Series MD filters

New

Ports with interchangeable cartridges: threaded (1/8, 1/4, 3/8) or integrated with super-rapid fitting for tube with Ø 6, 8 and 10 mm.
Modular assembly
Bowl with technopolymer cover and bayonet-type mounting

- » Removal of impurities and condensate
- » Visual blockage indicator
- » Condensate drain options: semi-automatic manual, automatic protected depressurisation, direct G1/8 exhaust
- » Bowl locking system reducing the risk of accidents
- » Additional air intakes with the same characteristics of the outlet air (line)

The Series MD air preparation product line is characterized by a modern and linear design as well as high performance.
The technopolymer structure has allowed to create a simplified, product, lightweight and robust at the same time.

Thanks to the solution adopted for the pneumatic connection, it is possible to equip the same element with interchangeable cartridges that can either be threaded, or with an integrated super-rapid fitting, both types available in different sizes. Intermediate cartridges can be also integrated to join multiple functions or with derivation to draw air. An additional air intake, with the same characteristic of the outlet air, is available on the front side and on the rear one. This intake can be used by utilities with limited consumption.

GENERAL DATA

Construction	modular, compact with filtering element in HDPE
Materials	see TABLE OF MATERIALS (pag. 3/0.05.02)
Ports	with interchangeable cartridges: 1/8, 1/4 and 3/8 threaded or integrated with super-rapid fitting for tube with Ø 6, 8 and 10 mm
Condensate capacity	24 cc
Fixing	vertical in-line; wall-mounting by means of through holes in the body or with a support bracket
Operating temperature	-5°C ÷ 50°C up to 16 bar
Condensate drain	semi-automatic manual, automatic protected depressurisation, direct G1/8 exhaust
Quality of delivered air according to ISO 8573-1 2010	Class 6.8.4 with 5 µm filtering element Class 7.8.4 with 25 µm filtering element
Operating pressure	0.3 ÷ 16 bar
Nominal flow	see FLOW DIAGRAMS (pag. 3/0.05.03 and 3/0.05.04)
Fluid	compressed air

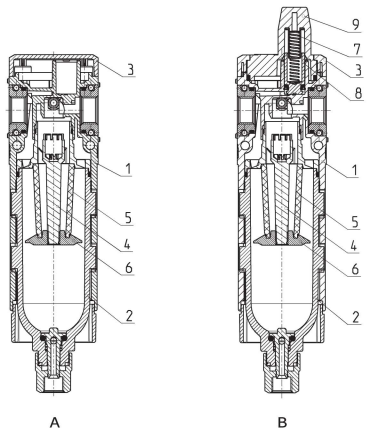
CODING EXAMPLE

MD	1	-	F	0	0	0	-	1/8

MD	SERIES
1	DIMENSION: 1 = 42 mm
F	FILTER
0	FILTERING ELEMENT: 0 = 25 µm 1 = 5 µm
0	CONDENSATE DRAIN: 0 = semiautomatic-manual drain 5 = automatic drain, protected depressurisation 8 = direct G1/8 exhaust
0	VISUAL BLOCKAGE INDICATOR: 0 = not present 1 = present
1/8	PORTS (IN - OUT)*: = without cartridges 1/8 = G1/8 1/4 = G1/4 3/8 = G3/8 6 = tube Ø6 8 = tube Ø8 10 = tube Ø10 * NOTE: if the inlet (IN) cartridge is different from the outlet (OUT) cartridge, both dimensions shall be indicated. Example: MD1-F000-1/4-10 For further information about condensate drains and filtering elements see the section 3/5.10.

Filters Series MD - materials

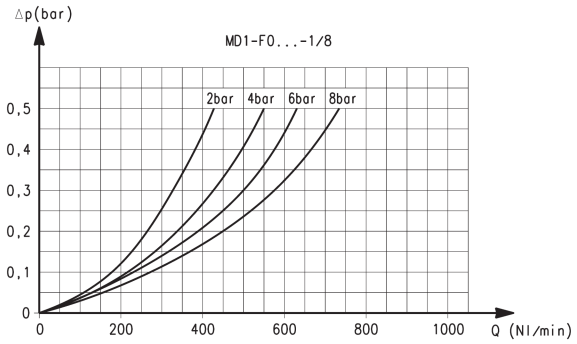
A = filter
B = filter with visual blockage indicator



A B

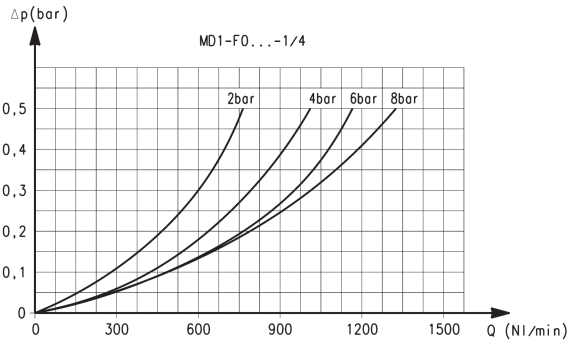
PARTS	MATERIALS
1 = Body	Polyamide
2 = Tank	Polycarbonate
3 = Covering	Polyamide
4 = Valve-guide	Polyacetal
5 = Filtering element	Polyethylene
6 = Separation deflector	Polyacetal
7 = Upper spring	Stainless steel
8 = Piston	Anodized aluminium
9 = Visual blockage indicator	Polycarbonate
Seals	NBR

FLOW DIAGRAMS for models with 25 µm filtering element



Ports with interchangeable 1/8 threaded cartridges

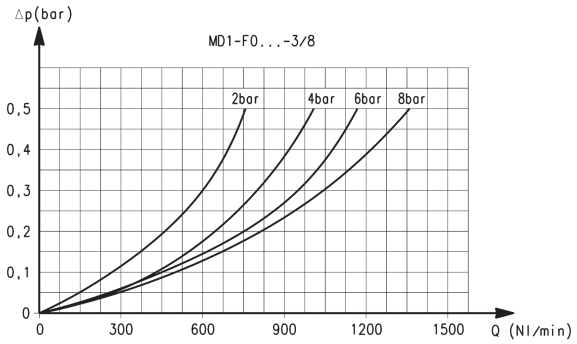
Δp = Pressure drop
Q = Flow



Ports with interchangeable 1/4 threaded cartridges

Δp = Pressure drop
Q = Flow

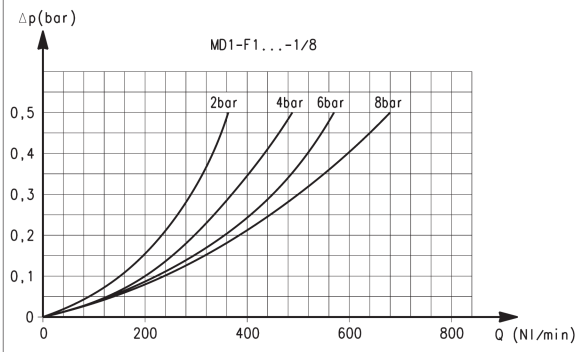
FLOW DIAGRAMS for models with 25 µm filtering element



Ports with interchangeable 3/8 threaded cartridges

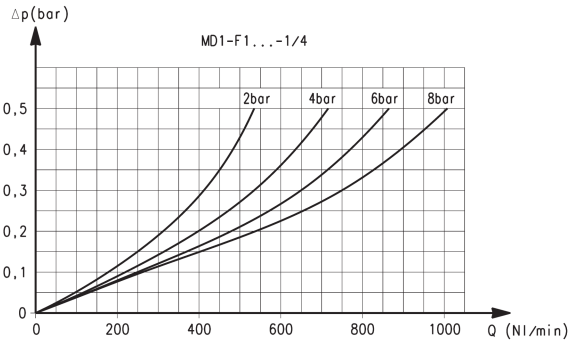
Δp = Pressure drop
Q = Flow

FLOW DIAGRAMS for models with 5 µm filtering element



Ports with interchangeable 1/8 threaded cartridges

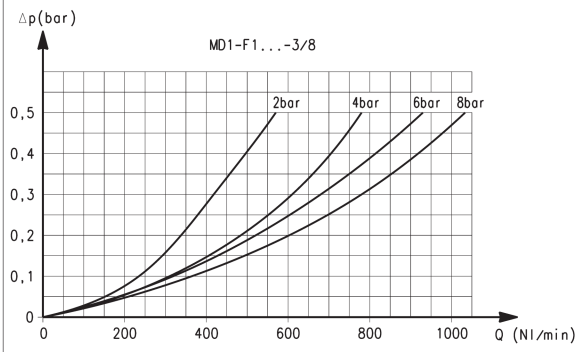
Δp = Pressure drop
Q = Flow



Ports with interchangeable 1/4 threaded cartridges

Δp = Pressure drop
Q = Flow

FLOW DIAGRAMS for models with 5 µm filtering element

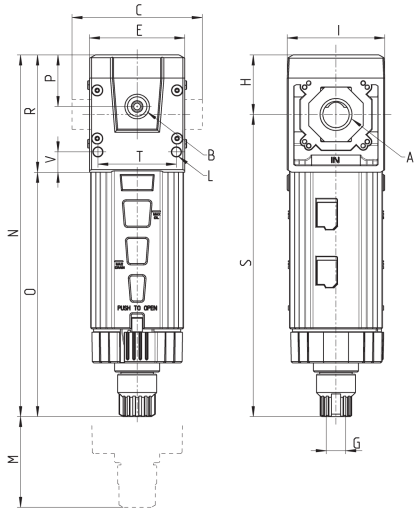


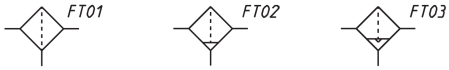
Ports with interchangeable 3/8 threaded cartridges

Δp = Pressure drop
Q = Flow

Series MD filters - dimensions

PNEUMATIC SYMBOLS LEGEND:
FT01 = filter with direct G1/8 exhaust
FT02 = filter with semi-automatic manual drain
FT03 = filter with automatic/depressuring drain



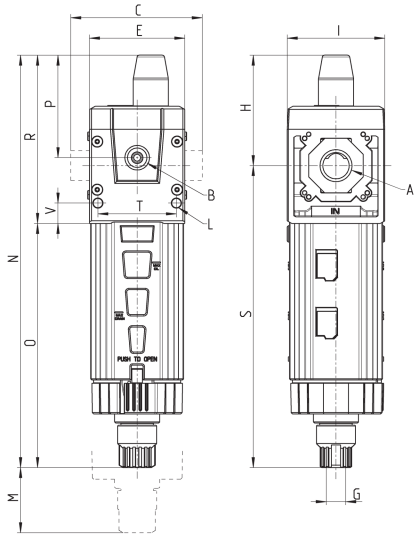


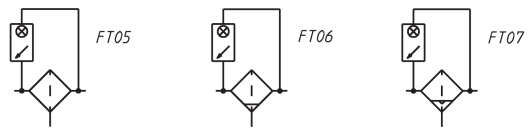
DIMENSIONS

Mod.	A	B	C	E	G	H	I	L	M	N	O	P	R	S	T	V	Weight (Kg)
MD1-F000	-	G1/8	42	42	G1/8	26.2	43	Ø4	90	159.4	107.7	22.7	51.7	133.2	34.6	9	0.2
MD1-F000-1/8	G1/8	G1/8	42	42	G1/8	26.2	43	Ø4	90	159.4	107.7	22.7	51.7	133.2	34.6	9	0.2
MD1-F000-1/4	G1/4	G1/8	42	42	G1/8	26.2	43	Ø4	90	159.4	107.7	22.7	51.7	133.2	34.6	9	0.2
MD1-F000-3/8	G3/8	G1/8	42	42	G1/8	26.2	43	Ø4	90	159.4	107.7	22.7	51.7	133.2	34.6	9	0.2
MD1-F000-6	Ø6	G1/8	47	42	G1/8	26.2	43	Ø4	90	159.4	107.7	22.7	51.7	133.2	34.6	9	0.2
MD1-F000-8	Ø8	G1/8	62	42	G1/8	26.2	43	Ø4	90	159.4	107.7	22.7	51.7	133.2	34.6	9	0.2
MD1-F000-10	Ø10	G1/8	67	42	G1/8	26.2	43	Ø4	90	159.4	107.7	22.7	51.7	133.2	34.6	9	0.2

Series MD filters with visual blockage indicator - dimensions

PNEUMATIC SYMBOLS LEGEND:
FT05 = filter with direct G1/8 exhaust and visual blockage indicator
FT06 = filter with semi-automatic manual drain and visual blockage indicator
FT07 = filter with automatic/depressuring drain and visual blockage indicator





DIMENSIONS

Mod.	A	B	C	E	G	H	I	L	M	N	O	P	R	S	T	V	Weight (Kg)
MD1-F001	-	G1/8	42	42	G1/8	48.7	43	Ø4	90	181.9	107.7	45.2	74.2	133.2	34.6	9	0.2
MD1-F001-1/8	G1/8	G1/8	42	42	G1/8	48.7	43	Ø4	90	181.9	107.7	45.2	74.2	133.2	34.6	9	0.2
MD1-F001-1/4	G1/4	G1/8	42	42	G1/8	48.7	43	Ø4	90	181.9	107.7	45.2	74.2	133.2	34.6	9	0.2
MD1-F001-3/8	G3/8	G1/8	42	42	G1/8	48.7	43	Ø4	90	181.9	107.7	45.2	74.2	133.2	34.6	9	0.2
MD1-F001-6	Ø6	G1/8	47	42	G1/8	48.7	43	Ø4	90	181.9	107.7	45.2	74.2	133.2	34.6	9	0.2
MD1-F001-8	Ø8	G1/8	62	42	G1/8	48.7	43	Ø4	90	181.9	107.7	45.2	74.2	133.2	34.6	9	0.2
MD1-F001-10	Ø10	G1/8	67	42	G1/8	48.7	43	Ø4	90	181.9	107.7	45.2	74.2	133.2	34.6	9	0.2

Series MD coalescing filters

New

Ports with interchangeable cartridges: threaded (1/8, 1/4, 3/8) or integrated with super-rapid fitting for tube with Ø 6, 8 and 10 mm.
Modular assembly
Bowl with technopolymer cover and bayonet-type mounting

- High performance and high purity compressed air
- Air quality according to ISO 8573-1:2010 standard, Class 1.8.1 and Class 2.8.2
- Visual blockage indicator
- Condensate drain options: semi-automatic manual, automatic protected depressurisation, direct G1/8 exhaust
- Bowl locking system reducing the risk of accidents
- Additional air intakes with the same characteristics of the inlet air (line)

The coalescing filter is a fine oil separator filter that removes the solids with dimensions from 0.1 to 5 µm and oil vapours with a concentration from 0.01 to 0.1 mg/m³. For a correct fucntioning they require a pre-filtering. Given the characteristic of this filter, it is recommended to replace the filter element at least every 12 months or 8000 working hours.

Thanks to the solution adopted for the pneumatic connection, it is possible to equip the same element with interchangeable cartridges that can either be threaded, or with an integrated super-rapid fitting, both types available in different sizes. Intermediate cartridges can be also integrated to join multiple functions or with derivation to draw air. An additional air intake, with the same characteristic of the outlet air, is available on the front side and on the rear one. This intake can be used by utilities with limited consumption.

GENERAL DATA

Construction	modular, compact with filtering element in BOROSILICATE	
Materials	see TABLE OF MATERIALS (pag. 3/0.10.02)	
Ports	with interchangeable cartridges: 1/8, 1/4 and 3/8 threaded or integrated with super-rapid fitting for tube with Ø 6, 8 and 10 mm	
Condensate capacity	24 cc	
Fixing	vertical in-line; wall-mounting by means of through holes in the body or with a support bracket	
Operating temperature	-5°C ÷ 50°C up to 16 bar	
Condensate drain	semi-automatic manual, automatic protected depressurisation, direct G1/8 exhaust	
Quality of delivered air according to ISO 8573-1 2010	Class 2.8.2 with 1 µm filtering element (pre-filtering with Class 6.8.4 is recommended) Classe 1.8.1 with 0.01 µm filtering element (pre-filtering with Classe 2.8.2 is recommended)	
Operating pressure	0.3 ÷ 16 bar	
Nominal flow	see FLOW DIAGRAMS (pag. 3/0.10.03 and 3/0.10.04)	
Oil retain efficiency	99.80% (0.01µm)	97% (1µm)
Particles retain efficiency	99.99999% (0.01µm)	99.999% (1µm)
Fluid	compressed air	

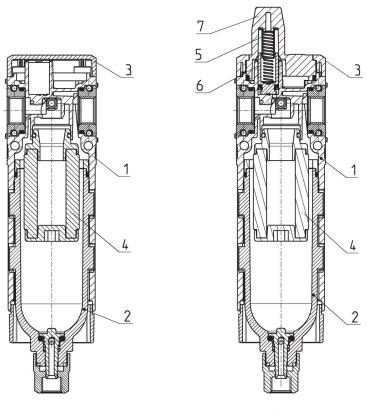
CODING EXAMPLE

MD	1	-	FC	0	0	0	-	1/8

MD	SERIES
1	DIMENSION: 1 = 42 mm
FC	COALESCING FILTER
0	FILTERING ELEMENT: 0 = 0,01 µm 1 = 1 µm
0	CONDENSATE DRAIN: 0 = semiautomatic-manual drain 5 = automatic drain, protected depressurisation 8 = direct G1/8 exhaust
0	VISUAL BLOCKAGE INDICATOR: 0 = not present 1 = present
1/8	PORTS (IN - OUT)*: = without cartridges 1/8 = G1/8 1/4 = G1/4 3/8 = G3/8 6 = tube Ø6 8 = tube Ø8 10 = tube Ø10 * NOTE: if the inlet (IN) cartridge is different from the outlet (OUT) cartridge, both dimensions shall be indicated. Example: MD1-FC000-1/4-10 For further information about condensate drains and filtering elements see the section 3/5.10.

Series MD coalescing filters - materials

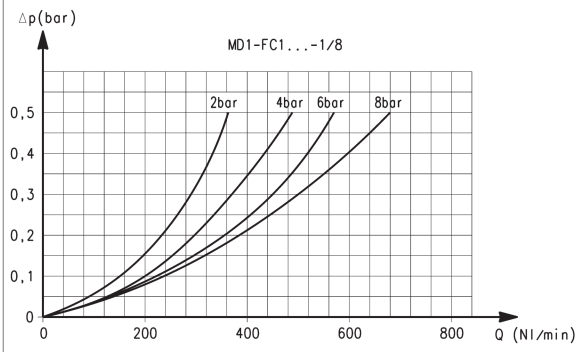
A = filter
B = filter with visual blockage indicator



A B

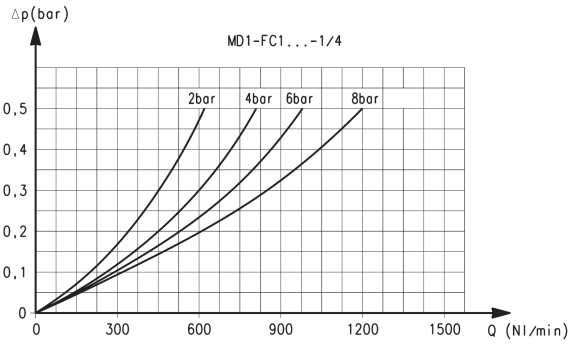
PARTS	MATERIALS
1 = Body	Polyamide
2 = Tank	Polycarbonate
3 = Covering	Polyamide
4 = Filtering element	Borosilicate
5 = Upper spring	Stainless steel
6 = Piston	Anodized aluminium
7 = Visual blockage indicator	Polycarbonate
Seals	NBR

FLOW DIAGRAMS for models with 1 µm filtering element



Ports with interchangeable 1/8 threaded cartridges

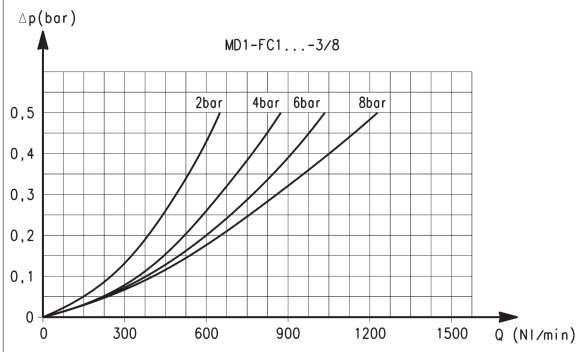
Δp = Pressure drop
Q = Flow



Ports with interchangeable 1/4 threaded cartridges

Δp = Pressure drop
Q = Flow

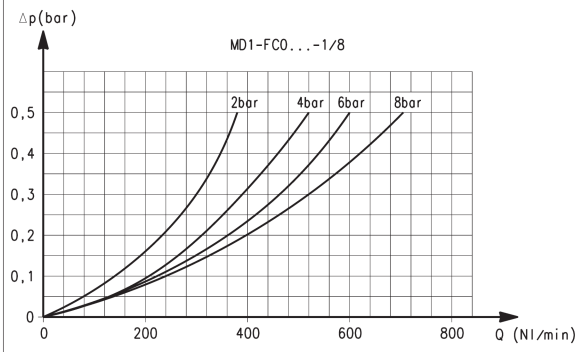
FLOW DIAGRAMS for models with 1 µm filtering element



Ports with interchangeable 3/8 threaded cartridges

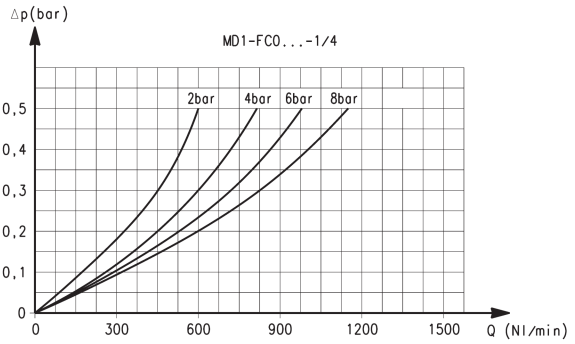
Δp = Pressure drop
Q = Flow

FLOW DIAGRAMS for models with 0.01 µm filtering element



Ports with interchangeable 1/8 threaded cartridges

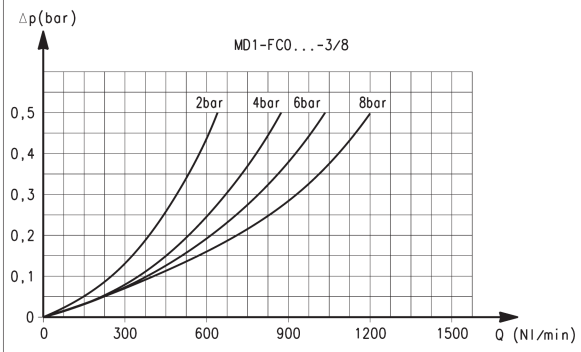
Δp = Pressure drop
Q = Flow



Ports with interchangeable 1/4 threaded cartridges

Δp = Pressure drop
Q = Flow

FLOW DIAGRAMS for models with 0.01 µm filtering element

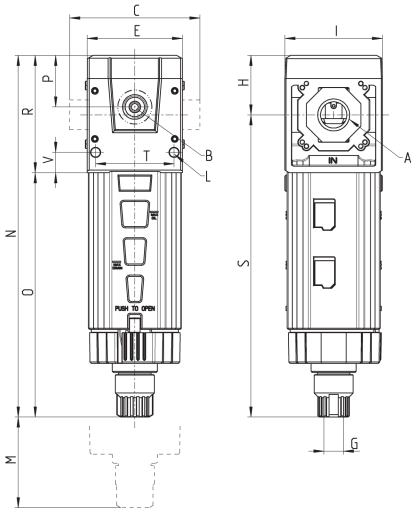


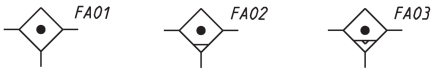
Ports with interchangeable 3/8 threaded cartridges

Δp = Pressure drop
Q = Flow

Series MD coalescing filters - dimensions

PNEUMATIC SYMBOLS LEGEND:
FA01 = coalescing filter with direct G1/8 exhaust
FA02 = coalescing filter with semi-automatic manual drain
FA03 = coalescing filter with automatic/depressuring drain

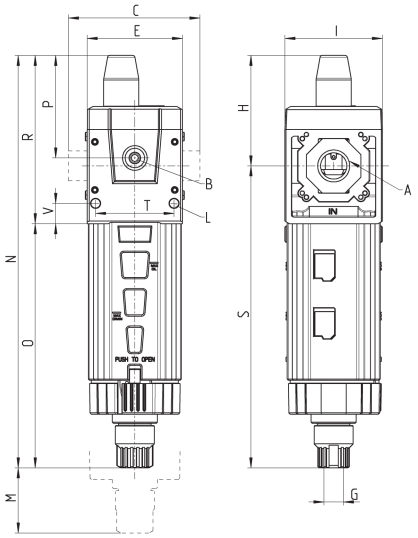


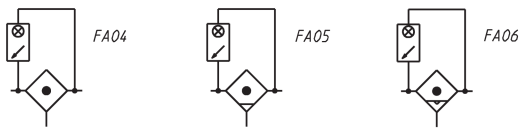


DIMENSIONS																	
Mod.	A	B	C	E	G	H	I	L	M	N	O	P	R	S	T	V	Weight (Kg)
MD1-FC000	-	G1/8	42	42	G1/8	26.2	43	Ø4	90	159.4	107.7	22.7	51.7	133.2	34.6	9	0.2
MD1-FC000-1/8	G1/8	G1/8	42	42	G1/8	26.2	43	Ø4	90	159.4	107.7	22.7	51.7	133.2	34.6	9	0.2
MD1-FC000-1/4	G1/4	G1/8	42	42	G1/8	26.2	43	Ø4	90	159.4	107.7	22.7	51.7	133.2	34.6	9	0.2
MD1-FC000-3/8	G3/8	G1/8	42	42	G1/8	26.2	43	Ø4	90	159.4	107.7	22.7	51.7	133.2	34.6	9	0.2
MD1-FC000-6	Ø6	G1/8	47	42	G1/8	26.2	43	Ø4	90	159.4	107.7	22.7	51.7	133.2	34.6	9	0.2
MD1-FC000-8	Ø8	G1/8	62	42	G1/8	26.2	43	Ø4	90	159.4	107.7	22.7	51.7	133.2	34.6	9	0.2
MD1-FC000-10	Ø10	G1/8	67	42	G1/8	26.2	43	Ø4	90	159.4	107.7	22.7	51.7	133.2	34.6	9	0.2

Series MD coalescing filters with visual indicator - dimensions

PNEUMATIC SYMBOLS LEGEND:
FA04 = coalescing filter with direct G1/8 exhaust and visual blockage indicator
FA05 = coalescing filter with semi-automatic manual drain and visual blockage indicator
FA06 = coalescing filter with automatic/depressuring drain and visual blockage indicator





DIMENSIONS																	
Mod.	A	B	C	E	G	H	I	L	M	N	O	P	R	S	T	V	Weight (Kg)
MD1-FC001	-	G1/8	42	42	G1/8	48.7	43	Ø4	90	181.9	107.7	45.2	74.2	133.2	34.6	9	0.2
MD1-FC001-1/8	G1/8	G1/8	42	42	G1/8	48.7	43	Ø4	90	181.9	107.7	45.2	74.2	133.2	34.6	9	0.2
MD1-FC001-1/4	G1/4	G1/8	42	42	G1/8	48.7	43	Ø4	90	181.9	107.7	45.2	74.2	133.2	34.6	9	0.2
MD1-FC001-3/8	G3/8	G1/8	42	42	G1/8	48.7	43	Ø4	90	181.9	107.7	45.2	74.2	133.2	34.6	9	0.2
MD1-FC001-6	Ø6	G1/8	47	42	G1/8	48.7	43	Ø4	90	181.9	107.7	45.2	74.2	133.2	34.6	9	0.2
MD1-FC001-8	Ø8	G1/8	62	42	G1/8	48.7	43	Ø4	90	181.9	107.7	45.2	74.2	133.2	34.6	9	0.2
MD1-FC001-10	Ø10	G1/8	67	42	G1/8	48.7	43	Ø4	90	181.9	107.7	45.2	74.2	133.2	34.6	9	0.2

Series MD activated carbon filters

New

Ports with interchangeable cartridges: threaded (1/8, 1/4, 3/8) or integrated with super-rapid fitting for tube with Ø 6, 8 and 10 mm
Modular assembly
Bowl with technopolymer cover and bayonet-type mounting

- Removal of oil, liquid and gas components from compressed air through the active carbons
- Air quality in compliance with ISO 8573-1 standard, Class 1.7.1
- Visual blockage indicator
- Bowl locking system reducing the risk of accidents
- Additional air intakes with the same characteristics of the inlet air (line)

Within a battery of filters the activated carbon version is placed at the end because it requires a pre-filtering like the coalescing filter.
Given the characteristic of this filter, it is recommended to replace the filter element at least every 6 months or 1000 working hours.

The operating principle is based on the adsorption characteristic of the filtering element which is composed of extremely porous fibers placed on different layers. These fibers create a cross-linked and are thus able to adsorb wet parts and contaminants remaining in the passing air, for example oil vapours/smokes, as well as odours generated from these contaminants.

GENERAL DATA

Construction	modular, compact with activated carbon filtering element
Materials	see TABLE OF MATERIALS (pag. 3/0.15.02)
Ports	With interchangeable cartridges: 1/8, 1/4 and 3/8 threaded or integrated with super-rapid fitting for tube with Ø 6, 8 and 10 mm
Mounting	vertical in-line; wall-mounting by means of through holes in the body or with a support bracket
Operating temperature	10°C ÷ 40°C (t max = 60°C)
Condensate drain	not present
Quality of delivered air according to ISO 8573-1 2010	Class 1.7.1 (pre-filtering in Class 1.8.1 is recommended)
Operating pressure	0.3 ÷ 16 bar
Nominal flow	see FLOW DIAGRAMS on the following pages
Filtering element	active carbon
Residual oil content	< 0.003 mg/m³
Fluid	compressed air

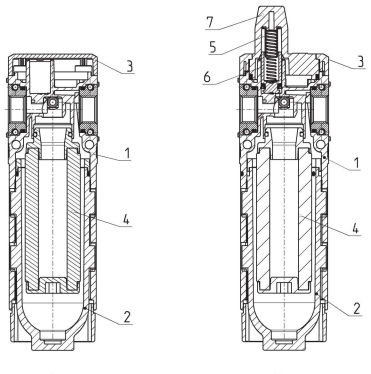
CODING EXAMPLE

MD	1	-	FCA	0	-	1/8

MD	SERIES
1	DIMENSION: 1 = 42 mm
FCA	ACTIVATED CARBON FILTER
0	VISUAL BLOCKAGE INDICATOR: 0 = not present 1 = present
1/8	PORTS (IN - OUT)*: = without cartridges 1/8 = G1/8 1/4 = G1/4 3/8 = G3/8 6 = tube Ø6 8 = tube Ø8 10 = tube Ø10 * NOTE: if the inlet (IN) cartridge is different from the outlet (OUT) cartridge, both dimensions shall be indicated. Example: MD1-FCA1-1/4-10 For further information about condensate drains and filtering elements see the section 3/5.10.

Series MD activated carbon filters - materials

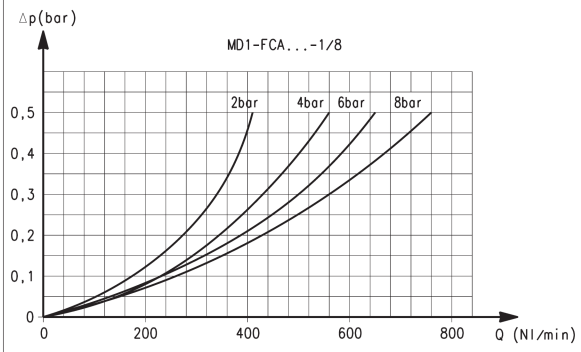
A = filter
B = filter with visual blockage indicator



A B

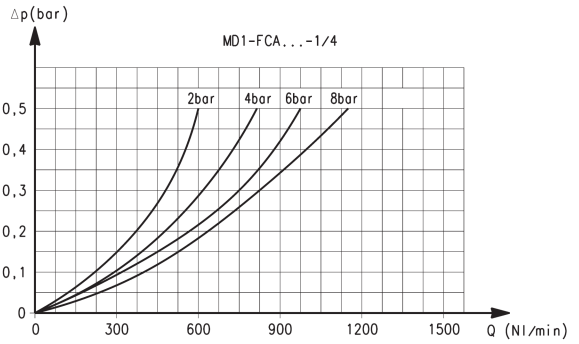
PARTS	MATERIALS
1 = Body	Polyamide
2 = Tank	Polycarbonate
3 = Covering	Polyamide
4 = Filtering element	Active carbons
5 = Upper spring	Stainless steel
6 = Piston	Anodized aluminium
7 = Visual blockage indicator	Polycarbonate
Seals	NBR

FLOW DIAGRAMS



Ports with interchangeable 1/8 threaded cartridges

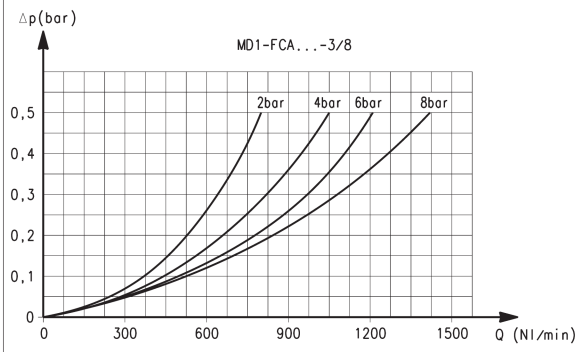
Δp = Pressure drop
Q = Flow



Ports with interchangeable 1/4 threaded cartridges

Δp = Pressure drop
Q = Flow

FLOW DIAGRAMS

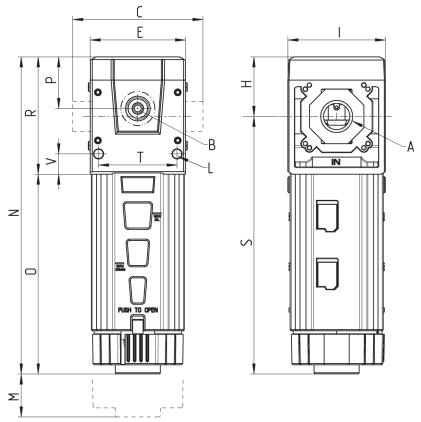


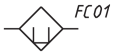
Ports with interchangeable 3/8 threaded cartridges

Δp = Pressure drop
Q = Flow

Series MD activated carbon filters - dimensions

PNEUMATIC SYMBOLS LEGEND:
FC01 = activated carbon filter

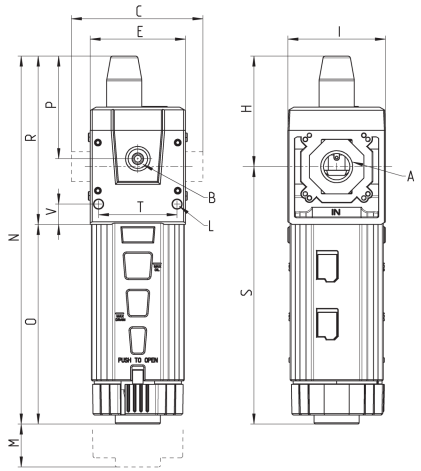


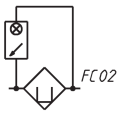


DIMENSIONS																
Mod.	A	B	C	E	H	I	L	M	N	O	P	R	S	T	V	Weight (Kg)
MD1-FCA0	-	G1/8	42	42	26.2	43	Ø4	90	139.7	88	22.7	51.7	113.5	34.6	9	0.2
MD1-FCA0-1/8	G1/8	G1/8	42	42	26.2	43	Ø4	90	139.7	88	22.7	51.7	113.5	34.6	9	0.2
MD1-FCA0-1/4	G1/4	G1/8	42	42	26.2	43	Ø4	90	139.7	88	22.7	51.7	113.5	34.6	9	0.2
MD1-FCA0-3/8	G3/8	G1/8	42	42	26.2	43	Ø4	90	139.7	88	22.7	51.7	113.5	34.6	9	0.2
MD1-FCA0-6	Ø6	G1/8	47	42	26.2	43	Ø4	90	139.7	88	22.7	51.7	113.5	34.6	9	0.2
MD1-FCA0-8	Ø8	G1/8	62	42	26.2	43	Ø4	90	139.7	88	22.7	51.7	113.5	34.6	9	0.2
MD1-FCA0-10	Ø10	G1/8	67	42	26.2	43	Ø4	90	139.7	88	22.7	51.7	113.5	34.6	9	0.2

Series MD activated carbon filters with visual indicator - dimensions

PNEUMATIC SYMBOLS LEGEND:
FC02 = activated carbon filter with visual blockage indicator





DIMENSIONS																
Mod.	A	B	C	E	H	I	L	M	N	O	P	R	S	T	V	Weight (Kg)
MD1-FCA1	-	G1/8	42	42	48.7	43	Ø4	90	162.2	88	45.2	74.2	113.5	34.6	9	0.2
MD1-FCA1-1/8	G1/8	G1/8	42	42	48.7	43	Ø4	90	162.2	88	45.2	74.2	113.5	34.6	9	0.2
MD1-FCA1-1/4	G1/4	G1/8	42	42	48.7	43	Ø4	90	162.2	88	45.2	74.2	113.5	34.6	9	0.2
MD1-FCA1-3/8	G3/8	G1/8	42	42	48.7	43	Ø4	90	162.2	88	45.2	74.2	113.5	34.6	9	0.2
MD1-FCA1-6	Ø6	G1/8	47	42	48.7	43	Ø4	90	162.2	88	45.2	74.2	113.5	34.6	9	0.2
MD1-FCA1-8	Ø8	G1/8	62	42	48.7	43	Ø4	90	162.2	88	45.2	74.2	113.5	34.6	9	0.2
MD1-FCA1-10	Ø10	G1/8	67	42	48.7	43	Ø4	90	162.2	88	45.2	74.2	113.5	34.6	9	0.2

Series MD pressure regulators

New

Ports with interchangeable cartridges: threaded (1/8, 1/4, 3/8) or integrated with super-rapid fitting for tube with Ø 6, 8 and 10 mm
Versions: single, combined with other functions, Manifold

- Minimal pressure decreases
- Knob with position lock
- Tamper-proof system (lockable regulator)
- With or without overpressure exhaust (relieving)
- Available versions: Manifold, with by-pass valve, calibrated, locked.

Thanks to the flexibility given by the connection inserts, the regulator can be adjusted within a treatment group so that the regulation knob is in the front or lower position. Once the regulation is locked, it is possible to insert as many security locks through the 4 holes.
The by-pass valve allows the fast exhaust of the air introduced.
The different springs enable a more accurate adjustment of the pressure.

The Series MD offers multi-sector solutions that ensure saving in terms of installation time, space and costs. Thanks to the solution adopted for the pneumatic connection, it is possible to equip the same element with interchangeable cartridges that can either be threaded, or with an integrated super-rapid fitting, both types available in different sizes. Intermediate cartridges can be also integrated to join multiple functions or with derivation to draw air.

GENERAL DATA

Construction	modular, compact wiht pre-formed diaphragm
Materials	see TABLE OF MATERIALS (pag. 3/0.20.02)
Ports	with interchangeable cartridges: 1/8, 1/4 and 3/8 threaded or integrated with super-rapid fitting for tube with Ø 6, 8 and 10 mm
Fixing	in-line; wall-mounting by means of through holes in the body or with a support bracket; panel mounting
Operating temperature	-5°C ÷ 50°C up to 16 bar
Inlet pressure	0 ÷ 16 bar
Outlet pressure	0 ÷ 2 bar 0 ÷ 4 bar 0.5 ÷ 7 bar 0.5 ÷ 10 bar
Overpressure exhaust	with relieving without relieving
Nominal flow	see FLOW DIAGRAMS (pag. 3/0.20.03 and 3/0.20.05)
Fluid	compressed air

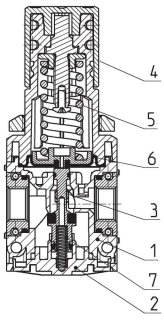
CODING EXAMPLE

MD	1	-	R	T	0	0	-	1/4	-	■	-	●

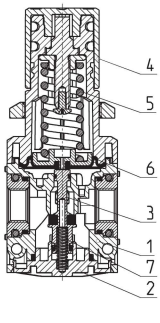
MD	SERIES
1	SIZE: 1 = 42 mm
R	TYPER OF REGULATOR: R = pressure regulator M = Manifold pressure regulator
T	OPERATING PRESSURE (1 bar = 14,5 psi): 0 = 0,5 ÷ 10 bar 2 = 0 ÷ 2 bar 4 = 0 ÷ 4 bar 7 = 0.5 ÷ 7 bar T = calibrated ** B = locked **
0	DESIGN TYPE: 0 = with relieving 1 = without relieving 2 = with relieving and by-pass valve 3 = without relieving, with by-pass valve
0	PRESSURE GAUGE: 0 = without pressure gauge (with 1/8 port)
1/4	PORTS (IN - OUT)*: = without cartridges 1/8 = G1/8 1/4 = G1/4 3/8 = G3/8 6 = tube Ø6 8 = tube Ø8 10 = tube Ø10 * NOTE: if the inlet (IN) cartridge is different from the outlet (OUT) cartridge, both dimensions shall be indicated. Example: MD1-R020-1/4-10
	** NOTE: IF THE REGULATOR IS CALIBRATED OR LOCKED, AFTER THE PORTS ADD THE INLET PRESSURE "■" AND THE OUTLET PRESSURE "●" INLET PRESSURE: ■ = enter the SUPPLY pressure value OUTLET PRESSURE: ● = enter the OUTLET pressure value for the LOCKED regulator or the maximum value of the ADJUSTABLE pressure for the CALIBRATED regulator Example of a calibrated regulator with Inlet Pressure = 6.3 bar and Outlet Pressure = 4.5 bar Complete part number: MD1-RT00-1/4-6.3-4.5

Pressure regulators Series MD - materials

R = pressure regulator
M = Manifold pressure regulator



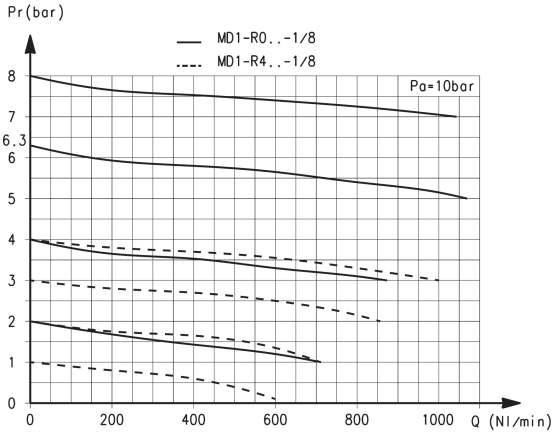
R



M

PARTS	MATERIALS
1 = Body	Polyamide
2 = Valve holder plug	Polyamide
3 = Poppet	Brass
4 = Knob	Polyamide
5 = Upper spring	Zinc-plated steel
6 = Diaphragm	NBR
7 = Lower spring	Stainless steel
Seals	NBR

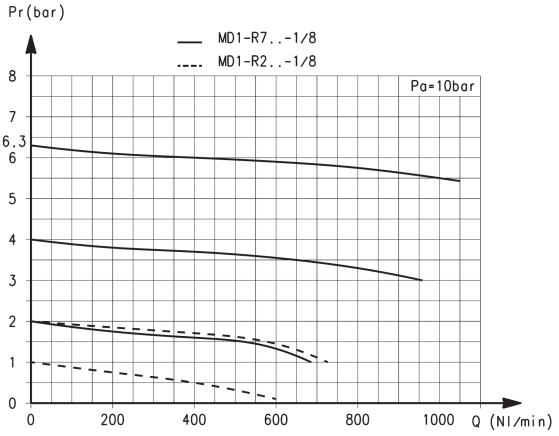
FLOW DIAGRAMS for regulators with working pressures of 2, 4, 7, 10 bar



Ports with interchangeable 1/8 threaded cartridges

Pr = Regulated pressure
Q = Flow

Pa = Inlet pressure

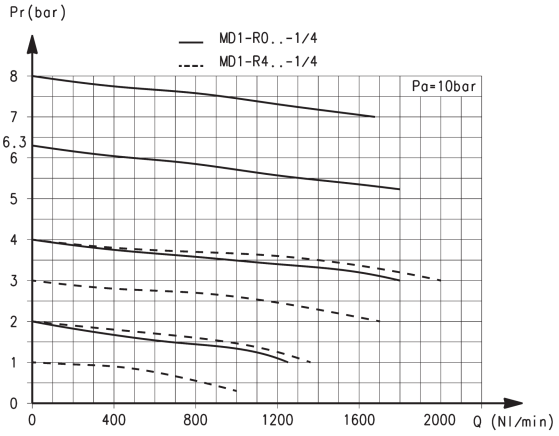


Ports with interchangeable 1/8 threaded cartridges

Pr = Regulated pressure
Q = Flow

Pa = Inlet pressure

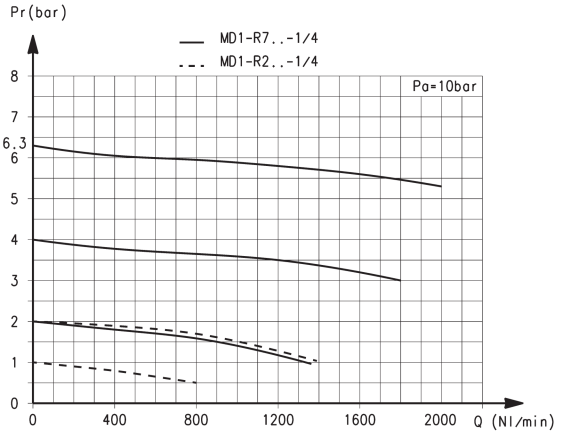
FLOW DIAGRAMS for regulators with working pressures of 2, 4, 7, 10 bar



Ports with interchangeable 1/4 threaded cartridges

Pr = Regulated pressure
Q = Flow

Pa = Inlet pressure

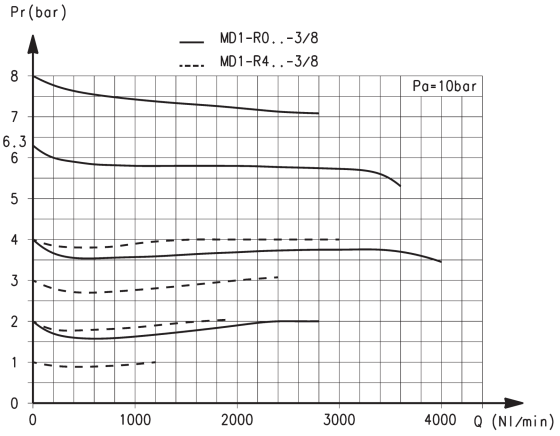


Ports with interchangeable 1/4 threaded cartridges

Pr = Regulated pressure
Q = Flow

Pa = Inlet pressure

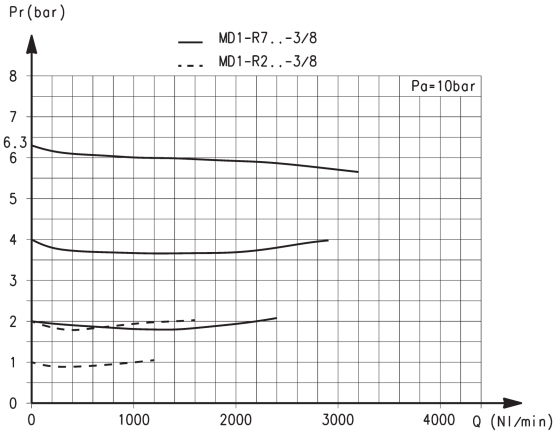
FLOW DIAGRAMS for regulators with working pressures of 2, 4, 7, 10 bar



Ports with interchangeable 3/8 threaded cartridges

Pr = Regulated pressure
Q = Flow

Pa = Inlet pressure



Ports with interchangeable 3/8 threaded cartridges

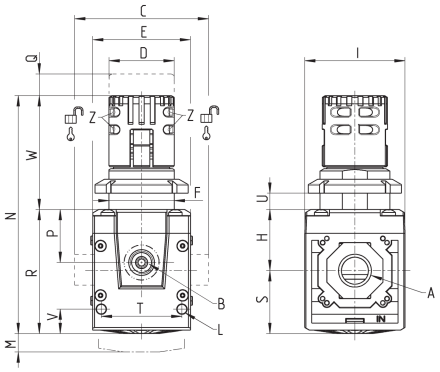
Pr = Regulated pressure
Q = Flow

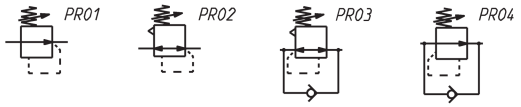
Pa = Inlet pressure

3 TREATMENT

Series MD pressure regulators - dimensions

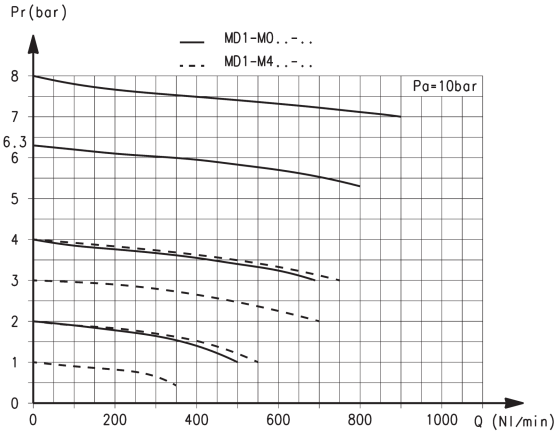
Pneumatic symbols legend:
PR01 = regulator without relieving
PR02 = regulator with relieving
PR03 = regulator with relieving and by-pass valve
PR04 = regulator without relieving and with by-pass valve





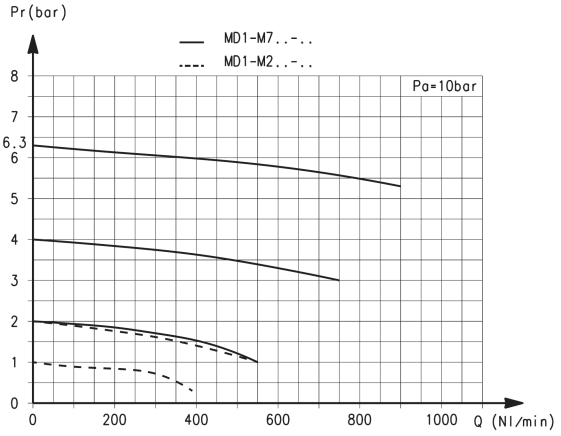
Mod.	A	B	C	D	E	F	H	I	L	M	N	P	Q	R	S	T	U	V	W	Z	Weight (Kg)
MD1-R000	-	G1/8	42	Ø28	42	M28X1,5	26.2	43	Ø4	16	102	22.7	4	53.2	27	34.6	0 ÷ 11	10.5	48.8	Ø3.2	0.2
MD1-R000-1/8	G1/8	G1/8	42	Ø28	42	M28X1,5	26.2	43	Ø4	16	102	22.7	4	53.2	27	34.6	0 ÷ 11	10.5	48.8	Ø3.2	0.2
MD1-R000-1/4	G1/4	G1/8	42	Ø28	42	M28X1,5	26.2	43	Ø4	16	102	22.7	4	53.2	27	34.6	0 ÷ 11	10.5	48.8	Ø3.2	0.2
MD1-R000-3/8	G3/8	G1/8	42	Ø28	42	M28X1,5	26.2	43	Ø4	16	102	22.7	4	53.2	27	34.6	0 ÷ 11	10.5	48.8	Ø3.2	0.2
MD1-R000-6	Ø6	G1/8	47	Ø28	42	M28X1,5	26.2	43	Ø4	16	102	22.7	4	53.2	27	34.6	0 ÷ 11	10.5	48.8	Ø3.2	0.2
MD1-R000-8	Ø8	G1/8	62	Ø28	42	M28X1,5	26.2	43	Ø4	16	102	22.7	4	53.2	27	34.6	0 ÷ 11	10.5	48.8	Ø3.2	0.2
MD1-R000-10	Ø10	G1/8	67	Ø28	42	M28X1,5	26.2	43	Ø4	16	102	22.7	4	53.2	27	34.6	0 ÷ 11	10.5	48.8	Ø3.2	0.2

FLOW DIAGRAMS for Manifold regulators with working pressures of 2, 4, 7, 10 bar



Pr = Regulated pressure
Q = Flow

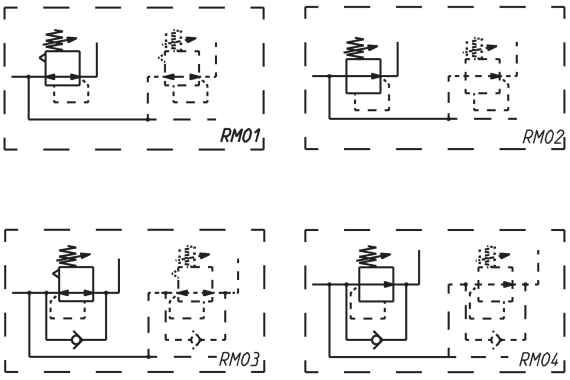
Pa = Inlet pressure



Pr = Regulated pressure
Q = Flow

Pa = Inlet pressure

MANIFOLD REGULATOR - PNEUMATIC SYMBOLS

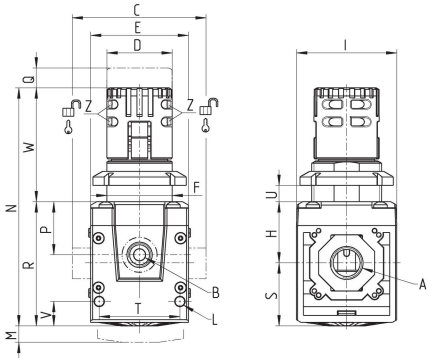


RM01 = Manifold regulator with relieving
RM02 = Manifold regulator without relieving
RM03 = Manifold regulator with relieving and by-pass valve
RM04 = Manifold regulator without relieving,
with by-pass valve

Series MD pressure regulators - dimensions

There is no limit to the number of regulators that can be connected.

With the Manifold version it is possible to realize a battery of regulators which are fed by a single source of inlet pressure.
Each regulator can be set up at any pressure (lower than the inlet pressure). The front or rear connection of each regulator allows to draw air at the pressure value set on the regulator itself.



Mod.	A	B	C	D	E	F	H	I	L	M	N	P	Q	R	S	T	U	V	W	Z	Weight (Kg)
MD1-M000	-	G1/8	42	Ø28	42	M28X1,5	26.2	43	Ø4	16	102	22.7	4	53.2	27	34.6	0 ÷ 11	10.5	48.8	Ø3.2	0.2

Series MD lubricators

New

Ports with interchangeable cartridges: threaded (1/8, 1/4, 3/8) or integrated with super-rapid fitting for tube with Ø 6, 8 and 10 mm
Modular assembly
Bowl with technopolymer cover and bayonet-type mounting

- Regulation screw
- Ability to refill the oil even with system under pressure
- High flow
- Check of the oil level through plastic cover openings
- Bowl locking system reducing the risk of accidents
- Additional air intakes with the same characteristics of the outlet air (line)

The lubricator allows the nebulization of lubricating oil which is necessary to the functioning of components in specific conditions of use.

By means of a regulation screw the amount of oil can be properly adjusted in order to avoid unnecessary overdoses.

GENERAL DATA

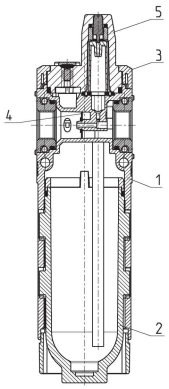
Construction	modular, compact
Materials	see TABLE OF MATERIALS (pag. 3/0.25.02)
Ports	with interchangeable cartridges: 1/8, 1/4 and 3/8 threaded or integrated with super-rapid fitting for tube with Ø 6, 8 and 10 mm
Oil capacity	40 cc
Oil refilling	even during use
Mounting	in vertical position by means of through holes in the body
Operating temperature	-5°C ÷ 50°C up to 16 bar
Oil for lubrication	use ISO VG32 oils. Once applied, the lubrication should never be interrupted.
Operating pressure	0 ÷ 16 bar
Min. air consumption for lubrication at 1 bar	15 Nl/min
Min. air consumption for lubrication at 6 bar	25 Nl/min
Nominal flow	see FLOW DIAGRAMS (pag 3/0.25.03)

CODING EXAMPLE

MD	1	-	L	0	0	-	1/8

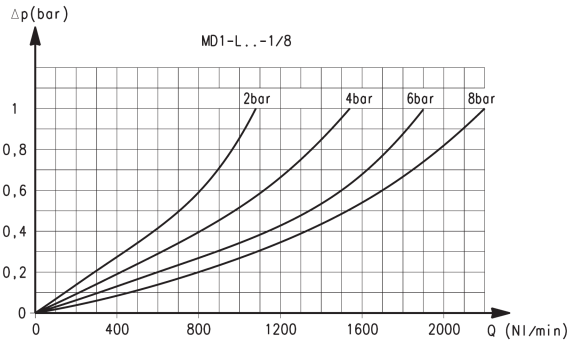
MD	SERIES
1	DIMENSION: 1 = 42 mm
L	LUBRICATOR
00	DESIGN TYPE: 00 = oil mist with refill valve 10 = oil mist without refill valve
1/8	PORTS (IN - OUT)*: = without ports 1/8 = G1/8 1/4 = G1/4 3/8 = G3/8 6 = tube Ø6 8 = tube Ø8 10 = tube Ø10 * NOTE: if the inlet (IN) cartridge is different from the outlet (OUT) cartridge, both dimensions shall be indicated. Example: MD1-L00-1/4-1/8

Series MD lubricators - materials



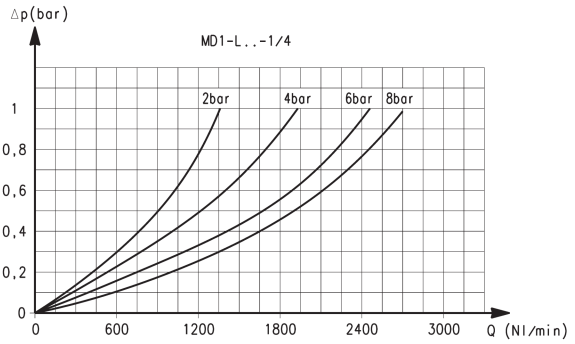
PARTS	MATERIALS
1 = Body	Polyamide
2 = Tank	Polycarbonate
3 = Covering	Polyamide
4 = Diaphragm	NBR
5 = Visual blockage indicator	Polycarbonate
Seals	NBR

FLOW DIAGRAMS



Ports with interchangeable 1/8 threaded cartridges

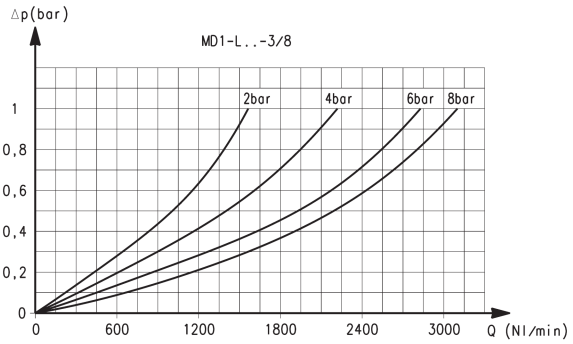
Δp = Pressure drop
Q = Flow



Ports with interchangeable 1/4 threaded cartridges

Δp = Pressure drop
Q = Flow

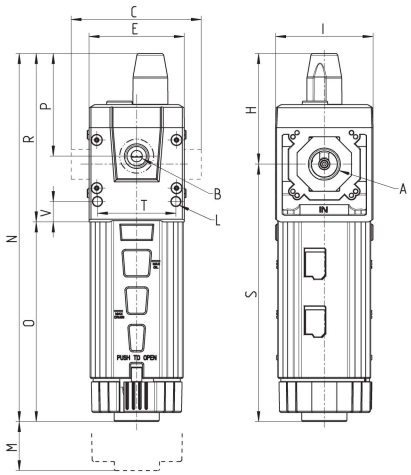
FLOW DIAGRAMS



Ports with interchangeable 3/8 threaded cartridges

Δp = Pressure drop
Q = Flow

Series MD lubricators - dimensions



DIMENSIONS

Mod.	A	B	C	E	H	I	L	M	N	O	P	R	S	T	V	Weight (Kg)
MD1-L00	-	G1/8	42	42	48.7	43	Ø4	75	162.2	88	45.2	74.2	113.5	34.6	9	0.2
MD1-L00-1/8	G1/8	G1/8	42	42	48.7	43	Ø4	75	162.2	88	45.2	74.2	113.5	34.6	9	0.2
MD1-L00-1/4	G1/4	G1/8	42	42	48.7	43	Ø4	75	162.2	88	45.2	74.2	113.5	34.6	9	0.2
MD1-L00-3/8	G3/8	G1/8	42	42	48.7	43	Ø4	75	162.2	88	45.2	74.2	113.5	34.6	9	0.2
MD1-L00-6	Ø6	G1/8	47	42	48.7	43	Ø4	75	162.2	88	45.2	74.2	113.5	34.6	9	0.2
MD1-L00-8	Ø8	G1/8	62	42	48.7	43	Ø4	75	162.2	88	45.2	74.2	113.5	34.6	9	0.2
MD1-L00-10	Ø10	G1/8	67	42	48.7	43	Ø4	75	162.2	88	45.2	74.2	113.5	34.6	9	0.2

Series MD
pressure filter-regulators

New

Ports with interchangeable cartridges: threaded (1/8, 1/4, 3/8) or integrated with super-rapid fitting for tube with Ø 6, 8 and 10 mm
Modular assembly
Bowl with technopolymer cover and bayonet-type mounting

- Filtering between 25 µm or 5 µm
- Minimum pressure drops
- Knob with position lock
- Tamper-proof system (lockable regulator)
- Bowl locking system reducing the risk of accidents

Series MD filter-regulators integrate filter and pressure reducer in one unit, thus reducing their dimensions.
The by-pass valve allows the fast exhaust of the air introduced. The different springs enable a more accurate adjustment of the pressure.

Thanks to the solution adopted for the pneumatic connection, it is possible to equip the same element with interchangeable cartridges that can either be threaded, or with an integrated super-rapid fitting, both types available in different sizes. Intermediate cartridges can be also integrated to join multiple functions or with derivation to draw air.

GENERAL DATA

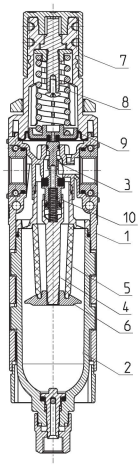
Construction	modular, compact with filtering element in HDPE
Materials	see TABLE OF MATERIALS (pag. 3/0.30.02)
Ports	with interchangeable cartridges: 1/8, 1/4 and 3/8 threaded or integrated with super-rapid fitting for tube with diameters of 6, 8 and 10 mm
Condensate capacity	24 cc
Mounting	in-line; wall-mounting by means of through holes in the body or with a support bracket; panel mounting
Operating temperature	-5°C ÷ 50°C up to 16 bar (with the dew point of the fluid lower than 2°C at the min. working temperature)
Condensate drain	semi-automatic manual, automatic protected depressurisation, direct G1/8 exhaust
Quality of delivered air according to ISO 8573-1 2010	Class 6.8.4 with 5 µm filtering element Class 7.8.4 with 25 µm filtering element
Operating pressure	0,3 ÷ 16 bar
Nominal flow	see FLOW DIAGRAMS (pag. 3/0.30.03)
Fluid	compressed air

CODING EXAMPLE

MD	1	-	FR	0	0	0	0	-	1/8

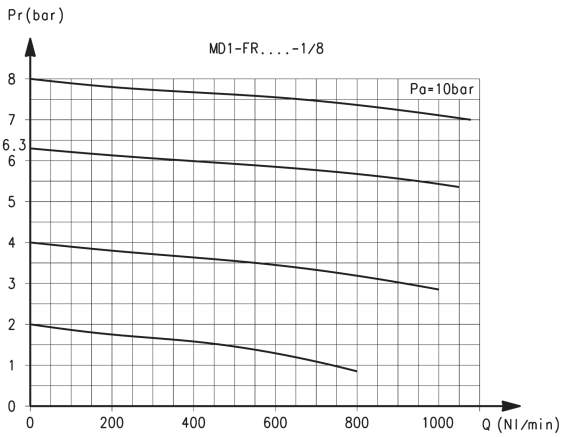
MD	SERIES
1	DIMENSION: 1 = 42 mm
FR	FILTER-REGULATOR
0	FILTERING ELEMENT AND DESIGN TYPE: 0 = 25 µm with relieving 1 = 5 µm with relieving 2 = 25 µm without relieving * 3 = 5 µm without relieving * 4 = 25 µm with relieving and by-pass valve 5 = 5 µm with relieving and by-pass valve 6 = 25 µm without relieving, with by-pass valve * 7 = 5 µm without relieving, with by-pass valve * * this option is available with semiautomatic-manual drain only
0	CONDENSATE DRAIN: 0 = semiautomatic-manual drain 5 = automatic drain, protected depressurisation 8 = direct G1/8 exhaust
0	OPERATING PRESSURE (1 bar = 14,5 psi): 0 = 0,5 ÷ 10 bar 2 = 0 ÷ 2 bar 4 = 0 ÷ 4 bar 7 = 0.5 ÷ 7 bar
0	PRESSURE GAUGE: 0 = without pressure gauge (with 1/8 port)
1/8	PORTS (IN - OUT)*: = without cartridges 1/8 = G1/8 1/4 = G1/4 3/8 = G3/8 6 = tube Ø6 8 = tube Ø8 10 = tube Ø10 * NOTE: if the inlet (IN) cartridge is different from the outlet (OUT) cartridge, both dimensions shall be indicated. Example: MD1-FR0000-1/4-1/8

Series MD filter-regulators - materials



PARTS	MATERIALS
1 = Body	Polyamide
2 = Tank	Polycarbonate
3 = Poppet	Brass
4 = Valve guide	Polyacetal
5 = Filtering element	Polyethylene
6 = Separation deflector	Polyacetal
7 = Knob	Polyamide
8 = Upper spring	Zinc-plated steel
9 = Diaphragm	NBR
10 = Lower spring	Stainless steel
Seals	NBR

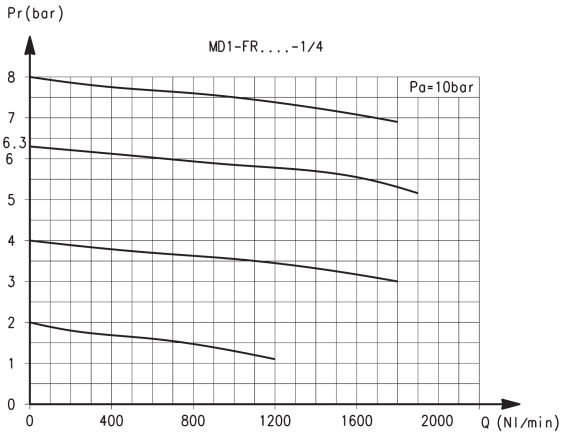
FLOW DIAGRAMS



Ports with interchangeable G1/8 threaded cartridges

Pr = Regulated pressure
Q = Flow

Pa = Inlet pressure

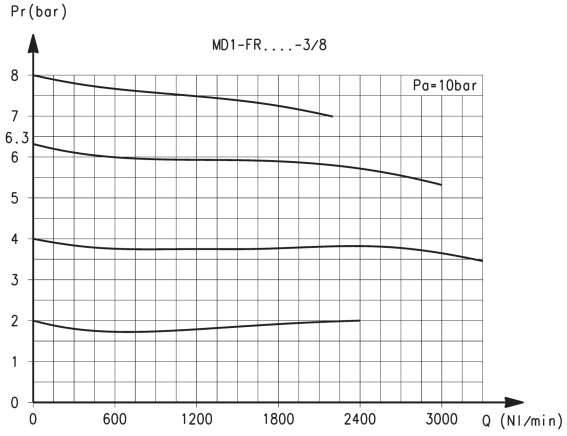


Ports with interchangeable G1/4 threaded cartridges

Pr = Regulated pressure
Q = Flow

Pa = Inlet pressure

FLOW DIAGRAMS

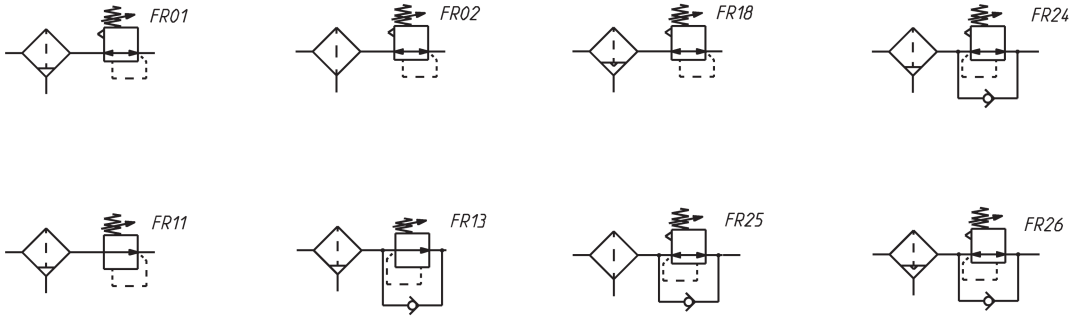


Ports with interchangeable G3/8 threaded cartridges

Pr = Regulated pressure
Q = Flow

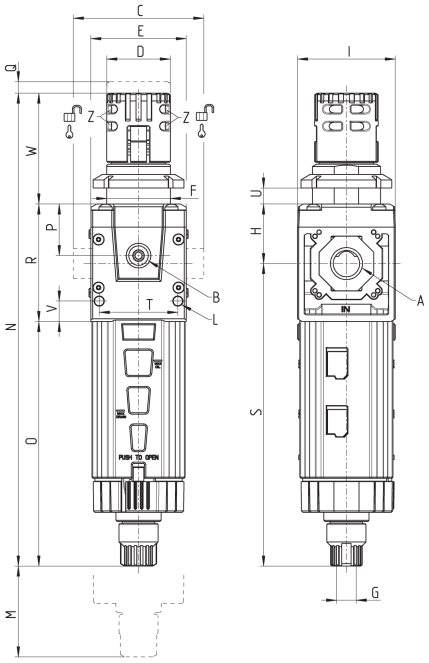
Pa = Inlet pressure

PNEUMATIC SYMBOLS



FR01 = filter-regulator with relieving and semi-automatic manual drain
FR02 = filter-regulator with relieving and direct G1/8 exhaust
FR11 = filter-regulator without relieving, with semi-automatic manual drain
FR13 = filter-regulator without relieving, with by-pass valve and semi-automatic manual drain
FR18 = filter-regulator with relieving and automatic/depressuring drain
FR24 = filter-regulator with relieving, by-pass valve and semi-automatic manual drain
FR25 = filter-regulator with relieving, by-pass valve and direct G1/8 exhaust
FR26 = filter-regulator with relieving, by-pass valve and automatic/depressuring drain

Series MD filter-regulators - dimensions



Mod.	A	B	C	D	E	F	G	H	I	L	M	N	O	P	Q	R	S	T	U	V	W	Z	Weight (Kg)
MD1-FR0000	-	G1/8	42	Ø28	42	M28X1,5	G1/8	26.2	43	Ø4	110	208.2	107.7	22.7	4	51.7	133.2	34.6	0 ÷ 11	9	48.8	Ø3.2	0.2
MD1-FR0000-1/8	G1/8	G1/8	42	Ø28	42	M28X1,5	G1/8	26.2	43	Ø4	110	208.2	107.7	22.7	4	51.7	133.2	34.6	0 ÷ 11	9	48.8	Ø3.2	0.2
MD1-FR0000-1/4	G1/4	G1/8	42	Ø28	42	M28X1,5	G1/8	26.2	43	Ø4	110	208.2	107.7	22.7	4	51.7	133.2	34.6	0 ÷ 11	9	48.8	Ø3.2	0.2
MD1-FR0000-3/8	G3/8	G1/8	42	Ø28	42	M28X1,5	G1/8	26.2	43	Ø4	110	208.2	107.7	22.7	4	51.7	133.2	34.6	0 ÷ 11	9	48.8	Ø3.2	0.2
MD1-FR0000-6	Ø6	G1/8	47	Ø28	42	M28X1,5	G1/8	26.2	43	Ø4	110	208.2	107.7	22.7	4	51.7	133.2	34.6	0 ÷ 11	9	48.8	Ø3.2	0.2
MD1-FR0000-8	Ø8	G1/8	62	Ø28	42	M28X1,5	G1/8	26.2	43	Ø4	110	208.2	107.7	22.7	4	51.7	133.2	34.6	0 ÷ 11	9	48.8	Ø3.2	0.2
MD1-FR0000-10	Ø10	G1/8	67	Ø28	42	M28X1,5	G1/8	26.2	43	Ø4	110	208.2	107.7	22.7	4	51.7	133.2	34.6	0 ÷ 11	9	48.8	Ø3.2	0.2

Series MD
lockable isolation 3/2-way valves

New

Ports with interchangeable cartridges: threaded (1/8, 1/4, 3/8) or integrated with super-rapid fitting for tube with Ø 6, 8 and 10 mm
Modular
Manual, electro-pneumatic, servo-pilot and pneumatic control

- Standard tamperproof lock-out (manual valve)
- 24 V, 110 V or 230 V coils (see the section 2.2.35)
- Solenoid valve with or without manual override available in different types
- Additional air intakes with the same characteristics of the inlet air (line)

The Series MD offers multi-sector solutions that ensure saving in terms of installation time, space and costs. Series MD lockable isolation valves allow the inlet and exhaust of compressed air from the plant and can meet several application requirements.

The electric version can be equipped with different options of manual override (Push & Turn, Push-in, retaining lever). Moreover, a version without override is also available.
The manually operated valve can be locked thanks to the use of padlocks.

GENERAL DATA

Construction	modular, compact, spool-type
Materials	see TABLE OF MATERIALS (pag. 3/0.35.02)
Ports	with interchangeable cartridges: 1/8, 1/4 and 3/8 threaded, integrated with super-rapid fitting for tube with Ø 6, 8 and 10 mm
Fixing	in-line; wall-mounting by means of through holes in the body or with a support bracket; panel-mounting (for manually operated version only)
Operating temperature	-5°C ÷ 50°C up to 16 bar
Operating pressure	Manual valve: -0,8 bar ÷ 10 bar Electro-pneumatic valve: 2 bar ÷ 10 bar Servopilot or pneumatic valve: -0,8 bar ÷ 10 bar (with pilot 2 ÷ 10 bar)
Nominal flow	see FLOW DIAGRAMS (pag. 3/0.35.03 e 3/0.35.04)
Nominal exhaust flow at 6 bar with Δp = 1 bar	850 Nl/min
Fluid	compressed air

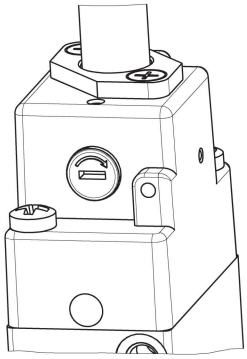
CODING EXAMPLE

MD	1	-	V	01	-	1/8

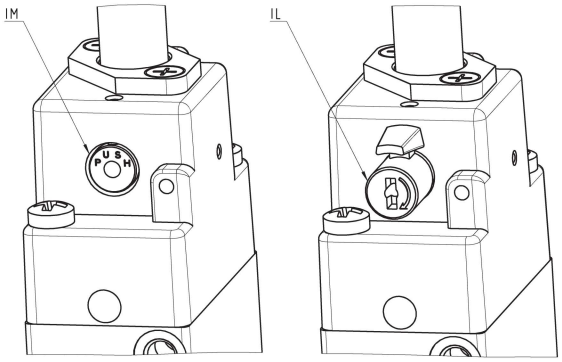
MD	SERIES
1	DIMENSION: 1 = 42 mm
V	3/2-WAY VALVE
01	DESIGN TYPE: 01 = lockable manual control 16 = electro-pneumatic control, Push & Turn manual override 16IL = electro-pneumatic control, bistable manual override, lever type 16IM = electro-pneumatic control, monostable manual override 16IT = electro-pneumatic control without manual override 36 = pneumatic control
1/8	PORTS (IN - OUT) *: = without cartridges 1/8 = G1/8 1/4 = G1/4 3/8 = G3/8 6 = tube Ø6 8 = tube Ø8 10 = tube Ø10

* NOTE: if the inlet (IN) cartridge is different from the outlet (OUT) cartridge, both dimensions shall be indicated.
Example: MD1-V01-1/4-1/8

TYPES OF MANUAL OVERRIDE

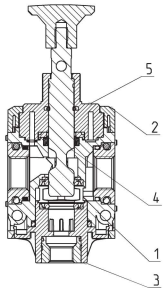


Push & Turn manual override

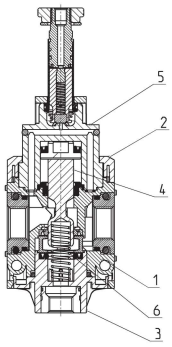


IL = bistable manual override, lever type
IM = monostable manual override

Series MD lockable isolation 3/2-way valves - materials



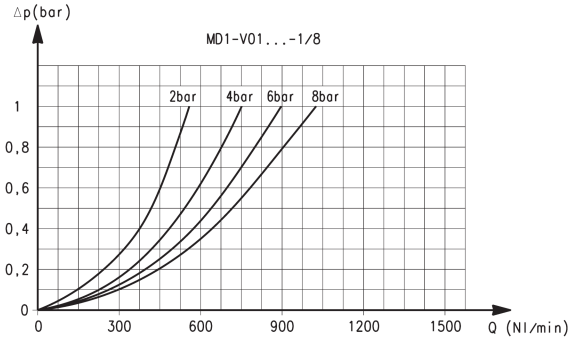
MD...-V01



MD...-V16

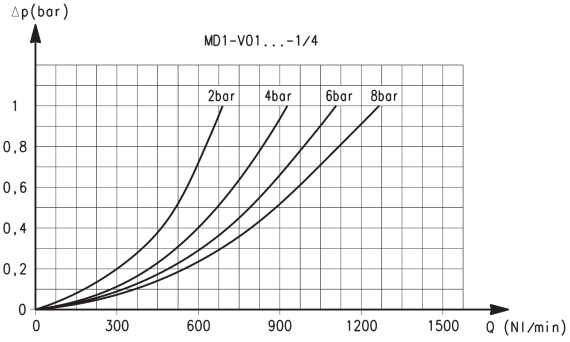
PARTS	MATERIALS
1 = Body	Polyamide
2 = Covering	Polyamide
3 = Plug	Polyamide
4 = Spool	Anodized aluminium
5 = End-cover	Polyamide
6 = Lower spring	Stainless steel
Seals	NBR

FLOW DIAGRAMS for manually operated models



Ports with interchangeable G1/8 threaded cartridges

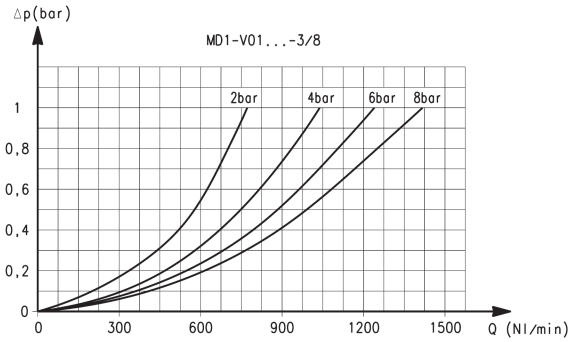
Δp = Pressure drop
Q = Flow



Ports with interchangeable G1/4 threaded cartridges

Δp = Pressure drop
Q = Flow

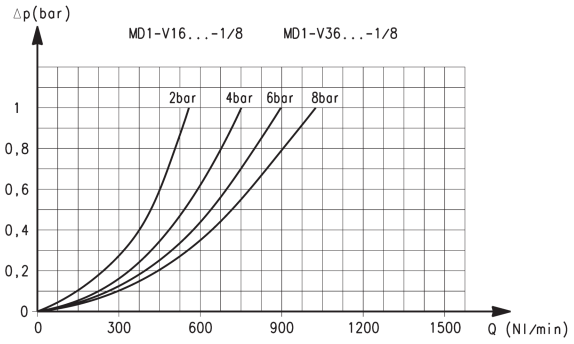
FLOW DIAGRAM for manually operated models



Ports with interchangeable G3/8 threaded cartridges

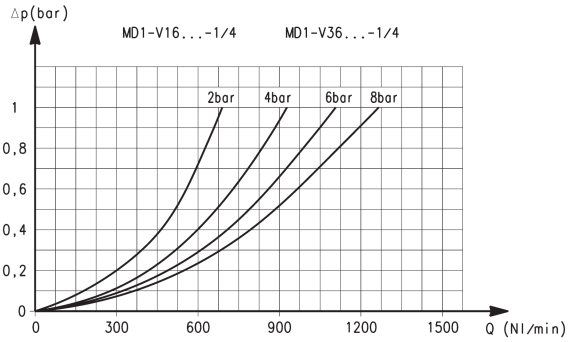
Δp = Pressure drop
Q = Flow

FLOW DIAGRAMS for electro-pneumatically or pneumatically operated models



Ports with interchangeable G1/8 threaded cartridges

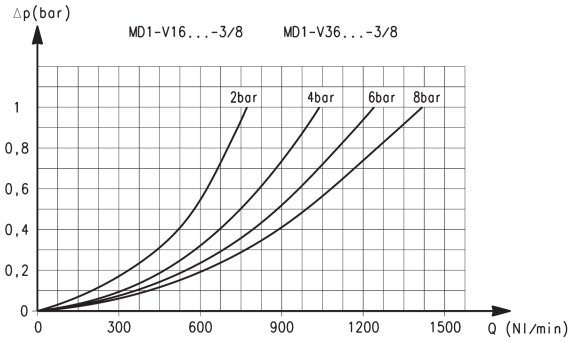
Δp = Pressure drop
Q = Flow



Ports with interchangeable G1/4 threaded cartridges

Δp = Pressure drop
Q = Flow

FLOW DIAGRAM for electro-pneumatically or pneumatically operated models



Ports with interchangeable G3/8 threaded cartridges

Δp = Pressure drop
Q = Flow

Manually operated valves - dimensions

Fig. 1 = closed valve
Fig. 2 = open valve

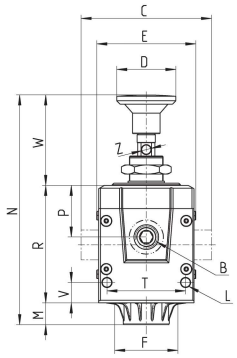


Fig.1

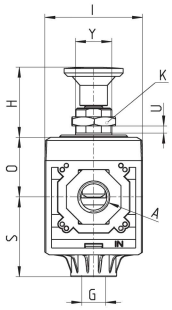
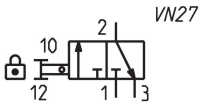


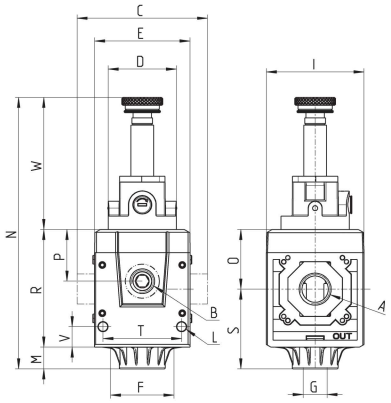
Fig.2

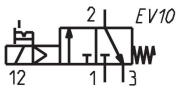


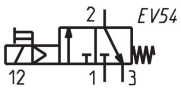
Mod.	A	B	C	D	E	F	G	H	I	K	L	M	N	O	P	R	S	T	U	V	W	Y	Z	Weight (Kg)
MD1-V01	-	G1/8	42	Ø26	42	28.5	G1/8	31	43	19	Ø4	9.5	101	26.2	22.7	51.7	35.1	34.6	0-8	9	39.8	M16X1	Ø4	0.2
MD1-V01-1/8	G1/8	G1/8	42	Ø26	42	28.5	G1/8	31	43	19	Ø4	9.5	101	26.2	22.7	51.7	35.1	34.6	0-8	9	39.8	M16X1	Ø4	0.2
MD1-V01-1/4	G1/4	G1/8	42	Ø26	42	28.5	G1/8	31	43	19	Ø4	9.5	101	26.2	22.7	51.7	35.1	34.6	0-8	9	39.8	M16X1	Ø4	0.2
MD1-V01-3/8	G3/8	G1/8	42	Ø26	42	28.5	G1/8	31	43	19	Ø4	9.5	101	26.2	22.7	51.7	35.1	34.6	0-8	9	39.8	M16X1	Ø4	0.2
MD1-V01-6	Ø6	G1/8	47	Ø26	42	28.5	G1/8	31	43	19	Ø4	9.5	101	26.2	22.7	51.7	35.1	34.6	0-8	9	39.8	M16X1	Ø4	0.2
MD1-V01-8	Ø8	G1/8	62	Ø26	42	28.5	G1/8	31	43	19	Ø4	9.5	101	26.2	22.7	51.7	35.1	34.6	0-8	9	39.8	M16X1	Ø4	0.2
MD1-V01-10	Ø10	G1/8	67	Ø26	42	28.5	G1/8	31	43	19	Ø4	9.5	101	26.2	22.7	51.7	35.1	34.6	0-8	9	39.8	M16X1	Ø4	0.2

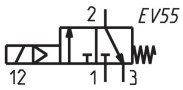
Electro-pneumatically operated valves - dimensions

* = add:
- IL for the version with bistable manual override, lever type (EV10)
- IM for the version with monostable manual override (EV54)
- IT for the version without manual override (EV55)



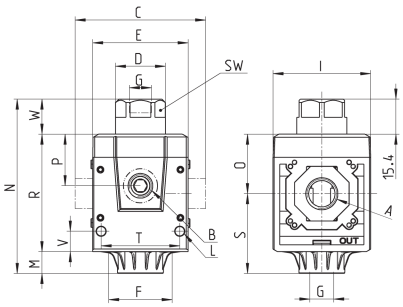


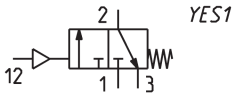




Mod.	A	B	C	D	E	F	G	I	L	M	N	O	P	R	S	T	V	W	Weight (Kg)
MD1-V16*	-	G1/8	42	Ø30	42	28.5	G1/8	43	Ø4	9.5	119.4	26.2	22.7	51.7	35.1	34.6	9	58.2	0.2
MD1-V16*-1/8	G1/8	G1/8	42	Ø30	42	28.5	G1/8	43	Ø4	9.5	119.4	26.2	22.7	51.7	35.1	34.6	9	58.2	0.2
MD1-V16*-1/4	G1/4	G1/8	42	Ø30	42	28.5	G1/8	43	Ø4	9.5	119.4	26.2	22.7	51.7	35.1	34.6	9	58.2	0.2
MD1-V16*-3/8	G3/8	G1/8	42	Ø30	42	28.5	G1/8	43	Ø4	9.5	119.4	26.2	22.7	51.7	35.1	34.6	9	58.2	0.2
MD1-V16*-6	Ø6	G1/8	47	Ø30	42	28.5	G1/8	43	Ø4	9.5	119.4	26.2	22.7	51.7	35.1	34.6	9	58.2	0.2
MD1-V16*-8	Ø8	G1/8	62	Ø30	42	28.5	G1/8	43	Ø4	9.5	119.4	26.2	22.7	51.7	35.1	34.6	9	58.2	0.2
MD1-V16*-10	Ø10	G1/8	67	Ø30	42	28.5	G1/8	43	Ø4	9.5	119.4	26.2	22.7	51.7	35.1	34.6	9	58.2	0.2

Pneumatically operated valves - dimensions





Mod.	A	B	C	D	E	F	G	I	L	M	N	O	P	R	S	T	V	W	SW	Weight (Kg)
MD1-V36	-	G1/8	42	Ø22	42	28.5	G1/8	43	Ø4	9.5	76.6	26.2	22.7	51.7	35.1	34.6	9	15.4	20	0.2
MD1-V36-1/8	G1/8	G1/8	42	Ø22	42	28.5	G1/8	43	Ø4	9.5	76.6	26.2	22.7	51.7	35.1	34.6	9	15.4	20	0.2
MD1-V36-1/4	G1/4	G1/8	42	Ø22	42	28.5	G1/8	43	Ø4	9.5	76.6	26.2	22.7	51.7	35.1	34.6	9	15.4	20	0.2
MD1-V36-3/8	G3/8	G1/8	42	Ø22	42	28.5	G1/8	43	Ø4	9.5	76.6	26.2	22.7	51.7	35.1	34.6	9	15.4	20	0.2
MD1-V36-6	Ø6	G1/8	47	Ø22	42	28.5	G1/8	43	Ø4	9.5	76.6	26.2	22.7	51.7	35.1	34.6	9	15.4	20	0.2
MD1-V36-8	Ø8	G1/8	62	Ø22	42	28.5	G1/8	43	Ø4	9.5	76.6	26.2	22.7	51.7	35.1	34.6	9	15.4	20	0.2
MD1-V36-10	Ø10	G1/8	67	Ø22	42	28.5	G1/8	43	Ø4	9.5	76.6	26.2	22.7	51.7	35.1	34.6	9	15.4	20	0.2

Series MD soft start valves

New

Ports with interchangeable cartridges: threaded (1/8, 1/4, 3/8) or integrated with super-rapid fitting for tube with Ø 6, 8 and 10 mm
Modular assembly

- Security function to maintain the command sequence
- Opening of the main air path at about 50% of the value of the inlet pressure
- Upper air intake to connect a pressure switch or to extend switching time
- Additional air intakes with the same characteristics of the outlet air (line)

The soft start valves are used to avoid the sudden movement of pneumatic actuators.
Feeding them pneumatically is enough to begin the phase of the pressure gradual increase in the system. By means of a regulation screw, it is possible to determine the time the valve needs to reach the 50% of the inlet pressure. Once this value is reached, the valve opens completely the passage.

The blanked connection on the upper side allows either the time increase to fill the system through a small additional volume or the connection of a pressure switch.

GENERAL DATA

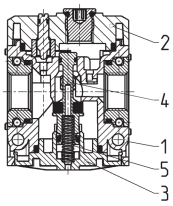
Construction	modular, compact, poppet-type
Materials	see TABLE OF MATERIALS (pag. 3/0.40.02)
Ports	with interchangeable cartridges: 1/8, 1/4 and 3/8 threaded, integrated with super-rapid fitting for tube with Ø 6, 8 and 10 mm
Fixing	in-line; wall-mounting by means of through hole in the body or with a support bracket
Operating temperature	-5°C ÷ 50°C
Operating pressure	2 ÷ 10 bar
Nominal flow at 6 bar with ΔP 1 bar	MD1-AV-1/8 = 1000 Nl/min MD1-AV-1/4 = 1350 Nl/min MD1-AV-3/8 = 1500 Nl/min
Fluid	compressed air

CODING EXAMPLE

MD	1	-	AV	-	1/8

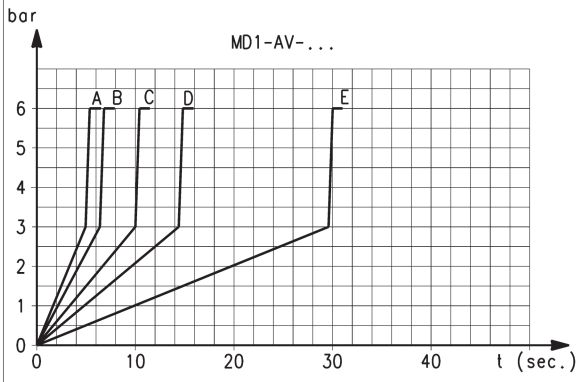
MD	SERIES
1	DIMENSION: 1 = 42 mm
AV	SOFT START VALVE
1/8	PORTS (IN - OUT)*: = without cartridges 1/8 = G1/8 1/4 = G1/4 3/8 = G3/8 6 = tube Ø6 8 = tube Ø8 10 = tube Ø10 * NOTE: if the inlet (IN) cartridge is different from the outlet (OUT) cartridge, both dimensions shall be indicated. Example: MD1-AV-1/4-1/8

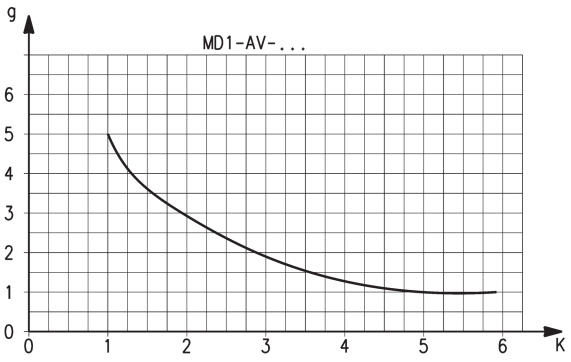
Series MD soft start valves - materials



PARTS	MATERIALS
1 = Body	Polyamide
2 = Covering	Polyamide
3 = Plug	Polyamide
4 = Poppet	Brass
5 = Spring	Stainless steel
Seals	NBR

MD1 DIAGRAMS FOR PRESSURISATION TIMES



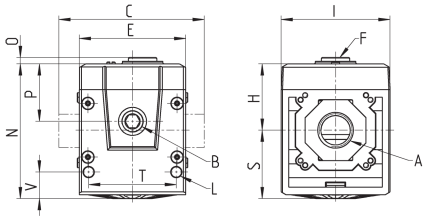


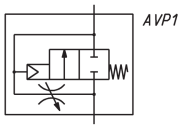
Pressurisation times as to the number of turns of the regulation screw, with downstream volume of 5 litres. A = 5 turns - B = 4 turns - C = 3 turns - D = 2 turns - E = 1 turn. K = number of turns of the regulation screw required to obtain the required pressurisation time with an inlet pressure of 6 bar. Variations of the inlet pressure can cause deviations of the pressure time by ± 20%. K = t/V where: V = volume of the downstream system in litres; t = desired pressuring time in seconds.

EXAMPLE:
V = 5 litres
t = 16 seconds
K = 16/5 = 3,2

Using in the graph this value K, the number of turns of the regulation screw will be approx. 0,8.

Series MD soft start valves - dimensions





Mod.	A	B	C	E	F	H	I	L	N	O	P	S	T	V	Weight (Kg)
MD1-AV	-	G1/8	42	42	G1/8	26.2	43	Ø4	53.2	2.5	22.7	27	34.6	10.5	0.2
MD1-AV-1/8	G1/8	G1/8	42	42	G1/8	26.2	43	Ø4	53.2	2.5	22.7	27	34.6	10.5	0.2
MD1-AV-1/4	G1/4	G1/8	42	42	G1/8	26.2	43	Ø4	53.2	2.5	22.7	27	34.6	10.5	0.2
MD1-AV-3/8	G3/8	G1/8	42	42	G1/8	26.2	43	Ø4	53.2	2.5	22.7	27	34.6	10.5	0.2
MD1-AV-6	Ø6	G1/8	47	42	G1/8	26.2	43	Ø4	53.2	2.5	22.7	27	34.6	10.5	0.2
MD1-AV-8	Ø8	G1/8	62	42	G1/8	26.2	43	Ø4	53.2	2.5	22.7	27	34.6	10.5	0.2
MD1-AV-10	Ø10	G1/8	67	42	G1/8	26.2	43	Ø4	53.2	2.5	22.7	27	34.6	10.5	0.2

Series MD take-off blocks

New

Module with interchangeable cartridges:
threaded (1/8, 1/4, 3/8) or integrated with super-rapid fitting for tube with Ø 6, 8 and 10 mm (5-way version)
Intermediate joining cartridge (3-way version)

» Compact design
» Utilities orientation

The take-off module enables to draw air from the air treatment group, both in middle and end position. The same operation, although in a more limited way, can be carried out with the intermediate cartridge.

GENERAL DATA

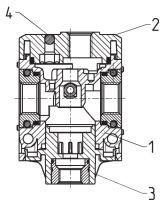
Construction	modular, compact
Materials	see TABLE OF MATERIALS (pag. 3/0.45.02)
Ports - Take-off block	with interchangeable cartridges: 1/8, 1/4 and 3/8 threaded or integrated with super-rapid fitting for tube with Ø 6, 8 and 10 mm
Ports - Joining cartridge with derivation	3/8
Derivations - Take-off block	4x 1/8
Derivations - Joining cartridge	2x 1/8
Fixing - Take-off block	in-line; wall-mounting by means of through holes in the body or with a support bracket
Operating temperature	-5°C ÷ 50°C
Operating pressure	0 ÷ 16 bar
Nominal flow at 6 bar with Δp = 1 bar	MD1-B00-1/8 = 1300 Nl/min MD1-B00-1/4 = 2300 Nl/min MD1-B00-3/8 = 3400 Nl/min
Fluid	compressed air

CODING EXAMPLE

MD	1	-	B	00	-	1/8

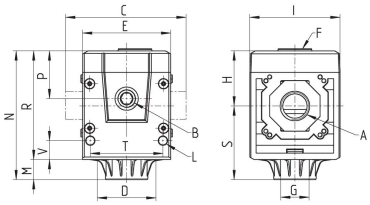
MD	SERIES
1	DIMENSION: 1 = 42 mm
B	TAKE-OFF BLOCK
00	DESIGN TYPE: 00 = standard derivation
1/8	PORTS (IN - OUT)*: = without cartridges 1/8 = G1/8 1/4 = G1/4 3/8 = G3/8 6 = tube Ø6 8 = tube Ø8 10 = tube Ø10 * NOTE: if the inlet (IN) cartridge is different from the outlet (OUT) cartridge, both dimensions shall be indicated. Example: MD1-B00-3/8-10

Series MD take-off block - materials



PARTS	MATERIALS
1 = Body	Polyamide
2 = Covering	Polyamide
3 = Plug	Polyamide
4 = Sphere	Stainless steel
Seals	NBR

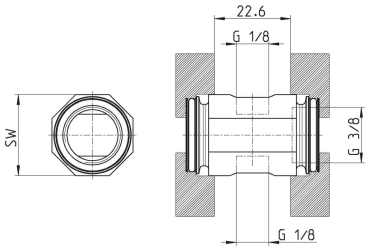
Series MD take-off block - dimensions



Mod.	A	B	C	D	E	F	G	H	I	L	M	N	P	R	S	T	V	Weight (Kg)
MD1-B00	-	G1/8	42	28.5	42	G1/8	G1/8	26.2	43	Ø4	9.5	61.2	22.7	51.7	35.1	34.6	9	0.2
MD1-B00-1/8	G1/8	G1/8	42	28.5	42	G1/8	G1/8	26.2	43	Ø4	9.5	61.2	22.7	51.7	35.1	34.6	9	0.2
MD1-B00-1/4	G1/4	G1/8	42	28.5	42	G1/8	G1/8	26.2	43	Ø4	9.5	61.2	22.7	51.7	35.1	34.6	9	0.2
MD1-B00-3/8	G3/8	G1/8	42	28.5	42	G1/8	G1/8	26.2	43	Ø4	9.5	61.2	22.7	51.7	35.1	34.6	9	0.2
MD1-B00-6	Ø6	G1/8	47	28.5	42	G1/8	G1/8	26.2	43	Ø4	9.5	61.2	22.7	51.7	35.1	34.6	9	0.2
MD1-B00-8	Ø8	G1/8	62	28.5	42	G1/8	G1/8	26.2	43	Ø4	9.5	61.2	22.7	51.7	35.1	34.6	9	0.2
MD1-B00-10	Ø10	G1/8	67	28.5	42	G1/8	G1/8	26.2	43	Ø4	9.5	61.2	22.7	51.7	35.1	34.6	9	0.2

Intermediate joining cartridge with derivation Mod. MD1-B

The kit is supplied with:
1x intermediate joining cartridge with derivation
4x zinc-plated white special screws Ø4,5 TC/RC



Mod.
MD1-B

ACCESSORIES FOR SERIES MD

Threaded cartridges

Integrated cartridges with super-rapid fitting

Intermediate joining cartridge Mod. MD1-C

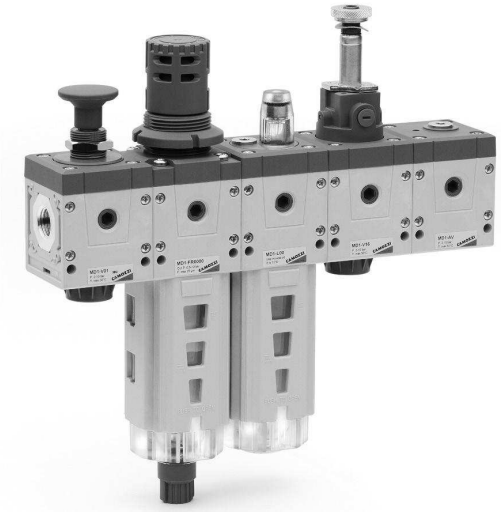
Screws for wall mounting Mod. MD1-D

Rear bracket Mod. MD1-ST/1

Mounting bracket Mod. C114-ST

Mounting bracket Mod. C114-ST/1

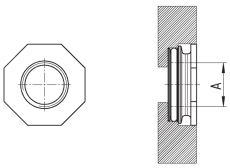
Mounting bracket Mod. C114-ST/2



Threaded cartridges Mod. MD1-A-...

New

The kit is supplied with:
2x nickel-plated threaded cartridges
4x special white zinc-plated screws Ø4,5 TC/RC

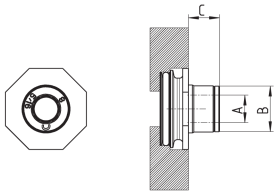


DIMENSIONS	
Mod.	A
MD1-A-1/8	G1/8
MD1-A-1/4	G1/4
MD1-A-3/8	G3/8

Integrated cartridges with super-rapid fitting Mod. MD1-A-...

New

The kit is supplied with:
2x integrated nickel-plated cartridges with super-rapid fitting
4x special white zinc-plated screws Ø4,5 TC/RC

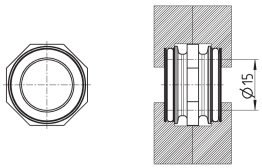


DIMENSIONS			
Mod.	A	B	C
MD1-A-6	Ø6	12.7	8.5
MD1-A-8	Ø8	14.2	10
MD1-A-10	Ø10	16.5	12.5

Intermediate joining cartridge Mod. MD1-C

New

The kit is supplied with:
1x intermediate joining cartridge
4x special white zinc-plated screws Ø4,5 TC/RC



Mod.
MD1-C

Screws for wall mounting Mod. MD1-D

New

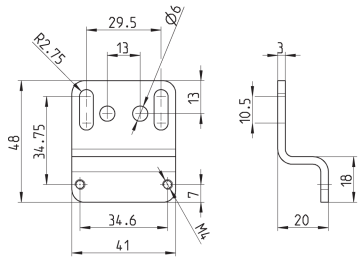
The kit is supplied with:
2x white zinc-plated screws M4x50

Mod.
MD1-D

Rear bracket Mod. MD1-ST/1

New

The kit is supplied with:
1x zinc-plated bracket
2x white zinc-plated screws M4x50

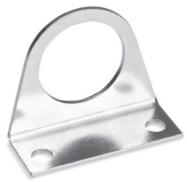


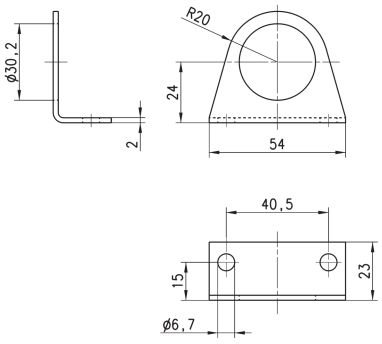
Mod.
MD1-ST/1

Mounting bracket Mod. C114-ST

For regulators and filter-regulators (G1/4 - G1/8)

The kit is supplied with:
1x zinc-plated steel bracket



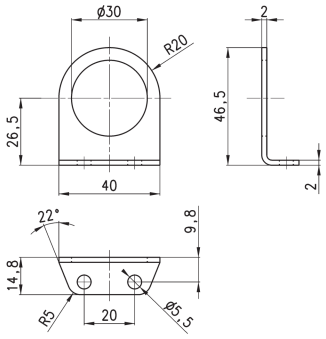


Mod.
C114-ST

Mounting bracket Mod. C114-ST/1

For regulators and filter-regulators
(G1/4 - G1/8)

The kit is supplied with:
1x zinc-plated steel bracket

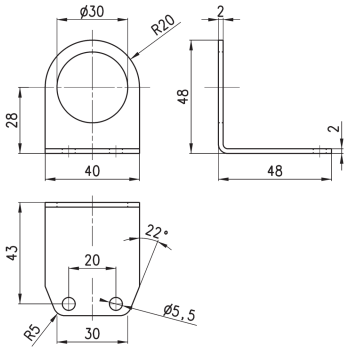


Mod.
C114-ST/1

Mounting bracket Mod. C114-ST/2

For regulators and filter-regulators
(G1/4 - G1/8)

The kit is supplied with:
1x zinc-plated steel bracket



Mod.
C114-ST/2

Series MD assembled FRL

New

Ports with interchangeable cartridges: threaded (1/8, 1/4, 3/8) or integrated with super-rapid fitting for tube with Ø 6, 8 and 10 mm
Modular assembly

- Compact design
- Optimized dimensions
- Great reliability
- Easy and quick maintenance
- Reduced weight
- Quick fixing
- Wide range of functions
- Additional air intakes

The Series MD offers multi-sector solutions that ensure saving in terms of installation time, space and costs.
The various functions can be connected by means of intermediate junctioning cartridges.
The regulator and the valves can be adjusted so as to have the regulation devices or the actuation in front or lower position.
There are different types of wall mounting available.

Thanks to the solution adopted for the pneumatic connection, it is possible to equip the same element with interchangeable cartridges that can either be threaded, or with an integrated super-rapid fitting, both types available in different sizes. Intermediate cartridges can be also integrated to join multiple functions or with derivation to draw air.

GENERAL DATA

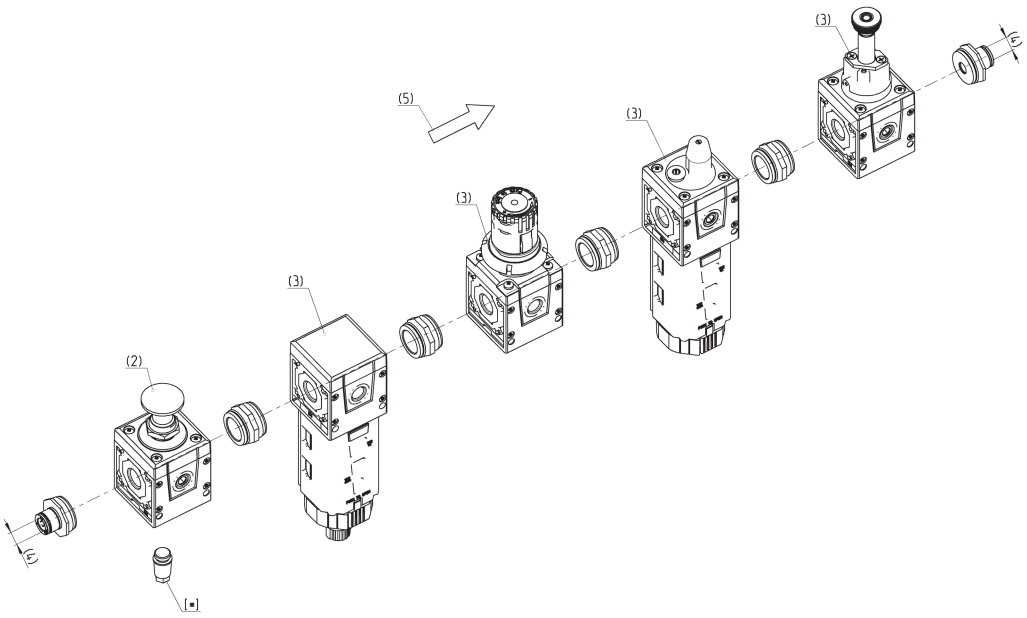
Construction	modular, compact
Materials	see catalogue pages referring to the single component
Ports	with interchangeable cartridges: 1/8, 1/4 and 3/8 threaded or integrated with super-rapid fitting for tube with Ø 6, 8 and 10 mm
Fixing	vertical in-line; wall-mounting by means of through holes in the body or with a support bracket; panel mounting
Operating temperature	-5°C ÷ 50°C up to 16 bar (according to the single component characteristics)

CONFIGURATION OF SERIES MD ASSEMBLED GROUPS

TO CONFIGURE THE SERIES MD ASSEMBLED GROUPS, USE THE HERE BELOW EXAMPLE AND THE RELATED LEGEND ON PAGE 3/0.50.03.

Configuration of the assembled group in the drawing below:

MD1-V01+A26F000R000L00V16-8



	(1)		(2)	[*]	(3)	[*]		(4)		(5)
MD	1	-	V01	+A26	F000					
					R004					
					L00					
nx										
					V16		-	8		
									-	

CONFIGURATOR OF SERIES MD ASSEMBLED GROUPS

MD	1	-	V01	F000	R000	L00	V16	-	8	-	LH

MD		SERIES
1	(1)	DIMENSION: 1 = 42 mm
-		
V01	(2)	MODULE + [*] (to configure the modules, see the single components pages): F... = Filter FC... = Coalescing filter FCA... = Activated carbons filter R... = Pressure regulator L... = Lubricator FR... = Filter-Regulator V... = Lockable isolation valve AV... = Soft start valve B... = Take-off block
	[*]	The following ACCESSORIES can be added after every single module: REGULATOR, FILTER-REGULATOR AND MANIFOLD REGULATOR +A01 = M043-P04 (pressure gauge) +A02 = M043-P06 (pressure gauge) +A03 = M043-P10 (pressure gauge) +A04 = M043-P12 (pressure gauge) +A05 = SWCN-P10-P3-2 (pressure switch) +A06 = SWCN-P10-P4-2 (pressure switch) +A07 = SWCN-P10-P4-M (pressure switch) +A08 = PG010-PB-1/8 (pressure gauge) LOCKABLE ISOLATION VALVE ...V01 / V16 / V36 +A25 = 2901 1/8 (silencier) +A26 = 2921 1/8 (silencier) - recommended choice +A27 = 2931 1/8 (silencier) +A28 = 2938 1/8 (silencier) +A01 = M043-P04 (pressure gauge) +A02 = M043-P06 (pressure gauge) +A03 = M043-P10 (pressure gauge) +A04 = M043-P12 (pressure gauge) +A05 = SWCN-P10-P3-2 (pressure switch) +A06 = SWCN-P10-P4-2 (pressure switch) +A07 = SWCN-P10-P4-M (pressure switch) +A08 = PG010-PB-1/8 (pressure gauge) LOCKABLE ISOLATION VALVE...V16 +A35 = U7H (coils 12V DC) +A36 = U77 (coils 24V DC) +A37 = U79 (coils 48V DC) +A38 = U7K (coils 110V AC) +A39 = U7J (coils 230V AC) +A40 = G7H (coils 12V DC) +A41 = G77 (coils 24V DC) +A42 = G79 (coils 48V DC) +A43 = G7K (coils 110V AC) +A44 = G7J (coils 230V AC) SOFT START VALVE AND 5-WAY TAKE-OFF BLOCK +A15 = PM11-NC (pressure switch mounted on top) +A16 = PM11-NA (pressure switch mounted on top) +A17 = PM681-1 (pressure switch mounted on top) +A18 = PM681-3 (pressure switch mounted on top) +A19 = PM11-SC + S2520 1/8-1/4 (pressure switch with fitting mounted on top) +A05 = SWCN-P10-P3-2 (front mounted pressure switch) +A06 = SWCN-P10-P4-2 (front mounted pressure switch) +A07 = SWCN-P10-P4-M (front mounted pressure switch) +A08 = PG010-PB-1/8 (front mounted pressure switch) INTERMEDIATE JOINING CARTRIDGE WITH DERIVATION (MD1-B) +A17 = PM681-1 (pressure switch mounted on top) +A18 = PM681-3 (pressure switch mounted on top)
F000	(3)	see MODULE (2) + [*]
R000	(3)	see MODULE (2) + [*]
L00	(3)	see MODULE (2) + [*]
V16	(3)	see MODULE (2) + [*]
-		
8	(4)	PORTS (IN - OUT)**: = without cartridges 1/8 = G1/8 1/4 = G1/4 3/8 = G3/8 6 = tube Ø6 8 = tube Ø8 10 = tube Ø10
-		
LH	(5)	FLOW DIRECTION: = from left to right (standard) LH = from right to left

nx = the combination “(3) + (*)” can be repeated an odd (“n”) number of times

** NOTE: if the inlet (IN) cartridge is different from the outlet (OUT) cartridge, both dimensions shall be indicated. Example: MD1-V01F000R000-3/8-8