Construction and working characteristics

The new FRL units AIRPLUS series represents the evolution of the well known and consolidated 1700 series.
The main features are increased performances, reliability, easy and fast assembly and the introduction of the latest technical features.
With the exception of the air intake module and the pressure switch module all elements are available in two configurations: with technopolimer connections (IN and OUT) , (T series), or with metal threaded inserts , (N series). Bowls made of transparent polycarbonate (PC) are fitted with a bowl protection guard which is assembled on the body via a quick coupling mechanism provided with a safety button. The filter, available with three filtration grades (5μm, 20μm and 50μm) is fitted as standard with a drain mechanism which can be operated manually or semi-automatically. On request is available the auto-drain mechanism. The regulator is based on the rolling diaphragm technology with low hysteresis and the system is balanced. The unit can be fitted with integrated flush mounting pressure gauge (0 to 12 bar range). 4 pressure ranges are available going from 0 to 12 bar and the regulating knob can be blocked in position simply by pressing it down. A dedicated version is available for battery mounting , up to a maximum of 6 units. The lubricator is based on the Venturi principle and the oil quantity is regulated via the adjusting screw positioned don the transparent polycarbonate (PC) regulating dome which also ensure clear visibility of the oil flow and regulation. The oil suction pipe is fitted as standard with a sintered filter which ensures that any contaminant that should be present in the oil will reach the down stream circuit. Shoot off valve is available in two versions, one manually operated and one solenoid operated. In both cases the unit is fitted with a threaded connection for depressurising the downstream circuit. On the manually operated version, in the lock position, it is possible to fit up to three locks in order to prevent the accidental pressurization of the pneumatic circuit avoiding accidents or damages. The solenoid operated version is available with a 15mm or with a 22mm solenoid valve. The soft start valve ensure a progressive pressurization of the down stream circuit avoiding sudden pressure surges which could be dangerous for the devices fitted on the down stream circuit. The filling time can be easily adjusted via a built in flow regulator. The full flow rate is allowed only once the down stream pressure has reached 50% of the value of the inlet pressure. The pressure switch module which can be set between 2 and 10 bar and the air intake module complete the range.
The elements are joint together via dedicated quick coupling technopolimer flanges which allows for the units to be panel mounted moreover ensure the possibility to replace any component without disassembling the FRL group from its position.
90° mounting brackets and standard gauges are also available.

Instruction for installation and operation

The FRL unit must be installed as close as possible to the application. The air flow direction must follow the directions indicated on the single units in correspondence of the threaded connections.(IN and OUT)
Units provided with bowl must be mounted vertically with the bawl facing down. Single units or groups can be panel mounted via the Y type flanges, regulators and filter-regulators can be mounted via the 90° zinc plated steel bracket. In order to mount the 90° bracket it is necessary to remove the regulating knob and then the locking ring before positioning the bracket. All units must be operated according to the specified pressure and temperature ranges; fittings must be mounted without exciding the maximum torque allowed. Ensure that the units cover plates are in position before pressure is applied. The cover plates are needed to lock in position the top part of the unit.
The condense level in filer and filter-regulators bowls must never exceed the maximum level indicated on the bowls. With manual or semi automatic drain the condense can be discharged via a 6/4mm tube directly connected to the drain tap. On the pressure regulator the pressure value must always set wile pressure is rising and ideally the unit pressure range should be chosen based on the pressure value to be regulated.
Lubricators must be filled with class FD22 and HG32 oils. Ensure, both on the inlet and on the outlet , that the flow rate is above the minimum flow rate required to operate the unit. Below this value the units does not operate. The oil quantity can be regulated via the regulating screw on the transparent polycarbonate dome through which it is also clearly visible the oil flow. A drop every 300-600 litres should be allowed.
The oil can be re-filled while the pneumatic circuit is pressurized thanks to the exhaust valve which is built in the refill plug and allows for the bowl to be depressurized and the oil refill directly form in the bowl or from the plug. The manual shot off valve needs, to be operated, a push and turn action (clockwise) in order to close it and discharge the down stream circuit it is necessary to turn anti clock wise the knob. The soft start valve is used to slowly and progressively pressurize the down stream circuit, the time needed to do so can be set by means of the built in flow regulator.
The soft start valve on its own does not allow for the down stream circuit to be discharged, in order to do so it is necessary to combine it with a shot off valve (to be mounted upstream).

Maintenance

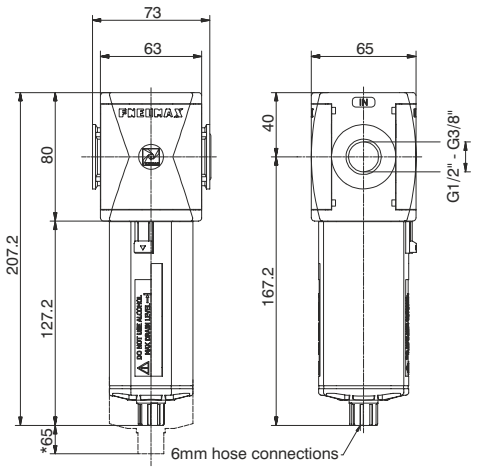
For any maintenance which requires the removal of the top plugs/ supports from the body it is necessary to preventively remove the sides cover plates. If the top plugs\supports are removed with the sides plates still in their position the unit could be permanently damaged.

Bowls , plugs and supports are assembled with a bayonet type mechanism. In order to remove them rotate anti clockwise until the mechanical stop is reached and than remove from the body (for the bowls firstly press down the green safety button). Bowls and transparent parts can be cleaned with water and neutral soap. Do not use solvents or alcohol.
Filtering elements (from filters and filter regulators) made of HDPE can be regenerated by washing and blowing them. In order to remove them it is necessary to remove the bowl unscrew the filter element and replace it with a new one or clean it. The oil can be re-filled while the pneumatic circuit is pressurized thanks to the exhaust valve which is built in the refill plug and allows for the bowl to be depressurized. In order to be able to un-mount the bowl it is necessary unscrew the refill plug positioned near the oil dome, once this operation has been carried out it is possible to remove the bowl to re fill it or to refill from the refill plug. Refilling directly the bowl is suggested.
Should the pressure regulator not perform properly or should present a constant leackage from the relieving replaced the diaphragm by unloading completely the regulating spring before removing the regulation support. Any other maintenance operation, in consideration of the complexity of the assembly, and the need of a through test according to the Pneumax spa specification, should be carried out by the manufacturer.

Fittings maximum recommended torque applicable

THREAD	Technopolymer version (T)	Metal version (N)
G1/8”	4 Nm	15 Nm
G1/4”	9 Nm	20 Nm
G3/8”	16 Nm	25 Nm
G1/2”	22 Nm	30 Nm

Filter (F)

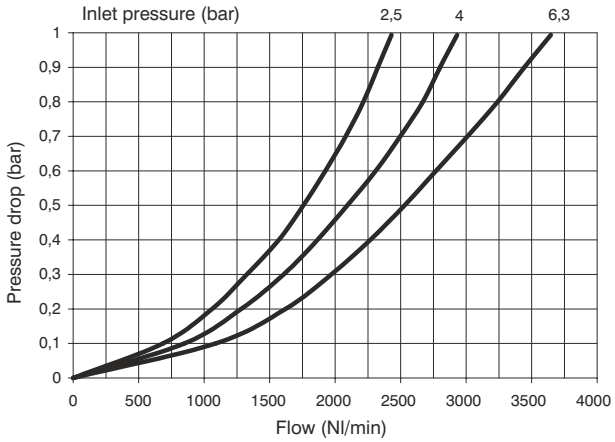


*Bowl removal maximum height

Example: T173BFB : size 3, Filter with Technopolymer threads, G1/2" connections, 20 μm filter pore size

3

Flow rate curves



Operational characteristics

- Double filtering action: air flow centrifugation and filter element
- Filtering element made of HDPE (high density polyethylene) available in three different filtration grades (5μm, 20μm and 50μm) can be regenerated by washing it or replaced.
- Transparent bowl made off polycarbonate with bowl protection guard.
- Bowl assembly via bayonet type quick coupling mechanism with safety button.
- Semi-automatic drain mounted as standard; automatic drain upon request.

Note

In order to ensure adequate flow on the auto drain version it is recommended to use minimum a 6mm fitting.

Technical characteristics

Connections	G 3/8" - G 1/2"
Max. inlet pressure	13 bar
Minimum working pressure with automatic drain	0,5 bar
Maximum working pressure with automatic drain	10 bar
Working temperature	-5°C +50°C
Weight with Technopolymer threads	gr. 320
Weight with threaded inserts	gr. 340
Filter pore size	5 μm - 20 μm - 50 μm
Bowl capacity	68 cm^3
Assembly positions	Vertical
Max. fitting torque (with Technopolymer threads)	G1/2" = 22 Nm
Max. fitting torque (with threaded inserts)	G3/8" = 25 Nm G1/2" = 30 Nm

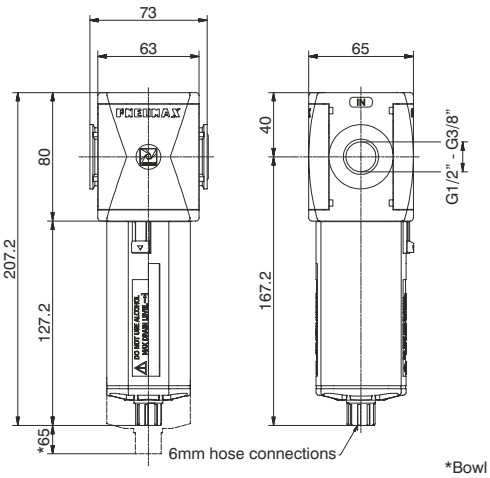
Ordering code

Ⓥ173ⒸFⓈⓄⓏ

Ⓥ	VERSION
	N = Metal inserts
	T = Technopolymer thread
Ⓒ	CONNECTIONS
	A = G3/8"(only for "N" version)
	B = G1/2"
	C = 1/2 NPT(only for "N" version)
Ⓢ	FILTER PORE SIZE
	A = 5 μm
	B = 20 μm
	C = 50 μm
Ⓞ	OPTIONS
	= Standard *
	S = Automatic drain
Ⓩ	BOWL OPTIONS
	= Standard *
	N = Nylon bowl

* no additional letter required

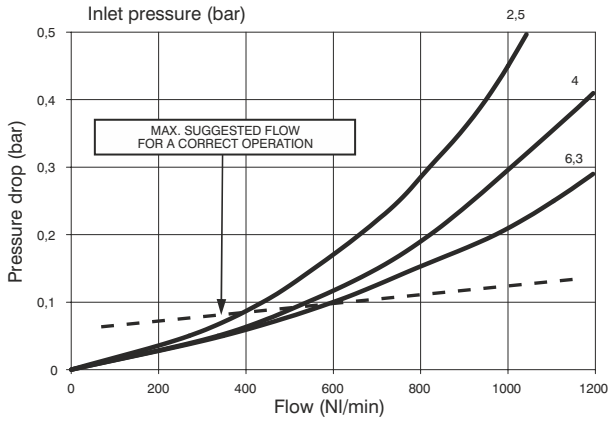
Coalescing filter (D)



*Bowl removal maximum height

Example : T173BDA : Coalescing size 3, Filter with Technopolymer threads, G1/2" connections, filter efficency 99,97%

Flow rate curves

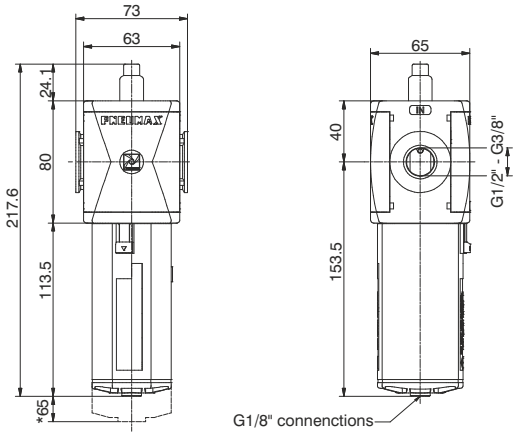


Operational characteristics	Technical characteristics		
- Coalescing filter element with filtration grade of 0,01 μm	Connections	G 3/8" - G 1/2"	Ordering code
- Transparent bowl made off polycarbonate with bowl protection guard.	Max. inlet pressure	13 bar	❶173❷D❸❹❺
- Bowl assembly via bayonet type quick coupling mechanism with safety button.	Minimum working pressure with automatic drain	0,5 bar	
- Semi-automatic drain mounted as standard; automatic drain upon request.	Maximum working pressure with automatic drain	10 bar	
Note	Working temperature	-5°C +50°C	
In order to ensure a better grade of filtration it is recommended to use a 5 μm filter before the coalescing filter. In order to ensure adequate flow on the auto drain version it is recommended to use minimum a 6mm fitting.	Weight with Technopolymer threads	gr. 325	
	Weight with threaded inserts	gr. 345	
	Filter efficiency with 0,01 μm particle	99,97%	
	Bowl capacity	68cm^3	
	Assembly positions	Vertical	
	Max. fitting torque (with Technopolymer threads)	G1/2" = 22 Nm	
	Max. fitting torque (with threaded inserts)	G3/8" = 25 Nm G1/2" = 30 Nm	

❶	VERSION
	N = Metal inserts
	T = Technopolymer thread
❷	CONNECTIONS
	A = G3/8"(only for "N" version)
	B = G1/2"
	C = 1/2 NPT(only for "N" version)
❸	FILTER EFFICIENCY
	A = 99,97%
❹	OPTIONS
	= Standard *
	S = Automatic drain
❺	BOWL OPTIONS
	= Standard *
	N = Nylon bowl

* no additional letter required

Oil removal filter (DB)

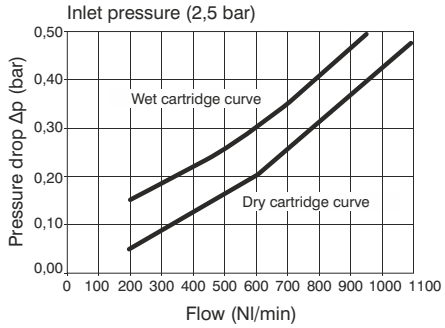


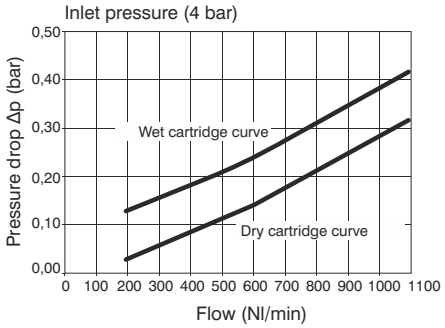
*Bowl removal maximum height

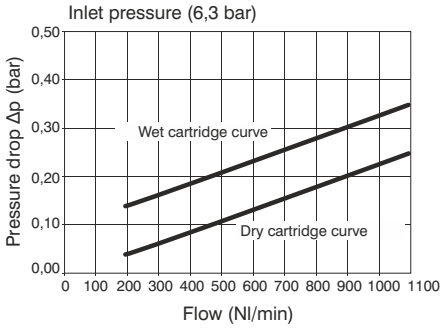
Example : T173BDBV : size 3 Oil removal filter, with clogging gauge, Technopolymer threads, G1/2" connections.

3

Efficiency curve





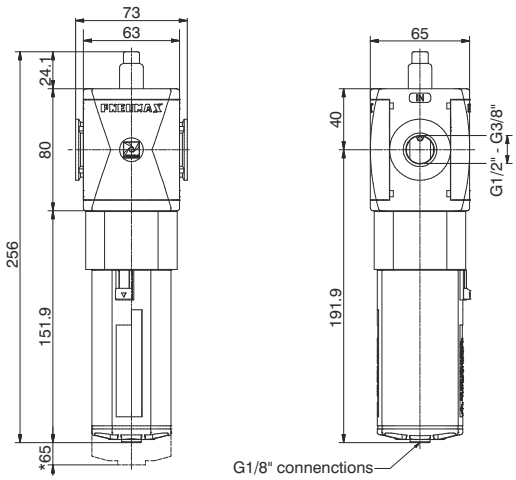


Operational characteristics	Technical characteristics		Ordering code
- Coalescing filtering cartridge particle removal 0,01 μm oil residual 0,01 ppm - Clogging gauge green: proper working red: clogged cartridge (Δp 0,5 bar) we recommend to change the cartridge - Transparent bowl made off polycarbonate with bowl protection guard. - Bowl assembly via bayonet type quick coupling mechanism with safety button. - Automatic drain mounted as standard.	Connections	G 3/8" - G 1/2"	**Ⓥ173ⒸDBVⓏ**
	Nominal flow at 6,3 bar	1100 Nl/min	
	Filter efficiency	99,99%	
	Max. inlet pressure	13 bar	
	Minimum working pressure with automatic drain	0,5 bar	
	Maximum working pressure with automatic drain	10 bar	
	Working temperature	-5°C +50°C	
	Weight with Technopolymer threads	gr. 440	
	Weight with threaded inserts	gr. 460	
	Bowl capacity	30 cm^3	
Note We recommend installing a 5 μm filter upstream of the oil removal filter. In order to ensure adequate flow on the auto drain version it is recommended to use minimum a 6mm fitting.	Assembly positions	Vertical	
	Max. fitting torque (with Technopolymer threads)	G1/2" = 22 Nm	
	Max. fitting torque (with threaded inserts)	G3/8" = 25 Nm G1/2" = 30 Nm	

Ⓥ	VERSION
	N = Metal inserts
	T = Technopolymer thread
Ⓒ	CONNECTIONS
	A = G3/8" (only for "N" version)
	B = G1/2"
	C = 1/2 NPT (only for "N" version)
Ⓩ	BOWL OPTIONS
	= Standard *
	N = Nylon bowl

* no additional letter required

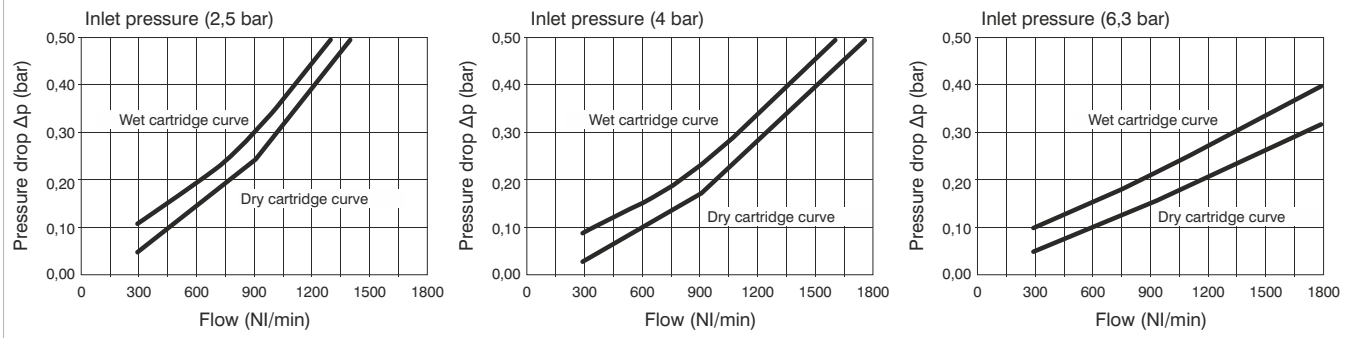
High efficiency oil removal filter (DC)



*Bowl removal maximum height

Example: T173BDCV : size 3 High efficiency oil removal filter, with clogging gauge, Technopolymer threads, G1/2" connections.

Efficiency curve

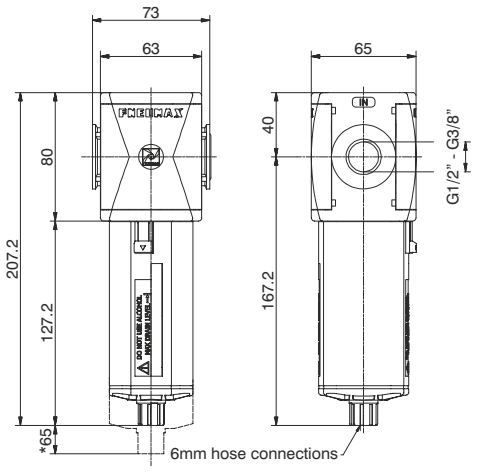


Operational characteristics	Technical characteristics		
- Coalescing filtering cartridge	Connections	G 3/8" - G 1/2"	Ordering code
particle removal 0,01 μm	Nominal flow at 6,3 bar	1800 Nl/min	❶173❷DCV❸
oil residual 0,01 ppm	Filter efficiency	99,99%	
- Clogging gauge	Max. inlet pressure	13 bar	
green: proper working	Minimum working pressure with automatic drain	0,5 bar	
red: clogged cartridge (Δp 0,5 bar)			
we recommend to change the cartridge	Maximum working pressure with automatic drain	10 bar	
- Transparent bowl made off polycarbonate with bowl protection guard.	Working temperature	-5°C +50°C	
- Bowl assembly via bayonet type quick coupling mechanism with safety button.	Weight with Technopolymer threads	gr. 640	
	Weight with threaded inserts	gr. 660	
- Automatic drain mounted as standard.	Bowl capacity	30 cm^3	
Note	Assembly positions	Vertical	
We recommend installing a 5 μm filter upstream of the oil removal filter. In order to ensure adequate flow on the auto drain version it is recommended to use minimum a 6mm fitting.	Max. fitting torque (with Technopolymer threads)	G1/2" = 22 Nm	
	Max. fitting torque (with threaded inserts)	G3/8" = 25 Nm G1/2" = 30 Nm	

❶	VERSION
	N = Metal inserts
	T = Technopolymer thread
❷	CONNECTIONS
	A = G3/8" (only for "N" version)
	B = G1/2"
	C = 1/2 NPT (only for "N" version)
❸	BOWL OPTIONS
	= Standard *
	N = Nylon bowl

* no additional letter required

Carbon filter (DD)

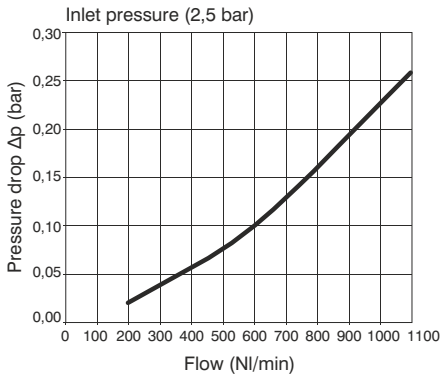


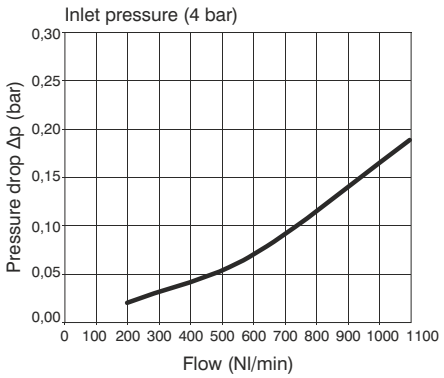
*Bowl removal maximum height

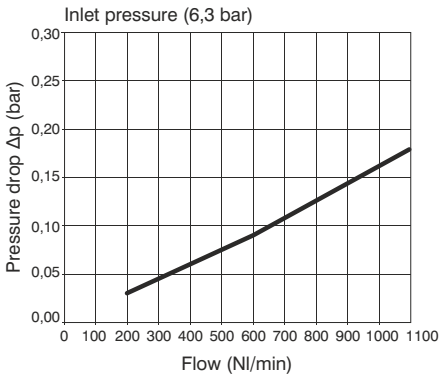
Example : T173BDD : size 3 Carbon filter, Technopolymer threads, G1/2" connections.

3

Efficiency curve







Operational characteristics

- Active carbon cartridge with built in particulate filter. Used to remove oil vapours, hydrocarbons, odours and particles coming from the compressed air lines or gasses in industrial applications. Oil residue up to <0,003 ppm (max imput aereosol 0.01ppm).
- Innovative filtering technology; high absorption capacity, with low differential pressure.
- Transparent bowl made off polycarbonate with bowl protection guard.
- Bowl assembly via bayonet type quick coupling mechanism with safety button.
- Semi-automatic drain mounted as standard.

Note

A 5 micron filter followed by a coalescing filter must be installed before the Oil removal filter in order to ensure the correct functionality of the unit and to safeguard the life of the active carbon cartridge. It is also necessary to preventively replace the cartridges at fixed intervals.

Technical characteristics

Connections	G 3/8" - G 1/2"
Nominal flow at 6,3 bar	1100 Nl/min
Cartridge life	2000 hours
Max. inlet pressure	13 bar
Working temperature	-5°C +50°C
Weight with Technopolymer threads	gr. 440
Weight with threaded inserts	gr. 460
Bowl capacity	30 cm^3
Assembly positions	Vertical
Max. fitting torque (with Technopolymer threads)	G1/2" = 22 Nm
Max. fitting torque (with threaded inserts)	G3/8" = 25 Nm G1/2" = 30 Nm

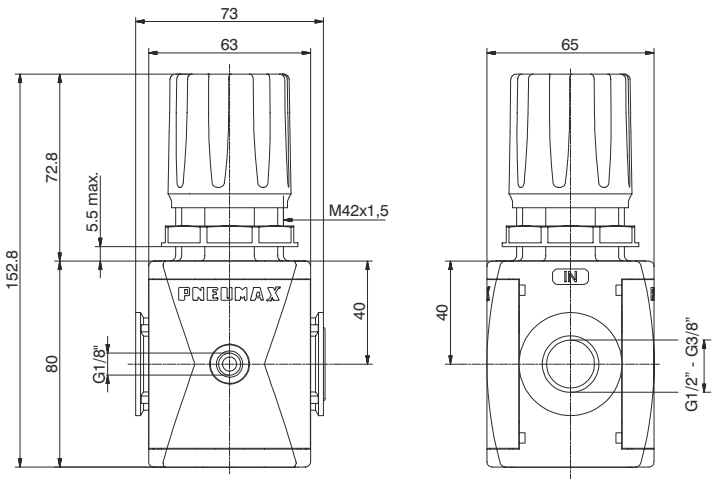
Ordering code

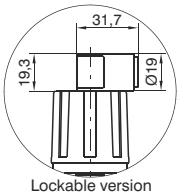
Ⓥ173ⒸDDⓏ

Ⓥ	VERSION
	N = Metal inserts
	T = Technopolymer thread
Ⓒ	CONNECTIONS
	A = G3/8" (only for "N" version)
	B = G1/2"
	C = 1/2 NPT (only for "N" version)
Ⓩ	BOWL OPTIONS
	= Standard *
	N = Nylon bowl

* no additional letter required

Regulator (R)

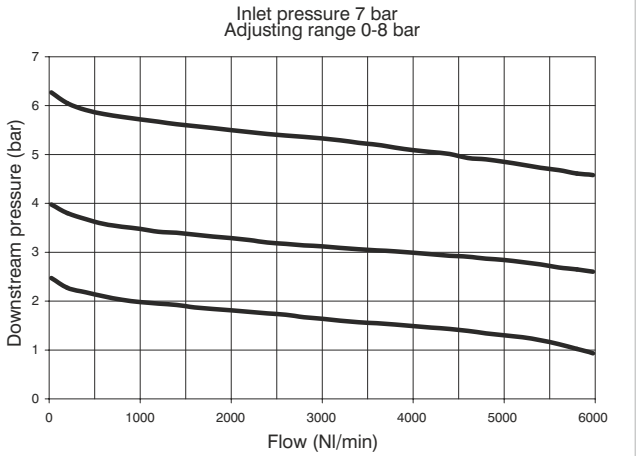




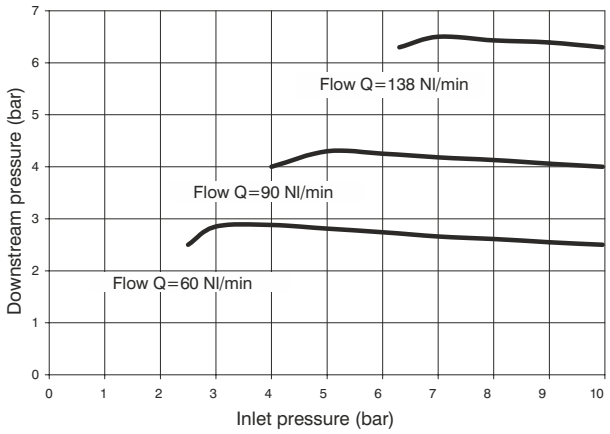
Lockable version
Detail

Example: T173BRC : size 3, Regulator with Technopolymer threads, G1/2" connections, 0 to 8 bar adjusting range

Flow rate curves



Adjustment characteristics



Operational characteristics

- Diaphragm pressure regulator with relieving.
- Low hysteresis rolling diaphragm.
- Balanced system.
- Available in four pressure ranges up to 12 bar.
- Operating knob can be locked in position by pressing it down once the desired P2 (regulated pressure) pressure value is achieved.
- Fitted with panel mounting locking ring.

Note

The pressure must be always regulating while increasing. For a more precise regulation and higher sensibility, the use of a regulator with a pressure range as close as possible to the regulated pressure is recommended.

Technical characteristics

Connections	G 3/8" - G 1/2"
Max. inlet pressure	13 bar
Working temperature	-5°C +50°C
Pressure gauge connections	G 1/8"
Weight with Technopolymer threads	gr. 360
Weight with threaded inserts	gr. 380
Pressure range	0-2 bar / 0-4 bar 0-8 bar / 0-12 bar
Assembly positions	Indifferent
Max. fitting torque (with Technopolymer threads)	G1/8" = 4 Nm G1/2" = 22 Nm
Max. fitting torque (with threaded inserts)	G3/8" = 25 Nm G1/2" = 30 Nm

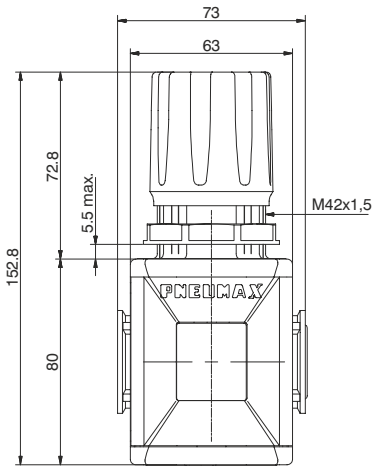
Ordering code

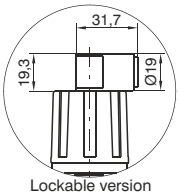
Ⓥ173ⒸRⒼⓉⓄ

Ⓥ	VERSION
	N = Metal inserts
	T = Technopolymer thread
Ⓒ	CONNECTIONS
	A = G3/8" (only for "N" version)
	B = G1/2"
	C = 1/2 NPT (only for "N" version)
Ⓖ	ADJUSTING RANGE
	A = 0-2 bar
	B = 0-4 bar
	C = 0-8 bar
	D = 0-12 bar
Ⓣ	TYPE
	= Standard *
	F = Controlled refiel + improved relieving
	L = no relieving
	R = Improved relieving
Ⓞ	OPTIONS
	= Standard *
	K = Lockable version

* no additional letter required

Regulator including gauge (RM)(RW)

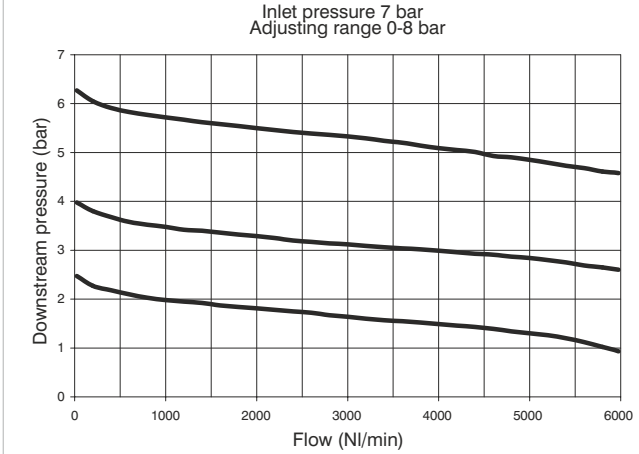




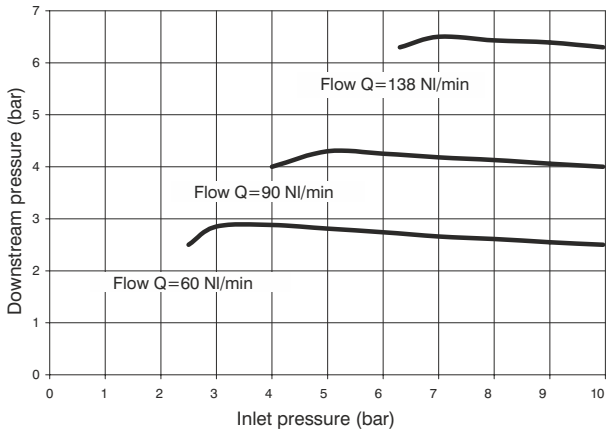
Lockable version
Detail

Example : T173BRMC : size 3, Regulator including gauge with Technopolymer threads, G1/2" connections, 0 to 8 bar adjusting range

Flow rate curves



Adjustment characteristics



Operational characteristics

- Diaphragm pressure regulator with relieving.
- Low hysteresis rolling diaphragm.
- Balanced system.
- Available in four pressure ranges up to 12 bar.
- Operating knob can be locked in position by pressing it down once the desired P2 (regulated pressure) pressure value is achieved.
- Fitted with panel mounting locking ring.
- Integrated manometer 0-12 bar as standard (for 0-8 and 0-12 bar range) and 0-4 bar (for 0-2 and 0-4 range)

Note

The pressure must be always regulating while increasing. For a more precise regulation and higher sensibility, the use of a regulator with a pressure range as close as possible to the regulated pressure is recommended.

Technical characteristics

Connections	G 3/8" - G 1/2"
Max. inlet pressure	13 bar
Working temperature	-5°C +50°C
Weight with Technopolymer threads	gr. 370
Weight with threaded inserts	gr. 390
Pressure range	0-2 bar / 0-4 bar 0-8 bar / 0-12 bar
Assembly positions	Indifferent
Max. fitting torque (with Technopolymer threads)	G1/2" = 22 Nm
Max. fitting torque (with threaded inserts)	G3/8" = 25 Nm G1/2" = 30 Nm

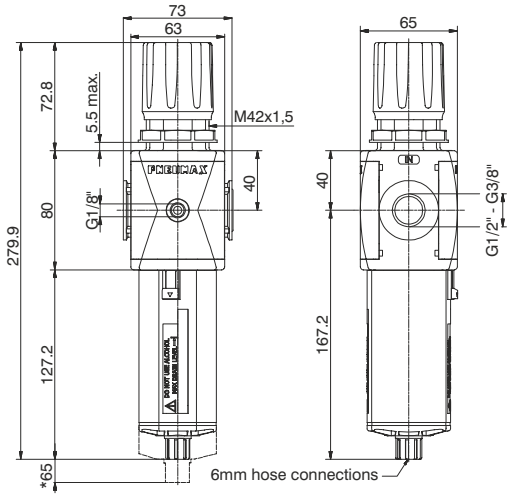
Ordering code

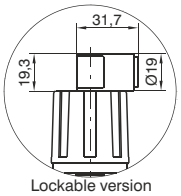
Ⓥ173ⒸRⒹⒼⓉⓄ

Ⓥ	VERSION
	N = Metal inserts
	T = Technopolymer thread
Ⓒ	CONNECTIONS
	A = G3/8" (only for "N" version)
	B = G1/2"
	C = 1/2 NPT (only for "N" version)
Ⓓ	FLOW DIRECTION
	M = from left to right
	W = from right to left
Ⓖ	ADJUSTING RANGE
	A = 0-2 bar
	B = 0-4 bar
	C = 0-8 bar
	D = 0-12 bar
Ⓣ	TYPE
	= Standard *
	F = Controlled refiel + improved relieving
	L = no relieving
	R = Improved relieving
Ⓞ	OPTIONS
	= Standard *
	K = Lockable version

* no additional letter required

Filter-Regulator (E)

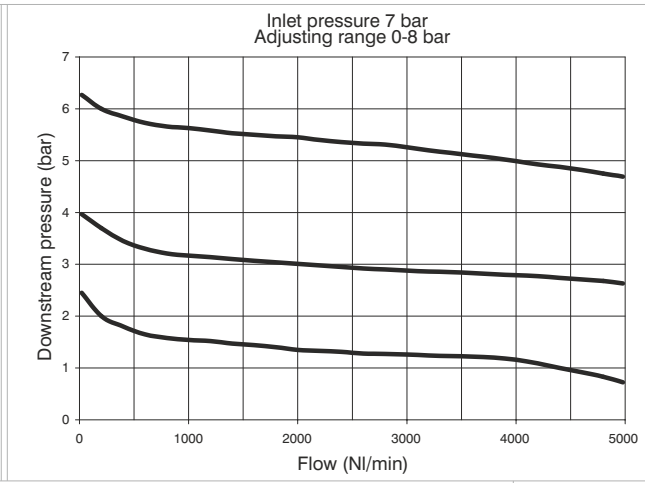




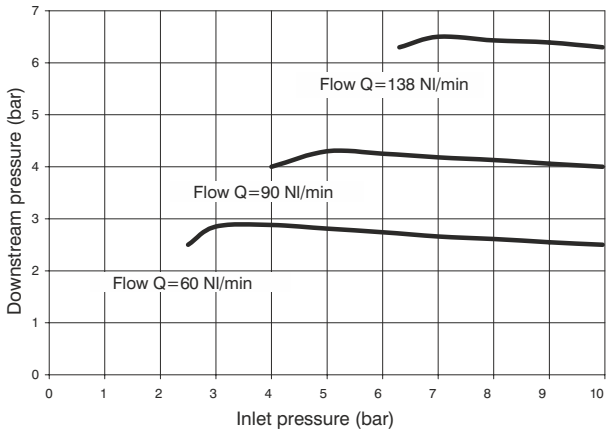
*Bowl removal maximum height

Example : T173BEBC : size 3, Filter-regulator with Technopolymer threads, G1/2" connections, 20 μm filtering pore size, 0 to 8 bar adjusting range

Flow rate curves



Adjustment characteristics



Operational characteristics

- Filter - diaphragm pressure regulator with relieving.
- Low hysteresis rolling diaphragm.
- Balanced system.
- Double filtering action: air flow centrifugation and filter element.
- Filtering element made of HDPE (high density polyethylene) available in three different filtration grades (5μm, 20μm and 50μm) can be regenerated by washing it or replaced.
- Transparent bowl made off polycarbonate with bowl protection guard.
- Bowl assembly via bayonet type quick coupling mechanism with safety button.
- Semi-automatic drain mounted as standard; automatic drain upon request.
- Available in four pressure ranges up to 12 bar.
- Operating knob can be locked in position by pressing it down once the desired P2 (regulated pressure) pressure value is achieved.
- Fitted with panel mounting locking ring.

Note

The pressure must be always regulating while increasing. For a more precise regulation and higher sensibility, the use of a regulator with a pressure range as close as possible to the regulated pressure is recommended. In order to ensure adequate flow on the auto drain version it is recommended to use minimum a 6mm fitting.

Technical characteristics

Connections	G 3/8" - G 1/2"
Max. inlet pressure	13 bar
Minimum working pressure with automatic drain	0,5 bar
Maximum working pressure with automatic drain	10 bar
Working temperature	-5°C +50°C
Pressure gauge connections	G 1/8"
Weight with Technopolymer threads	gr. 470
Weight with threaded inserts	gr. 490
Pressure range	0-2 bar / 0-4 bar 0-8 bar / 0-12 bar
Filter pore size	5 μm - 20 μm - 50 μm
Bowl capacity	68 cm^3
Assembly positions	Vertical
Max. fitting torque (with Technopolymer threads)	G1/8" = 4 Nm G1/2" = 22 Nm
Max. fitting torque (with threaded inserts)	G3/8" = 25 Nm G1/2" = 30 Nm

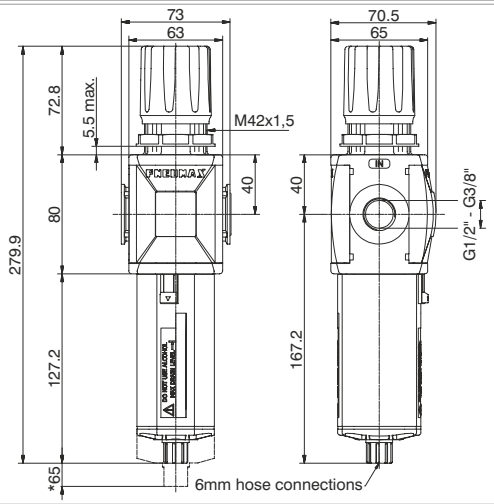
Ordering code

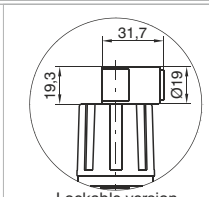
❶173❷❸❹❺❻❼

❶	VERSION
	N = Metal inserts
	T = Technopolymer thread
❷	CONNECTIONS
	A = G3/8" (only for "N" version)
	B = G1/2"
	C = 1/2 NPT (only for "N" version)
❸	FILTER PORE SIZE
	A = 5 μm
	B = 20 μm
	C = 50 μm
❹	ADJUSTING RANGE
	A = 0-2 bar
	B = 0-4 bar
	C = 0-8 bar
	D = 0-12 bar
❺	TYPE
	= Standard *
	S = Automatic drain
❻	OPTIONS
	= Standard *
	K = Lockable version
❼	BOWL OPTIONS
	= Standard *
	N = Nylon bowl

* no additional letter required

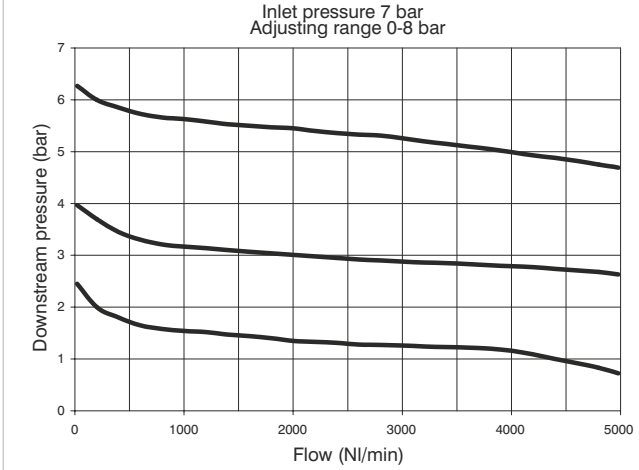
Filter-regulator including gauge (EM)(EW)



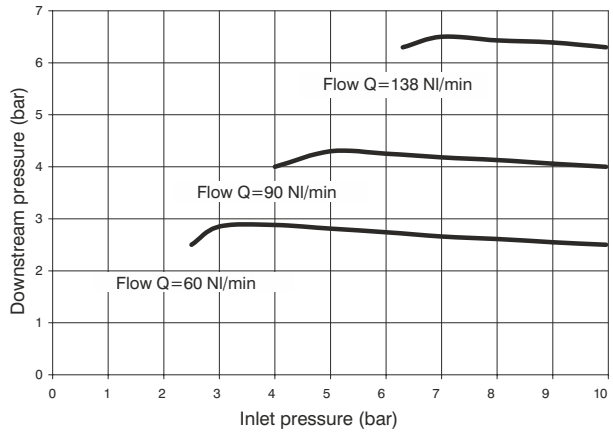


Example: T173BEMBC : size 3, Filter-Regulator including gauge with Technopolymer threads, G1/2" connections, with 20 μm filtering pore size, 0 to 8 bar adjusting range

Flow rate curves



Adjustment characteristics



Operational characteristics

- Filter - diaphragm pressure regulator with relieving.
- Low hysteresis rolling diaphragm.
- Balanced system.
- Double filtering action: air flow centrifugation and filter element.
- Filtering element made of HDPE (high density polyethylene) available in three different filtration grades (5μm, 20μm and 50μm) can be regenerated by washing it or replaced.
- Transparent bowl made of polycarbonate with bowl protection guard.
- Bowl assembly via bayonet type quick coupling mechanism with safety button.
- Semi-automatic drain mounted as standard; automatic drain upon request.
- Available in four pressure ranges up to 12 bar.
- Operating knob can be locked in position by pressing it down once the desired P2 (regulated pressure) pressure value is achieved.
- Fitted with panel mounting locking ring.
- Integrated manometer 0-12 bar as standard (for 0-8 and 0-12 bar range) and 0-4 bar (for 0-2 and 0-4 range)

Note

The pressure must be always regulating while increasing. For a more precise regulation and higher sensibility, the use of a regulator with a pressure range as close as possible to the regulated pressure is recommended. In order to ensure adequate flow on the auto drain version it is recommended to use minimum a 6mm fitting.

Technical characteristics

Connections	G 3/8" - G 1/2"
Max. inlet pressure	13 bar
Minimum working pressure with automatic drain	0,5 bar
Maximum working pressure with automatic drain	10 bar
Working temperature	-5°C +50°C
Weight with Technopolymer threads	gr. 480
Weight with threaded inserts	gr. 500
Pressure range	0-2 bar / 0-4 bar 0-8 bar / 0-12 bar
Filter pore size	5 μm - 20 μm - 50 μm
Bowl capacity	68 cm^3
Assembly positions	Vertical
Max. fitting torque (with Technopolymer threads)	G1/2" = 22 Nm
Max. fitting torque (with threaded inserts)	G3/8" = 25 Nm G1/2" = 30 Nm

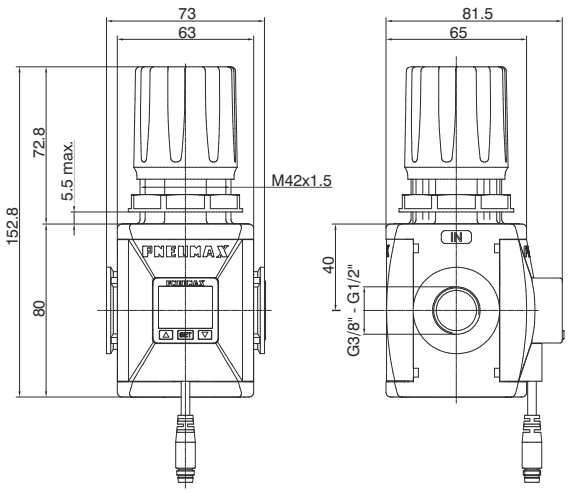
Ordering code

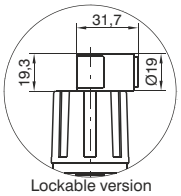
V173CEDSGTOZ

V	VERSION
	N = Metal inserts
	T = Technopolymer thread
C	CONNECTIONS
	A = G3/8" (only for "N" version)
	B = G1/2"
	C = 1/2 NPT (only for "N" version)
D	FLOW DIRECTION
	M = from left to right
	W = from right to left
S	FILTER PORE SIZE
	A = 5 μm
	B = 20 μm
	C = 50 μm
G	ADJUSTING RANGE
	A = 0-2 bar
	B = 0-4 bar
	C = 0-8 bar
	D = 0-12 bar
T	TYPE
	= Standard *
	S = Automatic drain
O	OPTIONS
	= Standard *
	K = Lockable version
Z	BOWL OPTIONS
	= Standard *
	N = Nylon bowl

* no additional letter required

Regulator with pressure switch (RP)(RZ)

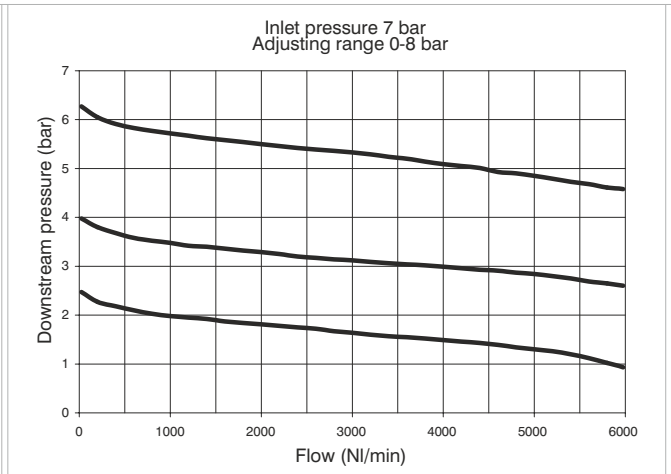




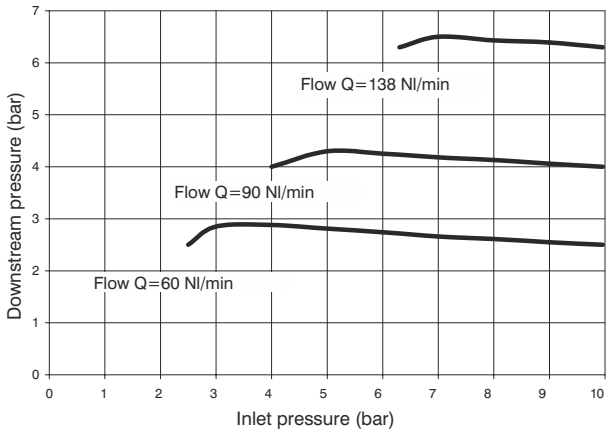
Lockable version
Detail

Example : T173BRPCA : size 3, Regulator with Technopolymer threads, G1/2" connections, 0 to 8 bar adjusting range, with pressure switch with M8 connector PNP

Flow rate curves



Adjustment characteristics



Operational characteristics

- Diaphragm pressure regulator with relieving.
- Low hysteresis rolling diaphragm.
- Balanced system.
- Available in four pressure ranges up to 12 bar.
- Operating knob can be locked in position by pressing it down once the desired P2 (regulated pressure) pressure value is achieved.
- Fitted with panel mounting locking ring.
- Pressure switch as standard

Note

The pressure must be always regulating while increasing. For a more precise regulation and higher sensibility, the use of a regulator with a pressure range as close as possible to the regulated pressure is recommended.

Technical characteristics

Connections	G 3/8" - G 1/2"
Max. inlet pressure	13 bar
Working temperature	0°C +50°C
Weight with Technopolymer threads	gr. 370
Weight with threaded inserts	gr. 390
Pressure range	0-2 bar / 0-4 bar 0-8 bar / 0-12 bar
Assembly positions	Indifferent
Max. fitting torque (with Technopolymer threads)	G1/2" = 22 Nm
Max. fitting torque (with threaded inserts)	G3/8" = 25 Nm G1/2" = 30 Nm

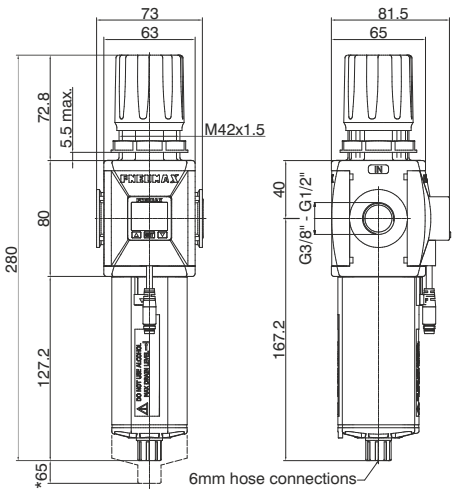
Ordering code

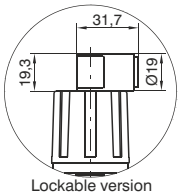
ⓋT173ⒸRⒹⒼⓉⓄⓅ

Ⓥ	VERSION
	N = Metal inserts
	T = Technopolymer thread
Ⓒ	CONNECTIONS
	A = G3/8"(only for "N" version)
	B = G1/2"
	C = 1/2 NPT(only for "N" version)
Ⓓ	FLOW DIRECTION
	P = from left to right
	Z = from right to left
Ⓖ	ADJUSTING RANGE
	A = 0-2 bar
	B = 0-4 bar
	C = 0-8 bar
	D = 0-12 bar
Ⓣ	TYPE
	= Standard *
	F = Controlled refiel + improved relieving
	L = no relieving
	R = Improved relieving
Ⓞ	OPTIONS
	= Standard *
	K = Lockable version
Ⓟ	PRESSURE SWITCH OPTION
	A = Cable 150 mm+M8 PNP
	B = Cable 150 mm+M8 NPN
	C = Cable 2 mt. PNP
	D = Cable 2 mt. NPN

* no additional letter required

Filter regulator with pressure switch (EP)(EZ)

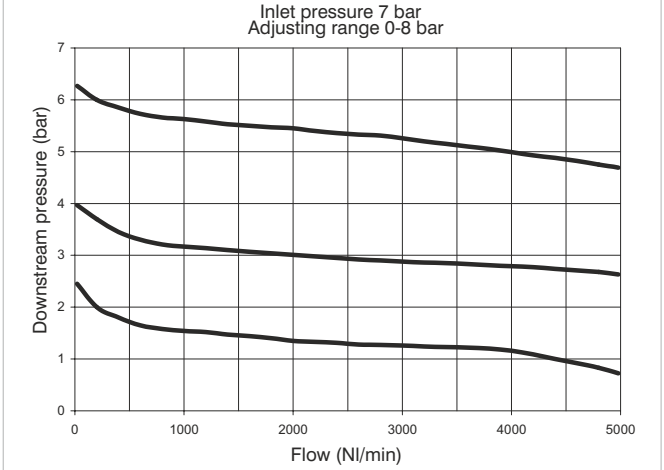




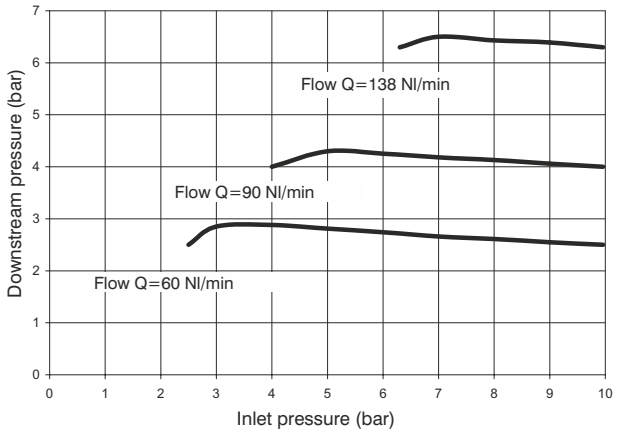
* Bowl removal maximum height

Example: T173BEPBCA : size 3, Filter-regulator with Technopolymer threads, G1/2" connections, 20 μm filtering pore size, 0 to 8 bar adjusting range, with pressure switch with M8 connector PNP

Flow rate curves



Adjustment characteristics



Operational characteristics

- Filter - diaphragm pressure regulator with relieving.
- Low hysteresis rolling diaphragm.
- Balanced system.
- Double filtering action: air flow centrifugation and filter element.
- Filtering element made of HDPE (high density polyethylene) available in three different filtration grades (5μm, 20μm and 50μm) can be regenerated by washing it or replaced.
- Transparent bowl made off polycarbonate with bowl protection guard.
- Bowl assembly via bayonet type quick coupling mechanism with safety button.
- Semi-automatic drain mounted as standard; automatic drain upon request
- Available in four pressure ranges up to 12 bar.
- Operating knob can be locked in position by pressing it down once the desired P2 (regulated pressure) pressure value is achieved.
- Fitted with panel mounting locking ring.
- Pressure switch as standard

Note

The pressure must be always regulating while increasing. For a more precise regulation and higher sensibility, the use of a regulator with a pressure range as close as possible to the regulated pressure is recommended. In order to ensure adequate flow on the auto drain version it is recommended to use minimum a 6mm fitting.

Technical characteristics

Connections	G 3/8" - G 1/2"
Max. inlet pressure	13 bar
Minimum working pressure with automatic drain	0,5 bar
Maximum working pressure with automatic drain	10 bar
Working temperature	0°C +50°C
Weight with Technopolymer threads	gr. 480
Weight with threaded inserts	gr. 500
Pressure range	0-2 bar / 0-4 bar 0-8 bar / 0-12 bar
Filter pore size	5 μm - 20 μm - 50 μm
Bowl capacity	68 cm^3
Assembly positions	Vertical
Max. fitting torque (with Technopolymer threads)	G1/2" = 22 Nm
Max. fitting torque (with threaded inserts)	G3/8" = 25 Nm G1/2" = 30 Nm

Ordering code

V173CEDSGTOPZ

V	VERSION
	N = Metal inserts
	T = Technopolymer thread
C	CONNECTIONS
	A = G3/8" (only for "N" version)
	B = G1/2"
	C = 1/2 NPT (only for "N" version)
D	FLOW DIRECTION
	P = from left to right
	Z = from right to left
S	FILTER PORE SIZE
	A = 5 μm
	B = 20 μm
	C = 50 μm
G	ADJUSTING RANGE
	A = 0-2 bar
	B = 0-4 bar
	C = 0-8 bar
	D = 0-12 bar
T	TYPE
	= Standard *
	S = Automatic drain
O	OPTIONS
	= Standard *
	K = Lockable version
P	PRESSURE SWITCH OPTION
	A = Cable 150 mm+M8 PNP
	B = Cable 150 mm+M8 NPN
	C = Cable 2 mt. PNP
	D = Cable 2 mt. NPN
Z	BOWL OPTIONS
	= Standard *
	N = Nylon bowl

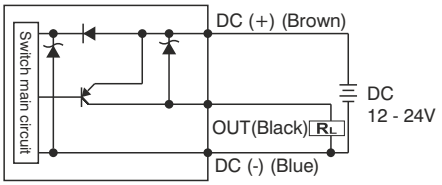
* no additional letter required

CHARACTERISTICS

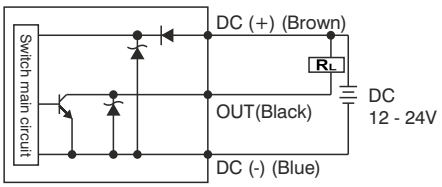
- 3 color digital LCD display, easy readout
- 4 units of measurement for pressure indication
- PNP and NPN output
- N.O. and N.C. output contact
- Not available individually, but only with a Regulator or a Filter-regulator

OUTPUT CIRCUIT WIRING DIAGRAMS

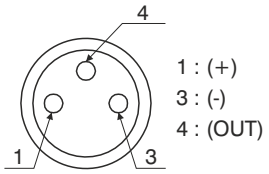
PNP output



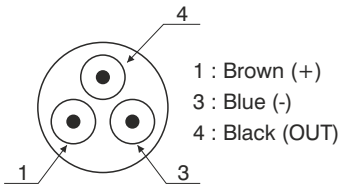
NPN output



M8 CONNECTOR PIN LAY OUT



3 WIRES CABLE LAY OUT



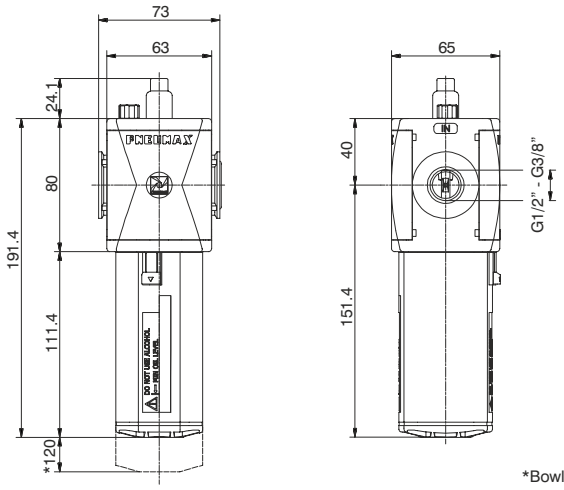
Cable ordering code

MCH1	cable 3 wires l=2,5m with M8 connector
MCH2	cable 3 wires l=5m with M8 connector
MCH3	cable 3 wires l=10m with M8 connector

Connector

TECHNICAL CHARACTERISTICS	
Adjusting range	0 - 10 bar / 0 - 1MPa
Max. inlet pressure	15 bar / 1,5 MPa
Fluid	Filtered and dehumidified air
Display unit of measurement	MPa - kgf/cm² - bar - psi
Supply voltage	12 - 24 VDC
Current consumption	≤40mA (without load)
Digital output type	NPN - PNP
Type of contact	Normally Open - Normally Closed
Max. load current	125 mA
Digital output activation mode	single threshold with fixed hysteresis - window with fixed hysteresis - window without hysteresis
Digital output activation time	0.05s - 0.25s - 0.5s - 1s - 2s - 3s (selections for chattering-proof function)
Display characteristics	Double 3 1/2 digit display Digital output status indication Three-pushbuttons touchpad
Indicator accuracy	≤±2% F.S. ± 1 digit
Protection grade	IP 40
Temperature	0 - 50 °C
Cable section	3 x 0,129mm², Ø4 mm, PVC

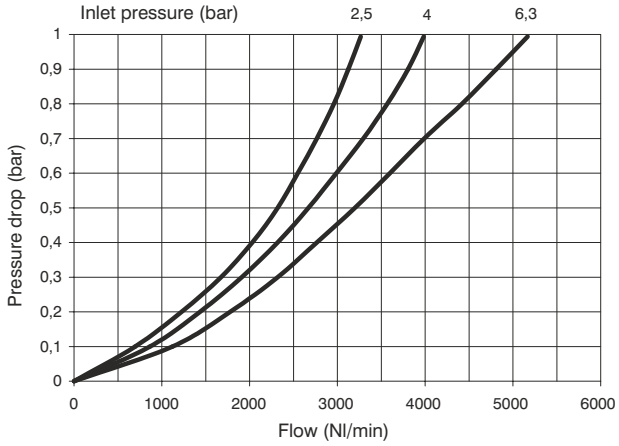
Lubricator (L)



*Bowl removal maximum height

Example : T173BL : size 3, Lubricator with Technopolymer threads, G1/2" connections

3 Flow rate curves



Operational characteristics

- Oil mist lubrication with variable orifice size in function of the flow rate
- Oil quantity regulation mechanism and oil quantity visualization dome made of polycarbonate.
- Transparent bowl made off polycarbonate with bowl protection guard.
- Bowl assembly via bayonet type quick coupling mechanism with safety button.
- Oil filling plug
- Oil can be refilled with pressurized circuit.
- Available with electric min-level sensor N.O. or N.C. with connection for connector.
- For electrical connection use connectors type C1-C2-C3 (see sensors chapter in the catalogue).

Note

Install as close as possible to the point o fuse
Do not use alcohol, deterging oils or solvents.

Technical characteristics

Connections	G 3/8" - G 1/2"
Max. inlet pressure	13 bar
Working temperature	-5°C +50°C
Weight with Technopolymer threads	gr. 290
Weight with threaded inserts	gr. 310
Indicative oil drop rate	1 drop every 300/600 Nl
Oil type	FD22 - HG32
Bowl capacity	136 cm^3
Assembly positions	Vertical
Max. fitting torque (with Technopolymer threads)	G1/2"= 22 Nm
Max. fitting torque (with threaded inserts)	G3/8" = 25 Nm G1/2" = 30 Nm
Min. operational flow at 6,3 bar	100 Nl/min.

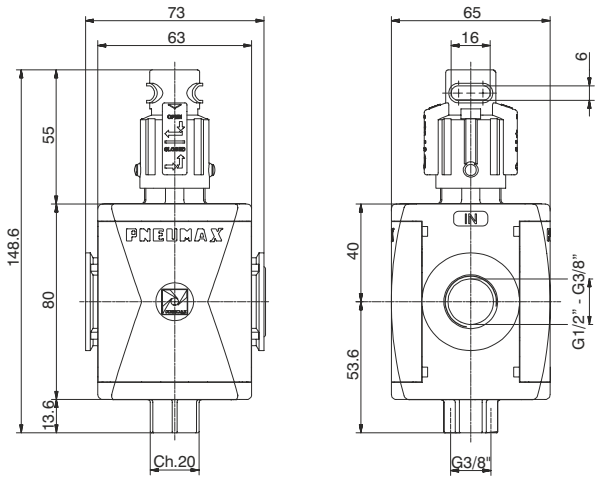
Ordering code

❶173❷L❸❹

❶	VERSION
	N = Metal inserts
	T = Technopolymer thread
❷	CONNECTIONS
	A = G3/8"(only for "N" version)
	B = G1/2"
	C = 1/2 NPT(only for "N" version)
❸	OPTIONS
	A = Min. Oil level indicator Normally open
	C = Min. Oil level indicator Normally closed
❹	BOWL OPTIONS
	= Standard *
	N = Nylon bowl

* no additional letter required

Shut-off valve (VL)



Example: T173BVL : size 3, Shut-off valve with Technopolymer threads, G1/2" connections

Operational characteristics

- Manual operated 3 ways poppet valve.
- Double handle action for valve opening: pushing and rotating (clockwise).
- The valve can be closed and the down stream circuit depressurized by rotating anticlockwise the knob.
- Knob lockable with three padlocks.

Technical characteristics

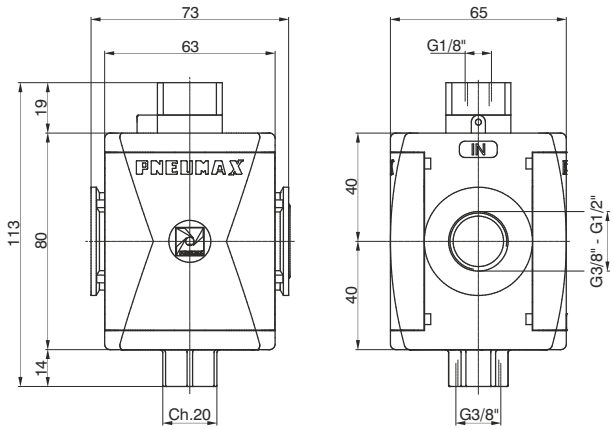
Connections	G 3/8" - G 1/2"
Max. inlet pressure	13 bar
Discharge connection	G3/8"
Working temperature	-5°C +50°C
Weight with Technopolymer threads	gr. 230
Weight with threaded inserts	gr. 250
Assembly positions	Indifferent
Handle opening and closing angle	90°
Max. fitting torque (with Technopolymer threads)	G1/2" = 22 Nm
Max. fitting torque (with threaded inserts)	G3/8" = 25 Nm G1/2" = 30 Nm
Nominal flow rate at 6 bar with Δp=1	3600 Nl/min.
Exhaust nominal flow rate at 6 bar with Δp=1	1500 Nl/min.

Ordering code

Ⓥ173Ⓒ VL

Ⓥ	VERSION
	N = Metal inserts
	T = Technopolymer thread
Ⓒ	CONNECTIONS
	A = G3/8" (only for "N" version)
	B = G1/2"
	C = 1/2 NPT (only for "N" version)

Pneumatic shut-off valve (VP)



Example: T173BVP : size 3, Pneumatic shut-off valve with Technopolymer threads, G1/2" connections

Operational characteristics

- Pneumatic operated 3 ways poppet valve.
- When the pneumatic signal is removed the valves exhaust the pneumatic circuit

Technical characteristics

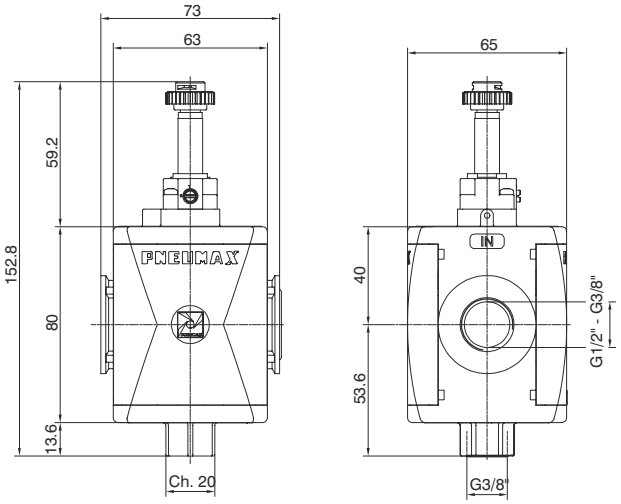
Connections	G 3/8" - G 1/2"
Discharge connection	G3/8"
Pilot port size	G1/8"
Working temperature	-5°C +50°C
Weight with technopolymer threads	gr. 254
Weight with threaded inserts	gr. 270
Assembly positions	Indifferent
Min. pressure working	2,5 bar
Max. pressure working	10 bar
Max. fitting torque (with Technopolymer threads)	G1/2" = 22 Nm
Max. fitting torque (with threaded inserts)	G3/8" = 25 Nm G1/2" = 30 Nm
Nominal flow rate at 6 bar with Δp=1	3600 Nl/min.
Exhaust nominal flow rate at 6 bar with Δp=1	1500 Nl/min.

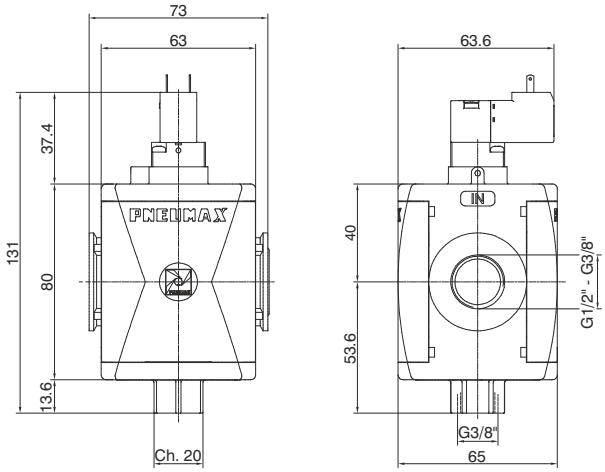
Ordering code

Ⓥ173ⒸVP

Ⓥ	VERSION
	N = Metal inserts
	T = Technopolymer thread
Ⓒ	CONNECTIONS
	A = G3/8" (only for "N" version)
	B = G1/2"
	C = 1/2 NPT (only for "N" version)

Electric shut-off valve (VE)





Example : T173BVEB2 : size 3, Electric shut-off valve, with M2 Pilot without coil, Technopolymer threads, G1/2" connections

Operational characteristics

- Solenoid operated 3 ways poppet valve.
- The model fitted with 15 mm pilots uses pilots series N33_0A and N33_0E (1 Watt)

Technical characteristics

Supply and operating connections	G 3/8" - G 1/2"
Discharge connections	G 3/8"
Working temperature	-5°C +50°C
Weight with Technopolymer threads	290 g
Weight with threaded inserts	310 g
Assembly positions	Indifferent
Min. Pressure working	2,5 bar
Max. Pressure working	10 bar
Max. fitting torque (with Technopolymer threads)	G1/2" = 22 Nm
Max. fitting torque (with threaded inserts)	G3/8" = 30 Nm G1/2" = 25 Nm
Nominal flow rate at 6 bar with Δp=1	3600 Nl/min.
Exhaust nominal flow rate at 6 bar with Δp=1	1500 Nl/min.

Ordering code

Ⓥ173ⒸVEⒶ

Ⓥ	VERSION
	N = Metal inserts
	T = Technopolymer thread
Ⓒ	CONNECTIONS
	A = G3/8"(only for "N" version)
	B = G1/2"
	C = 1/2 NPT(only for "N" version)
Ⓐ	15 mm COIL VOLTAGE
	A4 = 12 V DC
	A5 = 24 V DC
	A6 = 24 V AC (50-60 Hz)
	A7 = 110 V AC (50-60 Hz)
	A8 = 230 V AC (50-60 Hz)
	A9 = 24 V DC (1 Watt)
	22 mm COIL VOLTAGE
	B2 = Without coil M2 mechanic
	B4 = 12 V DC
	B5 = 24 V DC
	B6 = 24 V AC (50-60 Hz)
	B7 = 110 V AC (50-60 Hz)
	B8 = 230 V AC (50-60 Hz)
	B9 = 24 V DC (2 Watt)
	30 mm COIL VOLTAGE
	C5 = 24 V DC
	C6 = 24 V AC (50-60 Hz)
	C7 = 110 V AC (50-60 Hz)
	C8 = 230 V AC (50-60 Hz)
	C9 = 24 V DC (2 Watt)