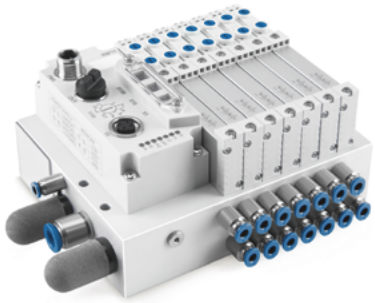
Series 86-REG / 86-REV

Technical details

Temperature range	0°C ... +50°C
Medium	Filtered, oil-free and dried compressed air according to ISO 8573-1:2010, Class 7:2:4, instrument air, in each case free of aggressive additives. Alternative the pressure dew point has to be at least 10°C below deepest occurring ambient temperature.
Materials	Body: Al (anodized), brass, stainless steel, zinc coated steel, plastic, Seals: NBR
Protection	IP 65 according to EN 60529



Description

- valve-terminal for pneumatic control systems
- terminal up to 24 stations
- valve sizes 10 mm or14 mm width
- outlet ports on the side of the terminal or on top of the valve
- mounting via through-holes
- internal or external changeable pilot port

Technical data

Number of stations	4, 5, 6, 7, 8, 9, 10, 12, 16, 20, 24
electrical Connection	Multi-pin (Sub-D25), CC-Link, Ethernet, Profinet, EtherCAT, IO-Link, Modbus-TCP
Voltage	24 V DC ± 10%
Power consumption	max. 1,3 W solenoid, electronic according version
Flow rate	up to 600 Nl/min (depending on valve type*)
Pneumatical ports	1, 3 and 5 G1/4, E1 (external pilot port) and 82/87 (solenoid exhausts) M7
Operating ports	G1/8 (14 mm width), M7 (10 mm width)
Operating pressure	depending on valve type (see page 10)
Pilot pressure	depending on valve type (see page 10)

Series 86-REG / 86-REV

Order code

86-RE*--**-**-**-**-**-****

Series	
REG	outlet ports on manifold
REV	outlet ports on valve

Pilot pressure, width	
10	internal pilot pressure, 10 mm
14	internal pilot pressure, 14 mm
E0	external pilot pressure, 10 mm
E4	external pilot pressure, 14 mm

Stations	
4-24	4, 5, 6, 7, 8, 9, 10, 12, 16, 20, 24

Electrical modules	
M1	Multi-pin, 25-pin
B0	Bus module, universal (CC-Link, Ethernet, Profinet, EtherCAT adjustable)
B11	IO-Link
B12	Modbus-TCP

Pneumatic connection	
00	G1/8 (M7) at 2 and 4 G1/4 at 1
40	Tube connection Ø 4 at 2 and 4 G1/4 at 1
41	Tube connection Ø 4 at 2 and 4 Tube connection Ø 8 at 1
42	Tube connection Ø 4 at 2 and 4 Tube connection Ø 10 at 1
60	Tube connection Ø 6 at 2 and 4 G1/4 at 1
61	Tube connection Ø 6 at 2 and 4 Tube connection Ø 8 at 1
62	Tube connection Ø 6 at 2 and 4 Tube connection Ø 10 at 1

Silencers*	
-	no silencers
BL	sintered bronze silencers, left
PL	plastic silencers, left
VL	silencers made of LDPE, sintered, left
BR	sintered bronze silencers, right
PR	plastic silencers, right
VR	silencers made of LDPE, sintered, right
BB	sintered bronze silencers, left and right
PB	plastic silencers, left and right
VB	silencers made of LDPE, sintered, left and right

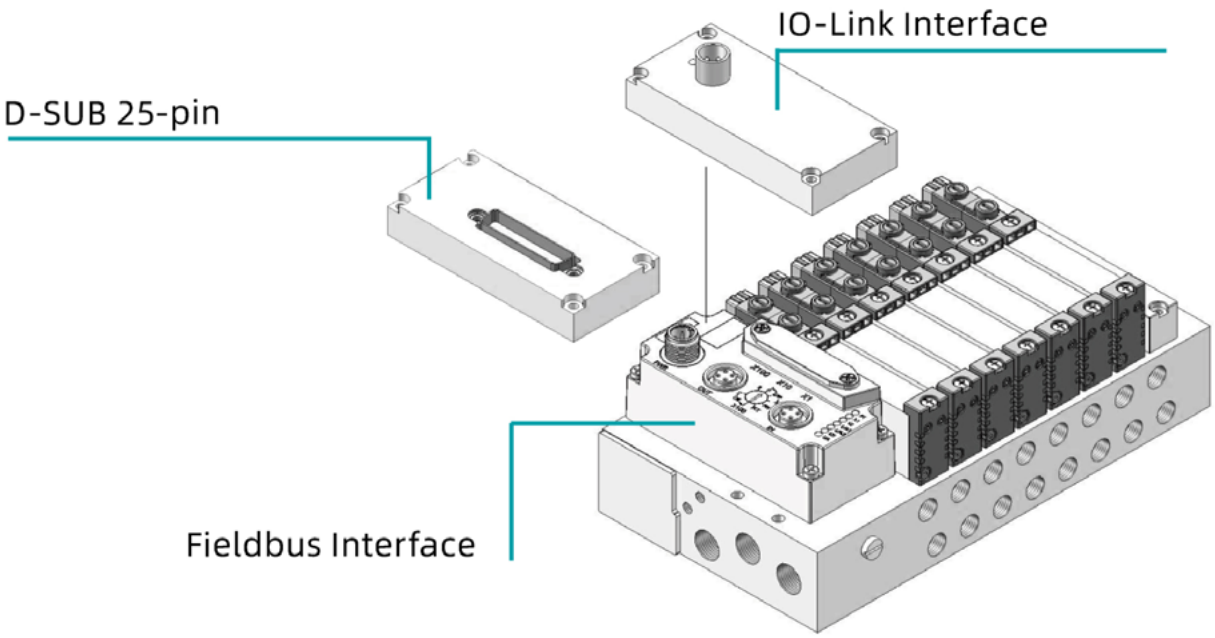
* If more than 6 valves are switched simultaneously, venting is required on both sides.

Valves*	
M	5/2-way, single solenoid
J	5/2-way, double solenoid
K	2 x 3/2-way, NC
N	2 x 3/2-way, NO
H	2 x 3/2-way, NC/NO
G	5/3-way, center position closed
E	5/3-way, center position exhausted
B	5/3-way, center position pressurized
L	blind plate
F	blind plate with 3 ports G1/8 for additional air supply
D	pressure dividing plug **

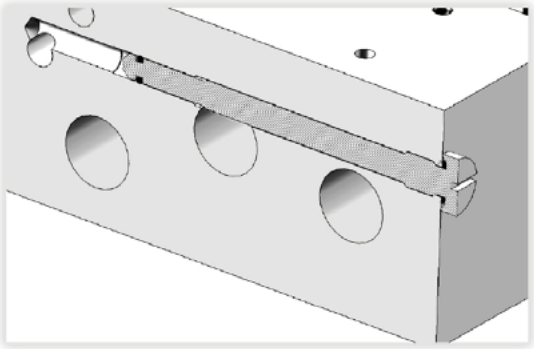
* The valves are fitted in the order specified in the order code.
**Pressure separation is mounted downstream of the valve.

Series 86-REG / 86-REV

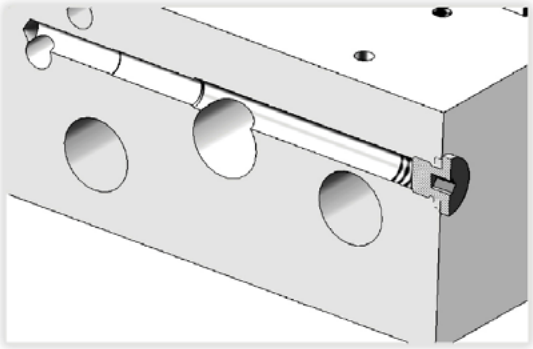
Modular platform



Changing from internal to external pilot pressure



External pilot pressure



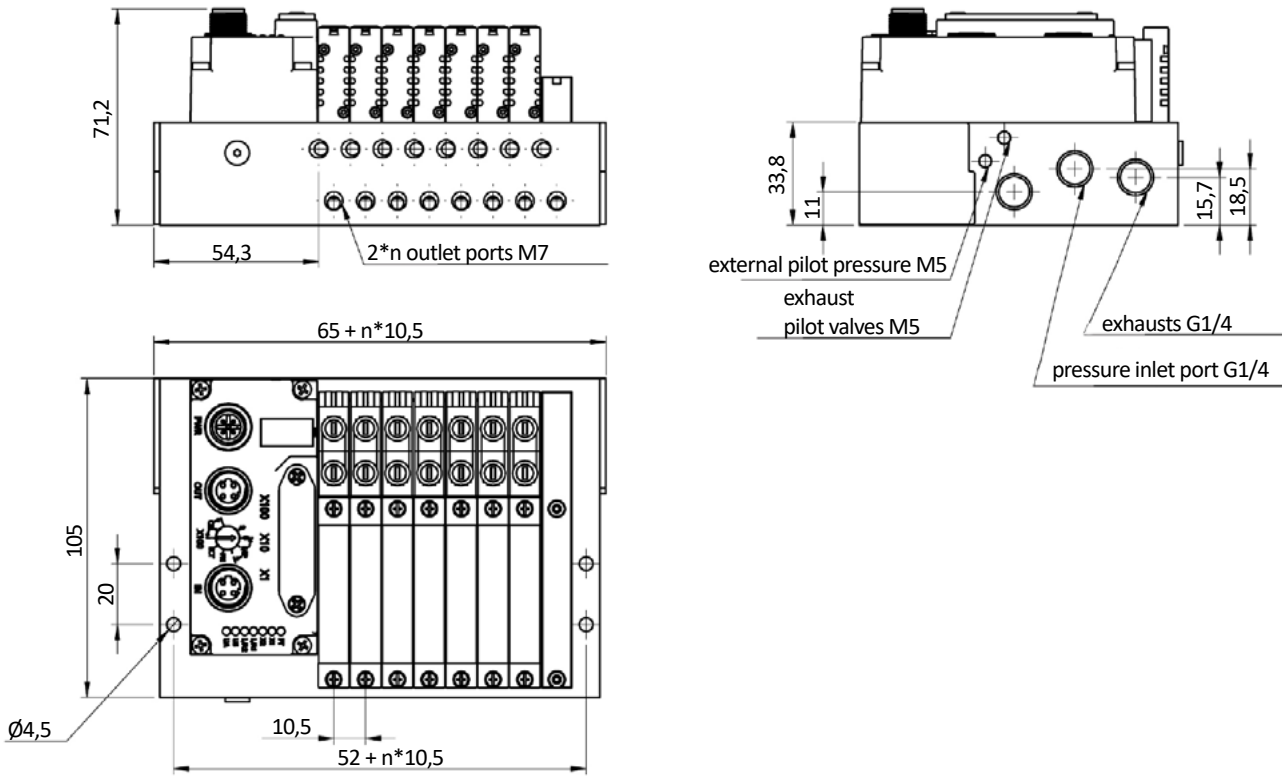
Internal pilot pressure

Series 86-REG / 86-REV

Manifold 86-RE-10S, width 10 mm, outlet ports lateral

Model-no.:	Stations (n)
86-RE-10S-04	4
86-RE-10S-05	5
86-RE-10S-06	6
86-RE-10S-07	7
86-RE-10S-08	8
86-RE-10S-09	9
86-RE-10S-10	10
86-RE-10S-12	12
86-RE-10S-16	16
86-RE-10S-20	20
86-RE-10S-24	24

Dimensions

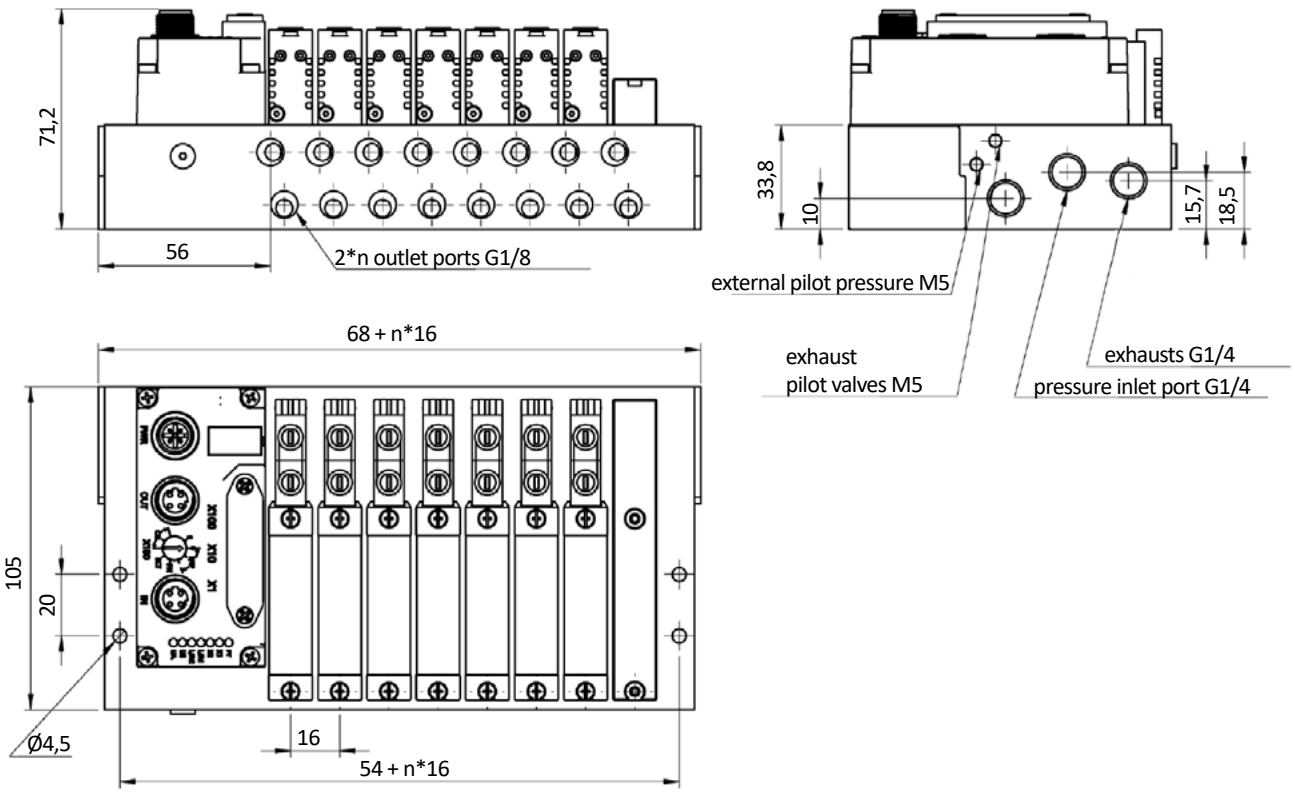


Series 86-REG / 86-REV

Manifold 86-RE-10S, width 14 mm, outlet ports lateral

Model-no.:	Stations (n)
86-RE-14S-04	4
86-RE-14S-05	5
86-RE-14S-06	6
86-RE-14S-07	7
86-RE-14S-08	8
86-RE-14S-09	9
86-RE-14S-10	10
86-RE-14S-12	12
86-RE-14S-16	16
86-RE-14S-20	20
86-RE-14S-24	24

Dimensions

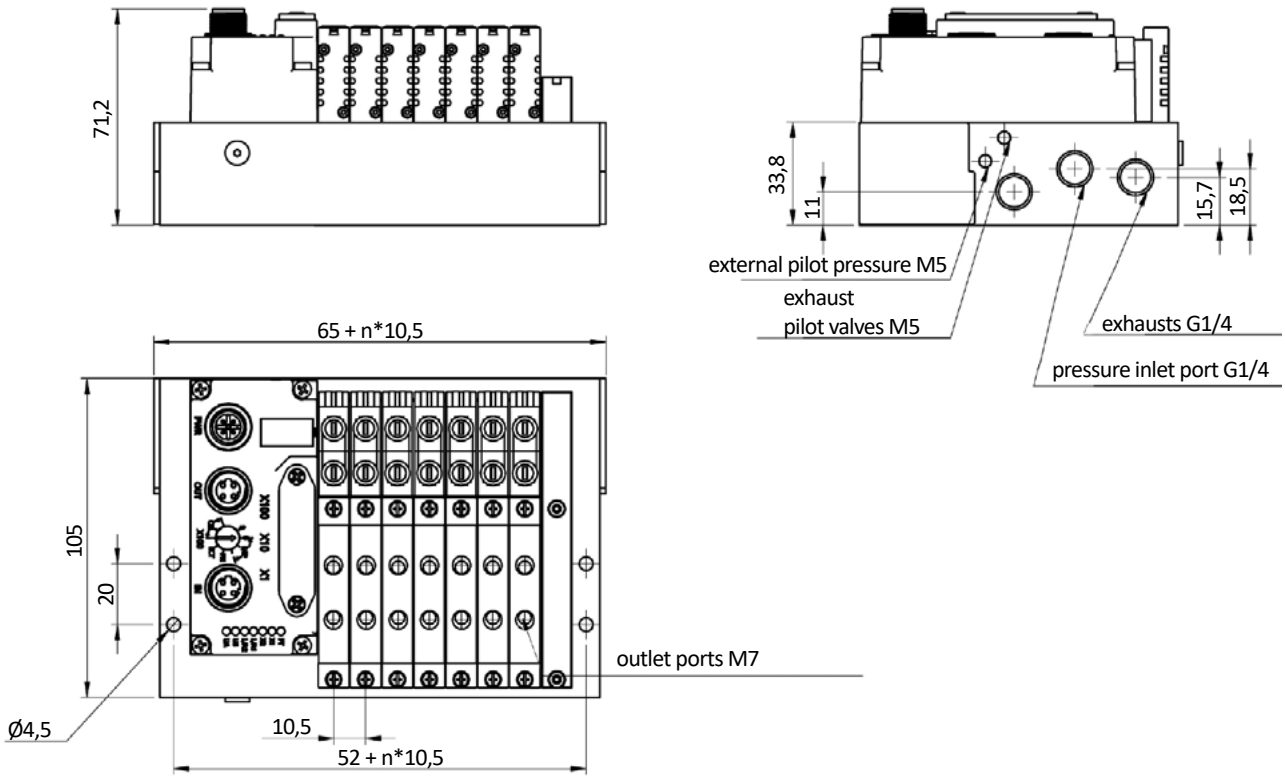


Series 86-REG / 86-REV

Manifold 86-RE-10S, width 10 mm, outlet ports lateral

Model-no.:	tation (n)
86-RE-10-04	4
86-RE-10-05	5
86-RE-10-06	6
86-RE-10-07	7
86-RE-10-08	8
86-RE-10-09	9
86-RE-10-10	10
86-RE-10-12	12
86-RE-10-16	16
86-RE-10-20	20
86-RE-10-24	24

Dimensions

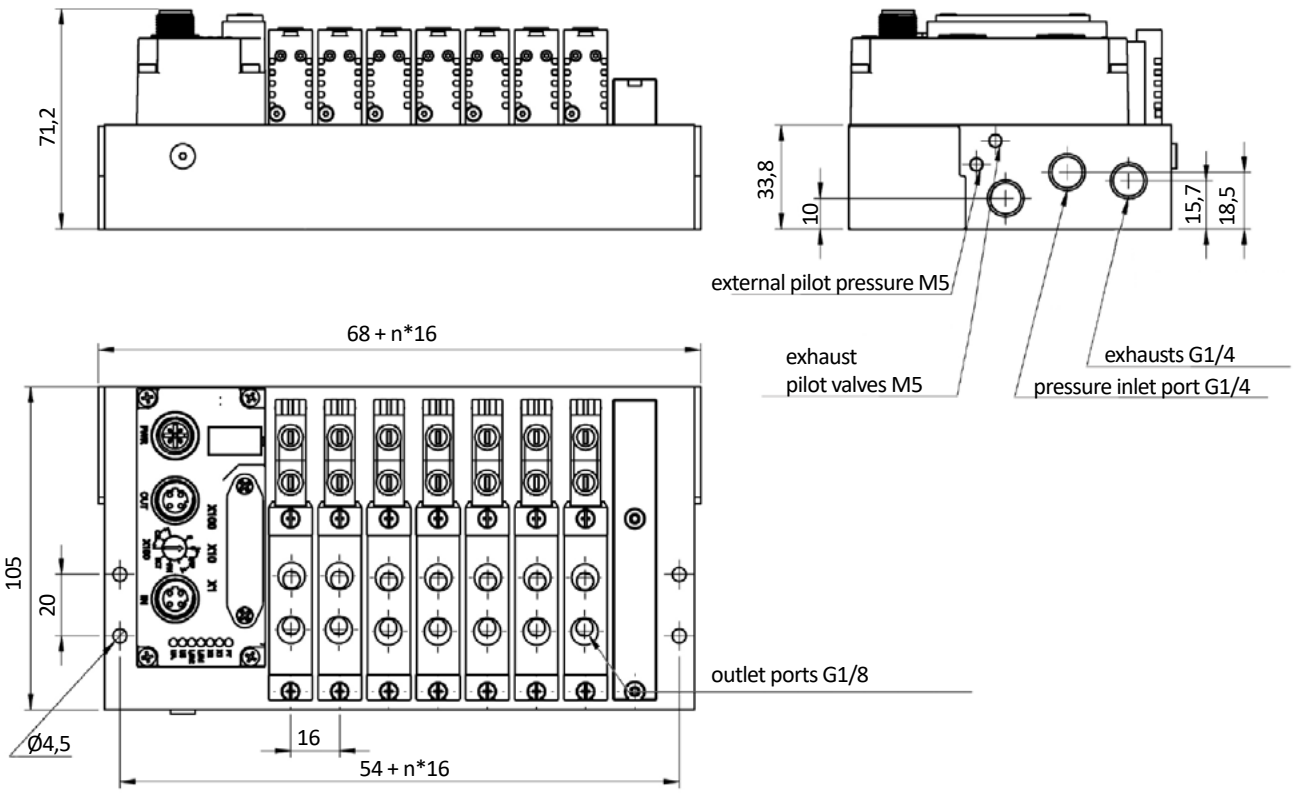


Series 86-REG / 86-REV

Manifold 86-RE-10S, width 14 mm, outlet ports lateral

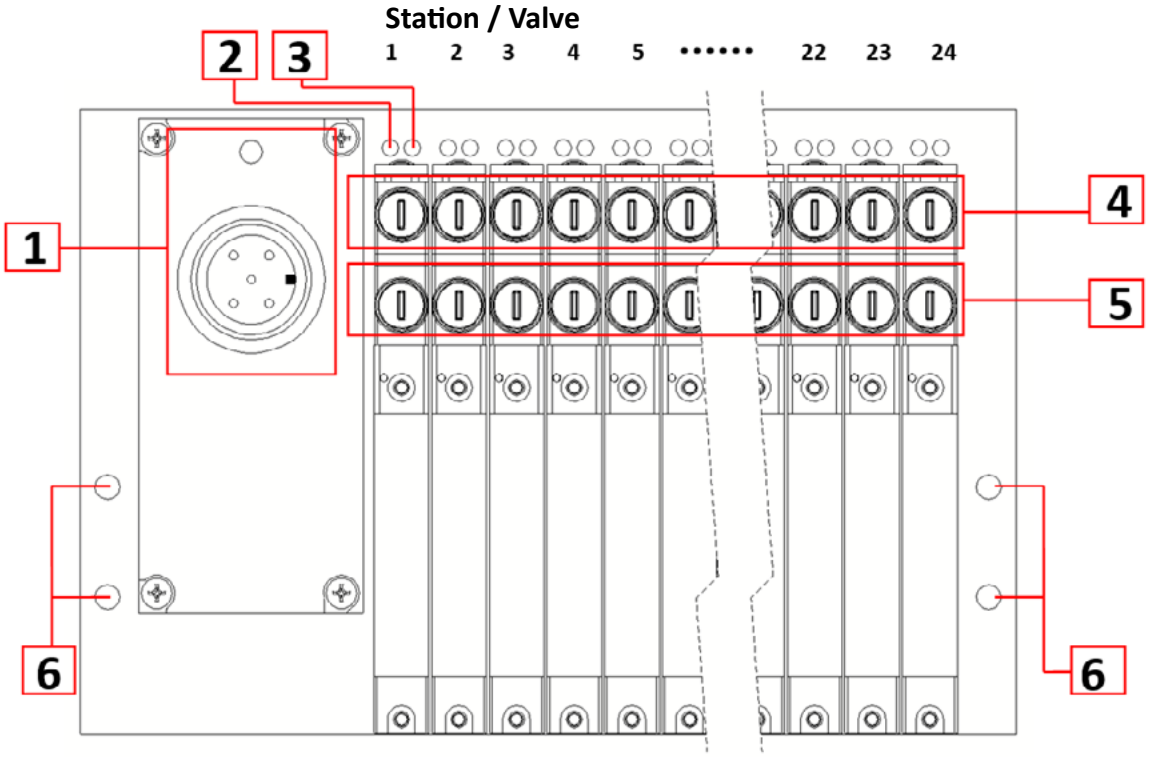
Model-no.:	tation (n)
86-RE-14-04	4
86-RE-14-05	5
86-RE-14-06	6
86-RE-14-07	7
86-RE-14-08	8
86-RE-14-09	9
86-RE-14-10	10
86-RE-14-12	12
86-RE-14-16	16
86-RE-14-20	20
86-RE-14-24	24

Dimensions



Series 86-REG / 86-REV

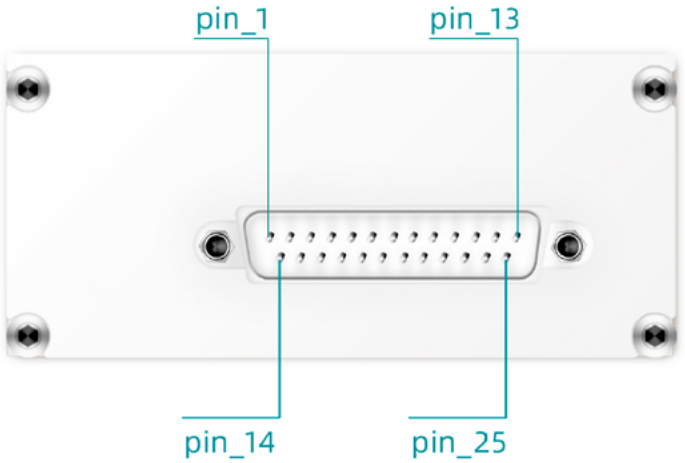
Structure



Pos.	Description	Pos.	Description
1	electrical connection (IO-Link in this case)	4	manual override 12
2	LED indicator 14	5	manual override 14
3	LED indicator 12	6	mounting holes

Multi-pin module 86-RE-M25, Sub-D 25-pin

The 25-pin multi plug has to be ordered separately.



	Stations			
Pin	4-12	16	20	24
1	valve 1 / solenoid 14	valve 1 / solenoid 14	valve 1 / solenoid 14	valve 1 / solenoid 14
2	valve 1 / solenoid 12	valve 1 / solenoid 12	valve 1 / solenoid 12	valve 24 / solenoid 14
3	valve 2 / solenoid 14	valve 2 / solenoid 14	valve 2 / solenoid 14	valve 2 / solenoid 14
4	valve 2 / solenoid 12	valve 2 / solenoid 12	valve 2 / solenoid 12	valve 23 / solenoid 14
5	valve 3 / solenoid 14	valve 3 / solenoid 14	valve 3 / solenoid 14	valve 3 / solenoid 14
6	valve 3 / solenoid 12	valve 3 / solenoid 12	valve 3 / solenoid 12	valve 22 / solenoid 14
7	valve 4 / solenoid 14	valve 4 / solenoid 14	valve 4 / solenoid 14	valve 4 / solenoid 14
8	valve 4 / solenoid 12	valve 4 / solenoid 12	valve 4 / solenoid 12	valve 21 / solenoid 14
9	valve 5 / solenoid 14	valve 5 / solenoid 14	valve 5 / solenoid 14	valve 5 / solenoid 14
10	valve 5 / solenoid 12	valve 5 / solenoid 12	valve 20 / solenoid 14	valve 20 / solenoid 14
11	valve 6 / solenoid 14	valve 6 / solenoid 14	valve 6 / solenoid 14	valve 6 / solenoid 14
12	valve 6 / solenoid 12	valve 6 / solenoid 12	valve 19 / solenoid 14	valve 19 / solenoid 14
13	valve 7 / solenoid 14	valve 7 / solenoid 14	valve 7 / solenoid 14	valve 7 / solenoid 14
14	valve 7 / solenoid 12	valve 7 / solenoid 12	valve 18 / solenoid 14	valve 18 / solenoid 14
15	valve 8 / solenoid 12	valve 8 / solenoid 14	valve 6 / solenoid 14	valve 6 / solenoid 14
16	valve 8 / solenoid 14	valve 8 / solenoid 12	valve 17 / solenoid 14	valve 17 / solenoid 14
17	valve 9 / solenoid 12	valve 9 / solenoid 14	valve 9 / solenoid 14	valve 9 / solenoid 14
18	valve 9 / solenoid 14	valve 16 / solenoid 14	valve 16 / solenoid 14	valve 16 / solenoid 14
19	valve 10 / solenoid 12	valve 10 / solenoid 14	valve 10 / solenoid 14	valve 10 / solenoid 14
20	valve 10 / solenoid 14	valve 15 / solenoid 14	valve 15 / solenoid 14	valve 15 / solenoid 14
21	valve 11 / solenoid 12	valve 11 / solenoid 14	valve 11 / solenoid 14	valve 11 / solenoid 14
22	valve 11 / solenoid 14	valve 14 / solenoid 14	valve 14 / solenoid 14	valve 14 / solenoid 14
23	valve 12 / solenoid 12	valve 12 / solenoid 14	valve 12 / solenoid 14	valve 12 / solenoid 14
24	valve 12 / solenoid 14	valve 13 / solenoid 14	valve 13 / solenoid 14	valve 13 / solenoid 14
25	GND (common ground)	GND (common ground)	GND (common ground)	GND (common ground)

* The valve positions marked in red can only be fitted with single solenoid 5/2-way valves.

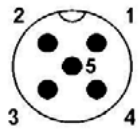
Series 86-REG / 86-REV

IO-Link-Modul

Model-no.:	max. station numbers (n)
86-RE-B11-08	8
86-RE-B11-16	16
86-RE-B11-24	24

IO-Link connector	socket M12, 5-pin, A-code
IO-Link version	V1.1 (V1.0 compatible)
Baud rate	COM2 (38,4 kBit)
Voltage	COM3 (230,4 kBit) at 2 and 4 byte
Power consumption	24 V DC ± 10%, 2 galvanically isolated power circuits for IO-Link electronic (US) or solenoids (UA)
Min. cycle time (device)	open-circuit: ca. 170 mA full load: max. 2,4 A, depending on number of active valves
Min. cycle time (device)	4ms

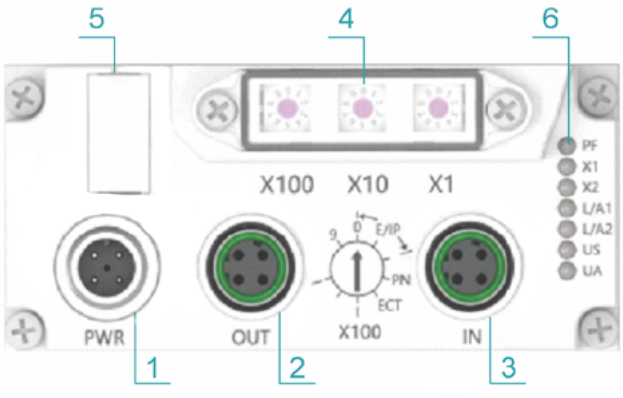
Pin assignment



IO-Link connection		
Pin	**Designation**	**Description**
1	US	power supply IO-Link electronics
2	UA	supply valve stations 1-24 (solenoids 1-48) [1)]
3	GND_S	ground to U_S
4	C/Q	IO-Link data communication(seriell)
5	GND_A	ground to U_A

[1)] This pin must be connected to 24 V for the solenoids to function, but can be deactivated if necessary to suppress unwanted switching. Reference ground is GND_A.

Bus module 86-RE-B0 (CANopen, CC-Link, Ethernet, Profinet, EtherCAT adjustable)

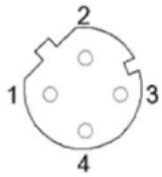


No	Designation	Description
1	Power connection	M12 plug, 4-pin, A-coded
2	Bus connection (OUT)	M12 socket, 4-pin, D-coded
3	Bus connection (IN)	M12 socket, 4-pin, D-coded
4	Selector switch	protocol selection, IP address, coil selection
5	Type plate	device description
6	LED indicators	status indicators

Pin assignment

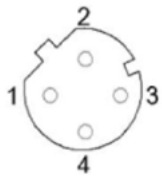
Power connection

Pin	Designation	Description
1	UA	supply valve stations 1-24 (solenoids 1-48)
2	GND_A	ground to U_A
3	US	Bus electronics supply
4	GND_S	ground to U_S



Bus connection (OUT)

Pin	Designation	Description
1	Tx+	Transmit Data +
2	Rx+	Receive Data +
3	Tx-	Transmit Data -
4	Rx-	Receive Data -



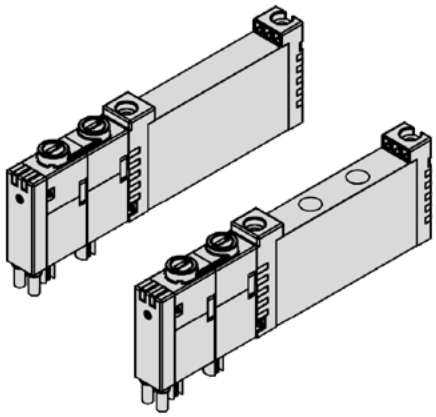
Bus connection (IN)

Pin	Designation	Description
1	Tx+	Transmit Data +
2	Rx+	Receive Data +
3	Tx-	Transmit Data -
4	Rx-	Receive Data -

Series 86-REG / 86-REV

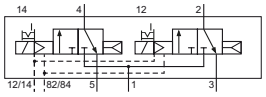
Technical data

Outlets	according to the pneumatical connections of the terminal
Temperature range	0°C ... +50°C
Medium	Filtered, oil-free and dried compressed air according to ISO 8573-1:2010, Class 7:2:4, instrument air, free of aggressive additives. Alternatively the pressure dew point must be at least 10°C below lowest occurring ambient temperature.
Materials	Body: Al (anodized), plastic, seals: NBR, inner parts: Al, steel, brass and plastic
Nominal voltage	24 V DC, ± 10%
Power consumption	1.3 W
Protection	IP 65 according to EN 60529

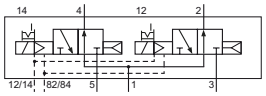


Electrically operated spool valve. The manual override is detent. The manual override is located on top of the solenoid.

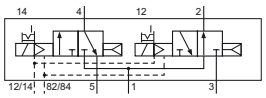
2 x 3/2-way valves



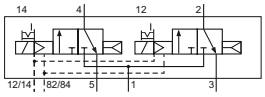
MRG-10-310/2-HNR-442
MRV-10-310/2-HNR-442
2 x 3/2-way, single solenoid, air spring return, NC



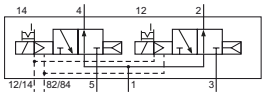
MRG-10-312/2-HNR-442
MRV-10-312/2-HNR-442
2 x 3/2-way, single solenoid, air spring return, NO



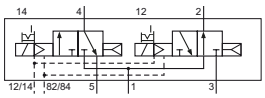
MRG-10-314/2-HNR-442
MRV-10-314/2-HNR-442
2 x 3/2-way, single solenoid, air spring return, 1 x NC, 1 x NO



MRG-14-310/2-HNR-442
MRV-14-310/2-HNR-442
2 x 3/2-way, single solenoid, air spring return, NC

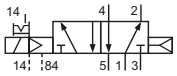


MRG-14-312/2-HNR-442
MRV-14-312/2-HNR-442
2 x 3/2-way, single solenoid, air spring return, NO

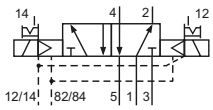


MRG-14-314/2-HNR-442
MRV-14-314/2-HNR-442
2 x 3/2-way, single solenoid, air spring return, 1 x NC, 1 x NO

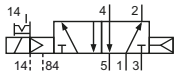
5/2-way valves



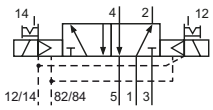
MRG-10-510-HNR-442
MRV-10-510-HNR-442
5/2-way, single solenoid, air spring return



MRG-10-520-HNR-442
MRV-10-520-HNR-442
5/2-way, double solenoid

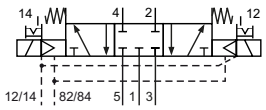


MRG-14-510-HNR-442
MRV-14-510-HNR-442
5/2-way, single solenoid, air spring return

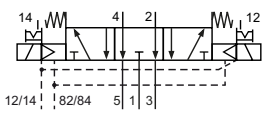


MRG-14-520-HNR-442
MRV-14-520-HNR-442
5/2-way, double solenoid

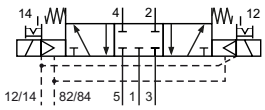
5/3-way valves



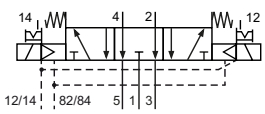
MRG-10-530-HNR-442
MRV-10-530-HNR-442
5/3-way, center position closed



MRG-10-533-HNR-442
MRV-10-533-HNR-442
5/3-way, center position exhausted



MRG-14-530-HNR-442
MRV-14-530-HNR-442
5/3-way, center position closed



MRG-14-533-HNR-442
MRV-14-533-HNR-442
5/3-way, center position exhausted

Series 86-REG / 86-REV

Technical data

Model-no.:	MR*-14-310/2-HNx-44x	MR*-14-312/2-HNx-44x	MR*-14-314/2-HNx-44x
Internal pilot pressure			
Operating pressure (bar)	2,5 ... 8	2,5 ... 8	2,5 ... 8
External pilot pressure			
Operating pressure (bar)	2 ... 8	2 ... 8	2 ... 8
Pilot pressure (bar)	2,5 ... 8	2,5 ... 8	2,5 ... 8
Flow rate (Nl/min)	480	480	480

Model-no.:	MR*-14-510-HNx-44x	MR*-14-520-HNx-44x	MR*-14-530-HNx-44x	MR*-14-533-HNx-44x
Internal pilot pressure				
Operating pressure (bar)	2 ... 8	2 ... 8	3 ... 8	3 ... 8
External pilot pressure				
Operating pressure (bar)	0 ... 8	0 ... 8	0 ... 8	0 ... 8
Pilot pressure (bar)	2 ... 8	2 ... 8	3 ... 8	3 ... 8
Flow rate (Nl/min)	500	500	500	500

Model-no.:	MR*-10-310/2-HNx-44x	MR*-10-312/2-HNx-44x	MR*-10-314/2-HNx-44x
Internal pilot pressure			
Operating pressure (bar)	2,5 ... 8	2,5 ... 8	2,5 ... 8
External pilot pressure			
Operating pressure (bar)	2 ... 8	2 ... 8	2 ... 8
Pilot pressure (bar)	2,5 ... 8	2,5 ... 8	2,5 ... 8
Flow rate (Nl/min)	280	280	280

Model-no.:	MR*-10-510-HNx-44x	MR*-10-520-HNx-44x	MR*-10-530-HNx-44x	MR*-10-533-HNx-44x
Internal pilot pressure				
Operating pressure (bar)	2 ... 8	2 ... 8	3 ... 8	3 ... 8
External pilot pressure				
Operating pressure (bar)	0 ... 8	0 ... 8	0 ... 8	0 ... 8
Pilot pressure (bar)	2 ... 8	2 ... 8	3 ... 8	3 ... 8
Flow rate (Nl/min)	300	300	260	260

Series 86-REG / 86-REV

Accessories

Model-no.:	86-RE-10-VP
	Blind plate for valve and coil station 86-RE-10

Model-no.:	86-RE-14-VP
	Blind plate for valve and coil station 86-RE-14

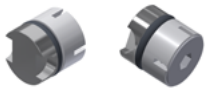
Model-no.:	86-RE-10-AP-01
	Blind plate for valve and coil station with 3 ports G1/8 for additional air supply (inlet and exhaust)

Model-no.:	86-RE-14-AP-01
	Blind plate for valve and coil station with 3 ports G1/8 for additional air supply (inlet and exhaust)

Model-no.:	86-ST-246-M1-yy-xxx
	25-pin multi plug, 45° yy = 25 25-pin xxx = 105 5 m cable

Model-no.:	28-ST-46-M1-yy-xxx
	25-pin multi plug, straight yy = 25 25-pin xxx = 105 5 m cable xxx = 110 10 m cable

Model-no.:	28-ST-146-M1-yy-xxx
	25-pin multi plug, 90° yy = 25 25-pin xxx = 105 5 m cable xxx = 110 10 m cable

Model-no.:	86-RE-DT-01
	Pressure dividing plug suitable in channel 1,3 and 5