Modular FRL
Series MX

New Series **MX**, *the best way to treat air*

The **Series MX** enlarges the Camozzi range of components for air treatment with a complete series of modular FRL that have been specifically designed to offer high performance and absolute reliability in every sector at an excellent quality-price level. Several patented innovations have also been introduced which save installation and maintenance time.

General data

Clean design

The new design, with compact dimensions and reduced weight, makes the Series MX particularly suitable for use in assembly lines and robotic systems.

Wide range of filters

5 different types of filtering elements: 25 μm, 5 μm and 0,01 μm,, coalescing filter of 1 μm and activated carbon filter.
Makes the Series MX suitable for applications in very demanding fields such as the machine tools and the food sectors.

Strong and light

The combination of materials: an aluminium body with a composite outer cover, and a polycarbonate bowl also with a full composite cover or shroud guarantee both rugged durability and lightweight, essential conditions for their use in the graphics and printing fields.

Safety guaranteed

For an even higher level of safety in manufacturing plants, a system of anti-tampering for the pressure regulation has been incorporated into the regulator units.
This solution suits perfectly the application requirements of the automotive field.

Easy to assembly

Thanks to an easier connection system among bodies with the help of reversible/symmetrical clamps it is possible the removal and replacement of one element within an FRL group without disassembling the other components and performing field-maintenance quickly.

The advantages

> High performances
> Compact and light
> Anti-tampering solution (regulator and filter-regulator)
> Easy and fast maintenance

Configure your assembled group on-line at:
http://catalogue.camozzi.com/configurators/mx.

Filters
Series MX

New

Ports G3/4 - G1
Modular
Bowl with technopolymer cover and bayonet-type mounting

- Removal of impurities and condensate
- High flow with minimal pressure decreases
- Cartridge filters of 25 or 5 µm
- Manual or automatic condensate drain
- Bowl locking mechanism reducing the risk of accidents

MX3 is the new series of air treatment components realized by Camozzi, characterized by a modern, linear and compact design, offering high performances. The perfect integration between metal alloys and technopolymers has allowed the realization of a reliable product, light and strong at the same time. Thanks to a new concept of modularity, moreover, the mounting of components has become easier.

The Series MX has been realized to offer a multi-sector solution that guarantees saving in terms of installation time, space and costs.
A special configurator, available on Camozzi website at http://catalogue.camozzi.com (sec. Configurators), allows the customer to choose the most suitable solution for his application, selecting single components or by configuring assembled FRLs.

GENERAL DATA

Construction	modular, compact with filtering element in HDPE
Materials	see TABLE OF MATERIALS (pag. 3/0.05.02)
Ports	G3/4 - G1
Condensate capacity	85 cc
Weight	0,720 kg
Mounting	vertical in-line wall-mounting (by means of clamps)
Operating temperature	-5°C ÷ 50°C at 16 bar (with the dew point of the fluid lower than 2°C at the min. working temperature) 50°C ÷ 60°C at 10 bar (with the dew point of the fluid lower than 2°C at the min. working temperature)
Porosity of filtering element	25 µm (standard) 5 µm
Draining of condensate	manual - semi automatic(standard) automatic
Operating pressure	0,3 ÷ 16 bar (with automatic drain 1,5 ÷ 12 bar)
Nominal flow	see FLOW DIAGRAMS (pag. 3/0.05.03)
Fluid	compressed air

CODING EXAMPLE

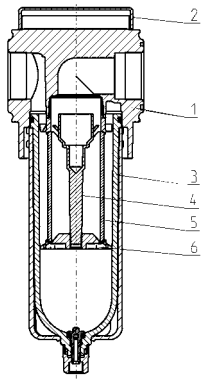
MX	3	-	3/4	-	F	0	0

MX	SERIES
3	SIZE: 3 = G3/4 - G1
3/4	PORT: 3/4 = G3/4 1 = G1
F	FILTER
0	FILTERING ELEMENT: 0 = 25 µm (standard) 1 = 5 µm
0	DRAINING OF CONDENSATE: 0 = semiautomatic-manual drain (standard) 3 = automatic drain 8 = no drain with port G1/8

For the assembly of a single component with fixing flanges or wall-mounting, see the section “FRL Series MX Assembled” (pag. 3/0.50.01)

Filters Series MX - materials

New

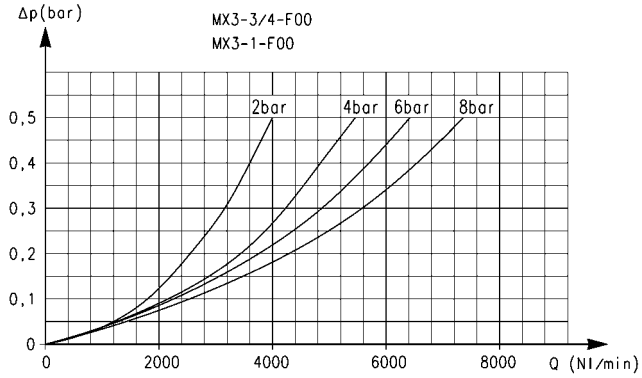


PARTS	MATERIALS
1 = Body	Aluminium
2 = Covering	Polyamide
3 = Bowl with technopolymer cover	Polycarbonate/Polyamide
4 = Valve-guide	Polyacetal
5 = Filtering element	Polyethylene
6 = Separation deflector	Polyacetal
Seals	NBR

3

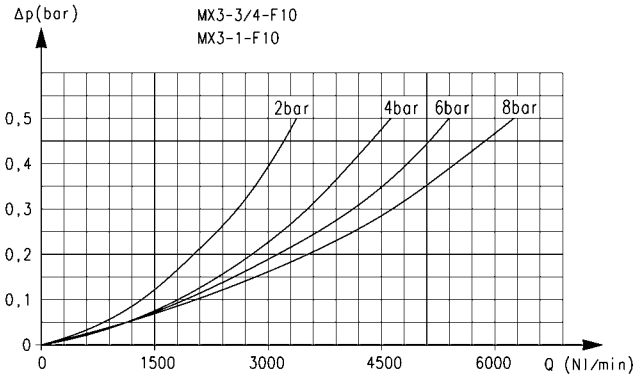
TREATMENT

FLOW DIAGRAMS



Reference diagram for models with filtering element = 25 µm

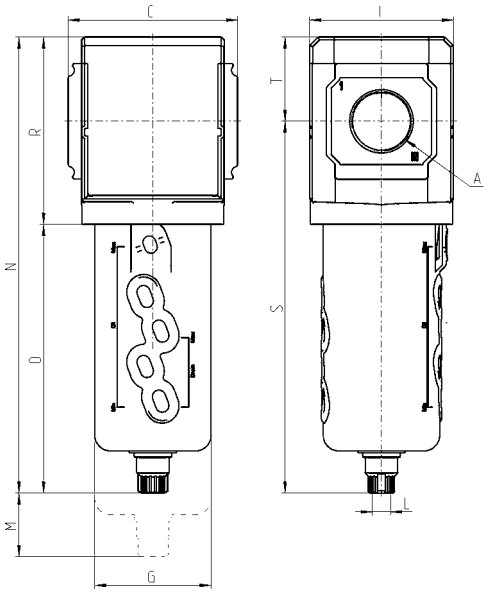
ΔP = Pressure drop
Q = Flow



Reference diagram for models with filtering element = 5 µm

ΔP = Pressure drop
Q = Flow

Filters Series MX - dimensions



Mod.	A	C	G	I	L	M	N	O	R	S	T
MX3-3/4-F00	G3/4	89,5	61,5	76	G1/8	75	241	142	99	196,5	44,5
MX3-1-F00	G1	89,5	61,5	76	G1/8	75	241	142	99	196,5	44,5

Coalescing filters Series MX

New

Ports G3/4 - G1
Modular
Bowl with technopolymer cover and bayonet-type mounting

- High performance and compressed air purity
- Air quality according to ISO 8573-1 standard
- Cartridge filters 1 or 0,01 µm
- Manual/automatic condensate drain
- Bowl locking mechanism reducing the risk of accidents

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The Series MX has been realized to offer a multi-sector solution that guarantees saving in terms of installation time, space and costs. A special configurator, available on Camozzi website at http://catalogue.camozzi.com (sec. Configurators), allows the customer to choose the most suitable solution for his application, selecting single components or by configuring assembled FRLs.

GENERAL DATA

Construction	modular, compact	
Materials	see TABLE OF MATERIALS (pag. 3/0.10.02)	
Ports	G3/4 - G1	
Condensate capacity	85 cc	
Weight	0,780 kg	
Mounting	vertical in-line wall-mounting (by means of clamps)	
Operating temperature	-5°C ÷ 50°C at 16 bar (with the dew point of the fluid lower than 2°C at the min. working temperature) 50°C ÷ 60°C at 10 bar (with the dew point of the fluid lower than 2°C at the min. working temperature)	
Draining of condensate	manual - semiautomatic (standard) automatic	
Operating pressure	0,3 ÷ 16 bar (with automatic drain 1,5 ÷ 12 bar)	
Nominal flow	see FLOW DIAGRAMS (pag. 3/0.10.03)	
Porosity of filtering element	0,01 µm	1 µm
Residual oil content with inlet at 3 mg/m3	< 0,01mg/m³	< 0,1mg/m³
Oil retain efficiency	99,80%	97%
Particles retain efficiency	99,99999%	99,999%
Fluid	compressed air	
Pre-filtering with filtering element of 1 µm	it is recommended to use a filter of 5 µm	
Pre-filtering with filtering element of 0,01 µm	it is recommended to use a filter with residual oil of 0,1 mg/m³	

CODING EXAMPLE

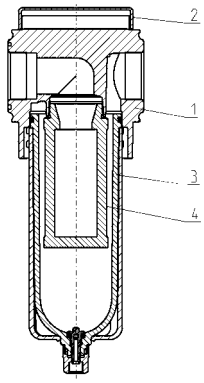
MX	3	-	3/4	-	F	C	0	0

MX	SERIES
3	SIZE: 3 = G3/4 - G1
3/4	PORTS: 3/4 = G3/4 1 = G1
FC	COALESCING FILTER
0	FILTERING ELEMENT: 0 = 0,01 µm (standard) 1 = 1 µm
0	DRAINING OF CONDENSATE: 0 = semiautomatic-manual drain (standard) 3 = automatic drain 8 = no drain with port G1/8

For the assembly of a single component with fixing flanges or wall-mounting, see the section “FRL Series MX Assembled” (pag. 3/0.50.01)

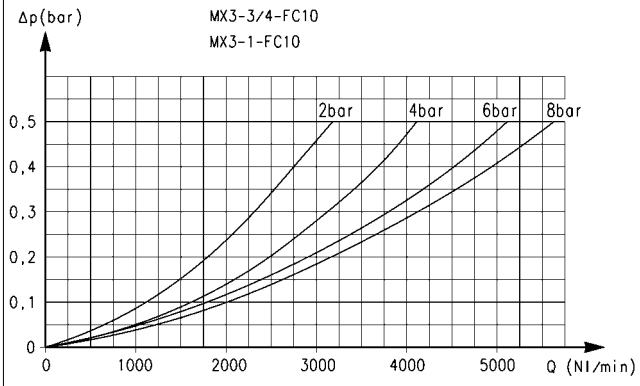
Coalescing filters Series MX - materials

New



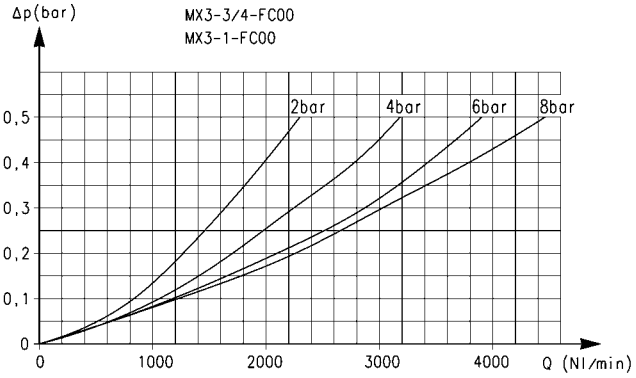
PARTS	MATERIALS
1 = Body	Aluminium
2 = Covering	Polyamide
3 = Bowl with technopolymer cover	Polycarbonate/Polyamide
4 = Filtering element	Borosilicate
Seals	NBR

FLOW DIAGRAMS



Reference diagram for models with filtering element = 1 µm

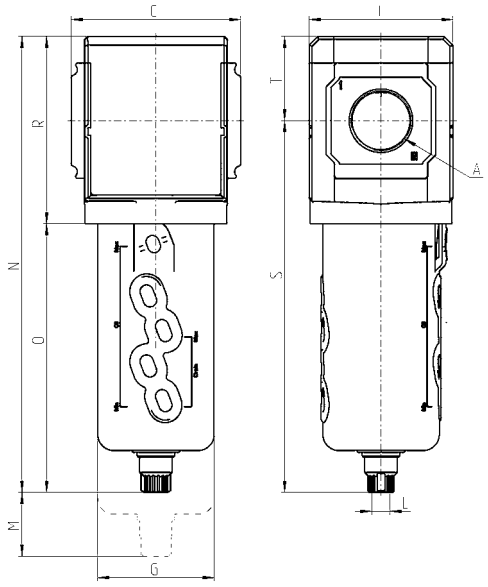
ΔP = Pressure drop
Q = Flow



Reference diagram for models with filtering element = 0,01 µm

ΔP = Pressure drop
Q = Flow

Coalescing filters Series MX - dimensions



Mod.	A	C	G	I	L	M	N	O	R	S	T
MX3-3/4-FC00	G3/4	89,5	61,5	76	G1/8	75	241	142	99	196,5	44,5
MX3-1-FC00	G1	89,5	61,5	76	G1/8	75	241	142	99	196,5	44,5

Activated carbon filters Series MX

New

Ports G3/4 - G1
Modular
Bowl with technopolymer cover and bayonet-type mounting

- Removal of compressed air oil, liquid, and gas components through the active carbons
- Air quality conforming to ISO 8573-1 standard, up to class 1.7.1
- Bowl locking mechanism reducing the risk of accidents

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GENERAL DATA

Construction	modular, compact with filtering element in HDPE
Materials	see TABLE OF MATERIALS (pag. 3/0.15.02)
Ports	G3/4 - G1
Weight	0,8 kg
Mounting	vertical in-line wall-mounting (by means of clamps)
Operating temperature	10°C ÷ 40°C (t max = 60°C)
Draining of condensate	NO DRAINING
Operating pressure	0,3 ÷ 16 bar
Nominal flow	see FLOW DIAGRAMS (pag. 3/0.15.03)
Filtering element	active carbon
Residual oil content	< 0,003 mg/m³
Fluid	compressed air
Pre-filtering	it is recommended to use a filter with residual oil of 0,01mg/m³

CODING EXAMPLE

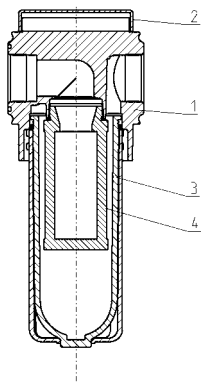
MX	3	-	3/4	-	FCA

MX	SERIES
3	SIZE: 3 = G3/4 - G1
3/4	PORT: 3/4 = G3/4 1 = G1
FCA	ACTIVATED CARBON FILTER

For the assembly of a single component with fixing flanges or wall-mounting, see the section “FRL Series MX Assembled” (pag. 3/0.50.01)

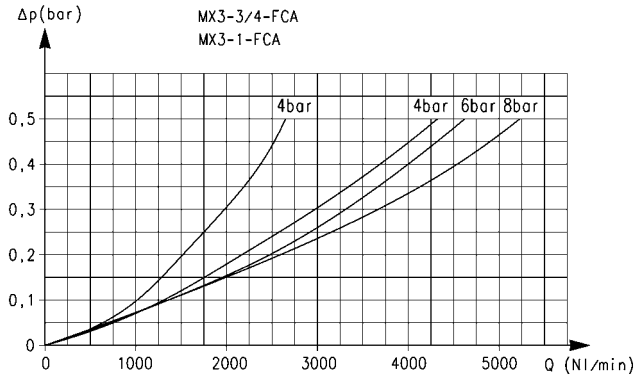
Activated carbon filters Series MX - materials

New



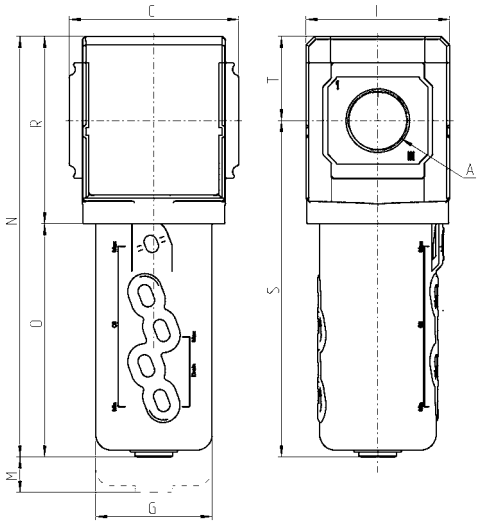
PARTS	MATERIALS
1 = Body	Aluminium
2 = Covering	Polyamide
3 = Bowl with technopolymer cover	Polycarbonate/Polyamide
4 = Filtering element	Active carbon
Seals	NBR

FLOW DIAGRAMS



ΔP = Pressure drop
Q = Flow

Activated carbon filters Series MX - dimensions



Mod.	A	C	G	I	M	N	O	R	S	T
MX3-3/4-FCA	G3/4	89,5	61,5	76	107	222	123	99,0	177,5	44,5
MX3-1-FCA	G1	89,5	61,5	76	107	222	123	99,0	177,5	44,5

Pressure regulators Series MX

New

Ports G3/4 - G1
Modular
Available with built-in pressure gauges or with ports for gauges

- Minimal pressure decreases
- Knob with closure
- Tamper-proof system (lockable regulator)
- Integral return exhaust (relieving)

The availability of constant values of the secondary pressure ensures performance optimization and energy saving. The tamper-proof system allows to adjust pressure safely through 2 intervals with primary pressure compensation. All regulators are equipped with an integrated locking system and built-in pressure gauges for a more compact product. The regulators Series MX are suitalbe also for panel mountings.

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GENERAL DATA

Construction	modular, compact, diaphragm type
Materials	see TABLE OF MATERIALS (pag. 3/0.20.02)
Ports	G3/4 - G1
Weight	1,05 kg
Mounting	vertical in-line wall-mounting (by means of clamps) panel mouting
Operating temperature	-5°C ÷ 50°C at 16 bar (with the dew point of the fluid lower than 2°C at the min. working temperature) 50°C ÷ 60°C at 10 bar (with the dew point of the fluid lower than 2°C at the min. working temperature)
Inlet pressure	0 ÷ 16 bar
Outlet pressure	0,5 ÷ 10 bar 0 ÷ 4 bar
Overpressure exhaust	with relieving (standard) without relieving
Nominal flow	see FLOW DIAGRAMS (pag. 3/0.25.01)
Fluid	compressed air
Pressure gauge	version with built-in pressure gauge (standard) version with ports for pressure gauge (G1/4 ports)

CODING EXAMPLE

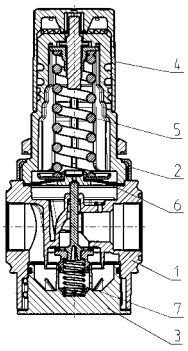
MX	3	-	3/4	-	R	0	0	4

MX	SERIES
3	SIZE: 3 = G3/4 - G1
3/4	PORT: 3/4 = G3/4 1 = G1
R	PRESSURE REGULATOR
0	OPERATING PRESSURE (1 bar = 14,5 psi) 0 = 0,5 ÷ 10 bar (standard) 4 = 0 ÷ 4 bar
0	DESIGN TYPE: 0 = relieving (standard) 1 = without relieving
4	PRESSURE GAUGE: 0 = without pressure gauge (with threaded port for gauges) 2 = with built-in pressure gauge 0-6 4 = with built-in pressure gauge 0-12 (standard)

For the assembly of a single component with fixing flanges or wall-mounting, see the section “FRL Series MX Assembled” (pag. 3/0.50.01)

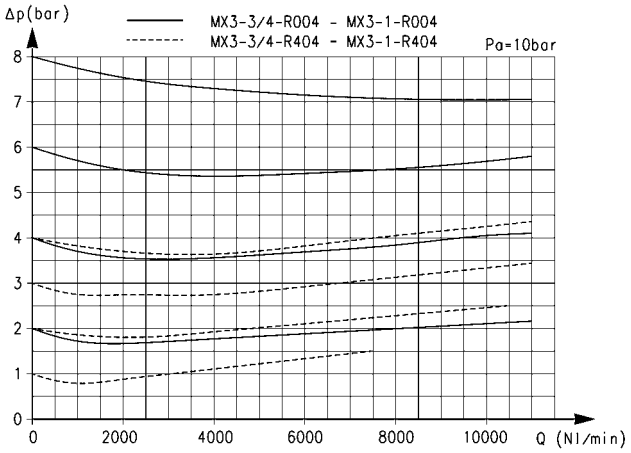
Pressure regulators Series MX - materials

New



PARTS	MATERIALS
1 = Body	Aluminium
2 = Covering	Polyamide
3 = Valve holder plug	Polyamide
4 = Regulator knob	Polyamide
5 = Upper spring	Zinc-plated steel
6 = Diaphragm	NBR
7 = Lower spring	Stainless steel
Seals	NBR

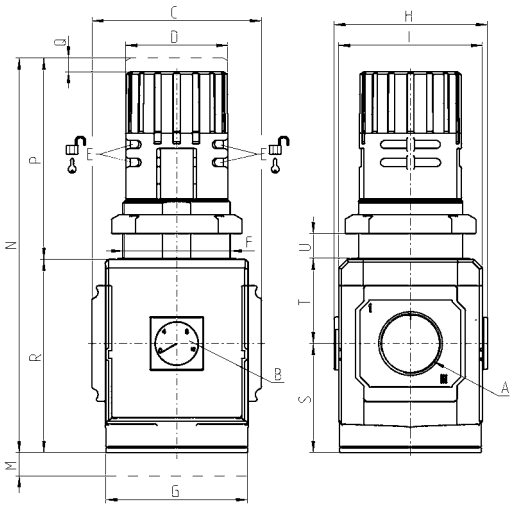
FLOW DIAGRAMS



ΔP = Pressure drop
Q = Flow

Pa = Inlet pressure

Pressure regulators Series MX - dimensions



Mod.	A	B (bar)	C	D	E	F	G	H	I	M	N	P	Q	R	S	T	U
MX3-3/4-R004	G3/4	0 ÷ 12	89,5	54	Ø4	M57x1,5	75	81	76	45	206	104	5	102	57,5	44,5	0 ÷ 20
MX3-1-R004	G1	0 ÷ 12	89,5	54	Ø4	M57x1,5	75	81	76	45	206	104	5	102	57,5	44,5	0 ÷ 20

Lubricators Series MX

New

Ports G3/4 - G1
Modular
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 mechanism reducing the risk of accidents

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These proportional lubricators enable a precision metering.

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GENERAL DATA

Construction	modular, compact
Materials	see TABLE OF MATERIALS (pag. 3/0.25.02)
Ports	G3/4 - G1
Oil capacity	170 cc
Weight	0,75 kg
Oil refilling	even during use
Mounting	vertical in-line wall-mounting (by means of clamps)
Operating temperature	-5°C ÷ 50°C at 16 bar (with the dew point of the fluid lower than 2°C at the min. working temperature) 50°C ÷ 60°C at 10 bar (with the dew point of the fluid lower than 2°C at the min. working temperature)
Oil for lubrication	da 3°E ÷ 10°E (ask our engineers)
Operating pressure	0 ÷ 16 bar
Min. air consumption for lubrication at 1 bar **Min. air consumption for lubrication at 6 bar**	50 Nl/min 95 Nl/min
Nominal flow	see FLOW DIAGRAMS (pag 3/0.25.03)

CODING EXAMPLE

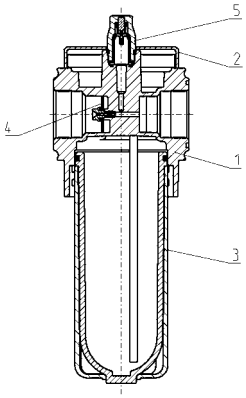
MX	3	-	3/4	-	L	00

MX	SERIES
3	SIZE: 3 = G3/4 - G1
3/4	PORT: 3/4 = G3/4 1 = G1
L	LUBRICATOR
00	DESIGN TYPE: 00 = atomized oil

For the assembly of a single component with fixing flanges or wall-mounting, see the section “FRL Series MX Assembled” (pag. 3/0.50.01)

Lubricators Series MX - materials

New

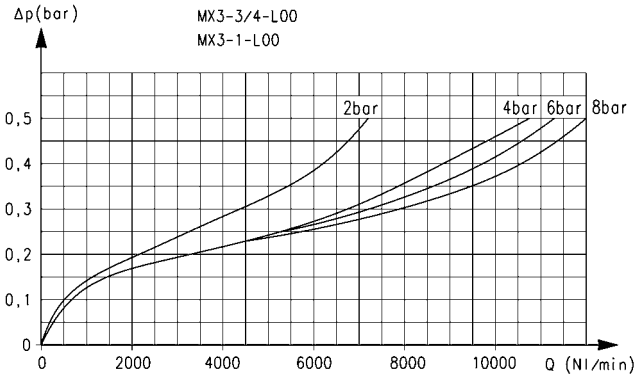


PARTS	MATERIALS
1 = Body	Aluminium
2 = Covering	Polyamide
3 = Bowl with technopolymer cover	Polycarbonate/Polyamide
4 = Diaphragm	NBR
5 = Viewer	Polyamide
Seals	NBR

3

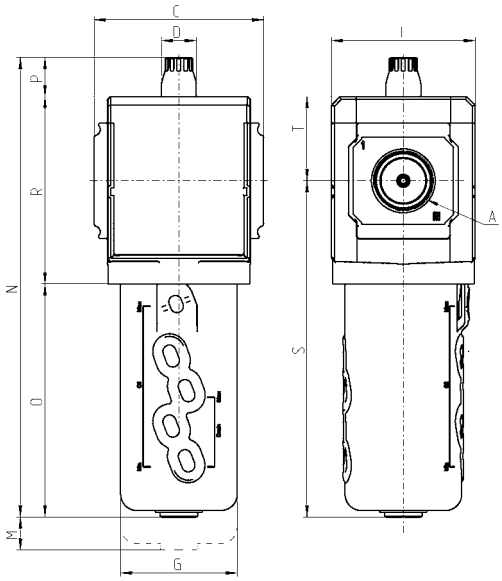
TREATMENT

FLOW DIAGRAMS



ΔP = Pressure drop
Q = Flow

Lubricators Series MX - dimensions



Mod.	A	C	D	G	I	M	N	O	P	R	S	T
MX3-3/4-L00	G3/4	89,5	18,5	61,5	76	100	243	123	21	99	178	44,5
MX3-1-L00	G1	89,5	18,5	61,5	76	100	243	123	21	99	178	44,5

Filter-regulators Series MX

New

Ports G3/4 - G1
Modular
Bowl with technopolymer cover and bayonet-type mounting

- Filtering between 25 µm or 5 µm
- Available versions: with built-in gauge or with ports for gauge
- Lockable knob with closure
- Bowl locking mechanism
- reducing the risk of accidents

Filter-regulators Series MX integrate filter and pressure reducer in one unit. They are, therefore, compact and suitable for pre-filtering functions.
Available with or without draining (relieving), they are equipped with a valve diaphragm for a direct pressure regulation and with an integrated condensate drainer, manual or automatic. Moreover, they are equipped with a built-in pressure gauge.

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GENERAL DATA

Construction	modular, compact with filtering element in HDPE
Materials	see TABLE OF MATERIALS (pag. 3/0.30.02)
Ports	G3/4 - G1
Condensate capacity	85 cc
Weight	1,250 kg
Mounting	vertical in-line wall-mounting (by means of clamps) panel mounting
Operating temperature	-5°C ÷ 50°C at 16 bar (with the dew point of the fluid lower than 2°C at the min. working temperature) 50°C ÷ 60°C at 10 bar (with the dew point of the fluid lower than 2°C at the min. working temperature)
Porosity of filtering element	25 µm (standard) 5 µm
Draining of condensate	manual - semiautomatic (standard)
Operating pressure	0,3 ÷ 16 bar ((with automatic drain 1,5 ÷ 12)
Nominal flow	see FLOW DIAGRAMS (pag. 3/1.0.30.03)
Fluid	compressed air
Pressure gauge	version with built-in pressure gauge (standard) version with ports for pressure gauge (G1/4 ports)

CODING EXAMPLE

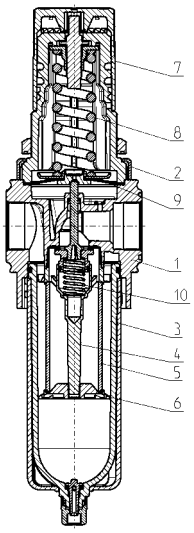
MX	3	-	3/4	-	FR	0	0	0	4

MX	SERIES
3	SIZE: 3 = G3/4 - G1
3/4	PORT: 3/4 = G3/4 1 = G1
FR	FILTER-REGULATOR
0	FILTERING ELEMENT WITH DESIGN TYPE: 0 = 25 µm with relieving (standard) 1 = 5 µm with relieving 2 = 25 µm without relieving 3 = 5 µm without relieving
0	DRAINING OF CONDENSATE: 0 = manual semiautomatic drain (standard) 3 = automatic drain 8 = no drain with port G1/8
0	OPERATING PRESSURE: 0 = 0,5 ÷ 10 bar (standard) 4 = 0 ÷ 4 bar
4	PRESSURE GAUGE: 0 = without pressure gauge(with threaded port) 2 = with built-in pressure gauge 0-6 4 = with built-in pressure gauge 0-12 (standard)

For the assembly of a single component with fixing flanges or wall-mounting, see the section “FRL Series MX Assembled” (pag. 3/0.50.01)

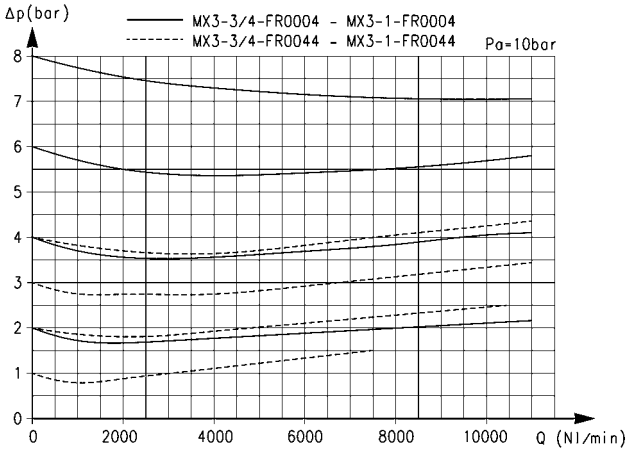
Filter-regulators Series MX - materials

New



PARTS	MATERIALS
1 = Body	Aluminium
2 = Covering	Polyamide
3 = Bowl with technopolymer cover	Polycarbonate/Polyamide
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

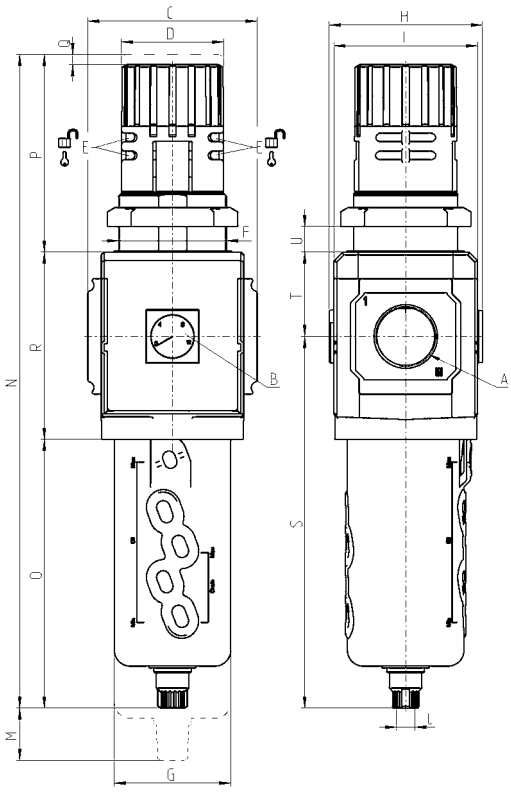
FLOW DIAGRAMS



ΔP = Pressure drop
Q = Flow

Pa = Inlet pressure

Filter-regulators Series MX - dimensions



Mod.	A	B (bar)	C	D	E	F	G	H	I	L	M	N	O	P	Q	R	S	T	U
MX3-3/4-FR0004	G3/4	0 ÷ 12	89,5	54	Ø4	M57x1,5	61,5	81	76	G1/8	75	345	142	104	5	99	196,5	44,5	0 ÷ 20
MX3-1-FR0004	G1	0 ÷ 12	89,5	54	Ø4	M57x1,5	61,5	81	76	G1/8	75	345	142	104	5	99	196,5	44,5	0 ÷ 20

Lockable isolation 3/2 way valves Series MX

New

Ports G3/4 - G1
Modular
Manual, electro-pneumatic, servo-pilot and pneumatic control

Manual isolation valves: ideal to allow an easy access to the FRL group. The system is depressurized with the de-activation of the valve.
Electropneumatic isolation valves: ideal where manual access is difficult, they allow a maximum positioning flexibility and are designed to pressurize or depressurize pneumatic systems. The built-in manual override guarantees security in case of an emergency.

- Standard tamperproof lock-out (manual valve)
- One/more locks for the lock-out feature (manual valve)
- Actuation at 24 V, 110 V or 230 V
- Exhaust in atmosphere
- Silencers available on request

The Series MX has been realized to offer a multi-sector solution that guarantees saving in terms of installation time, space and costs. A special configurator, available on Camozzi website at http://catalogue.camozzi.com (sec. Configurators), allows the customer to choose the most suitable solution for his application, selecting single components or by configuring assembled FRLs.

GENERAL DATA

Construction	modular, compact, spool-type
Materials	see TABLE OF MATERIALS (pag. 3/0.35.01)
Ports	G3/4 - G1
Weight	Manual valve = 0,75 kg Electro-pneumatic valve (V16) = 0,8 kg Pneumatic valve (V36) = 0,8 kg Servo-pilot valve (V17) = 0,87 kg
Mounting	in-line wall-mounting (by means of clamps)
Operating temperature	-5°C ÷ 50°C at 16 bar (with the dew point of the fluid lower than 2°C at the min. working temperature) 50°C ÷ 60°C at 10 bar (with the dew point of the fluid lower than 2°C at the min. working temperature)
Operating pressure	2 ÷ 10 bar (in the pneumatic version - 0,8 ÷ 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	G3/4 - G1 = 9200 Nl/m
Fluid	compressed air

CODING EXAMPLE

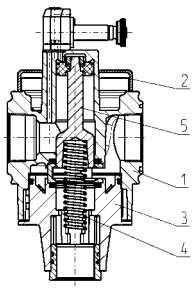
MX	3	-	3/4	-	V	01

MX	SERIES
3	SIZE: 3 = G3/4 - G1
3/4	PORT: 3/4 = G3/4 1 = G1
V	3/2 WAY VALVE
01	DESIGN TYPE: 01 = lockable manual control 16 = electro-pneumatic control 17 = servo-pilot control 36 = pneumatic control

For the assembly of a single component with fixing flanges or wall-mounting, see the section “FRL Series MX Assembled” (pag. 3/0.50.01)

Lockable isolation 3/2 way valves Series MX - materials

New



PARTS	MATERIALS
1 = Body	Aluminium
2 = Covering	Polyamide
3 = Valve holder plug	Polyamide
4 = Lower spring	Stainless steel
5 = Spool	Stainless steel
Seals	NBR

FLOW DIAGRAM for valves Mod. MX...V01

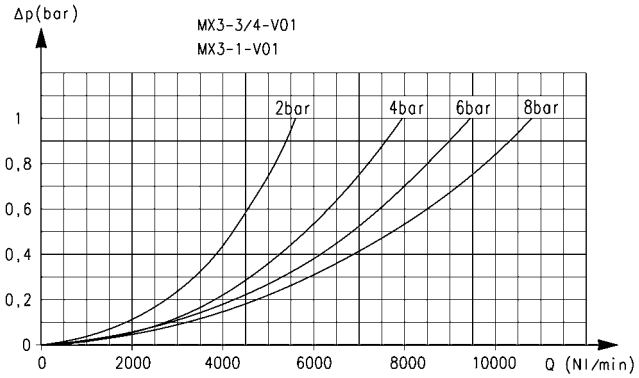


Diagram for lockable manual control valves

Lockable manual valves Series MX - dimensions

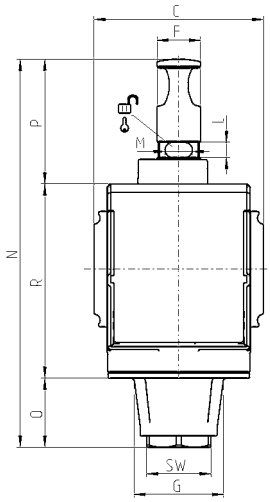


FIG.1 FIG.2

Mod.	A	B	C	D	F	G	I	L	M	N	O	P	Q	R	S	SW	T
MX3-3/4-V01	G3/4	G3/4	89,5	31	23	48	76	8	14,5	205,5	37	66,5	40	102	94,5	34	44,5
MX3-1-V01	G1	G3/4	89,5	31	23	48	76	8	14,5	205,5	37	66,5	40	102	94,5	34	44,5

FLOW DIAGRAM for valves Mod. Mod. MX...V16 - MX...V17 - MX...V36

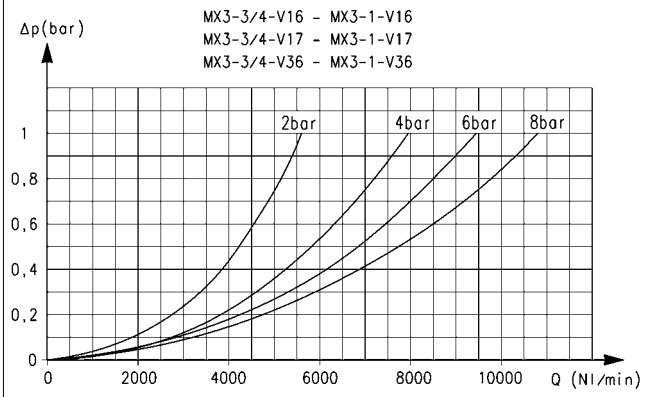
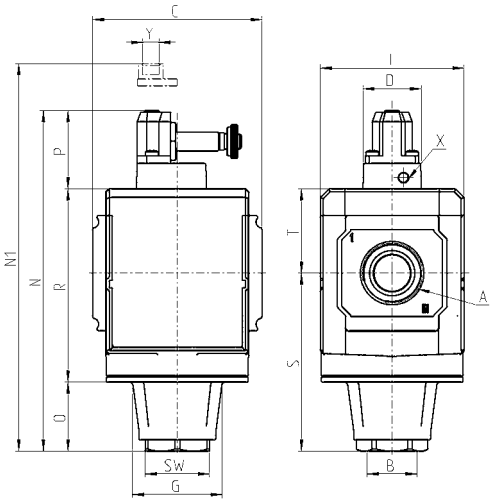


Diagram for electro-pneumatic, servo-pilot or pneumatic control valves

Electro-pneumatic, servo-pilot or pneumatic valves - dimensions



Mod.	A	B	C	D	G	I	N	N1	O	P	R	S	SW	T	X	Y
MX3-3/4-V16	**G3/4**	G3/4	89,5	31	48	76	180,5	-	37	41,5	102	94,5	34	44,5	-	-
MX3-1-V16	**G1**	G3/4	89,5	31	48	76	180,5	-	37	41,5	102	94,5	34	44,5	-	-
MX3-3/4-V17	**G3/4**	G3/4	89,5	31	48	76	180,5	-	37	41,5	102	94,5	34	44,5	M5	-
MX3-1-V17	**G1**	G3/4	89,5	31	48	76	180,5	-	37	41,5	102	94,5	34	44,5	M5	-
MX3-3/4-V36	**G3/4**	G3/4	89,5	31	48	76	-	164	37	-	102	94,5	34	44,5	-	G1/8
MX3-1-V36	**G1**	G3/4	89,5	31	48	76	-	164	37	-	102	94,5	34	44,5	-	G1/8

Soft start valves Series MX

New

Ports G3/4 - G1
Modular

- Security function to maintain the command sequence
- Opening of the main air path at about 50% of the value of the inlet pressure
- Pressure switches available on request

These soft start valves allow a gradual increase of the pressure in pneumatic systems. The pressure increases slowly according to the set regulation until it reaches half of the set value, then it increases rapidly. The valve poppet shifts slowly and securely to the open position to prevent sudden and unsafe movements of the pneumatic components in the system.

The Series MX has been realized to offer a multi-sector solution that guarantees saving in terms of installation time, space and costs. A special configurator, available on Camozzi website at http://catalogue.camozzi.com (sec. Configurators), allows the customer to choose the most suitable solution for his application, selecting single components or by configuring assembled FRLs.

GENERAL DATA

Construction	modular, compact, poppet-type
Materials	see TABLE OF MATERIALS (pag. 3/0.40.02)
Ports	G3/4 - G1
Weight	0,65 kg
Mounting	in-line wall-mounting (by means of clamps)
Operating temperature	-5°C ÷ 50°C at 16 bar (with the dew point of the fluid lower than 2°C at the min. working temperature) 50°C ÷ 60°C at 10 bar (with the dew point of the fluid lower than 2°C at the min. working temperature)
Operating pressure	2 ÷ 10 bar
Nominal flow (at 6 bar with ΔP 1 bar)	8500 l/min
Fluid	compressed air

CODING EXAMPLE

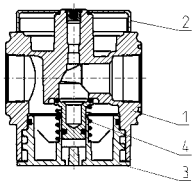
MX	3	-	3/4	-	AV

MX	SERIES
3	SIZE: 3 = G3/4 - G1
3/4	PORTSI: 3/4 = G3/4 1 = G1
AV	SOFT START VALVE

For the assembly of a single component with fixing flanges or wall-mounting, see the section “FRL Series MX Assembled” (pag. 3/0.50.01)

Soft start valves Series MX - materials

New

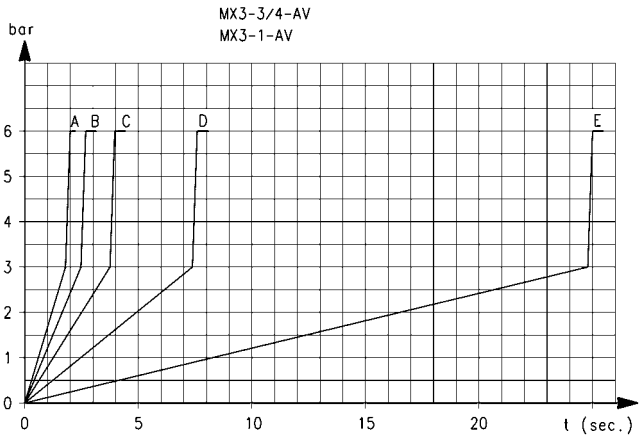


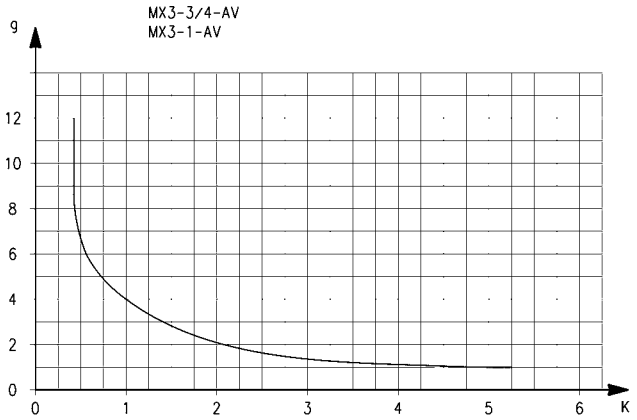
PARTS	MATERIALS
1 = Body	Aluminium
2 = Covering	Polyamide
3 = Valve holder plug	Polyamide
4 = Lower spring	Stainless steel
Seals	NBR

3

TREATMENT

DIAGRAMS FOR PRESSURISATION TIMES

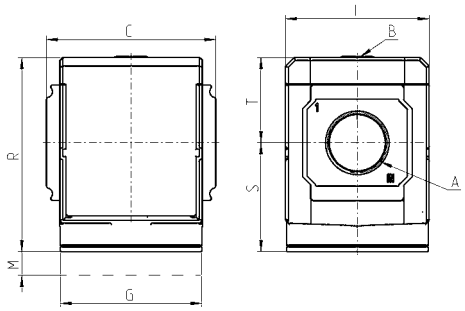




Pressurisation times as to the n° of turns of the regulation screw, with downstream volume of 5 litres. A = 5 turns - B = 4 turns - C = 3 turns - D = 2 turns - E = 1 turn. K = n° of turns of the regulation screw required to obtain the required pressurisation time with an inlet pressure of 6 bar. Variations 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. 1,8.

Soft start valves Series MX - dimensions



Mod.	A	B	C	G	I	M	R	S	T
MX3-3/4-AV	G3/4	G1/8	89,5	75	76	45	102	57,5	44,5
MX3-1-AV	G1	G1/8	89,5	75	76	45	102	57,5	44,5

Take-off blocks Series MX

New

3

Ports G1
Modular

- Compact design
- Available with or without VNR (no return valve)
- Pressure switches available on request

The Take-off blocks, when equipped with a no return valve, can be used to bleed non lubricated air.

The Series MX has been realized to offer a multi-sector solution that guarantees saving in terms of installation time, space and costs. A special configurator, available on Camozzi website at http://catalogue.camozzi.com (sec. Configurators), allows the customer to choose the most suitable solution for his application, selecting single components or by configuring assembled FRLs.

GENERAL DATA

Construction	modular, compact, diaphragm-type
Materials	see TABLE OF MATERIALS (pag. 3/0.45.02)
Ports	G1
Weight	0,55 kg
Take-off ports	G1
Mounting	in-line wall-mounting (by means of clamps)
Operating temperature	-5°C ÷ 50°C at 16 bar (with the dew point of the fluid lower than 2°C at the min. working temperature) 50°C ÷ 60°C at 10 bar (with the dew point of the fluid lower than 2°C at the min. working temperature)
Operating pressure	0 ÷ 16 bar
Nominal flow at 6 bar with Δp = 1 bar	MX3-1-B00 = 14500 Nl/m MX3-1-B01 = 10500 Nl/m
Fluid	compressed air

CODING EXAMPLE

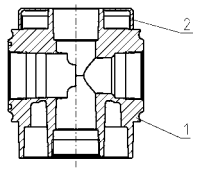
MX	3	-	1	-	B	00

MX	SERIES
3	SIZE: 3 = G3/4 - G1
1	PORT: 1 = G1
B	TAKE-OFF BLOCK
00	DESIGN TYPE: 00 = without no return valve (standard) 01 = with no return valve

For the assembly of a single component with fixing flanges or wall-mounting, see the section “FRL Series MX Assembled” (pag. 3/0.50.01)

Take-off blocks Series MX - materials

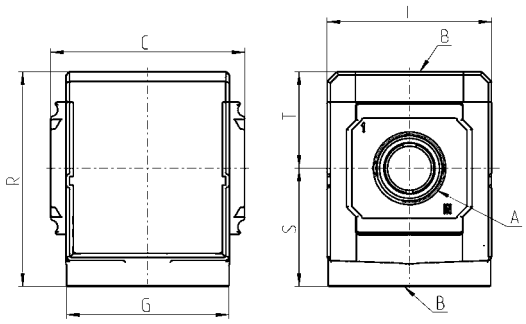
New



PARTS	MATERIALS
1 = Body	Aluminium
2 = Covering	Polyamide
Seals	NBR

Take-off blocks Series MX - dimensions

New



Mod.	A	B	C	G	I	R	S	T
MX3-1-B00	G1	G1	89,5	75	76	99	54,5	44,5

FRL Series MX Assembled

New

Ports G3/4, G1
Assembly through rapid clamps

- Compact design
- Dimensions optimization
- Great reliability
- Easy and quick maintenance
- Reduced weight

The new FRL Series MX can be easily assembled through rapid clamps which allow the connection among single components creating an unlimited number of compositions.
The FRL groups Series MX are also available in the already mounted version (with a single code).

The use of three different types of rapid clamps (standard, with wall fixing screws or with brackets) allows an easy mounting of the assembled groups and to carry out maintenance operations on the single components with no need to disassemble the group.

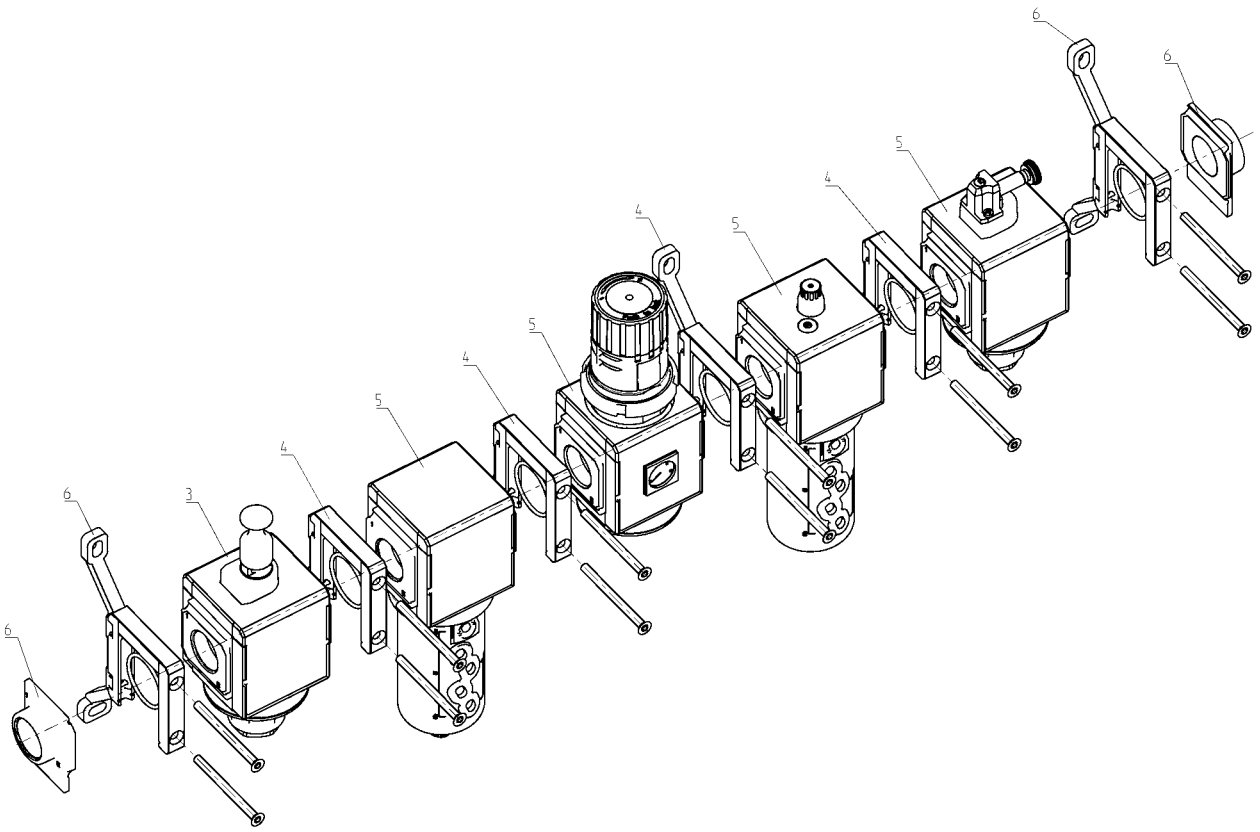
GENERAL DATA

Construction	modular, compact
Materials	see catalogue pages referring to the single component
Ports	G3/4 - G1
Mounting	vertical in-line wall-mounting (by means of clamps) panel mounting
Operating temperature	-5°C ÷ 50°C at 16 bar (according to the single component characteristics) 50°C ÷ 60°C at 10 bar (according to the single component characteristics)

CONFIGURATOR OF ASSEMBLED GROUPS SERIES MX

New

Configuration of the assembled group in the drawing below:
MX3-1-V01XF00R004YL00XV16-KK



	(1)		(2)		(3)	(4)	(5)		(6)		(7)
MX		–		–				–		–	

CONFIGURATOR OF ASSEMBLED GROUPS SERIES MX

MX	3	-	1	-	V01	X	F00	-	KK	-	LH

MX		SERIES
3	(1)	SIZE: 3 = G3/4 - G1
-		
1	(2)	IN / OUT THREADS: 3/4 = G3/4 1 = G1
-		
V01	(3)	MODULE (for the modules configuration, see pages referring to the single component) [*]: 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 (G1 only)
X	(4)	MODULES CONNECTION according to the positioning scheme on page 3/0.50.04: X = Rapid clamp kit Z = Rapid clamp kit with wall fixing screw Y = Rapid clamp kit with wall fixing brackets
F00	(5)	MODULE (for the modules configuration, see pages referring to the single component) [*]: 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 (G1 only)
-		
KK	(6)	TERMINAL CONNECTIONS according to the positioning scheme on page 3/0.50.04 [**] : = no terminal connection XX = n° 2 rapid clamps kits ZZ = n° 2 rapid clamps kits with wall fixing screw YY = n° 2 rapid clamps kit with wall fixing brackets HH = n° 1 rapid clamp kit with flanges (IN / OUT) JJ = n° 1 rapid clamp kit with wall fixing screws + flanges (IN / OUT) KK = n° 1 rapid clamp kit with wall fixing brackets + flanges (IN / OUT)
-		
LH	(7)	FLOW DIRECTION: = from right to left (standard) LH = from left to right
		ADDITIONAL INFORMATION FOR THE ASSEMBLED GROUP CONFIGURATION:
	(4) + (5)	REPEATABLE COMBINATION (for a “N” number of times)
	[*]	ACCESSORIES (to be added after every single module) : REGULATOR AND FILTER-REGULATOR +A59 = M063-P04 (Pressure gauge) +A60 = M063-P06 (Pressure gauge) +A61 = M063-P12 (Pressure gauge) LOCKABLE ISOLATION VALVE +A34 = 2901 3/4’’ (Silencier) +A35 = 2921 3/4’’ (Silencier) +A36 = 2931 3/4’’ (Silencier) SOFT START VALVE +A00 = PM11-NA (Pressure switch) +A01 = PM11-NC (Pressure switch) TAKE-OFF BLOCK +A06 = PM11-NA with fitting for fixing to the module +A07 = PM11-NC with fitting for fixing to the module +A02 = PM11-SC with fitting for fixing to the module
	[**]	WALL CONNECTION: REGULATOR and FILTER-REGULATOR S = Bracket (only with clamps mod. X o HH) Codes examples: MX3-1-R..XV..-S; MX3-1-R..XV..-HSH

3

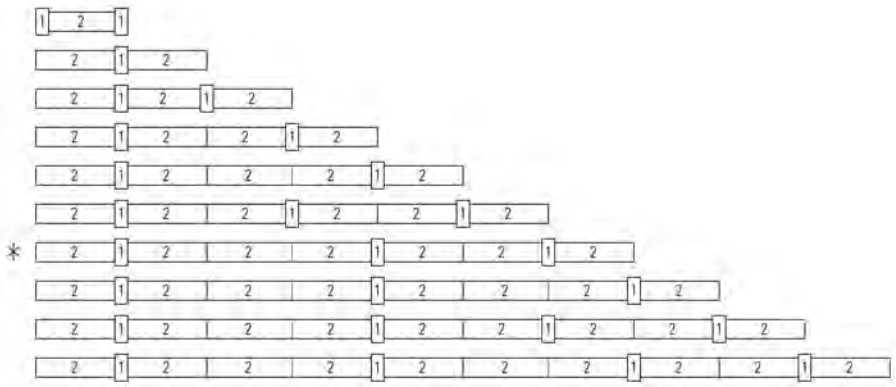
Wall fixing - mounting dimensions and positioning scheme

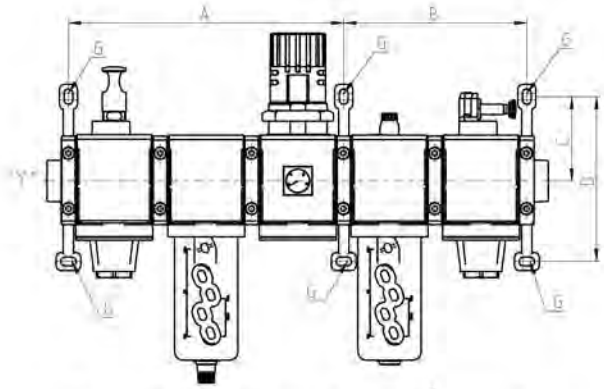
New

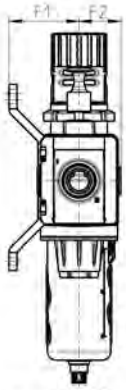
Legend of the POSITIONING SCHEME:
1 = rapid clamp with wall fixing screw
or with wall fixing bracket
2 = module / flange

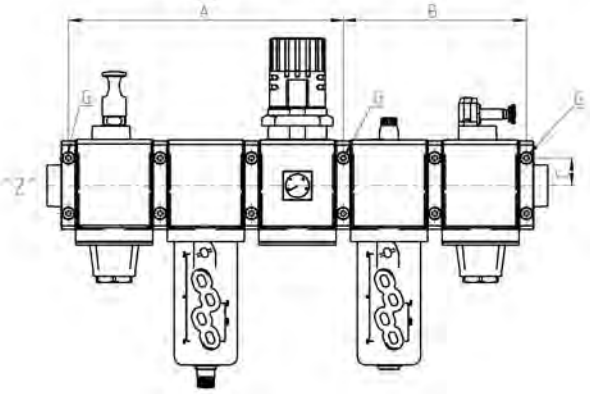
* POSITIONING SCHEME referring to drawings " Y " and " Z ".

Legend of the ASSEMBLED GROUPS DRAWINGS:
" Y " = with rapid clamps with wall fixing brackets (MX3-Y)
" Z " = with rapid clamp with wall fixing screws (MX3-Z)
G = fixing point









Mod.	A	B	C	D	F1	F2	L	M
MX3-Y	267	178	82	160	68	40,5	-	-
MX3-Z	267	178	27	-	40,5	40,5	13	M6

Pressure gauges and accessories Series MX

Pressure gauges with radial or rear connection, or for panel mounting.
Systems of rapid connections designed to make the mouting easier.

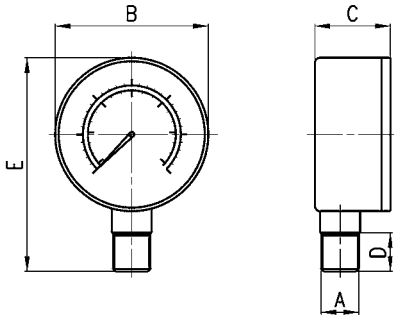
- Pressure gauges with precision classes CL1,6 and CL2,5
- Terminal flanges
- Rapid clamps
- Fixing kits
- Wall fixing kits
- Fixing brackets

To select the most suitable pressure gauge, the measurement range should be chosen considering the type of application according to the following criteria:
1. Constant pressure or pressure with slow fluctuations should be within 75% of the maximun scale value.
2. Pulsing pressure or rapid fluctuations should be within 65% of the maximum scale value.
3. Pressure peaks should never exceed the maximum scale value.

3

Pressure gauges with radial connection

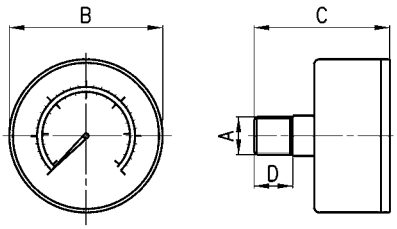
Precision class CL1,6 (mod. M063...)
Precision class CL2,5 (mod. M043... and M053...)



DIMENSIONS						
Mod.	A	B	C	D	E	Range
M043-R06	R1/8	Ø 40,5	24,5	10	57	0-6 bar
M043-R12	R1/8	Ø 40,5	24,5	10	57	0-12 bar
M053-R12	R1/8	Ø 52,5	29	10	70	0-12 bar
M063-R12	R1/4	Ø 63	28	12	83	0-12 bar

Pressure gauges with rear connection

Precision class CL1,6 (mod. M063...)
Precision class CL2,5 (mod. M043... and M053...)



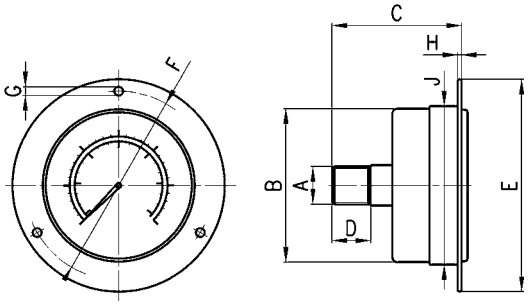
DIMENSIONS					
Mod.	A	B	C	D	Range
M043-P04	R1/8	Ø 40	39,5	10	0-4 bar
M043-P06	R1/8	Ø 40	39,5	10	0-6 bar
M043-P10	R1/8	Ø 40	39,5	10	0-10 bar
M043-P12	R1/8	Ø 40	39,5	10	0-12 bar
M053-P04	R1/8	Ø 53	45	10	0-4 bar
M053-P06	R1/8	Ø 53	45	10	0-6 bar
M053-P10	R1/8	Ø 53	45	10	0-10 bar
M053-P12	R1/8	Ø 53	45	10	0-12 bar
M063-P04	R1/4	Ø 62,5	45,5	12	0-4 bar
M063-P06	R1/4	Ø 62,5	45,5	12	0-6 bar
M063-P12	R1/4	Ø 62,5	45,5	12	0-12 bar

3

TREATMENT

Pressure gauges for panel mounting

Precision class CL1,6 (mod. M063...)
Precision class CL2,5 (mod. M043... and M053...)



DIMENSIONS

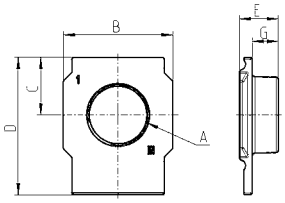
Mod.	A	B	C	D	E	F	G	H	J	Range
M043-F04	R1/8	Ø 41	38	10	Ø 60,5	53	Ø 3,5	1,2	42,5	0-4 bar
M043-F06	R1/8	Ø 41	38	10	Ø 60,5	53	Ø 3,5	1,2	42,5	0-6 bar
M043-F10	R1/8	Ø 41	38	10	Ø 60,5	53	Ø 3,5	1,2	42,5	0-10 bar
M043-F12	R1/8	Ø 41	38	10	Ø 60,5	53	Ø 3,5	1,2	42,5	0-12 bar
M063-F12	R1/4	Ø 62	43	12	Ø 84	74,5	Ø 3,5	1,2	63,5	0-12 bar

3

Terminal flanges (IN/OUT) for series MX

New

The kit is supplied with:
- n°1 flange INLET side
- n°1 Flangia OUTLET side



Mod.	A	B	C	D	E	G
MX3-3/4-FL	G3/4	58	30,5	73	20,5	13,5
MX3-1-FL	G1	58	30,5	73	20,5	13,5

Rapid clamps kit for series MX

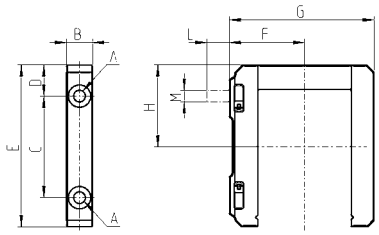
New

See positioning. scheme on p. 3/0.50.04

The kit MX3-X is supplied with:
n° 1 rapid clamp, n° 1 O-ring OR 3150 **,
n° 2 square nuts, n° 2 screws M6x75

The kit MX3-Z is supplied with:
n° 1 rapid clamp, n° 1 O-ring OR 3150 **,
n° 1 square nut, n° 1 screw M6x75,
n° 1 screw M6x90 for wall fixing

** it can be also separately ordered (cod. C401-F33)



Mod.	A	B	C	D	E	F	G	H	L	M	
MX3-X	6,2	14	54	16,5	86	40	77	43,5	-	-	
MX3-Z	6,2	14	54	16,5	86	40	77	43,5	13	M6	*

* kit with wall fixing screw

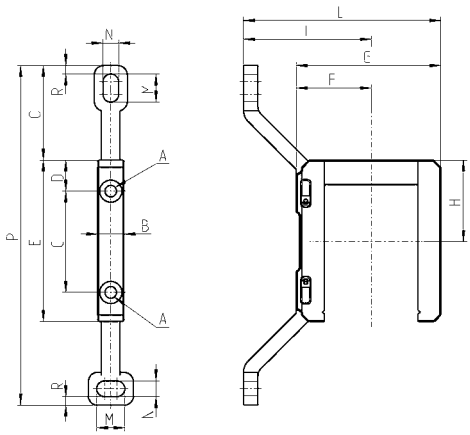
Rapid clamp kit with wall fixing brackets for series MX

New

See positioning scheme on p. 3/0.50.04

The kit MX3-Y is supplied with:
n° 1 wall rapid clamp, n° 1 O-ring,
n° 2 square nuts, n° 2 screwsi M6x75

** it can be also separately ordered (cod. C401-F33)

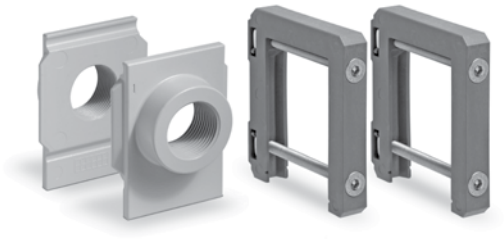


Mod.	A	B	C	D	E	F	G	H	I	L	M	N	O	P	R
MX3-Y	6,2	14	54	16,5	86	40	77	43,5	68	105	15	8,4	181	50,5	4,5

Rapid clamps kit + flanges for series MX

New

See positioning scheme on page 3/0.50.04

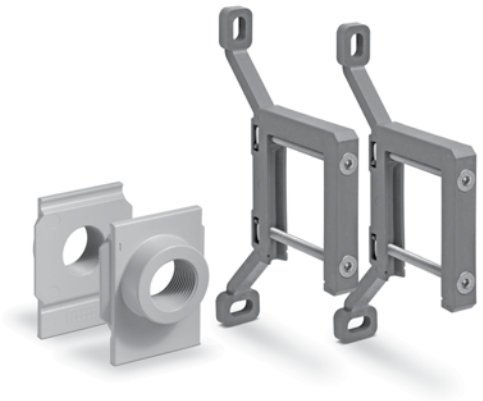


Mod.	
MX3-3/4-HH	1x MX3-3/4-FL + 2x MX3-X
MX3-1-HH	1x MX3-1-FL + 2x MX3-X
MX3-3/4-JJ	1x MX3-3/4-FL + 2x MX3-Z
MX3-1-JJ	1x MX3-1-FL + 2x MX3-Z

Rapid clamps kit with wall fixing brackets + flanges for series MX

New

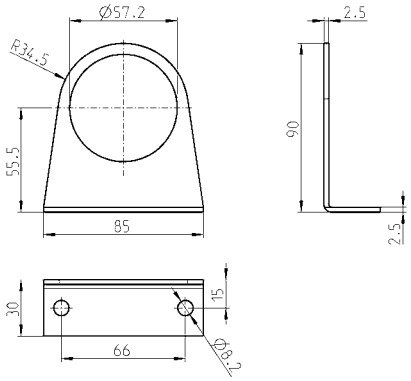
See positioning scheme on page 3/0.50.04



Mod.	
MX3-3/4-KK	1x MX3-3/4-FL + 2x MX3-Y
MX3-1-KK	1x MX3-1-FL + 2x MX3-Y

Fixing bracket for regulator series MX

New



Mod.
MX3-S