cap	for coupling housing	M8	902 556
		M12	902 557
	for plug housing	M12	917 155

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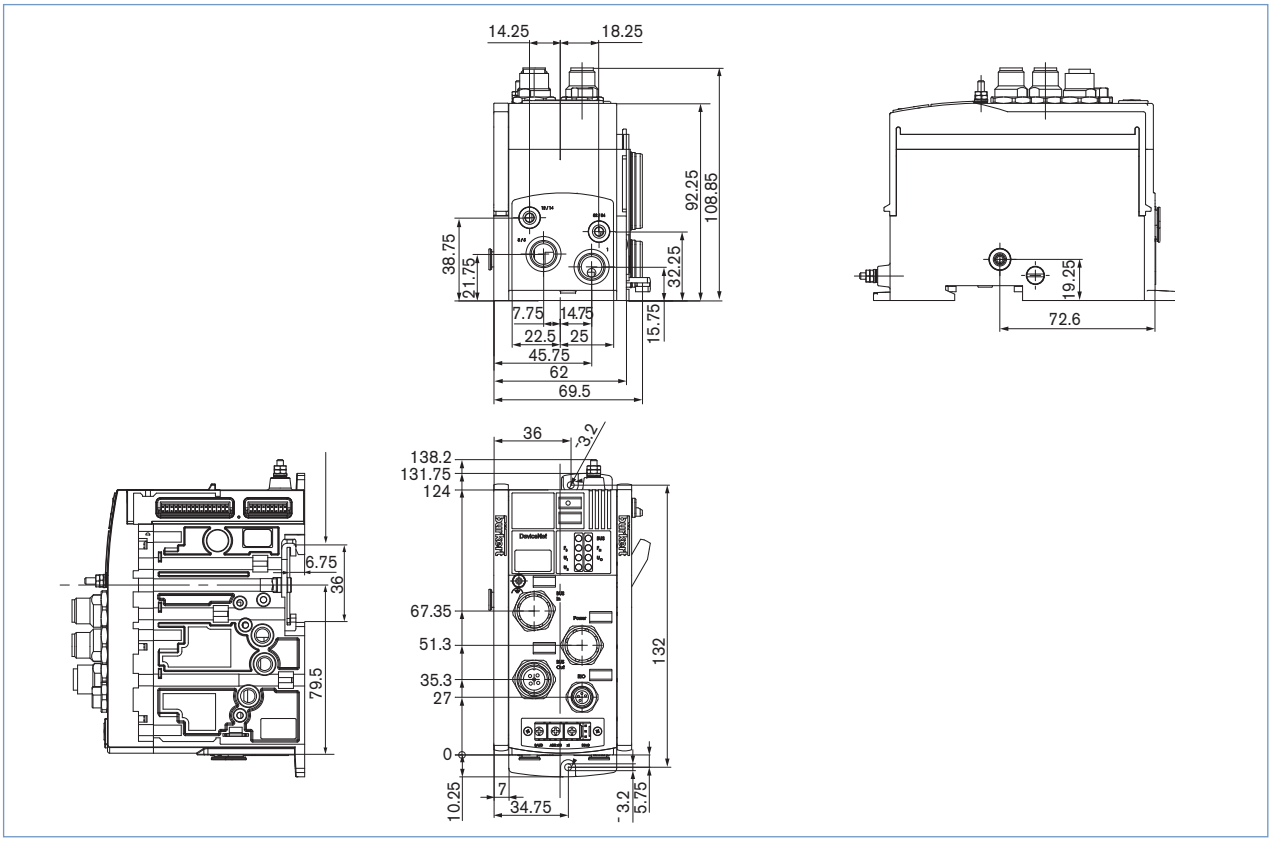
DeviceNet module



The fieldbus module connects the FreeLINE automation system to a fieldbus network.
The module is used for digital networking with the higher-level control system.

Technical data	
Operating voltage	24 V -15 % / +20 %
Residual ripple	2 Vss
Current consumption	
Inputs / logic	max. 1 A
Outputs	max. 4 A (M12)
DeviceNet	
transmission rate	125 ... 500 kBaud (via rotary encoder switch)
Electrical connections	
Power supply	M12, plug, 4-pin, max. 4 A
DeviceNet incoming	M12, plug, 5-pin, a-coded
DeviceNet outgoing	M12, jack, 5-pin, a-coded
RIO	M8, jack, 4-pin
Address setting	via rotary encoder switch
Address range	0 ... 99
Diagnostics	
Integrated diagnostic interface	3-pin, (RM 2.54)
Diagnostic LEDs	2 x bus status, 2 x fault indication, 3 x power supply
Pneumatic connections	
Compressed air supply	G 1/4", NPT 1/4", D10
Exhaust air	G 1/4", NPT 1/4", D10
Auxiliary control air	D6, D4, D 1/4", M5
Pilot control exhaust air	D6, D4, D 1/4", M5
Possibility of expansion in the system	up to 15 RIO-participants
Material	PBT
Weight	530 g

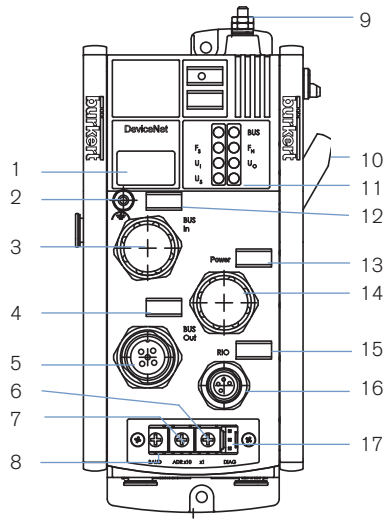
Dimensions [mm]



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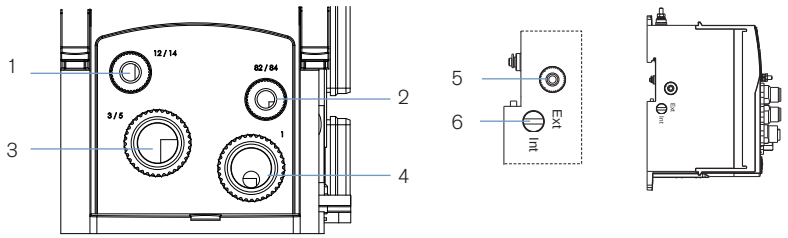
DeviceNet module

Connections



1 Type plate
2 Screw terminal (separate FE connection)
3 *BUS IN* connection (M12-b)
4 *BUS OUT* label panel
5 BUS OUT connection (M12-b)
6 Rotary encoder switch *(x1)*
7 Rotary encoder switch *(x10)*
8 Rotary encoder switch Baud rate
9 FE connection
10 DIN rail mounting
11 Diagnostic/status LEDs:
BUS status
FS error select
FN error number
U_i logic voltage
U_o output voltage
U_s sensor voltage
12 *BUS IN* label panel
13 *Power* label panel
14 *Power* connection
15 *RIO* label panel
16 *RIO* connection (M8)
17 Diagnostic and update interface

Pneumatic connections



1 Auxiliary control air M5, D6, D4, D1/4“
2 Pilot control exhaust air M5, D6, D4, D1/4”
3 Exhaust air G1/4”, NPT1/4”, D10
4 Compressed air supply G1/4”, NPT1/4”, D10
5 Safety vent M5, D6, D4, D1/4”
6 Switching between external and internal auxiliary control air

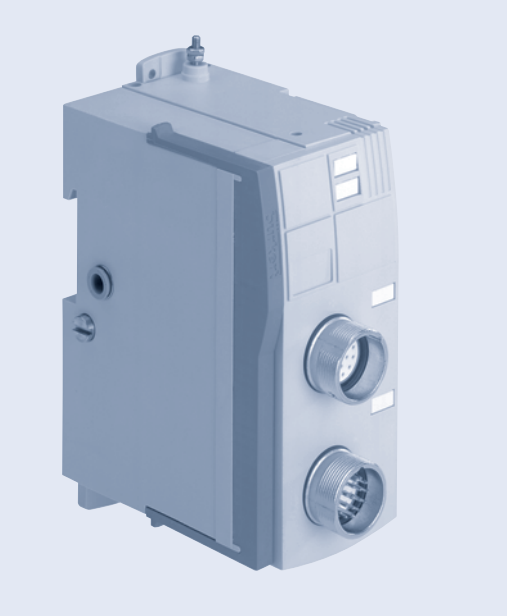
Ordering charts

DeviceNet module

Module		Item no.
DeviceNet	G1/4” version	181 203
	NPT1/4” version	182 486

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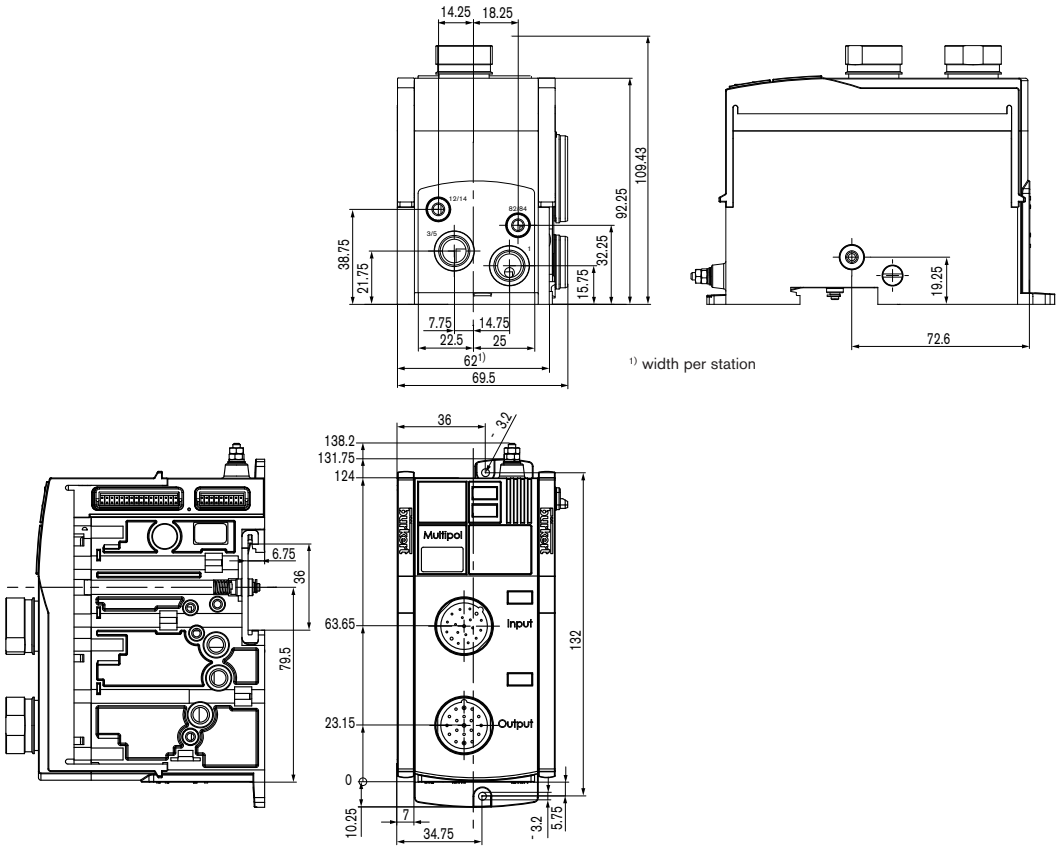
Multipole module



Technical data	
Operating voltage	24 V -15 % / +20 %
Residual ripple	2 Vss
Electrical connections	M23 jack, leads for inputs plug, leads for outputs / valves
Pneumatic connections	
Compressed air supply	G1/4", NPT1/4", D10
Exhaust air	G1/4", NPT1/4", D10
Auxiliary control air	D6, D4, D1/4", M5
Pilot control exhaust air	D6, D4, D1/4", M5
Material	PBT
Weight	485 g

The multipole module brings a bundle of individual core pairs together to form a multi-core cable that enables the signal to pass from the higher-level controller to the FreeLINE automation system.

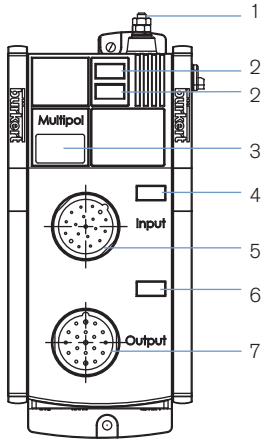
Dimensions [mm]



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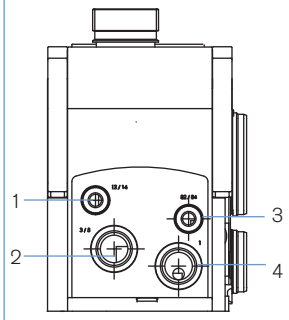
Multipole module

Connections



1 FE contact
2 Label panels
3 Type plate
4 Label panel Inputs M23
5 Connection Inputs M23
6 Label panel Outputs M23
7 Connection Outputs M23

Pneumatic connections



1 Auxiliary control air M5, D6, D4, D1/4"
2 Exhaust air G1/4", NPT1/4", D10
3 Pilot control exhaust air M5, D6, D4, D1/4"
4 Compressed air supply G1/4", NPT1/4", D10

Ordering charts

Multipole module

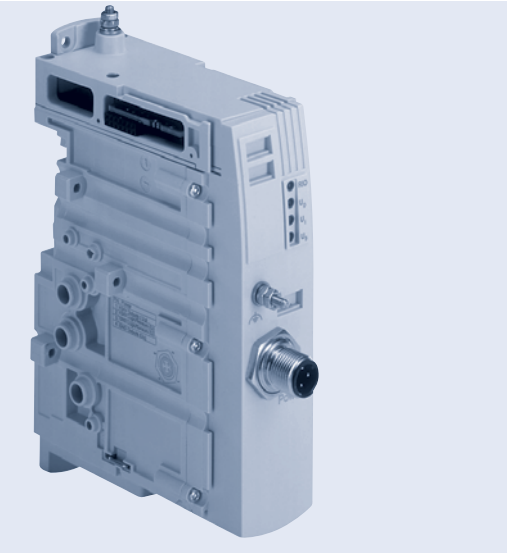
Module		Item no.
Multipole module	G1/4" version	172 340
	NPT 1/4" version	172 341

Multipole module - Accessory

Specification			Item no.
multipole plug	M23, 19-pin, convertible	straight	902 558
		angled	on request
multipole socket	M23, 19-pin, convertible	straight	902 559
	M23, 19-pin, pre-assembled, with 5 m cable	angled	902 560
Blanking plug	brass, socket/plug M23		902 561
Set	4x plug-in couplings	D4	655 951
		D6	655 952
		D 1/4"	655 953
Blanking-off plug	for plug-in coupling	D6	015 397
Silencer		G 1/4"	650 427

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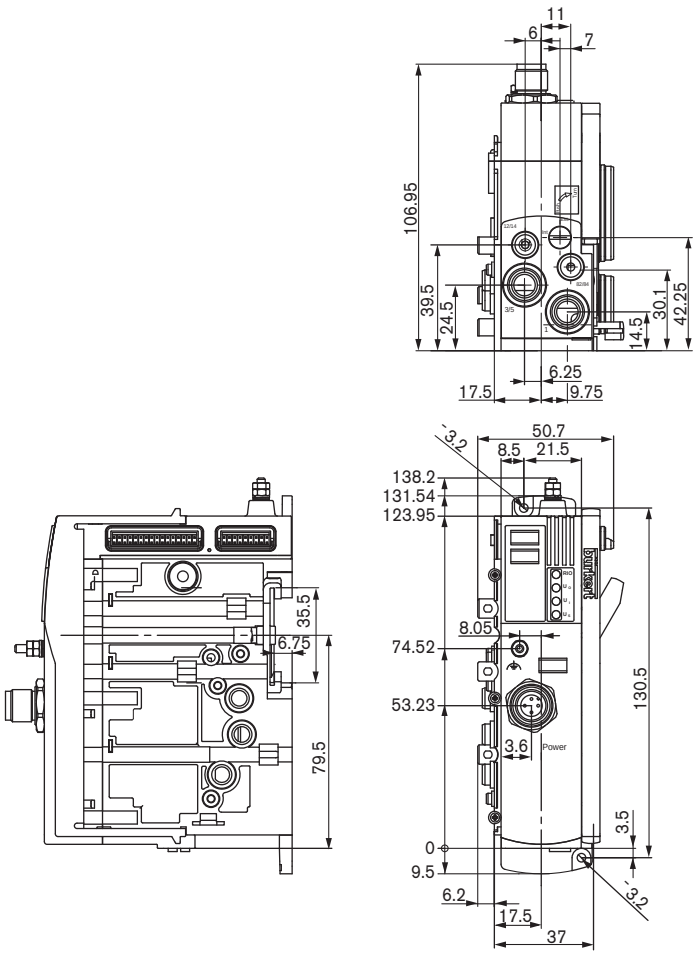
Intermediate module (INSIDE-Modul)



The intermediate module allows the extension of the field-bus network with each 16 inputs and 16 outputs.

Technical data	
Operating voltage	24 V -15 % / +20 %
Residual ripple	2 Vss
Current consumption Inputs / logic (U_L) Outputs (U_O)	 max. 1 A max. 4 A (M12)
Connections Power supply	 M12, plug, 4-pin, max. 4 A
Address setting	automatically over internal bus
Material	PBT
Weight	380 g

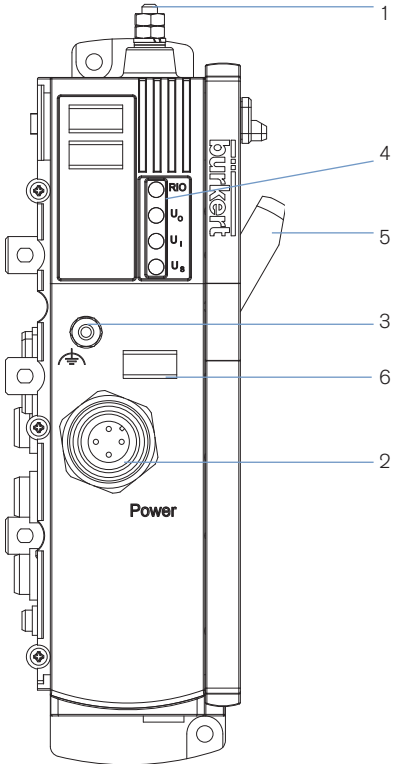
Dimensions [mm]



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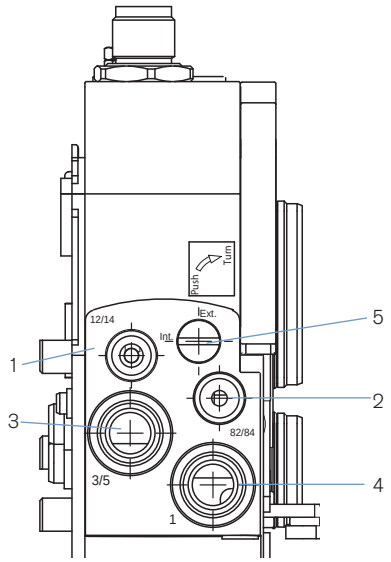
Intermediate module (INSIDE-Modul)

Connections



1 Screw terminal
(separate FE connection)
2 *Power* connection
3 FE connection
4 Diagnostic/status LED's
RIO status
U_O output voltage
U_I logic voltage
U_S sensor voltage
5 DIN rail mounting
6 *Power* Label panel

Pneumatic connections



1 Auxiliary control air M5, D6, D4, D1/4"
2 Pilot control exhaust air M5, D6, D4, D1/4"
3 Exhaust air G1/4", NPT1/4", D10
4 Compressed air supply G1/4", NPT1/4", D10
5 Switching between external / internal
auxiliary control air

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Intermediate module (INSIDE-Modul)

Ordering charts

Intermediate module (INSIDE-Modul)

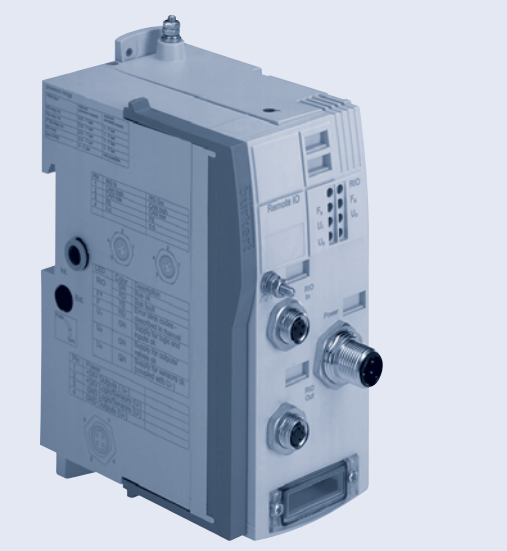
Module		Item no.
Intermediate module	G1/4” version	174 809
Intermediate module with shot	G1/4“ version	176 865

Intermediate module (INSIDE-Modul) - Accessory

	Specification		Item no.
Power supply	convertible plug connector M12	coupling straight, 4-pin	902 552
	convertible plug connector M12	coupling angled, 4-pin	on request
	pre-assembled plug connector M12	coupling angled, 4-pin	on request
Protecting cap	for coupling housing	M12	902 557
	for plug housing	M12	917 155

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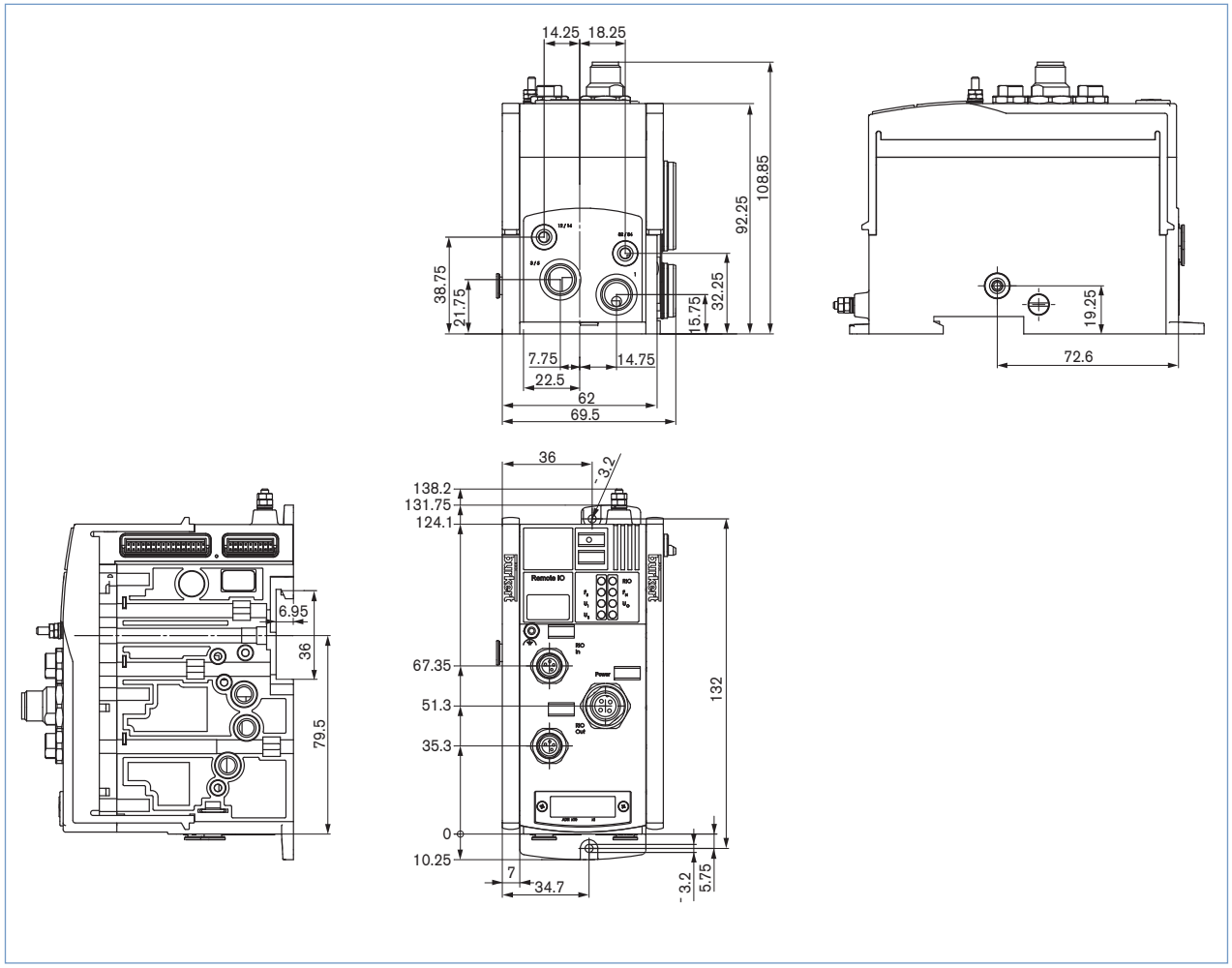
RIO Module



Technical data	
Operating voltage	24 V -15 % / +20 %
Residual ripple	2 Vss
Current consumption	
Inputs / logic (U_L)	max. 1 A
Outputs (U_O)	max. 4 A (M12)
Connections	
Power supply	M12, plug, 4-pin, max. 4 A
RIO-Bus incoming	M8, jack, 4-pin
RIO-Bus outgoing	M8, jack, 4-pin
Address setting	via rotary encoder switch
Address range	0 ... 50
Diagnostics	
Integrated diagnostic interface	3-pin (RM2,54)
Diagnose-LEDs	2 x bus status, 2 x fault indication, 3 x power supply
Material	PBT
Weight	520 g

The RIO module allows the extension of a 8645 FreeLINE system with additional 16 inputs and 16 outputs on an additional valve unit.

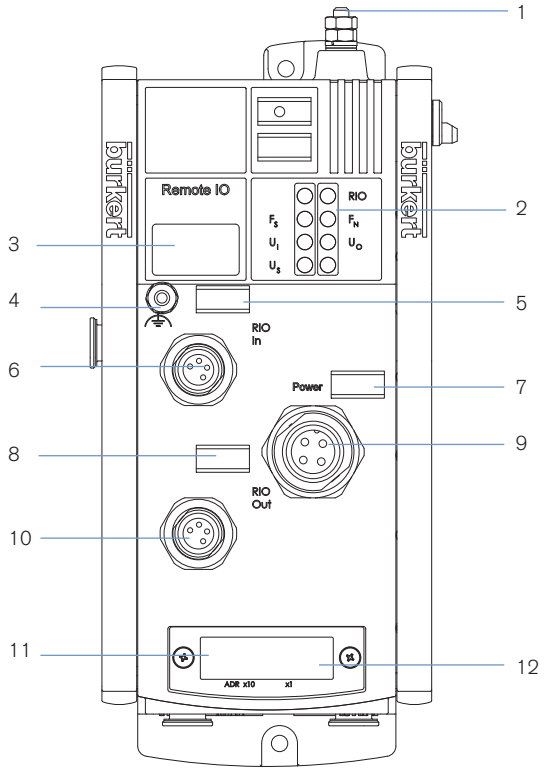
Dimensions [mm]



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RIO Module

Connections



1 FE connection

2 Diagnostic/status LEDs:
- RIO status
- FS error select
- FN error number
- U_I logic voltage
- U_O output voltage
- U_S sensor voltage

3 Type plate

4 Screw terminal (separate FE connection)

5 *RIO IN* label panel

6 *RIO IN* connection (M8)

7 *Power* label panel

8 *RIO OUT* label panel

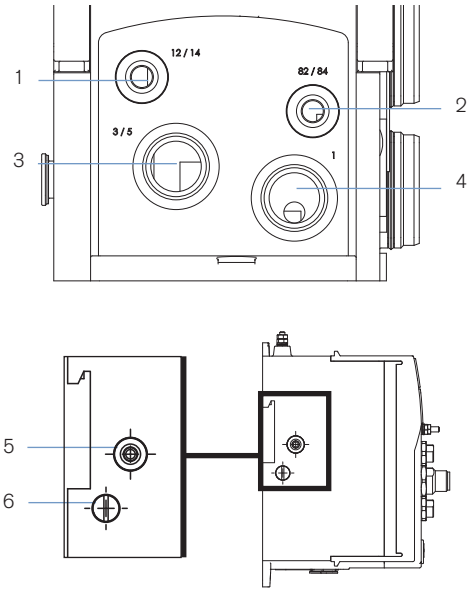
9 *Power* connection

10 *RIO OUT* connection (M8)

11 Rotary encoder switch

12 Diagnostic and update interface

Pneumatic connections



1 Auxiliary control air M5, D6, D4, D1/4”

2 Pilot control exhaust air M5, D6, D5, D1/4”

3 Exhaust air G1/4”, NPT1/4”, D10

4 Compressed air supply G1/4”, NPT1/4”, D10

5 Safety vent M5, D6, D4, D1/4”

6 Switching between external / internal auxiliary control air

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RIO Module

Ordering charts

RIO Module

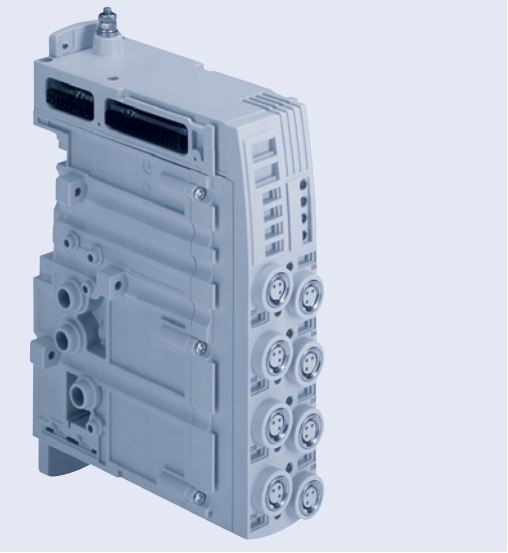
Module		Item no.
RIO Module	G1/4" version	174 811

RIO Module - Accesory

	Specification		Item no.
Power supply	convertible plug connector M12	coupling, straight, 4-pin	902 552
	convertible plug connector M12	coupling angled, 4-pin	on request
	pre-assembled plug connector M12	coupling angled, 4-pin	on request
Terminating resistor RIO	M8		918 742
RIO cable	M8	3 meter	902 554
	M8	10 meter	902 555
Protecting cap	for coupling housing	M8	902 556
	for plug housing	M12	917 155

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Electronic Module - Digital Inputs

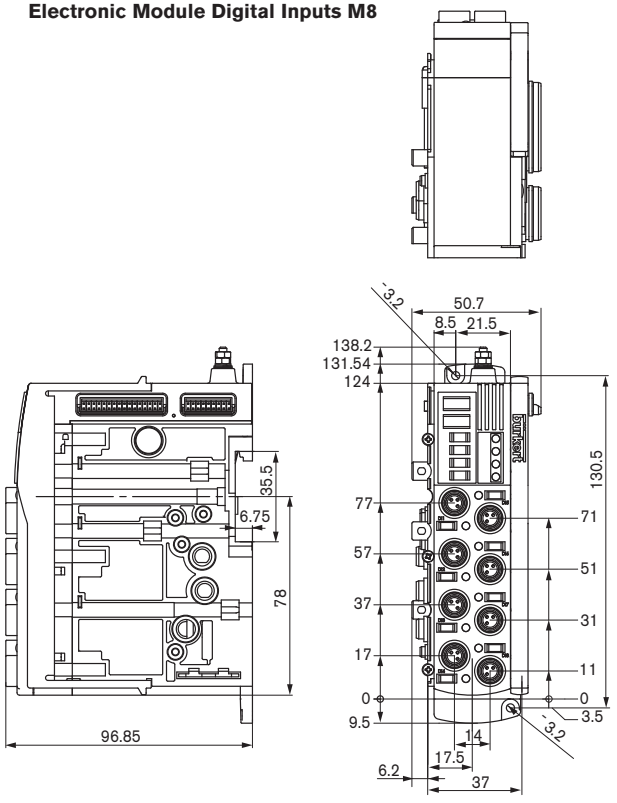


Technical data	
Supply voltage (transmitters)	max. 700 mA in the system
Supply current transmitter	24 V -15 % / +20 %
Inputs Logic level low Logic level high	 0 ... 5 V 13 ... 30 V (input current) < 10 mA)
Connections	8 x M8, 3-pin per input 4 x M12, 4-pin, double allocation
Display	8 LEDs for the status of the feedback
Sensor types	2- / 3-phase (pnp)
Input delay in connection with fieldbus module	typ. 4 ms
Material	PBT
Weight	325 g

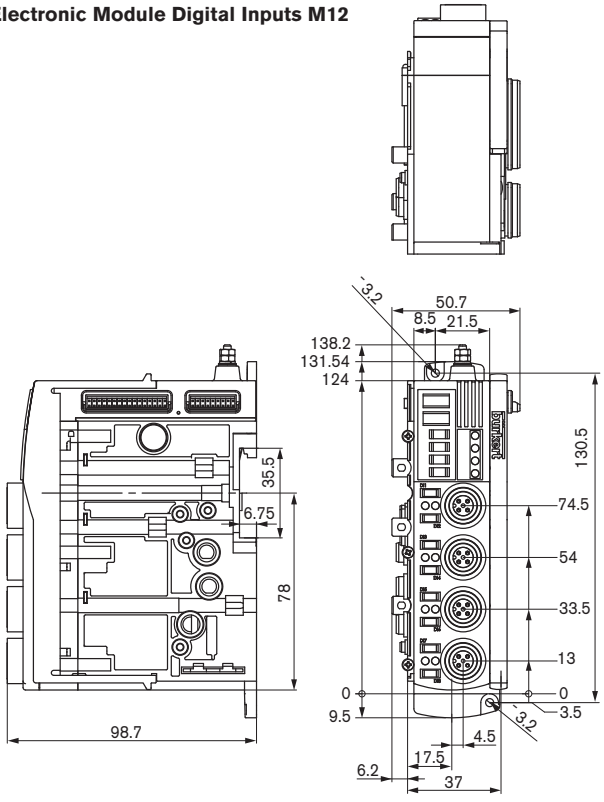
The electronic module realises electrical functions - here in the form of digital inputs..
These feedbacks are delivered to superior control units (PLCs).

Dimensions [mm]

Electronic Module Digital Inputs M8



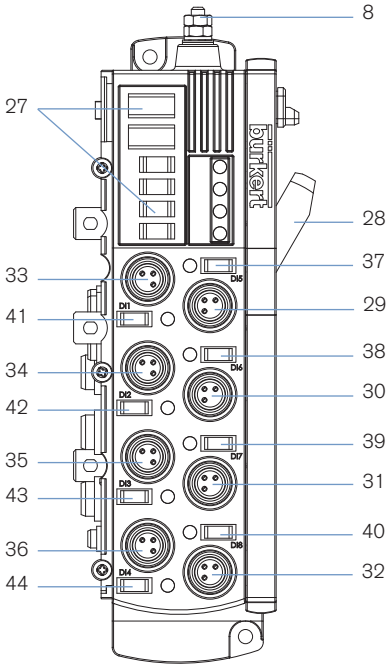
Electronic Module Digital Inputs M12



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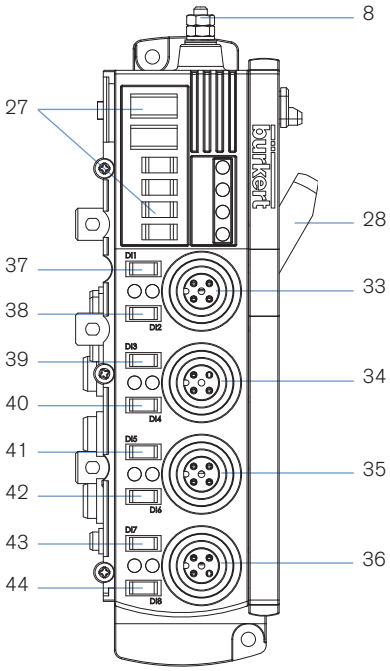
Electronic Module - Digital Inputs

8 Digital Inputs M8



8	FE contact
27	Label panels
28	DIN rail mounting
29	Connection DI_1 (M8)
30	Connection DI_2 (M8)
31	Connection DI_3 (M8)
32	Connection DI_4 (M8)
33	Connection DI_5 (M8)
34	Connection DI_6 (M8)
35	Connection DI_7 (M8)
36	Connection DI_8 (M8)
37	Label panel DI_1
38	Label panel DI_2
39	Label panel DI_3
40	Label panel DI_4
41	Label panel DI_5
42	Label panel DI_6
43	Label panel DI_7
44	Label panel DI_8

8 Digital Inputs M12 (double allocation)



8	FE contact
27	Label panels
28	DIN rail mounting
33	Connection DI_1 / DI_2 (M12)
34	Connection DI_3 / DI_4 (M12)
35	Connection DI_5 / DI_6 (M12)
36	Connection DI_7 / DI_8 (M12)
37	Label panel DI_1
38	Label panel DI_2
39	Label panel DI_3
40	Label panel DI_4
41	Label panel DI_5
42	Label panel DI_6
43	Label panel DI_7
44	Label panel DI_8

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Electronic Module - Digital Inputs

Ordering charts

Electronic Module - Digital Inputs

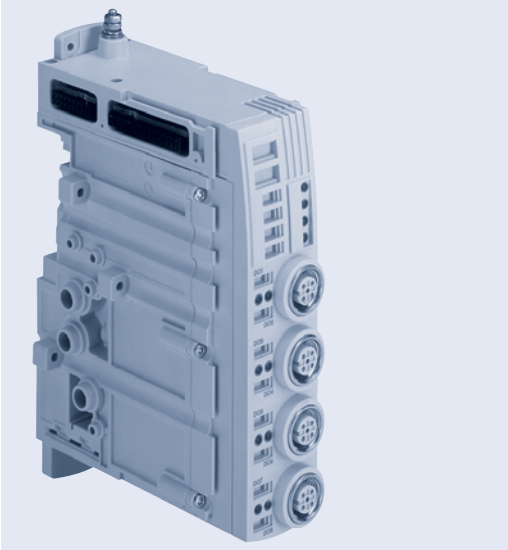
	Module	Item no.
Electronic Module	DI 8 x M8, 3-pin	174 812
	DI 3 x M12, 4-pin	174 813

Electronic Module-Digital Inputs - Accessory

	Specification		Item no.
Protecting cap	for coupling housing	M8	902 556
	for coupling housing	M12	902 557

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Electronic Module - Digital Outputs

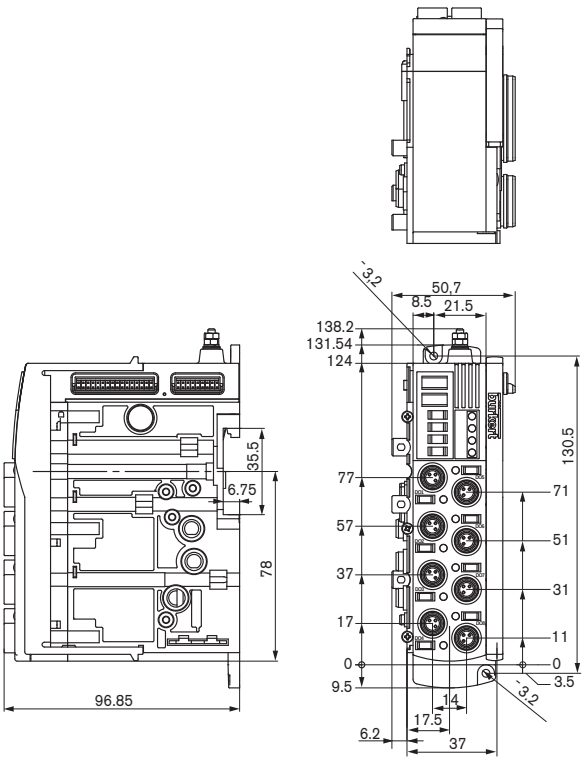


The electronic module realises electrical functions - here in form of digital outputs.

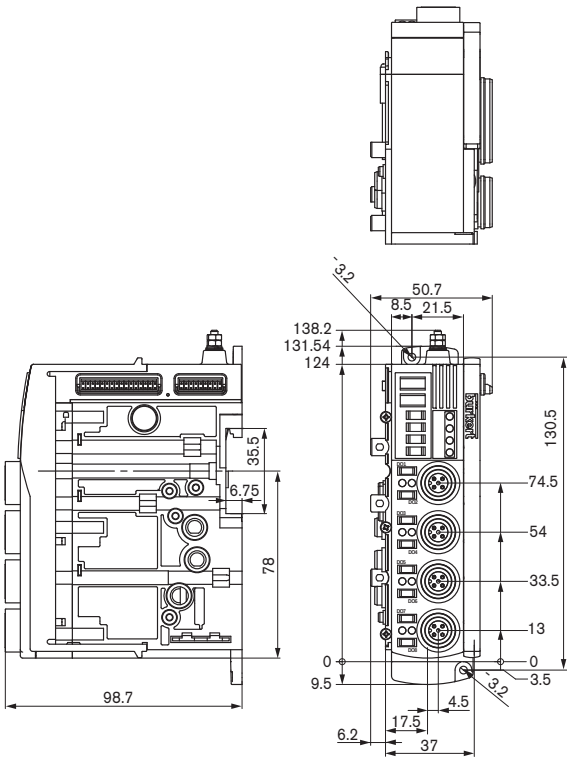
Technical data	
Output current	max. 500 mA / output
Output voltage	24 V, -15 % / +20 %
Connections	8 x M8, 3-pol./ output 4 x M12, 4-pol., double allocation
Displays	8 LEDs for the status of the digital outputs
Material	PBT
Weight	325 g

Dimensions [mm]

Electronic Module - Digital Outputs M8



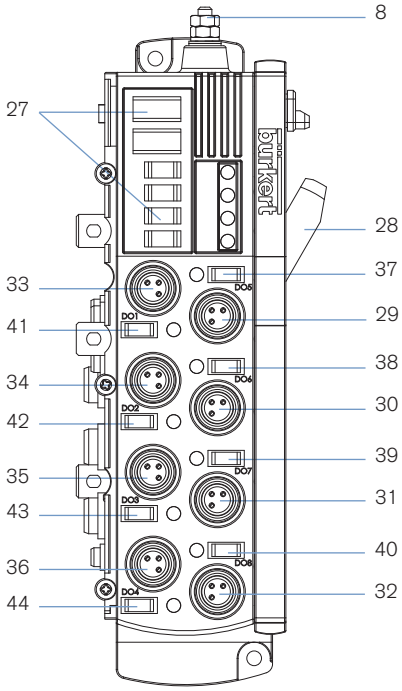
Electronic Module - Digital Outputs M12



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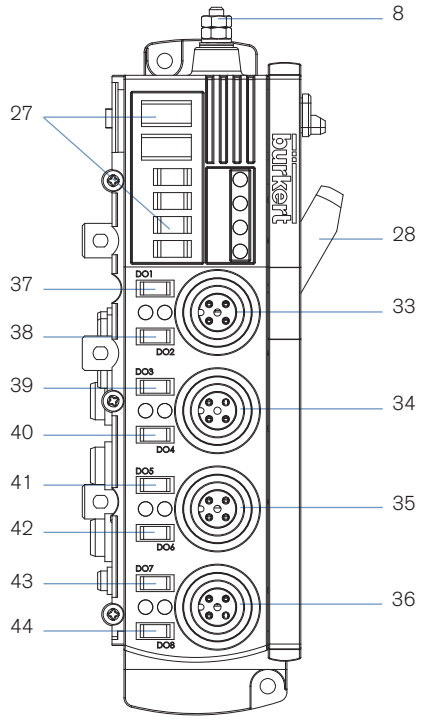
Electronic Module - Digital Outputs

8 Digital Outputs M8



8	FE contact
27	Label panels
28	DIN rail mounting
29	Connection DO_1 (M8)
30	Connection DO_2 (M8)
31	Connection DO_3 (M8)
32	Connection DO_4 (M8)
33	Connection DO_5 (M8)
34	Connection DO_6 (M8)
35	Connection DO_7 (M8)
36	Connection DO_8 (M8)
37	Label panel DO_1
38	Label panel DO_2
39	Label panel DO_3
40	Label panel DO_4
41	Label panel DO_5
42	Label panel DO_6
43	Label panel DO_7
44	Label panel DO_8

8 Digital Outputs M12 (double allocation)



8	FE contact
27	Label panels
28	DIN rail mounting
33	Connection DO_1 / DO_2 (M12)
34	Connection DO_3 / DO_4 (M12)
35	Connection DO_5 / DO_6 (M12)
36	Connection DO_7 / DO_8 (M12)
37	Label panel DO_1
38	Label panel DO_2
39	Label panel DO_3
40	Label panel DO_4
41	Label panel DO_5
42	Label panel DO_6
43	Label panel DO_7
44	Label panel DO_8

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Electronic Module - Digital Outputs

Ordering charts

Electronic Module - Digital Outputs

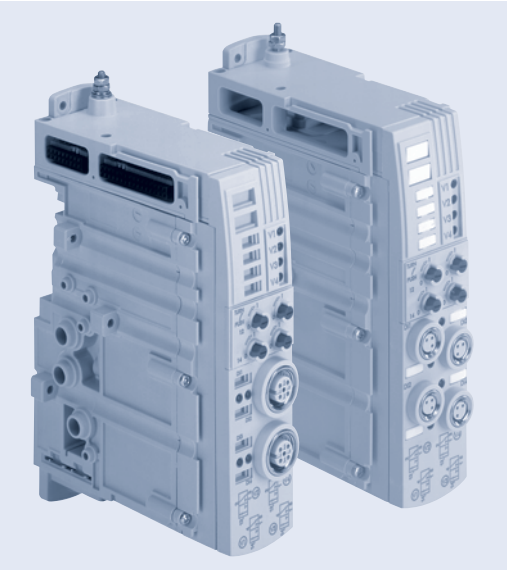
	Module	Item no.
Electronic Module	DO 8 x M8, 3-pin	174 814
	DO 4 x M12, 4-pin	174 815

Electronic Module-Digital Outputs - Accessory

	Specification		Item no.
Protecting cap	for coupling housing	M8	902 556
	for coupling housing	M12	902 557

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Combination module



The combination module performs both pneumatic and electrical functions.
Two valves from each of types 6524, 6525 or 0460 are integrated into the module; the electrical indicators are located on the top.

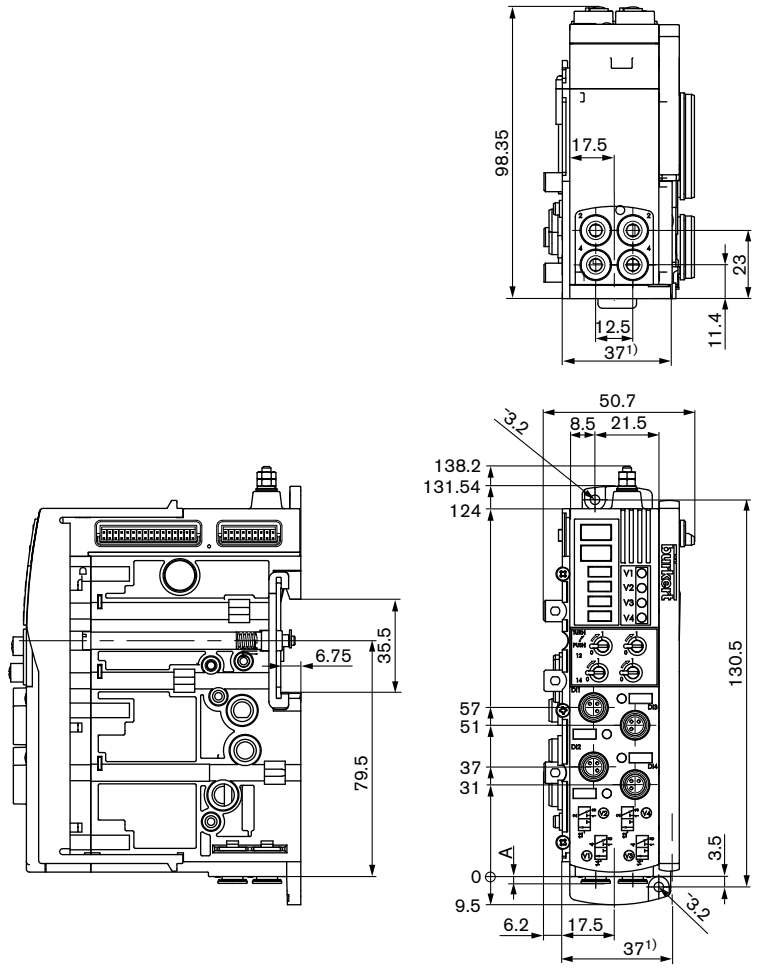
Technical data - Module	
Operating voltage	24 V -15 % / +20 %
Current consumption	max. 700 mA (in the system)
Current consumption per valve function (at 24 V)	
on pick-up (≤ 120 ms)	≤ 60 mA
lowered	≤ 25 mA
Connections	
Electrical	4 x M8 (3-pin) 2 x M12 (4-pin), double allocation
Pneumatic	D4, D6, D1/4"
Flow rate QNn	
with 3/2- or 5/2-way valves	300 l/min
with 5/2-way valves bistable or 5/3-way valves	200 l/min
Pressure range	
with 3/2- or 5/2-way valves	
internal control air	2.5 ... 7.0 bar
external auxiliary air	1.0 ... 7.0 bar
with 5/2-way valves bistable or 5/3-way valves	
internal control air	2.0 ... 7.0 bar
external auxiliary air	not possible
Response times	
with 3/2- or 5/2-way valves	
Opening	12 ms
Closing	20 ms
with 5/2-way valves bistable or 5/3-way valves	
Opening	15 ms
Closing	20 ms
Inputs	
Logic level high	13 ... 30 V
Logic level low	0 ... 5 V
Displays	4 LEDs for the status of the feedback 4 (2) LEDs for switching status of the valves
Material	PBT
Weight	
with 3/2- or 5/2-way valves	327 g
with 2 x 3/2-way valves	330 g

Technical data - integrated valves	
Body material	PA (polyamide)
Sealing material	NBR, FKM
Media	lubricated and non lubricated dry air; neutral gases (5 µm-filter recommended)
Duty cycle	continuous operation (100 % ED)

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Combination module

Dimensions [mm]



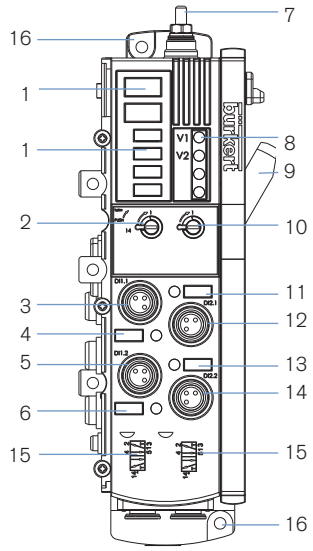
¹⁾ width per station
A: push-in D4, D6 A = 2.1 mm
push-in D1/4“ A = 10 mm

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Combination module

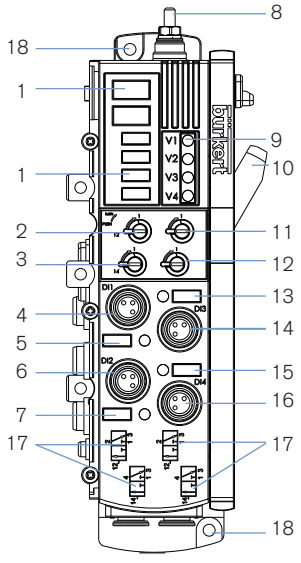
Connections

Combination module with 2 pneumatic outputs and 4 digital inputs
5/2-way valve (type 6525) or 3/2-way valve (type 6524) with M8 connections



1 Label panels (available)
2 Emergency manual control valve 1
3 Connection DI 1.1 (M8)
4 Label panel DI 1.1
5 Connection DI 1.2 (M8)
6 Label panel DI 1.2
7 FE contact
8 LEDs for switching status:
V1 - valve function 1
V2 - valve function 2
9 DIN rail mounting (accessories)
10 Emergency manual control valve 2
11 Label panel DI 2.1
12 Connection DI 2.1 (M8)
13 Label panel DI 2.2
14 Connection DI 2.2 (M8)
15 Function circuit diagram
16 Wall fixing

Combination module with 4 pneumatic outputs and 4 digital inputs
2 x 3/2-way valve (type 6525) with M8 connections

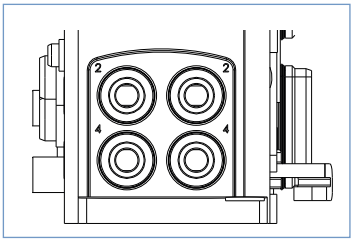


1 Label panels (available)
2 Emergency manual control valve 1
3 Emergency manual control valve 2
4 Connection DI 1.1 (M8)
5 Label panel DI 1.1
6 Connection DI 1.2 (M8)
7 Label panel DI 1.2
8 FE contact
9 LEDs for control status:
V1 ... 4 - valve function 1 ... 4
10 DIN rail mounting (accessories)
11 Emergency manual control valve 3
12 Emergency manual control valve 4
13 Label panel DI 2.1
14 Connection DI 2.1 (M8)
15 Label panel DI 2.2
16 Connection DI 2.2 (M8)
17 Function circuit diagram
18 Wall fixing

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Combination module

Pneumatic connections



All connection variations are suitable for the same mounting hole and can be exchanged afterwards.

Ordering charts

Combination module

	Module				Item no.
Combination module withw 4 x M8 DI	with 2 x 3/2-way valves		with pneumatic connection D1/4"	without check valve	187 307
				with check valve	187 308
			with pneumatic connection D6	without check valve	187 299
				with check valve	187 300
	with 3/2-way valve	circuit function C	with pneumatic connection D1/4"	without check valve	187 311
				with check valve	187 312
			with pneumatic connection D6	without check valve	187 303
				with check valve	187 304
		circuit function D	with pneumatic connection D1/4"	without check valve	187 313
				with check valve	187 314
			with pneumatic connection D6	without check valve	187 305
				with check valve	187 306
	with 5/2-way valve		with pneumatic connection D1/4"	without check valve	187 309
				with check valve	187 310
			with pneumatic connection D6	without check valve	187 301
				with check valve	187 302
Combination module with 4 x M8 DI	with 5/2-way valve, bistable	circuit function H	with pneumatic onnection D6	without check valve	174 819
	with 5/3-way valve	circuit function L	with pneumatic connection D6	without check valve	174 820
		circuit function N	with pneumatic connection D6	without check valve	174 821
Combination module with 2 x M12 DI	with 2 x 3/2-way valve	circuit function C	with pneumatic connection D6	without check valve	187 331
	with 5/2-way valve	circuit function H	with pneumatic connection D6	without check valve	187 332
	with 3/2-way valve	circuit function C	with pneumatic connection D6	without check valve	187 333
		circuit function D	with pneumatic connection D6	without check valve	187 334
	with 5/2-way valve, bistable	circuit function H	with pneumatic connection D6	without check valve	174 828
	with 5/3-way valve	circuit function L	with pneumatic connection D6	without check valve	174 829
		circuit function N	with pneumatic connection D6	without check valve	174 830

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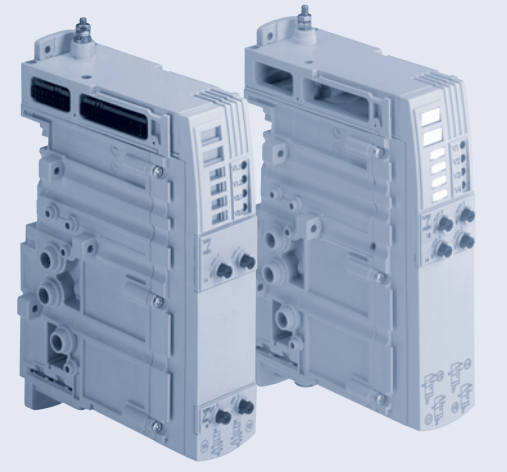
Combination module

Combination module - Accessory

	Specification		Item no.
Plug connector M8	convertible	plug straight	on request
		plug angled	on request
	pre-assembled	plug straight	on request
		plug angled	on request
Protecting cap	for coupling housing	M8	902 556
		M12	902 557
Set	4x plug-in couplings	D4	655 951
		D6	655 952
		D 1/4“	655 953
Blanking-off plug	for plug-in coupling	D6	015 397

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Pneumatic module



The pneumatic module realises pneumatic functions. Two valves each from types 6524, 6525 or 0460 can be integrated into the module.

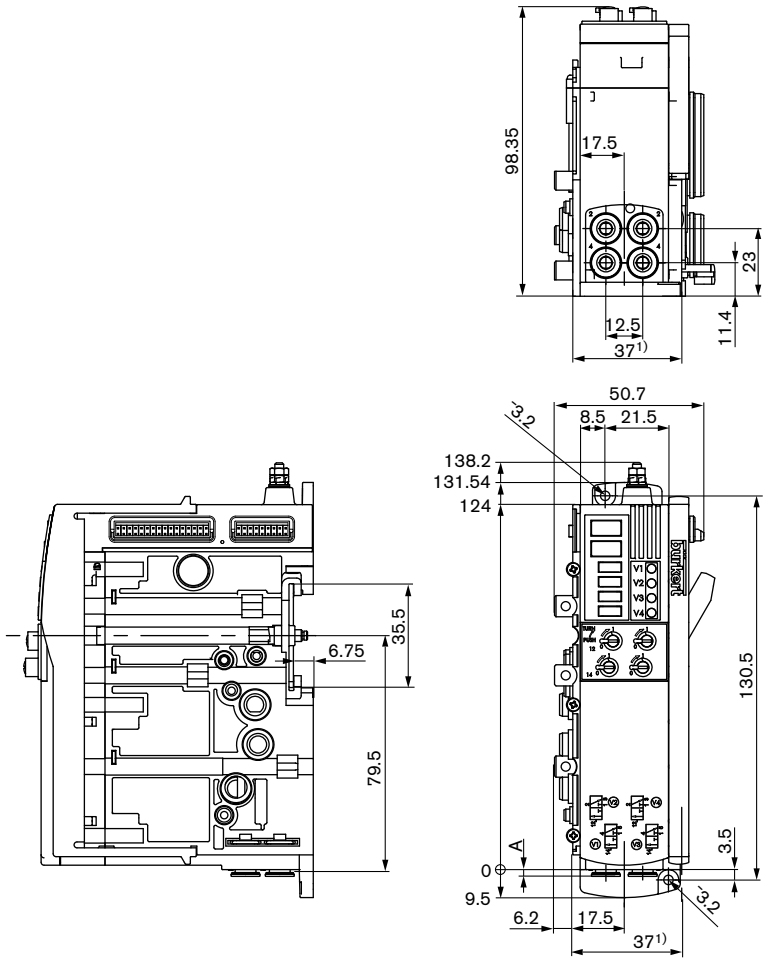
Technical data - module	
Operating voltage	24 V -15 % / +20 %
Power requirement per valve (at 24 V)	
on attachment (≤ 120 ms)	≤ 60 mA
reduced	≤ 25 mA
Pneumatic connections	D4, D6, D1/4"
Flow rate QNn	
with 3/2- or 5/2-way valve	300 l/min
with 5/2-way valves bistable or 5/3-way valves	200 l/min
Pressure range	
with 3/2- or 5/2-way valve	
internal control air	2.5 ... 7.0 bar
external auxiliary air	1.0 ... 7.0 bar
with 5/2-way valves bistable or 5/3-way valves	
internal control air	2.0 ... 7.0 bar
external auxiliary air	not possible
Response times	
with 3/2- or 5/2-way valves	
Opening	12 ms
Closing	20 ms
with 5/2-way valves bistable or 5/3-way valve	
Opening	15 ms
Closing	20 ms
Material	PBT
Weight	
with 3/2- or 5/2-way valves	312 g
with 2 x 3/2-way valves	314 g

Technical data - integrated valves	
Body material	PA (polyamide)
Sealing material	NBR, FKM
Media	lubricated and non lubricated dry air; neutral gases (5 µm-filter recommended)
Duty cycle	continuous operation (100 % ED)

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Pneumatic module

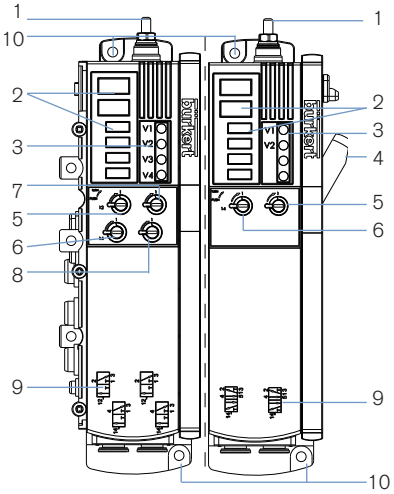
Dimensions [mm]



1) width per station
A: push-in D4, D6 A = 2.1 mm
push-in D 1/4" A = 10 mm

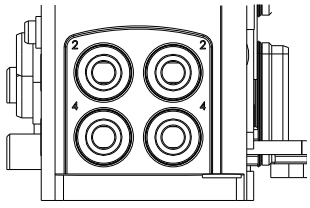
Connections

Pneumatic module with 4 pneumatic outputs (left module) and 2 pneumatic outputs (right module)



1 FE contact
2 Label panels (available)
3 LEDs for control status:
V1-valve function 1
V2-valve function 2
only PM PO4:
V3-valve function 3
V4-valve function 4
4 DIN rail mounting (accessories)
5 Emergency manual control valve 1
6 Emergency manual control valve 2
7 Emergency manual control valve 3
8 Emergency manual control valve 4
9 Function circuit diagram
10 Wall fixing

Pneumatic connections



All connection variations are suitable for the same mounting hole and can be exchanged afterwards.

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Pneumatic module

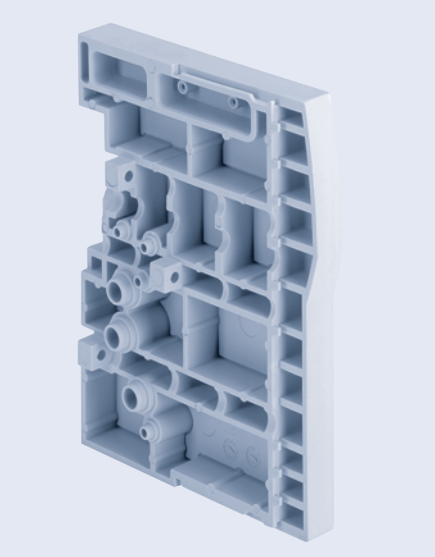
Ordering chart

Pneumatic module

	Module				Item no.
Pneumatic module	with 2 x 3/2-way valves		with pneumatic connection D1/4"	without check valve	187 323
				with check valve	187 324
			with pneumatic connection D6	without check valve	187 315
				with check valve	187 316
	with 3/2-way valves	circuit function C	with pneumatic connection D1/4"	without check valve	187 327
				with check valve	187 328
			with pneumatic connection D6	without check valve	187 319
				with check valve	187 320
		circuit function D	with pneumatic connection D1/4"	without check valve	187 329
				with check valve	187 330
			with pneumatic connection D6	without check valve	187 321
				with check valve	187 322
	with 5/2-way valves		with pneumatic connection D1/4"	without check valve	187 325
				with check valve	187 326
			with pneumatic connection D6	without check valve	187 317
				with check valve	187 318
	with 5/2-way valve, bistable	circuit function H	with pneumatic connection D6	without check valve	174 816
	with 5/3-way valve	circuit function L	with pneumatic connection D6	without check valve	174 817
		circuit function N	with pneumatic connection D6	without check valve	174 818

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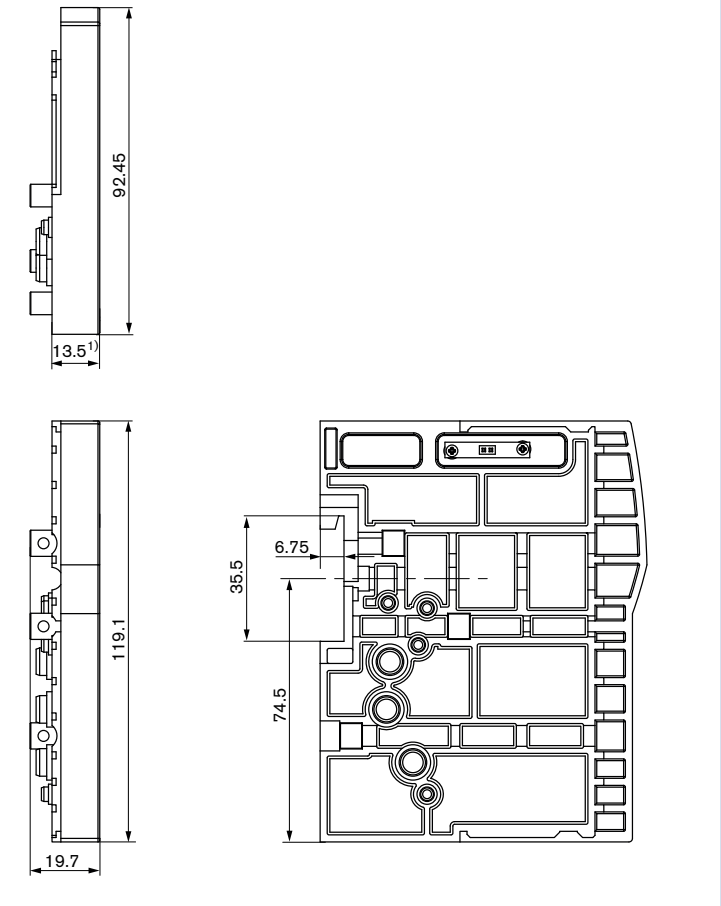
Termination module



Technical data		
Module variants	Fieldbus	Multipole
Terminal resistor for internal bus	installed	not installed
Material	PBT	
Weight	approx. 104 g	

The termination module complements the FreeLINE automation systems and is therefore a necessary component. It is held via connection bracket, securing does not take place to wall or rail.

Dimensions [mm]



Ordering chart

Module		Item no.
Termination module	Multipole	172 343
	Fieldbus	172 344

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Ordering chart System-Accessory

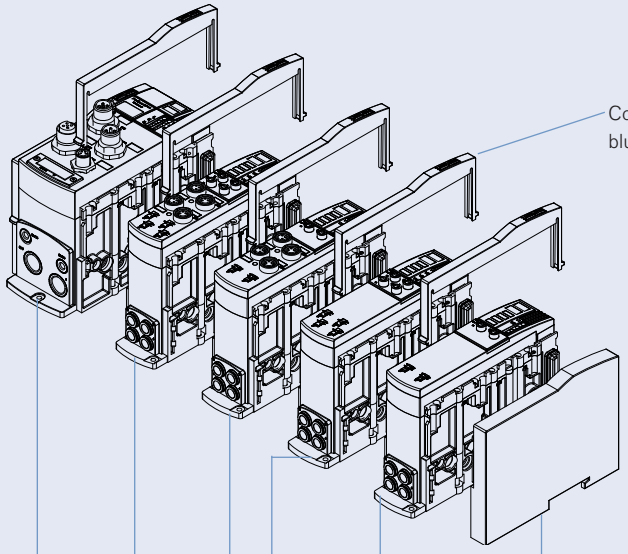
	Specification		Item no.
Module rail fastening set			667 400
Connection bracket	blue		660 982
Set	Label panels	10x, big	902 639
		30x, small	902 640
	4x plug-in couplings	D4	655 951
		D6	655 952
		D 1/4“	655 953
Blanking-off plug	for plug-in coupling	D6	015 397
Silencer		G 1/4“	650 427
Check valve type 0498	double pilot		167 126
	double pilot, with mounting base		167 127

Ordering chart System-Spare part

	Specification	Item no.
FE rail (5 fold)		667 165

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Example configuration



FIELDBUS MODULE	
Power supply	M12, plug, 4-pin, max. 4 A
Profibus® incoming	M12, plug, 5-pin, b-coded
Profibus® outgoing	M12, jack, 5-pin, b-coded
RIO	M8, jack, 4-pin

COMBINATION MODULE	
2*2x3/2-way valve / 4 x DI	
Connections	
electrical	4 x M8 (3-pin) 2 x M12 (4-pin), double allocation
pneumatic	D4, D6, D1/4"
5/2-Wege-Ventil / 4 x DI	
Connections	
electrical	4 x M8 (3-pin) 2 x M12 (4-pin), double allocation
pneumatic	D4, D6, D1/4"

TERMINATION MODULE
The fieldbus variant of the termination module contains the termination impedance for the internal bus.

PNEUMATIC MODULE	
2*2x3/2-way valve	
pneumatic connections	D4, D6, D1/4"
5/2-way valve	
pneumatic connections	D4, D6, D1/4"

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