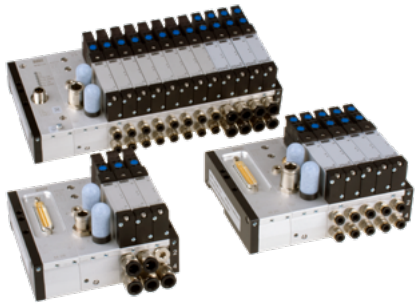
Series REF-14

Technical details

Temperature range	-10°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

- modular valve-terminal for pneumatic control systems
- flexible and extendable
- terminal up to 24 stations
- valve sizes 14 mm width
- outlet ports of the valve Lateral
- mounting with mounting screws or on DIN Rail
- Multi-pin and IO Link available
- optionally:
  - internal or external pilot port
  - adapter plate for additional operating port
  - pressure dividing plate in air channel 1, 3 and 5 or only in channel 1
  - seperate suitable pressure zones

Technical data

Number of stations	3 to 24
electrical Connection	Multi-pin (Sub-D25/44), IO-Link
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
Operating pressure	depending on valve type*
Pilot pressure	depending on valve type*

* see page 10

More detailled installation information see manuals at www.airtec.de.

Series REF-14

Order code

REF-01-*****-**-**-*

Series

Version of the configurator

Basic configuration

consisting of:
pressure input module, electrical module, manifold for valves, end plates, (optional) pressure dividing plates and additional pressure input modules
mounted with:
valves and (optional) blind plates

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
V0	fitting according to specification at 2 and 4 G1/4 at 1
VV	fitting according to specification at 2 and 4 fitting according to specification at 1

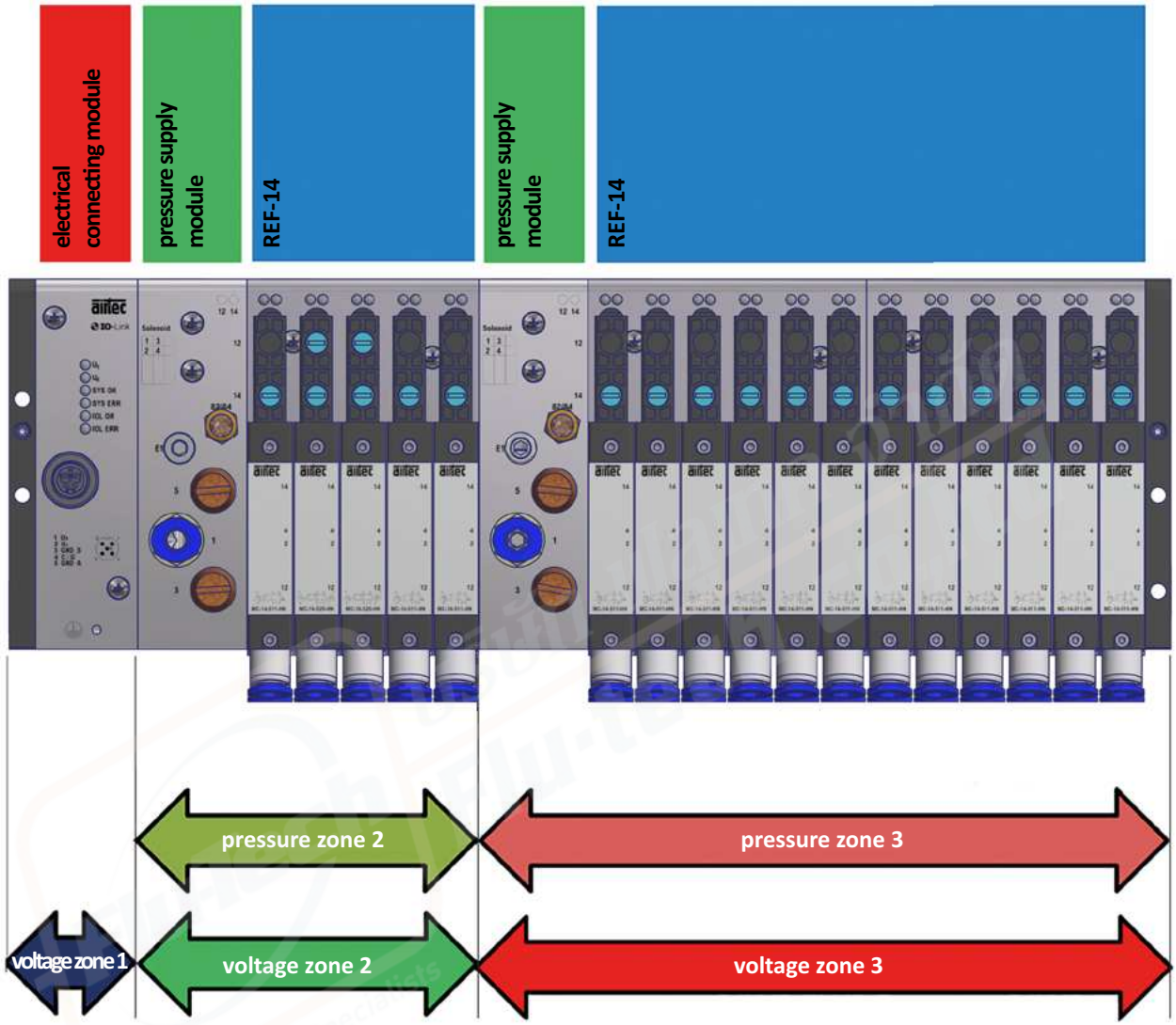
Additional options

-	no options
K	electrical connection cable enclosed
O	other options

Silencers

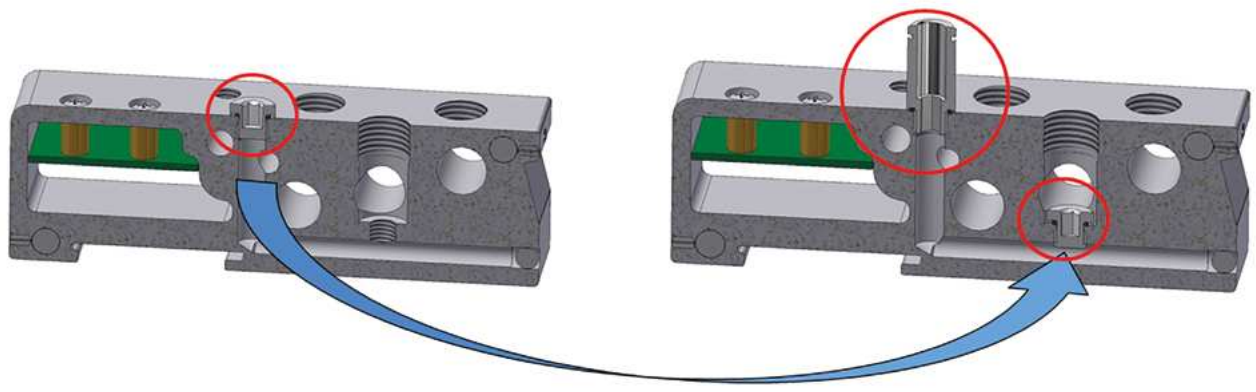
-	no silencers
SB	sintered bronze silencers
SP	plastic silencers
SV	silencers made of LDPE, sintered

Voltage- and pressure zones



Up to 3 seperate suitable voltage zones for emergency stops, voltage switch off´s operated by separation- or power-module.

Changing from internal to external pilot pressure

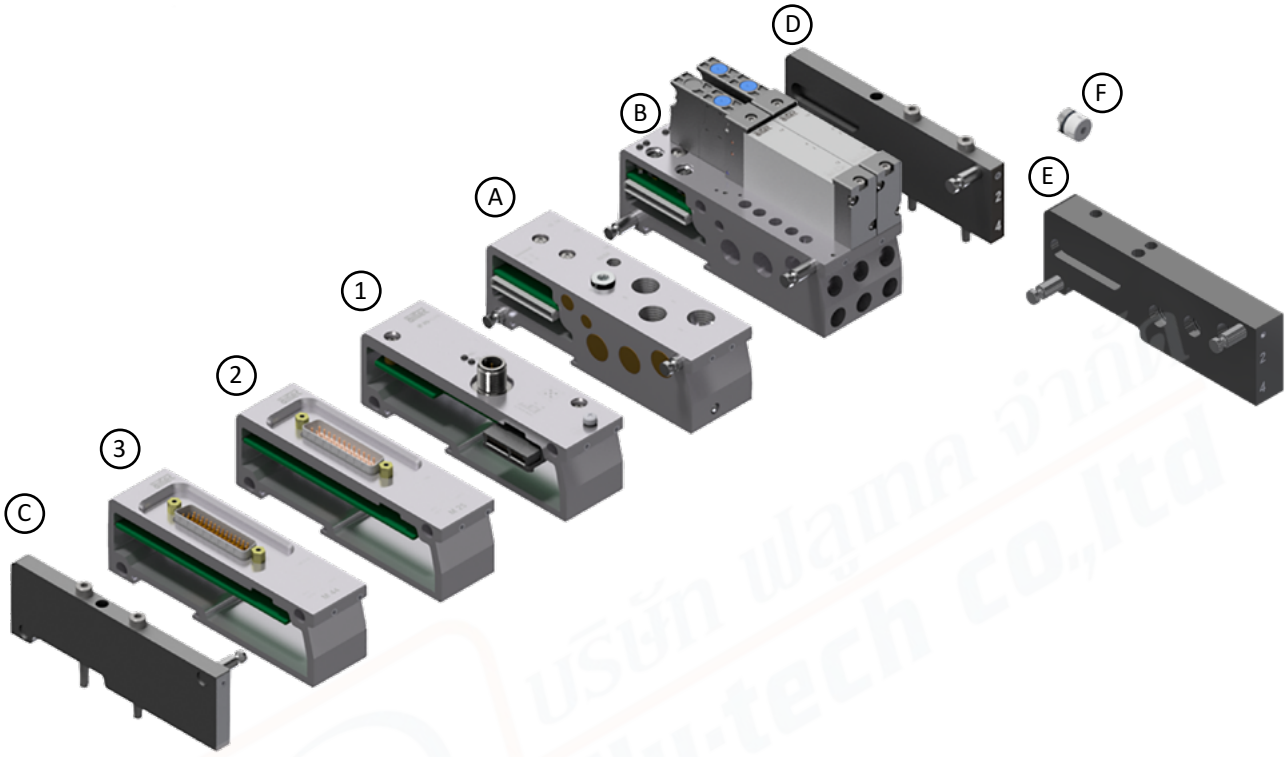


Internal pilot pressure:
- plug on pilot pressure port

External pilot pressure:
- plug displaced to port 1
- pilot port with M7 push in fitting

Series REF-14

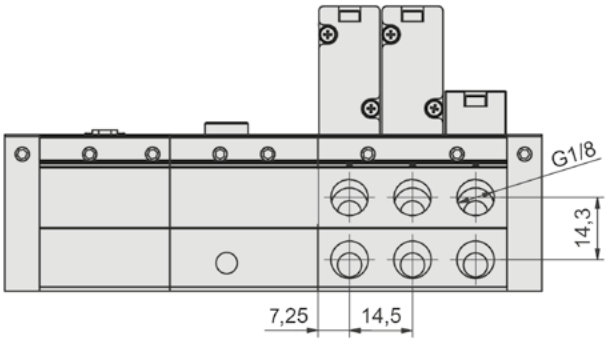
Modular platform

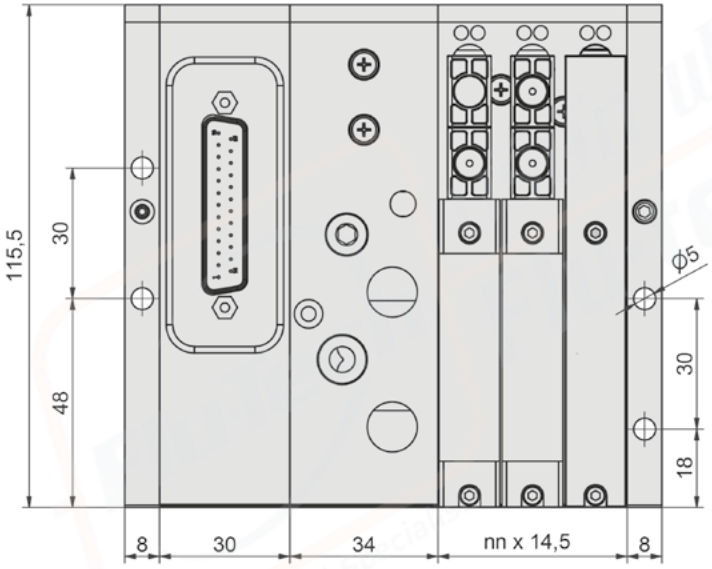


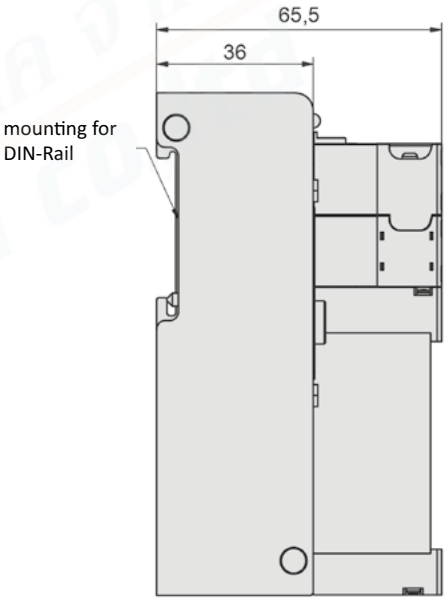
Electrical modules	
1	IO-Link
2	Multi-pin, 25-pin
3	Multi-pin, 44-pin

Pneumatical modules	
A	Pressure input module, upside
B	Manifold for 14 mm valves, outlet ports lateral
C	End plate, left
D	End plate, right
E	End plate, right, with additional pressure input
F	Pressure dividing plate

Dimensions







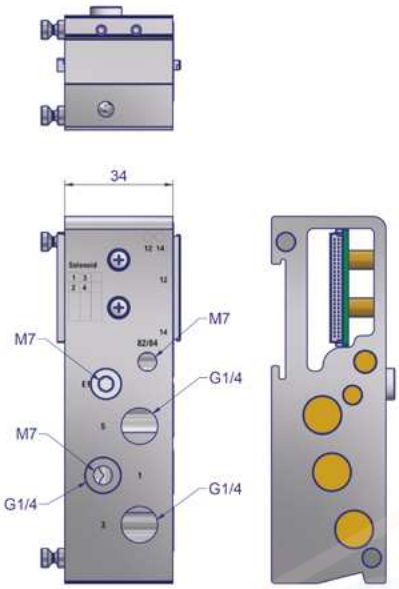
nn = 03 ... 24 stations

Series REF-14

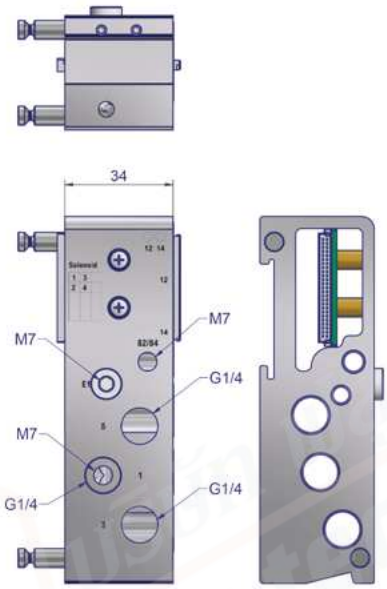
Dimensions of modules

Pressure input modules, upside

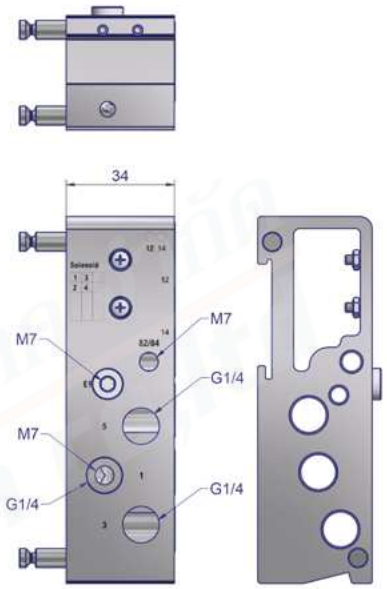
REFI-01-01
Standard module
Module for pressure separation



REFI-02-01
Module for additional air supply



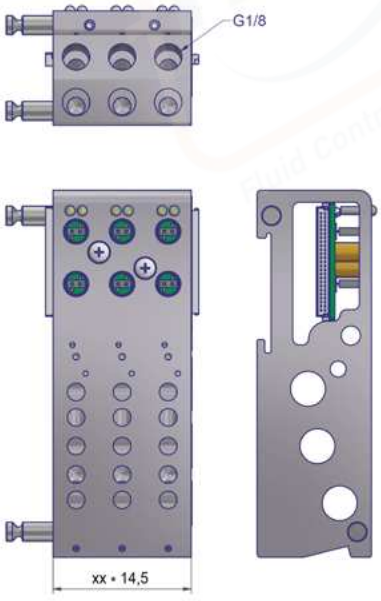
REFI-03-01
End module for additional air supply



For external pilot pressure version please remove the plug from port E1 to port 1. (see page 2)
The module model number changes from REFI to REFE.

Manifolds for valves, outlet ports lateral

REF-14S-xx-01

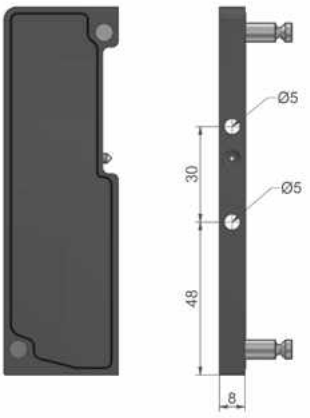


xx = n= 03, 04, 05, 06, 08, 10, 12
(By combining single subbases 3 - 24 stations possible.)

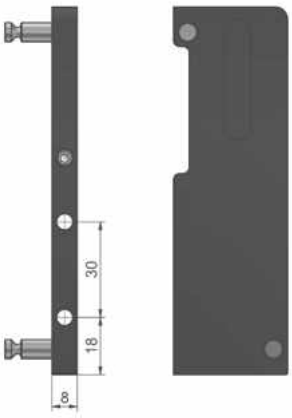
Dimensions of modules

End plates

REF-EPL-01

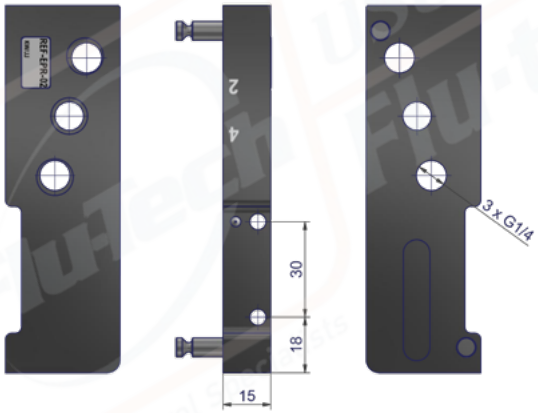


REF-EPR-01



End plate, right, with additional pressure input

REF-EPR-02



Electrical modules

REF-M25-01
Multi-pin, Sub-D 25-pin

REF-M44-01
Multi-pin, Sub-D 44-pin

REF-B11-24-02
IO-Link

Series REF-14

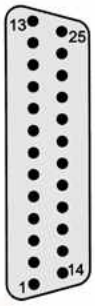
Electrical options

Multi-pin, Sub-D 25-pin, up to 12 stations

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

Pin	Function	Wire colour
1	valve 1 / solenoid 1 (top)	white
2	valve 1 / solenoid 2 (bottom)	brown
3	valve 2 / solenoid 3 (top)	green
4	valve 2 / solenoid 4 (bottom)	yellow
5	valve 3 / solenoid 5 (top)	grey
6	valve 3 / solenoid 6 (bottom)	pink
7	valve 4 / solenoid 7 (top)	blue
8	valve 4 / solenoid 8 (bottom)	red
9	valve 5 / solenoid 9 (top)	black
10	valve 5 / solenoid 10 (bottom)	violet
11	valve 6 / solenoid 11 (top)	grey/ pink
12	valve 6 / solenoid 12 (bottom)	red/ blue
13	valve 7 / solenoid 13 (top)	white/ green

Pin	Function	Wire colour
14	valve 7 / solenoid 14 (bottom)	brown/ green
15	valve 8 / solenoid 15 (top)	white/ yellow
16	valve 8 / solenoid 16 (bottom)	yellow/ brown
17	valve 9 / solenoid 17 (top)	white/ grey
18	valve 9 / solenoid 18 (bottom)	grey/ brown
19	valve 10 / solenoid 19 (top)	white/ pink
20	valve 10 / solenoid 20 (bottom)	pink/ brown
21	valve 11 / solenoid 21 (top)	white/ blue
22	valve 11 / solenoid 22 (bottom)	brown/ blue
23	valve 12 / solenoid 23 (top)	white/ red
24	valve 12 / solenoid 24 (bottom)	brown/ red
25	GND (common ground)	white/ black

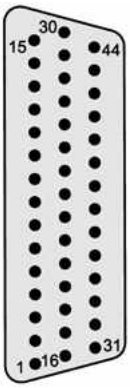


Multi-pin, Sub-D 44-pin, up to 20 stations

The 44-pin multi plug has to be ordered separately.

Pin	Function	Wire colour
1	valve 1 / solenoid 1 (top)	white
2	valve 1 / solenoid 2 (bottom)	brown
3	valve 2 / solenoid 3 (top)	green
4	valve 2 / solenoid 4 (bottom)	yellow
5	valve 3 / solenoid 5 (top)	grey
6	valve 3 / solenoid 6 (bottom)	pink
7	valve 4 / solenoid 7 (top)	blue
8	valve 4 / solenoid 8 (bottom)	red
9	valve 5 / solenoid 9 (top)	black
10	valve 5 / solenoid 10 (bottom)	violet
11	valve 6 / solenoid 11 (top)	grey/ pink
12	valve 6 / solenoid 12 (bottom)	red/ blue
13	valve 7 / solenoid 13 (top)	white/ green
14	valve 7 / solenoid 14 (bottom)	brown/ green
15	valve 8 / solenoid 15 (top)	white/ yellow
16	valve 8 / solenoid 16 (bottom)	yellow/ brown
17	valve 9 / solenoid 17 (top)	white/ grey
18	valve 9 / solenoid 18 (bottom)	grey/ brown
19	valve 10 / solenoid 19 (top)	white/ pink
20	valve 10 / solenoid 20 (bottom)	pink/ brown
21	valve 11 / solenoid 21 (top)	white/ blue
22	valve 11 / solenoid 22 (bottom)	brown/ blue

Pin	Function	Wire colour
23	valve 12 / solenoid 23 (top)	white/ red
24	valve 12 / solenoid 24 (bottom)	brown/ red
25	valve 13 / solenoid 25 (top)	white/ black
26	valve 13 / solenoid 26 (bottom)	brown/ black
27	valve 14 / solenoid 27 (top)	grey/ green
28	valve 14 / solenoid 28 (bottom)	yellow/ grey
29	valve 15 / solenoid 29 (top)	pink/ green
30	valve 15 / solenoid 30(bottom)	yellow/ pink
31	valve 16 / solenoid 31 (top)	green/ blue
32	valve 16 / solenoid 32 (bottom)	yellow/ blue
33	valve 17 / solenoid 33 (top)	green/ red
34	valve 17 / solenoid 34 (bottom)	yellow/ red
35	valve 18 / solenoid 35 (top)	green/ black
36	valve 18 / solenoid 36 (bottom)	yellow/ black
37	valve 19 / solenoid 37 (top)	grey/ blue
38	valve 19 / solenoid 38 (bottom)	pink/ blue
39	valve 20 / solenoid 39 (top)	grey/ red
40	valve 20 / solenoid 40 (bottom)	pink/ red
41	unused	grey/ black
42	unused	pink/ black
43	GND (common ground)*	blue/ black
44	GND (common ground)*	red/ black



* To increase the cable cross section both GNG pins should be used. The max current could reach 2,4 A.

Electrical options

IO-Link

IO-Link connector	socket M12, 5-pin, A-code
IO-Link version	V1.1
Baud rate	COM2 (38400 Baud)
Voltage	24 V DC ± 10%, 2 galvanically isolated power circuits for IO-Link electronic (US) bzw solenoids (UA)
Power consumption	open-circuit: ca. 170 mA full load: max. 2,4 A, depending on number of active valves
Min. cycle time (device)	4ms

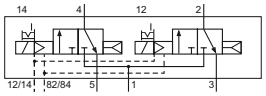
Series REF-14

Technical data

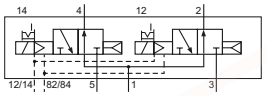
Outlets	according to the pneumatical connections of the terminal
Temperature range	-10°C ... +50°C
Medium	Filtered, oil-free and dried compressed air according to ISO 8573-1:2010, Class 7:2:4, instrument air, free of aggressive additives. Alternatively the pressure dew point must be at least 10°C below 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.

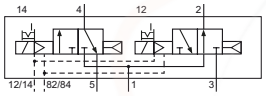
2 x 3/2-way valves



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

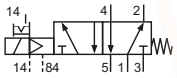


MC-14-312/2-HNR-442
2 x 3/2-way, single solenoid, air spring return, NO

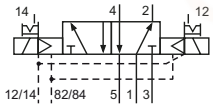


MC-14-314/2-HNR-442
2 x 3/2-way, single solenoid, air spring return, 1 x NC, 1 x NO

5/2-way valves

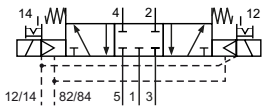


MC-14-511-HNR-442
5/2-way, single solenoid, mechanical spring return

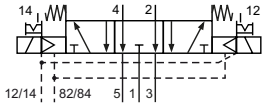


MC-14-520-HNR-442
5/2-way, double solenoid

5/3-way valves



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



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

Technical data

Model-no.:	MC-14-310/2-HNx-44x	MC-14-312/2-HNx-44x	MC-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
Nominal size (mm)	5	5	5
Flow rate (Nl/min)	560	480	480
Response time (ms) at 6 bar	on: 30 off: 30	on: 30 off: 30	on: 30 off: 30

Model-no.:	MC-14-511-HNx-44x	MC-14-520-HNx-44x	MC-14-530-HNx-44x	MC-14-533-HNx-44x
Internal pilot pressure				
Operating pressure (bar)	3 ... 8	2 ... 8	3 ... 8	3 ... 8
External pilot pressure				
Operating pressure (bar)	0 ... 8	0 ... 8	0 ... 8	0 ... 8
Pilot pressure (bar)	3 ... 8	2 ... 8	3 ... 8	3 ... 8
Nominal size (mm)	5	5	5	5
Flow rate (Nl/min)	530	580		
Response time (ms) at 6 bar	on: 15 off: 30	on: 15 off: 15	on: 15 off: 40	on: 15 off: 40

Series REF-14

Accessories

Model-no.:	REF-10-VP-01
	Blind plate for valve and coil station

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

Model-no.:	28-ST-46-M1-yy-xxx
	25- or 44-pin multi plug, straight yy = 25 25-pin yy = 44 44-pin xxx = 105 5 m cable xxx = 110 10 m cable

Model-no.:	28-ST-146-M1-yy-xxx
	25- or 44-pin multi plug, 90° yy = 25 25-pin yy = 44 44-pin xxx = 105 5 m cable xxx = 110 10 m cable

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