# 3 Modular FRL Series MC 1/4", 3/8", & 1/2" NPTF


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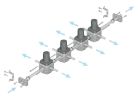
| Series MC |  | Manifold Regulators Assembly Hardware Kits | **99** |
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# Summary and Features

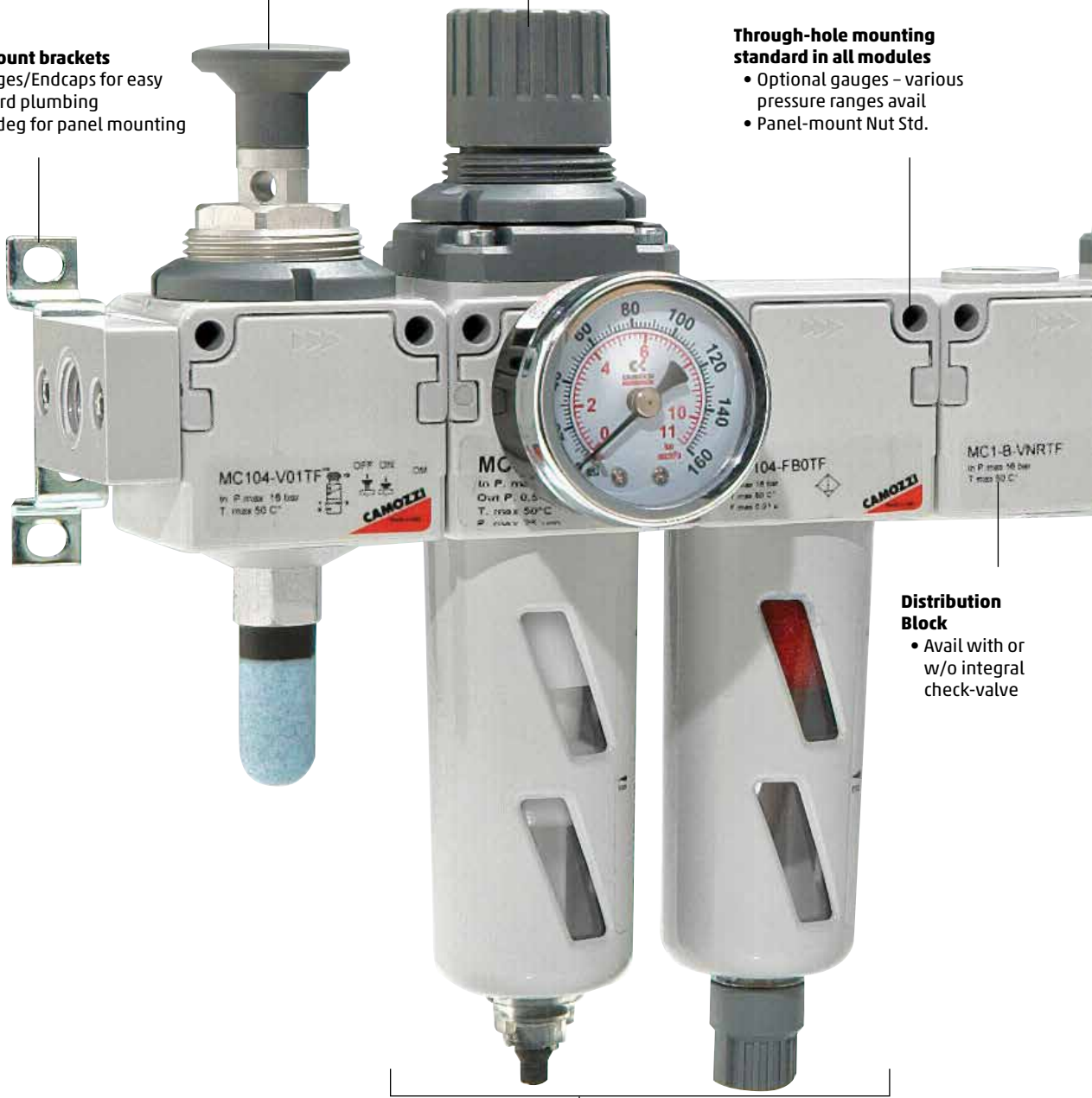
## Series MC Modular FRL 1/4", 3/8", 1/2" NPTF

**Regulator**
- Four Pressure range options
- Relieving, Non-Relieving & High Response diaphragm options
- Factory Pressure presets avail.
- Tamper-proof avail.
- Locking, Non-rising knob std.
- Parallel-Circuit, Manifold Regulators – Full pressure & flow
- Front & Rear gauge ports

**Manual Shut-Off Valve w/ Lock-Out, Tag-Out**
- Downstream quick-dump feature
- 8mm (0.315") diam hole for most locks and hasps in use

**Optional Wallmount brackets**
- Optional Flanges/Endcaps for easy removal of hard plumbing
- Rotatable 90 deg for panel mounting assy.

**Through-hole mounting standard in all modules**
- Optional gauges – various pressure ranges avail
- Panel-mount Nut Std.




**Distribution Block**
- Avail with or w/o integral check-valve

**Filter**
- Coalescing, 5 & 25 micron elements avail.
- Quick-Release bayonet bowls
- Grilamid (Nylon Composite) bowl w/ metal bowl shroud std.
- Five Drain Options available
- Available in 'Piggy-back" Filter-Regulator combos

**Lubricator**
- Venturi Design w/ 2 micron drop size, Refillable under pressure in 3/8" & 1/2" sizes
- Flow adjustment built into droplet indicator
- Quick-release bayonet bowl
- Grilamid (Nylon Composite) bowl material w/ metal shroud std.


**Soft-Start Valve**
- Fully adjustable pressure ramp-up during start-up
- Port tap for electronic pressure switch (PM11)
- For assembly with or w/o Isolation Valve
- Poppet valve design

**Isolation Valve (Shut-Off Valve)**
- Solenoid or Air-Pilot activated
- Downstream quick-dump feature
- Spool valve design

**Standard Features**
- Inlet Pressure 0.3 – 16 bar (4.25 – 232 psi)
- Operating Temp -5°C - 50°C, (23°F - 122°F), with Dew Point of air at least 2°C (4°F) below the min working temperature
- Custom Assemblies available from McKinney, TX
- Low Temp versions available
- Aluminum construction with Polyester Epoxy / Polyurethane Enamel finish
- Modular Design with Tie-Rod Assembly system
- Single Part Number system for standard Pre-Assemblies from McKinney, TX.
- Optional accessories shown include, gauges, silencers, solenoid coil operators, and pressure switches.

# Filters
# Series MC

## Port 1/4", 3/8", 1/2" NPTF
## Modular with metal bowl guard and bayonet-type mounting


The Series MC filters are available with port 1/4", 3/8" or 1/2" NPTF.

The bowls of these filters are made of Nylon - Grilamid with an aluminum bowl guard and have a condensate drain valve in five (5) different options.

On request it is possible to order filters with filtering elements in different filtration ranges than those listed standard in the code key.

### TECHNICAL SPECIFICATIONS

| | | | | |
|---|---|---|---|---|
| Construction | compact modular with filtering element in HDPE | | | |
| Materials | Body - Aluminum alloy, Bowl - Grilamid TR 55 (Nylon compound), Seals - Buna-N, internals in brass | | | |
| Port | NPTF | 1/4" | 3/8" | 1/2" |
| Max condensate capacity | oz | 1 | 2.43 | 2.43 |
| Weight | lbs | .75 | 1.58 | 1.52 |
| Mounting | vertical in-line or wall-mounting | | | |
| Operating temperature | -5° C - 50° C, (23° F - 122° F), with Dew Point of air at least 2° C (4° F) below the min working temperature | | | |
| Delivered air quality (ISO 8573-1: 2010) | Class 6.8.4 with 5 µm element<br>Class 7.8.4 with 25 µm element | | | |
| Draining of condensate | manual - semi automatic standard, other options available in code key | | | |
| Finishing | Chromate treatment undercoat; Bodies - polyurethane enamel & oven-cured; Bowls - electrostatic coating of polyester epoxy & oven cured | | | |

### PNEUMATIC DATA

| | |
|---|---|
| Operating pressure | standard or protected depressurization drains: 0.3 - 16 bar (4.25 - 232 psi)<br>depressurization drain: 0.3 - 10 bar (4.25 - 145 psi)<br>automatic drain: 1.5 - 12 bar (22 - 174 psi) for 3/8 and 1/2 port sizes |
| Nominal flow | see graph |

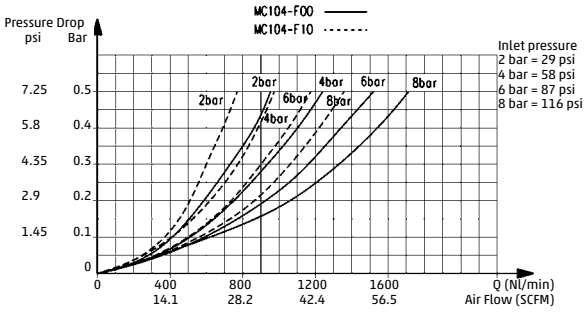
## CODING EXAMPLE

| MC | 1 | 04 | - | F | 0 | 0 | TF |
|---|---|---|---|---|---|---|---|

| | |
|---|---|
| MC | SERIES |
| 1 | SIZE<br>1 = 1/4"<br>2 = 3/8" or 1/2" |
| 04 | PORTS:<br>04 = 1/4" NPTF<br>38 = 3/8" NPTF<br>02 = 1/2" NPTF |
| F | FILTER |
| 0 | FILTERING ELEMENT<br>0 = 25µm<br>1 = 5µm |
| 0 | DRAINING OF CONDENSATE<br>0 = normal - semiautomatic<br>3 = Fully automatic, Float-Drain (3/8" & 1/2" ONLY)<br>4 = depressurization, "Spitter-Type", 1/4" ONLY<br>5 = depressurization, protected, "Spitter-Type" w/ filtered drain orifice<br>8 = port 1/8" female, free-flow |
| TF | PORT<br>TF = NPTF<br>Blank = BSPP thread ports |

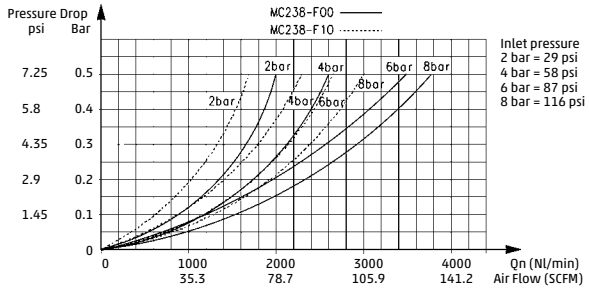
## FLOW DIAGRAMS

### MC104-F00TF and MC104-F10TF - 1/4" Models



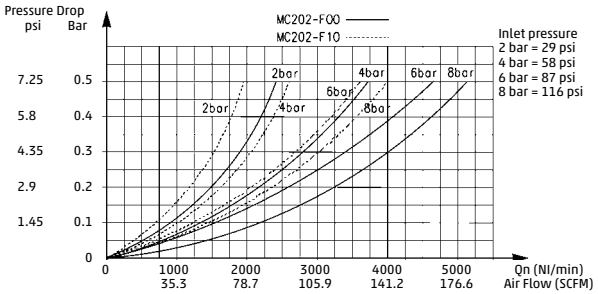

Pa = Inlet pressure
ΔP = Pressure Drop
Qn = Flow

### MC238-F00TF and MC238-F10TF - 3/8" Models



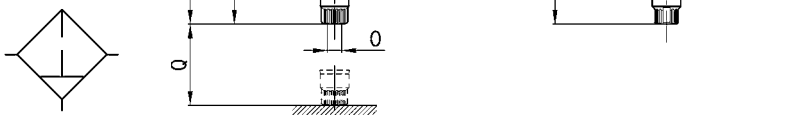

Pa = Inlet pressure
ΔP = Pressure Drop
Qn = Flow

### MC202-F00TF and MC202-F10TF - 1/2" Models




Pa = Inlet pressure
ΔP = Pressure Drop
Qn = Flow

## Filters Series MC




DIMENSIONS (in inches)

| Mod. | A | B | C | E | F | G | H | M | N | DRAIN NPTF O | P | Q | T | NPTF PORTS U |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MC104-F00TF | 5.630 | 4.016 | 1.614 | .433 | 4.980 | .650 | .177 | 1.772 | 1.772 | 1/8 | 1.457 | 2.23 | 1.378 | 1/4 |
| MC238-F00TF | 7.244 | 5.236 | 2.008 | .551 | 6.417 | .827 | .217 | 2.441 | 2.362 | 1/8 | 2.087 | 2.835 | 1.811 | 3/8 |
| MC202-F00TF | 7.244 | 5.236 | 2.008 | .551 | 6.417 | .827 | .217 | 2.441 | 2.362 | 1/8 | 2.087 | 2.835 | 1.811 | 1/2 |

# Coalescing Filters Series MC

## Port 1/4", 3/8" & 1/2" NPTF
## Modular with metal bowl guard and bayonet-type mounting


The Series MC coalescing filters are available with 1/4", 3/8", 1/2" NPTF port.

The bowls of these filters are made of Nylon-Grilamid with an aluminum bowl guard and have a condensate drain valve in five (5) different options.

### TECHNICAL SPECIFICATIONS

| | | | | |
|---|---|---|---|---|
| Construction | modular, coalescing elements | | | |
| materials | Body - Aluminum alloy, Bowl - Grilamid TR 55 (Nylon compound), Seals - Buna-N, internals in brass | | | |
| Port | NPTF: | 1/4" | 3/8" | 1/2" |
| Max. condensate capacity | oz | .95 | 2.64 | 2.64 |
| Weight | lbs | .75 | 1.52 | 1.52 |
| Mounting | vertical in line or wall-mounting | | | |
| Operating temperature | -5° C - 50° C, (23° F - 122° F), with Dew Point of air at least 2° C (4° F) below the min working temperature | | | |
| Delivered air quality (ISO 8573-1: 2010) | Class 1.8.1 with 0.01 µm filtered element | | | |
| Draining of condensate | manual - semi-automatic standard, (other options available in code Key) | | | |
| finish | Chromate treatment undercoat; Bodies - polyurethane enamel & oven-cured; Bowls - electrostatic coating of polyester epoxy & oven cured | | | |

### PNEUMATIC DATA

| | |
|---|---|
| Operating pressure | 0.3 - 16 bar, (with depressurizing drain P Max. of 10 bar) : 4.35 - 232 psi, (P Max 145 psi w/ depressurizing drain) - 1.5 - 12 bar for Full Automatic float drain, (22 - 175 psi), 3/8" & 1/2" models only |
| Nominal flow | see graph |

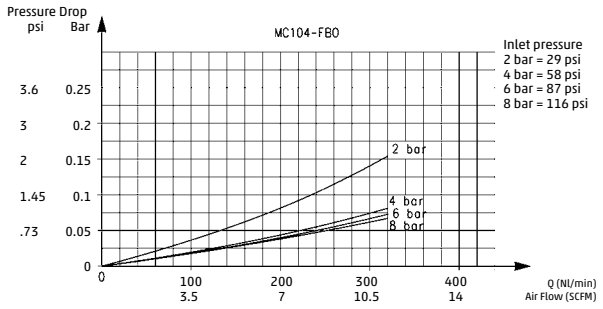
## CODING EXAMPLE

| MC | 1 | 04 | - | F | B | 0 | TF |
|---|---|---|---|---|---|---|---|

| | |
|---|---|
| MC | SERIES |
| 1 | SIZE<br>1 = 1/4"<br>2 = 3/8" or 1/2" |
| 04 | PORTS:<br>04 = 1/4" NPTF<br>38 = 3/8" NPTF<br>02 = 1/2" NPTF |
| F | FILTER |
| B | FILTERING ELEMENT<br>B = 0,01 µm coalescing |
| 0 | DRAINING OF CONDENSATE<br>0 = normal - semiautomatic<br>3 = Fully automatic, Float-Drain, 3/8" & 1/2"<br>4 = depressurization, "Spitter-Type", 1/4" ONLY<br>5 = depressurization, protected, "Spitter-Type" w/ filtered drain orifice<br>8 = port 1/8" female, free-flow |
| TF | PORT<br>TF = NPTF<br>Blank = BSPP thread ports |

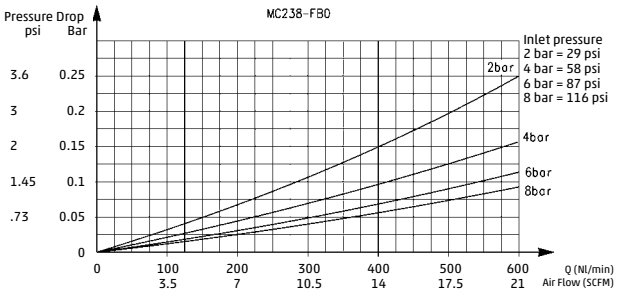
## FLOW DIAGRAMS

### MC104-FB0TF - 1/4" Models



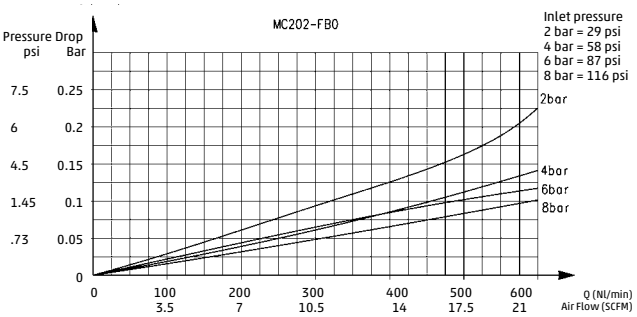

Pa = Inlet pressure
ΔP = Pressure Drop
Qn = Flow

### MC238-FB0TF - 3/8" Models



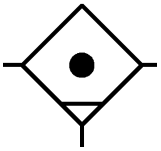

Pa = Inlet pressure
ΔP = Pressure Drop
Qn = Flow

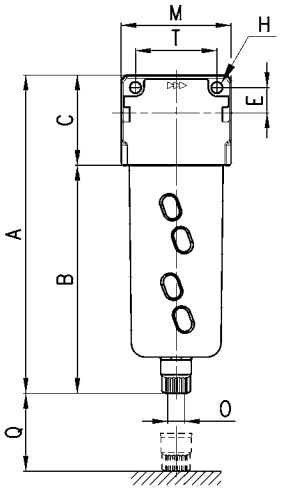
### MC202-FB0TF - 1/2" Models

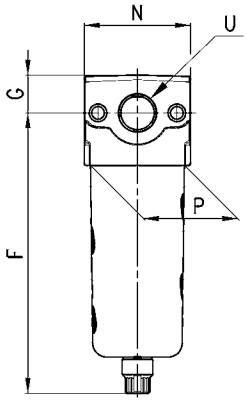



Pa = Inlet pressure
ΔP = Pressure Drop
Qn = Flow

## Coalescing filters Series MC






DIMENSIONS (in inches)

| Mod. | A | B | C | E | F | G | H | M | N | DRAIN PORT NPTF O | P | Q | T | PORTS U (NPTF) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MC104-FB0TF | 5.630 | 4.016 | 1.614 | .433 | 4.980 | .650 | .177 | 1.772 | 1.772 | 1/8 | 1.457 | 2.126 | 1.378 | 1/4" |
| MC238-FB0TF | 7.244 | 5.236 | 2.008 | .551 | 6.417 | .827 | .217 | 2.441 | 2.362 | 1/8 | 2.087 | 2.874 | 1.811 | 3/8" |
| MC202-FB0TF | 7.244 | 5.236 | 2.008 | .551 | 6.417 | .827 | .217 | 2.441 | 2.362 | 1/8 | 2.087 | 2.874 | 1.811 | 1/2" |

# Activated Carbon Filters Series MC

## Ports: 1/4", 3/8" & 1/2" NPTF
## Modular with metal bowl guard and bayonet-type mounting


For the removal of oil, liquid, and gaseous components from compressed air through activated carbon

The Series MC activated carbon filters are available with 1/4", 3/8", 1/2" NPTF port.

The bowls of these filters are made of Nylon-Grilamid sight glass and an aluminum bowl guard.

### TECHNICAL SPECIFICATIONS

| | | | | |
|---|---|---|---|---|
| Construction | modular, compact with activated carbon filtering element | | | |
| Materials | Body - Zinc alloy, Bowl - Grilamid TR 55 (Nylon compound), Seals - Buna-N, activated carbon | | | |
| Port | NPTF: | 1/4" | 3/8" | 1/2" |
| Weight | lbs | .75 | 1.52 | 1.52 |
| Mounting | vertical in line or wall-mounting | | | |
| Operating temperature | 10° C - 40° C, (50° F - 104° F), (t max = 140° F) | | | |
| Operating Pressure | 4 - 230 psi (0.3 - 16 bar) | | | |
| Nominal flow | see graph | | | |
| Delivered air quality (ISO 8573-1: 2010) | Class 1.7.1 | | | |
| Draining of condensate | Not present | | | |
| Risidual oil content | <0.003 mg/m$^3$ | | | |
| Fluid | Compressed Air | | | |
| Pre-filtering | It is recommended to use a filter with residual oil of 0.01mg/m$^3$ | | | |

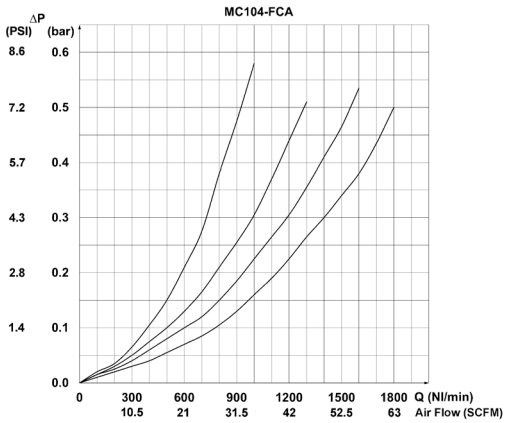
## CODING EXAMPLE

| MC | 1 | 04 | - | F | CA | TF |
|---|---|---|---|---|---|---|

| | |
|---|---|
| MC | SERIES |
| 1 | SIZE<br>1 = 1/4"<br>2 = 3/8" or 1/2" |
| 04 | PORTS:<br>04 = 1/4" NPTF<br>38 = 3/8" NPTF<br>02 = 1/2" NPTF |
| F | FILTER |
| CA | FILTERING ELEMENT<br>CA = Activated Carbon |
| TF | PORT<br>TF = NPTF<br>Blank = BSPP thread ports |

## Flow Diagram

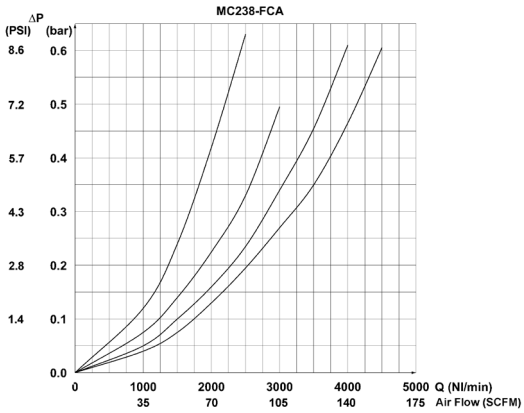
### MC104-FCATF




Flow diagram for model: MC104-FCATF
ΔP = Pressure drop
Q = Flow

In order to guarantee the indicated performances, the maximum flow of the filter must be the one indicated in the graph. A higher flow rate is possible but the performances are not guaranteed.

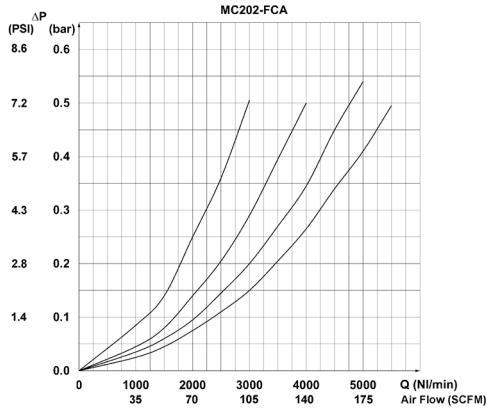
### MC238-FCATF




Flow diagram for model: MC238-FCATF
ΔP = Pressure drop
Q = Flow

In order to guarantee the indicated performances, the maximum flow of the filter must be the one indicated in the graph. A higher flow rate is possible but the performances are not guaranteed.

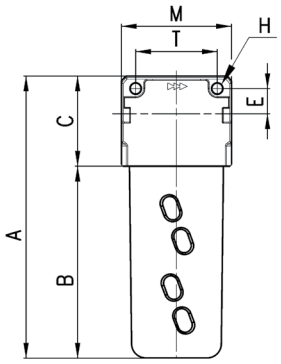
### MC202-FCATF

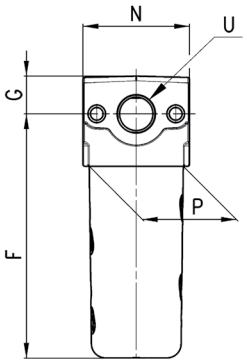



Flow diagram for model: MC202-FCATF
ΔP = Pressure drop
Q = Flow

In order to guarantee the indicated performances, the maximum flow of the filter must be the one indicated in the graph. A higher flow rate is possible but the performances are not guaranteed.

## Activated Carbon Filter Series MC




DIMENSIONS (in inches)

| Mod. | A | B | C | E | F | G | H | M | N | P | T | PORTS U (NPTF) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MC104-FCATF | 4.881 | 3.267 | 1.624 | .433 | 4.232 | .650 | .177 | 1.771 | 1.771 | 1.457 | 1.378 | 1/4" |
| MC238-FCATF | 6.535 | 4.527 | 2.008 | .551 | 5.709 | .826 | .217 | 2.440 | 2.362 | 2.086 | 1.811 | 3/8" |
| MC202-FCATF | 6.535 | 4.527 | 2.008 | .551 | 5.709 | .826 | .217 | 2.440 | 2.362 | 2.086 | 1.811 | 1/2" |

# Pressure Regulators Series MC

## Port 1/4", 3/8", 1/2" NPTF
## Modular


The Series MC pressure regulators are available with port 1/4", 3/8", 1/2" NPTF.

Relieving diaphragms are standard.
Non-Relieving and Fast-Response Relieving diaphragms are optional, as called out in the code key.

All versions can be panel mounted.

### TECHNICAL SPECIFICATIONS

| | | | | |
|---|---|---|---|---|
| Construction | modular, compact, diaphragm type | | | |
| Materials | Aluminum Body, Buna-N Seals,Nylon-Grilamid Knob, Brass internals | | | |
| Port | NPTF | 1/4" | 3/8" | 1/2" |
| Weight | lbs | .71 | 1.42 | 1.42 |
| Pressure gauge port | 1/8" NPTF | | | |
| Mounting | in-line wall or console mounting (in any position) | | | |
| Operating temperature | -5° C - 50° C, (23° F - 122° F), with Dew Point of air at least 2° C (4° F) below the min working temperature | | | |
| Finishing | Chromate treatment undercoat; Bodies - polyurethane enamel & oven-cured; Bowls - electrostatic coating of polyester epoxy & oven cured | | | |

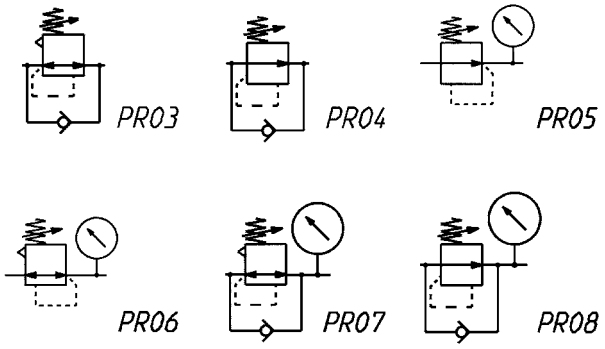
### PNEUMATIC DATA

| | |
|---|---|
| Inlet pressure | 0 – 16 bar (0 - 232 psi) |
| Outlet pressure | 0.5 - 10 bar (7.25 - 145 psi) standard; see code key for optional spring ranges |
| Nominal flow | see graph |
| Secondary pressure relieving | standard, Non-Relieving and Sensitive Control Relieving available |

## CODING EXAMPLE

| MC | 1 | 04 | - | R | 0 | 0 | _ | - | VS | - | ■ | - | ● | TF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

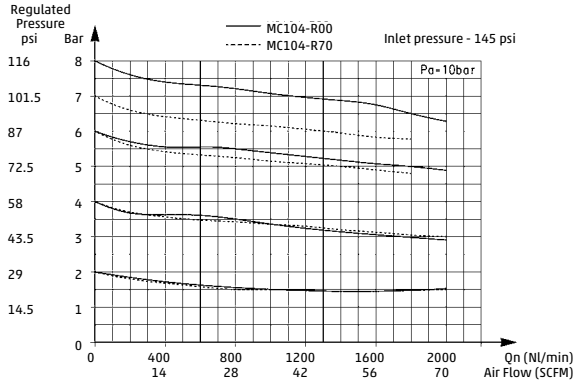
| | |
|---|---|
| MC | SERIES |
| 1 | SIZE<br>1 = 1/4"<br>2 = 3/8" or 1/2" |
| 04 | PORTS:<br>04 = 1/4" NPTF<br>38 = 3/8" NPTF<br>02 = 1/2" NPTF |
| R | REGULATOR |
| 0 | OPERATING PRESSURE<br>0 = 0.5 - 10 bar (standard) (7.25 - 145 psi)<br>1 = 0 - 4 bar (0 - 58 psi)<br>2 = 0 - 2 bar (0 - 29 psi), 1/4" ONLY<br>7 = 0.5 - 7 bar (7.25 - 102 psi), 1/4" ONLY<br>T = calibrated (adjustable to a maximum pressure) **<br>B = fixed pressure ** |
| 0 | DESIGN TYPE<br>0 = self-relieving<br>1 = non-relieving<br>5 = fast-response control, (metal-to-metal seat), relieving - 1/4" ONLY |
| | PRESSURE GAUGE OPTIONS<br>Blank = without pressure gauge (standard)<br>1 = with pressure gauge 0 - 2.5 bar (0 - 36 psi)<br>2 = with pressure gauge 0 - 6 bar (0 - 87 psi)<br>3 = with pressure gauge 0 - 10 bar (0 - 145 psi)<br>4 = with pressure gauge 0 - 12 bar (0 - 174 psi) |
| VS | Blank = without high-relief flow<br>VS = with high-relief flow, rapid reverse flow (1/4" units only) |
| | **IF THE REGULATOR IS CALIBRATED OR FIXED, AFTER THE PORTS ADD THE INLET PRESSURE "■" AND THE OUTLET PRESSURE "●", AFTER THE PORTS<br><br>INLET PRESSURE:<br>■ = enter the SUPPLY pressure value<br><br>OUTLET PRESSURE:<br>● = enter the OUTLET pressure value for the FIXED regulator or<br>the maximum value of the ADJUSTABLE pressure for the CALIBRATED regulator<br><br>Example of a calibrated regulator with Inlet Pressure = 6.3 bar and Outlet Pressure = 4.5 bar<br>Complete part number: MD1-RT00-1/4-6,3-4,5TF |
| TF | PORT<br>TF = NPTF<br>Blank = BSPP thread ports |




PR03 = Regulator with relieving and by-pass valve
PR04 = Regulator without relieving and with by-pass valve
PR05 = Regulator without relieving and with pressure gauge
PR06 = Regulator with relieving and pressure gauge
PR07 = Regulator with relieving, by-pass valve and pressure gauge
PR08 = Regulator without relieving with by-pass valve and pressure gauge

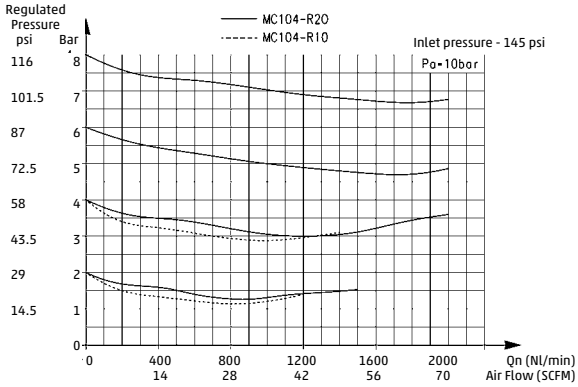
## FLOW DIAGRAMS

### MC104-R00TF and MC104-R70TF



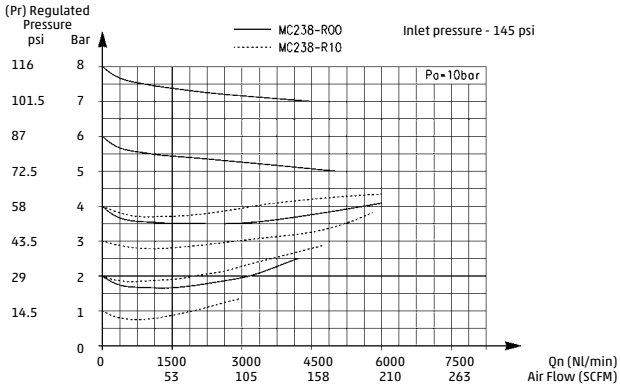

Pa = Inlet pressure Pr = Regulated pressure Qn = Flow

### MC104-R20TF and MC104-R10TF



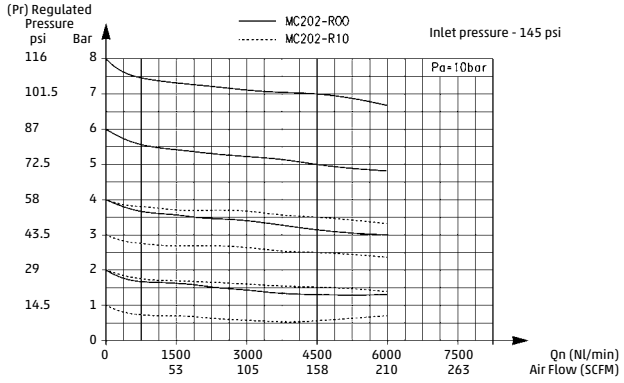

Pa = Inlet pressure Pr = Regulated pressure Qn = Flow

### MC238-R00TF and MC238-R10TF



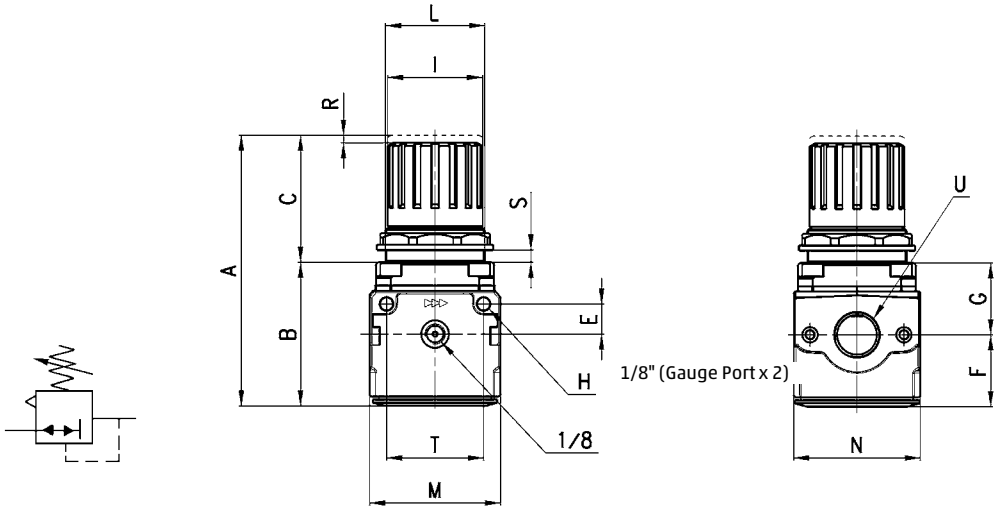

Pa = Inlet pressure Pr = Regulated pressure Qn = Flow

### MC202-R00TF AND MC202-R10TF




Pa = Inlet pressure Pr = Regulated pressure Qn = Flow

## Pressure regulators Series MC




DIMENSIONS (in inches)

| Mod. | A | B | C | E | F | G | H | I | L | M | N | O | R | S | T | U (NPTF) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MC104-R00TF | 3.701 | 2.205 | 1.496 | .433 | 1.122 | 1.083 | .177 | 1.102 | M30x1.5 | 1.772 | 1.772 | 1.772 | .118 | .236 | 1.378 | 1/4" |
| MC238-R00TF | 5.000 | 2.638 | 2.362 | .551 | 1.339 | 1.378 | .217 | 1.772 | M47x1.5 | 2.441 | 2.441 | 2.362 | .138 | .354 | 1.811 | 3/8" |
| MC202-R00TF | 5.000 | 2.638 | 2.362 | .551 | 1.339 | 1.378 | .217 | 1.772 | M47x1.5 | 2.441 | 2.441 | 2.362 | .138 | .354 | 1.811 | 1/2" |

# Manifold Pressure Regulators Series MC

## Inlet port 1/4" NPTF, full Inlet pressure (non-cascading), 2 outlets per unit. Modular


The manifold pressure regulators are available with port 1/4" NPTF.

Normally they are available with relieving diaphragm as standard and can be panel mounted.

## TECHNICAL SPECIFICATIONS

| | |
|---|---|
| Construction | compact modular, diaphragm type |
| Materials | Body - Aluminum alloy, Cover/Head - Grilamid TR 55 (Nylon compound), Seals - Buna-N, internals in brass |
| Port (Inlet/Outlet) | 1/4" NPTF / 1/8" NPTF |
| Weight | kg 0,320 = .70 lbs |
| Pressure gauge port / outlet | 1/8" NPTF |
| Mounting | in-line ;, wall or panel mounting (in any position) |
| Operating temperature | -5° C - 50° C, (23° F - 122° F), with Dew Point of air at least 2° C (4° F) below the min working temperature |
| Finish | Chromate treatment undercoat; Bodies - polyurethane enamel & oven-cured; Bowls - electrostatic coating of polyester epoxy & oven cured |

## PNEUMATIC DATA

| | |
|---|---|
| Inlet pressure | 0 – 16 bar (0 - 232 psi) |
| Outlet pressure | 0.5 – 10 bar or 0 – 4 bar (7.25 - 145 psi or 0 - 58 psi) |
| Flow | see graph |
| Secondary pressure relieving | standard |

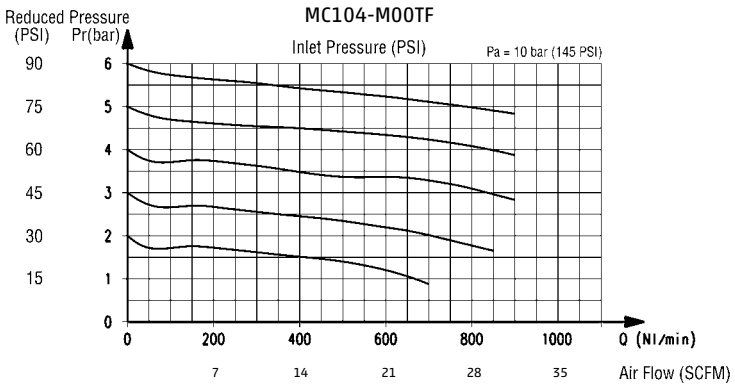
## CODING EXAMPLE

| MC | 1 | 04 | - | M | 0 | 0 | _ | TF |
|---|---|---|---|---|---|---|---|---|

| | |
|---|---|
| MC | SERIES |
| 1 | SIZE<br>1 = 1/4" NPTF |
| 04 | PORT (Inlet/Outlet)<br>04 = 1/4" NPTF / 1/8" NPTF |
| M | MANIFOLD REGULATOR |
| 0 | OPERATING PRESSURE<br>0 = 0.5 – 10 bar (7.25 - 145 psi)<br>1 = 0 – 4 bar (0 - 58 psi)<br>2 = 0 – 2 bar (0 - 29 psi)<br>7 = 0.5 – 7 bar (7.25 - 103 psi) |
| 0 | CONSTRUCTION<br>0 = self-relieving<br>1 = non-relieving<br>5 = fast-response control, (metal-to-metal seat),relieving |
| | PRESSURE GAUGE OPTIONS<br>Blank = without pressure gauge (standard)<br>1 = with pressure gauge 0 - 2.5 bar (0 - 36 psi)<br>2 = with pressure gauge 0 - 6 bar (0 - 87 psi)<br>3 = with pressure gauge 0 - 10 bar (0 - 145 psi)<br>4 = with pressure gauge 0 - 12 bar (0 - 174 psi) |
| TF | PORT<br>TF = NPTF<br>Blank = BSPP thread ports |

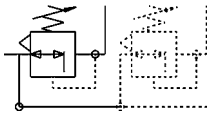
## FLOW DIAGRAM

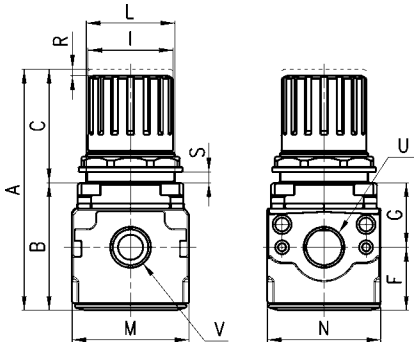
### MC104-M00TF




Pa = Inlet pressure
Pr = Regulated pressure
Qn = Flow

## Manifold pressure regulators Series MC



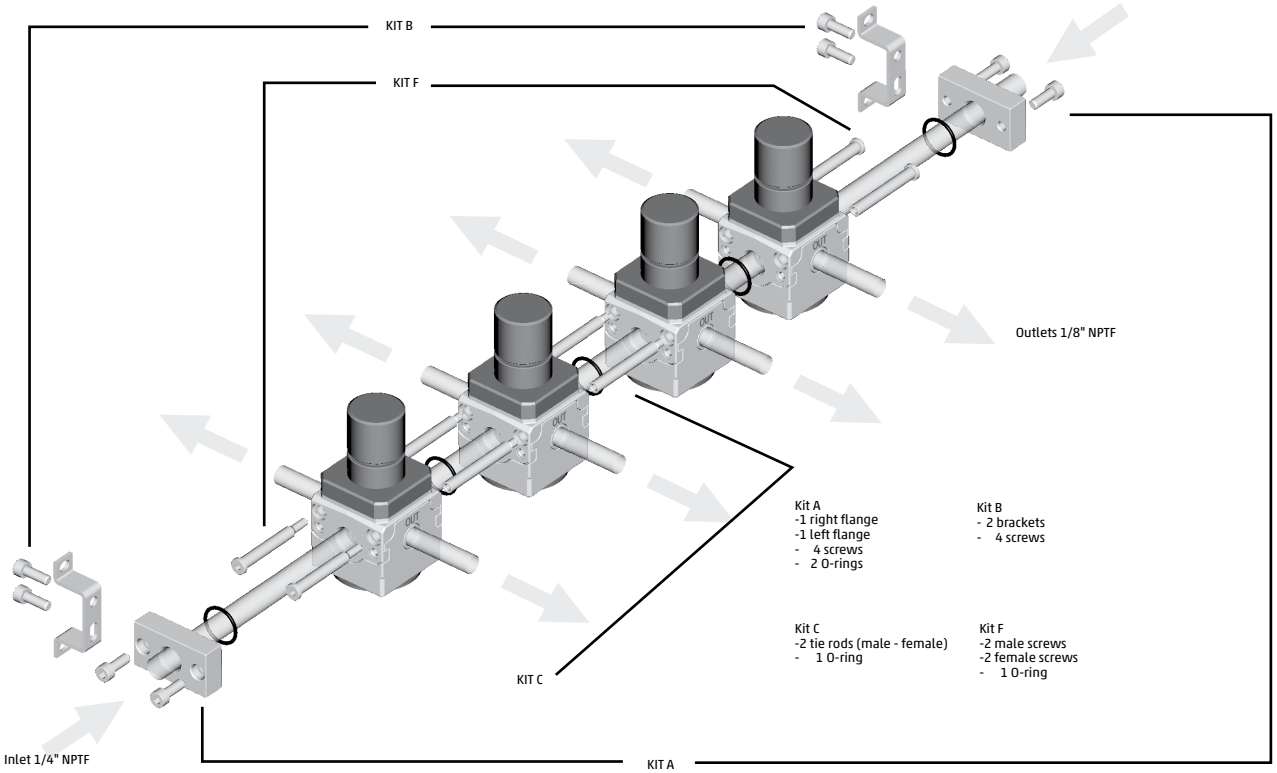



DIMENSIONS (in inches)

| Mod. | A | B | C | F | G | I | L | M | N | R | S | T | U NPTF | V NPTF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MC104-M00TF | 3.700 | 2.165 | 1.535 | 1.102 | 1.102 | 1.102 | M30x1.5 | 1.772 | 1.772 | .118 | 0-.236 | 1.378 | 1/4" | 1/8" |

# Manifold Regulators Series MC
# Assembly Hardware Kits (1/4" only – MC1)

**Examples assembly hardware kits**




## Assembly without end plates

| Body | Kit |
|---|---|
| H + H | 1 Kit "F" |
| H + H + H | 1 Kit "F" + 1 Kit "C" |
| H + H + H + H | 1 Kit "F" + 2 Kit "C" |
| H + H + H + H + H | 1 Kit "F" + 3 Kit "C" |

## Assembly with end plates

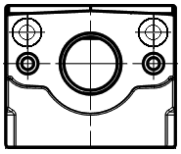
| Body | Kit |
|---|---|
| H + H | 1 Kit "A" + 1 Kit "F" |
| H + H + H | 1 Kit "A" + 1 Kit "F" + 1 Kit "C" |
| H + H + H + H | 1 Kit "A" + 1 Kit "F" + 2 Kit "C" |
| H + H + H + H + H | 1 Kit "A" + 1 Kit "F" + 3 Kit "C" |

## Types Kit

N.B. for configurations which differ from the ones described, you can only add only bodies type "H" and for every part added you should add a Kit "C".

| Components & Part number | |
|---|---|
| Kit A: MC104-FL-TF | 1 right flange + 1 left flange + 4 screws + 1 O-ring |
| | 2 brackets + 4 screws |
| Kit C: MC1-TMF | 2 tie rods male - female + 1 O-ring |
| Kit F: MC1-VMF | 2 male screws + 2 female screws + 1 O-ring |

## Example body "Manifold" regulator type H



With through holes on top (used to mount the manifold regulators to each other)
With female no through threads
- manifold regulator

N.B. Once a group of manifold regulators has been assembled, it can be inserted in a FRL group. In this case the manifold regulator assembly alone would be defined as body type M (see page 125)

# Lubricators Series MC

## Port 1/4", 3/8", 1/2" NPTF
## Modular with metal bowl guard and bayonet-type mounting


The Series MC lubricators are available with port 1/4", 3/8", 1/2" NPTF.

The bowls of these lubricators are made of metal and are equipped with a transparent viewer. The oil flow can be monitored via the small transparent cap and regulated by means of the special adjusting screw.

In the 3/8" and 1/2" models, oil can be refilled while unit is under pressure by first removing the oil fill cap plug. Oil can be directly filled via cap plug.
In addition, once cap plug is removed, the entire bowl may be removed for direct filling while system remains pressurized.

### TECHNICAL SPECIFICATIONS

| | | | | |
|---|---|---|---|---|
| Construction | modular compact | | | |
| Materials | Body - Aluminum alloy, Bowl - Grilamid TR 55 (Nylon compound), Seals - Buna-N | | | |
| Port | NPTF: | 1/4" | 3/8" | 1/2" |
| Oil capacity | oz | 1.25 | 5.75 | 5.75 |
| Weight | lbs | .75 | 1.65 | 1.49 |
| Mounting | vertical in-line or wall-mounting | | | |
| Operating temperature | -5° C - 50° C, (23° F - 122° F), with Dew Point of air at least 2° C (4° F) below the min working temperature | | | |
| Oil refilling | without pressure only in 1/4" Size : While pressurized for 3/8" & 1/2" | | | |
| Oil for lubrication | use ISO VG32 oils. Once applied, the lubrication should never be interrupted. | | | |
| Oil consumption | recommendation 2 - 5 drops every 1000 Nl of air consumed (35 SCFM) | | | |
| Droplet size | > 2µm (10 drops = 1cm3) | | | |
| Finish | Chromate treatment undercoat; Bodies - polyurethane enamel & oven-cured; Bowls - electrostatic coating of polyester epoxy & oven cured | | | |

### PNEUMATIC DATA

| | |
|---|---|
| Operating pressure | 0 – 16 bar (0 - 232 psi) |
| Nominal flow | see graphs |
| Min. air consumption for lubr. (Nl/min) | 1/4", 3/8", 1/2" NPTF |
| at 1 bar (14.5 psi) | 8 Nl/min (.28 SCFM) |
| at 6 bar (87 psi) | 15 Nl/min (.53 SCFM) |

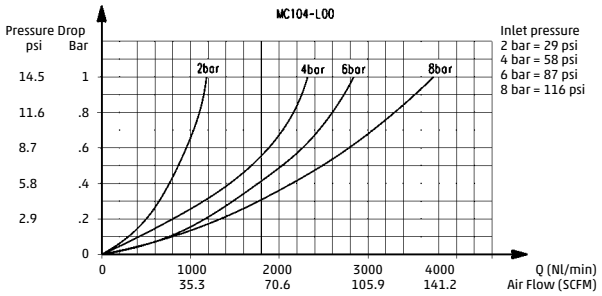
## CODING EXAMPLE

| MC | 1 | 04 | - | L | 00 | TF |
|---|---|---|---|---|---|---|

| | |
|---|---|
| MC | SERIES |
| 1 | SIZE<br>1 = 1/4"<br>2 = 3/8" or 1/2" |
| 04 | PORTS:<br>04 = 1/4" NPTF<br>38 = 3/8" NPTF<br>02 = 1/2" NPTF |
| L | LUBRICATOR |
| 00 | DESIGN TYPE<br>00 = atomized oil, ( approx. 2 microns ) |
| TF | PORT<br>TF = NPTF<br>Blank = BSPP thread ports |

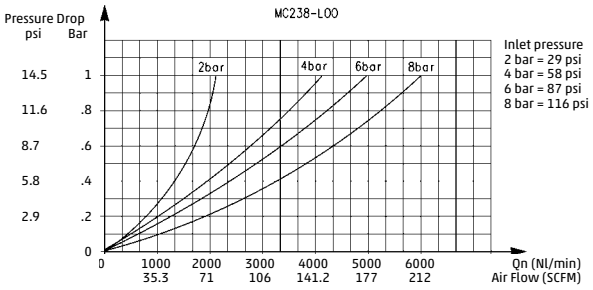
## FLOW DIAGRAMS

### MC104-L00TF



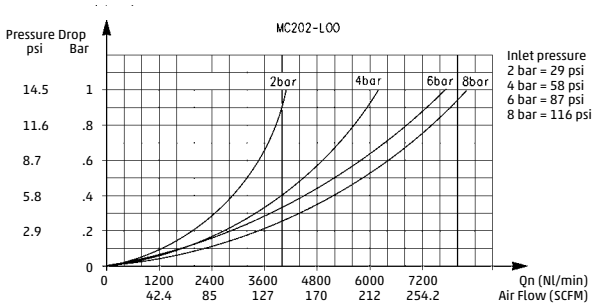

Pa = Inlet pressure
ΔP = Pressure Drop
Qn = Flow

### MC238-L00TF



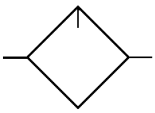

Pa = Inlet pressure
ΔP = Pressure Drop
Qn = Flow

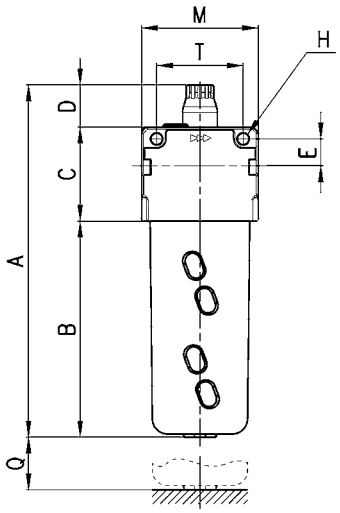
### MC202-L00TF

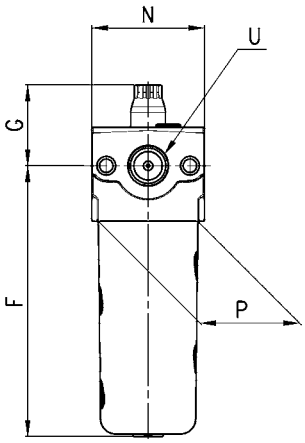



Pa = Inlet pressure
ΔP = Pressure Drop
Qn = Flow

## Lubricators Series MC






DIMENSIONS (in inches)

| Mod. | A | B | C | D | E | F | G | H | M | N | P | Q | T | NPTF U |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MC104-L00TF | 5.827 | 3.268 | 1.575 | .984 | .433 | 4.213 | 1.614 | .177 | 1.772 | 1.772 | 1.457 | 3.307 | 1.378 | 1/4 |
| MC238-L00TF | 7.362 | 4.528 | 1.969 | .866 | .551 | 5.670 | 1.693 | .217 | 2.441 | 2.362 | 2.087 | 4.606 | 1.811 | 3/8 |
| MC202-L00TF | 7.362 | 4.528 | 1.969 | .866 | .551 | 5.670 | 1.693 | .217 | 2.441 | 2.362 | 2.087 | 4.606 | 1.811 | 1/2 |

# Filter/Regulator Series MC

## Port 1/4", 3/8", 1/2" NPTF
## Modular with metal bowl guard and bayonet-type mounting

The filter regulators Series MC are available with port 1/4", 3/8", 1/2" NPTF.

They combine the features of the filters and regulators and have smaller overall dimensions than the two separate components.

### TECHNICAL SPECIFICATIONS

| | | | | |
|---|---|---|---|---|
| Construction | compact modular with filtering element in HDPE - diaphragm type | | | |
| Materials | Body - Aluminum alloy, Bowl - Grilamid TR 55 (Nylon compound), Seals - Buna-N | | | |
| Port | NPTF: | 1/4" | 3/8" | 1/2" |
| Condensate capacity | oz | 1 | 2.4 | 2.4 |
| Weight | lbs | .98 | 2.09 | 2.05 |
| Pressure gauge port | 1/8" NPTF | | | |
| Mounting | vertical in-line or wall-mounting | | | |
| Operating temperature | -5° C - 50° C, (23° F - 122° F), with Dew Point of air at least 2° C (4° F) below the min working temperature | | | |
| Delivered air quality (ISO 8573-1: 2010) | Class 7.8.4 with 25 µm element<br>Class 6.8.4 with 5 µm element | | | |
| Draining of condensate | manual - semi-automatic standard, optional drains available, see code key | | | |
| Finish | Chromate treatment undercoat; Bodies - polyurethane enamel & oven-cured; Bowls - electrostatic coating of polyester epoxy & oven cured | | | |

### PNEUMATIC DATA

| | |
|---|---|
| Inlet pressure | standard or protected depressurization drains: 0.3 - 16 bar (4.25 - 232 psi)<br>depressurization drain: 0.3 - 10 bar (4.25 - 145 psi)<br>automatic drain: 1.5 - 12 bar (22 - 174 psi) for 3/8 and 1/2 port sizes |
| Outlet pressure | 0.5 – 10 bar (7.25 - 145 psi), see code key for optional spring ranges |
| Nominal flow | see graph |
| Secondary pressure relieving | standard |

## CODING EXAMPLE

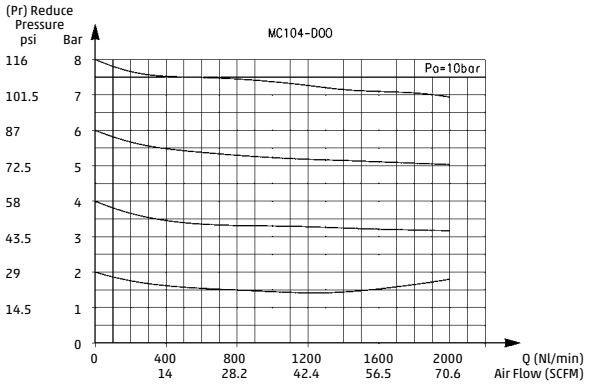
| MC | 1 | 04 | - | D | 0 | 0 | 2 | - | _ | - | TF |
|---|---|---|---|---|---|---|---|---|---|---|---|

| | |
|---|---|
| MC | SERIES |
| 1 | SIZE<br>1 = 1/4" NPTF<br>2 = 3/8" OR 1/2" NPTF |
| 04 | PORT<br>04 = 1/4" NPTF<br>38 = 3/8" NPTF<br>02 = 1/2" NPTF |
| D | FILTER-REGULATOR |
| 0 | FILTERING ELEMENT<br>0 = 25µm<br>1 = 5µm |
| 0 | DRAINING OF CONDENSATE<br>0 = semiautomatic. self-relieving<br>1 = semiautomatic. non-relieving<br>3 = automatic, self-relieving (only for 3/8" and 1/2")<br>4 = depressurization<br>5 = depressurization, orifice filter, self-relieving<br>8 = port 1/8" |
| 2 | PRESSURE GAUGE OPTIONS**<br>Blank = without pressure gauge (standard)<br>1 = with pressure gauge 0 - 2.5 bar (0 - 36 psi)<br>2 = with pressure gauge 0 - 6 bar (0 - 87 psi)<br>3 = with pressure gauge 0 - 10 bar (0 - 145 psi)<br>4 = with pressure gauge 0 - 12 bar (0 - 174 psi) |
| | OPERATING PRESSURE (bar)<br>Blank = 0.5 - 10 (7.25 - 145 psi)<br>2 = 0 - 2 (only 1/4") (0 - 29 psi)<br>4 = 0 - 4 (0 - 58 psi)<br>7 = 0.5 - 7 (only 1/4") (7.25 - 103 psi) |
| VS | REGULATION TYPE<br>Blank = without by-pass valve (standard)<br>VS = with by-pass valve (only 1/4) |
| TF | PORT<br>TF = NPTF<br>Blank = BSPP thread ports |

**Pressure gauges are supplied unassembled to unit
for size 1 pressure gauge M043-P..
for size 2 pressure gauge M053-P..

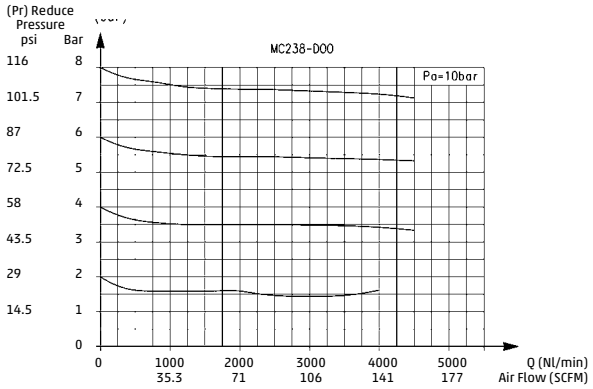
## FLOW DIAGRAMS

### MC104-D00TF



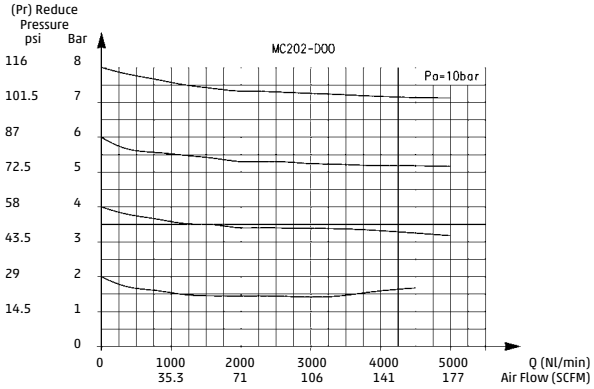

Pa = Inlet pressure
Pr = Regulated pressure
Qn = Flow

### MC238-D00TF



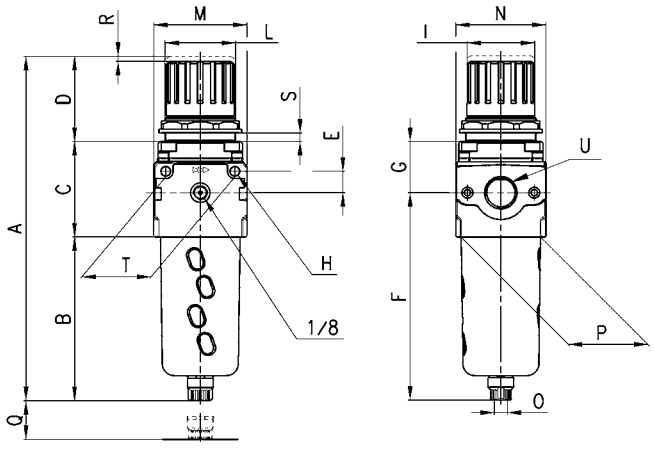

Pa = Inlet pressure
Pr = Regulated pressure
Qn = Flow

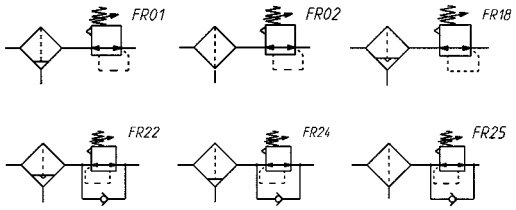
### MC202-D00TF




Pa = Inlet pressure
Pr = Regulated pressure
Qn = Flow

## Filter regulators Series MC




FR01 = filter-reg. with relieving and manual/semiautomatic drain
FR02 = filter-reg. with relieving and direct exhaust
FR18 = filter-reg. with relieving and automatic drain
FR22 = filter-reg. without relieving, with pressure gauge, automatic-depressurisation drain and by-pass valve
FR24 = filter-reg. with relieving and manual/semiautomatic drain and bypass valve
FR25 = filter-reg. with relieving, direct exhaust and by-pass valve

DIMENSIONS (in inches)

| Mod. | A | B | C | D | E | F | G | H | I | L | M | N | O | P | Q | R | S | T | NPTF U |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MC104-D00TF | 7.500 | 4.016 | 2.047 | 1.496 | .433 | 4.980 | 1.083 | .177 | 1.102 | M30x1.5 | 1.772 | 1.772 | 1/8 | 1.457 | 2.283 | .118 | .024 | 1.378 | 1/4 |
| MC238-D00TF | 10.098 | 5.236 | 2.520 | 2.323 | .551 | 6.378 | 1.378 | .217 | 1.772 | M47x1.5 | 2.441 | 2.323 | 1/8 | 2.087 | 2.835 | .138 | .035 | 1.811 | 3/8 |
| MC202-D00TF | 10.098 | 5.236 | 2.520 | 2.323 | .551 | 6.378 | 1.378 | .217 | 1.772 | M47x1.5 | 2.441 | 2.323 | 1/8 | 2.087 | 2.835 | .138 | .035 | 1.811 | 1/2 |

# Lockable Isolation 3/2-Way Valve (Lock-out/Tag-out) Series MC

## Port 1/4", 3/8", 1/2" NPTF
## Modular


The valves are designed so that the downstream air pressure can be vented and the valve locked in the non passing condition to allow work to be carried out with greater safety on pneumatically actuated equipment.

Positioning of these valves is often before the FRL unit. Pulling Manual handle in the "UP" direction shuts off inlet flow and exhausts all downstream pressure via the threaded port in the bottom of the unit. (Silencers can be installed to minimize noise).

With handle extended "UP", lock-out hole (0.315" OD), is exposed in handle spool for locks or hasps. ( Valve shown in illustration in "DOWN" position for normal inlet flow to pass.)

### TECHNICAL SPECIFICATIONS

| | | | | |
|---|---|---|---|---|
| Construction | modular assembly, compact, poppet type | | | |
| Materials | Body - Aluminum alloy, Bowl - Grilamid TR 55 (Nylon compound), Seals - Buna-N | | | |
| Port | NPTF: | 1/4" | 3/8" | 1/2" |
| Weight | lbs | .61 | 1.2 | 1.13 |
| Mounting | in-line, wall or panel mounting (in any position) | | | |
| Operating temperature | -5° C - 50° C, (23° F - 122° F), with Dew Point of air at least 2° C (4° F) below the min working temperature | | | |
| Finish | Chromate treatment undercoat; Bodies - polyurethane enamel & oven-cured; Bowls - electrostatic coating of polyester epoxy & oven cured | | | |

### PNEUMATIC DATA

| | |
|---|---|
| Operating pressure | -0.8 – 10 bar (-12 - 145 psi) |
| Nominal flow | see graph |
| Nominal flow in the exhausted direction | Nominal Flow in the Exhausting Direction, 1/4" NPTF - 1080 Nl/min, (38 SCFM); 3/8" & 1/2" - 2380 Nl/min ( 83 SCFM)) |
| | flow determined at 6 bar with DP= 1 bar (Flow at 87 psi with Pressure Drop of 14.5 psi) |

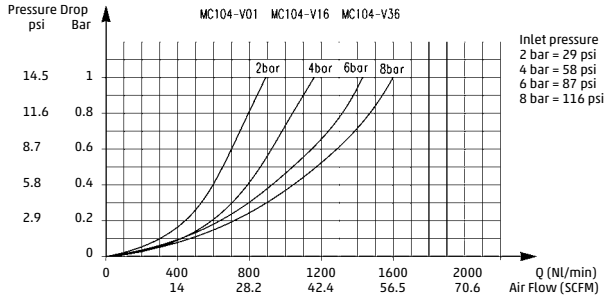
## CODING EXAMPLE

| MC | 1 | 04 | - | V | 01 | TF |
|---|---|---|---|---|---|---|

| | |
|---|---|
| MC | SERIES |
| 1 | SIZE<br>1 = 1/4" NPTF<br>2 = 3/8", 1/2" NPTF |
| 04 | port<br>04 = 1/4" NPTF<br>38 = 3/8" NPTF<br>02 = 1/2" NPTF |
| V | V = 3-way/2-position valve, Lock-Out/Tag-Out |
| 01 | DESIGN TYPE<br>01 = padlock valve (manual command, "UP" = off and downstream flow exhausting, "DOWN" = on and inlet flow passing) |
| TF | PORT<br>TF = NPTF<br>Blank = BSPP thread ports |

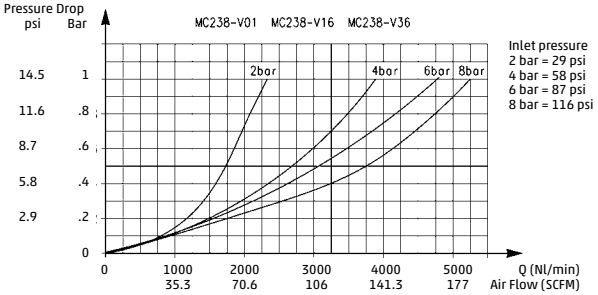
## FLOW DIAGRAMS

### MC104-V01TF



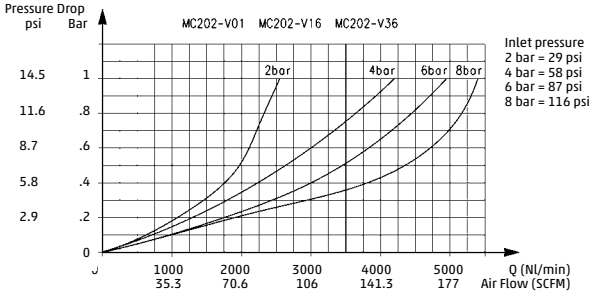

Pa = Inlet pressure
ΔP = Pressure Drop
Qn = Flow

### MC238-V01TF



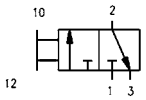

Pa = Inlet pressure
ΔP = Pressure Drop
Qn = Flow

### MC202-V01TF

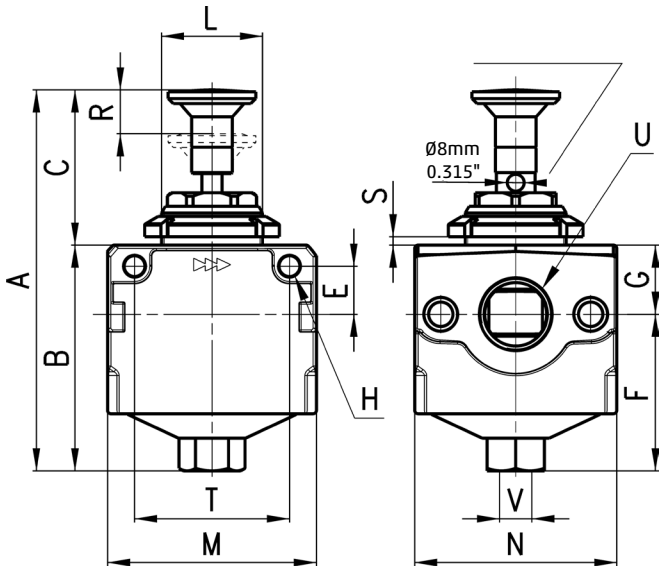



Pa = Inlet pressure
ΔP = Pressure Drop
Qn = Flow

## Lockable isolation valve Series MC




Look-Out hole exposed in '"UP"/OFF position




DIMENSIONS (in inches)

| Mod. | A | B | C | E | F | G | H | L | M | N | R | S | T | NPTF U | NPTF V | Actuation Force (at 85 psi) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MC104-V01TF | 3.866 | 2.14 | 1.713 | .43 | 1.51 | .629 | .177 | M30x1.5 | 1.77 | 1.77 | .354 | 0-.236 | 1.377 | 1/4" | 1/8" | 6.5 lbs |
| MC238-V01TF | 4.44 | 2.63 | 1.81 | .55 | 1.83 | .807 | .217 | M30x1.5 | 2.44 | 2.36 | .518 | 0-.236 | 1.81 | 3/8" | 1/4" | 7.0 lbs |
| MC202-V01TF | 4.44 | 2.63 | 1.81 | .55 | 1.83 | .807 | .217 | M30x1.5 | 2.44 | 2.36 | .518 | 0-.236 | 1.81 | 1/2" | 1/4" | 7.0 lbs |

# Electropneumatic/Pneumatic Isolation Valve(Shut-off) Series MC

## Port 1/4", 3/8", 1/2" NPTF:
## Model '-V16' has Solenoid Pilot
## Model '-V36' has Air Pilot
## Modular


These 3/2 way valves are designed to block the air at the inlet of the FRL group to pressurize or depressurize the equipment. The valves can either be electropneumatically or pneumatically operated and can be supplied with port 1/4", 3/8", 1/2" NPTF.

In case of a solenoid valve use coil type U7... or G7... and the coil is ordered as a separate item.

### TECHNICAL SPECIFICATIONS

| | | | | |
|---|---|---|---|---|
| Construction | compact, poppet-type | | | |
| Materials | Body - Aluminum alloy, Bowl - Grilamid TR 55 (Nylon compound), Seals - Buna-N | | | |
| Port | NPTF: | 1/4" | 3/8" | 1/2" |
| Weight | lbs | .69 | 1.53 | 1.48 |
| Mounting | in-line wall or panel mounting (in any position) | | | |
| Operating temperature | -5° C - 50° C, (23° F - 122° F), with Dew Point of air at least 2° C (4° F) below the min working temperature | | | |
| Finish | Chromate treatment undercoat; Bodies - polyurethane enamel & oven-cured; Bowls - electrostatic coating of polyester epoxy & oven cured | | | |

### PNEUMATIC DATA

| | |
|---|---|
| Operating pressure | Electropneumatic: 2 - 10 (29-145 psi)<br>Pneumatic: -0.8 - 10 bar (-12 - 145 psi) |
| Nominal flow | see graph |
| Outlet flow | Nominal Flow in the Exhausting Direction, 1/4" NPTF - 1080 Nl/min, (38 SCFM, 3/8" & 1/2" - 2380 Nl/min ( 83 SCFM)) |
| Flows determined | at 6 bar with DP = 1 bar (Flow at 87 psi with pressure drop of 14.5 psi) |

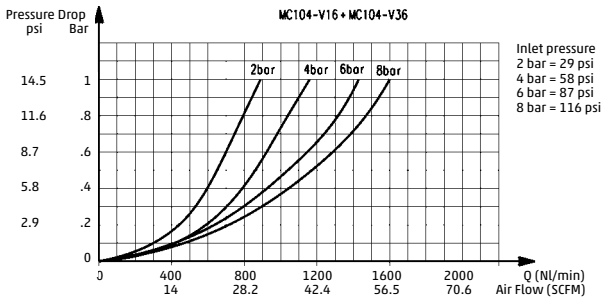
## CODING EXAMPLE

| MC | 1 | 04 | - | V | 1 | 6 | TF |
|---|---|---|---|---|---|---|---|

| | |
|---|---|
| MC | SERIES |
| 1 | SIZE<br>1 = 1/4"<br>2 = 3/8" or 1/2" |
| 04 | PORTS:<br>04 = 1/4" NPTF<br>38 = 3/8" NPTF<br>02 = 1/2" NPTF |
| V | V = 3-way/2-position valve |
| 16 | CONSTRUCTION<br>16 = electropneumatic – Solenoid Pilot* (*Note: Solenoid coil is ordered as a separate item. See following pages for part number selection.<br>36 = pneumatic – Air Pilot |
| TF | PORT<br>TF = NPTF<br>Blank = BSPP thread ports |

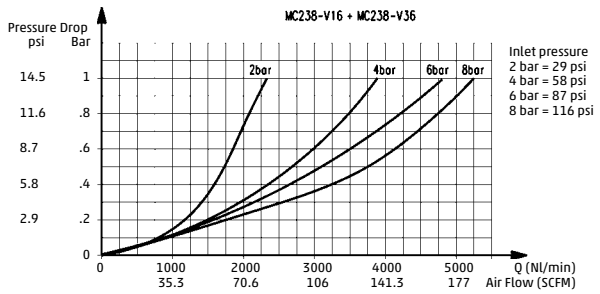
## FLOW DIAGRAMS

### MC104-V16TF OR V36TF



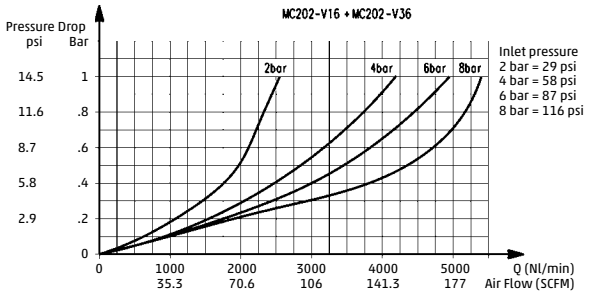

Pa = Inlet pressure
ΔP = Pressure Drop
Qn = Flow

### MC238-V16TF OR V36TF



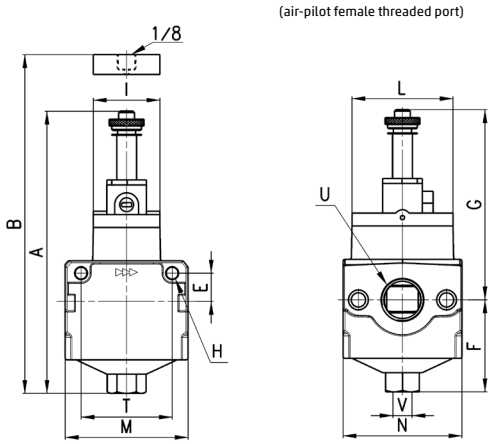

Pa = Inlet pressure
ΔP = Pressure Drop
Qn = Flow

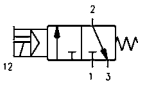
### MC202-V16TF OR V36TF



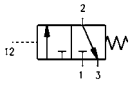

Pa = Inlet pressure
ΔP = Pressure Drop
Qn = Flow

## Lockable isolation valve Series MC




V16




V36

DIMENSIONS (in inches)

| Mod. | A | B | E | F | G | H | I | L | M | N | T | PORT U (NPTF) | EXHAUST V |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MC104-V16TF | 4.724 | - | .433 | 1.515 | 3.208 | .177 | .866 | 1.259 | 1.771 | 1.771 | 1.377 | 1/4" | 1/8" |
| MC238-V16TF | 5.610 | - | .551 | 1.830 | 3.779 | .217 | 1.319 | 2.007 | 2.440 | 2.362 | 1.811 | 3/8" | 1/4" |
| MC202-V16TF | 5.610 | - | .551 | 1.830 | 3.779 | .217 | 1.319 | 2.007 | 2.440 | 2.362 | 1.811 | 1/2" | 1/4" |
| MC104-V36TF | - | 3.05 | .433 | 1.515 | - | .177 | .866 | 1.259 | 1.771 | 1.771 | 1.377 | 1/4" | 1/8" |
| MC238-V36TF | - | 3.68 | .551 | 1.830 | - | .217 | 1.319 | 2.007 | 2.440 | 2.362 | 1.811 | 3/8" | 1/4" |
| MC202-V36TF | - | 3.68 | .551 | 1.830 | - | .217 | 1.319 | 2.007 | 2.440 | 2.362 | 1.811 | 1/2" | 1/4" |

# Soft Start Valve Series MC

## Ports 1/4", 3/8", 1/2" NPTF


The Series MC sort start valve is used to avoid damaging people or equipment when pressurizing pneumatic systems containing cylinders.

The features of these components allows one to pressurize equipment up to 50% of the set outlet reduced pressure, after which 100% is reached rapidly.

The usual location of the soft start valve is after the FRL. The modular design allows for perfect adaptability with all Series MC.

A pressure switch can be mounted into the upper part of the unit after removal of the S2610 1/8 plug.
An electrical or pneumatic 3-way/2-pos. Shut-Off valve may or may not be installed before the unit to allow Depressurization.

The brass adjustment screw in the head cap varies the timing constant and the pressure ramp-up rate.

### TECHNICAL SPECIFICATIONS

| | | | | |
|---|---|---|---|---|
| Construction | modular, compact, poppet type | | | |
| Materials | Body - Aluminum, Cover - Nylon, Seals - Buna-N, internals in brass | | | |
| Ports | NPTF | 1/4" | 3/8" | 1/2" |
| Weight | lbs | .06 | 1.250 | 1.25 |
| Mounting | in-line wall or panel mounting (in any position) | | | |
| Operating temperature | -5° C - 50° C, (23° F - 122° F), with Dew Point of air at least 2° C (4° F) below the min working temperature | | | |
| Finish | Chromate treatment undercoat; Bodies - polyurethane enamel & oven-cured; Bowls - electrostatic coating of polyester epoxy & oven cured | | | |

### PNEUMATIC DATA

| | |
|---|---|
| Operating pressure | 2 - 10 bar (29 - 145 psi) |
| Nominal flow (determined at 6 bar with DP1) | 1/4" - 1850 Nl/min (64.7 SCFM), 3/8" - 4000 Nl/min (140 SCFM), 1/2" - 4350 Nl/min (152 SCFM) |

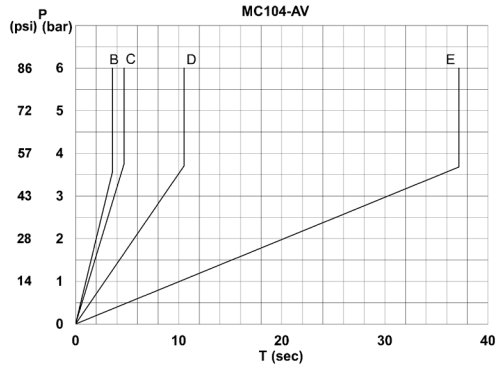
## CODING EXAMPLE

| MC | 2 | 02 | - | AV | TF |
|---|---|---|---|---|---|

| | |
|---|---|
| MC | SERIES |
| 2 | SIZE<br>1 = 1/4"<br>2 = 3/8" - 1/2" |
| 02 | ports<br>04 = 1/4"<br>38 = 3/8"<br>02 = 1/2" |
| AV | AV = soft start valve |
| TF | PORT<br>TF = NPTF<br>Blank = BSPP thread ports |

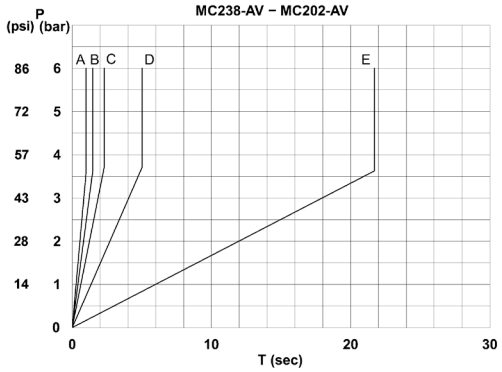
## DIAGRAMS FOR PRESSURIZATION TIMES

### MC104-AVTF




Pressurization time is adjusted by n° of turns of the regulation screw, with a downstream pressure of 5 litres (.177 $FT^3$) :
A = 5 turns
B = 4 turns
C = 3 turns
D = 2 turns
E = 1 turn

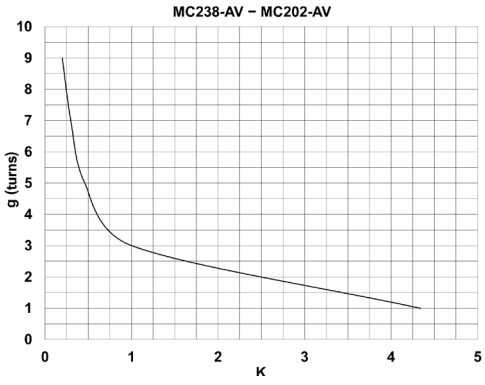
### MC238-AVTF and MC202-AVTF




Pressurization time is adjusted by n° of turns of the regulation screw, with a downstream pressure of 5 litres (.177 $FT^3$) :
A = 9 turns
B = 7 turns
C = 5 turns
D = 3 turns
E = 1 turn

### MC104-AVTF

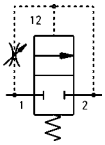

### MC238-AVTF and MC202-AVTF

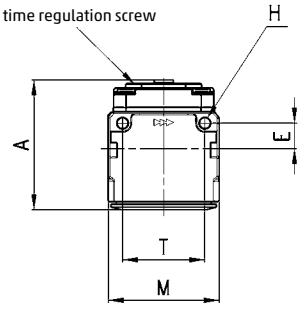


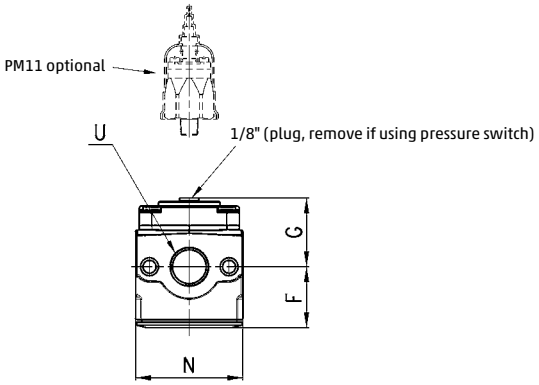

Value "K" is used to calculate the number of turns, (open from dead bottom closed), of the regulation screw required to obtain the required pressurization time with an inlet pressure of 87 psi. Variations of the inlet pressure can cause deviations of the pressure time by ± 20%.
K = t/V
V = volume of the downstream system in Liters
t = desired pressuring time in seconds
g = number of turns

Example: V = 5 Liters 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 turns open from dead bottom closed.

## Soft start valve Series MC




DIMENSIONS (in inches)

| Mod. | A | E | F | G | H | M | N | T | NPTF U |
|---|---|---|---|---|---|---|---|---|---|
| MC104-AVTF | 2.343 | .433 | 1.122 | 1.220 | .177 | 1.772 | 1.772 | 1.378 | 1/4 |
| MC238-AVTF | 2.854 | .551 | 1.339 | 1.516 | .217 | 2.441 | 2.362 | 1.811 | 3/8 |
| MC202-AVTF | 2.854 | .551 | 1.339 | 1.516 | .217 | 2.441 | 2.362 | 1.811 | 1/2 |

# Take-Off Blocks, (Distribution-Block) Series MC

## Ports 1/4", (3/8"), 1/2" NPTF
## Modular, with or without internal Check-Valve


The take-off blocks when equipped with a check-valve, allow the use of non lubricated air from the vertical outlets if inserted between the regulator and the lubricator. Otherwise, the check-valve prevents downstream lubrication from siphoning back upstream where non-lube components may be required.

If mounted as last component in a completed assembly, the distribution block requires the use of end-plates since its main horizontal flow path ports are non-threaded. Meaning, no direct threaded components can be assembled in the left-to-right flow path. ONLY end-plates can be used, unless otherwise in the middle of a typical FRL assembly.

### TECHNICAL SPECIFICATIONS

| | | | | |
|---|---|---|---|---|
| Construction | modular, compact, diaphragm type with or without internal VNR check-valve | | | |
| Materials | Body - Aluminum, Seals - Buna-N, internals in brass | | | |
| Ports | NPTF | 1/4" | 1/2" | (3/8" assemblies utilize the larger 1/2" model) |
| Weight | lbs | .511 | .836 | |
| Outlet ports | NPTF | 1/4" | 1/2", (Threaded outlet ports only, along vertical axis. Horizontal flow-path ports are un-threaded and require assembly within an existing assembly or terminal end-plates kits.) | |
| Mounting | in-line wall or panel mounting (in any position) | | | |
| Operating temperature | -5° C - 50° C, (23° F - 122° F), with Dew Point of air at least 2° C (4° F) below the min working temperature | | | |
| Finish | Chromate treatment undercoat; Bodies - polyurethane enamel & oven-cured; Bowls - electrostatic coating of polyester epoxy & oven cured | | | |

### PNEUMATIC DATA

| | |
|---|---|
| Operating pressure | 0 - 16 bar (0 - 235 psi) |
| Nominal flow (determined at 87 psi with a pressure drop of 14.5 psi) | MC1-B = 144 SCFM; MC1-B-VNR = 83 SCFM, (with VNR check-valve)<br>MC2-B = 297 SCFM; MC2-B-VNR = 198 SCFM, (with VNR check-valve) |

## CODING EXAMPLE

| MC | 2 | - | B | - | VNR | TF |
|---|---|---|---|---|---|---|

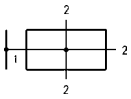
| | |
|---|---|
| MC | SERIES |
| 2 | SIZE<br>1 = 1/4" outlets<br>2 = 1/2" outlets, (used on 3/8" models also) |
| B | B = take off block |
| VNR | OPTIONS<br>"Blank" = standard<br>VNR = with check valve built in |
| TF | PORT<br>TF = NPTF<br>Blank = BSPP thread ports |



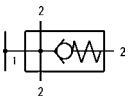
## Take off blocks Series MC

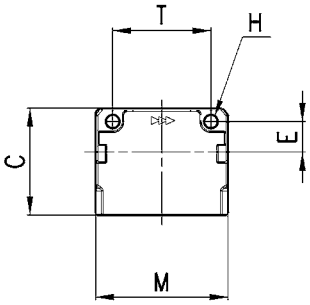
**NOTE: Inlet and Outlet are not threaded. ONLY vertical ports "U" are threaded. MUST be used with flanges or intermediate within assembly.

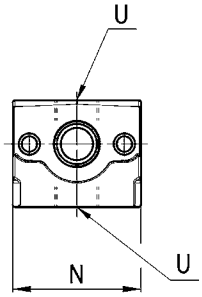
MC-1 - B
MC-2 - B




MC-1-B-VNR
MC-2-B-VNR




DIMENSIONS (in inches)

| Mod. | C | H | E | M | N | T | NPTF U | size |
|---|---|---|---|---|---|---|---|---|
| MC1-B | 1.693 | .177 | .433 | 1.772 | 1.772 | 1.378 | 1/4" | 1 |
| MC1-B-VNR | 1.693 | .177 | .433 | 1.772 | 1.772 | 1.378 | 1/4" | 1 |
| MC2-B | 1.969 | .217 | .551 | 2.441 | 2.362 | 1.811 | 1/2 | 2 |
| MC2-B-VNR | 1.969 | .217 | .551 | 2.441 | 2.362 | 1.811 | 1/2 | 2 |

# FRL Series MC - Completed Assemblies (Single Part Number Code)

## Ports 1/4", 3/8", 1/2" NPTF

The FRL Series MC Fully Assembled version are easier to order using one single part number code and to mount.

The version with end-plate kit flanges is supplied without rear mounting bracket assembly, KIT B, (sold separately).

### TECHNICAL SPECIFICATIONS

| | |
|---|---|
| Construction | modular, compact, either with or without end-plate flange kits. |
| Materials | Body - Aluminum, Heads/Covers - Nylon, Bowls - Nylon (Grilamid), Bowl Guard - Aluminum, Seals - Buna-N, internals in brass |
| Ports | 1/4" - 3/8" - 1/2" NPTF |
| Mounting | vertical, in-line or wall-mounting |
| Finish | Chromate treatment undercoat; Bodies - polyurethane enamel & oven-cured; Bowls - electrostatic coating of polyester epoxy & oven cured |

### PNEUMATIC DATA

| | |
|---|---|
| Operating pressure | -5° C - 50° C, (23° F - 122° F), with Dew Point of air at least 2° C (4° F) below the min working temperature |
| Flow | determined at 87 psi inlet supply with pressure drop of 14.5 psi (Pressure drop of 7.25 for FRL assembly group utilizing "R00", instead of "D00" models.) |

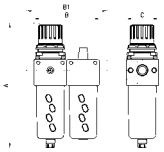
## CODING EXAMPLE

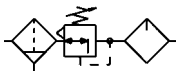
| MC | 2 | 02 | - | C | - | 5 | - | FL | TF |
|---|---|---|---|---|---|---|---|---|---|

| | |
|---|---|
| MC | SERIES |
| 2 | SIZE<br>1 = 1/4"<br>2 = 3/8" or 1/2" |
| 02 | PORTS:<br>04 = 1/4" NPTF<br>38 = 3/8" NPTF<br>02 = 1/2" NPTF |
| C | ASSEMBLY GROUP**<br>C = D + L<br>E = V01 + D + L<br>FRL = F + R + L<br>GN = D + L + V16 + AV<br>HNA = V01 + D + L + V16 + AV + PRESS N.A.<br>HNC = V01 + D + L + V16 + AV + PRESS N.C.<br>N = V01 + D |
| 5 | FILTERING ELEMENT<br>5 = 5 MM<br>25 = 25 MM |
| FL | FL = WITH END-PLATE FLANGES<br>"BLANK" = NO END-PLATES ON ASSEMBLY |
| TF | PORT<br>TF = NPTF<br>Blank = BSPP thread ports |

| ** Assembly group KEY for Code Abbreviations | |
|---|---|
| D | MC***-D00 Filter-regulator 0-10 bar semi-automatic manual drain filtering element 5µm or 25µm |
| V01 | MC***-V01 Lock-Out Valve 3/2 way manually operated |
| V16 | MC***-V16 Shut-Off Valve 3/2 way electropneumatically operated, (coils sold separately, not included in assemblies) |
| L | MC***-L00 Lubricator |
| F | MC***-F00 Filter 5 µm or 25 µm |
| R | MC***-R00 Regulator 0 - 10 bar (0 - 145 psi) |
| AV | MC***-AV Soft start valve |
| PRESS | PM11-NA or NC, Pressure switches (define if NC or NO) |

## Assembly group C





D + L

DIMENSIONS (in inches)

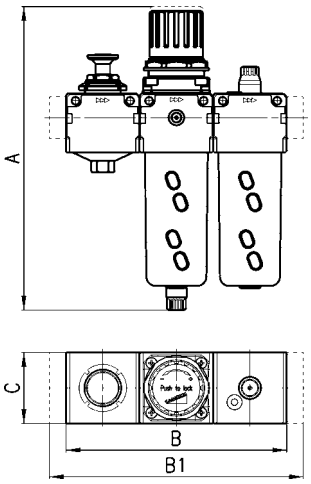
| Mod. | A | B | C | Flow Nl/min | SCFM |
|---|---|---|---|---|---|
| MC104-C-5TF | 7.618 | 3.543 | 1.772 | 1450 | 51.2 |
| MC238-C-5TF | 10.098 | 4.882 | 2.362 | 4800 | 169.5 |
| MC202-C-5TF | 10.098 | 4.882 | 2.362 | 4900 | 173 |

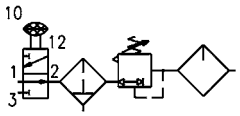
DIMENSIONS (in inches)

| Mod. | A | B1 | Flow Nl/min | SCFM |
|---|---|---|---|---|
| MC104-C-5-FLTF | 7.618 | 4.488 | 1450 | 51.2 |
| MC238-C-5-FLTF | 10.098 | 5.984 | 4800 | 169.5 |
| MC202-C-5-FLTF | 10.098 | 5.984 | 4900 | 173 |

## Assembly group E

V01 + D + L



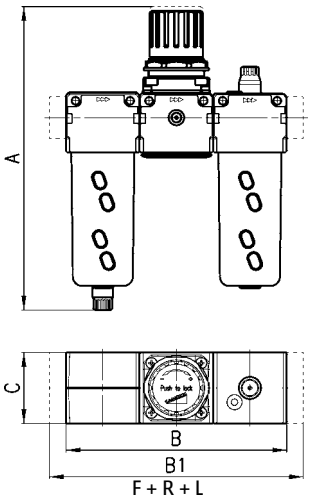

DIMENSIONS (in inches)

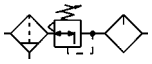
| Mod. | A | B | C | Flow Nl/min | SCFM |
|---|---|---|---|---|---|
| MC104-E-5TF | 7.618 | 5.315 | 1.772 | 1450 | 51.2 |
| MC238-E-5TF | 10.098 | 7.323 | 2.362 | 4800 | 169.5 |
| MC202-E-5TF | 10.098 | 7.323 | 2.362 | 4950 | 175 |

DIMENSIONS (in inches)

| Mod. | A | B1 | C | Flow Nl/min | SCFM |
|---|---|---|---|---|---|
| MC104-E-5-FLTF | 7.618 | 6.260 | 1.772 | 1450 | 51.2 |
| MC238-E-5-FLTF | 10.098 | 8.425 | 2.362 | 4800 | 169.5 |
| MC202-E-5-FLTF | 10.098 | 8.425 | 2.362 | 4950 | 175 |

## Assembly group FRL

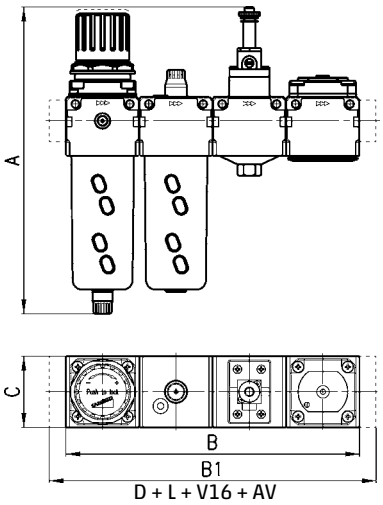


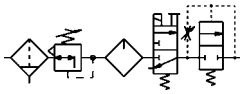



| DIMENSIONS (in inches) | | | | | |
|---|---|---|---|---|---|
| Mod. | A | B | C | Flow Nl/min | SCFM |
| MC104-FRL-5TF | 7.618 | 5.315 | 1.772 | 1450 | 51.2 |
| MC238-FRL-5TF | 10.098 | 7.323 | 2.362 | 4800 | 169.5 |
| MC202-FRL-5TF | 10.098 | 7.323 | 2.362 | 4900 | 173 |

| DIMENSIONS (in inches) | | | | | |
|---|---|---|---|---|---|
| Mod. | A | B1 | C | Flow Nl/min | SCFM |
| MC104-FRL-5-FLTF | 7.618 | 6.260 | 1.772 | 1450 | 51.2 |
| MC238-FRL-5-FLTF | 10.098 | 8.425 | 2.362 | 4800 | 169.5 |
| MC202-FRL-5-FLTF | 10.098 | 8.425 | 2.362 | 4900 | 173 |

## Assembly group GN

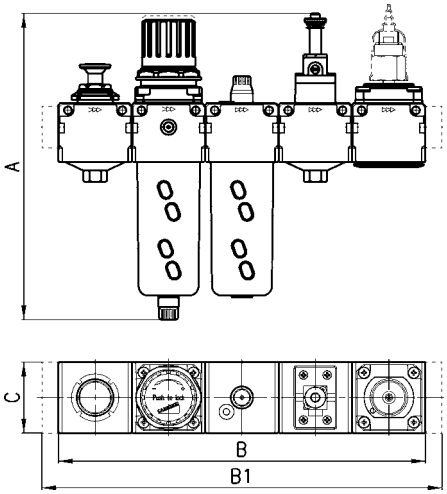


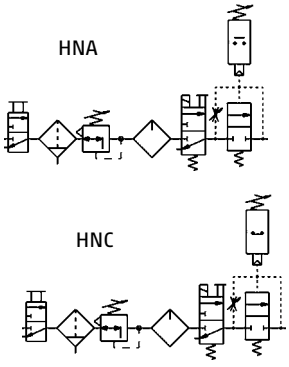



| DIMENSIONS (in inches) | | | | | |
|---|---|---|---|---|---|
| Mod. | A | B | C | Flow Nl/min | SCFM |
| MC104-GN-5TF | 8.189 | 7.087 | 1.772 | 1450 | 51.2 |
| MC238-GN-5TF | 10.197 | 9.764 | 2.362 | 4800 | 169.5 |
| MC202-GN-5TF | 10.197 | 9.764 | 2.362 | 4900 | 173 |

| DIMENSIONS (in inches) | | | | | |
|---|---|---|---|---|---|
| Mod. | A | B1 | C | Flow Nl/min | SCFM |
| MC104-GN-5-FLTF | 8.189 | 8.031 | 1.772 | 1450 | 51.2 |
| MC238-GN-5-FLTF | 10.197 | 10.866 | 2.362 | 4800 | 169.5 |
| MC202-GN-5-FLTF | 10.197 | 10.866 | 2.362 | 4900 | 173 |

## Assembly group HN... ( Complete code with "A" or "C" for PM11 choice)



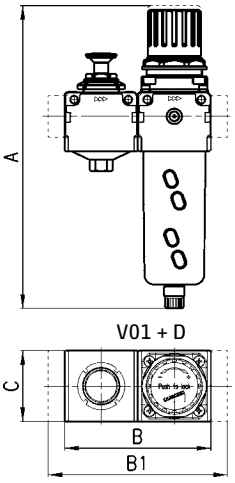




| DIMENSIONS (in inches) | | | | | |
|---|---|---|---|---|---|
| Mod. | A | B | C | Flow Nl/min | SCFM |
| MC104-HN... -5TF | 8.189 | 8.858 | 1.772 | 1450 | 51.2 |
| MC238-HN... -5TF | 10.193 | 12.205 | 2.362 | 4800 | 169.5 |
| MC202-HN... -5TF | 10.193 | 12.205 | 2.362 | 4900 | 173 |

| DIMENSIONS (in inches) | | | | | |
|---|---|---|---|---|---|
| Mod. | A | B1 | C | Flow Nl/min | SCFM |
| MC104-HN... -5-FLTF | 8.189 | 9.803 | 1.772 | 1450 | 51.2 |
| MC238-HN... -5-FLTF | 10.193 | 13.307 | 2.362 | 4800 | 169.5 |
| MC202-HN... -5-FLTF | 10.193 | 13.307 | 2.362 | 4950 | 175 |

## Assembly group N

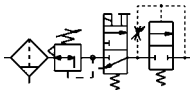


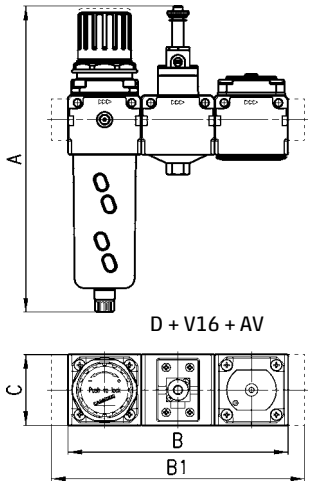



| DIMENSIONS (in inches) | | | | | |
|---|---|---|---|---|---|
| Mod. | A | B | C | Flow Nl/min | SCFM |
| MC104-N-5TF | 7.618 | 3.543 | 1.772 | 1450 | 51.2 |
| MC238-N-5TF | 10.098 | 4.882 | 2.362 | 4800 | 169.5 |
| MC202-N-5TF | 10.098 | 4.882 | 2.362 | 4950 | 175 |

| DIMENSIONS (in inches) | | | | | |
|---|---|---|---|---|---|
| Mod. | A | B1 | C | Flow Nl/min | SCFM |
| MC104-N-5-FLTF | 7.618 | 4.488 | 1.772 | 1450 | 51.2 |
| MC238-N-5-FLTF | 10.098 | 5.984 | 2.362 | 4800 | 169.5 |
| MC202-N-5-FLTF | 10.098 | 5.984 | 2.362 | 4950 | 175 |

## Assembly group PN, (coils sold separately, not included in assemblies)

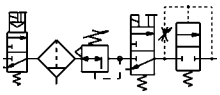


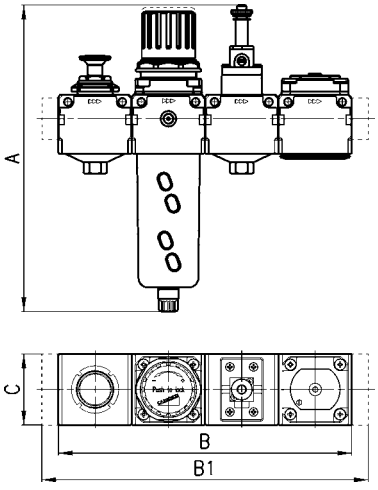



| DIMENSIONS (in inches) | | | | | |
|---|---|---|---|---|---|
| Mod. | A | B | C | Flow Nl/min | SCFM |
| MC104-PN-5TF | 8.189 | 5.315 | 1.772 | 1450 | 51.2 |
| MC238-PN-5TF | 10.197 | 7.323 | 2.362 | 4800 | 169.5 |
| MC202-PN-5TF | 10.197 | 7.323 | 2.362 | 4950 | 175 |

| DIMENSIONS (in inches) | | | | | |
|---|---|---|---|---|---|
| Mod. | A | B1 | C | Flow Nl/min | SCFM |
| MC104-PN-5-FLTF | 8.189 | 8.189 | 1.772 | 1450 | 51.2 |
| MC238-PN-5-FLTF | 10.197 | 10.866 | 2.362 | 4800 | 169.5 |
| MC202-PN-5-FLTF | 10.197 | 10.866 | 2.362 | 4950 | 175 |

## Assembly group QN, (coils sold separately, not included in assemblies)

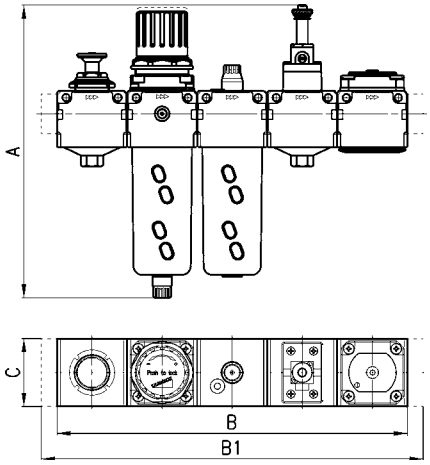




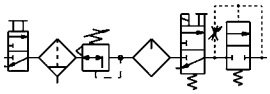

| DIMENSIONS (in inches) | | | | | |
|---|---|---|---|---|---|
| Mod. | A | B | C | Flow Nl/min | SCFM |
| MC104-QN-5TF | 8.189 | 7.087 | 1.772 | 1450 | 51.2 |
| MC238-QN-5TF | 10.197 | 9.764 | 2.362 | 4800 | 169.5 |
| MC202-QN-5TF | 10.197 | 9.764 | 2.362 | 4950 | 175 |

| DIMENSIONS (in inches) | | | | | |
|---|---|---|---|---|---|
| Mod. | A | B1 | C | Flow Nl/min | SCFM |
| MC104-QN-5-FLTF | 8.189 | 8.031 | 1.772 | 1450 | 51.2 |
| MC238-QN-5-FLTF | 10.197 | 10.866 | 2.362 | 4800 | 169.5 |
| MC202-QN-5-FLTF | 10.197 | 10.866 | 2.362 | 4950 | 175 |

## Assembly group TN, (coils sold separately, not included in assemblies).




V01 + D + L + V16 + AV



DIMENSIONS (in inches)

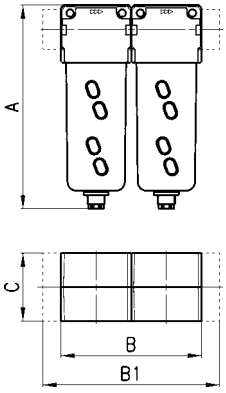
| Mod. | A | B | C | Flow Nl/min | SCFM |
|---|---|---|---|---|---|
| MC104-TN-5TF | 8.189 | 8.858 | 1.772 | 1450 | 51.2 |
| MC238-TN-5TF | 10.197 | 12.205 | 2.362 | 4800 | 169.5 |
| MC202-TN-5TF | 10.197 | 12.205 | 2.362 | 4950 | 175 |

DIMENSIONS (in inches)

| Mod. | A | B1 | C | Flow Nl/min | SCFM |
|---|---|---|---|---|---|
| MC104-TN-5-FLTF | 8.189 | 9.803 | 1.772 | 1450 | 51.2 |
| MC238-TN-5-FLTF | 10.197 | 13.307 | 2.362 | 4800 | 169.5 |
| MC202-TN-5-FLTF | 10.197 | 13.307 | 2.362 | 4950 | 175 |

## Assembly group U

F13 + FB3



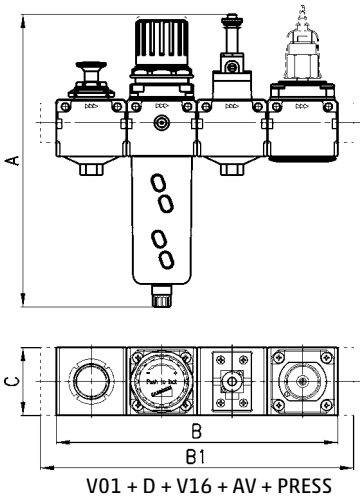

DIMENSIONS (in inches)

| Mod. | A | B | C | Flow Nl/min | SCFM |
|---|---|---|---|---|---|
| MC238-U-5TF | 7.087 | 4.882 | 2.362 | 2050 | 72.4 |
| MC202-U-5TF | 7.087 | 4.882 | 2.362 | 2300 | 81.2 |

DIMENSIONS (in inches)

| Mod. | A | B1 | C | Flow Nl/min | SCFM |
|---|---|---|---|---|---|
| MC238-U-5-FLTF | 7.087 | 5.984 | 2.362 | 2050 | 72.4 |
| MC202-U-5-FLTF | 7.087 | 5.984 | 2.362 | 2300 | 81.2 |

## Assembly group ZN... (complete Code with "A" or "C" for PM11 choice), (coils sold separately, not included in assemblies)

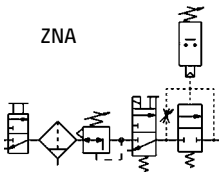



V01 + D + V16 + AV + PRESS

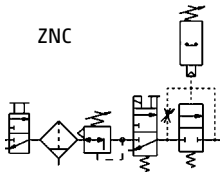
| DIMENSIONS (in inches) | | | | | |
|---|---|---|---|---|---|
| Mod. | A | B | C | Flow Nl/min | SCFM |
| MC104-ZN... -5TF | 8.189 | 7.087 | 1.772 | 1450 | 51.2 |
| MC238-ZN... -5TF | 10.197 | 9.764 | 2.362 | 4800 | 169.5 |
| MC202-ZN... -5TF | 10.197 | 9.764 | 2.362 | 4950 | 175 |

| DIMENSIONS (in inches) | | | | | |
|---|---|---|---|---|---|
| Mod. | A | B1 | C | Flow Nl/min | SCFM |
| MC104-ZN... -5-FLTF | 8.189 | 8.031 | 1.772 | 1450 | 51.2 |
| MC238-ZN... -5-FLTF | 10.197 | 10.866 | 2.362 | 4800 | 169.5 |
| MC202-ZN... -5-FLTF | 10.197 | 10.866 | 2.362 | 4950 | 175 |

ZNA



ZNC



# FRL Series MC Assembly Kits Guide

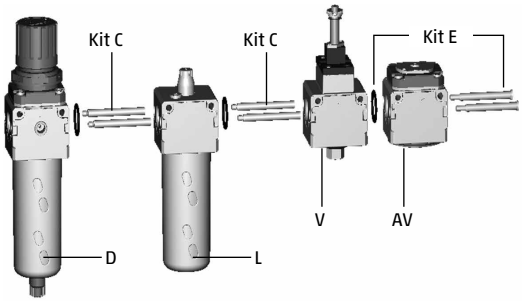
**LEGEND ***
All Components use an abbreviated Single-Letter code for determining KITS required. (see table below for examples of various assemblies and KITS)

- **F** = Filter (MC***-F00) - with "pass-through" assembly holes
- **R** = Regulator (MC***-R00) – with threaded fixed assembly holes
- **L** = Lubricator (MC***-L00) - with "pass-through" assembly holes
- **D** = Filter- Regulator Combo / In-Line Unit (MC***-D00) – with threaded fixed assembly holes
- **V** = 3/2-way Manual "Lock-Out" Valve, or Solenoid Shut-Off Valve, or Air-Pilot Shut-Off Valve (MC***-V01, MC***-V16, MC***-V36) - with "pass-through" assembly holes
- **B** = Additional outlet pressure block, "Take-Off" Block (MC*-B***) - with "pass-through" assembly holes
- **AV** = Slow start valve / Soft-Start valve (MC***-AV) - with "pass-through" assembly holes

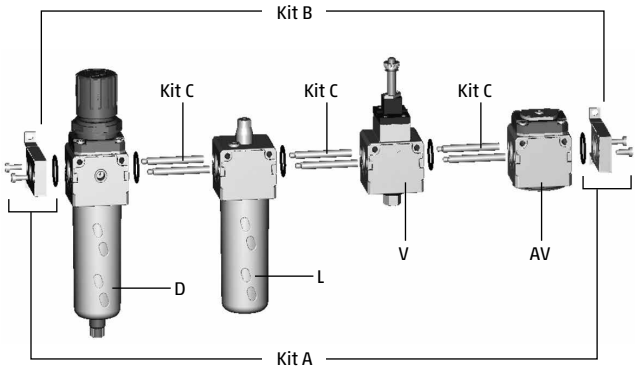
**INSTRUCTIONS**

1. In deciding which KITS to use for assembly, you must first decide if End-Plates, (KIT A), are to be used based upon customer preference. This affects the number of Tie-Rod KITS, (KIT C or KIT D) that will be required, as opposed to Cap-Screw KITS, (KIT E or KIT F), when no End-Plates are used in assembly.
2. ONLY Regulators and Filter-Regulators have threads in their bodies, which require Tie-Rod or Cap-Screw KITS to terminate in them. All other components allow the Tie-Rods and Cap-Screws to pass through their bodies. This allows for the most common Tie-Rod set, (KIT C), to be used in all assemblies, and merely change the final terminating/outside Tie-Rods or Cap-Screws based on the use of End-Plates, or not.
3. If no Regulators or Filter-Regulators are used, and all components are a "Pass-Through" type with no threads, then alternate KITS D or F would be used to finish the Tie-Rod or Cap-Screw assembly.

**FRL without End-Plates**
1D + 1L + 1V + 1AV + 2 kit C + 1 kit E




**FRL with End-Plates + Wall-Mount Brackets**
1D + 1L + 1V + 1AV + 3 kit C + 1 kit A + 1 kit B

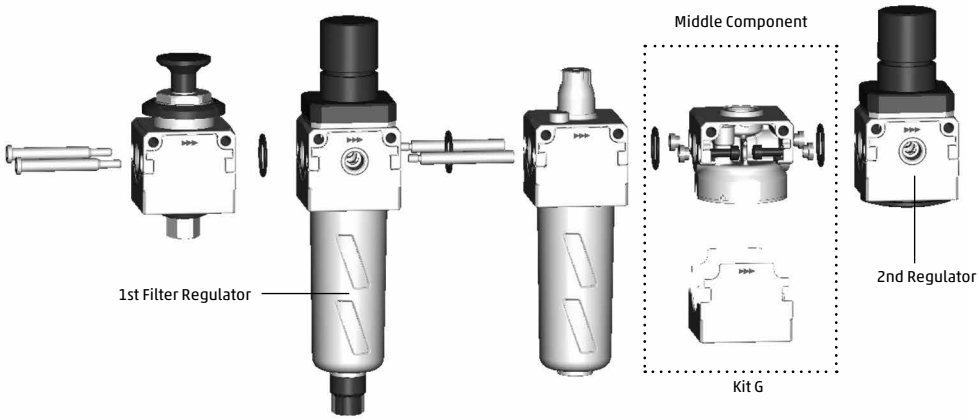



EXAMPLE OF FRL MODULAR ASSEMBLY, Based on Components in assembly using Legend above *

| ASSEMBLY WITHOUT END-PLATES | | ASSEMBLY WITH END-PLATES | |
|---|---|---|---|
| Components * | KITS Needed | Components * | KITS Needed |
| F + R + L | 2 kit E | F + R + L | 1 kit A + 2 kit C |
| D + L | 1 kit E | D + L | 1 kit A + 1 kit C |
| D + B + L | 1 kit E + 1 kit C | D + B + L | 1 kit A + 2 kit C |
| D + B + R + L | 2 kit E + 1 kit C | D + B + R + L | 1 kit A + 3 kit C |
| V + F + R + L | 2 kit E + 1 kit C | V + F + R + L | 1 kit A + 3 kit C |
| V + F + R + L + V + AV | 2 kit E + 3 kit C | V + F + R + L | 1 kit A + 5 kit C |
| F + L | 1 kit F | F + L | 1 kit A + 1 kit C + 1 Kit D |
| F + L + V + AV | 2 kit C + 1 kit F | F + L + V + AV | 1 kit A + 3 kit C + 1 Kit D |
| V + D + V + AV | 2 kit E + 1 kit C | V + D + V + AV | 1 kit A + 3 kit C |

| KIT COMPOSITION | | | |
|---|---|---|---|
| Kit A | Left and Right End-plate + 4 cap-screws + 2 O-Rings | Kit D | 2 Female-Female tie-rods |
| Kit B | 2 Wall-Mount supports + 4 M5 screws | Kit E | 2 male cap-screws + 1 o-ring |
| Kit C | 2 Male-Female tie-rods + 1 O-Ring | Kit F | 2 male cap-screws + 2 female cap-screws + 1 o-ring |
| | | Kit G ** | 4 male cap-screws + 4 washers/bushings + 2 o-rings |

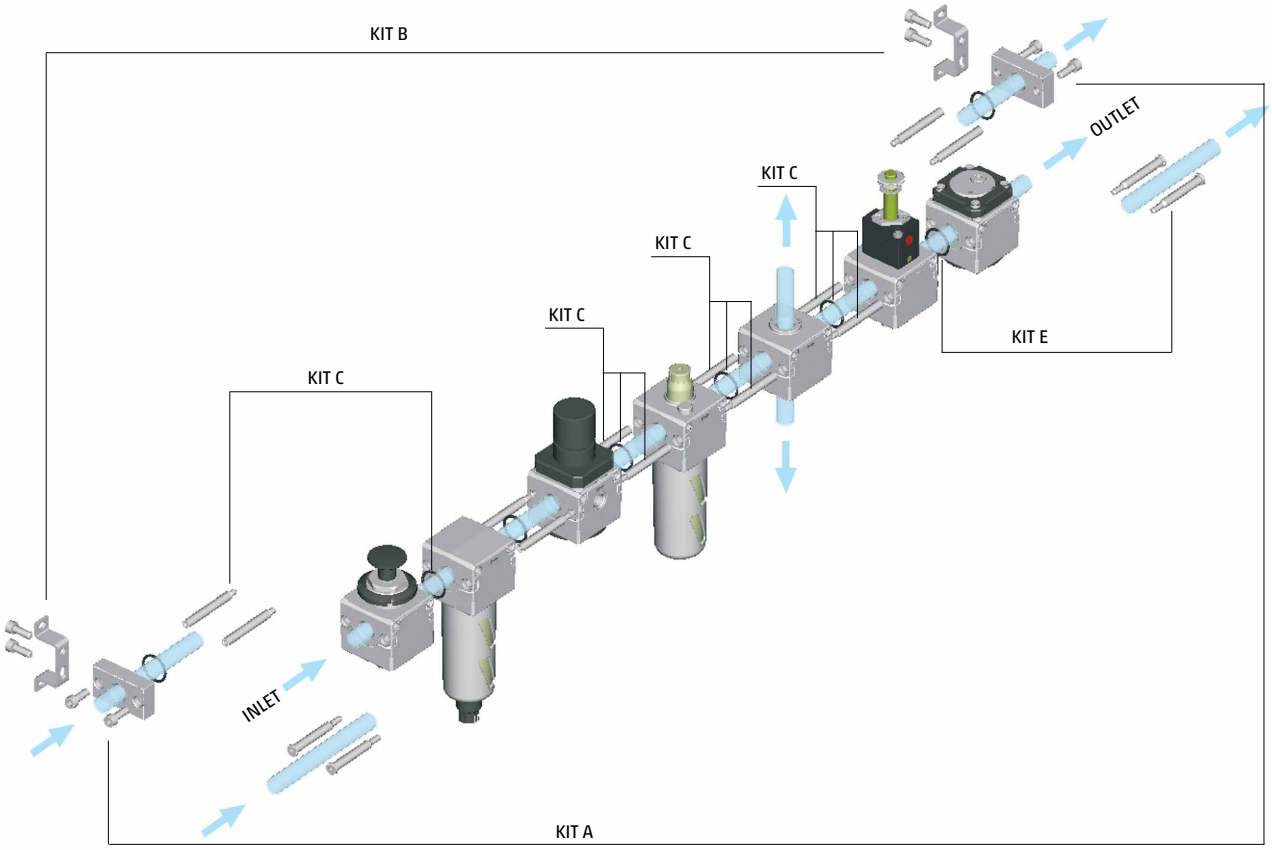
** Example of KIT "G" used below. KIT "G" is to be used whenever there is a second regulator or filter-regulator in the same common assembly. KIT "G" allows the component to the left of the second regulator to be assembled onto the second regulator on its right side and also back into the component or tie-rod KIT to its left side. You must remove the outer plastic shell or cover of that middle component in order to assemble the bushings and cap-screws of Kit "G" both to the left and right.




** **NOTE:** See below table for all KIT Part Numbers when ordering, or checking stock and price.

| Part Numbers For Kits | | | |
|---|---|---|---|
| KIT | 1/4" Units | 3/8" Units | 1/2" Units |
| Kit A | MC104-FL-TF | MC238-FL-TF | MC202-FL-TF |
| Kit B | MC104-ST | MC104-ST | MC104-ST |
| Kit C | MC1-TMF | MC2-TMF | MC2-TMF |
| Kit D | MC1-TFF | MC2-TFF | MC2-TFF |
| Kit E | MC1-VM | MC2-VM | MC2-VM |
| Kit F | MC1-VMF | MC2-VMF | MC2-VMF |
| Kit G | MC1-VMD | MC2-VMD | MC2-VMD |

** All kits and accessories located at end of chapter and in Appendix section. Consult for ordering codes and descriptions.




## Types Kit

| Components |
|---|
| Kit A: 1 right flanges + 1 left flanges + 4 screws + 2 O-ring |
| Kit B: 2 brackets + 4 screws |
| Kit C: 2 tie-rods male-female + 1 O-ring |
| Kit D: 2 tie rods female-female |
| Kit E: 2 male screws + 1 O-ring |
| Kit F: 2 male screws + 2 female screws + 1 O-ring |
| Kit G: 4 screws + 4 washers + 2 O-ring |

N.B. only one "M" can be present within the assembled composition; for assembly configurations which differ from the ones described, you can add only types "P" and for each added element you need a Kit "C".

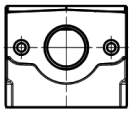
## Assembly Kit Requirements – Guide to Kits with Body types "P" and "M"

| Components | Without terminal flanges | With terminal flanges |
|---|---|---|
| P + M | 1 Kit E | 1 Kit A + 1 Kit C |
| M + P | 1 Kit E | 1 Kit A + 1 Kit C |
| P + P | 1 Kit F | 1 Kit A + 1 Kit C + 1 Kit D |
| P + M + P | 2 Kit E | 1 Kit A + 2 Kit C |
| P + P + P | 1 Kit F + 1 Kit C | 1 Kit A + 2 Kit C + 1 Kit D |
| M + P + P | 1 Kit E + 1 Kit C | 1 Kit A + 2 Kit C |
| P + M + P + P | 2 Kit E + 1 Kit C | 1 Kit A + 3 Kit C |
| P + P + M + P + P | 2 Kit E + 2 Kit C | 1 Kit A + 4 Kit C |

## Examples body type "M"

With female no through threads

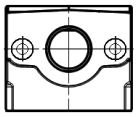
R = Regulator (MC***-R00) – with threaded fixed assembly holes
D = Filter- Regulator Combo / In-Line Unit (MC***-D00) – with threaded fixed assembly holes
H = Manifold Regulator ( MC104-M00TF) , with threaded fixed assembly holes



## Examples body type "P"

With through holes

F = Filter (MC***-F00) - with "pass-through" assembly holes
L = Lubricator (MC***-L00) - with "pass-through" assembly holes
AV = Slow start valve / Soft-Start valve (MC***-AV) - with "pass-through" assembly holes
V = 3/2-way Manual "Lock-Out" Valve, or Solenoid Shut-Off Valve, or Air-Pilot Shut-Off Valve (MC***-V01, MC***-V16, MC***-V36) - with "passthrough" assembly holes
B = Additional outlet pressure block, "Take-Off" Block (MC*-B***) - with "pass-through" assembly holes



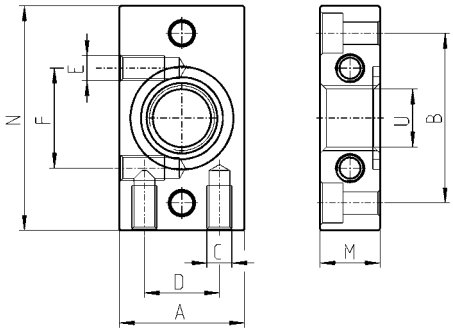
# Mounting Brackets, Accessories and Kits - Series MC

## Terminal flanges Series MC (Kit A)

The kit MC104-FL is supplied with: 1x left terminal flange; 1x right terminal flange; 4x screws M4x14; 2x O-Ring 2068.

Each of the kits MC202-FL and MC238-FL is supplied with: 1x left terminal flange; 1x right terminal flange; 4x screws M5x14; 2x O-Ring 3100.

Materials: enameled aluminium flanges, zinc-plated steel screws and NBR O-ring.




DIMENSIONS (in mm)

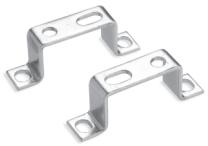
| Mod. | A | B | C | D | N | M | U | size |
|---|---|---|---|---|---|---|---|---|
| MC104-FL | 25 | 34 | M5 | 15 | 45 | 12 | G1/4 | 1 |
| MC238-FL | 35 | 44.5 | M5 | 20 | 60 | 14 | G3/8 | 2 |
| MC202-FL | 35 | 44.5 | M5 | 20 | 60 | 14 | G1/2 | 2 |
| MC104-FLTF | 25 | 34 | M5 | 15 | 45 | 12 | 1/4" NPTF | |
| MC238-FLTF | 35 | 44.5 | M5 | 20 | 60 | 14 | 3/8" NPTF | |
| MC202-FLTF | 35 | 44.5 | M5 | 20 | 60 | 14 | 1/2" NPTF | |

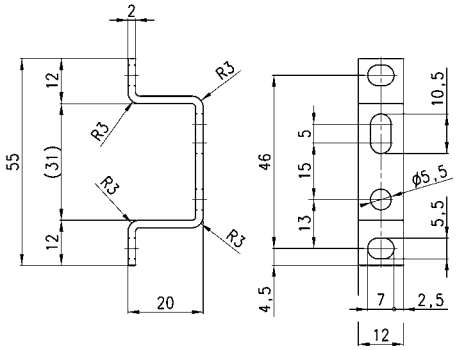
## Mounting bracket Series MC (Kit B)

Mounting bracket for terminals 1/4, 3/8, 1.

The kit MC104-ST is supplied with:
- 2x terminal brackets
- 4x screws M5x10

Materials: zinc-plated steel brackets and screws.



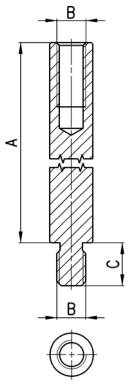



| Mod. (Dimensions in mm) |
|---|
| MC104-ST |

## Tie-rod for assembling, Series MC (Kit C)

The kit MC1-TMF is supplied with:
2 male/female tie-rods; 1 O-ring 2068.
The kit MC2-TMF is supplied with:
2 male/female tie-rods; 1 O-ring 3100.

Materials: nickel-plated steel tie-rods and NBR O-ring.



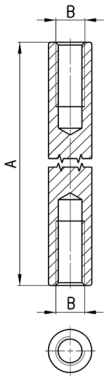

| Mod. (dimensions in mm) | A | B | SW | size |
|---|---|---|---|---|
| MC1-TMF | 45 | M4 | 6 | 1 |
| MC2-TMF | 62 | M5 | 6 | 2 |

## Tie-rod for assembling, Series MC (Kit D)

The kit MC1-TFF is supplied with 2 female tie-rods.

The kit MC2-TFF is supplied with 2 female tie-rods.

Materials: nickel-plated steel tie-rods.

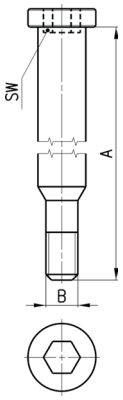



| Mod. (Dimensions in mm) | A | B | size |
|---|---|---|---|
| MC1-TFF | 44 | M4 | 1 |
| MC2-TFF | 61 | M5 | 2 |

## Screw for assembling, Series MC (Kit E)

The kit MC1-VM is supplied with:
2 male screws; 1 O-ring 2068.
The kit MC2-VM is supplied with:
2 male screws; 1 O-ring 3100

Materials: zinc-plated steel screws and NBR O-ring.

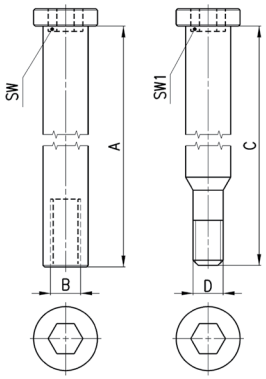



| Mod. (Dimensions in mm) | A | B | SW | size |
|---|---|---|---|---|
| MC1-VM | 48.5 | M4 | 4 | 1 |
| MC2-VM | 65.5 | M5 | 4 | 2 |

## Screw for assembling, Series MC (Kit F)

The kit is supplied with: 2 male screws; 2 female screws; 1 O-ring(OR 2068 for MC1-VMF; OR 3100 for MC2-VMF).

Materials: zinc-plated steel male screws, nickel-plated steel female screws and NBR O-ring.




| Mod. (dimensions in mm) | A | B | C | D | SW | SW1 | size |
|---|---|---|---|---|---|---|---|
| MC1-VMF | 42 | M4 | 42.5 | M4 | 4 | 4 | 1 |
| MC2-VMF | 59 | M5 | 59.5 | M5 | 4 | 4 | 2 |

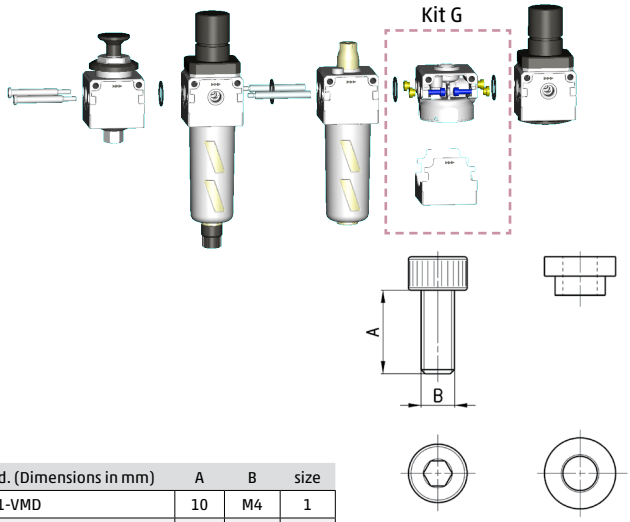
## Tie-rod for assembling, Series MC (Kit G)

4 screws - 4 washers/spacers - 2 o-rings

** See example at right. KIT "G" is to be used whenever there is a second regulator or filter-regulator in the same common assembly. KIT "G" allows the component to the left of the second regulator to be assembled onto the second regulator on its right side and also back into the component or tie-rod KIT to its left side. You must remove the outer plastic shell or cover of that middle component in order to assemble the bushings and cap-screws of Kit "G" both to the left and right.

The kit MC1-VMD is supplied with:
4 screws M4X10; 4 spacers; 2 O-ring 2068.
The kit MC2-VMD is supplied with:
4 screws M5X12; 4 spacers; 2 O-ring 3100.

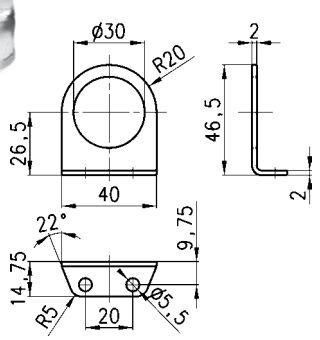
Materials: zinc-plated steel screws, brass spacers and NBR O-ring.




| Mod. (Dimensions in mm) | A | B | size |
|---|---|---|---|
| MC1-VMD | 10 | M4 | 1 |
| MC2-VMD | 12 | M5 | 2 |

## Mounting bracket, Series MC-M-N-T

Mounting bracket for Regulators and Filter-Regulators (1/8 & 1/4) - zinc-plated steel bracket



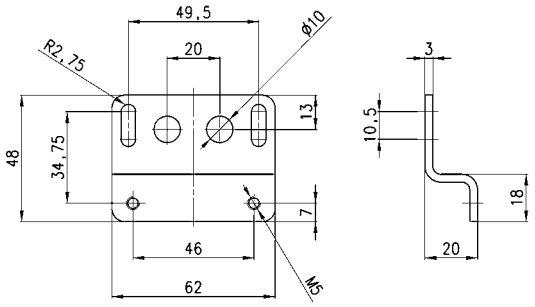

| Mod. (dimensions in mm) |
|---|
| C114-ST/1 |

## Mounting bracket, Series MC

Mounting bracket for MC238 and MC202

The kit is supplied with:
1 bracket; 2 screws M5X65

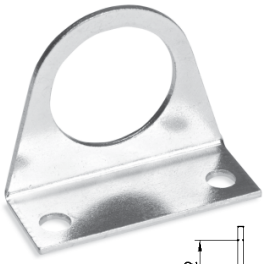
Materials: zinc-plated steel bracket and screws

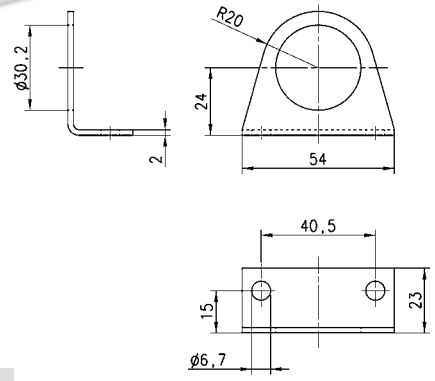



| Mod. (dimensions in mm) |
|---|
| C238-ST/1 |

## Mounting bracket, Series MC-M-N-T

Mounting bracket for Regulators and Filter-Regulators (1/8 & 1/4) - zinc-plated steel bracket

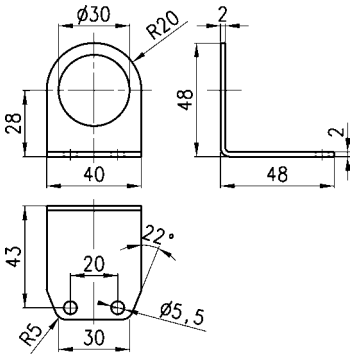





| Mod. (dimensions in mm) |
|---|
| C114-ST |

## Mounting bracket, Series MC-M-N-T

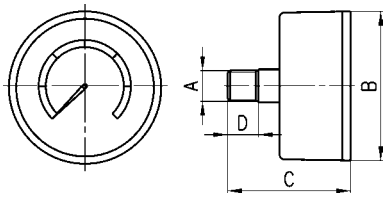
Mounting bracket for Regulators and Filter-Regulators, (1/8 & 1/4) - zinc-plated steel bracket




| Mod. (dimensions in mm) |
|---|
| C114-ST/2 |

## Pressure gauges
## Mod. M043-P04TF (0 - 60 psi)

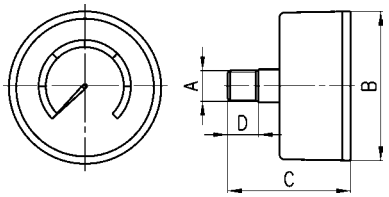
Nominal face size 1 1/2"




| DIMENSIONS (in inches) | | | | |
|---|---|---|---|---|
| Mod. | A | B | C | D |
| M043-P04TF | 1/8" NPTF | 1.655 | 1.600 | 0.950 |

## Pressure gauges
## Mod. M043-P10TF (0 - 160 psi)

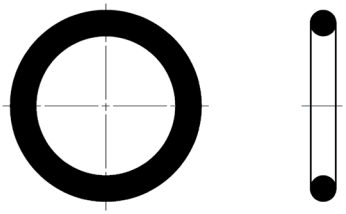
Nominal face size 1 1/2"




| DIMENSIONS (in inches) | | | | |
|---|---|---|---|---|
| Mod. | A | B | C | D |
| M043-P10TF | 1/8" NPTF | 1.655 | 1.600 | 0.950 |

## Assembly O-ring, Series MC

Assembly O-ring F-R-L-D
for MC104 mod. 458-33/1 (OR 2068)
for MC238 and MC202 mod. 80-26-11/4T (OR 3100)
(spare part only).



* spare parts only

| Mod. | O-ring | For assembly | |
|---|---|---|---|
| 458-33/1 | OR 2068 | MC104 | |
| 80-26-11/4T | OR 3100 | MC238 - MC202 | * |
| 160-39-11/19 | OR 3125 | MX2 | |
| C401-F33 | OR 3150 | MX3 | |