


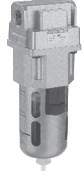














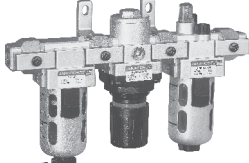
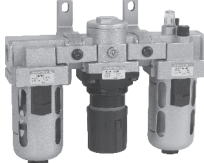


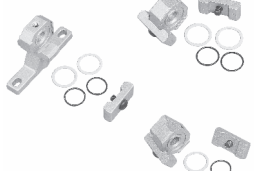








4. AIR PREPARATION UNITS (FRLs)

Filter Series F1 Sizes : G1/4, 3/8, 1/2, 3/4, 1"	Air Filter With Service Indicator Series F1-N1 Sizes : G3/8"	Air Filter With Service Indicator Series F1-G1 Sizes : G1/2, 3/4, 1"	Filter with Internal Autodrain Series F1A Sizes : G3/8, 1/2, 3/4, 1"
			
Page No. 4.1.1 - 4.1.3	Page No. 4.1.4 - 4.1.5	Page No. 4.1.6 - 4.1.8	Page No. 4.2.1 - 4.2.3
Filter with Internal Autodrain Service Indicator Series F1-N1 Sizes : G3/8"	Filter with Internal Autodrain Service Indicator Series F1-G1 Sizes : G1/2, 3/4, 1"	Filter with Metal bowl Series F1M Sizes : G1/4, 3/8, 1/2, 3/4, 1"	Mist Separator Series FS1 Sizes : G1/4, 1/2
			
Page No. 4.2.4 - 4.2.5	Page No. 4.2.6 - 4.2.8	Page No. 4.3.1 - 4.3.3	Page No. 4.4.1 - 4.4.2
Regulator Series R1 Sizes : G1/4, 3/8, 1/2, 3/4, 1"	Regulator Built in Non-Return Valve Series R1N Sizes : G1/4, 3/8, 1/2, 3/4, 1"	Regulator with Tamper Proof Series R1 Sizes : G1/4, 3/8, 1/2, 3/4, 1"	Venturi Type Regulator (Built In Non-Return Valve) Series R2 Sizes : G1/4"
			
Page No. 4.5.1 - 4.5.3	Page No. 4.5.4 - 4.5.6	Page No. 4.5.7 - 4.5.9	Page No. 4.5.10 - 4.5.11
Lubricator Series L1 Sizes : G1/4, 3/8, 1/2, 3/4, 1"	Lubricator with Metal bowl Series L1M Sizes : G1/4, 3/8, 1/2, 3/4, 1"	Filter Regulator Combination Series FRC1 Sizes : G1/4, 3/8, 1/2, 3/4, 1"	FRC with Tamper Proof Series FRC1M Sizes : G1/4, 3/8, 1/2, 3/4, 1"
			
Page No. 4.6.1 - 4.6.3	Page No. 4.7.1 - 4.7.3	Page No. 4.8.1 - 4.8.3	Page No. 4.8.4 - 4.8.6
FRC with Internal Autodrain Series FRC1A Sizes : G3/8, 1/2, 3/4, 1"	FRC with Metal bowl Series FRC1M Sizes : G1/4, 3/8, 1/2, 3/4, 1"	FRL Modular Series FRLM1 Sizes : G1/4, 3/8, 1/2, 3/4, 1"	FRL Modular without Piping Adaptor Series FRLM1 Sizes : G1/4, 3/8, 1/2, 3/4, 1"
			
Page No. 4.9.1 - 4.9.3	Page No. 4.10.1 - 4.10.3	Page No. 4.11.1 - 4.11.3	Page No. 4.11.4 - 4.11.6

4. AIR PREPARATION UNITS (FRLs)

FRL Modular with Internal Autodrain Series FRLM1A Sizes : G3/8, 1/2, 3/4, 1"	Series FRLM1M Sizes : G1/4, 3/8, 1/2, 3/4, 1"	FRCL Modular Series FRCLM1 Sizes : G1/4, 3/8, 1/2, 3/4, 1"	FRCL Modular without Piping Adaptor Series FRCLM1 Sizes : G1/4, 3/8, 1/2, 3/4, 1"
Page No. 4.12.1 - 4.12.3	4.13.1 - 4.13.3	4.14.1 - 4.14.3	4.14.4 - 4.14.6
FRCL Modular with Internal Autodrain Series FRCLM1A Sizes : G3/8, 1/2, 3/4, 1"	FRCL Modular with Metal bowl Series FRCLM1M Sizes : G1/4, 3/8, 1/2, 3/4, 1"	Shut Off Valve Series GS2 Sizes : G1/4, 3/8, 1/2	Shut Off Valve with Lockable Series GS2 Sizes : G1/4, 3/8, 1/2
Page No. 4.15.1 - 4.15.3	4.16.1 - 4.16.3	4.17.1	4.17.2
Precision Regulator Series PR Sizes : G1/8, 1/4	Precision Regulator Series PR Size : G1/2	Proportional Pressure Regulator Series PPR Size : G1/4, G3/8, G1/2	Flow Meter Series FM1 Size : G3/4
Page No. 4.18.1 - 4.18.4	4.18.5 - 4.18.7	4.19.1 - 4.19.12	4.20.1 - 4.20.2
Pressure Switch Series PT1 Sizes : G1/8, 1/4	Air Tank (Stainless Steel) Series AT Sizes : 0.75, 2, 5, 10, 20 L		
Page No. 4.21.1 - 4.21.2	4.22.1 - 4.22.2		

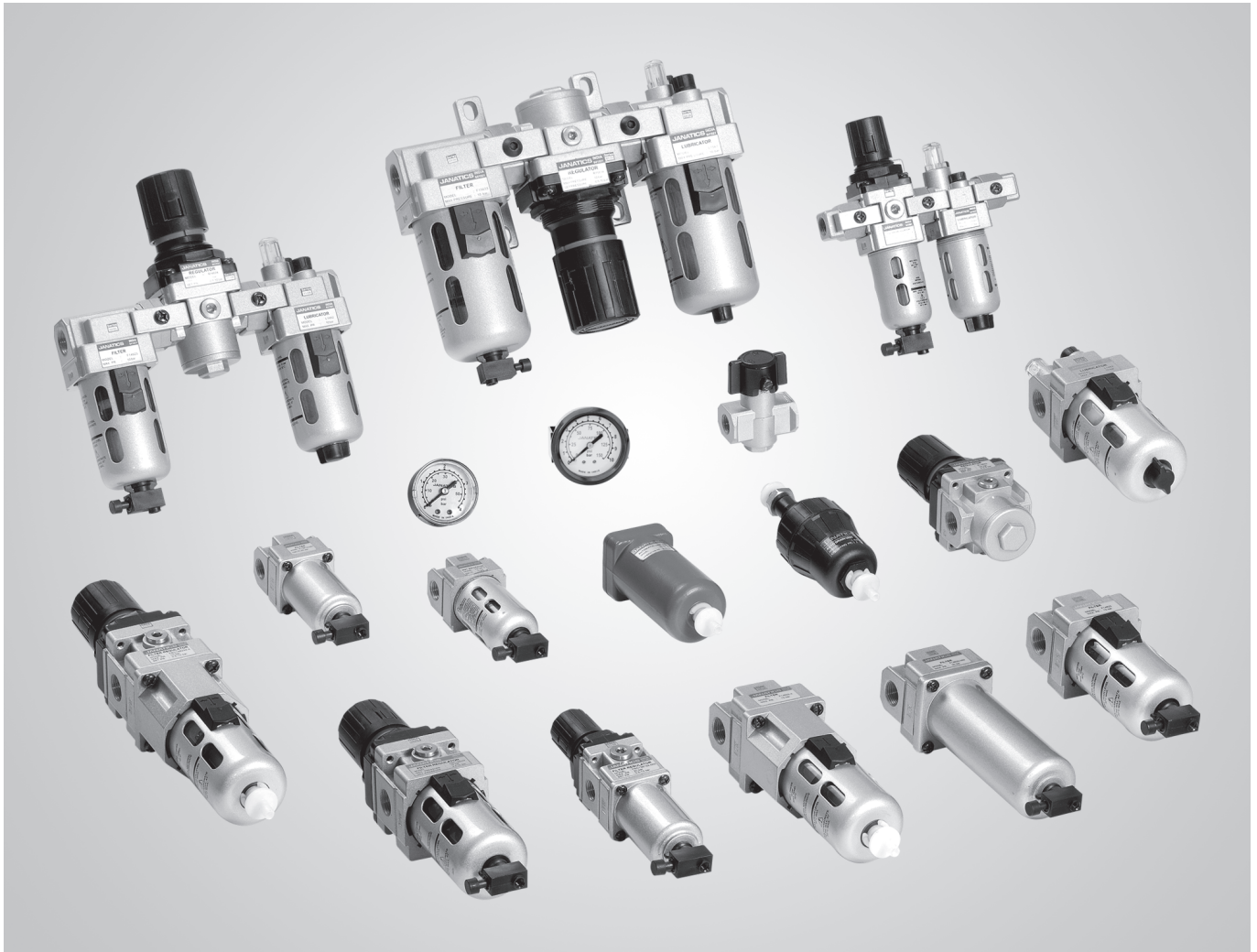
4a. AIR PREPARATION UNITS (FRLs) - ACCESSORIES

Modular Construction	Clamps	Pressure Gauges	Auto Drain Valve
			
Page No. 4a.1.1 - 4a.1.2	4a.2.1	4a.2.2	4a.3.1
Pressure Switch	Digital Pressure Sensor	Digital Pressure Sensor	Angular Line Strainer
Series PW Size : R1/8	Two output Series PS Size : R1/8	Single output Series PS Size : R1/8	Size : G1/2
			
Page No. 4a.4.1	4a.5.1 - 4a.5.3	4a.5.4 - 4a.5.6	4a.6.1
Pressure Indicator			
Series PN Sizes : M5, G1/8, G1/4			
			
Page No. 4a.7.1			

Air Preparation Units

Series : FRL

Sizes : G1/4, G3/8, G1/2, G3/4, G1



- Air Filter
- Air Filter with Metal bowl
- Mist Separator
- Regulator
- Regulator with built in NRV
- Lubricator
- Lubricator with Metal bowl
- Filter Regulator Combination
- Filter Regulator Combination with Metal bowl
- Filter Regulator Combination - Lubricator, Modular unit
- Filter - Regulator - Lubricator, Modular unit
- Internal / External Auto drain valve
- Accessories



AIR PREPARATION UNITS FILTER Series F1

Cat No F1 - 01 - C

AIR FILTER - 1/4, 3/8, 1/2, 3/4, 1"

Features

- Conforms to ISO 5782 -1
- Suitable for Modular mounting
- Steel bowl guard, bayonet type on F14, F15 & F17 models and threaded type on F13 model
- Press type Manual drain for easy operation
- Bronze filtering element
- Separator and shield for efficient moisture separation



Technical Specifications

Model	F13	F14	F15	F17	F17
Medium	Compressed air				
Port size	G1/4	G3/8	G1/2	G3/4	G1
Flow rate (lts / min) @	800	2250	3500	5000	6500
Maximum supply pressure (bar)	10				
Ambient temperature	Manual drain: -10° to +50° C, Semi auto drain: +5° to +50° C				
Medium temperature	+5° to +50° C				
Filtration # (µm)	1, 5, 25, 40 (standard), 50, 100				
Bowl capacity (ml) (at maximum condensate level)	9	32	44	165	165
Bowl material	Polycarbonate				
Installation	Vertical (as in the picture)				
Materials of construction	Aluminium, Bronze, Steel, Acetal, Polycarbonate, SS, Nitrile				
Optional accessories *	Clamp, Modular mounting kit, Pressure gauge				
Weight (Kg)	0.19	0.32	0.60	1.4	1.3

@ Supply pressure 6 bar, pressure drop $\Delta p = 0.3$ bar (For standard models).

For details see " How to order ".

* For details refer Optional accessories Cat No APA - 01 - C

Precautions

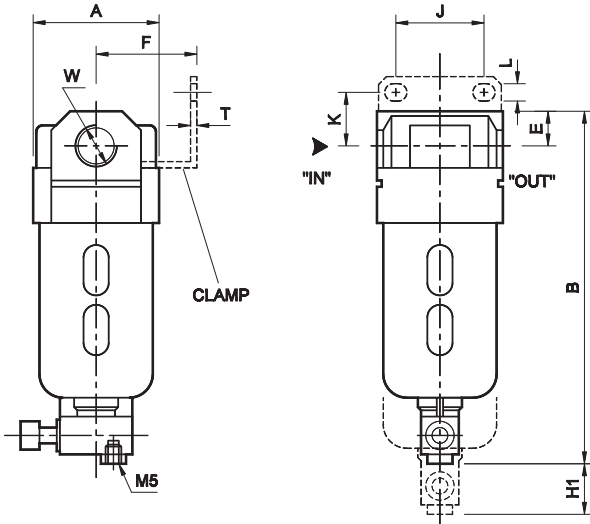
1. Note the direction of flow before installation and connect piping accordingly.
2. Flush pipings for dirt, dust, rust and other foreign particles.
3. Install in clean atmosphere.
4. Nipples of taper threads (R) to be used with teflon tape. Ensure teflon tape does not enter the unit during tightening. Nipples of straight threads (G) to be used with sealing washer.
5. Polycarbonate bowls may get damaged and possibly fail if exposed to synthetic oils, thinner, solvents, trichloroethylene, kerosene or other aromatic hydrocarbons.

AIR PREPARATION UNITS

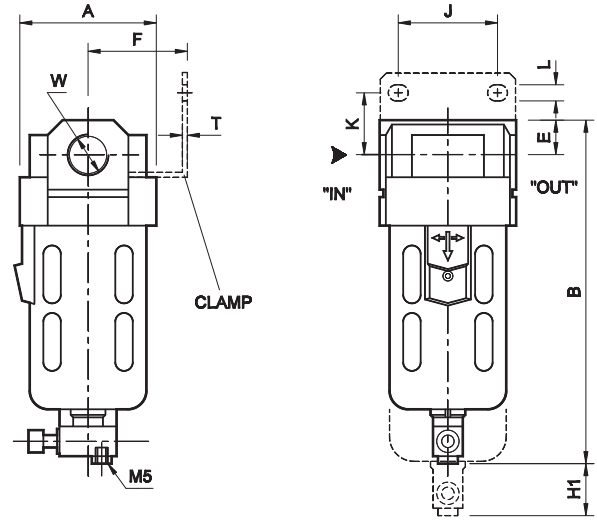
FILTER Series F1

Cat No F1 - 01 - C

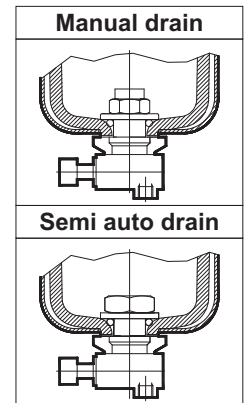
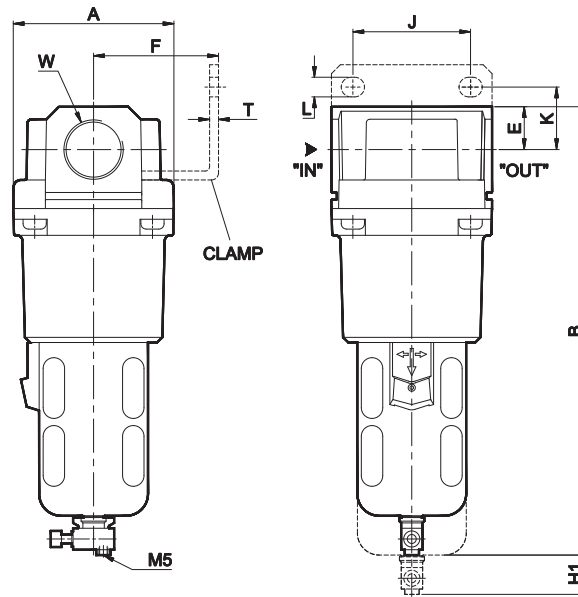
Model F13



Model F14 & F15



Model F17



Model	W	A	B	E	K	F	J	L	T	H1
F13	G1/4	SQ 40	113	11	15	30	28	5.5	2	50
F14	G3/8	SQ 55	140	14	25	40	40	6.5	2	55
F15	G1/2	SQ 70	172	18	25	50	55	8.5	2	80
F17	G3/4	SQ 90	260	24	35	70	66	11	5	80
F17	G1	SQ 90	260	24	35	70	66	11	5	80

For Details of Clamp see optional accessories Cat No APA - 01 - C

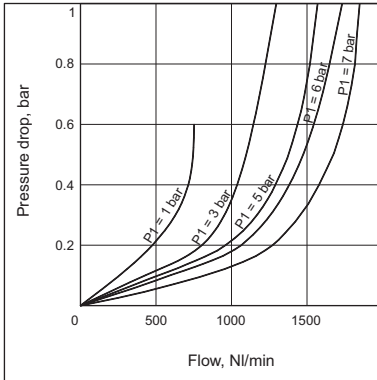
AIR PREPARATION UNITS

FILTER Series F1

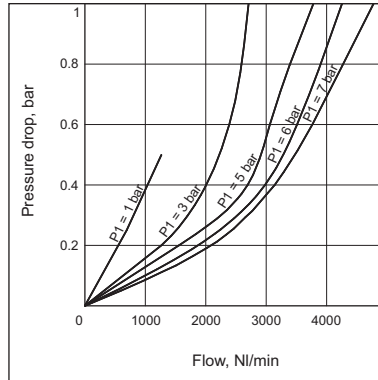
Cat No F1 - 01 - C

Flow Graphs

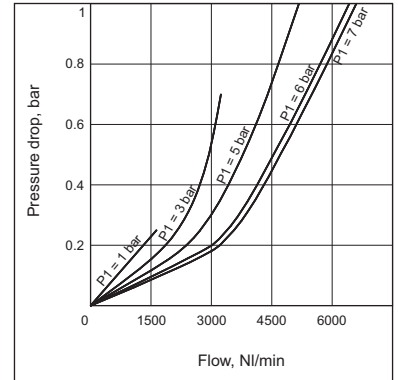
1/4" FILTER



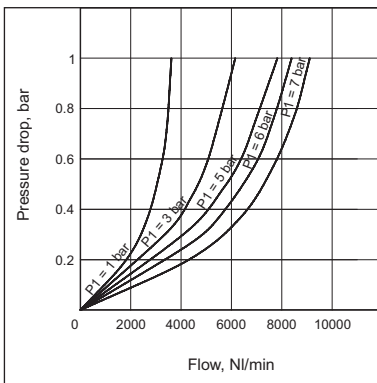
3/8" FILTER



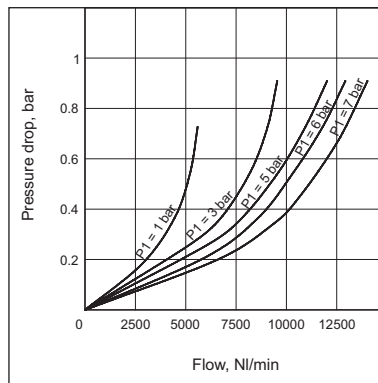
1/2" FILTER



3/4" FILTER



1" FILTER



Flow graphs are for 40µm filtrations only.

How to order

(F1)	(462)	(3)	—	()
Body & Port size		Filteration in µm		Drain arrangement
361	G1/4	0	- 1	Manual drain (Standard) S Semi Auto drain S - For Semi auto drain minimum working pressure 0.8 bar The basic model filter is supplied with manual drain. For optional drain requirement specify the suffix mentioned in ordering information.
462	G3/8	1	- 5	
563	G1/2	2	- 25	
764	G3/4	3	- 40 (Standard)	
765	G1	4	- 50	
		5	- 100	

Ordering example:

Filter - 3/8 size (with G3/8 port) with 50µm filter with Semi auto drain : Ordering No: **F14624-S**
 If ordered as 3/8 Filter, our standard model **F14623**, with 40µm will be supplied.



AIR PREPARATION UNITS

AIR FILTER Series F1-N1

Cat No F1N - 01 - 01 - A

AIR FILTER WITH SERVICE INDICATOR - 3/8"

Features

- Conforms to ISO 5782 -1
- Suitable for Modular mounting
- Steel bowl guard, bayonet type
- Press type Manual drain for easy operation
- Bronze filtering element
- Separator and shield for efficient moisture separation
- Service indicator turns from green to red when filter element needs to be replaced ($\Delta p > 1$ bar)



Technical Specifications

Model	F14	
Medium	Compressed air	
Port size	G3/8	
Flow rate @	lts/min	2250
Maximum supply pressure	bar	10
Medium temperature	C	+5° to +50°
Ambient temperature	C	-10° to +50°
Filtration #	µm	1, 5, 25, 40 (standard), 50, 100
Bowl capacity (at maximum condensate level)	ml	32
Bowl material	Polycarbonate	
Installation	Vertical (as in the picture)	
Materials of construction	Aluminium, Bronze, Steel, Acetal, Polycarbonate, SS, Nitrile	
Optional accessories *	Clamp, Modular mounting kit, Pressure gauge	
Weight	Kg	0.40

@ Supply pressure 6 bar, pressure drop $\Delta p = 0.3$ bar (For standard models)

For details see " How to order ".

* For details refer Optional accessories Cat No APA - 01 - C

Precautions

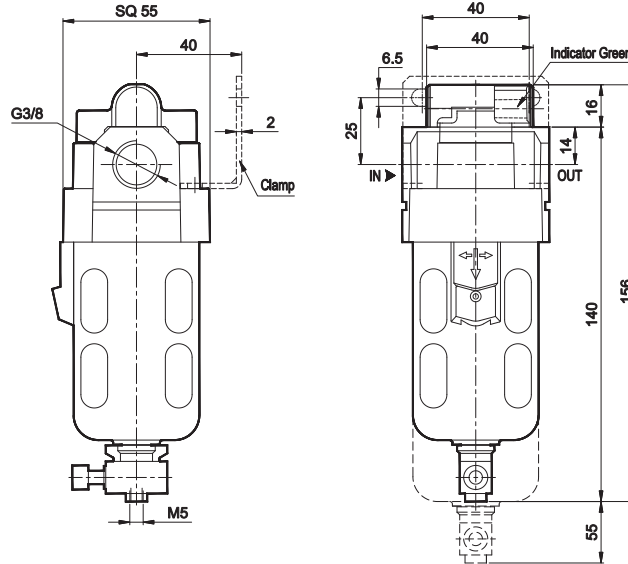
1. Note the direction of flow before installation and connect piping accordingly.
2. Flush pipings for dirt, dust, rust and other foreign particles.
3. Install in clean atmosphere.
4. Nipples of taper threads (R) to be used with teflon tape. Ensure teflon tape does not enter the unit during tightening. Nipples of straight threads (G) to be used with sealing washer.
5. Polycarbonate bowls may get damaged and possibly fail if exposed to synthetic oils, thinner, solvents, trichloroethylene, kerosene or other aromatic hydrocarbons.
6. Periodically drain the water so that it does not accumulate (or) clog the filter element.

AIR PREPARATION UNITS

AIR FILTER Series F1-N1

Cat No F1N - 01 - 01 - A

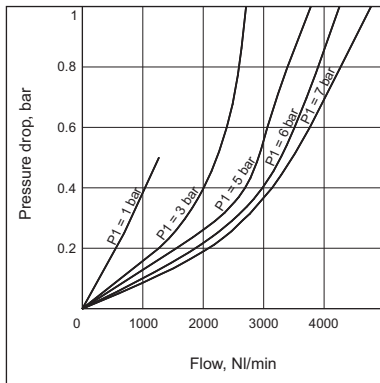
Model F14...-N1



For Details of Clamp see optional accessories Cat No APA - 01 - C

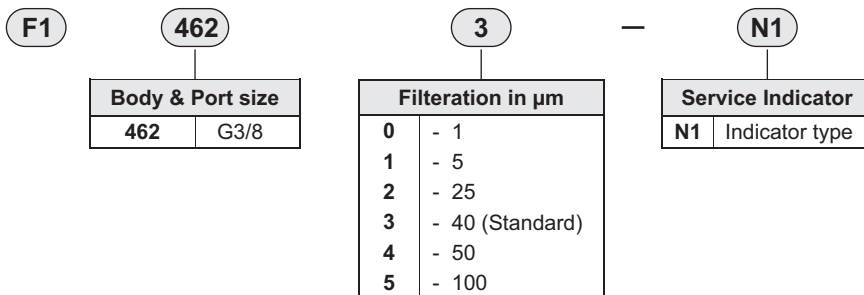
Flow Graphs

3/8" FILTER



Flow graphs are for 40µm filtrations only.

How to order



Ordering example:

Filter - 3/8 size (with G3/8 port) with 50µm filter with indicator type: Ordering No: **F14624-N1**
 If ordered as 3/8 Filter with indicator type, our standard model **F14623-N1**, with 40µm will be supplied.

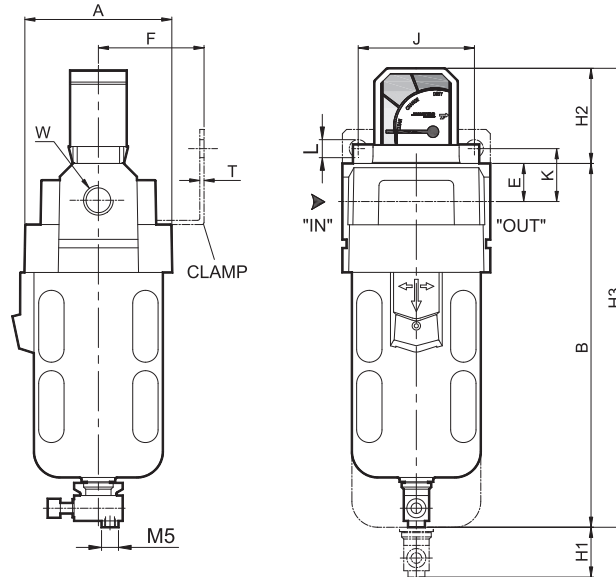
Subject to change

AIR PREPARATION UNITS

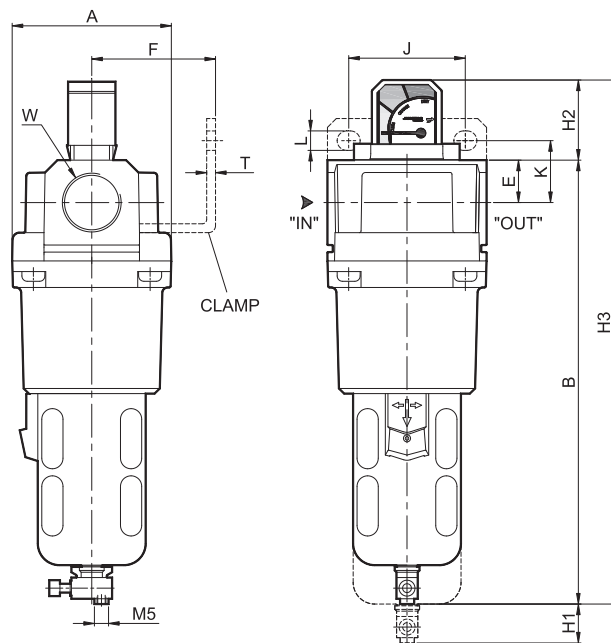
FILTER Series F1-G1

Cat No F1G - 01 - 01 - B

Model F15...-G1



Model F17...-G1



Model	W	A	B	E	K	F	J	L	T	H1	H2	H3
F15...-G1	G1/2	SQ 70	172	18	25	50	55	8.5	2	80	45	217
F17...-G1	G3/4	SQ 90	260	24	35	70	66	11	5	80	45	305
F17...-G1	G1	SQ 90	260	24	35	70	66	11	5	80	45	305

For Details of Clamp see optional accessories Cat No APA - 01 - C

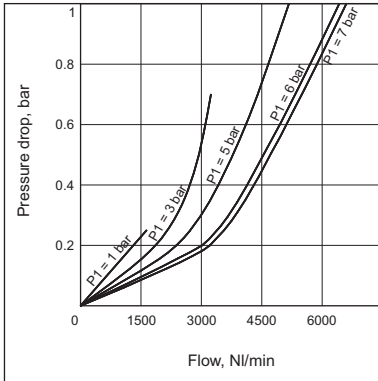
AIR PREPARATION UNITS

FILTER Series F1-G1

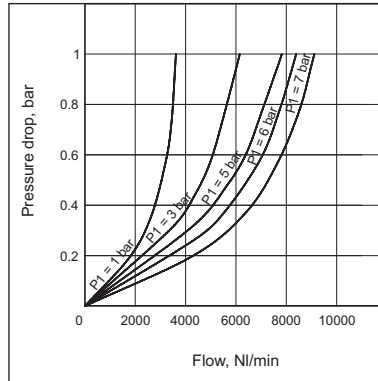
Cat No F1G - 01 - 01 - B

Flow Graphs

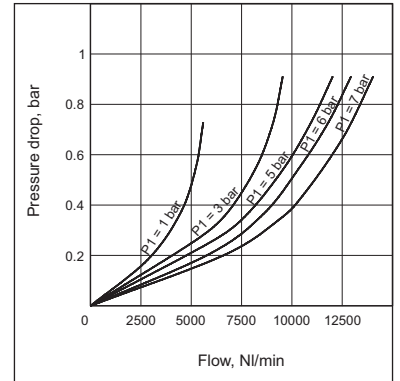
1/2" FILTER



3/4" FILTER



1" FILTER



Flow graphs are for 40µm filtrations only.

How to order

F1	462	3	—	G1
Body & Port size		Filteration in µm		Service Indicator
563	G1/2	0	-	G1
764	G3/4	1	-	Gauge type
765	G1	2	-	
		3	-	
		4	-	
		5	-	

Ordering example:

Filter - 3/4 size (with G3/4 port) with 50µm filter with service indicator : Ordering No: **F17644-G1**

If ordered as 3/4 Filter with service indicator, our standard model **F17643-G1**, with 40µm will be supplied.



AIR PREPARATION UNITS

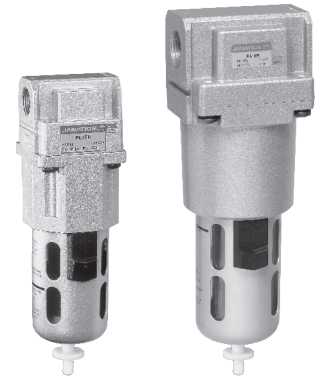
FILTER WITH INTERNAL AUTODRAIN - Series F1A

Cat No F1A - 01 - C

AIR FILTER WITH INTERNAL AUTODRAIN - 3/8, 1/2, 3/4, 1"

Features

- Suitable for Modular mounting
- Steel bowl guard, bayonet type
- Internal Autodrain - Float type, no electrical connections required
 - Provided with manual drain
 - Provision for drain tube connection, to take the condensate away from the unit, to keep the working area clean
- Bronze filtering element
- Separator and shield for efficient moisture separation



Technical Specifications

Model	F14....A	F15....A	F17....A	F17....A
Medium	Compressed air			
Port size	G3/8	G1/2	G3/4	G1
Flow rate (lts / min) @	2250	3500	5000	6500
Operating pressure (bar)	2 - 10		10	
Ambient temperature	+5° to +50° C			
Medium temperature	+5° to +50° C			
Filtration # (µm)	1, 5, 25, 40 (Standard), 50, 100			
Bowl capacity (ml) (at maximum condensate level)	35	65	165	165
Bowl material	Polycarbonate			
Installation	Vertical (as in the picture)			
Materials of construction	Aluminium, Bronze, Steel, Acetal, Polycarbonate, SS, Nitrile			
Optional accessories *	Clamp, Modular mounting kit, Pressure gauge			
Weight (Kg)	0.49	0.86	1.4	1.3

@ Supply pressure 6 bar, pressure drop $\Delta p = 0.3$ bar

For details see " How to order ".

* For details refer Optional accessories Cat No APA - 01 - C

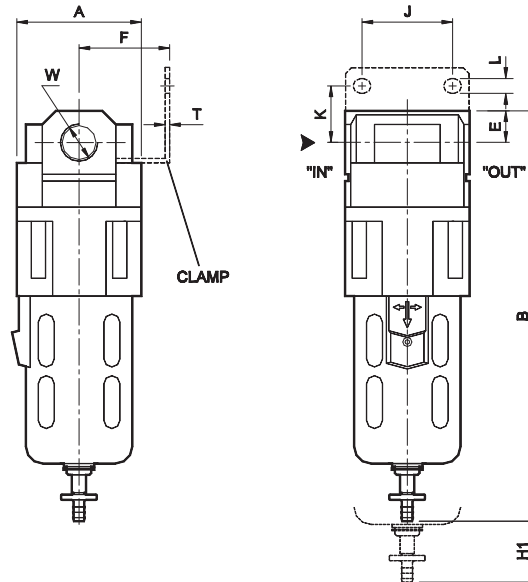
Precautions

1. Note the direction of flow before installation and connect piping accordingly.
2. Flush pipings for dirt, dust, rust and other foreign particles.
3. Install in clean atmosphere.
4. Nipples of taper threads (R) to be used with teflon tape. Ensure teflon tape does not enter the unit during tightening. Nipples of straight threads (G) to be used with sealing washer.
5. Polycarbonate bowls may get damaged and possibly fail if exposed to synthetic oils, thinner, solvents, trichloroethylene, kerosene or other aromatic hydrocarbons.

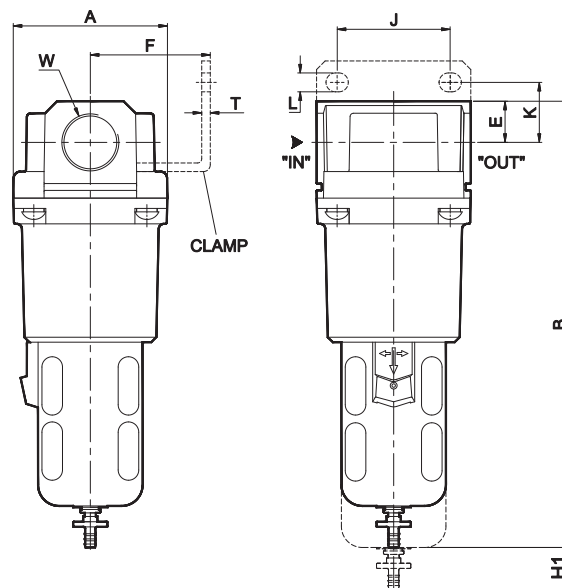
AIR PREPARATION UNITS FILTER WITH INTERNAL AUTODRAIN - Series F1A

Cat No F1A - 01 - C

Model F14...A, F15...A



Model F17...A



Model	W	A	B	E	K	F	J	L	T	H1
F14...A	G3/8	SQ 55	193	14	25	40	40	6.5	2	55
F15...A	G1/2	SQ 70	230	18	25	50	55	8.5	2	80
F17...A	G3/4	SQ 90	260	24	35	70	66	11	5	80
F17...A	G1	SQ 90	260	24	35	70	66	11	5	80

For Details of Clamp see optional accessories Cat No APA - 01 - C

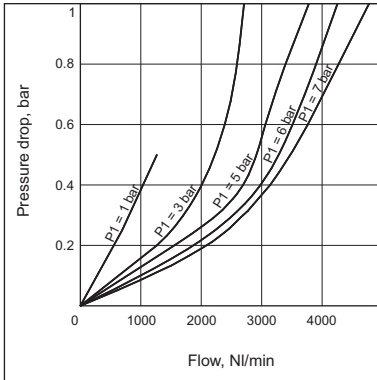
AIR PREPARATION UNITS

FILTER WITH INTERNAL AUTODRAIN - Series F1A

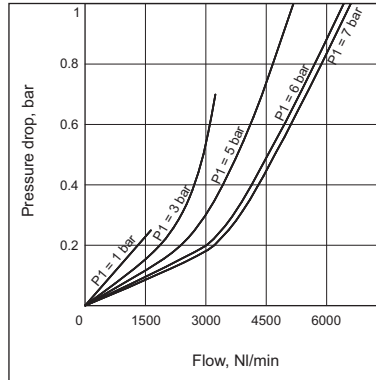
Cat No F1A - 01 - C

Flow Graphs

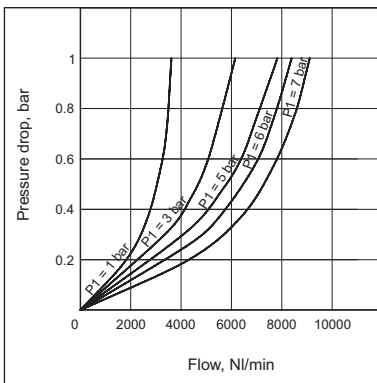
3/8" FILTER



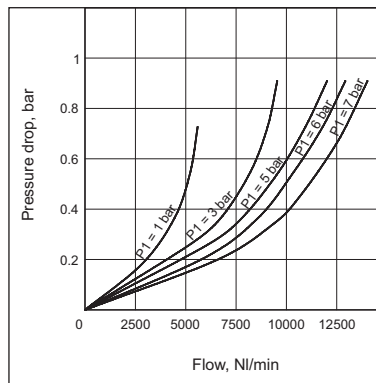
1/2" FILTER



3/4" FILTER



1" FILTER



Flow graphs are for 40µm filtrations only.

How to order

F1 **462** **3** — **A**

Body & Port size	
462	G3/8
563	G1/2
764	G3/4
765	G1

Filtration in µm	
0	- 1
1	- 5
2	- 25
3	- 40 (Standard)
4	- 50
5	- 100

Internal Autodrain
A

Ordering example:

Filter - 3/8 size (with G 3/8 port) with a 50µm Filter with Internal Autodrain: Ordering No: **F14624 - A**

If ordered as 3/8 Filter with Internal Autodrain, our standard model **F14623 - A**, with 40µm will be supplied.



AIR PREPARATION UNITS

FILTER WITH INTERNAL AUTODRAIN - Series F1A-N1

Cat No F1AN - 01 - 01 - B

AIR FILTER INTERNAL AUTODRAIN WITH SERVICE INDICATOR - 3/8"

Features

- Suitable for Modular mounting
- Steel bowl guard, bayonet type
- Internal Autodrain - Float type, no electrical connections required
 - Provided with manual drain
 - Provision for drain tube connection, to take the condensate away from the unit, to keep the working area clean
- Bronze filtering element
- Separator and shield for efficient moisture separation
- Service indicator turns from green to red when filter element needs to be replaced ($\Delta p > 1$ bar)



Technical Specifications

Model	F14.....AN1	
Medium	Compressed air	
Port size	G3/8	
Flow rate @	lts/min	2250
Operating pressure	bar	2 to 10
Medium temperature	C	+5° to +50°
Ambient temperature	C	+5° to +50°
Filteration #	µm	1, 5, 25, 40 (standard), 50, 100
Bowl capacity (at maximum condensate level)	ml	35
Bowl material	Polycarbonate	
Installation	Vertical (as in the picture)	
Materials of construction	Aluminium, Bronze, Steel, Acetal, Polycarbonate, SS, Nitrile	
Optional accessories *	Clamp, Modular mounting kit, Pressure gauge	
Weight	Kg	0.51

® Supply pressure 6 bar, pressure drop $\Delta p = 0.3$ bar (For standard models)

For details see " How to order ".

* For details refer Optional accessories Cat No APA - 01 - C

Precautions

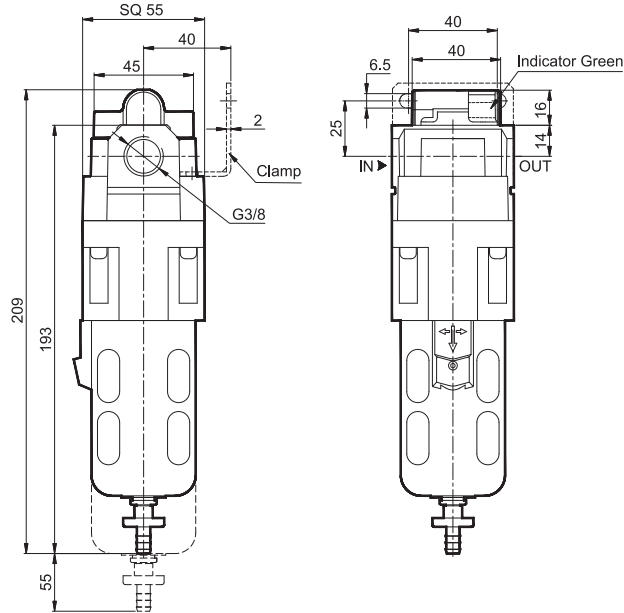
1. Note the direction of flow before installation and connect piping accordingly.
2. Flush pipings for dirt, dust, rust and other foreign particles.
3. Install in clean atmosphere.
4. Nipples of taper threads (R) to be used with teflon tape. Ensure teflon tape does not enter the unit during tightening. Nipples of straight threads (G) to be used with sealing washer.
5. Polycarbonate bowls may get damaged and possibly fail if exposed to synthetic oils, thinner, solvents, trichloroethylene, kerosene or other aromatic hydrocarbons.

AIR PREPARATION UNITS

FILTER WITH INTERNAL AUTODRAIN - Series F1A-N1

Cat No F1AN - 01 - 01 - B

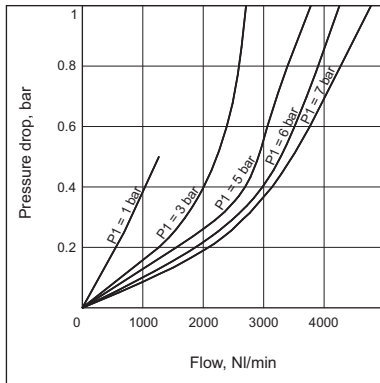
Model F14...-AN1



For Details of Clamp see optional accessories Cat No APA - 01 - C

Flow Graphs

3/8" FILTER



Flow graphs are for 40µm filtrations only.

How to order

F1	462	3	—	A	N1
Body & Port size		Filteration in µm		Internal Autodrain	Service Indicator
462	G3/8	0 - 1			N1 Indicator type
		1 - 5			
		2 - 25			
		3 - 40 (Standard)			
		4 - 50			
		5 - 100			

Ordering example: Filter - 3/8 size (with G 3/8 port) with a 50µm Filter with Internal Autodrain with indicator type:
Ordering No: **F14624-AN1**

If ordered as 3/8 Filter with Internal Autodrain with indicator type, our standard model **F14623-AN1**, with a 40µm Filter with Internal Autodrain will be supplied.

Subject to change



AIR PREPARATION UNITS FILTER WITH INTERNAL AUTODRAIN - Series F1A-G1

Cat No F1AG - 01 - 01 - B

AIR FILTER INTERNAL AUTODRAIN WITH SERVICE INDICATOR - 1/2, 3/4, 1"

Features

- Suitable for Modular mounting
- Steel bowl guard, bayonet type
- Internal Autodrain - Float type, no electrical connections required
 - Provided with manual drain
 - Provision for drain tube connection, to take the condensate away from the unit, to keep the working area clean
- Bronze filtering element
- Separator and shield for efficient moisture separation
- Differential pressure gauge are used for indicating the servicing life of filter element
Needle position: Green - Clean, Yellow - Change, Red - Dirty



Technical Specifications

Model	F15...-AG1	F17...-AG1	F17...-AG1
Medium	Compressed air		
Port size	G1/2	G3/4	G1
Flow rate @	lts/min	3500	5000
Operating pressure	bar	2 to 10	
Medium temperature	C	+5° to +50°	
Ambient temperature	C	+5° to +50°	
Filtration #	µm	1, 5, 25, 40 (standard), 50, 100	
Bowl capacity (at maximum condensate level)	ml	65	165
Bowl material	Polycarbonate		
Installation	Vertical (as in the picture)		
Materials of construction	Aluminium, Bronze, Steel, Acetal, Polycarbonate, SS, Nitrile		
Optional accessories *	Clamp, Modular mounting kit, Pressure gauge		
Weight	Kg	0.910	1.450

@ Supply pressure 6 bar, pressure drop $\Delta p = 0.3$ bar (For standard models)

For details see " How to order ".

* For details refer Optional accessories Cat No APA - 01 - C

Precautions

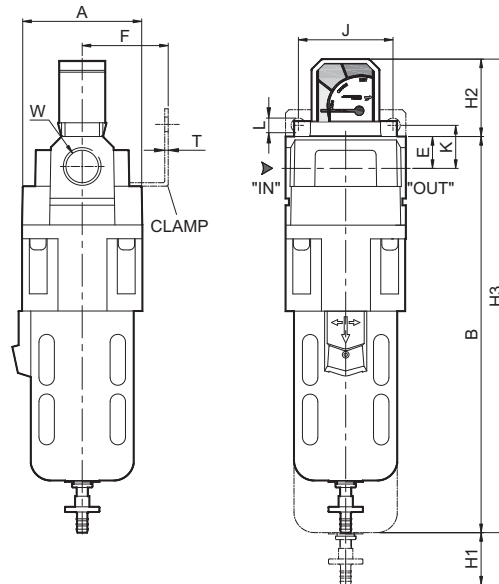
1. Note the direction of flow before installation and connect piping accordingly.
2. Flush pipings for dirt, dust, rust and other foreign particles.
3. Install in clean atmosphere.
4. Nipples of taper threads (R) to be used with teflon tape. Ensure teflon tape does not enter the unit during tightening. Nipples of straight threads (G) to be used with sealing washer.
5. Polycarbonate bowls may get damaged and possibly fail if exposed to synthetic oils, thinner, solvents, trichloroethylene, kerosene or other aromatic hydrocarbons.

AIR PREPARATION UNITS

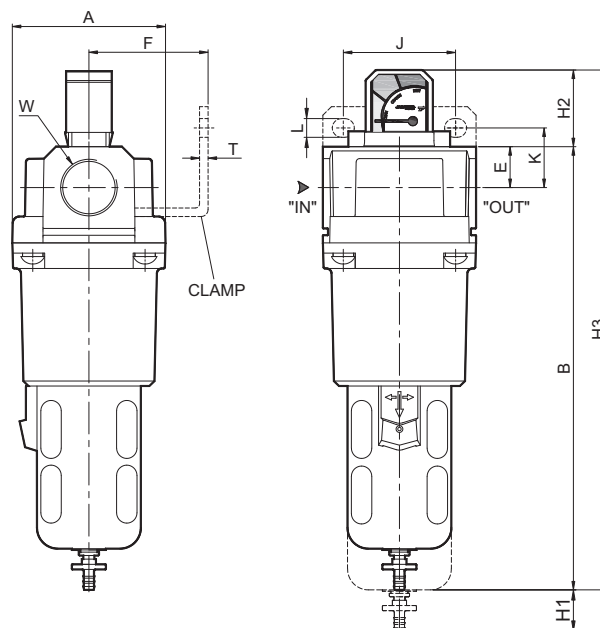
FILTER WITH INTERNAL AUTODRAIN - Series F1A-G1

Cat No F1AG - 01 - 01 - B

Model F15...-AG1



Model F17...-AG1



Model	W	A	B	E	K	F	J	L	T	H1	H2	H3
F15...-AG1	G1/2	SQ 70	230	18	25	50	55	8.5	2	80	45	275
F17...-AG1	G3/4	SQ 90	260	24	35	70	66	11	5	80	45	305
F17...-AG1	G1	SQ 90	260	24	35	70	66	11	5	80	45	305

For Details of Clamp see optional accessories Cat No APA - 01 - C

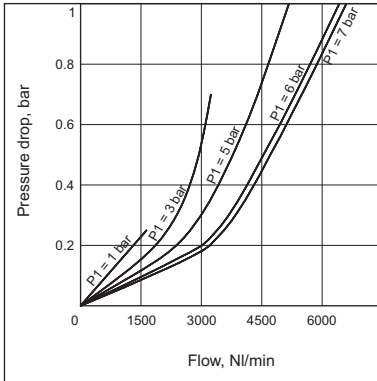
AIR PREPARATION UNITS

FILTER WITH INTERNAL AUTODRAIN - Series F1A-G1

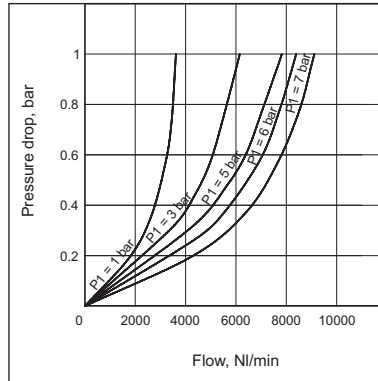
Cat No F1AG - 01 - 01 - B

Flow Graphs

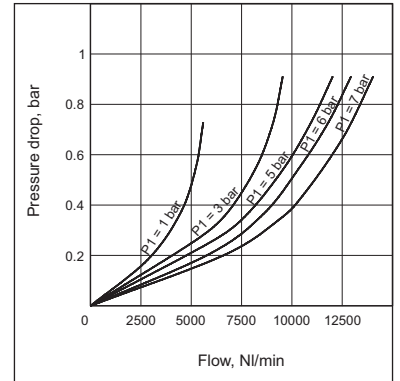
1/2" FILTER



3/4" FILTER

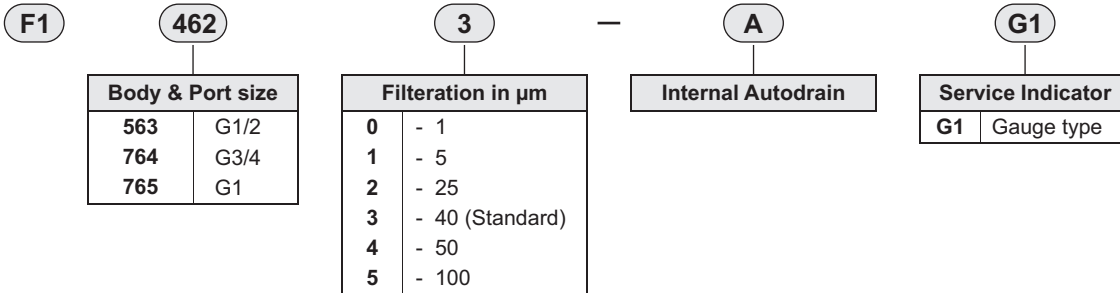


1" FILTER



Flow graphs are for 40µm filtrations only.

How to order



Ordering example: Filter - 3/4 size (with G 3/4 port) with a 50µm Filter with Internal Autodrain with service indicator:
Ordering No: **F17644-AG1**

If ordered as 3/4 Filter with Internal Autodrain with service indicator, our standard model **F17643-AG1**, with a 40µm Filter with Internal Autodrain will be supplied .



AIR PREPARATION UNITS FILTER WITH METAL BOWL Series F1M

Cat No F1M - 01 - E

FILTER WITH METAL BOWL - 1/4, 3/8, 1/2, 3/4, 1"

Features

- Conforms to ISO 5782 -1
- For higher pressure range above 10 bar
- Suitable for Modular mounting
- Aluminium bowl guard, bayonet type (1/2, 3/4 and 1" only)
- Press type Manual drain for easy operation
- Suitable for Internal auto drain also
- Bronze filtering element
- Separator and shield for efficient moisture separation



Application

These type of filters are used for Chemical, Paintshops, Pharmaceutical, Foundry etc.

Technical Specifications

Model	F13...M	F14...M	F15...M	F17...M	F17...M
Medium	Compressed air				
Port size	G1/4	G3/8	G1/2	G3/4	G1
Flow rate (lts / min) @	800	2250	3500	5000	6500
Maximum supply pressure	20 bar / 10 bar Auto drain model				
Ambient temperature	-10° to +50° C				
Medium temperature	+5° to +50° C				
Filtration # (µm)	1, 5, 25, 40 (standard), 50, 100				
Bowl capacity (ml) (at max. condensate level)	9	64	90	165	165
Bowl material	Aluminium				
Installation	Vertical (as in the picture)				
Materials of construction	Aluminium, Bronze, Steel, Acetal, SS, Nitrile				
Optional accessories *	Clamp, Modular mounting kit				
Weight (Kg)	0.20	0.45	0.85	1.47	1.43

@ Supply pressure 6 bar, pressure drop $\Delta p = 0.3$ bar (For standard models).

For details see " How to order " .

* For details refer Optional accessories Cat No APA - 01 - C
For Semi auto drain minimum working pressure 0.8 bar

Precautions

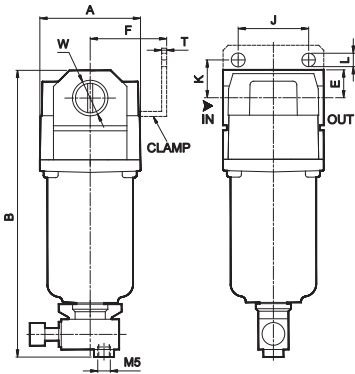
1. Note the direction of flow before installation and connect piping accordingly.
2. Flush pipings for dirt, dust, rust and other foreign particles.
3. Install in clean atmosphere.
4. Nipples of taper threads (R) to be used with teflon tape. Ensure teflon tape does not enter the unit during tightening.
Nipples of straight threads (G) to be used with sealing washer.

AIR PREPARATION UNITS

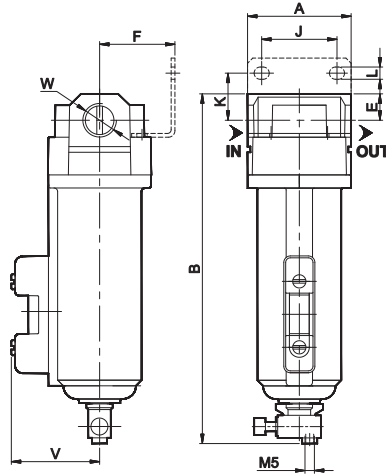
FILTER WITH METAL BOWL Series F1M

Cat No F1M - 01 - E

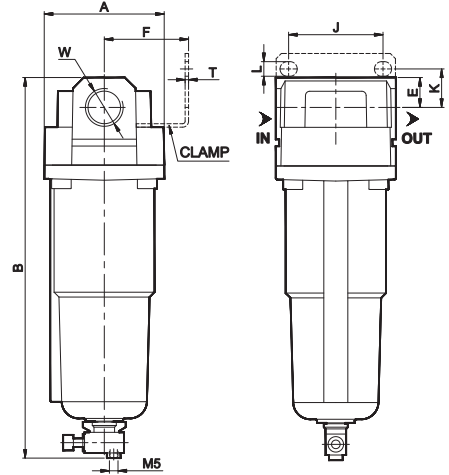
Model F13...-MM
(Without level indicator)



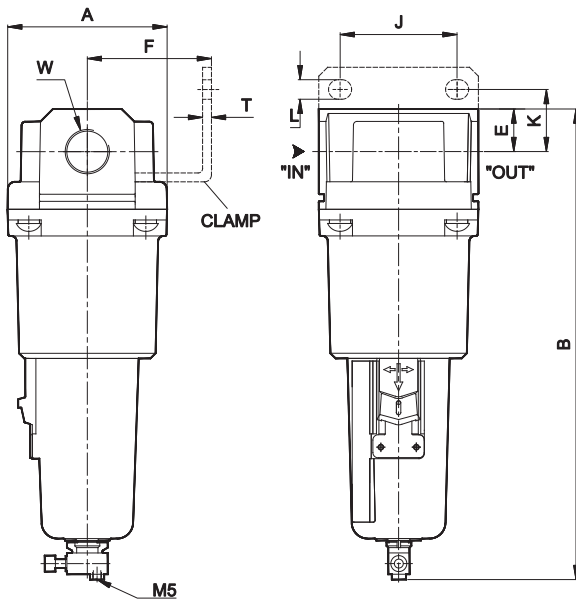
Model F14...-LM
(With level indicator)



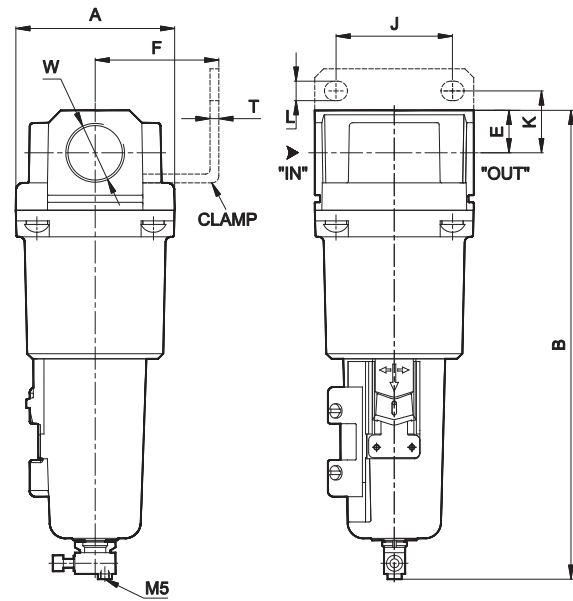
Model F15...-MM
(Without level indicator)



Model F17...-MM (Without level indicator)



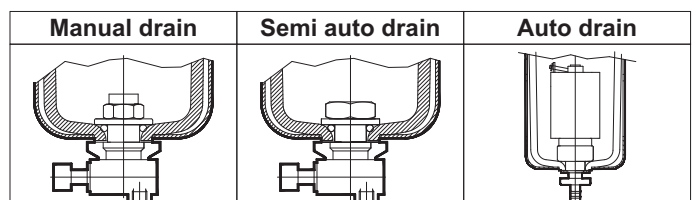
Model F17...-LM (With level indicator)



Model	W	A	B	E	K	F	J	L	T	V
F13...	G1/4	SQ 40	115	11	15	30	28	5.5	2	-
F14...	G3/8	SQ 55	188/ 195*	14	25	40	40	6.5	2	45
F15...	G1/2	SQ 70	224/ 230*	18	25	50	55	8.5	2	50
F17...	G3/4	SQ 90	265/ 273*	24	35	70	66	11	5	-
F17...	G1	SQ 90	265/ 273*	24	35	70	66	11	5	-

* with Auto drain

For Details of Clamp see optional accessories Cat No APA - 01 - C



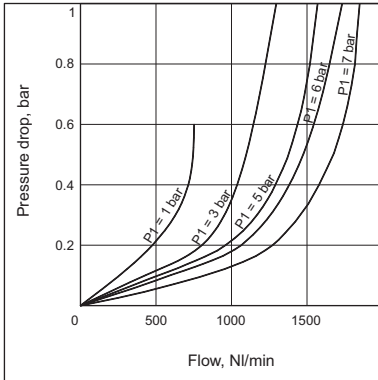
AIR PREPARATION UNITS

FILTER WITH METAL BOWL Series F1M

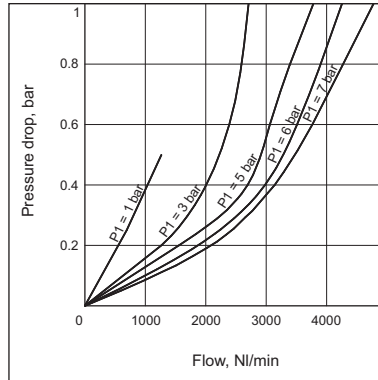
Cat No F1M - 01 - E

Flow Graphs

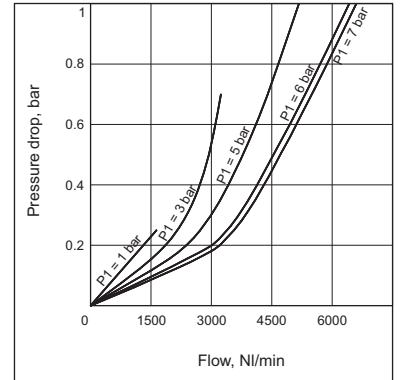
1/4" FILTER



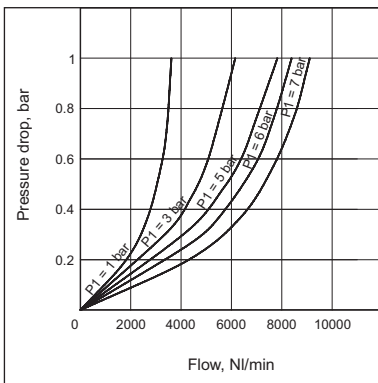
3/8" FILTER



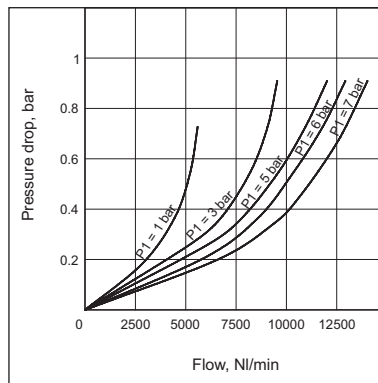
1/2" FILTER



3/4" FILTER



1" FILTER



Flow graphs are for 40µm filtrations only.

How to order

F1	462	3	—	M	M
Body & Port size	Filtration in µm	Metal bowl		Drain arrangement	
361 G1/4	0 - 1	M Without level indicator L** With level indicator		M Manual drain (Standard) A* Auto drain S Semi Auto drain	
462 G3/8	1 - 5				
563 G1/2	2 - 25	** - Applicable for F14, F15, F17 models only		* Auto Drain - F14, F15, F17 models only, 2 - 10 bar operating pressure. S - For Semi auto drain minimum working pressure 0.8 bar. The basic model filter is supplied with manual drain. For optional drain requirement specify the suffix mentioned in ordering information.	
764 G3/4	3 - 40 (Standard)				
765 G1	4 - 50				
	5 - 100				

Ordering example:

Filter - 3/8 size (with 3/8" port) with 50µm and Metal bowl with Auto drain Ordering No: **F14624-MA**.

If ordered as 3/8" Filter with Metal bowl, our standard model **F14623-MM**, with 40µm will be supplied.

MIST SEPARATOR

Series FS1

Cat No FS1 - 01 - 01

MIST SEPARATOR - 1/4, 1/2, 3/4, 1"

Features

- Borosilicate filtering element
- 99.99% compressed filtered air upto 0.01micron to 0.1 micron
- Suitable for Modular mounting
- Steel bowl guard, bayonet type on FS15 & FS17 modles and threaded type on FS13 model
- Press type Manual drain for easy operation
- Separator for efficient moisture separation



Application

These type of mist separators are used in Chemical, Pharmaceutical, Food processing industry, Paint shops and for other precision pneumatic systems.

Function

- Removes submicronic oil, water droplets and solid contaminants from compressed air.
- Used for high efficient filtration of compressed air, removing fine oil particles and droplets of sizes upto 0.01 microns

Technical Specifications

Model	FS13...		FS15...	
Medium	Compressed filtered air			
Port size	G1/4		G1/2	
Filtration # (µm)	0.01	0.1	0.01	0.1
Flow rate (lts / min) [@]	250	275	1500	2000
Maximum supply pressure (bar)	10			
Ambient temperature	-10° to +50° C			
Medium temperature	+5° to +50° C			
Bowl capacity (ml) (at maximum condensate level)	9		44	
Bowl material	Polycarbonate			
Installation	Vertical (as in the picture)			
Materials of construction	Aluminium, Borosilicate, Steel, Acetal, Polycarbonate, SS, Nitrile			
Optional accessories *	Clamp, Modular mounting kit			
Weight (Kg)	0.19		0.60	

[@] Supply pressure 6 bar, pressure drop $\Delta p = 0.3$ bar.

[#] For details see " How to order ".

* For details refer Optional accessories Cat No APA - 01 - C

Precautions

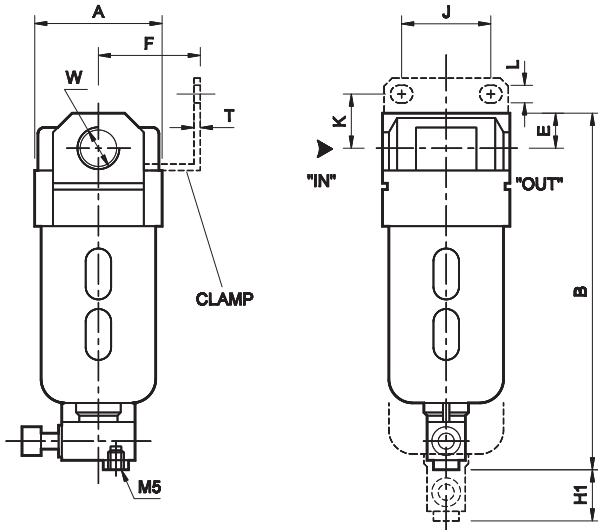
1. Mount the mist separator in line, next to a standard air filter series F1 with 5 micron filter element.
2. Note the direction of flow before installation and connect piping accordingly.
3. Flush pipings for dirt, dust, rust and other foreign particles.
4. Install in clean atmosphere.
5. Nipples of taper threads (R) to be used with teflon tape. Ensure Teflon tape does not enter the unit during tightening. Nipples of straight threads (G) to be used with sealing washer.
6. Polycarbonate bowls may get damaged and possibly fail if exposed to synthetic oils, thinner, solvents, trichloroethylene kerosene or other aromatic hydrocarbons.

MIST SEPARATOR

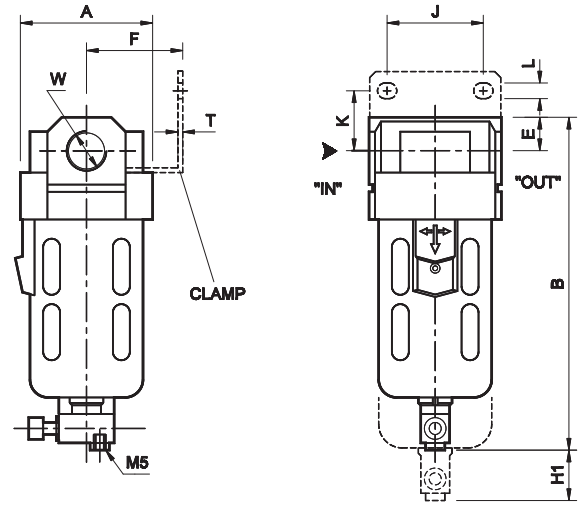
Series FS1

Cat No FS1 - 01 - 01

Model FS13...



Model FS15...

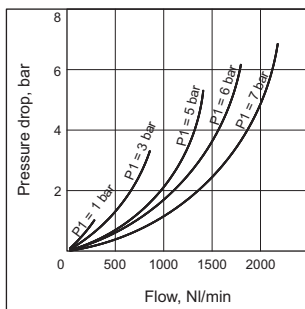


Model	W	A	B	E	K	F	J	L	T	H1
FS13...	G1/4	SQ 40	113	11	15	30	28	5.5	2	50
FS15...	G1/2	SQ 70	172	18	25	50	55	8.5	2	80

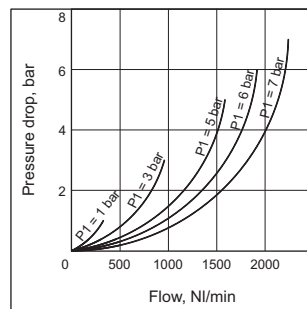
For Details of Clamp see optional accessories Cat No APA - 01 - C

Flow Graphs

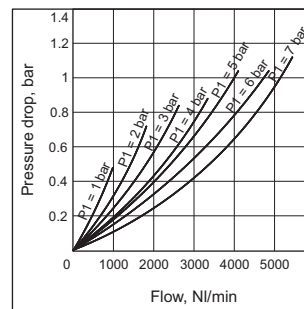
1/4 FILTER (0.01 micron)



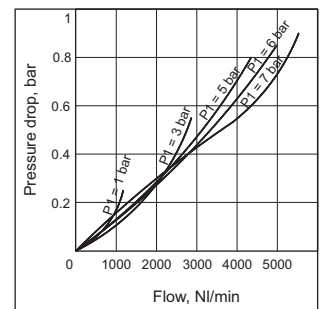
1/4 FILTER (0.1 micron)



1/2 FILTER (0.01 micron)



1/2 FILTER (0.1 micron)



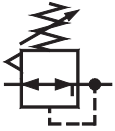
How to order

FS1	361	3
Body & Port size		Filteration in μm
361	G1/4	2 - 0.01
563	G1/2	3 - 0.1

Ordering example:

Filter - 1/4 size (with G1/4 port) with 0.1 micron filter : Ordering No: **FS13613**

Subject to change



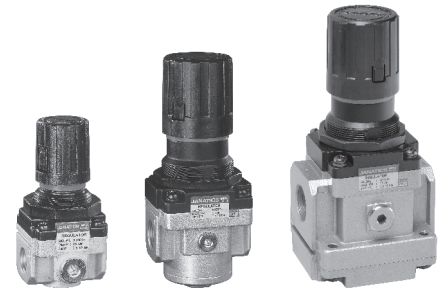
AIR PREPARATION UNITS REGULATOR Series R1

Cat No R1 - 01 - C

AIR REGULATOR - 1/4, 3/8, 1/2, 3/4, 1"

Features

- Conforms to ISO 6953 - 1
- Suitable for panel and modular mountings
- Non raising 'Press to Lock' adjusting knob for locking at any set pressure
- Diaphragm operated, relieving type
- Pressure compensated by Balanced poppet
- Flow compensated in models R14, R15 and R17 (with venturi) for faster response
- Good flow and regulating characteristics



Technical Specifications

Model	R13	R14	R15	R17	R17
Medium	Compressed air - Filtered				
Port size	G1/4	G3/8	G1/2	G3/4	G1
Pressure gauge port size	G1/8	G1/8	G1/8	G1/4	G1/4
Flow rate (lts / min) @	600	2500	4000	5000	6000
Maximum supply pressure (bar)	15				
Regulating pressure range # (bar)	0.2 - 2, 0.2 - 4, 0.5 - 7, 0.5 - 10 (Standard)				
Ambient temperature	-10° to +60° C				
Medium temperature	+5° to +50° C				
Installation	Any position				
Materials of construction	Aluminium, Brass, Steel, Acetal, SS, Nitrile				
Optional accessories *	Clamp, Modular mounting kit, Pressure gauge				
Weight (Kg)	0.15	0.40	0.90	1.4	1.3

@ Supply pressure 7 bar, Set pressure 6 bar, pressure drop $\Delta p = 1$ bar (For standard models).

For details see " How to order ".

* For details refer Optional accessories Cat No APA - 01 - C

Precautions

1. Note the direction of flow before installation and connect piping accordingly.
2. Flush pipings for dirt, dust, rust and other foreign particles.
3. Install in clean atmosphere.
4. Nipples of taper threads (R) to be used with teflon tape. Ensure teflon tape does not enter the unit during tightening. Nipples of straight threads (G) to be used with sealing washer.

Pressure Setting

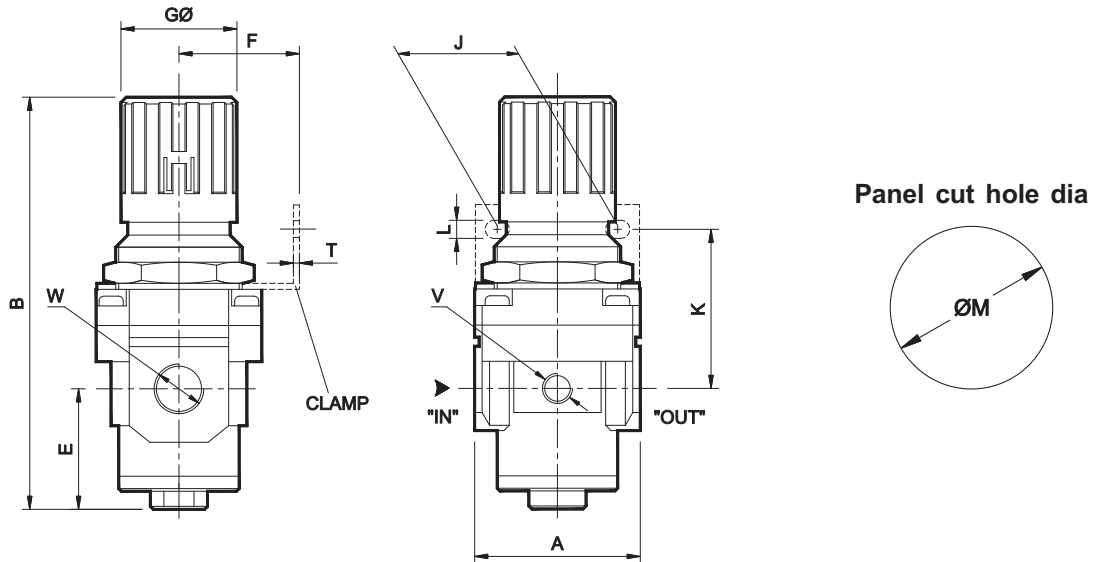
Pull the knob and adjust by turning the knob clockwise to increase the pressure. Push the knob back to its locked position. (Turning the knob counter clockwise will reduce the pressure)

AIR PREPARATION UNITS

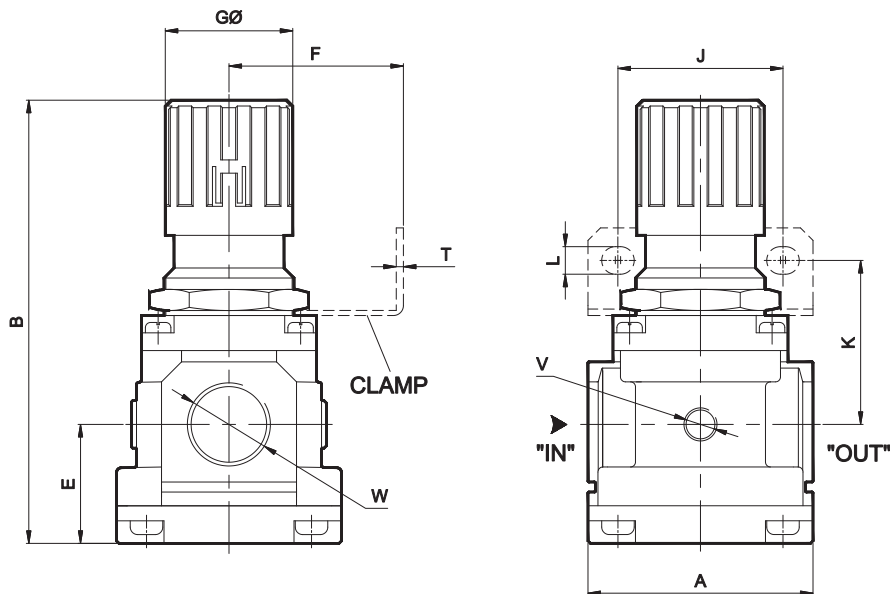
REGULATOR Series R1

Cat No R1 - 01 - C

Model R13, R14, R15



Model R17



Model	W	V	A	B	E	F	GØ	J	K	L	T	ØM
R13	G1/4	G1/8	SQ 40	81	13	30	28	28	45	5.5	2	31
R14	G3/8	G1/8	SQ 55	135	40	40	40	40	53	6.5	2	43
R15	G1/2	G1/8	SQ 70	165	40	50	51	55	62	8.5	2	53
R17	G3/4	G1/4	SQ 90	177	47.5	70	51	66	65	11	5	53
R17	G1	G1/4	SQ 90	177	47.5	70	51	66	65	11	5	53

For Details of Clamp see optional accessories Cat No APA - 01 - C

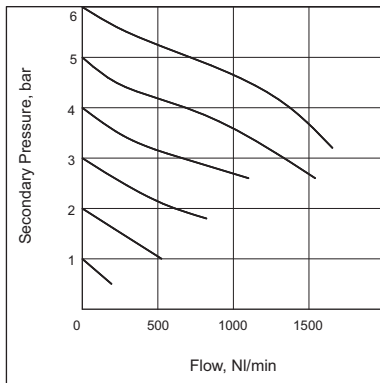
AIR PREPARATION UNITS

REGULATOR Series R1

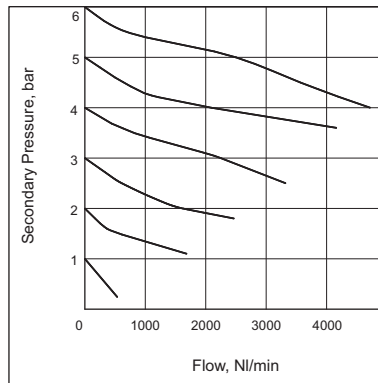
Cat No R1 - 01 - C

Flow Graphs

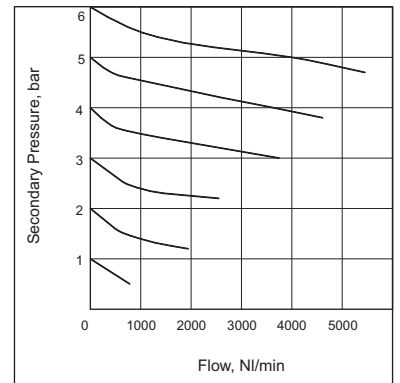
1/4" REGULATOR



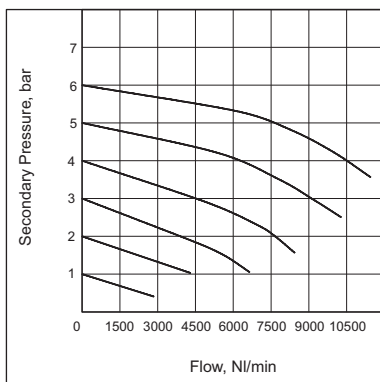
3/8" REGULATOR



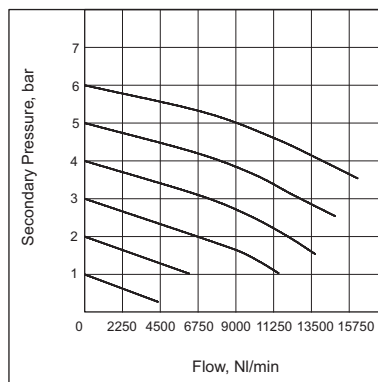
1/2" REGULATOR



3/4" REGULATOR



1" REGULATOR



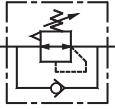
How to order

R1	462	4
Body & Port size		Pressure range
361	G1/4	1 0.2 - 2 bar
462	G3/8	2 0.2 - 4 bar
563	G1/2	3 0.5 - 7 bar
764	G3/4	4 0.5 - 10 bar (Standard)
765	G1	

Ordering example:

Regulator - 3/8 size (with G3/8 port), with pressure range 0.5 - 7 bar - Ordering No : **R14623**

If ordered as 3/8 Regulator, our standard model **R14624**, G3/8 with pressure range 0.5 -10 bar will be supplied.



AIR PREPARATION UNITS

REGULATOR Series R1N

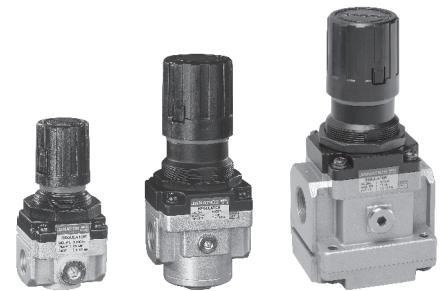
(with built in Non Return Valve)

Cat No R1N - 01 - 01 - B

AIR REGULATOR (with built in Non Return Valve) - 1/8, 1/4, 3/8, 1/2, 3/4, 1

Features

- Conforms to ISO 6953 - 1
- Suitable for panel and modular mountings
- Non raising 'Press to Lock' adjusting knob for locking at any set pressure
- Diaphragm operated, relieving type
- Pressure compensated by Balanced poppet
- Flow compensated in models R14, R15 and R17 (with venturi) for faster response
- Good flow and regulating characteristics
- Built in non return valve allows free air flow in reverse direction. When the inlet air is reduced by and below the setup pressure



Application

Apart from its basic regulating characteristics in forward direction, this regulator with a built in non return valve allows free air flow in reverse direction, thus enabling to be used in applications requiring cylinders to exert two different force during extending and retracting strokes.

Technical Specifications

Model	R13...-N	R14...-N	R15...-N	R17...-N	R17...-N
Medium	Compressed air - Filtered				
Port size	G1/4	G3/8	G1/2	G3/4	G1
Pressure gauge port size	G1/8	G1/8	G1/8	G1/4	G1/4
Flow rate (lts / min) @	600	2500	4000	5000	6000
Maximum supply pressure (bar)	15				
Regulating pressure range # (bar)	0.2 - 2, 0.2 - 4, 0.5 - 7, 0.5 - 10 (Standard)				
Ambient temperature	-10° to +60° C				
Medium temperature	+5° to +50° C				
Installation	Any position				
Materials of construction	Aluminium, Brass, Steel, Acetal, SS, Nitrile				
Optional accessories *	Clamp, Modular mounting kit, Pressure gauge				
Weight (Kg)	0.15	0.40	0.90	1.40	1.30

@ Supply pressure 7 bar, Set pressure 6 bar, pressure drop $\Delta p = 1$ bar (For standard models).

For details see " How to order ".

* For details refer Optional accessories Cat No APA - 01 - C

Precautions

1. Note the direction of flow before installation and connect piping accordingly.
2. Flush pipings for dirt, dust, rust and other foreign particles.
3. Install in clean atmosphere.
4. Nipples with taper threads (R) to be used with teflon tape. Ensure teflon tape doesn't enter the unit during tightening. Nipples with straight threads (G) to be used with sealing washer.

Pressure Setting

Pull the knob and adjust by turning the knob clockwise to increase the pressure. Push the knob back to its locked position. (Turning the knob counter clockwise will reduce the pressure)

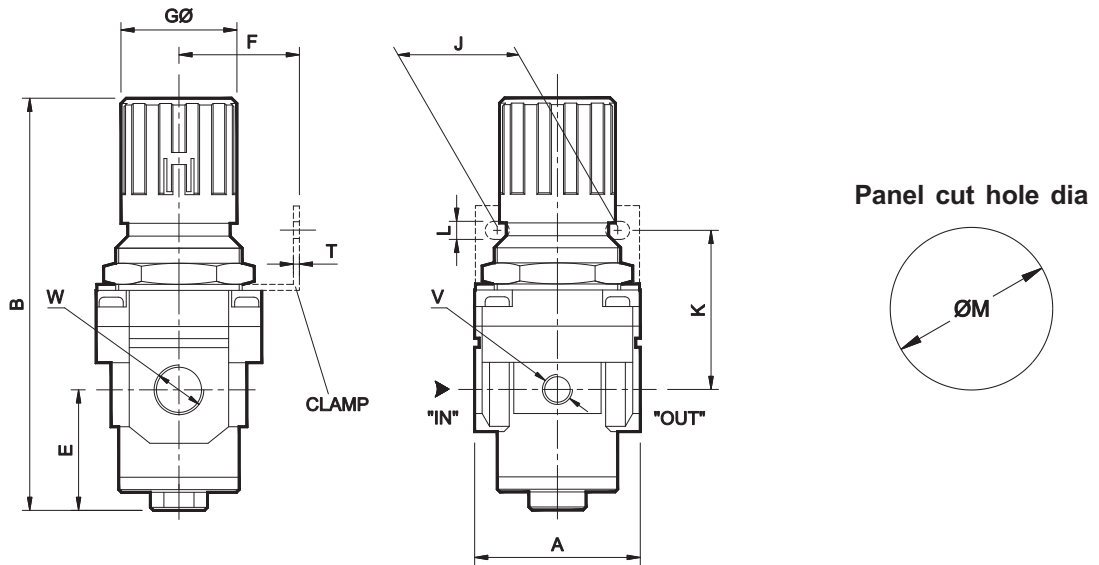
AIR PREPARATION UNITS

REGULATOR Series R1N

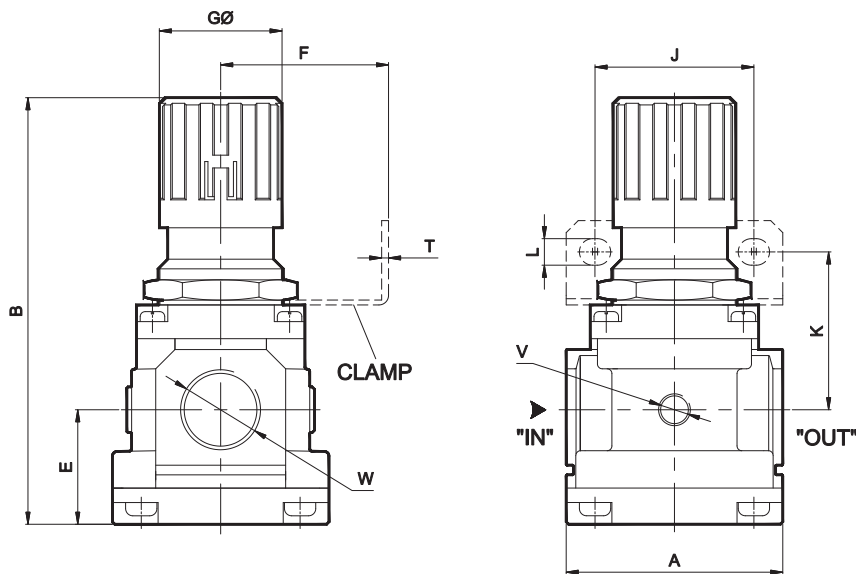
(with built in Non Return Valve)

Cat No R1N - 01 - 01 - B

Model R13...-N, R14...-N, R15...-N



Model R17...-N



Model	W	V	A	B	E	F	GØ	J	K	L	T	ØM
R13...N	G1/4	G1/8	SQ 40	81	13	30	28	28	45	5.5	2	31
R14...N	G3/8	G1/8	SQ 55	135	40	40	40	40	53	6.5	2	43
R15...N	G1/2	G1/8	SQ 70	165	40	50	51	55	62	8.5	2	53
R17...N	G3/4	G1/4	SQ 90	177	47.5	70	51	66	65	11	5	53
R17...N	G1	G1/4	SQ 90	177	47.5	70	51	66	65	11	5	53

For Details of Clamp see optional accessories Cat No APA - 01 - C

AIR PREPARATION UNITS

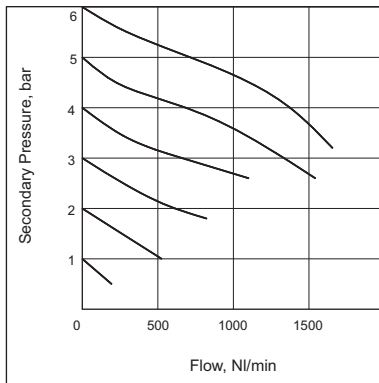
REGULATOR Series R1N

(with built in Non Return Valve)

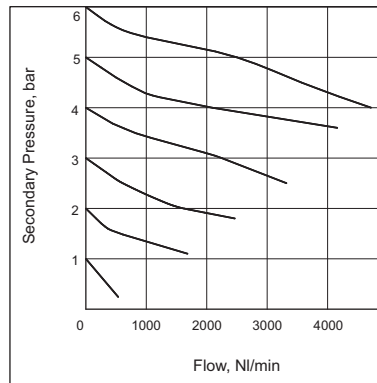
Cat No R1N - 01 - 01 - B

Flow Graphs

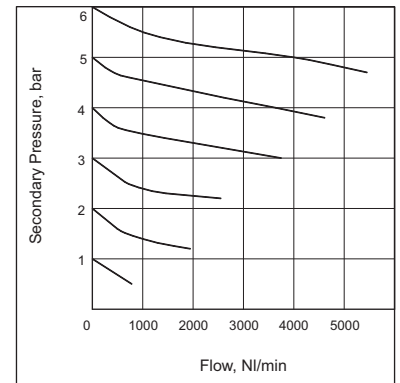
1/4" REGULATOR



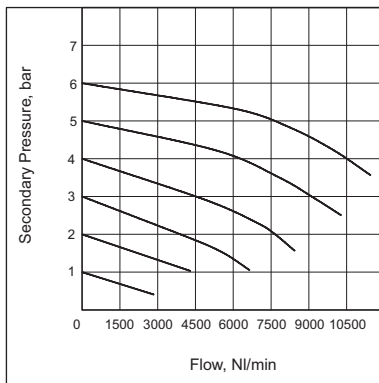
3/8" REGULATOR



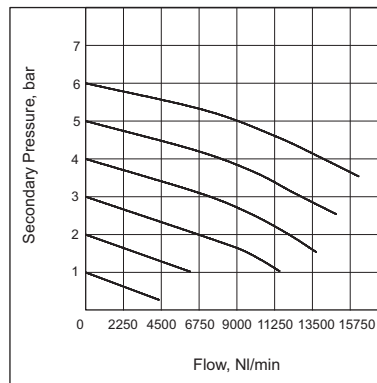
1/2" REGULATOR



3/4" REGULATOR



1" REGULATOR



How to order

R1 **462** **4** — **N**

Body & Port size	
360	G1/8
361	G1/4
461	G1/4
462	G3/8
561	G1/4
562	G3/8
563	G1/2
764	G3/4
765	G1

Pressure range	
1	0.2 - 2 bar
2	0.2 - 4 bar
3	0.5 - 7 bar
4	0.5 - 10 bar (Standard)

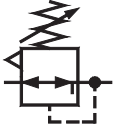
with Non Return Valve

Ordering example:

Regulator - 3/8 size (with G3/8 port), with pressure range 0.5 - 10 bar with Non Return Valve

Ordering No: **R14624-N**

If ordered as 3/8 Regulator, our standard model **R14624**, G3/8 with pressure range 0.5 - 10 bar will be supplied.



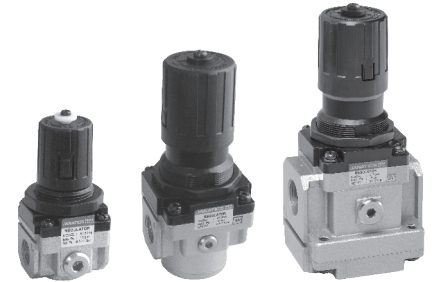
AIR PREPARATION UNITS REGULATOR WITH TAMPER PROOF - Series R1

Cat No R1T - 01 - A

AIR REGULATOR WITH TAMPER PROOF - 1/8, 1/4, 3/8, 1/2, 3/4, 1

Features

- Conforms to ISO 6953-1
- Suitable for panel and modular mountings
- Non raising 'Press to Lock' adjusting knob for locking at any set pressure
- Diaphragm operated, relieving type
- Pressure compensated by Balanced poppet
- Flow compensated in models R14, R15 and R17 (with venturi) for faster response
- Good flow and regulating characteristics
- Tamper proof (Setting secured via screw on knob)



Function

- a. Prevents ordinary hand adjustments
- b. Outlet pressure settings remain unchanged. These regulators give extra level of security. (Set the desired outlet pressure and lock with screw to prevent further adjustment.)

Technical Specifications

Model	R13...T	R14...T	R15...T	R17...T	R17...T
Medium	Compressed air - Filtered				
Port size	G1/4	G3/8	G1/2	G3/4	G1
Pressure gauge port size	G1/8	G1/8	G1/8	G1/4	G1/4
Flow rate (lts / min) @	600	2500	4000	5000	6000
Maximum supply pressure (bar)	15				
Regulating pressure range # (bar)	0.2 - 2, 0.2 - 4, 0.5 - 7, 0.5 - 10 (Standard)				
Ambient temperature	-10° to +60° C				
Medium temperature	+5° to +50° C				
Installation	Any position				
Materials of construction	Aluminium, Brass, Steel, Acetal, SS, Nitrile				
Optional accessories *	Clamp, Modular mounting kit, Pressure gauge				
Weight (Kg)	0.15	0.40	0.90	1.4	1.3

@ Supply pressure 7 bar, Set pressure 6 bar, pressure drop $\Delta p = 1$ bar (For standard models).

For details see " How to order ".

* For details refer Optional accessories Cat No APA - 01 - C

Precautions

1. Note the direction of flow before installation and connect piping accordingly.
2. Flush pipings for dirt, dust, rust and other foreign particles.
3. Install in clean atmosphere.
4. Nipples of taper threads (R) to be used with teflon tape. Ensure teflon tape does not enter the unit during tightening. Nipples of straight threads (G) to be used with sealing washer.

Pressure Setting

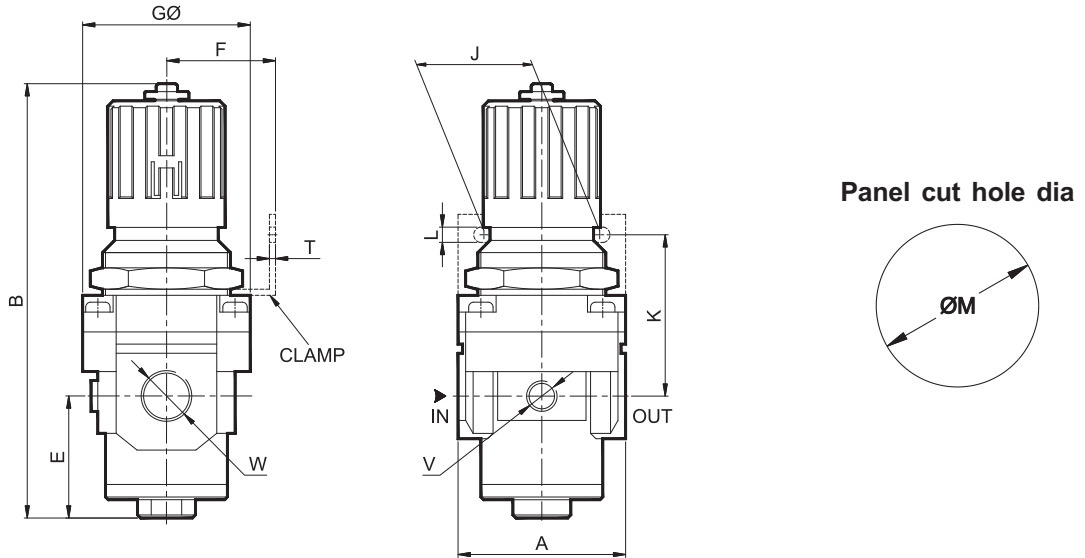
Loosen the screw provided on the top of the knob.

Pull the knob and adjust by turning the knob clockwise to increase the pressure. Push the knob back to its locked position, and tighten the screw on knob. (Turning the knob counter clockwise will reduce the pressure)

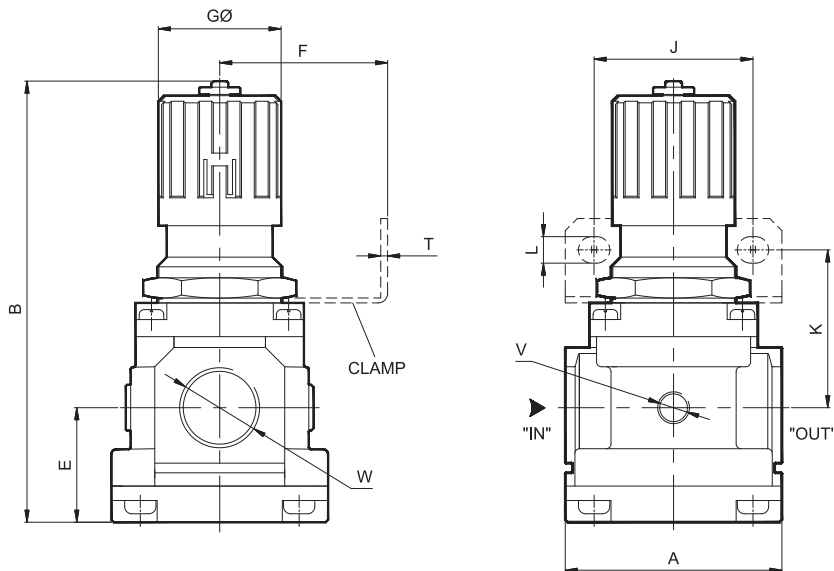
AIR PREPARATION UNITS REGULATOR WITH TAMPER PROOF - Series R1

Cat No R1T - 01 - A

Model R13 - T, R14 - T, R15 - T



Model R17 - T



Model	W	V	A	B	E	F	GØ	J	K	L	T	ØM
R13-T	G1/8, G1/4	G1/8	SQ 40	86	13	30	28	28	45	5.5	2	31
R14-T	G1/4, G3/8	G1/8	SQ 55	142	40	40	40	40	53	6.5	2	43
R15-T	G1/4, G3/8, G1/2	G1/8	SQ 70	170	40	50	51	55	62	8.5	2	53
R17-T	G3/4	G1/4	SQ 90	183	47.5	70	51	66	65	11	5	53
R17-T	G1	G1/4	SQ 90	183	47.5	70	51	66	65	11	5	53

For Details of Clamp see optional accessories Cat No APA - 01 - C

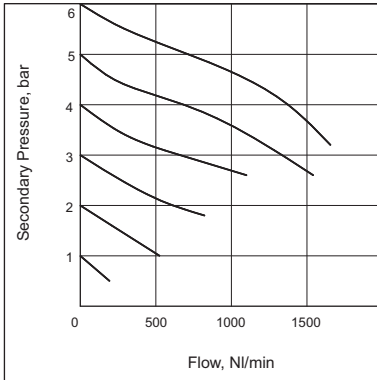
AIR PREPARATION UNITS

REGULATOR WITH TAMPER PROOF - Series R1

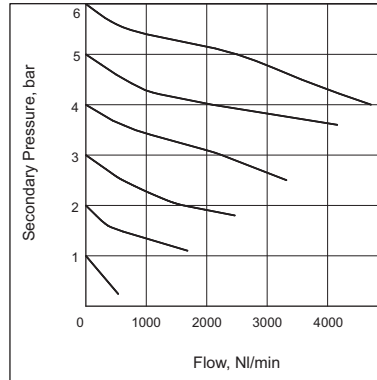
Cat No R1T - 01 - A

Flow Graphs

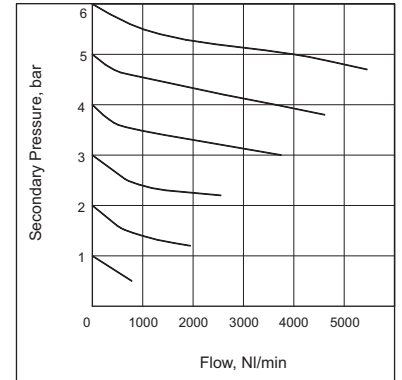
R13614 - T



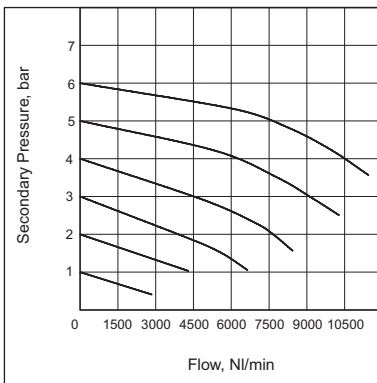
R14624 - T



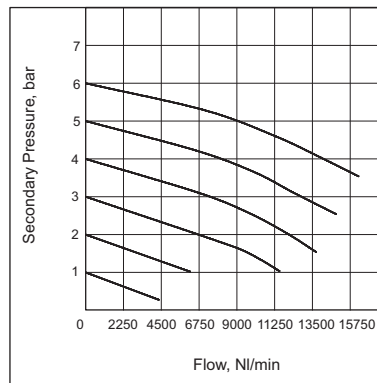
R15634 - T



R176434 - T



R176534 - T



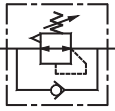
Flow graphs are for 40µm filtrations and 10 bar pressure.

How to order

R1	462	4	T		
Body & Port size		Pressure range		Tamper proof	
360	G1/8	1	0.2 - 2 bar	T	Tamper proof
361	G1/4	2	0.2 - 4 bar		
461	G1/4	3	0.5 - 7 bar		
462	G3/8	4	0.5 - 10 bar (Standard)		
561	G1/4				
562	G3/8				
563	G1/2				
764	G3/4				
765	G1				

Ordering example:

Regulator - 3/8 size (with G3/8 port), with pressure range 0.5 - 7 bar, with Tamper proof - Ordering No: **R14623-T**
If ordered as 3/8 Regulator, our standard model **R14624**, G3/8 with pressure range 0.5 -10 bar will be supplied.



AIR PREPARATION UNITS

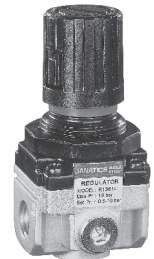
1/4" Venturi Type Regulator Series R2 (with built in Non Return Valve)

Cat No R2 - 01 - 01 - B

VENTURI TYPE REGULATOR (WITH BUILT IN NON RETURN VALVE) - G1/4

Features

- Conforms to ISO 6953-1
- Suitable for panel and modular mountings
- Non raising 'Press to Lock' adjusting knob for locking at any set pressure
- Diaphragm operated, relieving type
- Pressure compensated by balanced poppet
- Flow compensated (with venturi) for faster response
- Good flow and regulating characteristics
- Built in non-return valve allows free air flow in reverse direction
When the inlet air is reduced by and below the setup pressure
- Optional pressure gauge port



Application

Apart from its basic regulating characteristics in forward direction, this regulator with a built in non return valve allows free air flow in reverse direction, thus enabling to be used in applications requiring cylinders to exert two different force during extending and retracting strokes.

Technical Specifications

Model	R2361... Series	
Medium	Compressed air - Filtered	
Port size	G1/4	
Pressure gauge port size	G1/8	
Flow rate @	lts/min	1000
Maximum supply pressure	bar	15
Regulating pressure range #	bar	0.2 to 2, 0.2 to 4, 0.5 to 7, 0.5 to 10 (Standard)
Ambient temperature	C	-10° to +60°
Medium temperature	C	+5° to +50°
Installation	Any position	
Materials of construction	Aluminium, Brass, Steel, Acetal, SS, Nitrile	
Optional accessories *	Clamp, Modular mounting kit, Pressure gauge	
Weight	Kg	0.165

@ Supply pressure 7 bar, Set pressure 6 bar, pressure drop $\Delta p = 1$ bar (For standard models).

For details see " How to order ".

* For details refer Optional accessories Cat No APA - 01 - C

Precautions

1. Note the direction of flow before installation and connect piping accordingly.
2. Flush pipings for dirt, dust, rust and other foreign particles.
3. Install in clean atmosphere.
4. Nipples with taper threads (R) to be used with teflon tape. Ensure Teflon tape doesnot enter the unit during tightening. Nipples with straight threads (G) to be used with sealing washer.

Pressure Setting

Pull the knob and adjust by turning the knob clockwise to increase the pressure. Push the knob back to its locked position. (Turning the knob counter clockwise will reduce the pressure)

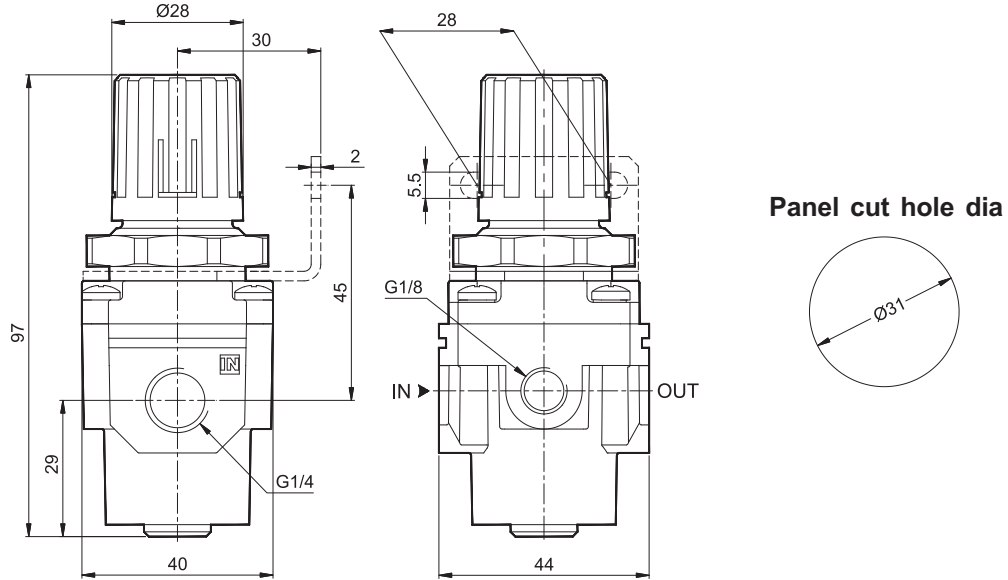
AIR PREPARATION UNITS

1/4" Venturi Type Regulator Series R2

(with built in Non Return Valve)

Cat No R2 - 01 - 01 - B

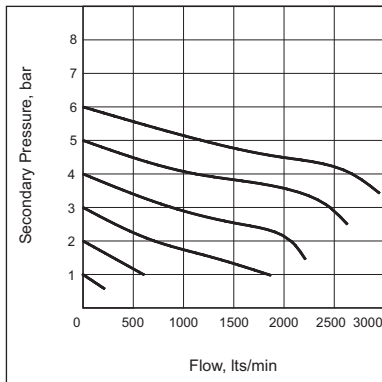
Model R2361...



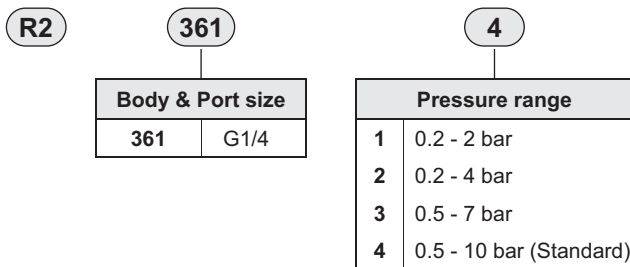
For Details of Clamp see optional accessories Cat No APA - 01 - C

Flow Graphs

1/4" REGULATOR



How to order



Ordering example: Regulator - 1/4 size (with G1/4 port), with pressure range 0.5 - 7 bar : Ordering No : **R23613**
If ordered as 1/4 Regulator, our standard model **R23614**, G1/4 with pressure range 0.5 - 10 bar will be supplied.

Subject to change



AIR PREPARATION UNITS

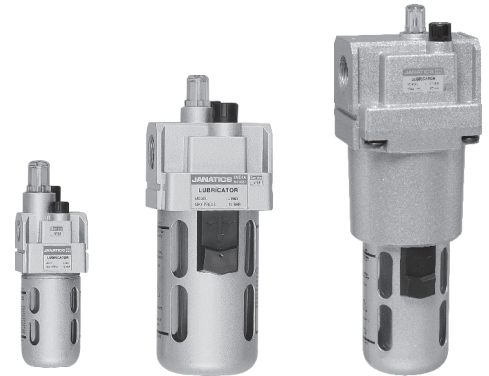
LUBRICATOR Series L1

Cat No L1 - 01 - D

LUBRICATOR - 1/4, 3/8, 1/2, 3/4, 1"

Features

- Conforms to ISO 6301 - 1
- Suitable for Modular mounting
- Fog / Mist type
- Fine adjustment of lubrication
- Steel bowl guard, bayonet type on L14, L15 & L17 models and threaded type on L13 mode
- Lubrication proportional to flow



Technical Specifications

Model	L13	L14	L15	L17	L17
Medium	Compressed air - Filtered				
Port size	G1/4	G3/8	G1/2	G3/4	G1
Flow rate (lts / min) @	1350	3000	5650	7200	9000
Maximum supply pressure (bar)	10				
Ambient temperature	-10° to +50° C				
Medium temperature	+5° to +50° C				
Min operating flow (lts / min)	12	40	45	50	50
Bowl capacity (ml) (at maximum oil level)	20	57	152	200	200
Recommended oil	ISO VG 32 (Servo System 32)				
Bowl material	Polycarbonate				
Installation	Vertical (as in the picture)				
Materials of construction	Aluminium, Bronze, Steel, Acetal, Polycarbonate, SS, Nitrile				
Optional accessories *	Clamp, Modular mounting kit				
Weight (Kg)	0.19	0.30	0.56	1.3	1.2

@ Supply pressure 6 bar , pressure drop $\Delta p = 0.5$ bar (For standard models)

* For details refer optional accessories Cat No APA - 01 - C

Precautions

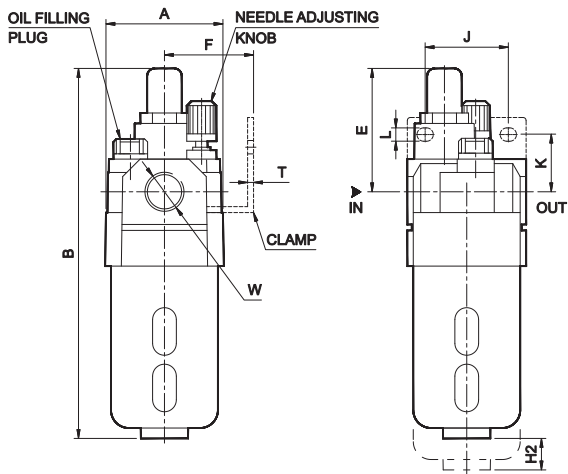
1. Note the direction of flow before installation and connect piping accordingly.
2. Flush pipings for dirt, dust, rust and other foreign particles.
3. Install in clean atmosphere.
4. Nipples of taper threads (R) to be used with teflon tape. Ensure teflon tape does not enter the unit during tightening. Nipples of straight threads (G) to be used with sealing washer.
5. Polycarbonate bowls may get damaged and possibly fail if exposed to synthetic oils, thinner, solvents, trichloroethylene, kerosene or other aromatic hydrocarbons.
6. Oil may be filled when under pressure. However it is recommended to vent the air completely before filling the oil.

AIR PREPARATION UNITS

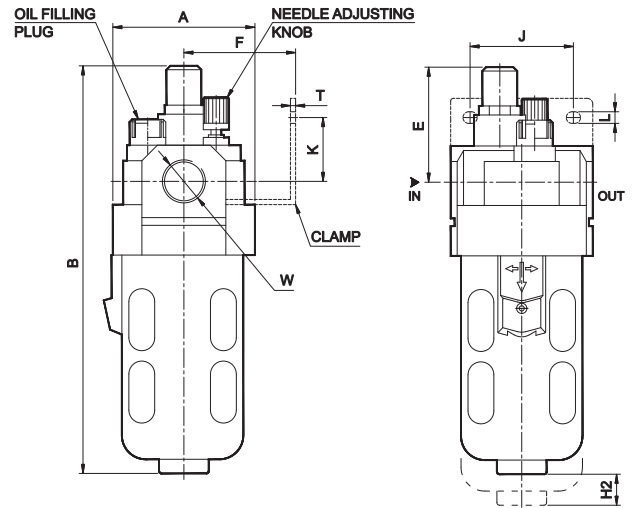
LUBRICATOR Series L1

Cat No L1 - 01 - D

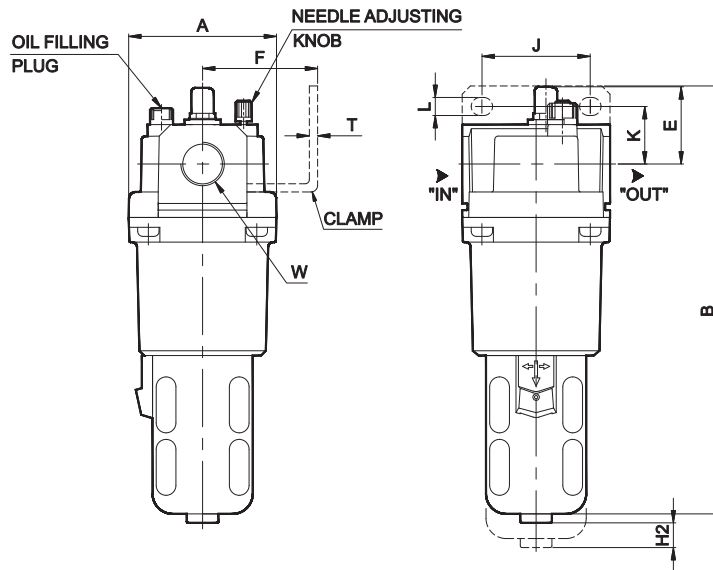
Model L13



Model L14 & L15



Model L17



Model	W	A	B	E	K	F	J	L	T	H2
L13	G1/4	SQ 40	127	42	15	30	28	5.5	2	35
L14	G3/8	SQ 55	150	44	25	40	40	6.5	2	45
L15	G1/2	SQ 70	184	46	25	50	55	8.5	2	45
L17	G3/4	SQ 90	267	47	35	70	66	11	5	45
L17	G1	SQ 90	267	47	35	70	66	11	5	45

For Details of Clamp see optional accessories Cat No APA - 01 - C

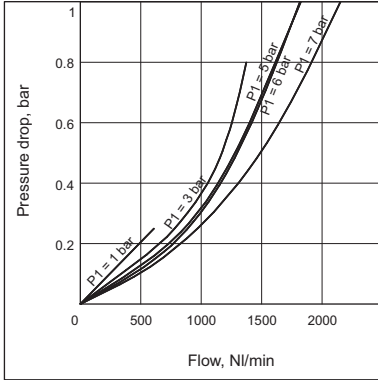
AIR PREPARATION UNITS

LUBRICATOR Series L1

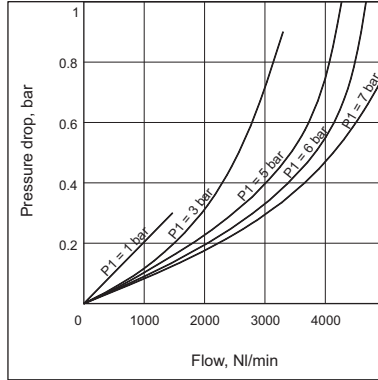
Cat No L1 - 01 - D

Flow Graphs

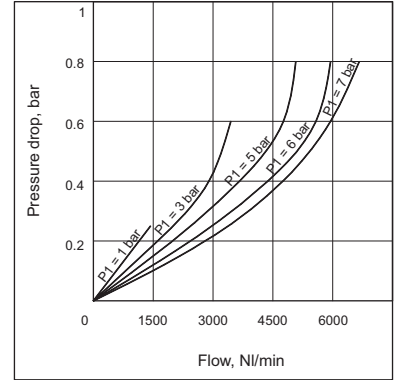
1/4" LUBRICATOR



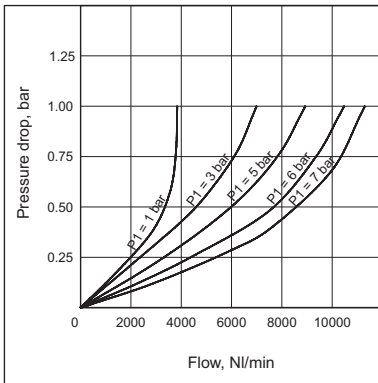
3/8" LUBRICATOR



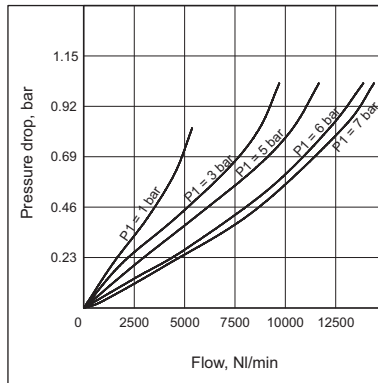
1/2" LUBRICATOR



3/4" LUBRICATOR



1" LUBRICATOR



Principle of Operation

A part of the air entering the Lubricator through "IN" pressurises the bowl chamber.

Flow of full air goes through "OUT" deflecting the "Deflector" and creating pressure drop below the sight dome.

The pressure in the Bowl presses the oil through the suction tube and the oil flows through the sight dome. All the oil drops seen through the sight dome mixes with the main - stream air and comes through "OUT". The required oil drops can be adjusted by the adjusting needle.

How to order

L1

462

Body & Port size	
361	G1/4
462	G3/8
563	G1/2
764	G3/4
765	G1

Ordering example:

Lubricator - 3/8 port size (with G3/8 port) : Ordering No: **L1462**

Subject to change



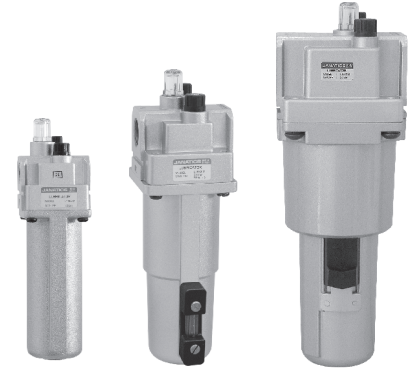
AIR PREPARATION UNITS LUBRICATOR WITH METAL BOWL Series L1M

Cat No L1M - 01 - E

LUBRICATOR WITH METAL BOWL - 1/4, 3/8, 1/2, 3/4, 1"

Features

- For higher pressure range above 10 bar
- Suitable for Modular mounting
- Fog / Mist type
- Fine adjustment of lubrication
- Aluminium bowl guard, bayonet type (3/4 and 1" only)
- Lubrication proportional to flow



Technical Specifications

Model	L13...-M	L14...-M	L15...-M	L17...-M	L17...-M
Medium	Compressed air - Filtered				
Port size	G1/4	G3/8	G1/2	G3/4	G1
Nominal flow rate (lpm) [@]	1350	3000	5650	7200	9000
Maximum supply pressure (bar)	20				
Ambient temperature	-10° to +60° C				
Medium temperature	-5° to +50° C				
Min operating flow (lts / min)	12	40	45	50	50
Bowl capacity (ml) (at maximum oil level)	20	100	200	200	200
Recommended oil	ISO VG 32 (Servo System 32)				
Bowl material	Aluminium				
Installation	Vertical (as in the picture)				
Materials of construction	Aluminium, Bronze, Steel, SS, Nitrile				
Optional accessories *	Clamp, Modular mounting kit				
Weight (Kg)	0.20	0.55	0.85	1.38	1.37

[@] Supply pressure 6 bar , pressure drop $\Delta p = 0.5$ bar (For standard models)

* For details refer optional accessories Cat No APA - 01 - C

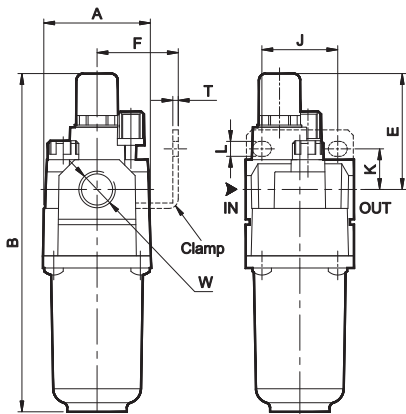
Precautions

1. Note the direction of flow before installation and connect piping accordingly.
2. Flush pipings for dirt, dust, rust and other foreign particles.
3. Install in clean atmosphere.
4. Nipples with taper threads (R) to be used with teflon tape. Ensure teflon tape does not enter the unit during tightening. Nipples with straight threads (G) to be used with sealing washer.
5. Oil may be filled when under pressure. However it is recommended to vent the air completely before filling the oil.

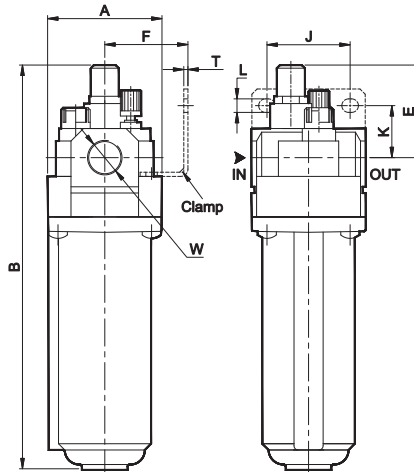
AIR PREPARATION UNITS LUBRICATOR WITH METAL BOWL Series L1M

Cat No L1M - 01 - E

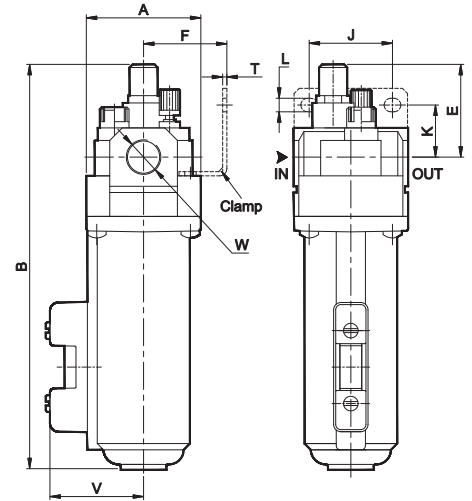
**Model L13...-M
(Without level indicator)**



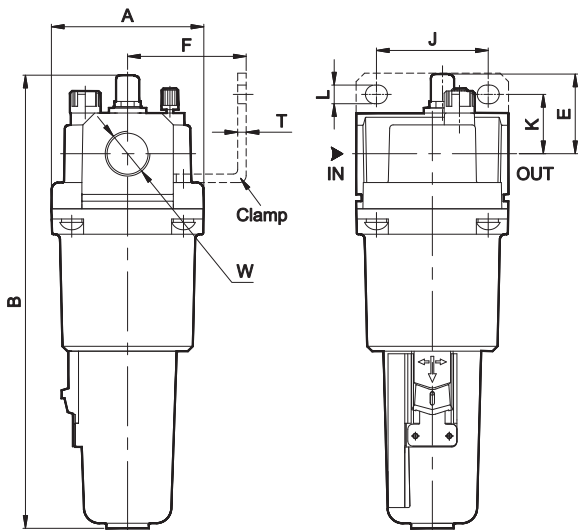
**Model L14...-M & L15...-M
(Without level indicator)**



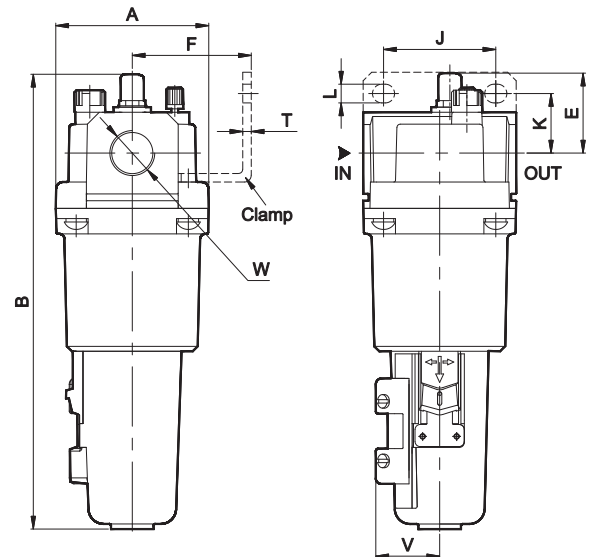
**Model L14...-L & L15...-L
(With level indicator)**



Model L17...-M (Without level indicator)



Model L17...-L (With level indicator)



Model	W	A	B	E	K	F	J	L	T	V
L13...M	G1/4	SQ 40	125	42	15	30	28	5.5	2	-
L14...M L14...L	G3/8	SQ 55	195	44	25	40	40	6.5	2	45
L15...M L15...L	G1/2	SQ 70	229	46	25	50	55	8.5	2	49
L17...M L17...L	G3/4	SQ 90	268	47	35	70	66	11	5	39
L17...M L17...L	G1	SQ 90	268	47	35	70	66	11	5	39

For Details of Clamp see optional accessories Cat No APA - 01 - C

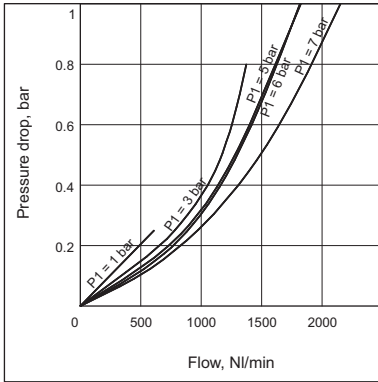
AIR PREPARATION UNITS

LUBRICATOR WITH METAL BOWL Series L1M

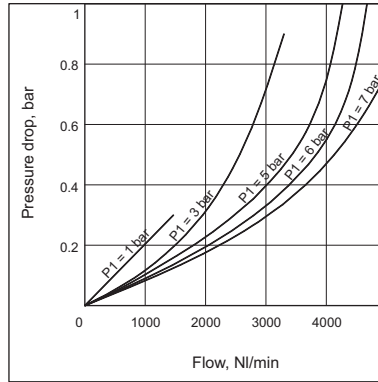
Cat No L1M - 01 - E

Flow Graphs

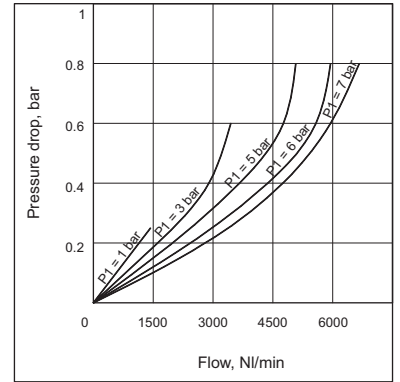
1/4" LUBRICATOR



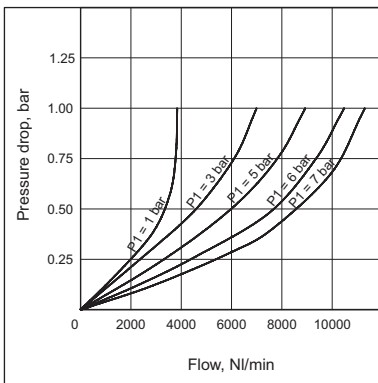
3/8" LUBRICATOR



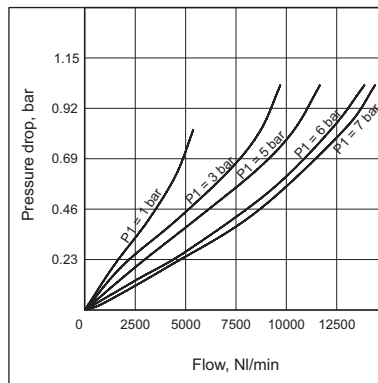
1/2" LUBRICATOR



3/4" LUBRICATOR



1" LUBRICATOR



Principle of Operation

A part of the air entering the Lubricator through "IN" pressurises the bowl chamber.

Flow of full air goes through "OUT" deflecting the "Deflector" and creating pressure drop below the sight dome .

The pressure in the Bowl presses the oil through the suction tube and the oil flows through the sight dome. All the oil drops seen through the sight dome mixes with the main stream air and comes through "OUT". The required oil drops can be adjusted by the adjusting needle.

How to order

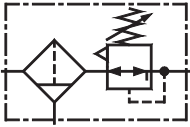
L1	462	—	M
Body & Port size		Metal bowl	
361	G1/4	M	Without level indicator
462	G3/8	L**	With level indicator
563	G1/2		
764	G3/4		
765	G1		

** - Applicable for L14, L15, L17 models only.

Ordering example:

Lubricator with Metal bowl without level indicator - G3/8 port size : Ordering No : **L1462-M**

Subject to change



AIR PREPARATION UNITS

FILTER REGULATOR COMBINATION Series FRC1

Cat No FRC1 - 01 - C

FILTER REGULATOR COMBINATION - 1/4, 3/8, 1/2, 3/4, 1"

Features

- Modular type
- Suitable for panel mounting
- Filter
 - Bronze filtering element
 - Separator and shield for efficient moisture separation
- Regulator - Diaphragm operated, relieving type
 - Pressure compensated by balanced poppet
 - Flow compensated in models FRC14, FRC15 & FRC17 (with venturi) for faster response
 - Non raising ' Press to lock ' adjusting knob for locking at any set pressure
- Steel bowl guard, bayonet type on FRC14, FRC15 & FRC17 models and threaded type on FRC13 model
- Good flow and regulating characteristics



Technical Specifications

Model	FRC 13	FRC 14	FRC 15	FRC 17	FRC 17
Medium	Compressed air				
Port size	G1/4	G3/8	G1/2	G3/4	G1
Pressure gauge port size	G1/8	G1/8	G1/8	G1/4	G1/4
Flow rate (lts / min) @	550	1800	3000	4250	5500
Maximum supply pressure (bar)	10				
Regulating pressure range # (bar)	0.2 - 2, 0.2 - 4, 0.5 - 7, 0.5 - 10 (Standard)				
Ambient temperature	-10° to +50° C				
Medium temperature	+5° to +50° C				
Filtration # (µm)	1, 5, 25, 40 (standard), 50, 100				
Bowl capacity (ml) (at maximum condensate level)	9	32	44	165	165
Bowl material	Polycarbonate				
Installation	Vertical (as shown in the picture)				
Materials of construction	Aluminium, Bronze, Brass, Steel, Acetal, Polycarbonate, SS, Nitrile				
Optional accessories *	Clamp, Modular mounting kit, Pressure gauge				
Weight (Kg)	0.30	0.58	1.27	2.09	2.05

@ Supply pressure 7 bar, Set pressure 6 bar, Pressure drop $\Delta p = 1$ bar (For standard models).

For details see " How to order ".

* For details refer optional accessories Cat No APA - 01 - C

Precautions

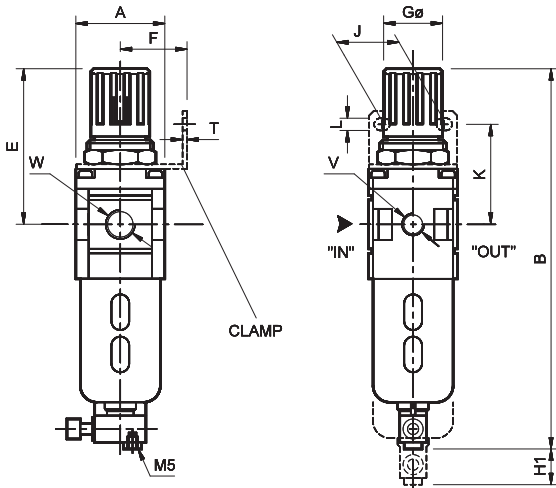
1. Note the direction of flow before installation and connect piping accordingly.
2. Flush pipings for dirt, dust, rust and other foreign particles.
3. Install in clean atmosphere.
4. Nipples of taper threads (R) to be used with teflon tape. Ensure teflon tape does not enter the unit during tightening. Nipples of straight threads (G) to be used with sealing washer.
5. Polycarbonate bowls may get damaged and possibly fail if exposed to synthetic oils, thinner, solvents, trichloroethylene kerosene or other aromatic hydrocarbons.

AIR PREPARATION UNITS

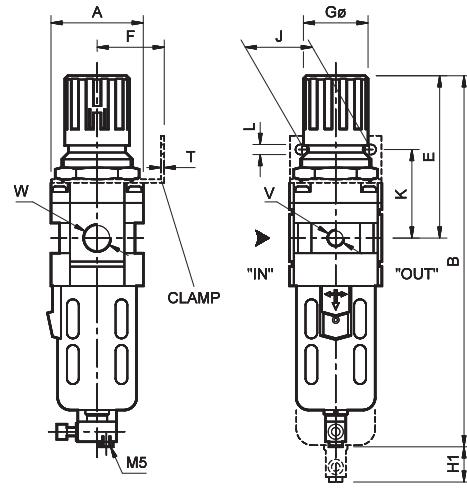
FILTER REGULATOR COMBINATION Series FRC1

Cat No FRC1 - 01 - C

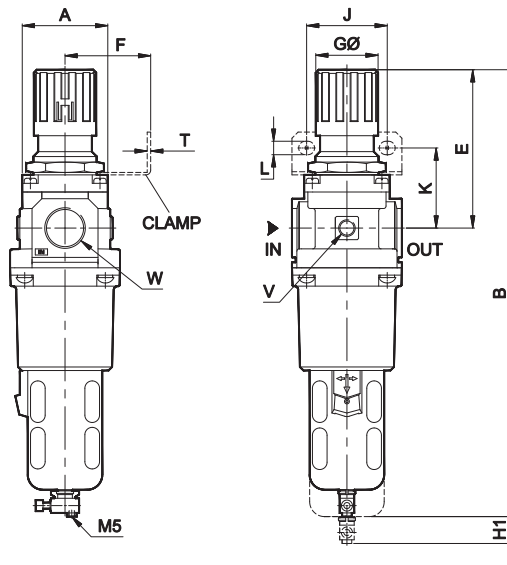
Model FRC13



Model FRC14 & FRC15



Model FRC17



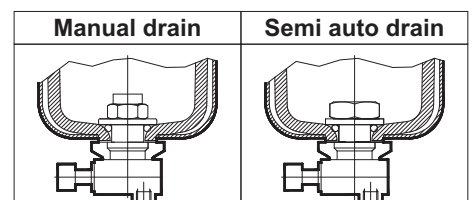
Model	W	V	A	B	E	K	F	GØ	J	L	T	H1
FRC13	G1/4	G1/8	SQ 40	170	68	45	30	28	28	5.5	2	50
FRC14	G3/8	G1/8	SQ 55	220	95	53	40	40	40	6.5	2	55
FRC15	G1/2	G1/8	SQ 70	280	125	62	50	51	55	8.5	2	80
FRC17	G3/4	G1/4	SQ 90	370	130	65	70	51	66	11	5	80
FRC17	G1	G1/4	SQ 90	370	130	65	70	51	66	11	5	80

For Details of Clamp see optional accessories Cat No APA - 01 - C

Pressure Setting

Pull the knob and adjust by turning the knob clockwise to increase the pressure.
Push the knob back to its locked position.

(Turning the knob counter clockwise will reduce the pressure)

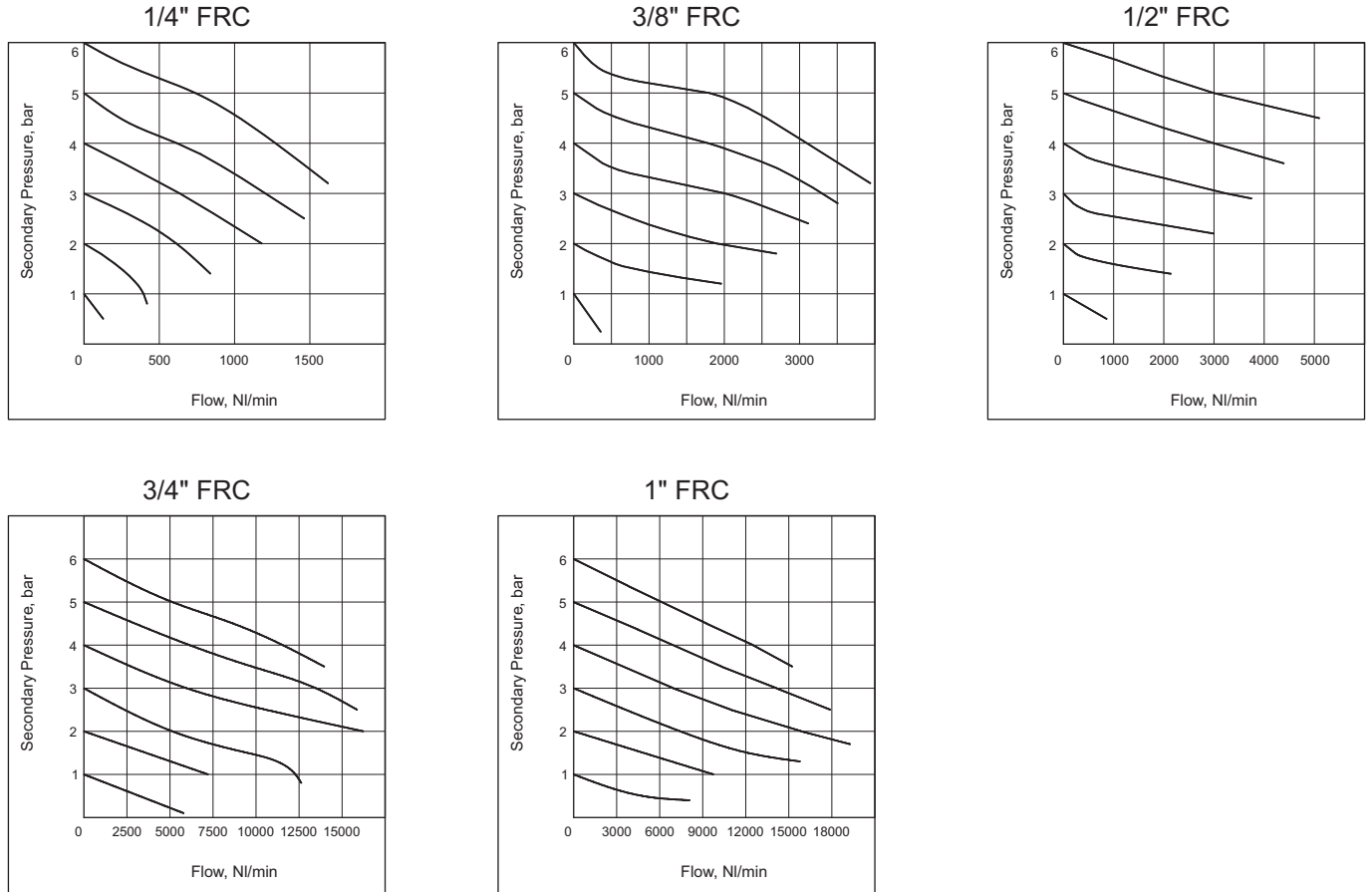


AIR PREPARATION UNITS

FILTER REGULATOR COMBINATION Series FRC1

Cat No FRC1 - 01 - C

Flow Graphs



Flow graphs are for 40µm filtrations only.

How to order

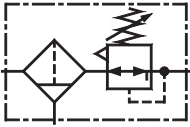
FRC1	462	3	4	—	○																																		
Body & Port size	Filteration in µm	Pressure range	Drain arrangement																																				
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>361</td><td>G1/4</td></tr> <tr><td>462</td><td>G3/8</td></tr> <tr><td>563</td><td>G1/2</td></tr> <tr><td>764</td><td>G3/4</td></tr> <tr><td>765</td><td>G1</td></tr> </table>	361	G1/4	462	G3/8	563	G1/2	764	G3/4	765	G1	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>0</td><td>- 1</td></tr> <tr><td>1</td><td>- 5</td></tr> <tr><td>2</td><td>- 25</td></tr> <tr><td>3</td><td>- 40 (Standard)</td></tr> <tr><td>4</td><td>- 50</td></tr> <tr><td>5</td><td>- 100</td></tr> </table>	0	- 1	1	- 5	2	- 25	3	- 40 (Standard)	4	- 50	5	- 100	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>1</td><td>0.2 - 2 bar</td></tr> <tr><td>2</td><td>0.2 - 4 bar</td></tr> <tr><td>3</td><td>0.5 - 7 bar</td></tr> <tr><td>4</td><td>0.5 - 10 bar (Standard)</td></tr> </table>	1	0.2 - 2 bar	2	0.2 - 4 bar	3	0.5 - 7 bar	4	0.5 - 10 bar (Standard)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td></td><td>Manual drain (Standard)</td></tr> <tr><td>S</td><td>Semi Auto drain</td></tr> </table>				Manual drain (Standard)	S	Semi Auto drain
361	G1/4																																						
462	G3/8																																						
563	G1/2																																						
764	G3/4																																						
765	G1																																						
0	- 1																																						
1	- 5																																						
2	- 25																																						
3	- 40 (Standard)																																						
4	- 50																																						
5	- 100																																						
1	0.2 - 2 bar																																						
2	0.2 - 4 bar																																						
3	0.5 - 7 bar																																						
4	0.5 - 10 bar (Standard)																																						
	Manual drain (Standard)																																						
S	Semi Auto drain																																						

S - For Semi auto drain minimum working pressure 0.8 bar
The basic model filter is supplied with manual drain.
For optional drain requirement specify the suffix mentioned in ordering information.

Ordering example:

Filter Regulator Combination - 3/8 size (with G3/8 port) with 5µm Filter, Pressure range 0.5 - 7 bar with Semi auto drain, Ordering No: **FRC146213-S**

If ordered as FRC 3/8 our standard model **FRC146234**, with 40µm Filter and pressure range 0.5 - 10 bar will be supplied.



AIR PREPARATION UNITS

FRC WITH TAMPER PROOF - Series FRC1

Cat No FRC1T - 01 - A

FILTER REGULATOR COMBINATION WITH TAMPER PROOF - 1/8, 1/4, 3/8, 1/2, 3/4, 1

Features

- Modular type
- Suitable for panel mounting
- Filter
 - Bronze filtering element
 - Separator and shield for efficient moisture separation
- Regulator - Diaphragm operated, relieving type
 - Pressure compensated by balanced poppet
 - Flow compensated in models FRC14, FRC15 & FRC17 (with venturi) for faster response
 - Non raising 'Press to lock' adjusting knob for locking at any set pressure
- Steel bowl guard, bayonet type on FRC14, FRC15 & FRC17 models and threaded type on FRC13 model
- Good flow and regulating characteristics
- Tamper proof (Setting secured via screw on knob)



Function

- a. Prevents ordinary hand adjustments
- b. Outlet pressure settings remain unchanged. These regulators give extra level of security. (Set the desired outlet pressure and lock with screw to prevent further adjustment.)

Technical Specifications

Model	FRC13...T	FRC14...T	FRC15...T	FRC17...T	FRC17...T
Medium	Compressed air				
Port size	G1/4	G3/8	G1/2	G3/4	G1
Pressure gauge port size	G1/8	G1/8	G1/8	G1/4	G1/4
Flow rate (lts / min) @	550	2180	3000	4250	5500
Maximum supply pressure (bar)	10				
Regulating pressure range # (bar)	0.2 - 2, 0.2 - 4, 0.5 - 7, 0.5 - 10 (Standard)				
Ambient temperature	-10° to +50° C				
Medium temperature	+5° to +50° C				
Filtration # (µm)	1, 5, 25, 40 (standard), 50, 100				
Bowl capacity (ml) (at maximum condensate level)	9	32	44	165	165
Bowl material	Polycarbonate				
Installation	Vertical (as shown in the picture)				
Materials of construction	Aluminium, Bronze, Brass, Steel, Acetal, Polycarbonate, SS, Nitrile				
Optional accessories *	Clamp, Modular mounting kit, Pressure gauge				
Weight (Kg)	0.30	0.58	1.27	2.09	2.05

@ Supply pressure 7 bar, Set pressure 6 bar, Pressure drop $\Delta p = 1$ bar (For standard models).

For details see " How to order ".

* For details refer optional accessories Cat No APA - 01 - C

Precautions

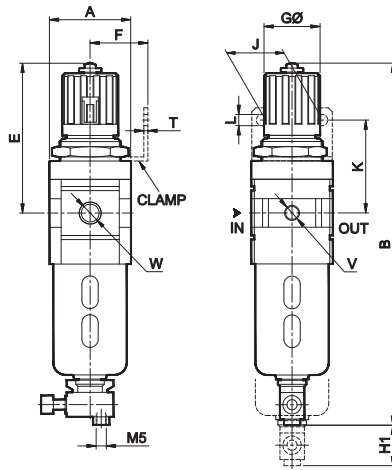
1. Note the direction of flow before installation and connect piping accordingly.
2. Flush pipings for dirt, dust, rust and other foreign particles.
3. Install in clean atmosphere.
4. Nipples of taper threads (R) to be used with teflon tape. Ensure teflon tape does not enter the unit during tightening. Nipples of straight threads (G) to be used with sealing washer.
5. Polycarbonate bowls may get damaged and possibly fail if exposed to synthetic oils, thinner, solvents, trichloroethylene kerosene or other aromatic hydrocarbons.

AIR PREPARATION UNITS

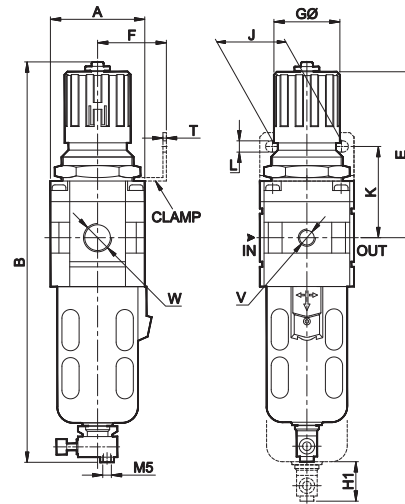
FRC WITH TAMPER PROOF - Series FRC1

Cat No FRC1T - 01 - A

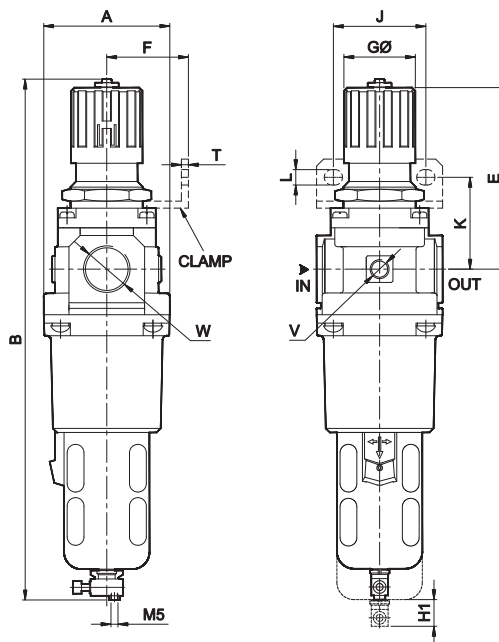
Model FRC13...T



Model FRC14...T & FRC15...T



Model FRC17...T



Model	W	V	A	B	E	K	F	GØ	J	L	T	H1
FRC13-T	G1/8, G1/4	G1/8	SQ 40	177	68	45	30	28	28	5.5	2	50
FRC14-T	G1/4, G3/8	G1/8	SQ 55	233	95	53	40	40	40	6.5	2	55
FRC15-T	G1/4, G3/8, G1/2	G1/8	SQ 70	291	125	62	50	51	55	8.5	2	80
FRC17-T	G3/4	G1/4	SQ 90	375	130	65	70	51	66	11	5	80
FRC17-T	G1	G1/4	SQ 90	375	130	65	70	51	66	11	5	80

For Details of Clamp see optional accessories Cat No APA - 01 - C

Pressure Setting

Loosen the screw provided on the top of the knob.

Pull the knob and adjust by turning the knob clockwise to increase the pressure. Push the knob back to its locked position, and tighten the screw on knob. (Turning the knob counter clockwise will reduce the pressure)

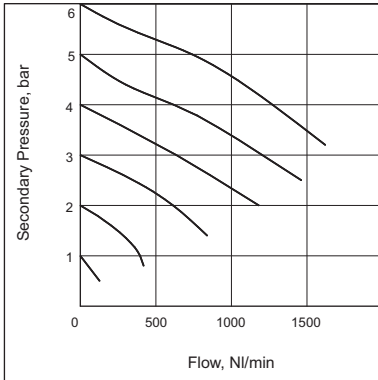
AIR PREPARATION UNITS

FRC WITH TAMPER PROOF - Series FRC1

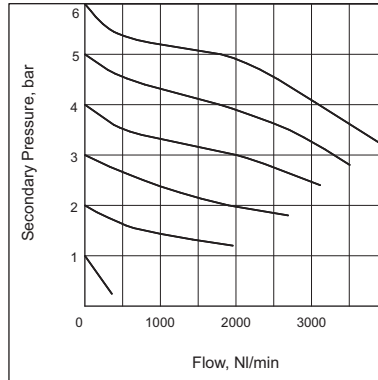
Cat No FRC1T - 01 - A

Flow Graphs

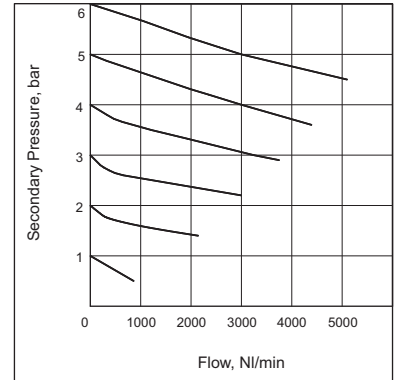
FRC136134 - T



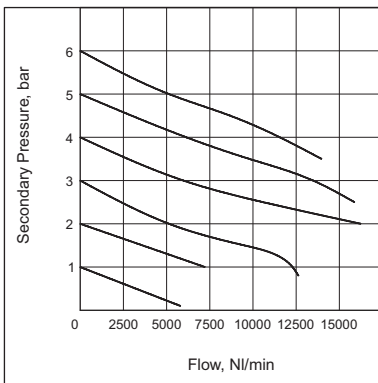
FRC146234 - T



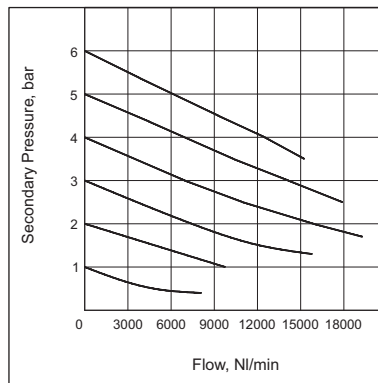
FRC156334 - T



FRC176434 - T



FRC176534 - T



Flow graphs are for 40µm filtrations and 10 bar pressure.

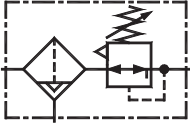
How to order

FRC1	462	3	4	T	
Body & Port size		Filteration in µm		Pressure range	
360	G1/8	0	- 1	1	0.2 - 2 bar
361	G1/4	1	- 5	2	0.2 - 4 bar
461	G1/4	2	- 25	3	0.5 - 7 bar
462	G3/8	3	- 40 (Standard)	4	0.5 - 10 bar (Standard)
561	G1/4	4	- 50		
562	G3/8	5	- 100		
563	G1/2				
764	G3/4				
765	G1				
				Tamper proof	
				T	Tamper proof

Ordering example:

Filter Regulator Combination - 3/8 size (with G3/8 port) with 5µm Filter and pressure range 0.5 - 7 bar with Tamper proof - Ordering No: **FRC146213-T**

If ordered as FRC 3/8 our standard model **FRC146234**, with 40µm Filter and pressure range 0.5 - 10 bar will be supplied.



AIR PREPARATION UNITS

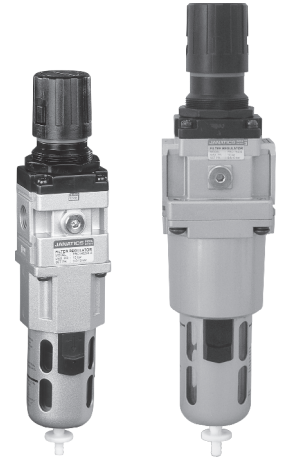
FILTER REGULATOR COMBINATION

WITH INTERNAL AUTODRAIN - Series FRC1A Cat No FRC1A - 01 - C

FILTER REGULATOR COMBINATION WITH INTERNAL AUTODRAIN - 3/8, 1/2, 3/4, 1"

Features

- Modular type
- Suitable for panel mounting
- Filter
 - Bronze filtering element
 - Separator and shield for efficient moisture separation
 - Bayonet type steel bowl guard
- Internal Autodrain
 - Float type, no electrical connections required
 - Provided with manual drain
 - Provision for drain tube connection, to take the condensate away from the unit, to keep the working area clean
- Regulator
 - Diaphragm operated, relieving type
 - Pressure compensated by balanced poppet
 - Flow compensated (with venturi) for faster response
 - Non raising ' Press to lock ' adjusting knob for locking at any set pressure
- Good flow and regulating characteristics



Technical Specifications

Model	FRC14....A	FRC15....A	FRC17....A	FRC17....A
Medium	Compressed air			
Port size	G3/8	G1/2	G3/4	G1
Pressure gauge port size	G1/8	G1/8	G1/4	G1/4
Flow rate (lts / min) @	1800	3000	4250	5500
Operating pressure (bar)	2 - 10			
Regulating pressure range # (bar)	0.2 - 2, 0.2 - 4, 0.5 - 7, 0.5 - 10 (Standard)			
Ambient temperature	+5° to +50° C			
Medium temperature	+5° to +50° C			
Filtration # (µm)	1, 5, 25, 40 (Standard), 50, 100			
Bowl capacity (ml) (at maximum condensate level)	35	65	165	165
Bowl material	Polycarbonate			
Installation	Vertical (as in the picture)			
Materials of construction	Aluminium, Bronze, Steel, Acetal, Polycarbonate, SS, Nitrile			
Optional accessories *	Clamp, Modular mounting kit, Pressure Gauge			
Weight (Kg)	0.74	1.50	2.1	2.07

@ Supply pressure 7 bar, Set pressure 6 bar, Pressure drop $\Delta p = 1$ bar (For standard models).

For details see " How to order ".

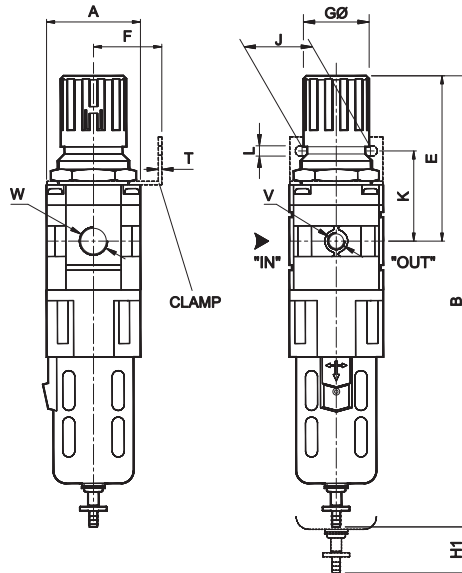
* For details refer optional accessories Cat No APA - 01 - C

Precautions

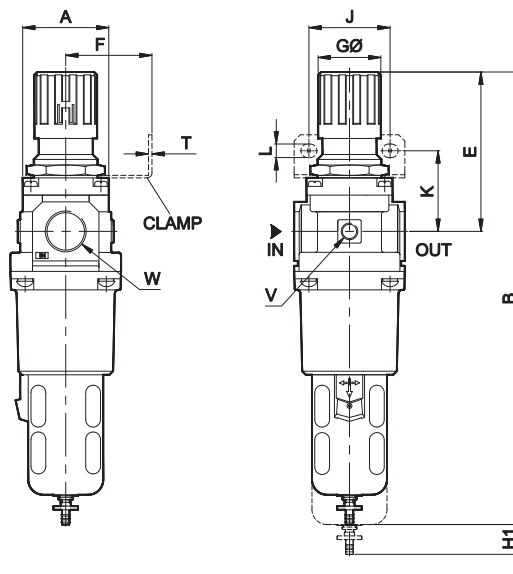
1. Note the direction of flow before installation and connect piping accordingly.
2. Flush pipings for dirt, dust, rust and other foreign particles.
3. Install in clean atmosphere.
4. Nipples of taper threads (R) to be used with teflon tape. Ensure teflon tape does not enter the unit during tightening. Nipples of straight threads (G) to be used with sealing washer.
5. Polycarbonate bowls may get damaged and possibly fail if exposed to synthetic oils, thinner, solvents, trichloroethylene kerosene or other aromatic hydrocarbons.

AIR PREPARATION UNITS
FILTER REGULATOR COMBINATION
WITH INTERNAL AUTODRAIN - Series FRC1A Cat No FRC1A - 01 - C

Model FRC14...-A, FRC15...-A



Model FRC17...-A



Model	W	V	A	B	E	K	F	GØ	J	L	T	H1
FRC14...A	G3/8	G1/8	SQ 55	272	95	53	40	40	40	6.5	2	60
FRC15...A	G1/2	G1/8	SQ 70	335	125	62	50	51	55	8.5	2	85
FRC17...A	G3/4	G1/4	SQ 90	368	130	65	70	51	66	11	5	85
FRC17...A	G1	G1/4	SQ 90	368	130	65	70	51	66	11	5	85

For Details of Clamp see optional accessories Cat No APA - 01 - C

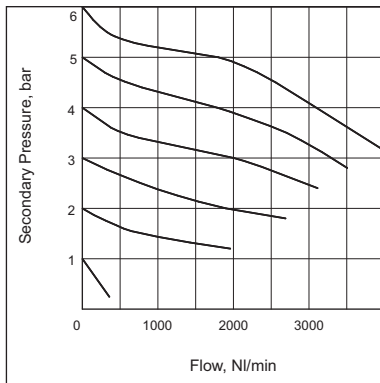
Pressure Setting

Pull the knob and adjust by turning the knob clockwise to increase the pressure. Push the knob back to its locked position. (Turning the knob counter clockwise will reduce the pressure)

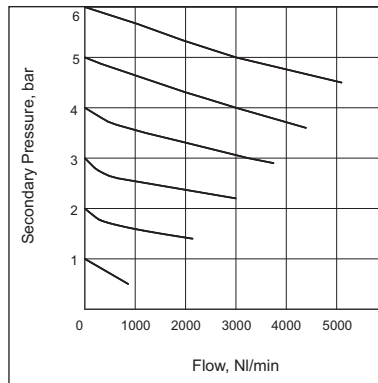
AIR PREPARATION UNITS
FILTER REGULATOR COMBINATION
WITH INTERNAL AUTODRAIN - Series FRC1A Cat No FRC1A - 01 - C

Flow Graphs

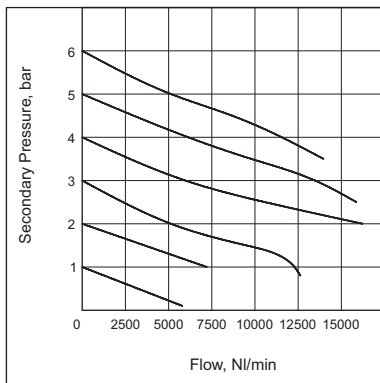
3/8" FRC



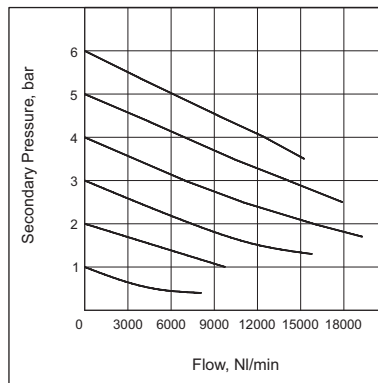
1/2" FRC



3/4" FRC



1" FRC



Flow graphs are for 40µm filtrations only.

How to order

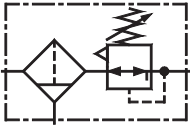
FRC1 **462** **3** **4** — **A**

Body & Port size		Filtration in µm		Pressure range		Internal Autodrain
462	G3/8	0	- 1	1	0.2 - 2 bar	A
563	G1/2	1	- 5	2	0.2 - 4 bar	
764	G3/4	2	- 25	3	0.5 - 7 bar	
765	G1	3	- 40 (Standard)	4	0.5 - 10 bar (Standard)	
		4	- 50			
		5	- 100			

Ordering example:

Filter Regulator Combination - 3/8 size (with G3/8 port) with a 5µm Filter, pressure range 0.5 - 7 bar with Internal Autodrain : Ordering No: **FRC146213 - A**

If ordered as 3/8 FRC with Internal Autodrain, our standard model **FRC146234 - A**, with a 40µm Filter, pressure range 0.5 - 10 bar with Internal Autodrain will be supplied.



AIR PREPARATION UNITS FILTER REGULATOR COMBINATION WITH METAL BOWL - Series FRC1M

Cat No FRC1M - 01 - E

FILTER REGULATOR COMBINATION WITH METAL BOWL - 1/4, 3/8, 1/2, 3/4, 1"

Features

- Modular type
- Suitable for panel mounting
- Filter
 - Bronze filtering element
 - Separator and shield for efficient moisture separation
 - Press type manual drain for easy operation
 - Suitable for automatic drain
- Regulator
 - Diaphragm operated, relieving type
 - Pressure compensated by balanced poppet
 - Flow compensated
 - Non raising 'Press to lock' adjusting knob
- Aluminium bowl guard, bayonet type (3/4 and 1" only)
- Good flow and regulating characteristics



Application

These type of filters are used for Chemical, Paintshops, Pharmaceutical, Foundry etc.

Technical Specifications

Model	FRC13...-M	FRC14...-M	FRC15...-M	FRC17...-M	FRC17...-M
Medium	Compressed air				
Port size	G1/4	G3/8	G1/2	G3/4	G1
Pressure gauge port size	G1/8	G1/8	G1/8	G1/4	G1/4
Nominal flow rate (lpm) @	550	1800	3000	6000	6500
Maximum supply pressure	Manual drain model - 20 bar, Auto drain model - 10 bar				
Regulating pressure range # (bar)	0.2 - 2, 0.2 - 4, 0.5 - 7, 0.5 - 10 (Standard)				
Ambient temperature	Manual drain: -10° to +60° C, Semi auto / Auto drain: +5° to +50° C				
Medium temperature	+5° to +50° C				
Filtration # (µm)	1, 5, 25, 40 (standard), 50, 100				
Bowl capacity (ml) (At max. condensate level)	9	64	90	165	165
Bowl material	Aluminium				
Installation	Vertical (as shown in the picture)				
Materials of construction	Aluminium, Bronze, Brass, Steel, Acetal, SS, Nitrile				
Optional accessories *	Clamp, Modular mounting kit, Pressure gauge				
Weight (Kg)	0.30	0.70	1.50	2.16	2.12

@ Supply pressure 7 bar, Set pressure 6 bar, pressure drop $\Delta p = 1$ bar (For standard models).

For details see " How to order ".

* For details refer Optional accessories Cat No APA - 01 - C
For Semi auto drain minimum working pressure 0.8 bar

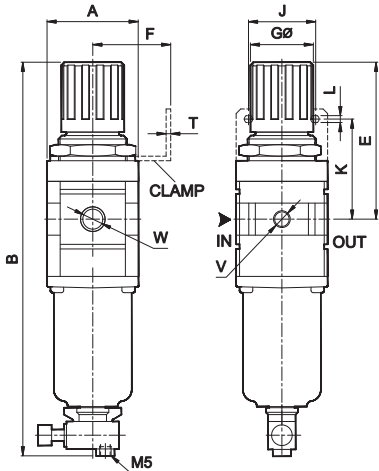
Precautions

1. Note the direction of flow before installation and connect piping accordingly.
2. Flush pipings for dirt, dust, rust and other foreign particles.
3. Install in clean atmosphere.
4. Nipples with taper threads (R) to be used with teflon tape. Ensure teflon tape does not enter the unit during tightening. Nipples with straight threads (G) to be used with sealing washer.

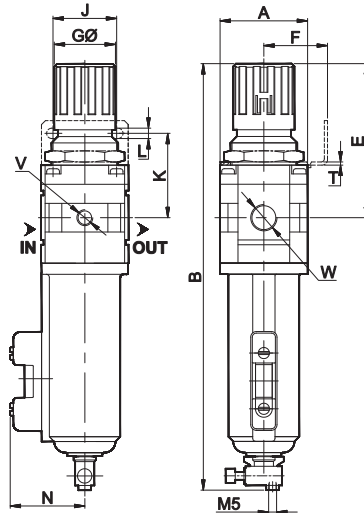
AIR PREPARATION UNITS
FILTER REGULATOR COMBINATION
WITH METAL BOWL - Series FRC1M

Cat No FRC1M - 01 - E

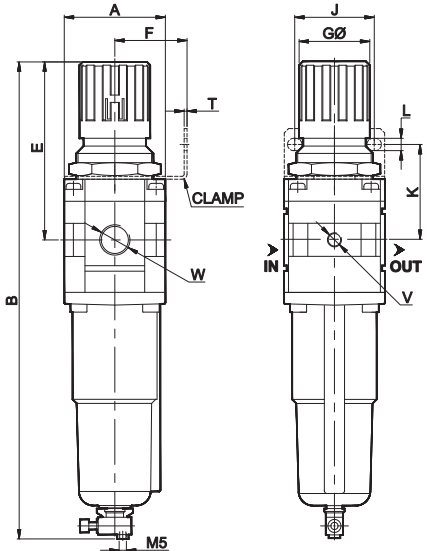
Model FRC13...-MM
(Without level indicator)



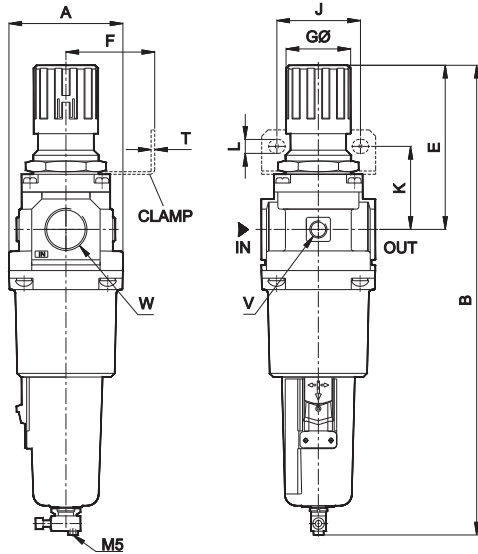
Model FRC14...-LM
(With level indicator)



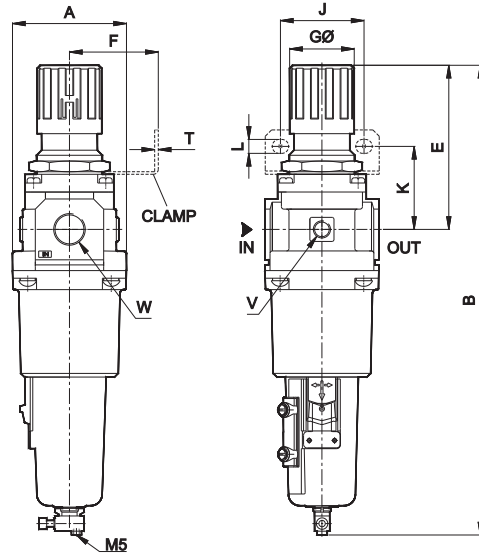
Model FRC15...-MM
(Without level indicator)



Model FRC17...-MM (Without level indicator)



Model FRC17...-LM (With level indicator)



Model	W	V	A	B	E	K	F	GØ	J	L	T	N
FRC13...	G1/4	G1/8	SQ 40	172	68	45	30	28	28	5.5	2	-
FRC14...	G3/8	G1/8	SQ 55	265 / 273*	95	53	40	40	40	6.5	2	45
FRC15...	G1/2	G1/8	SQ 70	330 / 340*	125	62	50	51	55	8.5	2	48
FRC17...	G3/4	G1/4	SQ 90	371 / 373*	130	65	70	51	66	11	5	-
FRC17...	G1	G1/4	SQ 90	371 / 373*	130	65	70	51	66	11	5	-

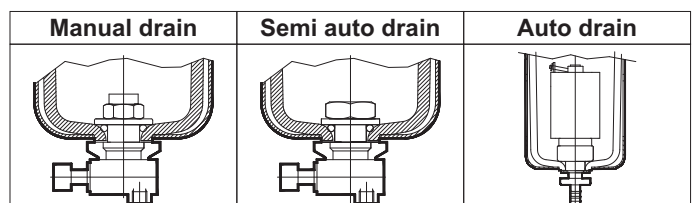
* with Auto drain

For Details of Clamp see optional accessories Cat No APA - 01 - C

Pressure Setting

Pull the knob and adjust by turning the knob clockwise to increase the pressure. Push the knob back to its locked position.

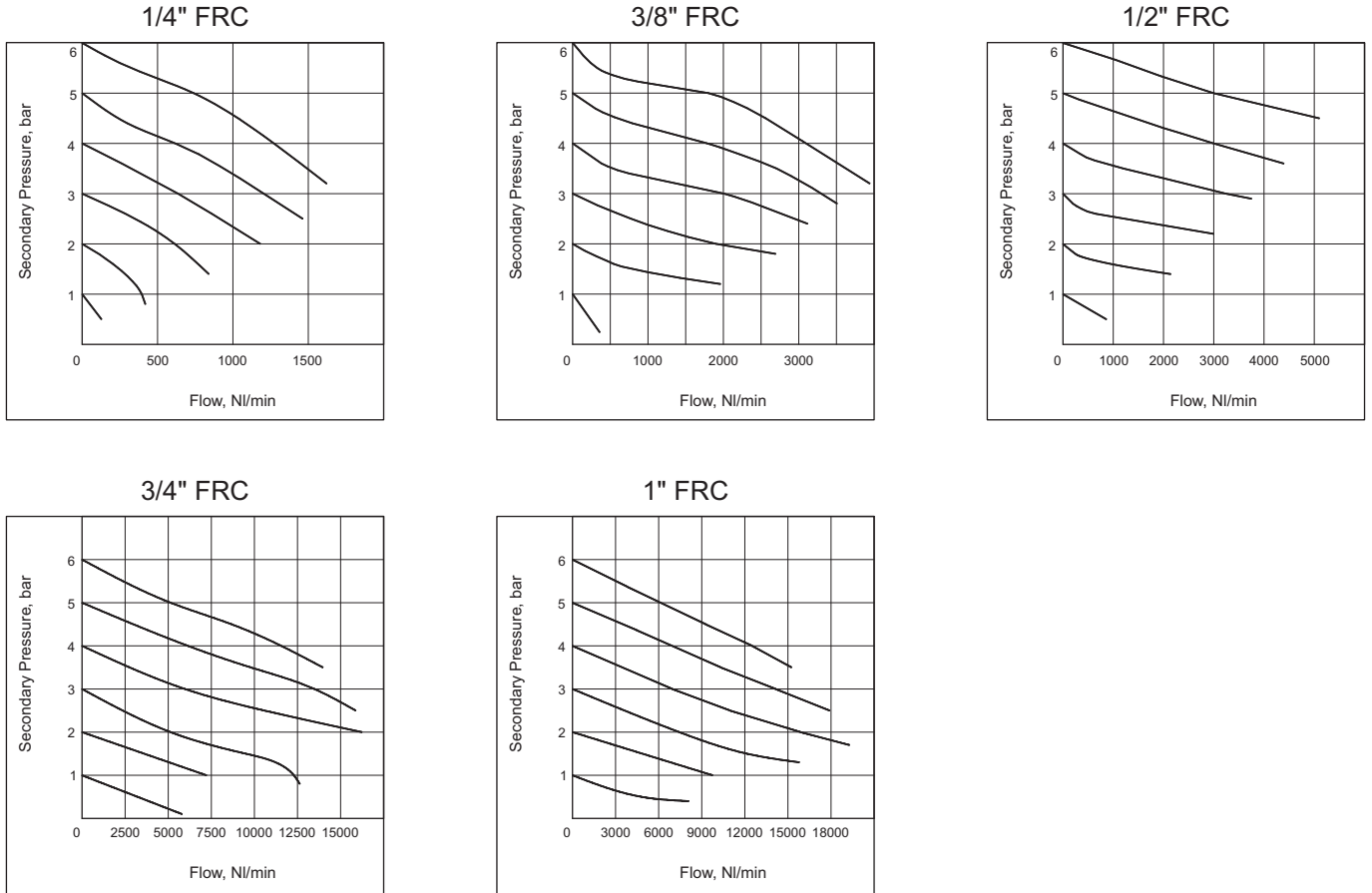
(Turning the knob counter clockwise will reduce the pressure)



**AIR PREPARATION UNITS
FILTER REGULATOR COMBINATION
WITH METAL BOWL - Series FRC1M**

Cat No FRC1M - 01 - E

Flow Graphs



Flow graphs are for 40µm filtrations only.

How to order

FRC1 **462** **3** **4** — **M** **M**

Body & Port size		Filtration in µm		Pressure range		Metal bowl		Drain arrangement	
361	G1/4	0	- 1	1	0.2 - 2 bar	M	Without level indicator	M	Manual drain (Standard)
462	G3/8	1	- 5	2	0.2 - 4 bar	L**	With level indicator	A*	Auto drain
563	G1/2	2	- 25	3	0.5 - 7 bar			S	Semi Auto drain
764	G3/4	3	- 40 (Standard)	4	0.5 - 10 bar (Standard)				
765	G1	4	- 50						
		5	- 100						

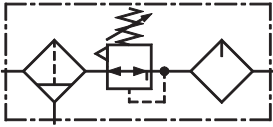
** - Applicable for FRC14, FRC15, FRC17 models only

* Auto Drain - FRC14, FRC15, FRC17 models only, 2 - 10 bar operating pressure.
S - For Semi auto drain minimum working pressure 0.8 bar.
The basic model FRC is supplied with manual drain.
For optional drain requirement specify the suffix mentioned in ordering information.

Ordering example:

Filter Regulator Combination - 3/8 size (with G3/8 port) with 5µm Filter and pressure range 0.5 - 7 bar and Metal Bowl with level indicator with Auto drain, Ordering No: **FRC146213-LA**

If ordered as FRC 3/8 with Metal bowl, our standard model **FRC146234-MM**, with 40µm Filter and pressure range 0.5 - 10 bar will be supplied.



AIR PREPARATION UNITS

FRL MODULAR Series FRLM1

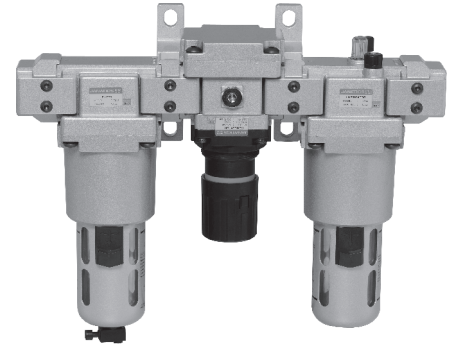
Cat No FRLM1 - 01 - D

FILTER - REGULATOR - LUBRICATOR, MODULAR - 1/4, 3/8, 1/2, 3/4, 1"

Individual Filter, Regulator & Lubricator units easily removable / mountable without disturbing the pipe line

Features

- Modular type for easy and fast maintenance
- Suitable for wall mounting
- Filter
 - Bronze filtering element
 - Separator and shield for efficient moisture separation
 - Press type manual drain for easy operation
- Regulator
 - Diaphragm operated, relieving type
 - Pressure compensated by balanced poppet
 - Flow compensated (with venturi) in models FRLM14, FRLM15 and FRLM17 for faster response
 - Non raising 'Press to lock' adjusting knob for locking at any set pressure
- Lubricator
 - Fog / Mist type Lubricator
 - Fine adjustment of lubrication
 - Lubrication proportional to flow
- Steel bowl guard, bayonet type on FRLM14, FRLM15 & FRLM17 models and threaded type on FRLM13 model
- Good flow and regulating characteristics



Technical Specifications

Model	FRLM 13	FRLM 14	FRLM 15	FRLM 17	FRLM 17
Medium	Compressed air				
Port size	G1/4	G3/8	G1/2	G3/4	G1
Pressure gauge port size	G1/8	G1/8	G1/8	G1/4	G1/4
Flow rate @ (lts / min)	500	2000	3500	3500	5000
Maximum supply pressure (bar)	10				
Regulating pressure range # (bar)	0.2 - 2, 0.2 - 4, 0.5 - 7, 0.5 - 10 (Standard)				
Ambient temperature	-10° to +50° C				
Medium temperature	+5° to +50° C				
Filtration # (µm)	1, 5, 25, 40 (standard), 50, 100				
Min operating flow (lts / min)	12	40	45	50	50
Bowl capacity Filter (ml) (at maximum condensate level)	9	32	44	165	165
Bowl capacity Lubricator (ml) (at maximum oil level)	20	57	152	200	200
Recommended oil	ISO VG 32 (Servo System 32)				
Bowl material	Polycarbonate				
Installation	Any position for Regulator. Vertical for Filter and Lubricator				
Materials of construction	Aluminium, Bronze, Brass, Steel, Acetal, Polycarbonate, SS, Nitrile				
Optional accessories *	Pressure gauge				
Weight (Kg)	0.72	1.38	2.65	4.93	4.87

@ Supply pressure 7 bar, Set pressure 6 bar, Pressure drop $\Delta p = 1$ bar (For standard models).

For details see " How to order ".

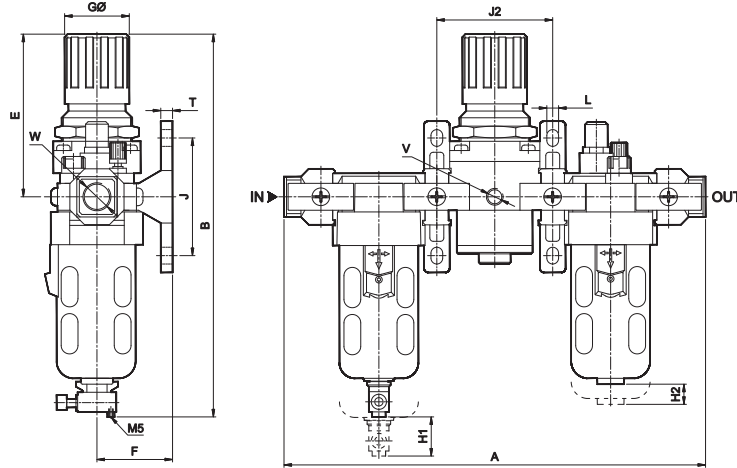
* For details refer optional accessories Cat No APA - 01 - C

AIR PREPARATION UNITS

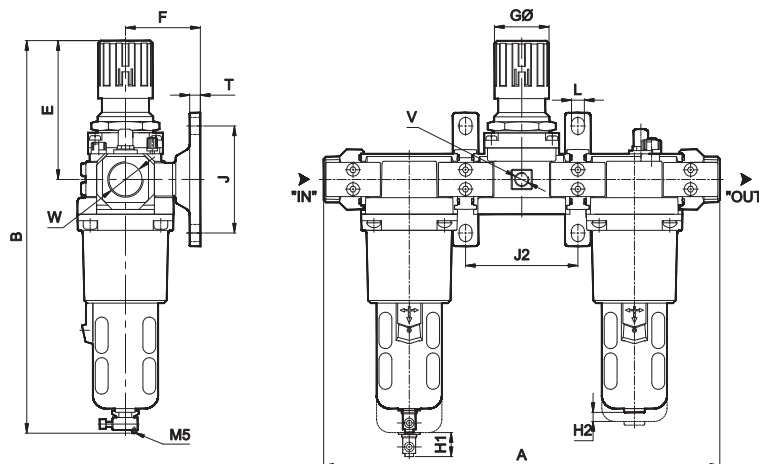
FRL MODULAR Series FRLM1

Cat No FRLM1 - 01 - D

Model FRLM1361, FRLM1462, FRLM1563



Model FRLM1764, FRLM1765



Model	W	V	A	B	E	F	GØ	J	L	T	H1	H2	J2
FRLM 13	G1/4	G1/8	200	170	68	35	28	50	7	7	50	35	52
FRLM 14	G3/8	G1/8	250	220	95	45	40	70	7	7	55	45	69
FRLM 15	G1/2	G1/8	305	280	125	55	51	90	9	9	80	45	86
FRLM 17	G3/4	G1/4	370	366	130	70	51	100	12	10	80	45	105
FRLM 17	G1	G1/4	370	366	130	70	51	100	12	10	80	45	105

For Details of Clamp see optional accessories Cat No APA - 01 - C

Precautions

1. Note the direction of flow before installation and connect piping accordingly.
2. Flush pipings for dirt, dust, rust and other foreign particles.
3. Install in clean atmosphere.
4. Nipples of taper threads (R) to be used with teflon tape. Ensure teflon tape doesn't enter the unit during tightening. Nipples of straight threads (G) to be used with sealing washer.
5. Polycarbonate bowls may get damaged and possibly fail if exposed to synthetic oils, thinner, solvents, trichloroethylene, kerosene or other aromatic hydrocarbons.

Pressure Setting

Pull the knob and adjust by turning the knob clockwise to increase the pressure. Push the knob back to its locked position. (Turning the knob counter clockwise will reduce the pressure)

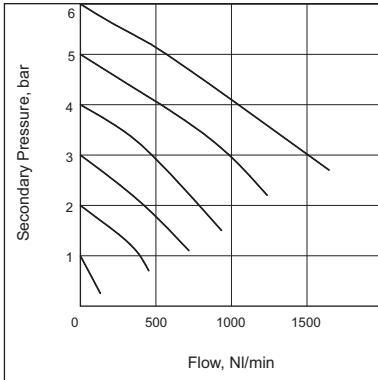
AIR PREPARATION UNITS

FRL MODULAR Series FRLM1

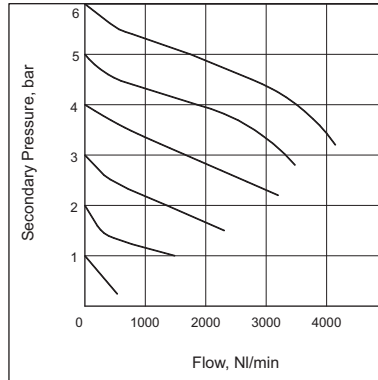
Cat No FRLM1 - 01 - D

Flow Graphs

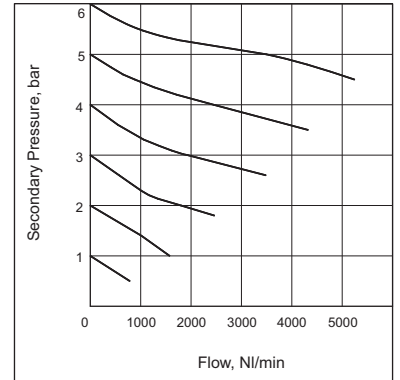
1/4" FRLM



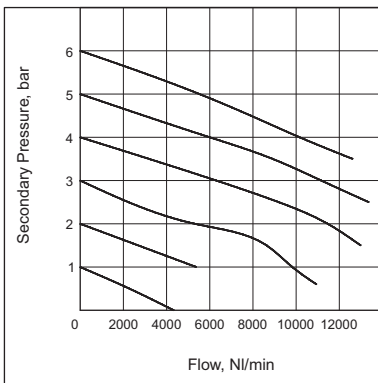
3/8" FRLM



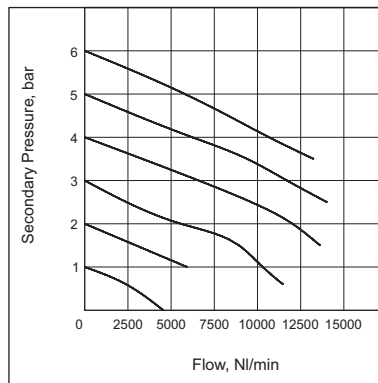
1/2" FRLM



3/4" FRLM



1" FRLM



Flow graphs are for 40µm filtrations only

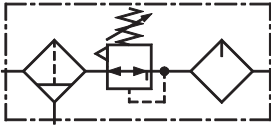
How to order

FRLM1	462	3	4
Body & Port size		Filteration in µm	
361	G1/4	0	- 1
462	G3/8	1	- 5
563	G1/2	2	- 25
764	G3/4	3	- 40 (Standard)
765	G1	4	- 50
		5	- 100
Pressure range		1	0.2 - 2 bar
		2	0.2 - 4 bar
		3	0.5 - 7 bar
		4	0.5 - 10 bar (Standard)

Ordering example:

Filter Regulator Lubricator Modular - 3/8 (with G3/8 port size) with 5µm Filter and pressure range 0.5 - 7 bar,
Ordering No: **FRLM146213**

If ordered as 3/8 FRLM, our standard model **FRLM146234**, with 40µm Filter and pressure range 0.5 - 10 bar will be supplied.



AIR PREPARATION UNITS

FRL MODULAR Series FRLM1

Cat No FRLM1...W - 01 - D

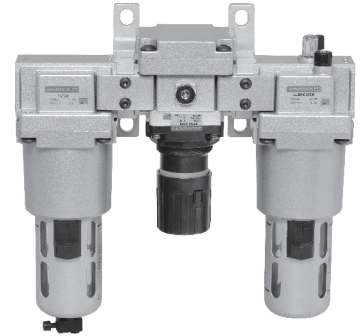
FILTER - REGULATOR - LUBRICATOR, MODULAR - 1/4, 3/8, 1/2, 3/4, 1"

Without piping adaptor and spacer

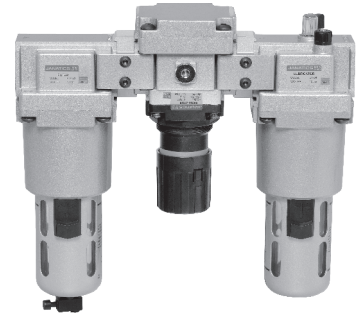
Features

- ❑ Modular type for easy and fast maintenance
- ❑ Suitable for wall mounting
- ❑ Filter
 - Bronze filtering element
 - Separator and shield for efficient moisture separation
 - Press type manual drain for easy operation
- ❑ Regulator - Diaphragm operated, relieving type
 - Pressure compensated by balanced poppet
 - Flow compensated (with venturi) in models FRLM14, FRLM15 and FRLM17 for faster response
 - Non raising 'Press to lock' adjusting knob for locking at any set pressure
- ❑ Lubricator - Fog / Mist type Lubricator
 - Fine adjustment of lubrication
 - Lubrication proportional to flow
- ❑ Steel bowl guard, bayonet type on FRLM14, FRLM15 & FRLM17 models and threaded type on FRLM13 model
- ❑ Good flow and regulating characteristics

Model FRLM1.../W



Model FRLM1.../S



Technical Specifications

Model	FRLM13.../W	FRLM14.../W	FRLM15.../W	FRLM17.../W	FRLM17.../W	
	FRLM13.../S	FRLM14.../S	FRLM15.../S	FRLM17.../S	FRLM17.../S	
Medium	Compressed air					
Port size	G1/4	G3/8	G1/2	G3/4	G1	
Pressure gauge port size	G1/8	G1/8	G1/8	G1/4	G1/4	
Flow rate @ (lts / min)	500	2000	3500	3500	5000	
Maximum supply pressure (bar)	10					
Regulating pressure range # (bar)	0.2 - 2, 0.2 - 4, 0.5 - 7, 0.5 - 10 (Standard)					
Ambient temperature	-10° to +50° C					
Medium temperature	+5° to +50° C					
Filtration # (µm)	1, 5, 25, 40 (standard), 50, 100					
Min operating flow (lts / min)	12	40	45	50	50	
Bowl capacity Filter (ml) (at maximum condensate level)	9	32	44	165	165	
Bowl capacity Lubricator (ml) (at maximum oil level)	20	57	152	200	200	
Recommended oil	ISO VG 32 (Servo System 32)					
Bowl material	Polycarbonate					
Installation	Any position for Regulator. Vertical for Filter and Lubricator					
Materials of construction	Aluminium, Bronze, Brass, Steel, Acetal, Polycarbonate, SS, Nitrile					
Optional accessories *	Pressure gauge					
Weight (Kg)	FRLM1.../W	0.63	1.23	2.39	4.47	4.45
	FRLM1.../S	0.60	1.18	2.30	4.17	4.05

@ Supply pressure 7 bar, Set pressure 6 bar, Pressure drop $\Delta p = 1$ bar (For standard models).

For details see " How to order ".

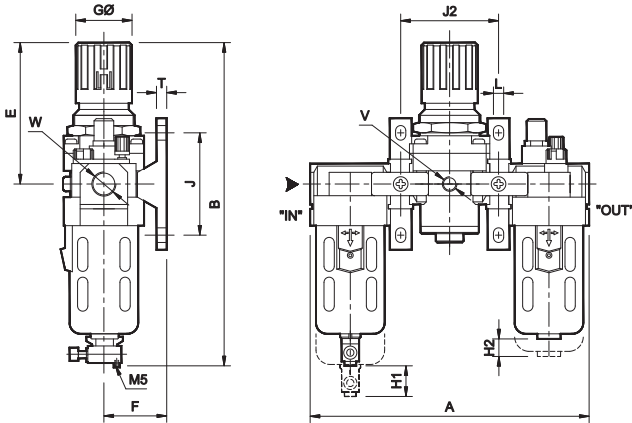
* For details refer optional accessories Cat No APA - 01 - C

AIR PREPARATION UNITS

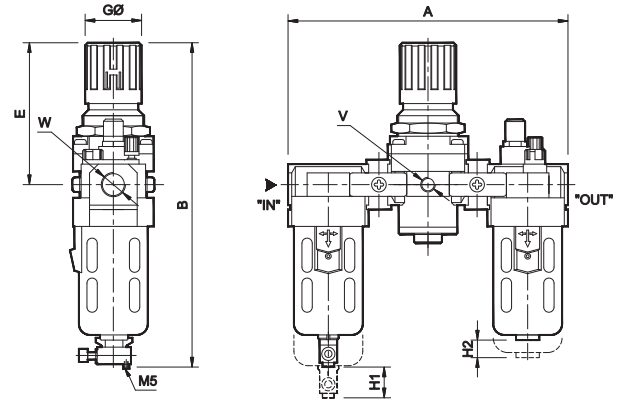
FRL MODULAR Series FRLM1

Cat No FRLM1...W - 01 - D

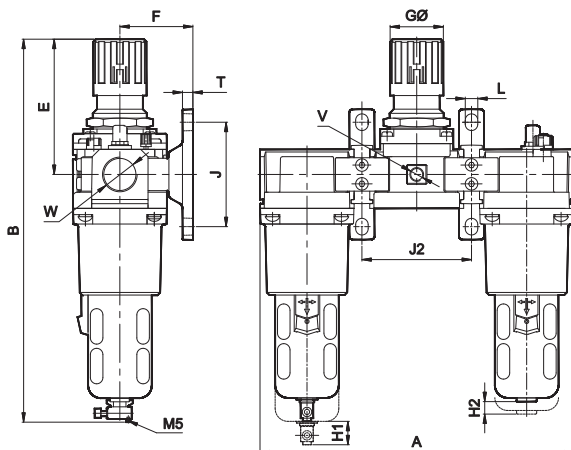
Model FRLM13, 14, 15.../W



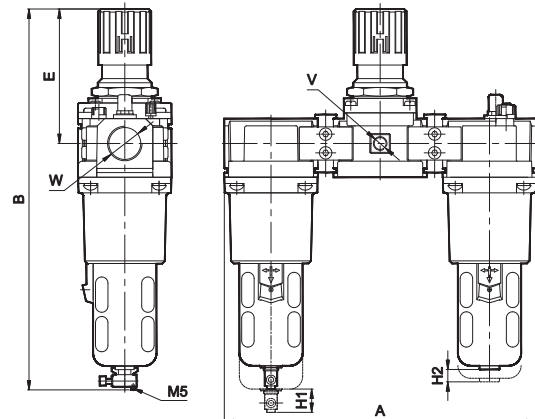
Model FRLM13, 14, 15.../S



Model FRLM17.../W



Model FRLM17.../S



Model	W	V	A	B	E	F	GØ	J	L	T	H1	H2	J2
FRLM13.../W	G1/4	G1/8	146	170	68	35	28	50	7	7	50	35	52
FRLM14.../W	G3/8	G1/8	192	220	95	45	40	70	7	7	55	45	69
FRLM15.../W	G1/2	G1/8	241	280	125	55	51	90	9	9	80	45	86
FRLM17.../W	G3/4	G1/4	300	366	130	70	51	100	12	10	80	45	105
FRLM17.../W	G1	G1/4	300	366	130	70	51	100	12	10	80	45	105

Model	W	V	A	B	E	GØ	H1	H2
FRLM13.../S	G1/4	G1/8	146	170	68	28	50	35
FRLM14.../S	G3/8	G1/8	192	220	95	40	55	45
FRLM15.../S	G1/2	G1/8	241	280	125	51	80	45
FRLM17.../S	G3/4	G1/4	300	366	130	51	80	45
FRLM17.../S	G1	G1/4	300	366	130	51	80	45

Precautions

1. Note the direction of flow before installation and connect piping accordingly.
2. Flush pipings for dirt, dust, rust and other foreign particles.
3. Install in clean atmosphere.
4. Nipples of taper threads (R) to be used with teflon tape. Ensure teflon tape doesn't enter the unit during tightening. Nipples of straight threads (G) to be used with sealing washer.
5. Polycarbonate bowls may get damaged and possibly fail if exposed to synthetic oils, thinner, solvents, trichloroethylene, kerosene or other aromatic hydrocarbons.

Pressure Setting

Pull the knob and adjust by turning the knob clockwise to increase the pressure. Push the knob back to its locked position. (Turning the knob counter clockwise will reduce the pressure)

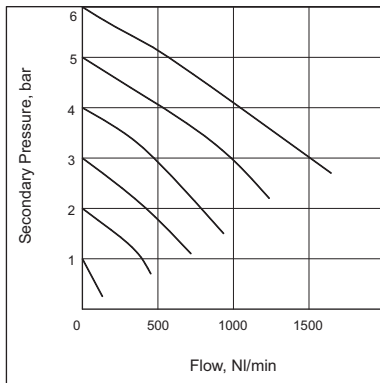
AIR PREPARATION UNITS

FRL MODULAR Series FRLM1

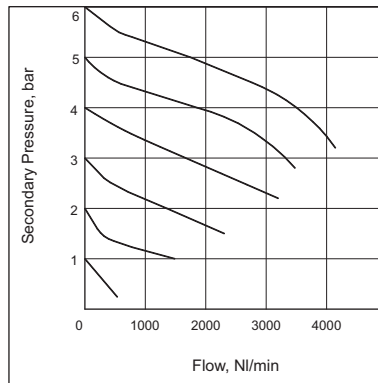
Cat No FRLM1...W - 01 - D

Flow Graphs

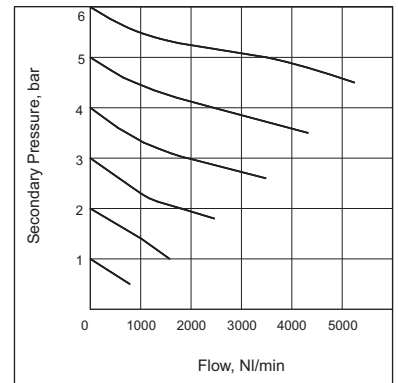
1/4" FRLM



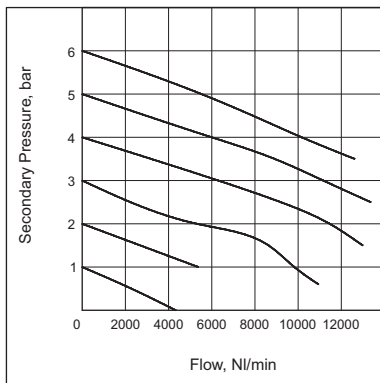
3/8" FRLM



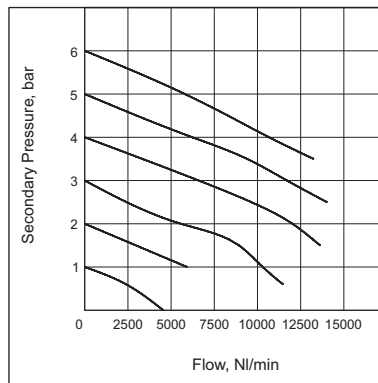
1/2" FRLM



3/4" FRLM



1" FRLM



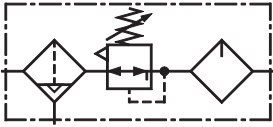
Flow graphs are for 40µm filtrations only

How to order

FRLM1	462	3	4	W
Body & Port size	Filteration in µm	Pressure range	Mounting	
361 G1/4	0 - 1	1 0.2 - 2 bar	W Wall mounting bracket	
462 G3/8	1 - 5	2 0.2 - 4 bar	S Spacer	
563 G1/2	2 - 25	3 0.5 - 7 bar		
764 G3/4	3 - 40 (Standard)	4 0.5 - 10 bar (Standard)		
765 G1	4 - 50			
	5 - 100			

Ordering example:

Filter Regulator Lubricator Modular - 3/8 (with G3/8 port size) and wall mounting bracket, with 5µm Filter and pressure range 0.5 - 7 bar: Ordering No : **FRLM146213 / W**



AIR PREPARATION UNITS

FRL MODULAR Series FRLM1A

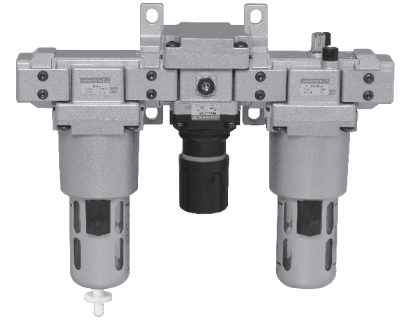
Cat No FRLM1A - 01 - B

FRL MODULAR WITH INTERNAL AUTODRAIN - 3/8, 1/2, 3/4, 1"

Individual Filter - Regulator combination & Lubricator units easily removable / mountable without disturbing the pipe line

Features

- Modular type for easy and fast maintenance
- Suitable for wall mounting
- Filter
 - Bronze filtering element
 - Separator and shield for efficient moisture separation
- Internal Autodrain - Float type, no electrical connections required
 - Manual drain is also provided / possible
 - Provision for drain tube connection, to take the condensate away from the unit, to keep the working area clean
- Regulator
 - Diaphragm operated, relieving type
 - Pressure compensated by balanced poppet
 - Flow compensated (with venturi) for faster response
 - Non raising 'Press to lock' adjusting knob for locking at any set pressure
- Lubricator
 - Fog / Mist type Lubricator
 - Fine adjustment of lubrication
 - Lubrication proportional to flow
- Steel bowl guard, bayonet type on FRLM14, FRLM15 & FRLM17 models
- Good flow and regulating characteristics



Technical Specifications

Model	FRLM14...A	FRLM15...A	FRLM17...A	FRLM17...A
Medium	Compressed air			
Port size	G3/8	G1/2	G3/4	G1
Pressure gauge port size	G1/8	G1/8	G1/4	G1/4
Flow rate [®] (lts / min)	2000	3500	3500	5000
Operating pressure (bar)	2 - 10			
Regulating pressure range [#] (bar)	0.2 - 2, 0.2 - 4, 0.5 - 7, 0.5 - 10 (Standard)			
Ambient temperature	+5° to +50° C			
Medium temperature	+5° to +50° C			
Filtration [#] (µm)	1, 5, 25, 40 (standard), 50, 100			
Min operating flow (lts / min)	40	45	50	50
Bowl capacity Filter (ml) (at maximum condensate level)	32	44	165	165
Bowl capacity Lubricator (ml) (at maximum oil level)	57	152	200	200
Recommended oil	ISO VG 32 (Servo System 32)			
Bowl material	Polycarbonate			
Installation	Any position for Regulator. Vertical for Filter and Lubricator			
Materials of construction	Aluminium, Bronze, Brass, Steel, Acetal, Polycarbonate, SS, Nitrile			
Optional accessories [*]	Pressure gauge			
Weight (Kg)	1.58	2.84	4.93	4.87

[®] Supply pressure 7 bar, Set pressure 6 bar, Pressure drop $\Delta p = 1$ bar (For standard models).

[#] For details see " How to order ".

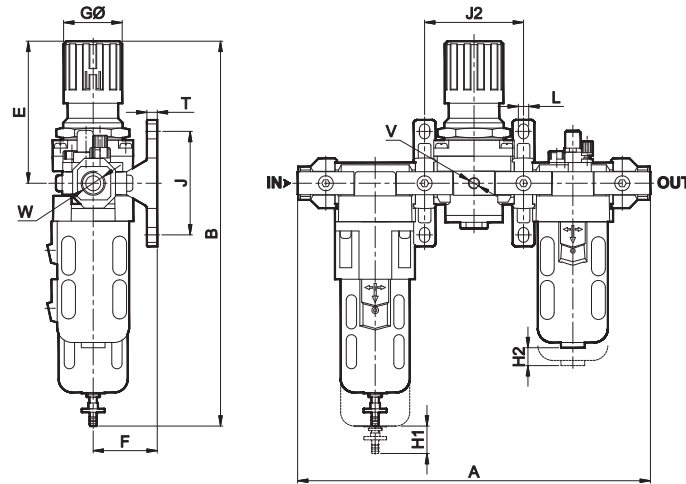
^{*} For details refer optional accessories Cat No APA - 01 - C

AIR PREPARATION UNITS

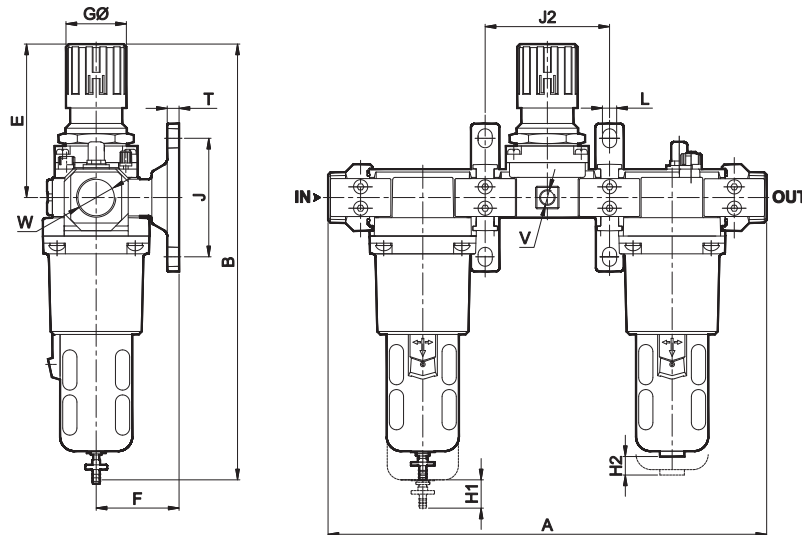
FRL MODULAR Series FRLM1A

Cat No FRLM1A - 01 - B

Model FRLM14...A, FRLM15...A



Model FRLM17...A



Model	W	V	A	B	E	F	GØ	J	L	T	J2	H1	H2
FRLM14...A	G3/8	G1/8	250	272	95	45	40	70	7	7	69	55	45
FRLM15...A	G1/2	G1/8	305	335	125	55	51	90	9	9	86	80	45
FRLM17...A	G3/4	G1/4	370	368	130	70	51	100	12	10	105	80	45
FRLM17...A	G1	G1/4	370	368	130	70	51	100	12	10	105	80	45

Precautions

1. Note the direction of flow before installation and connect piping accordingly.
2. Flush pipings for dirt, dust, rust and other foreign particles.
3. Install in clean atmosphere.
4. Nipples of taper threads (R) to be used with teflon tape. Ensure teflon tape doesnot enter the unit during tightening. Nipples of straight threads (G) to be used with sealing washer.
5. Polycarbonate bowls may get damaged and possibly fail if exposed to synthetic oils, thinner, solvents, trichloroethylene, kerosene or other aromatic hydrocarbons.

Pressure Setting

Pull the knob and adjust by turning the knob clockwise to increase the pressure. Push the knob back to its locked position. (Turning the knob counter clockwise will reduce the pressure)

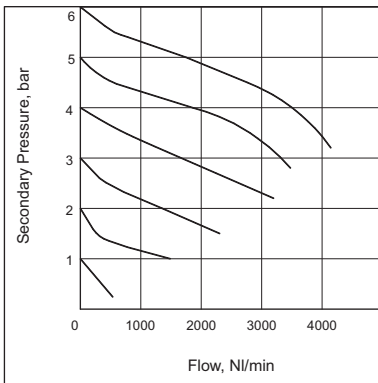
AIR PREPARATION UNITS

FRL MODULAR Series FRLM1A

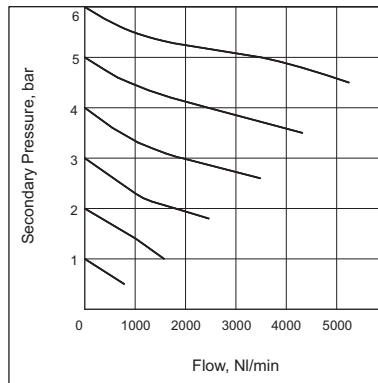
Cat No FRLM1A - 01 - B

Flow Graphs

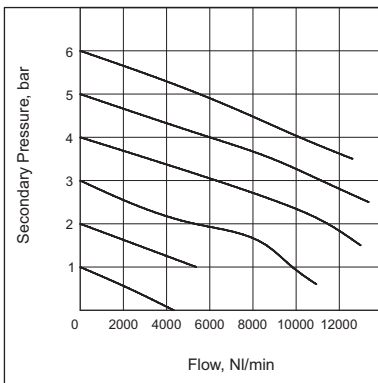
3/8" FRLM



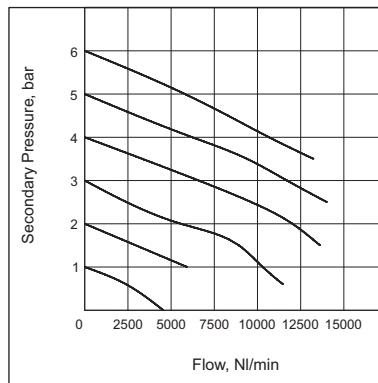
1/2" FRLM



3/4" FRLM



1" FRLM



Flow graphs are for 40µm filtrations only

How to order

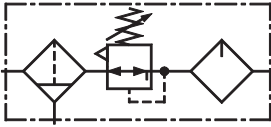
FRLM1 **462** **3** **4** — **A**

Body & Port size		Filtration in µm		Pressure range		Internal Autodrain
462	G3/8	0	- 1	1	0.2 - 2 bar	
563	G1/2	1	- 5	2	0.2 - 4 bar	
764	G3/4	2	- 25	3	0.5 - 7 bar	
765	G1	3	- 40 (Standard)	4	0.5 - 10 bar (Standard)	
		4	- 50			
		5	- 100			

Ordering example:

Filter Regulator Lubricator Modular - 3/8 (with G3/8 port size) with 5µm Filter and pressure range 0.5 - 7 bar with Internal Autodrain: Ordering No: **FRLM146213-A**

If ordered as 3/8 FRLM with Internal Autodrain, our standard model **FRLM146234-A**, with 40µm Filter and pressure range 0.5 - 10 bar with Internal Autodrain will be supplied.



AIR PREPARATION UNITS

FRL MODULAR WITH METALBOWL Series FRLM1-MM

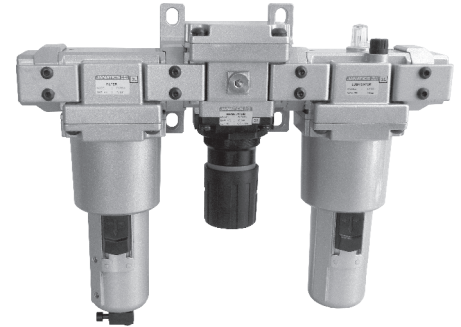
Cat No FRLM1-MM - 01 - 01 - A

FILTER - REGULATOR - LUBRICATOR, MODULAR - 1/4, 3/8, 1/2, 3/4, 1"

Individual Filter, Regulator & Lubricator units easily removable / mountable without disturbing the pipe line

Features

- ❑ For higher pressure range above 10 bar
- ❑ Modular type for easy and fast maintenance
- ❑ Suitable for wall mounting
- ❑ Filter
 - Bronze filtering element
 - Separator and shield for efficient moisture separation
 - Press type manual drain for easy operation
- ❑ Regulator - Diaphragm operated, relieving type
 - Pressure compensated by balanced poppet
 - Flow compensated (with venturi) in models FRLM14, FRLM15 and FRLM17 for faster response
 - Non raising 'Press to lock' adjusting knob for locking at any set pressure
- ❑ Lubricator - Fog / Mist type Lubricator
 - Fine adjustment of lubrication
 - Lubrication proportional to flow
- ❑ Metal bowl- Aluminium
 - Bayonet type on FRCLM17 models
 - Direct mounting type on FRLM13, FRLM14, FRLM15 models
- ❑ Good flow and regulating characteristics



Technical Specifications

Model	FRLM13 - MM	FRLM14 - MM	FRLM15 - MM	FRLM17 - MM	FRLM17 - MM
Medium	Compressed air				
Port size	G1/4	G3/8	G1/2	G3/4	G1
Pressure gauge port size	G1/8			G1/4	
Flow rate in NI / min @	500	2000	3500	3500	5000
Max supply pressure in bar	20				
Regulating Pressure Range in bar #	0.2 - 2, 0.2 - 4, 0.5 - 7, 0.5 - 10 (Standard)				
Ambient temperature	-10° to +60° C				
Medium temperature	+5° to +50° C				
Filtration in microns #	1, 5, 25, 40 (standard), 50, 100				
Min operating flow in NI / min	12	40	45	50	50
Bowl capacity Filter in ml (at maximum condensate level)	9	64	90	165	165
Bowl capacity Lubricator in ml (at maximum condensate level)	20	100	200	200	200
Recommended oil	ISO VG 32 (Servo System 32)				
Bowl material	Aluminium				
Installation	Any position for Regulator. Vertical for Filter and Lubricator				
Materials of construction	Aluminium, Bronze, Brass, Steel, Acetal, SS, Nitrile				
Optional accessories *	Pressure gauge				
Weight in Kg	0.73	1.50	2.94	5.03	4.97

@ Supply pressure 7 bar, Set pressure 6 bar, Pressure drop $\Delta p = 1$ bar (For standard models).

For details see " How to order ".

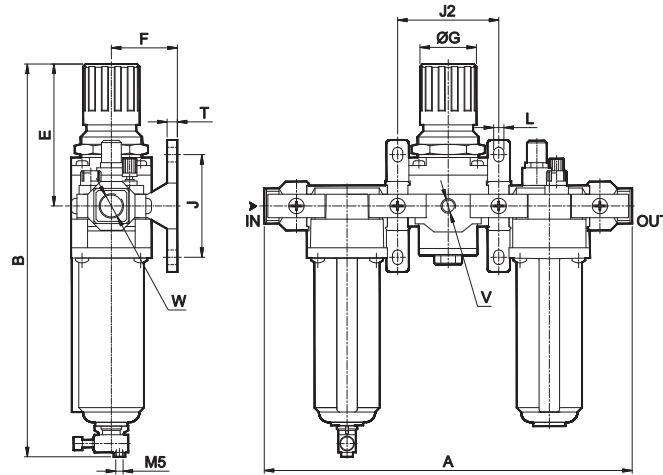
* For details refer optional accessories Cat No APA - 01 - C

AIR PREPARATION UNITS

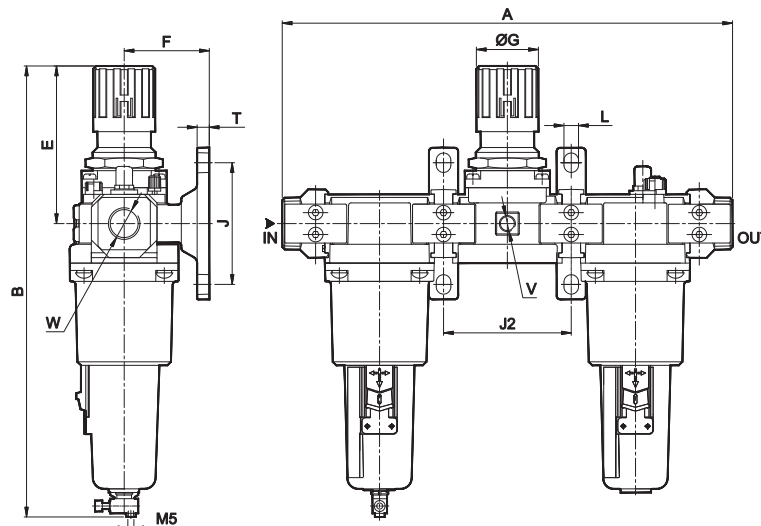
FRL MODULAR WITH METALBOWL Series FRLM1-MM

Cat No FRLM1-MM - 01 - 01 - A

Model FRLM13-MM, FRLM14-MM, FRLM15-MM



Model FRLM17-MM



Model	W	V	A	B	E	F	ØG	J	L	T	J2
FRLM13 - MM	G1/4	G1/8	200	170	68	35	28	50	7	7	52
FRLM14 - MM	G3/8	G1/8	250	270	95	45	40	70	7	7	69
FRLM15 - MM	G1/2	G1/8	305	328	125	55	51	90	9	9	86
FRLM17 - MM	G3/4	G1/4	370	366	130	70	51	100	12	10	105
FRLM17 - MM	G1	G1/4	370	366	130	70	51	100	12	10	105

Precautions

1. Note the direction of flow before installation and connect piping accordingly.
2. Flush pipings for dirt, dust, rust and other foreign particles.
3. Install in clean atmosphere.
4. Nipples of taper threads (R) to be used with teflon tape. Ensure teflon tape doesn't enter the unit during tightening. Nipples of straight threads (G) to be used with sealing washer.

Pressure Setting

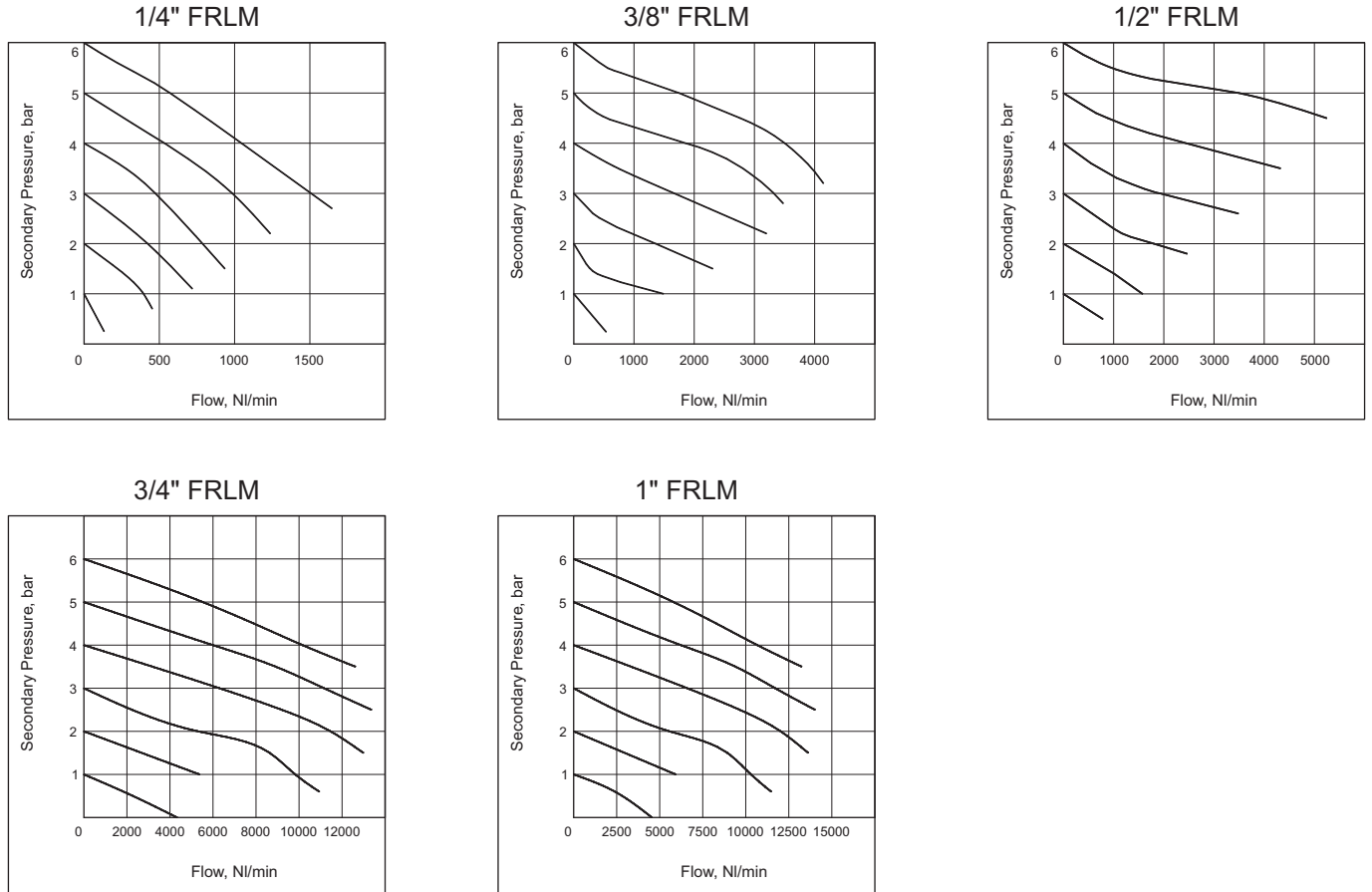
Pull the knob and adjust by turning the knob clockwise to increase the pressure. Push the knob back to its locked position. (Turning the knob counter clockwise will reduce the pressure)

AIR PREPARATION UNITS

FRL MODULAR WITH METALBOWL Series FRLM1-MM

Cat No FRLM1-MM - 01 - 01 - A

Flow Graphs



Flow graphs are for 40µm filtrations only

How to order

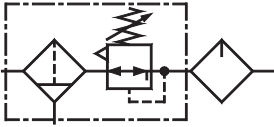
FRLM1	462	3	4	M	M
Body & Port size	Filtration in µm	Pressure range	Metal bowl	Drain arrangement	
361 G1/4	0 - 1	1 0.2 - 2 bar	M Without level indicator	M Manual drain (Standard)	
462 G3/8	1 - 5	2 0.2 - 4 bar	L# With level indicator		
563 G1/2	2 - 25	3 0.5 - 7 bar			
764 G3/4	3 - 40 (Standard)	4 0.5 - 10 bar (Standard)			
765 G1	4 - 50				
	5 - 100				

- Applicable for L14, L15, L17 models only.

Ordering example:

Filter Regulator Lubricator Modular - 3/8 size (with G3/8 port) with 5µm Filter and pressure range 0.5 - 7 bar, Metal bowl without level indicator and Manual drain : Ordering No : **FRLM 146213-MM**

If ordered as 3/8 FRLM, our standard model **FRLM 146234**, with 40µm Filter and pressure range 0.5 - 10 bar will be supplied.



AIR PREPARATION UNITS

FRCL MODULAR Series FRCLM1

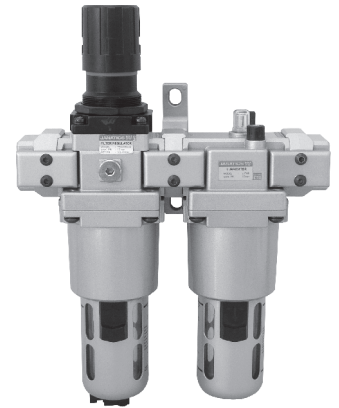
Cat No FRCLM1 - 01 - D

FILTER REGULATOR COMBINATION - LUBRICATOR, MODULAR - 1/4, 3/8, 1/2, 3/4, 1"

Individual Filter- Regulator combination & Lubricator units easily removable / mountable without disturbing the pipe line

Features

- Modular type for easy and fast maintenance
- Suitable for wall mounting
- Filter
 - Bronze filtering element
 - Separator and shield for efficient moisture separation
 - Press type manual drain for easy operation
- Regulator - Diaphragm operated, relieving type
 - Pressure compensated by balanced poppet
 - Flow compensated (with venturi) in models FRCLM14, FRCLM15 and FRCLM17 for faster response
 - Non raising 'Press to lock' adjusting knob for locking at any set pressure
- Lubricator - Fog / Mist type Lubricator
 - Fine adjustment of lubrication
 - Lubrication proportional to flow
- Steel bowl guard, bayonet type on FRCLM14, FRCLM15 & FRCLM17 models and threaded type on FRCLM13 model
- Good flow and regulating characteristics



Technical Specifications

Model	FRCLM 13	FRCLM 14	FRCLM 15	FRCLM 17	FRCLM 17
Medium	Compressed air				
Port size	G1/4	G3/8	G1/2	G3/4	G1
Pressure gauge port size	G1/8	G1/8	G1/8	G1/4	G1/4
Flow rate [@] (lts / min)	500	1250	2800	3500	4000
Maximum supply pressure (bar)	10				
Regulating pressure range [#] (bar)	0.2 - 2, 0.2 - 4, 0.5 - 7, 0.5 - 10 (Standard)				
Ambient temperature	-10° to +50° C				
Medium temperature	+5° to +50° C				
Filtration [#] (µm)	1, 5, 25, 40 (standard), 50, 100				
Min operating flow (lts / min)	12	40	45	50	50
Bowl capacity FRC (ml) (at maximum condensate level)	9	32	44	165	165
Bowl capacity Lubricator (ml) (at maximum oil level)	20	57	152	200	200
Recommended oil	ISO VG 32 (Servo System 32)				
Bowl material	Polycarbonate				
Installation	Vertical (as shown in the picture)				
Materials of construction	Aluminium, Bronze, Brass, Steel, Acetal, Polycarbonate, SS, Nitrile				
Optional accessories [*]	Pressure gauge				
Weight (Kg)	0.63	1.15	2.27	4.18	4.07

[@] Supply pressure 7 bar, Set pressure 6 bar, Pressure drop $\Delta p = 1$ bar (For standard models).

[#] For details see " How to order ".

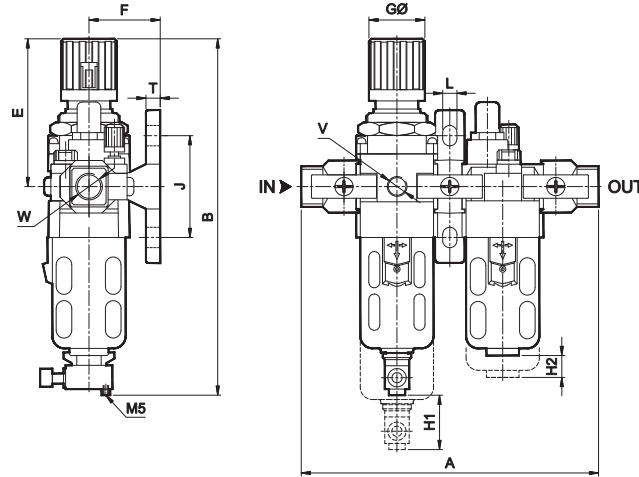
^{*} For details refer optional accessories Cat No APA - 01 - C

AIR PREPARATION UNITS

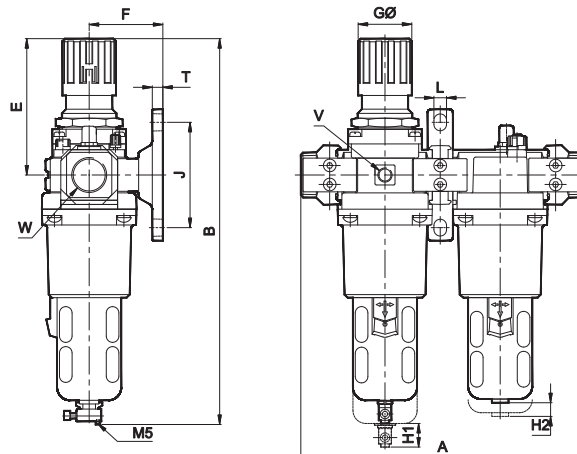
FRCL MODULAR Series FRCLM1

Cat No FRCLM1 - 01 - D

Model FRCLM1361, FRCLM1462, FRCLM1563



Model FRCLM1764, FRCLM1765



Model	W	V	A	B	E	F	GØ	J	L	T	H1	H2
FRCLM13	G1/4	G1/8	146	170	68	35	28	50	7	7	50	35
FRCLM14	G3/8	G1/8	182	220	95	45	40	70	7	7	55	45
FRCLM15	G1/2	G1/8	220	280	125	55	51	90	9	9	80	45
FRCLM17	G3/4	G1/4	270	370	130	70	51	100	12	10	80	45
FRCLM17	G1	G1/4	270	370	130	70	51	100	12	10	80	45

Precautions

1. Note the direction of flow before installation and connect piping accordingly.
2. Flush pipings for dirt, dust, rust and other foreign particles.
3. Install in clean atmosphere.
4. Nipples of taper threads (R) to be used with teflon tape. Ensure teflon tape doesnot enter the unit during tightening. Nipples of straight threads (G) to be used with sealing washer.
5. Polycarbonate bowls may get damaged and possibly fail if exposed to synthetic oils, thinner, solvents, trichloroethylene, kerosene or other aromatic hydrocarbons.

Pressure Setting

Pull the knob and adjust by turning the knob clockwise to increase the pressure. Push the knob back to its locked position. (Turning the knob counter clockwise will reduce the pressure)

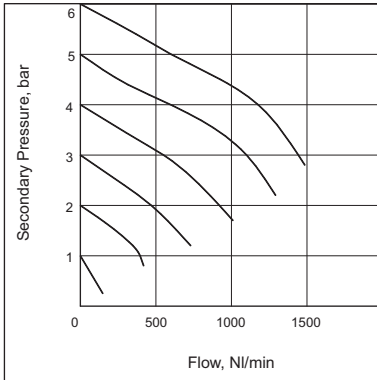
AIR PREPARATION UNITS

FRCL MODULAR Series FRCLM1

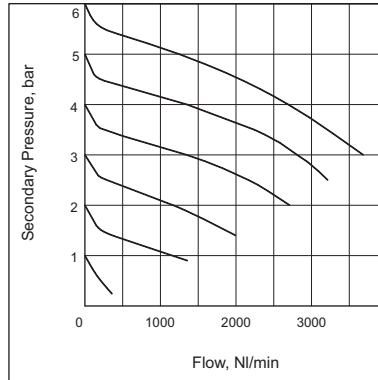
Cat No FRCLM1 - 01 - D

Flow Graphs

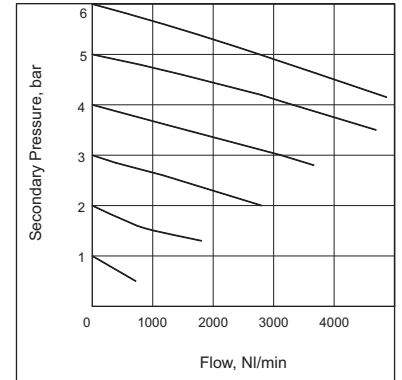
1/4" FRCLM



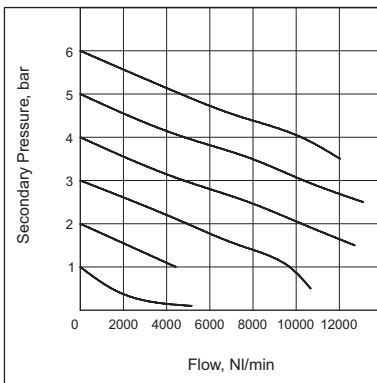
3/8" FRCLM



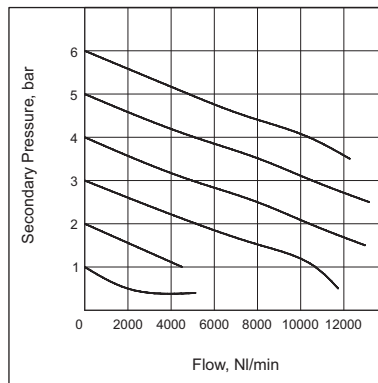
1/2" FRCLM



3/4" FRCLM



1" FRCLM



Flow graphs are for 40µm filtrations only

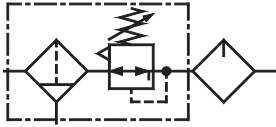
How to order

FRCLM1	462	3	4
Body & Port size		Filteration in µm	
361	G1/4	0	- 1
462	G3/8	1	- 5
563	G1/2	2	- 25
764	G3/4	3	- 40 (Standard)
765	G1	4	- 50
		5	- 100
Pressure range		1	0.2 - 2 bar
		2	0.2 - 4 bar
		3	0.5 - 7 bar
		4	0.5 - 10 bar (Standard)

Ordering example:

Filter Regulator Combination and Lubricator Modular - 3/8 size (with G3/8 port) with 5µm Filter and pressure range 0.5 - 7 bar : Ordering No : **FRCLM 146213**

If ordered as 3/8 FRCLM, our standard model **FRCLM 146234**, with 40µm Filter and pressure range 0.5 - 10 bar will be supplied.



AIR PREPARATION UNITS

FRCL MODULAR Series FRCLM1

Cat No FRCLM1 - 01 - D

FILTER REGULATOR COMBINATION - LUBRICATOR, MODULAR - 1/4, 3/8, 1/2, 3/4, 1"

Without piping adaptor and spacer

Features

- ❑ Modular type for easy and fast maintenance
- ❑ Suitable for wall mounting
- ❑ Filter
 - Bronze filtering element
 - Separator and shield for efficient moisture separation
 - Press type manual drain for easy operation
- ❑ Regulator
 - Diaphragm operated, relieving type
 - Pressure compensated by balanced poppet
 - Flow compensated (with venturi) in models FRCLM14, FRCLM15 and FRCLM17 for faster response
 - Non raising 'Press to lock' adjusting knob for locking at any set pressure
- ❑ Lubricator
 - Fog / Mist type Lubricator
 - Fine adjustment of lubrication
 - Lubrication proportional to flow
- ❑ Steel bowl guard, bayonet type on FRCLM14, FRCLM15 & FRCLM17 models and threaded type on FRCLM13 model
- ❑ Good flow and regulating characteristics

Model FRCLM1.../W



Model FRCLM1.../S



Technical Specifications

Model	FRCLM13.../W	FRCLM14.../W	FRCLM15.../W	FRCLM17.../W	FRCLM17.../W	
	FRCLM13.../S	FRCLM14.../S	FRCLM15.../W	FRCLM17.../W	FRCLM17.../W	
Medium	Compressed air					
Port size	G1/4	G3/8	G1/2	G3/4	G1	
Pressure gauge port size	G1/8	G1/8	G1/8	G1/4	G1/4	
Flow rate [®] (lts / min)	500	1250	2800	3500	4000	
Maximum supply pressure (bar)	10					
Regulating pressure range [#] (bar)	0.2 - 2, 0.2 - 4, 0.5 - 7, 0.5 - 10 (Standard)					
Ambient temperature	-10° to +50° C					
Medium temperature	+5° to +50° C					
Filtration [#] (µm)	1, 5, 25, 40 (standard), 50, 100					
Min operating flow (lts / min)	12	40	45	50	50	
Bowl capacity FRC (ml) (at maximum condensate level)	9	32	44	165	165	
Bowl capacity Lubricator (ml) (at maximum oil level)	20	57	152	200	200	
Recommended oil	ISO VG 32 (Servo System 32)					
Bowl material	Polycarbonate					
Installation	Vertical (as shown in the picture)					
Materials of construction	Aluminium, Bronze, Brass, Steel, Acetal, Polycarbonate, SS, Nitrile					
Optional accessories [*]	Pressure gauge					
Weight (Kg)	FRCLM1.../W	0.54	1.00	2.01	3.69	3.64
	FRCLM1.../S	0.51	0.95	1.92	3.55	3.49

[®] Supply pressure 7 bar, Set pressure 6 bar, Pressure drop $\Delta p = 1$ bar (For standard models).

[#] For details see " How to order ".

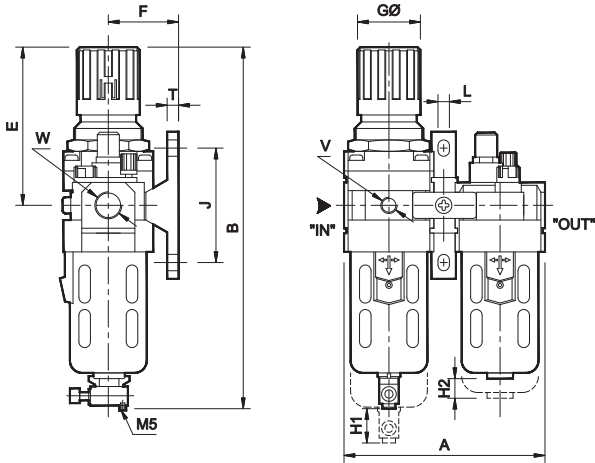
^{*} For details refer optional accessories Cat No APA - 01 - C

AIR PREPARATION UNITS

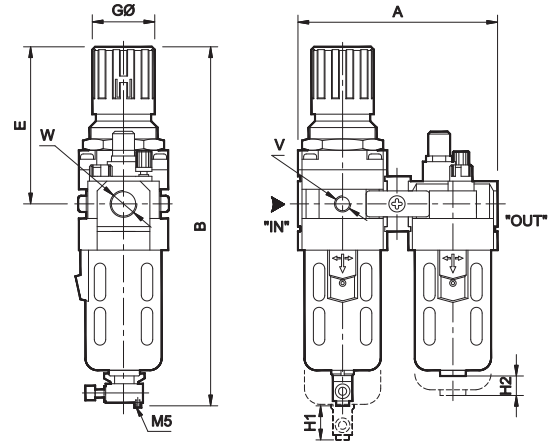
FRCL MODULAR Series FRCLM1

Cat No FRCLM1 - 01 - D

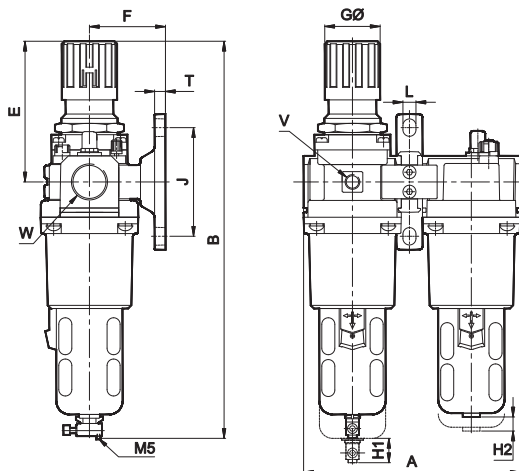
Model FRCLM13, 14, 15.../W



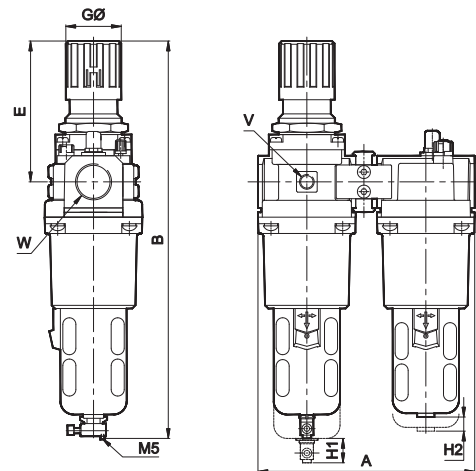
Model FRCLM13, 14, 15.../S



Model FRCLM17.../W



Model FRCLM17.../S



Model	W	V	A	B	E	F	GØ	J	L	T	H1	H2
FRCLM13.../W	G1/4	G1/8	92	170	68	35	28	50	7	7	50	35
FRCLM14.../W	G3/8	G1/8	124	220	95	45	40	70	7	7	55	45
FRCLM15.../W	G1/2	G1/8	156	280	125	55	51	90	9	9	80	45
FRCLM17.../W	G3/4	G1/4	200	370	130	70	51	100	12	10	80	45
FRCLM17.../W	G1	G1/4	200	370	130	70	51	100	12	10	80	45

Model	W	V	A	B	E	GØ	H1	H2
FRCLM13.../S	G1/4	G1/8	92	170	68	28	50	35
FRCLM14.../S	G3/8	G1/8	124	220	95	40	55	45
FRCLM15.../S	G1/2	G1/8	156	280	125	51	80	45
FRCLM17.../S	G3/4	G1/4	200	370	130	51	80	45
FRCLM17.../S	G1	G1/4	200	370	130	51	80	45

Precautions

- Note the direction of flow before installation and connect piping accordingly.
- Flush pipings for dirt, dust, rust and other foreign particles.
- Install in clean atmosphere.
- Nipples of taper threads (R) to be used with teflon tape. Ensure teflon tape doesn't enter the unit during tightening. Nipples of straight threads (G) to be used with sealing washer.
- Polycarbonate bowls may get damaged and possibly fail if exposed to synthetic oils, thinner, solvents, trichloroethylene, kerosene or other aromatic hydrocarbons.

Pressure Setting

Pull the knob and adjust by turning the knob clockwise to increase the pressure. Push the knob back to its locked position. (Turning the knob counter clockwise will reduce the pressure)

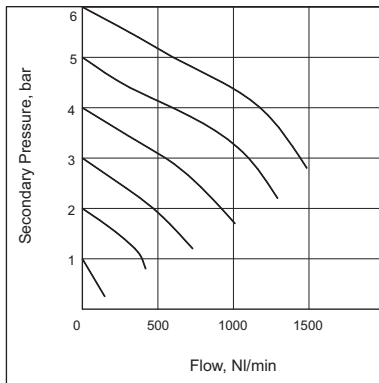
AIR PREPARATION UNITS

FRCL MODULAR Series FRCLM1

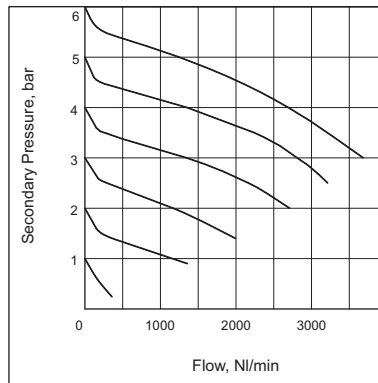
Cat No FRCLM1 - 01 - D

Flow Graphs

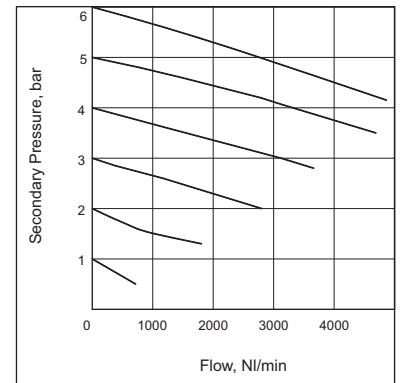
1/4" FRCLM



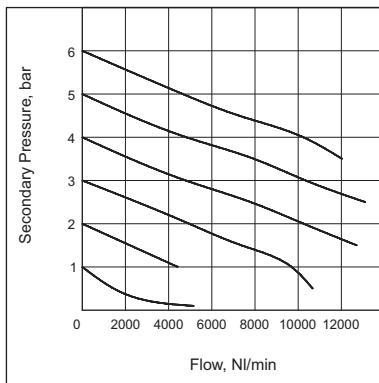
3/8" FRCLM



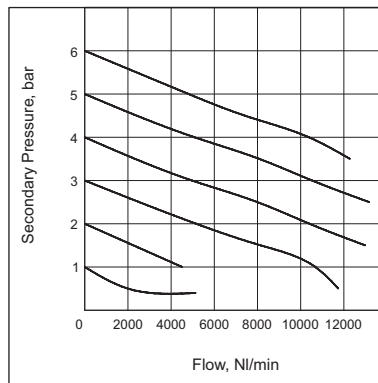
1/2" FRCLM



3/4" FRCLM



1" FRCLM



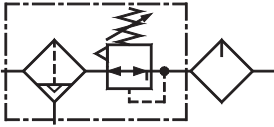
Flow graphs are for 40µm filtrations only

How to order

FRCLM1	462	3	4	/	W
Body & Port size		Filteration in µm		Pressure range	
361	G1/4	0	- 1	1	0.2 - 2 bar
462	G3/8	1	- 5	2	0.2 - 4 bar
563	G1/2	2	- 25	3	0.5 - 7 bar
764	G3/4	3	- 40 (Standard)	4	0.5 - 10 bar (Standard)
765	G1	4	- 50		
		5	- 100		
Mounting					
W	Wall mounting bracket				
S	Spacer				

Ordering example:

Filter Regulator Combination and Lubricator Modular - 3/8 size (with G3/8 port) and wall mounting bracket with 5µm Filter and pressure range 0.5 - 7 bar : Ordering No: **FRCLM146213/W**



AIR PREPARATION UNITS

FRCLM with Internal Autodrain Series FRCLM1A

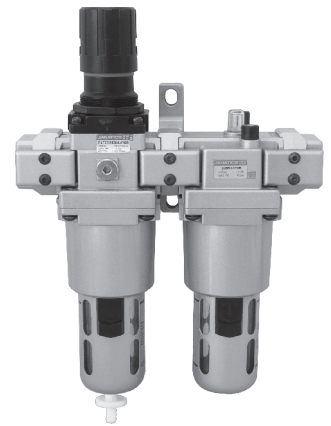
Cat No FRCLM1A - 01 - B

FRCL MODULAR WITH INTERNAL AUTODRAIN - 3/8, 1/2, 3/4, 1"

Individual Filter - Regulator Combination & Lubricator units easily removable / mountable without disturbing the pipe line

Features

- Modular type for easy and fast maintenance
- Suitable for wall mounting
- Filter
 - Bronze filtering element
 - Separator and shield for efficient moisture separation
- Internal Autodrain
 - Float type, no electrical connections required
 - Manual drain is also provided / possible
 - Provision for drain tube connection, to take the condensate away from the unit, to keep the working area clean
- Regulator
 - Diaphragm operated, relieving type
 - Pressure compensated by balanced poppet
 - Flow compensated (with venturi) for faster response
 - Non raising 'Press to lock' adjusting knob for locking at any set pressure
- Lubricator
 - Fog / Mist type Lubricator
 - Fine adjustment of lubrication
 - Lubrication proportional to flow
- Steel bowl guard, bayonet type on FRCLM14, FRCLM15 & FRCLM17 models
- Good flow and regulating characteristics



Technical Specifications

Model	FRCLM14...A	FRCLM15...A	FRCLM17...A	FRCLM17...A
Medium	Compressed air			
Port size	G3/8	G1/2	G3/4	G1
Pressure gauge port size	G1/8	G1/8	G1/4	G1/4
Flow rate [@] (lts / min)	1250	2800	3500	4000
Operating pressure (bar)	2 - 10			
Regulating pressure range [#] (bar)	0.2 - 2, 0.2 - 4, 0.5 - 7, 0.5 - 10 (Standard)			
Ambient temperature	+5° to +50° C			
Medium temperature	+5° to +50° C			
Filtration [#] (µm)	1, 5, 25, 40 (standard), 50, 100			
Min operating flow (lts / min)	40	45	50	50
Bowl capacity FRC (ml) (at maximum condensate level)	32	44	165	165
Bowl capacity Lubricator (ml) (at maximum oil level)	57	152	200	200
Recommended oil	ISO VG 32 (Servo System 32)			
Bowl material	Polycarbonate			
Installation	Vertical (as shown in the picture)			
Materials of construction	Aluminium, Bronze, Brass, Steel, Acetal, Polycarbonate, SS, Nitrile			
Optional accessories [*]	Pressure gauge			
Weight (Kg)	1.31	2.49	4.23	4.12

[@] Supply pressure 7 bar, Set pressure 6 bar, Pressure drop $\Delta p = 1$ bar (For standard models).

[#] For details see " How to order ".

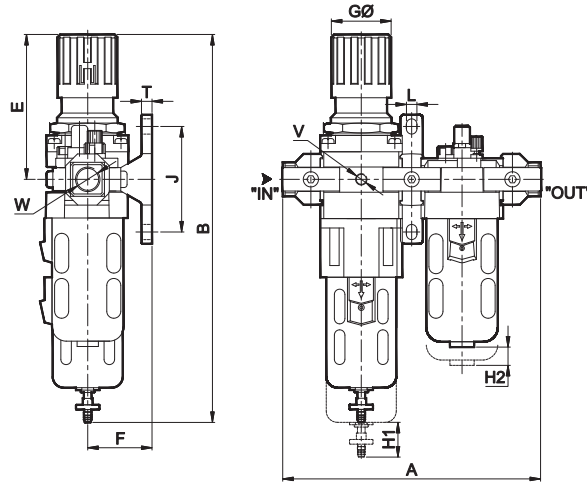
^{*} For details refer optional accessories Cat No APA - 01 - C

AIR PREPARATION UNITS

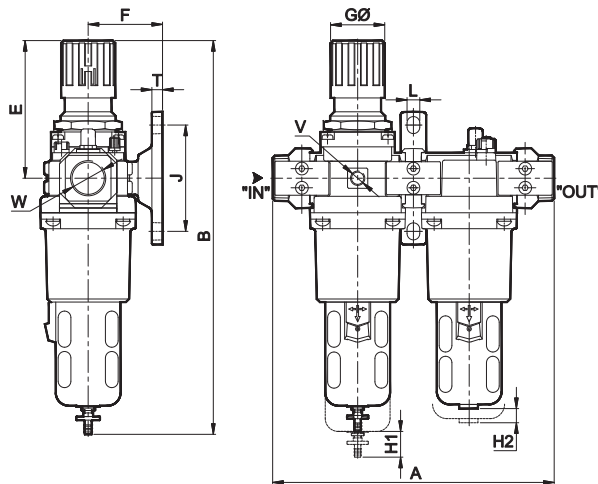
FRCLM with Internal Autodrain Series FRCLM1A

Cat No FRCLM1A - 01 - B

Model FRCLM14...-A, FRCLM15...-A



Model FRCLM17...-A



Model	W	V	A	B	E	F	GØ	J	L	T	H1	H2
FRCLM14...A	G3/8	G1/8	182	272	95	45	40	70	7	7	55	45
FRCLM15...A	G1/2	G1/8	220	335	125	55	51	90	9	9	80	45
FRCLM17...A	G3/4	G1/4	270	370	130	70	51	100	12	10	80	45
FRCLM17...A	G1	G1/4	270	370	130	70	51	100	12	10	80	45

Precautions

1. Note the direction of flow before installation and connect piping accordingly.
2. Flush pipings for dirt, dust, rust and other foreign particles.
3. Install in clean atmosphere.
4. Nipples of taper threads (R) to be used with teflon tape. Ensure teflon tape does not enter the unit during tightening. Nipples of straight threads (G) to be used with sealing washer.
5. Polycarbonate bowls may get damaged and possibly fail if exposed to synthetic oils, thinner, solvents, trichloroethylene, kerosene or other aromatic hydrocarbons.

Pressure Setting

Pull the knob and adjust by turning the knob clockwise to increase the pressure. Push the knob back to its locked position. (Turning the knob counter clockwise will reduce the pressure)

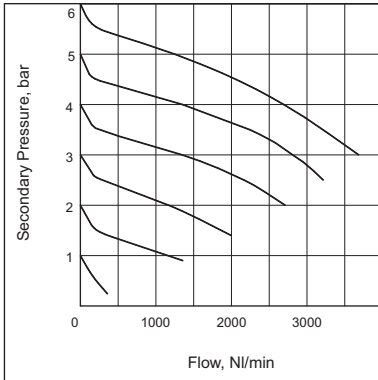
AIR PREPARATION UNITS

FRCLM with Internal Autodrain Series FRCLM1A

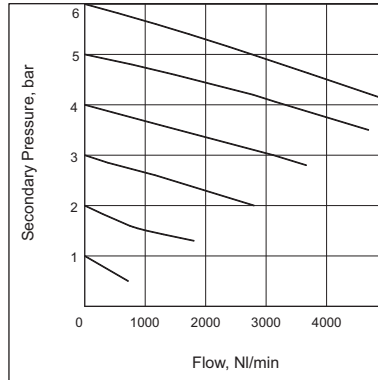
Cat No FRCLM1A - 01 - B

Flow Graphs

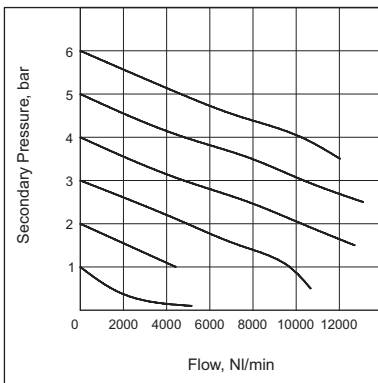
3/8" FRCLM



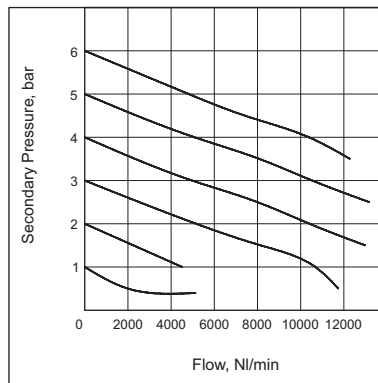
1/2" FRCLM



3/4" FRCLM



1" FRCLM



Flow graphs are for 40µm filtrations only

How to order

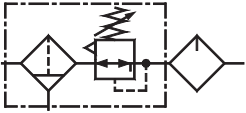
FRCLM1 **462** **3** **4** — **A**

Body & Port size		Filtration in µm		Pressure range		Internal Autodrain
462	G3/8	0	- 1	1	0.2 - 2 bar	Internal Autodrain
563	G1/2	1	- 5	2	0.2 - 4 bar	
764	G3/4	2	- 25	3	0.5 - 7 bar	
765	G1	3	- 40 (Standard)	4	0.5 - 10 bar (Standard)	
		4	- 50			
		5	- 100			

Ordering example:

Filter Regulator Combination and Lubricator Modular - 3/8 size (with G3/8 port) with 5µm Filter and pressure range 0.5 - 7 bar with Internal Autodrain : Ordering No : **FRCLM146213-A**

If ordered as 3/8 FRCLM with Internal Autodrain, our standard model **FRCLM146234-A**, with 40µm Filter and pressure range 0.5 - 10 bar with Internal Autodrain will be supplied.



AIR PREPARATION UNITS

FRCL MODULAR WITH METAL BOWL Series FRCLM1-MM

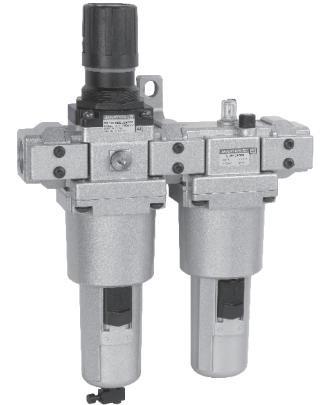
Cat No FRCLM1-MM - 01 - 01 - A

FILTER REGULATOR COMBINATION - LUBRICATOR, MODULAR - 1/4, 3/8, 1/2, 3/4, 1"

Individual Filter- Regulator combination & Lubricator units easily removable / mountable without disturbing the pipe line

Features

- ❑ For higher pressure range above 10 bar
- ❑ Modular type for easy and fast maintenance
- ❑ Suitable for wall mounting
- ❑ Filter
 - Bronze filtering element
 - Separator and shield for efficient moisture separation
 - Press type manual drain for easy operation
- ❑ Regulator
 - Diaphragm operated, relieving type
 - Pressure compensated by balanced poppet
 - Flow compensated (with venturi) in models FRCLM14, FRCLM15 and FRCLM17 for faster response
 - Non raising 'Press to lock' adjusting knob for locking at any set pressure
- ❑ Lubricator
 - Fog / Mist type Lubricator
 - Fine adjustment of lubrication
 - Lubrication proportional to flow
- ❑ Metal bowl- Aluminium
 - Bayonet type on FRCLM17 models
 - Direct mounting type on FRCLM13, FRCLM14, FRCLM15 models
- ❑ Good flow and regulating characteristics



Technical Specifications

Model	FRCLM13-MM	FRCLM14-MM	FRCLM15-MM	FRCLM17-MM	FRCLM17-MM
Medium	Compressed air				
Port size	G1/4	G3/8	G1/2	G3/4	G1
Pressure gauge port size	G1/8			G1/4	
Flow rate in lts / min @	500	1250	2800	3500	4000
Max supply pressure in bar	20				
Regulating pressure range in bar #	0.2 - 2, 0.2 - 4, 0.5 - 7, 0.5 - 10 (Standard)				
Ambient temperature	-10° to +60° C				
Medium temperature	+5° to 50° C				
Filtration in microns #	1, 5, 25, 40 (standard), 50, 100				
Min operating flow in NI / min	12	40	45	50	50
Bowl capacity FRC in ml (at maximum condensate level)	9	64	90	165	165
Bowl capacity Lubricator in ml (at maximum condensate level)	20	100	200	200	200
Recommended oil	ISO VG 32 (Servo System 32)				
Bowl material	Aluminium				
Installation	Vertical (as shown in the picture)				
Materials of construction	Aluminium, Bronze, Brass, Steel, Acetal, SS, Nitrile				
Optional accessories *	Pressure gauge				
Weight in Kg	0.64	1.27	2.56	4.28	4.17

@ Supply pressure 7 bar, Set pressure 6 bar, Pressure drop $\Delta p = 1$ bar (For standard models).

For details see " How to order ".

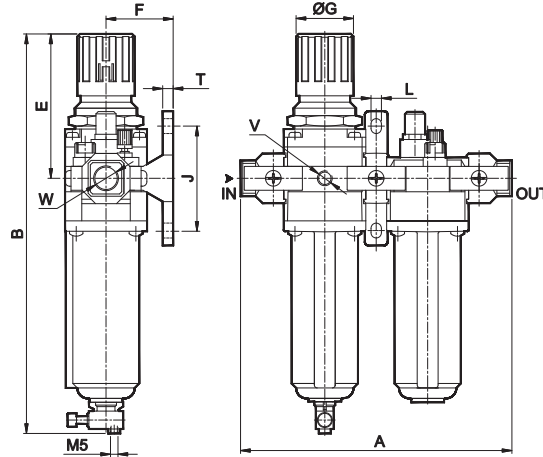
* For details refer optional accessories Cat No APA - 01 - C

AIR PREPARATION UNITS

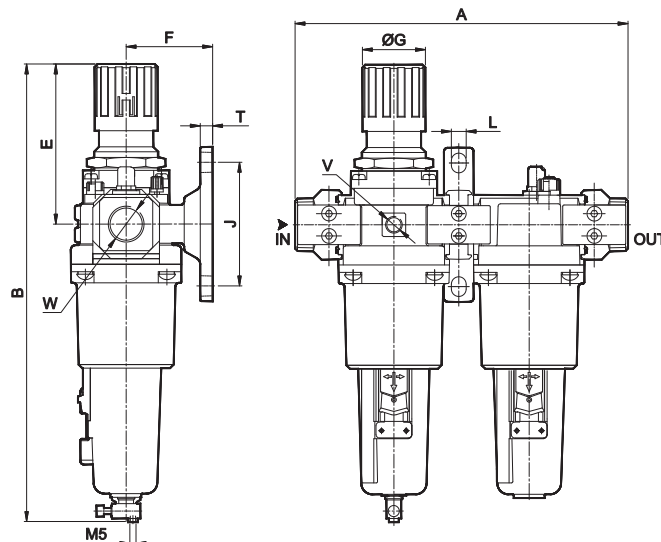
FRCL MODULAR WITH METAL BOWL Series FRCLM1-MM

Cat No FRCLM1-MM - 01 - 01 - A

Model FRCLM13-MM, FRCLM14-MM, FRCLM15-MM



Model FRCLM17-MM



Model	W	V	A	B	E	F	GØ	J	L	T
FRCLM13-MM	G1/4	G1/8	146	170	68	35	28	50	7	7
FRCLM14-MM	G3/8	G1/8	182	265	95	45	40	70	7	7
FRCLM15-MM	G1/2	G1/8	220	330	125	55	51	90	9	9
FRCLM17-MM	G3/4	G1/4	270	370	130	70	51	100	12	10
FRCLM17-MM	G1	G1/4	270	370	130	70	51	100	12	10

Precautions

1. Note the direction of flow before installation and connect piping accordingly.
2. Flush pipings for dirt, dust, rust and other foreign particles.
3. Install in clean atmosphere.
4. Nipples of taper threads (R) to be used with teflon tape. Ensure teflon tape doesnot enter the unit during tightening. Nipples of straight threads (G) to be used with sealing washer.

Pressure Setting

Pull the knob and adjust by turning the knob clockwise to increase the pressure. Push the knob back to its locked position. (Turning the knob counter clockwise will reduce the pressure)

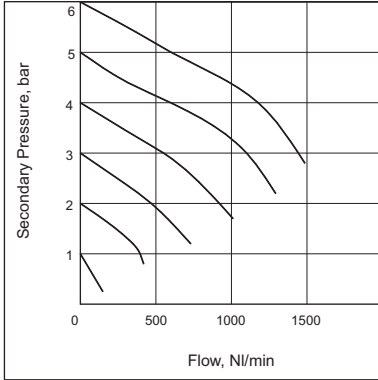
AIR PREPARATION UNITS

FRCL MODULAR WITH METAL BOWL Series FRCLM1-MM

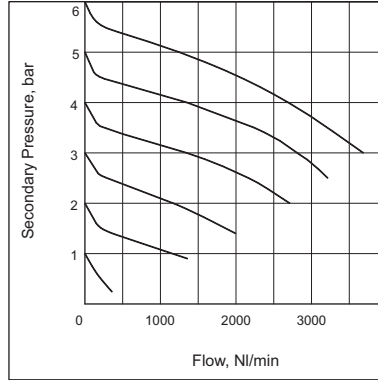
Cat No FRCLM1-MM - 01 - 01 - A

Flow Graphs

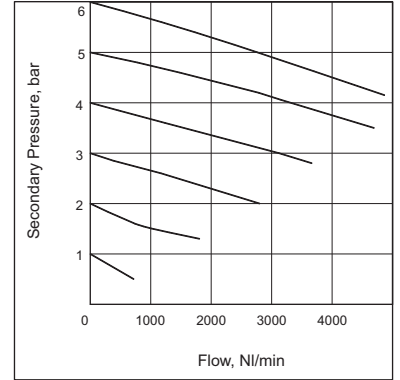
1/4" FRCLM



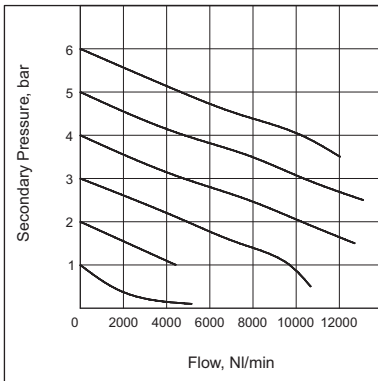
3/8" FRCLM



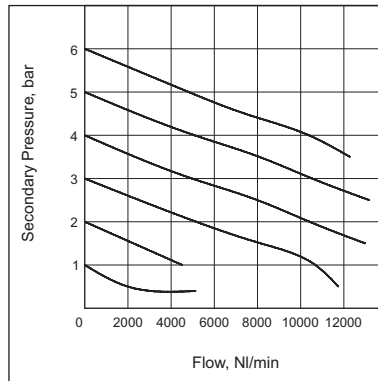
1/2" FRCLM



3/4" FRCLM



1" FRCLM



Flow graphs are for 40µm filtrations only

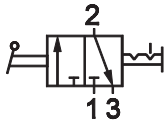
How to order

FRCLM1	462	3	4	—	M	M																																				
Body & Port size	Filtration in µm	Pressure range	Metal bowl	Drain arrangement																																						
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>361</td><td>G1/4</td></tr> <tr><td>462</td><td>G3/8</td></tr> <tr><td>563</td><td>G1/2</td></tr> <tr><td>764</td><td>G3/4</td></tr> <tr><td>765</td><td>G1</td></tr> </table>	361	G1/4	462	G3/8	563	G1/2	764	G3/4	765	G1	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>0</td><td>- 1</td></tr> <tr><td>1</td><td>- 5</td></tr> <tr><td>2</td><td>- 25</td></tr> <tr><td>3</td><td>- 40 (Standard)</td></tr> <tr><td>4</td><td>- 50</td></tr> <tr><td>5</td><td>- 100</td></tr> </table>	0	- 1	1	- 5	2	- 25	3	- 40 (Standard)	4	- 50	5	- 100	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>1</td><td>0.2 - 2 bar</td></tr> <tr><td>2</td><td>0.2 - 4 bar</td></tr> <tr><td>3</td><td>0.5 - 7 bar</td></tr> <tr><td>4</td><td>0.5 - 10 bar (Standard)</td></tr> </table>	1	0.2 - 2 bar	2	0.2 - 4 bar	3	0.5 - 7 bar	4	0.5 - 10 bar (Standard)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>M</td><td>Without level indicator</td></tr> <tr><td>L#</td><td>With level indicator</td></tr> </table>	M	Without level indicator	L#	With level indicator	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>M</td><td>Manual drain (Standard)</td></tr> </table>			M	Manual drain (Standard)
361	G1/4																																									
462	G3/8																																									
563	G1/2																																									
764	G3/4																																									
765	G1																																									
0	- 1																																									
1	- 5																																									
2	- 25																																									
3	- 40 (Standard)																																									
4	- 50																																									
5	- 100																																									
1	0.2 - 2 bar																																									
2	0.2 - 4 bar																																									
3	0.5 - 7 bar																																									
4	0.5 - 10 bar (Standard)																																									
M	Without level indicator																																									
L#	With level indicator																																									
M	Manual drain (Standard)																																									
# - Applicable for L14, L15, L17 models only.																																										

Ordering example:

Filter Regulator Combination and Lubricator Modular - 3/8 size (with G3/8 port) with 5µm Filter and pressure range 0.5 - 7 bar, Metal bowl without level indicator and Manual drain : Ordering No : **FRCLM 146213-MM**

If ordered as 3/8 FRCLM, our standard model **FRCLM 146234**, with 40µm Filter and pressure range 0.5 - 10 bar will be supplied.



SHUT OFF VALVE

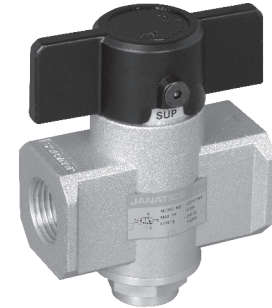
Series GS2

Cat No GS2 - 01 - 01

SHUT OFF VALVE - G1/4, G3/8, G1/2

Features

- Connecting thread at both ends
- Connection - G1/4, G3/8, G1/2
- Modular mounting with FRL



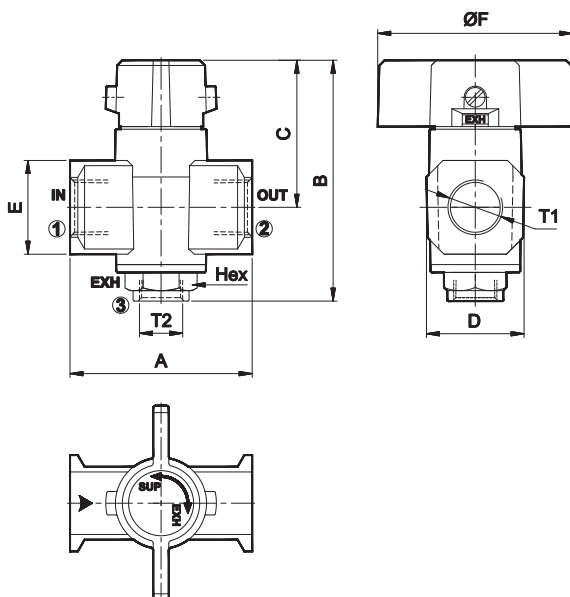
Function

- a. Opening and closing of airline with relieving of the down stream pressure.
- b. A window display to show the valve position when the valve is On condition (or) Exhaust condition.

Technical Specifications

Port size	G1/4	G3/8	G1/2	
Type	3/2			
Operating pressure range	0 - 10 bar			
Ambient Temperature	-10° to +60° C			
Medium Temperature	+5° to +50° C			
Flow @ (lpm)	1 → 2	1000	2200	3250
	2 → 3	450	1100	1600
Materials of construction	Aluminium, Brass, Nitrile			

® Inlet pressure 6 bar, and pressure drop 1 bar

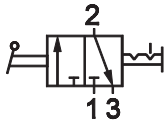


Sl. No	Ordering No.	T1	T2	Hex	A	B	C	D	E	ØF
1	GS245H61	G1/4	G1/8	17	45	73	43	28.5	22	40
2	GS246H62	G3/8	G1/4	19	55	85	52	32.5	28	55
3	GS247H63	G1/2	G3/8	24	70	94	56.5	37.5	36	75

How to Order

While ordering Shut off valve, mention the ordering number given in the corresponding tables.

Subject to change



SHUT OFF VALVE LOCKABLE

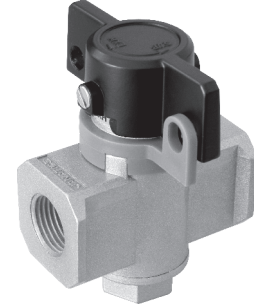
Series GS2

Cat No GS2 - 01 - 02

SHUT OFF VALVE LOCKABLE - G1/4, G3/8, G1/2

Features

- ❑ Modular mounting with FRL
- ❑ Port thread at both ends
- ❑ Sizes - G1/4, G3/8 & G1/2
- ❑ Window display to show the valve position (i.e.) the valve is in On condition or Off condition



Function

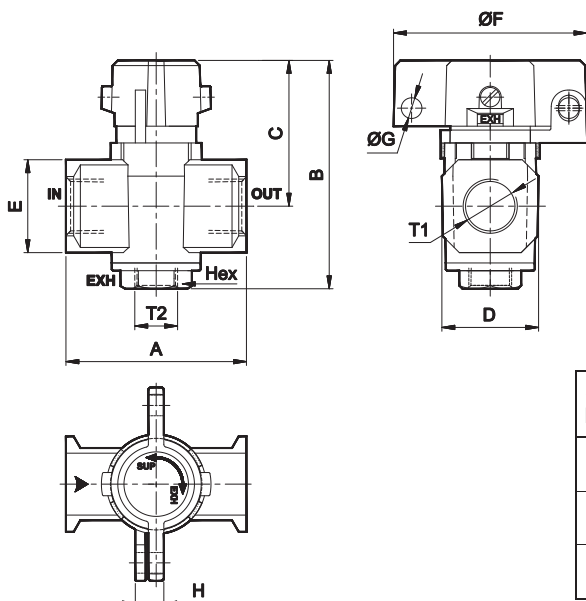
1. Opening and closing of airline with relieving of down stream pressure at closed condition.
2. The valve can be locked at the closing condition (Exhaust 2 → 3)

Technical Specifications

Model	GS245L61	GS246L62	GS247L63
Port size	G1/4	G3/8	G1/2
Type	3/2		
Operating pressure range	0 - 10 bar		
Ambient Temperature	-10° to +60° C		
Medium Temperature	+5° to +50° C		
Flow @ (lpm)	1 → 2	1000	2200
	2 → 3	450	1100
Materials of construction	Aluminium, Brass, Nitrile		

® Inlet pressure 6 bar, and pressure drop 1 bar

- Note :** 1. While connecting the valve check the direction of the air flow as per ►
2. 'Lock' - Not in the scope of supply.

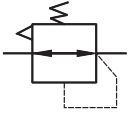


Sl. No	Ordering No.	T1	T2	Hex	A	B	C	D	E	ØF	ØG	H
1	GS245L61	G1/4	G1/8	17	45	73	43	28.5	22	40	3.5	8
2	GS246L62	G3/8	G1/4	19	55	85	52	32.5	28	55	6	11
3	GS247L63	G1/2	G3/8	24	70	94	56.5	37.5	36	75	8	11.5

How to Order

While ordering Shut off valve lockable, mention the ordering number given in the corresponding tables.

Subject to change



AIR PREPARATION UNITS

PRECISION REGULATOR - 1/8 & 1/4 Series PR

Cat No PR - 01 - 01 - B

PRECISION REGULATOR - 1/8 & 1/4

Features

- ❑ Precise pressure control
- ❑ Characteristics such as flow characteristic, pressure characteristic and repeatability are superior compared with standard regulators
- ❑ Excellent relief flow characteristic is available
- ❑ Suitable for Panel & Modular mountings
- ❑ Diaphragm operated, relieving type (Exhaust)
- ❑ Clamp and pressure gauge can be mounted either in the front or the back
- ❑ Can be assembled with F13, FRC13, FS13 & L13 series of products



Applications

Some of the applications of precision regulator,

1. Manufacturers of air gauging equipment,
2. Medical equipments,
3. Leak testing equipment,
4. Polishing machinery,
5. Web tensioning,
6. Measuring machines,
7. Ink or paint, Robotics spraying systems,
8. Tank blanketing and many...

Technical Specifications

Model	PR13601	PR13611	PR13602	PR13612	PR13603	PR13613
Port size	G1/8	G1/4	G1/8	G1/4	G1/8	G1/4
Pressure gauge port size	G1/8					
Medium	Compressed, Filtered, Non lubricated air					
Maximum supply pressure ¹ (bar)	10					
Minimum supply pressure (bar)	Set pressure +0.5					
Regulating pressure range (bar)	0.05 - 2		0.1 - 4		0.1 - 8	
Sensitivity	Within 0.2% of full span ²					
Repeatability	Within ±0.5% of full span ²					
Air consumption (lts / min) ³	6					
Flow * (lts / min)	Refer graph					
Ambient temperature	-10° to +60° C					
Medium temperature	+5° to +50° C					
Materials of construction	Aluminium, SS, Brass, Celcon, Steel, NBR					
Weight (Kg)	G1/8 - 0.360, G1/4 - 0.490					

1 - With the condition of no flow on the outlet side. The minimum differential pressure from setting pressure should be always +0.5 bar.

2 - Full span - Maximum setting pressure of the product.

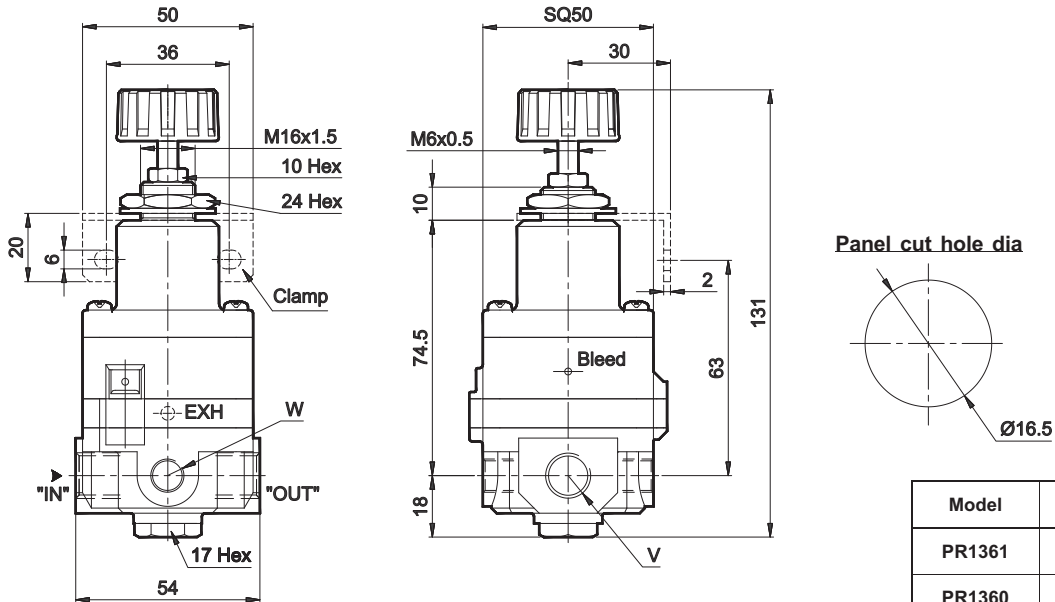
3 - Supply pressure 10 bar. Air is being exhausted to the atmosphere.

AIR PREPARATION UNITS

PRECISION REGULATOR - 1/8 & 1/4 Series PR

Cat No PR - 01 - 01 - B

Dimension



Accessories

CLAMP	PRESSURE GAUGE										
<p>Ordering No. A2C05</p>	<table border="1"> <thead> <tr> <th>Pressure range bar</th> <th>Ordering No.</th> </tr> </thead> <tbody> <tr> <td>0 - 4</td> <td>A2PG04</td> </tr> <tr> <td>0 - 6</td> <td>A2PG06</td> </tr> <tr> <td>0 - 8</td> <td>A2PG08</td> </tr> <tr> <td>0 - 16</td> <td>A2PG16</td> </tr> </tbody> </table>	Pressure range bar	Ordering No.	0 - 4	A2PG04	0 - 6	A2PG06	0 - 8	A2PG08	0 - 16	A2PG16
Pressure range bar	Ordering No.										
0 - 4	A2PG04										
0 - 6	A2PG06										
0 - 8	A2PG08										
0 - 16	A2PG16										

How to order : Mention the ordering number required

Example : Clamp - Ordering no : **A2C05**

Precautions

1. If the supply pressure line contains drainage or dirt, etc., the disc can become clogged leading to malfunction, and therefore, in addition to an air filter be sure to use a mist separator.
2. Never use a lubricator on the supply side of the regulator, as this will positively cause the disc to become clogged and lead to malfunction. If lubrication is required for terminal devices, connect a lubricator on the output side of the regulator.
3. Do not use a precision regulator outside the range of its specifications as this can cause failure. (Refer to technical specifications)
4. When mounting is performed, make connections while confirming port indications.
5. Air is normally released from the bleed hole (the hole on the side of the body's mid-section). This is necessary consumption of air based on the construction of the precision regulator, and is not an abnormality.
6. Make sure to tighten the lock nut after pressure adjustment.

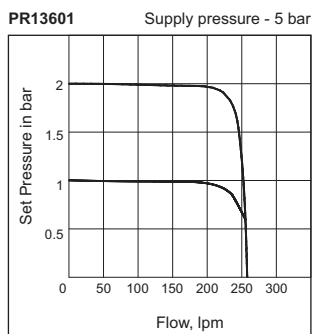
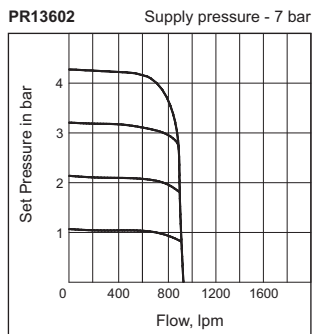
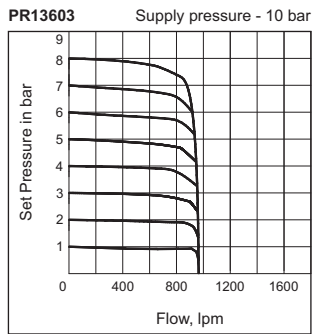
AIR PREPARATION UNITS

PRECISION REGULATOR - 1/8 & 1/4 Series PR

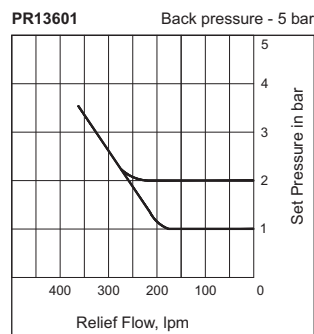
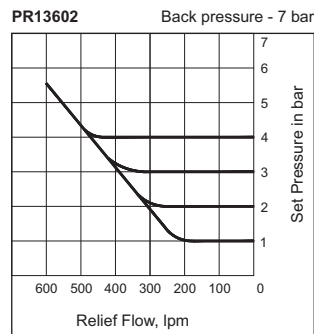
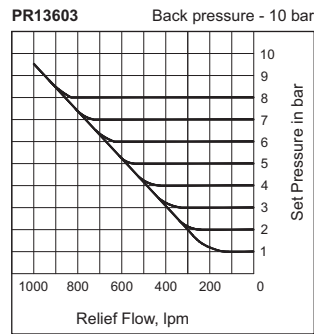
Cat No PR - 01 - 01 - B

Flow Graphs - 1/8

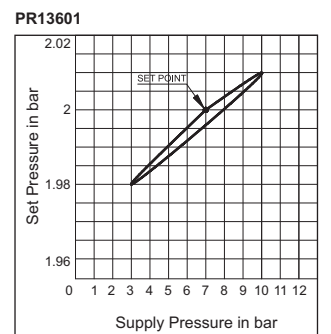
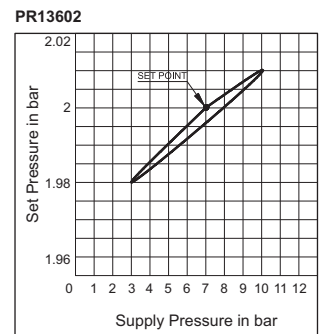
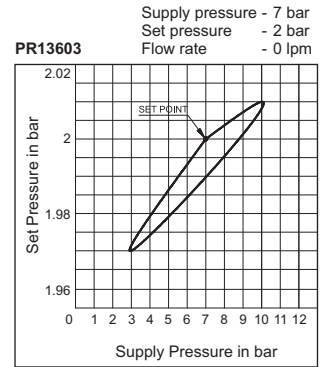
Flow Characteristics



Relief Characteristics



Pressure Characteristics

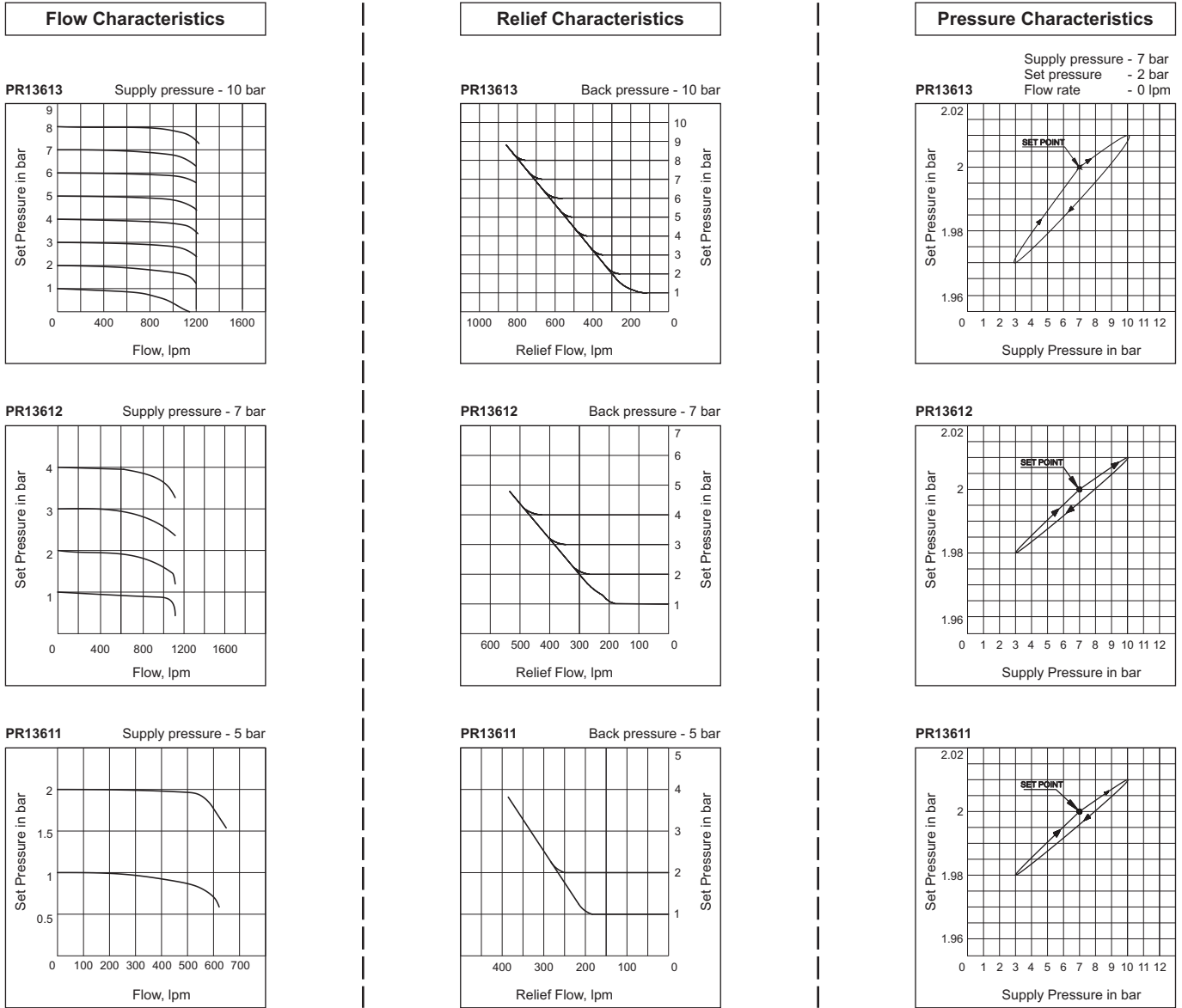


AIR PREPARATION UNITS

PRECISION REGULATOR - 1/8 & 1/4 Series PR

Cat No PR - 01 - 01 - B

Flow Graphs - 1/4

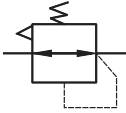


How to order

PR1	361	3
Body & Port size		Pressure range
361	G1/4	1 0.05 to 2 bar
360	G1/8	2 0.1 to 4 bar
		3 0.1 to 8 bar

Ordering example:

Precision Regulator - 1/4 size (with G1/4 port), with pressure range 0.1 - 8 bar: Ordering No: **PR13613**



AIR PREPARATION UNITS

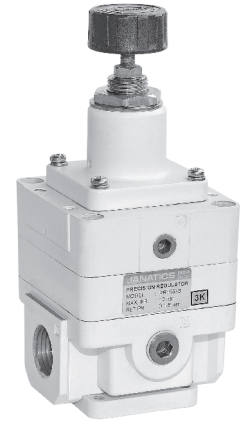
PRECISION REGULATOR - 1/2 Series PR

Cat No PR - 01 - 02

PRECISION REGULATOR - 1/2

Features

- Precise pressure control
- Characteristics such as flow characteristic, pressure characteristic and repeatability are superior compared with standard regulators
- Excellent relief flow characteristic is available
- Suitable for Panel & Modular mountings
- Diaphragm operated, relieving type (Exhaust)
- Clamp and pressure gauge can be mounted either in the front or the back
- Can be assembled with F15, FRC15, FS15 & L15 series of products



Applications

Some of the applications of precision regulator,

1. Air gauging equipment
2. Medical equipments
3. Leak testing equipment
4. Polishing machinery
5. Web tensioning
6. Measuring machines
7. Ink or paint, Robotics spraying systems
8. Tank blanketing and many...

Technical Specifications

Model	PR15631	PR15632	PR15633
Port size	G1/2		
Pressure gauge port size	G1/8 & G1/4		
Medium	Compressed, Filtered, Non lubricated air		
Maximum supply pressure (bar)	10		
Minimum supply pressure ¹ (bar)	Set pressure +1		
Regulating pressure range (bar)	0.1 - 2	0.1 - 4	0.1 - 8
Sensitivity	Within 0.2% of full span ²		
Repeatability	Within ±0.5% of full span ²		
Air consumption ³	a) Bleed hole - 9.5 lts / min (Supply pressure - 10 bar), b) Exhaust port - 2 lts / min (at maximum set pressure)		
Flow (lts / min)	Refer graph		
Ambient temperature	-10° to +60° C		
Medium temperature	+5° to +50° C		
Materials of construction	Aluminium, SS, Brass, Celcon, Steel, NBR		
Weight (Kg)	0.800		

1 - With the condition of no flow on the outlet side. The minimum differential pressure from setting pressure should be always +1 bar.

2 - Full span - Maximum setting pressure of the product.

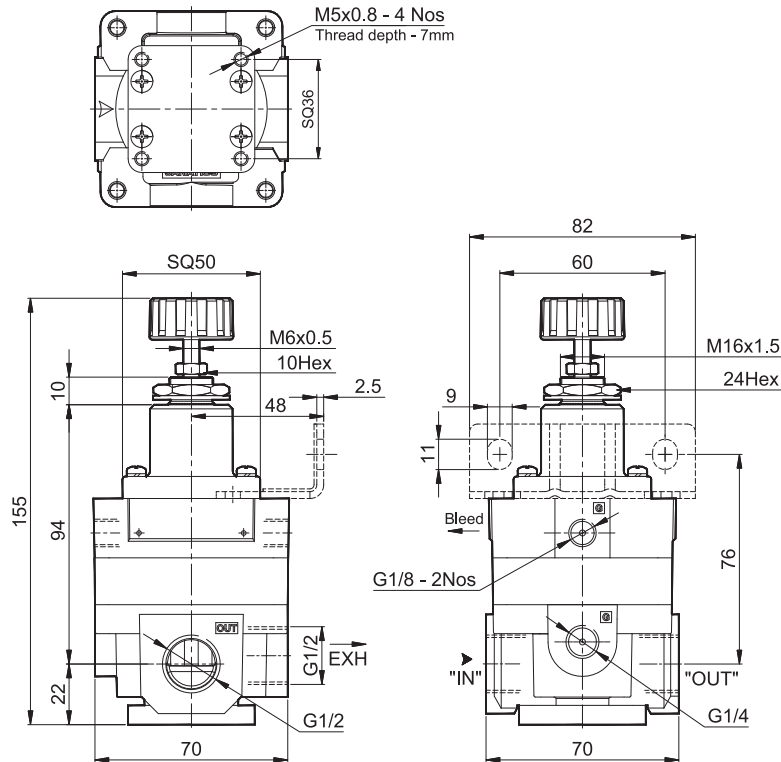
3 - Air is being exhausted to the atmosphere.

AIR PREPARATION UNITS

PRECISION REGULATOR - 1/2 Series PR

Cat No PR - 01 - 02

Dimension



Accessories

CLAMP	PRESSURE GAUGE										
<p>Ordering No. A2C06</p>	<table border="1"> <thead> <tr> <th>Pressure range bar</th> <th>Ordering No.</th> </tr> </thead> <tbody> <tr> <td>0 - 4</td> <td>A2PG04</td> </tr> <tr> <td>0 - 6</td> <td>A2PG06</td> </tr> <tr> <td>0 - 8</td> <td>A2PG08</td> </tr> <tr> <td>0 - 16</td> <td>A2PG16</td> </tr> </tbody> </table>	Pressure range bar	Ordering No.	0 - 4	A2PG04	0 - 6	A2PG06	0 - 8	A2PG08	0 - 16	A2PG16
Pressure range bar	Ordering No.										
0 - 4	A2PG04										
0 - 6	A2PG06										
0 - 8	A2PG08										
0 - 16	A2PG16										

How to order : Mention the ordering number required, Example :- Clamp - Ordering no : **A2C06**

Precautions

- If the supply pressure line contains drainage or dirt, etc., the disc can become clogged leading to malfunction, and therefore, in addition to an air filter be sure to use a mist separator.
- Never use a lubricator on the supply side of the regulator, as this will positively cause the disc to become clogged and lead to malfunction. If lubrication is required for terminal devices, connect a lubricator on the output side of the regulator.
- Do not use a precision regulator outside the range of its specifications as this can cause failure. (Refer to technical specifications)
- When mounting is performed, make connections while confirming port indications.
- Air is normally released from the bleed hole. This is a necessary consumption of air based on the construction of the precision regulator, and is not an abnormality.
- Make sure to tighten the lock nut after pressure adjustment.
- The supply pressure is relatively high (approx. 5bar or more), the set pressure is low (approx. 1bar or less), and when operated with the output side released to the atmosphere, there may be pulsations in the setting side pressure. In this kind of situation, operate with the supply pressure reduced as much as possible, or increase the set pressure somewhat and restrict the output line.
- The capacity of the output side is large, and when used for the purpose of a relief function, the exhaust sound will be loud when being relieved. Therefore, operate with a silencer mounted on the exhaust port (EXH port). The connection is G1/2.

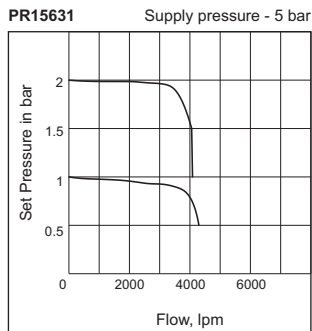
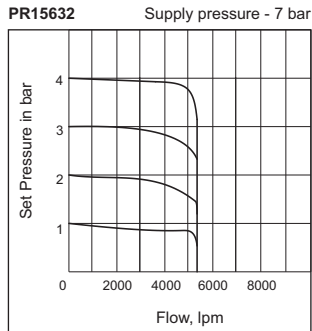
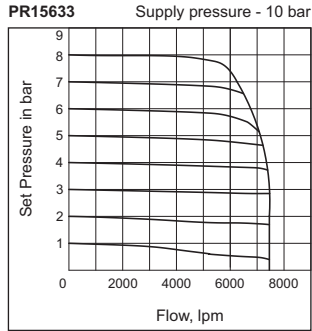
AIR PREPARATION UNITS

PRECISION REGULATOR - 1/2 Series PR

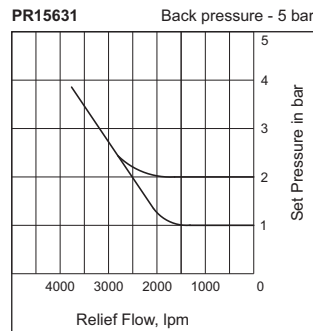
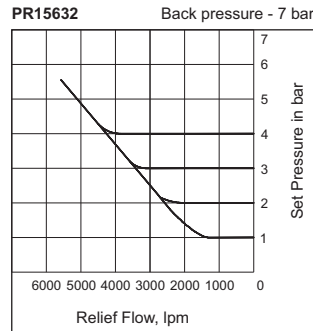
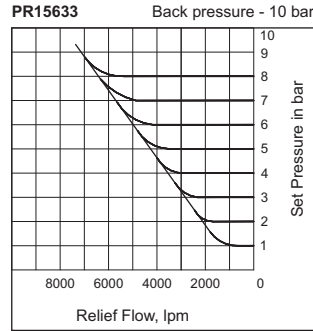
Cat No PR - 01 - 02

Flow Graphs - 1/2

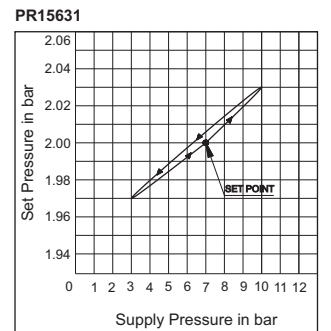
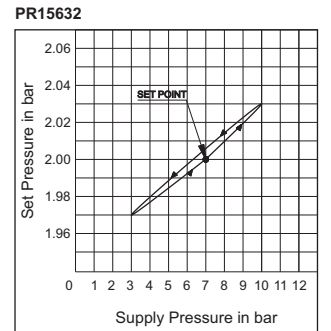
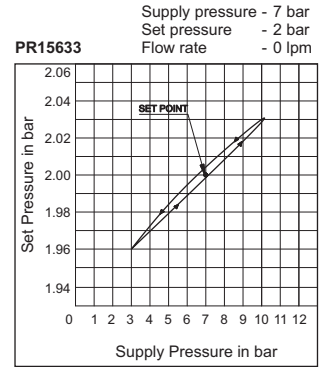
Flow Characteristics



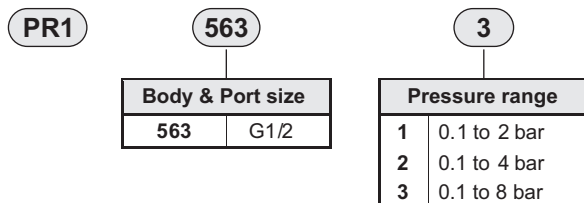
Relief Characteristics



Pressure Characteristics



How to order



Ordering example:

Precision Regulator - 1/2 size (with G1/2 port), with pressure range 0.1 to 8 bar - Ordering No: **PR15633**

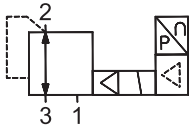
Proportional Pressure Regulator

Series : PPR

Sizes : G1/4, G3/8, G1/2



- Suitable for standalone and modular mounting
- Set pressure 0.05 to 10, 6, 2.5 and 1 bar
- Straight and Right angle cable options
- Accessories



AIR PREPARATION UNITS

PROPORTIONAL PRESSURE REGULATOR Series PPR

Cat No PPR - 01 - 01 - D

PROPORTIONAL PRESSURE REGULATOR - G1/4, G3/8, G1/2

Features

- LED display for monitoring output pressure
- Fast response
- High flow rate
- Output pressure is maintained in the event of power loss
- IP65 class protection
- Compact and lightweight
- Suitable for standalone and modular mounting
- Straight and right angle cable options available



Application

- Tension control applications
- Glue proportioning
- Spot welding
- Control of speed, force and torque
- Zero weighing balancer
- Position control
- Fluid coating and many...

Technical Specifications

Model	PPR156.....		PPR146.....	
Port size	G1/2		G1/4, G3/8	
Medium	Compressed air, Filtered #			
Minimum supply pressure (bar)	Regulated pressure +0.5 to 1 bar			
Maximum supply pressure (bar)	10.5	7	3.5	2
Regulating pressure range (bar)	0.05 - 10.0 (Standard)	0.05 - 6.00	0.05 - 2.5	0.05 - 1
Power Supply	Voltage	24V DC \pm 10 %		
	Power consumption	3 Watts		
	Current consumption	0.125A at 24V DC		
Command Signal	Potentiometer mode (only in voltage analog input model)		Analog Input through potentiometer (Load Impedance >10k Ω)	
	Keyboard mode		Input through keys	
	Analog input	Voltage	0 - 10V (Load impedance 10 k Ω)	
			0 - 5V (Load impedance 10 k Ω)	
		Current	4 - 20mA (Load impedance < 270 Ω)	
0 - 20mA (Load impedance < 270 Ω)				
Monitoring output	Analog output	Voltage	0.2 - 4.7V DC (output impedance 10 k Ω), output accuracy \pm 3% of full span	
		Voltage	1 - 5V DC (output impedance 10 k Ω), output accuracy \pm 3% of full span	
		Voltage	0 - 10V DC (output impedance 10 k Ω), output accuracy \pm 3% of full span	
		Current	4 - 20mA DC (output impedance 250 Ω), output accuracy \pm 3% of full span	
Linearity	\pm 1% of full span or less			
Hysteresis	0.5% of full span or less			
Repeatability	\pm 0.5% of full span or less			
Sensitivity	0.2% of full span or less			
Output pressure Display	Accuracy	\pm 2% of F.S. \pm 1 Digit or less		
	Minimum Unit	0.01 bar, 1 psi, 0.01 kgf/cm ²		
Flow @ (ltrs/min)	7000		2250	
Ambient / Medium temperature	0° to 50° C			
Enclosure (Class protection)	IP 65			
Weight (kg)	0.750		0.560	

@ Supply pressure 10.5 bar, Set pressure 6 bar, Pressure drop $\Delta p = 1$ bar (For standard models).

Use a Filter (5 micron) and a Mist separator (0.01 micron) at the inlet.

AIR PREPARATION UNITS

PROPORTIONAL PRESSURE REGULATOR Series PPR

Cat No PPR - 01 - 01 - D

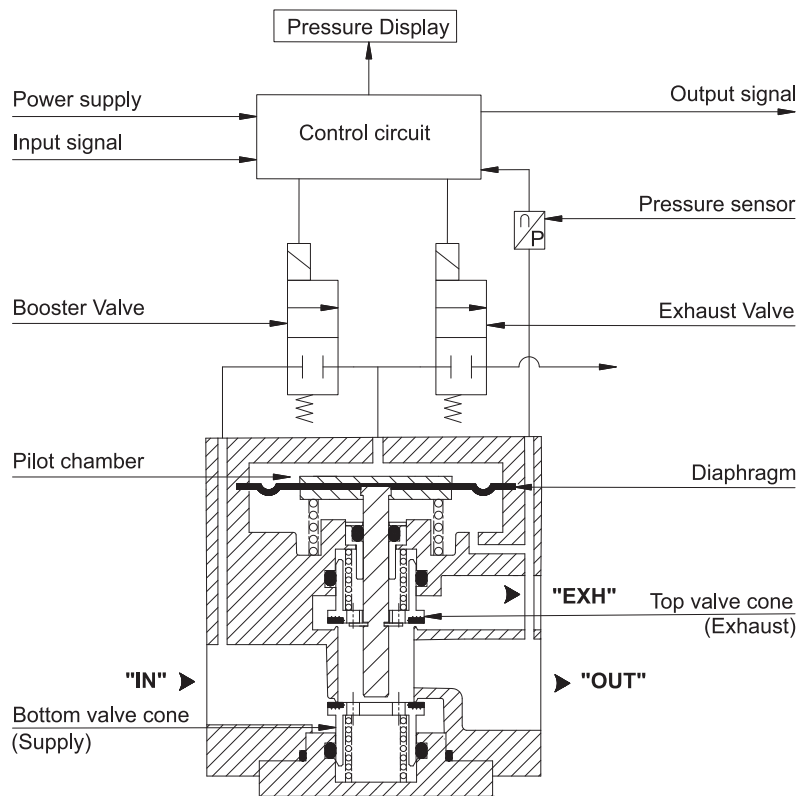
Function

When the input signal rises, "Booster valve" switches ON and pressurises the "Pilot chamber". Increase in pressure in the pilot chamber forces the "Diaphragm" downwards, and closes the "Top valve cone" (blocks Out to Exhaust) and subsequently opens the "Bottom valve cone", eventually connecting "IN" to "OUT".

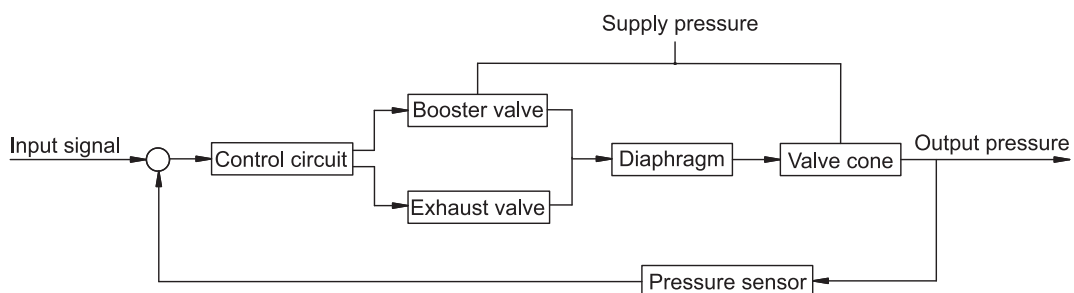
The "Pressure sensor" monitors the output pressure and sends feedback to the "Control circuit". Once the desired output pressure is attained, "Control circuit" switches OFF the "Booster valve".

The "Control circuit" tries to maintain a pressure proportional to the "Input signal". i.e., in case if the output pressure exceeds the desired value, it switches OFF the "Booster valve" and switches ON the "Exhaust valve" and depressurises the "Pilot chamber", until the output pressure reaches the desired value.

Similarly, when the output pressure falls below the desired value, the "Exhaust valve" gets switched OFF and the "Booster valve" gets switched ON to maintain the desired output pressure. This cycle is repeated until the output pressure is proportional to the input signal.



Functional block diagram

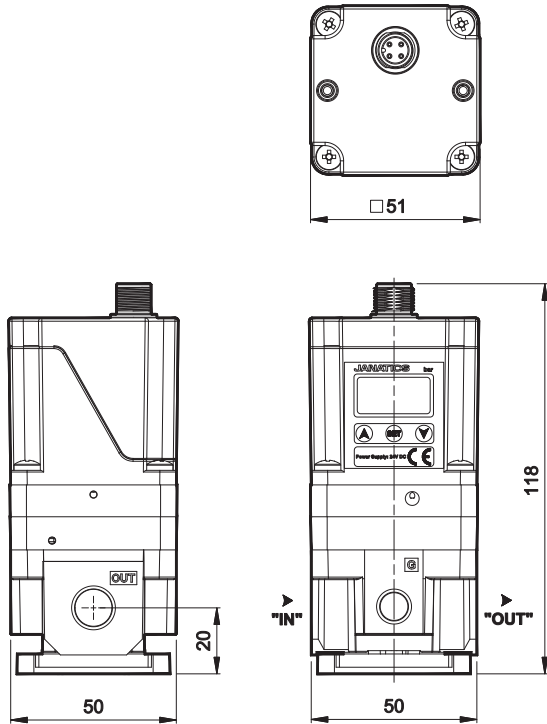


AIR PREPARATION UNITS

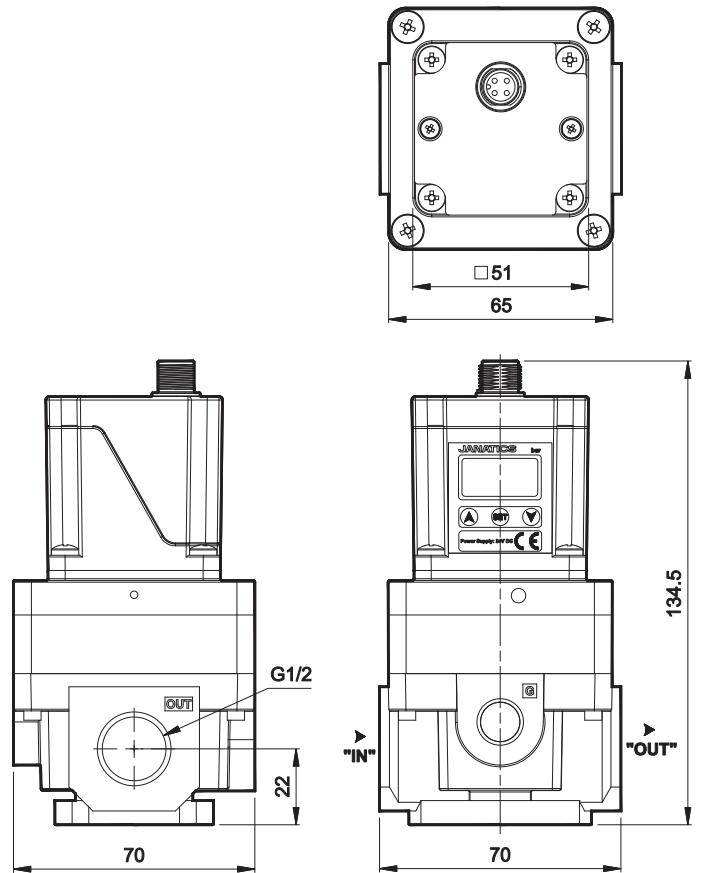
PROPORTIONAL PRESSURE REGULATOR Series PPR

Cat No PPR - 01 - 01 - D

Model PPR 1461..-W..



Model PPR 1563..-W..



Accessories

L - Clamp - (Ordering No: A2C07)

Dimensional details	PPR146XXX-WXX	PPR156XXX-WXX
<p>Dimensional details of the L-clamp:</p> <ul style="list-style-type: none"> Top view: Overall width 40, height 25.5, hole spacing 17, hole diameter 2.5, and a 7mm offset. Front view: Overall width 67, height 70, hole spacing 53, and a 36mm offset. It features 4 holes with a diameter of Ø5.5. 	<p>Diagram showing the L-clamp installed on a PPR146XXX-WXX unit. The unit height is 143.5. The clamp is positioned at the bottom, with a 25.5mm offset from the bottom edge. The clamp width is 40mm and its overall width is 67mm.</p>	<p>Diagram showing the L-clamp installed on a PPR156XXX-WXX unit. The unit height is 160. The clamp is positioned at the bottom, with a 25.5mm offset from the bottom edge. The clamp width is 40mm and its overall width is 67mm.</p>

AIR PREPARATION UNITS

PROPORTIONAL PRESSURE REGULATOR Series PPR

Cat No PPR - 01 - 01 - D

Foot Bracket - (Ordering No: A2C08)		
Dimensional details	PPR146XXX-WXX	PPR156XXX-WXX

Electrical cable connection

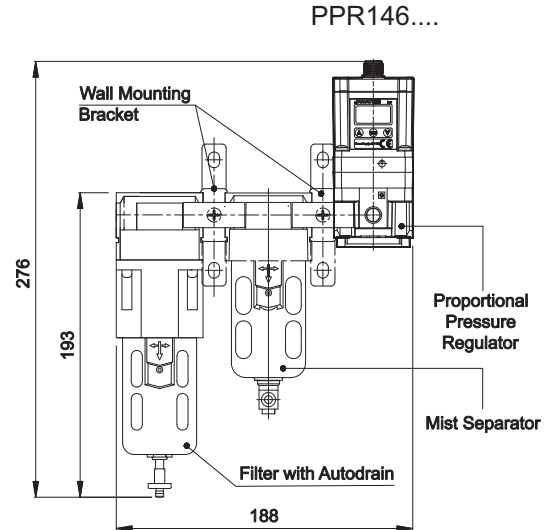
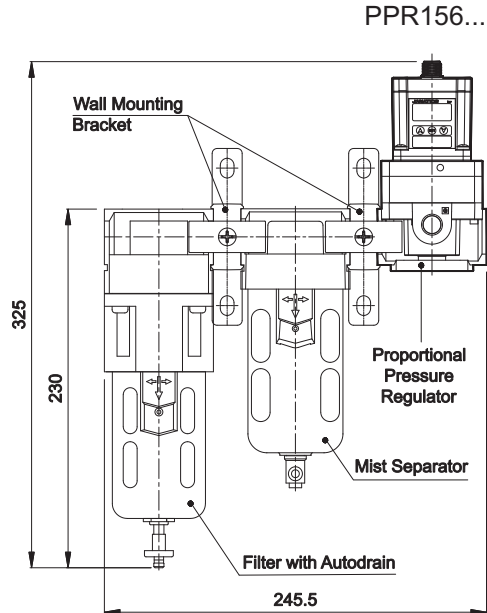
Straight Connector	Right Angle Connector
<p>Ordering No: AC100-M124S-PVC-2M (L=2mtr) AC100-M124S-PVC-5M (L=5mtr) AC100-M124S-PUR-2M (L=2mtr) AC100-M124S-PUR-5M (L=5mtr)</p>	<p>Ordering No: AC100-M124L-PVC-2M (L=2mtr) AC100-M124L-PVC-5M (L=5mtr) AC100-M124L-PUR-2M (L=2mtr) AC100-M124L-PUR-5M (L=5mtr)</p>

AIR PREPARATION UNITS

PROPORTIONAL PRESSURE REGULATOR Series PPR

Cat No PPR - 01 - 01 - D

Recommended modular mounting and products



Sl. No	Product name	Part no	Qty
1	Filter with auto drain	F15631-A	1
2	Mist separator	FS15632	1
3	Wall mounting bracket	A2W03	2

Sl. No	Product name	Part no	Qty
1	Filter with auto drain	F14621-A	1
2	Mist separator	FS14622	1
3	Wall mounting bracket	A2W02	2

Precautions

General information

1. Read these instructions carefully before installing and commissioning the device
2. These instructions are important and must be stored for future references
3. Only trained personnel should operate (Installation, commissioning, and maintenance) the product
4. Inspection and maintenance of the product only be performed once safety of personnel and product is confirmed
5. Before the product is removed, stop the air supply, exhaust the residual pressure and verify the air pressure is zero and turn off the power
6. Before the product is restarted, ensure safety for the product and the person
7. These instructions and procedures in this manual are intended to be an overview of the product and do not contain detailed information on design of the product
8. Safety / warning symbols in these instructions are given for optimum protection of personnel, environment and as well as safe and fault-free operation of the product
9. Information and symbols directly on the product must be observed. They may not be removed so that it shall be fully legible at all times
10. For any problems or difficulties that are not discussed in this manual, please contact JANATICS

Air Supply

Caution

1. Do not use compressed air that contains chemicals, synthetic oils, organic solvents, salt or corrosive gases etc., as it can cause malfunction
2. Install an air filter on the supply side. Refer recommended modular mounting and products.
3. Compressed air containing large amounts of drainage can cause malfunction to the product and other pneumatic equipment. As a countermeasure, install an after cooler, air dryer or Drain Catch, etc.

AIR PREPARATION UNITS

PROPORTIONAL PRESSURE REGULATOR Series PPR

Cat No PPR - 01 - 01 - D

Pneumatic connection

Caution

1. Connect the piping adapter with the recommended torque. If the tightening torque is low, sealing will not proper. If the tightening torque is high, thread damage will occur. Refer recommended modular mounting and products.
2. Do not allow twisting or bending moment to be applied on the unit. Provide separate support for external piping
3. Use flexible (PU, Nylon) tubing for intermediate connections to avoid excessive moment loads and the propagation of vibrations in the system
4. Flush the piping for dirt, dust, rust and other foreign particles
5. Please ensure foreign particles (tape, dirt etc.) do not enter the product during assembly

Handling Precaution

Warning

1. If the power supply of the product is turned off during normal operation, the output pressure will be held as same as set pressure of the product and air will flow continuously. To exhaust the output pressure, first reduce the set pressure, then power off the unit and discharge the residual pressure by using exhaust valve or an equivalent
2. If supply pressure of the product is interrupted or shut off, while the power is still on, the internal solenoid valve will continue to operate. Turn off the power supply when supply pressure is interrupted or shut off, so that life of the solenoid valve is not affected
3. If the Output pressure is released to atmosphere, the booster valve will be in full open condition and under such condition product does not meet the desired pressure and product life may be shortened
4. The M12 connector is 4-wire type. When the analog output is not being used, insulate it from touching the other wires to avoid malfunction
5. The right angled cable connector does not rotate and is designed to only one entry direction. If it is forcibly rotated, cable or product may be damaged
6. This product is adjusted to specification at the time of shipment from the factory. It is recommended to avoid disassembly or removal of parts, as this can lead to malfunction of the product
7. Do not use a lubricator on the supply side of the regulator, as this will cause the valve to become clogged and lead to malfunction. If lubrication is required for terminal devices, connect a lubricator after the output side of the regulator
8. Do not use the product outside the range of its specifications as this can cause failure. Refer Technical specifications
9. When mounting is performed, make connections while confirming port indications
10. Take the following steps to avoid malfunction due to noise:
 - a) Install a line filter to the AC power line to reduce / eliminate power supply noise
 - b) Avoid malfunction due to noise, by installing this product and its wiring away from strong electric fields (such as those of motors and power cables, etc.)
 - c) Ensure to implement protective measures against surge for inductive loads (i.e. solenoid valves, etc.)
 - d) Turn off the power supply before inserting or removing the connector
11. The capacity of the output side is large, and when used for the purpose of a relief function, the exhaust sound will be loud when being relieved. Therefore, operate with a silencer mounted on the exhaust port (EXH port). The connection is G1/2
12. Output pressure cannot be released to atmosphere in the range below 0.05 bar. In case output pressure needs to be zero, connect a 3/2 NC valve on the output pressure port
13. If the air supply is given in the absence of electrical power, output pressure may increase up to the supply pressure because this product does not have shut off valve function. Operate the product when both electrical power and supply pressure are available
14. The solenoid valves inside the unit are consumables. Perform periodic maintenance where the requirement of pressure is very high and very frequent. Please contact Janatics for the replacement

Operating Environment

Caution

1. In locations where the body is exposed to water, steam, dust, etc., there is a possibility that moisture or dust could enter the body through the EXH (solenoid) ports, thereby causing problems
To solve this problem, install tubing to each port, using the fittings, and extend the tubing so that the other end is at a location where no water splash, etc. occurs. Make sure not to bend, or block the I.D. of the tubing as this will have effect on the pressure control
2. Do not operate in locations where vibration or impact occurs
3. In locations which receive direct sunlight, provide a protective cover
4. In locations near heat sources, block off any radiated heat
5. In locations where there is contact with splash from water, oil, etc., implement suitable protective measures

AIR PREPARATION UNITS

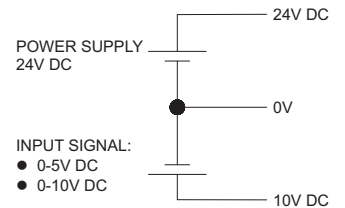
PROPORTIONAL PRESSURE REGULATOR Series PPR

Cat No PPR - 01 - 01 - D

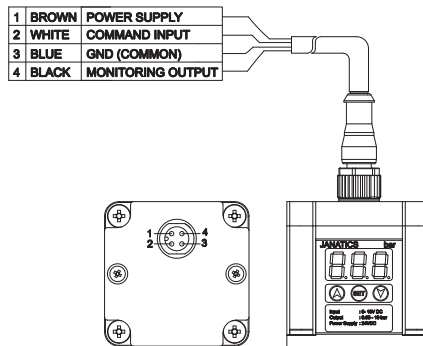
Electrical wiring

Caution

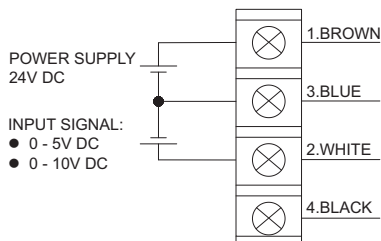
1. Operate this product only within the specified voltage (24V DC $\pm 10\%$). Using voltages beyond the specified levels could cause faults or malfunctions
2. Use DC power supply with sufficient capacity with low ripple. Turn off the power supply when inserting and removing the connector
3. The electrical connection information in the manual must be observed; otherwise, electrical protection may be affected
4. Use 0 V as the baseline for the power supplied to the unit for output, control and input
5. Connect the cable to the connector on the product as per below wiring. Connect the cable carefully, as incorrect wiring can cause damage



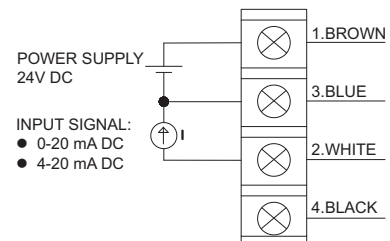
Electrical connection details



Command input - Analog - Voltage

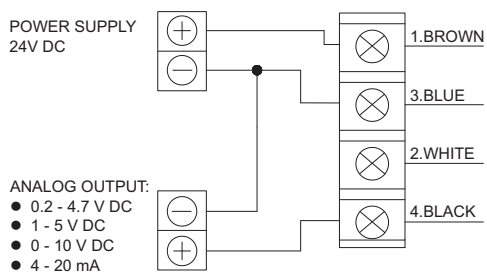


Command input - Analog - Current

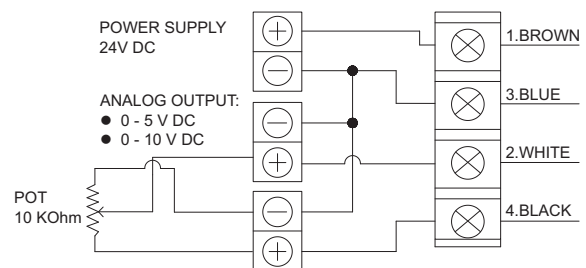


Electrical Connection details

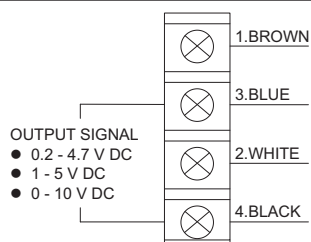
Command input - Keyboard mode



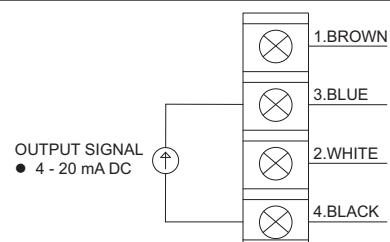
Command input - Potentiometer mode



Monitoring output - Analog - Voltage



Monitoring output - Analog - Current



Note: Above wire colors are based on the M12 cable which is supplied by JANATICS

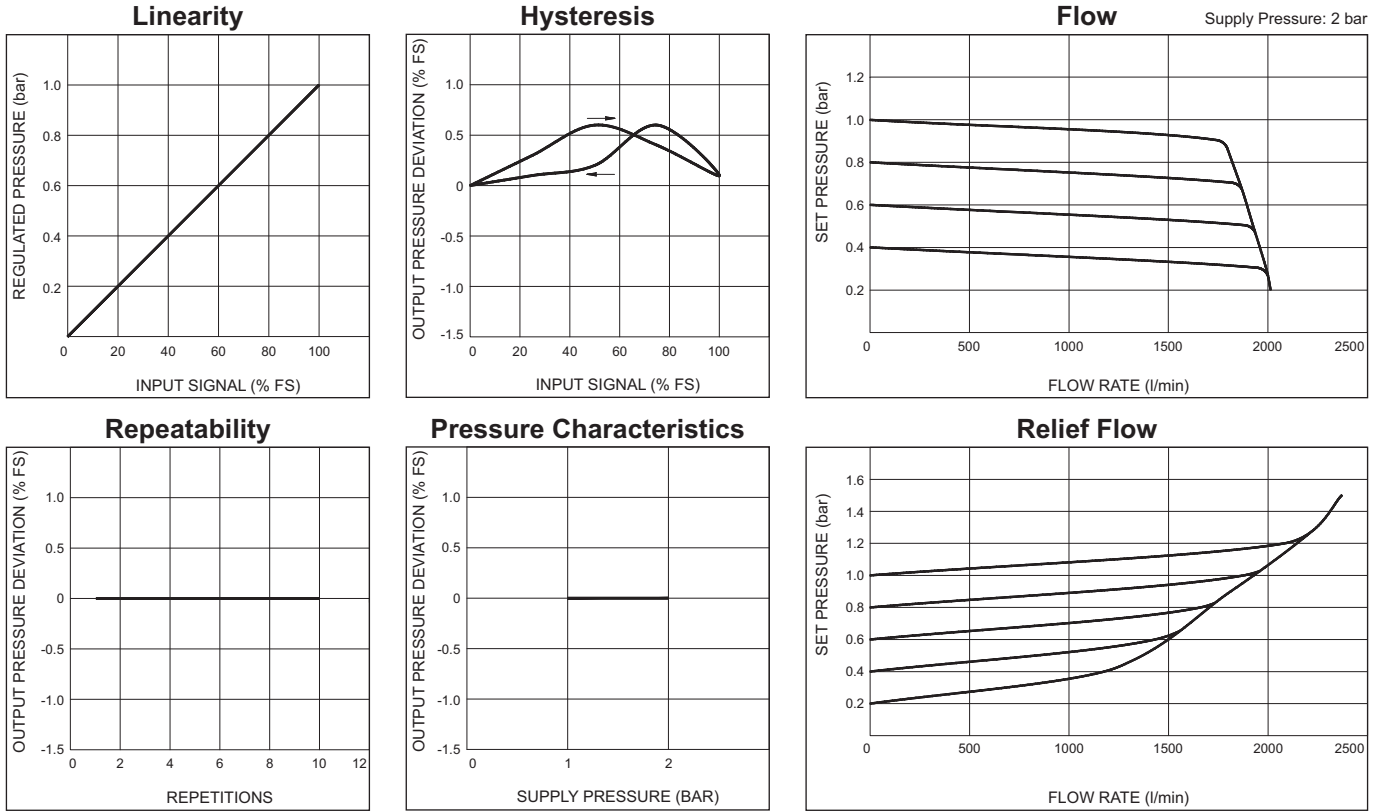
AIR PREPARATION UNITS

PROPORTIONAL PRESSURE REGULATOR Series PPR

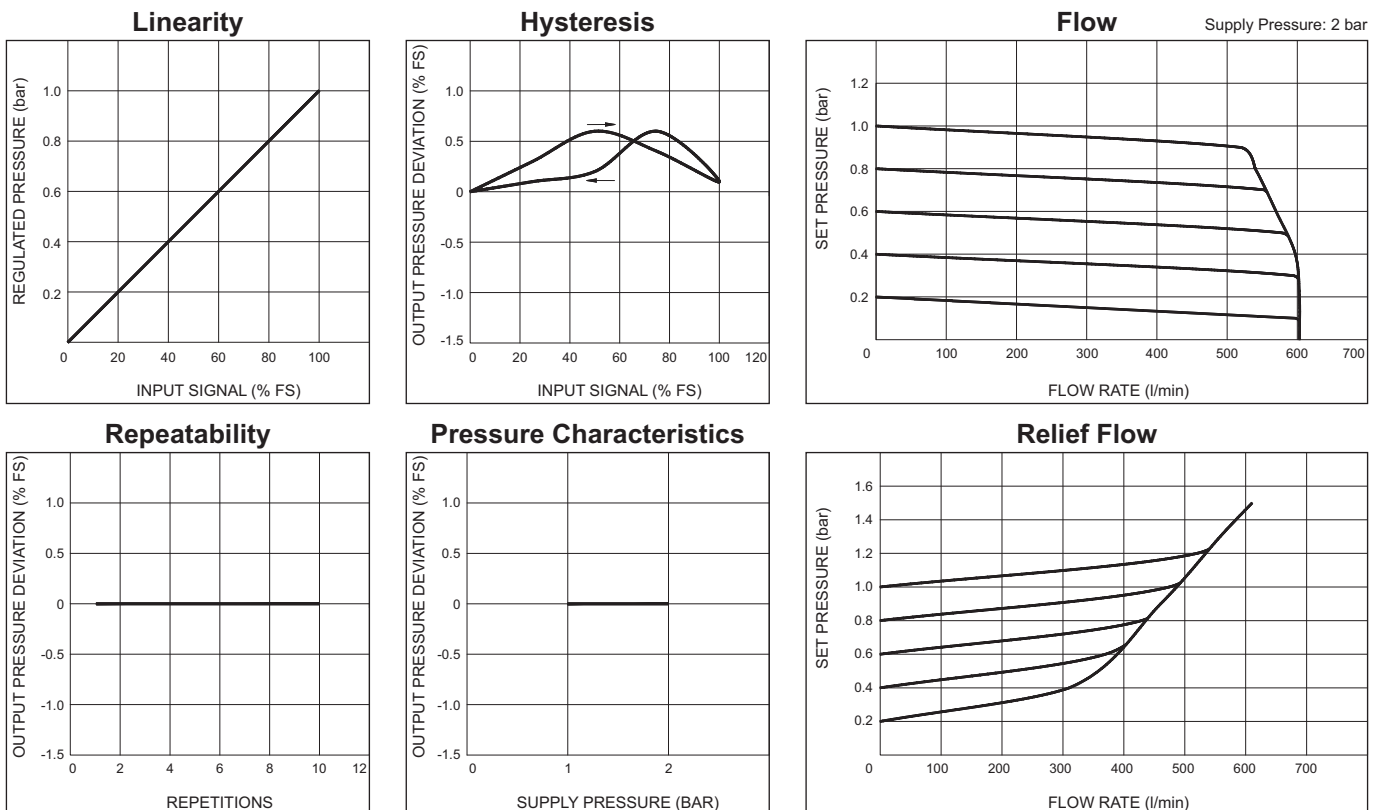
Cat No PPR - 01 - 01 - D

Flow Graphs

PPR15631X-WXX (G1/2, 1 bar)



PPR14611X-WXX (G1/4, 1 bar)

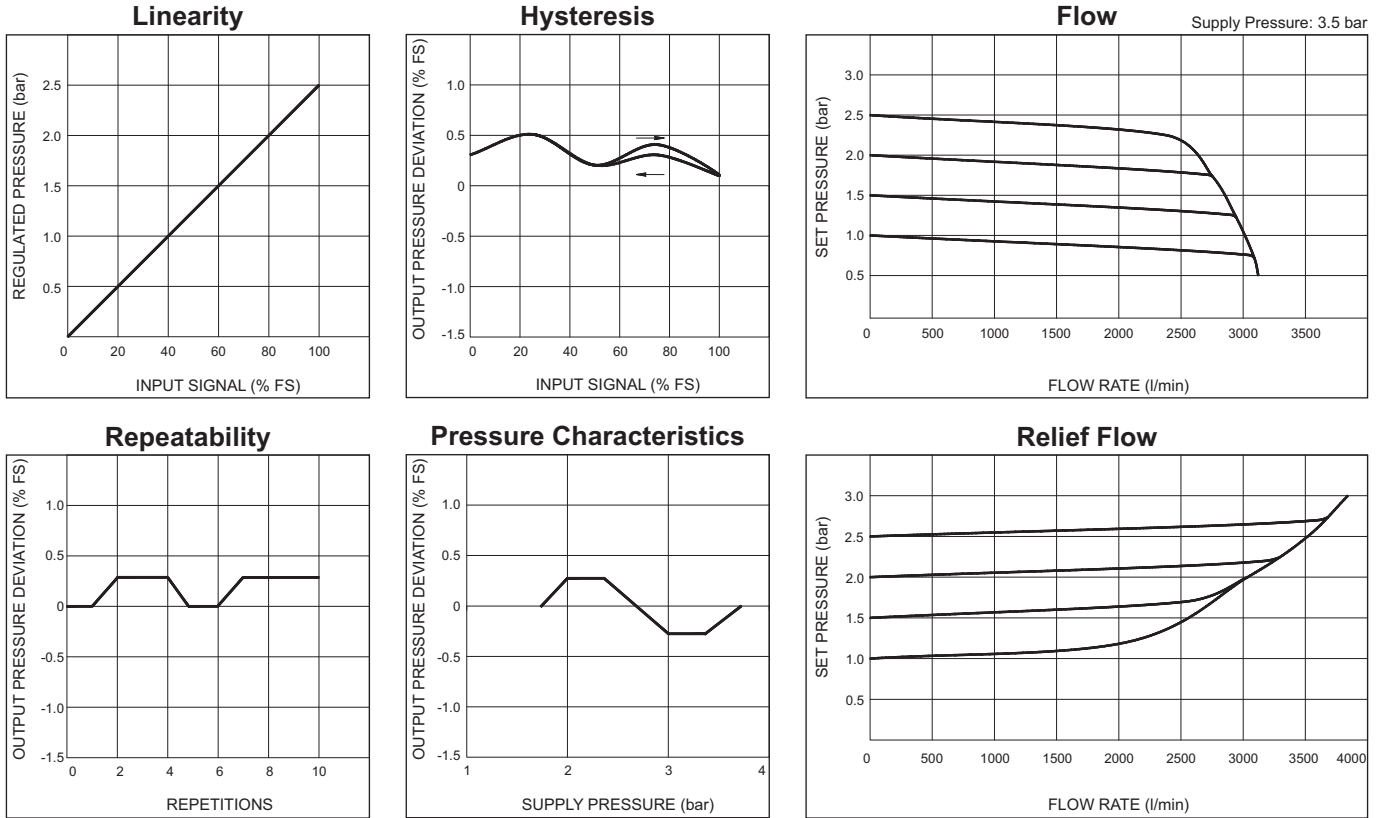


AIR PREPARATION UNITS

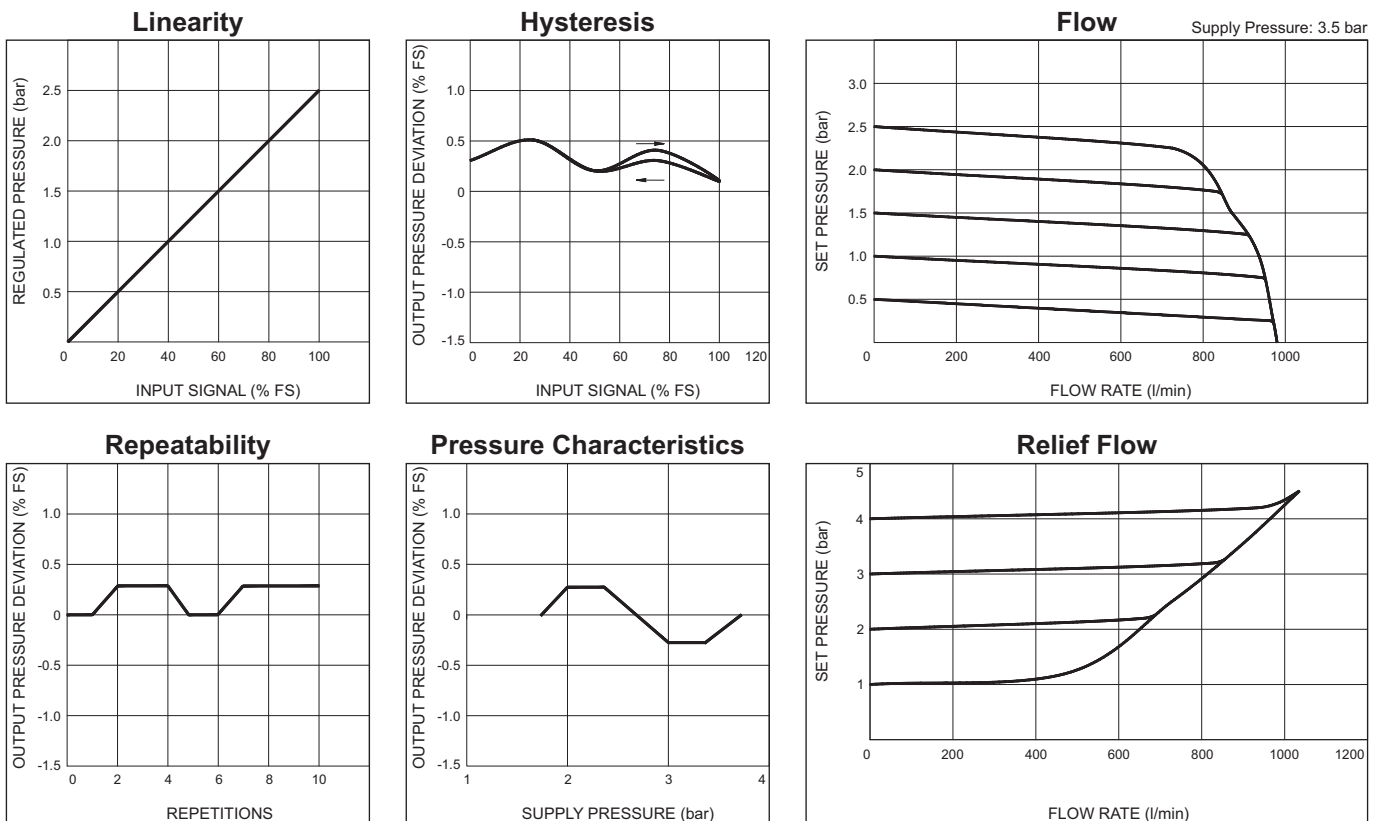
PROPORTIONAL PRESSURE REGULATOR Series PPR

Cat No PPR - 01 - 01 - D

PPR15632X -WXX (G1/2, 2.5 bar)



PPR14612X -WXX (G1/4, 2.5 bar)

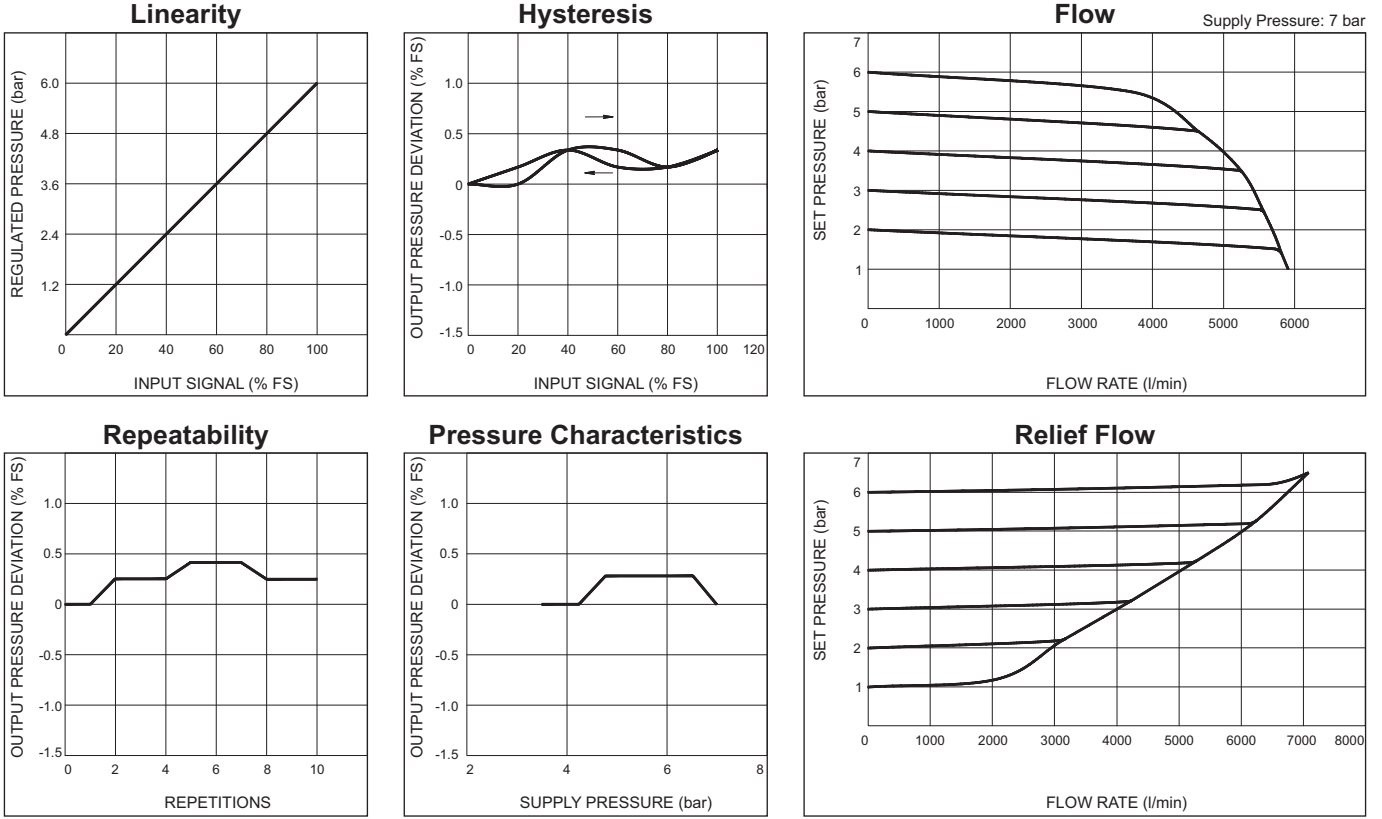


AIR PREPARATION UNITS

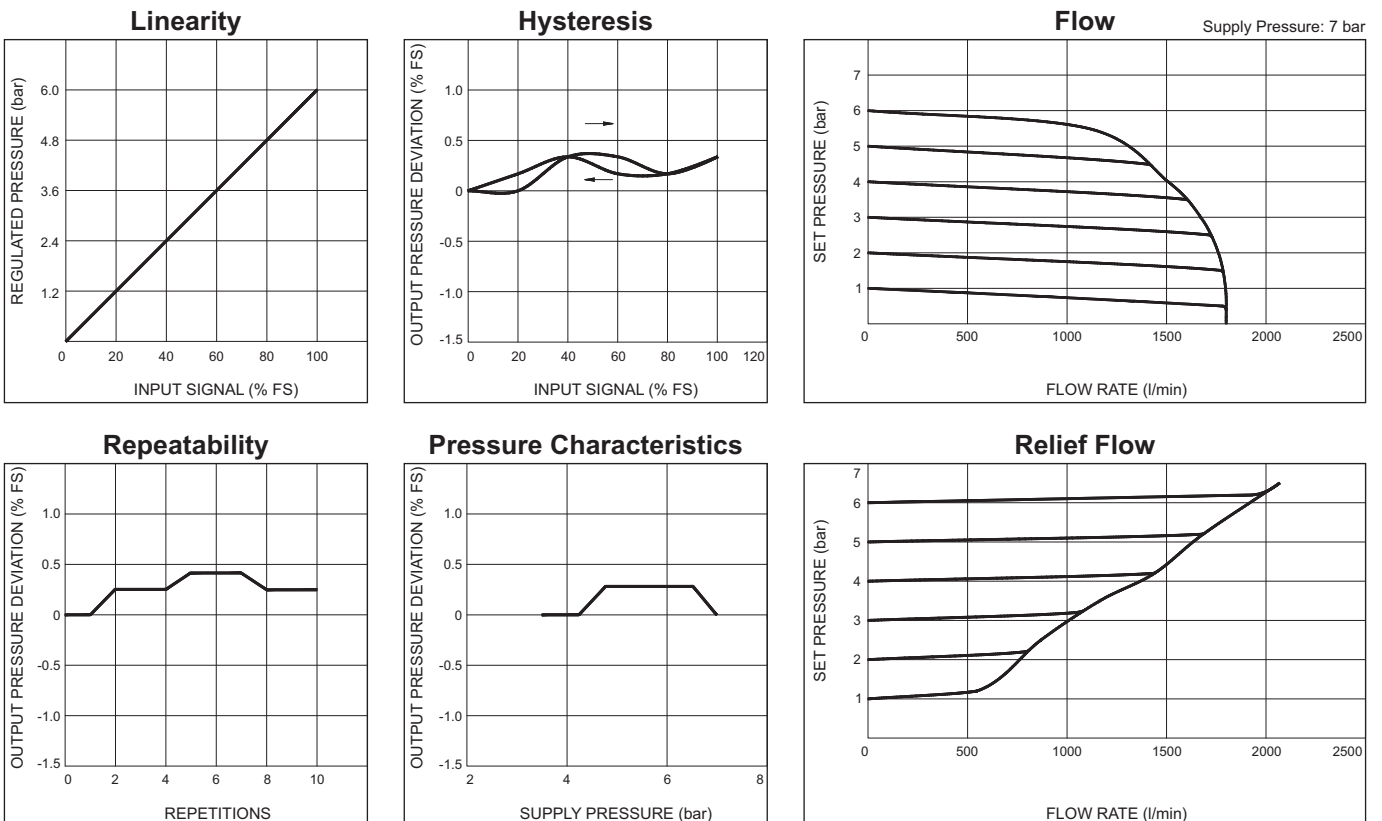
PROPORTIONAL PRESSURE REGULATOR Series PPR

Cat No PPR - 01 - 01 - D

PPR15633X -WXX (G1/2, 6 bar)



PPR14613X-WXX (G1/4, 6 bar)

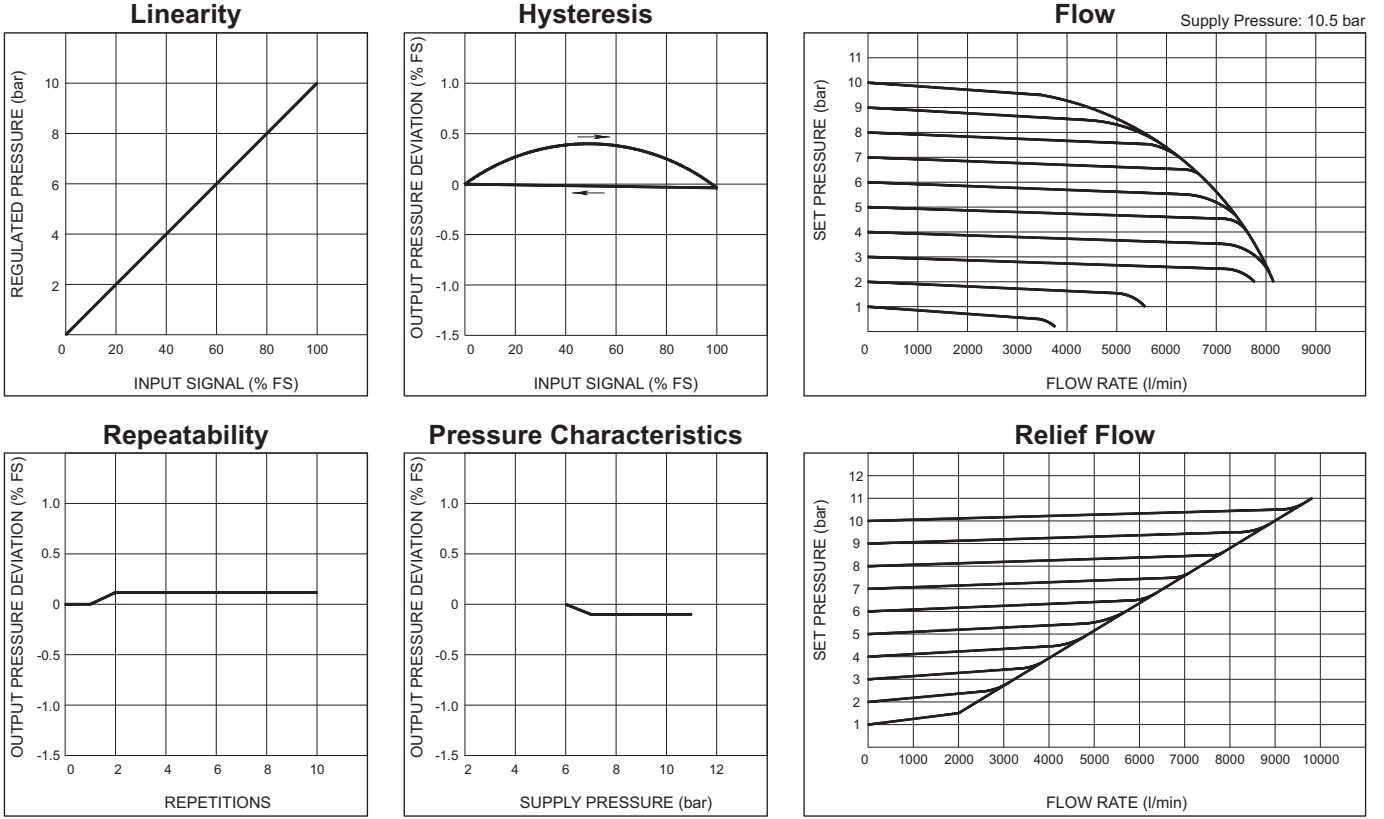


AIR PREPARATION UNITS

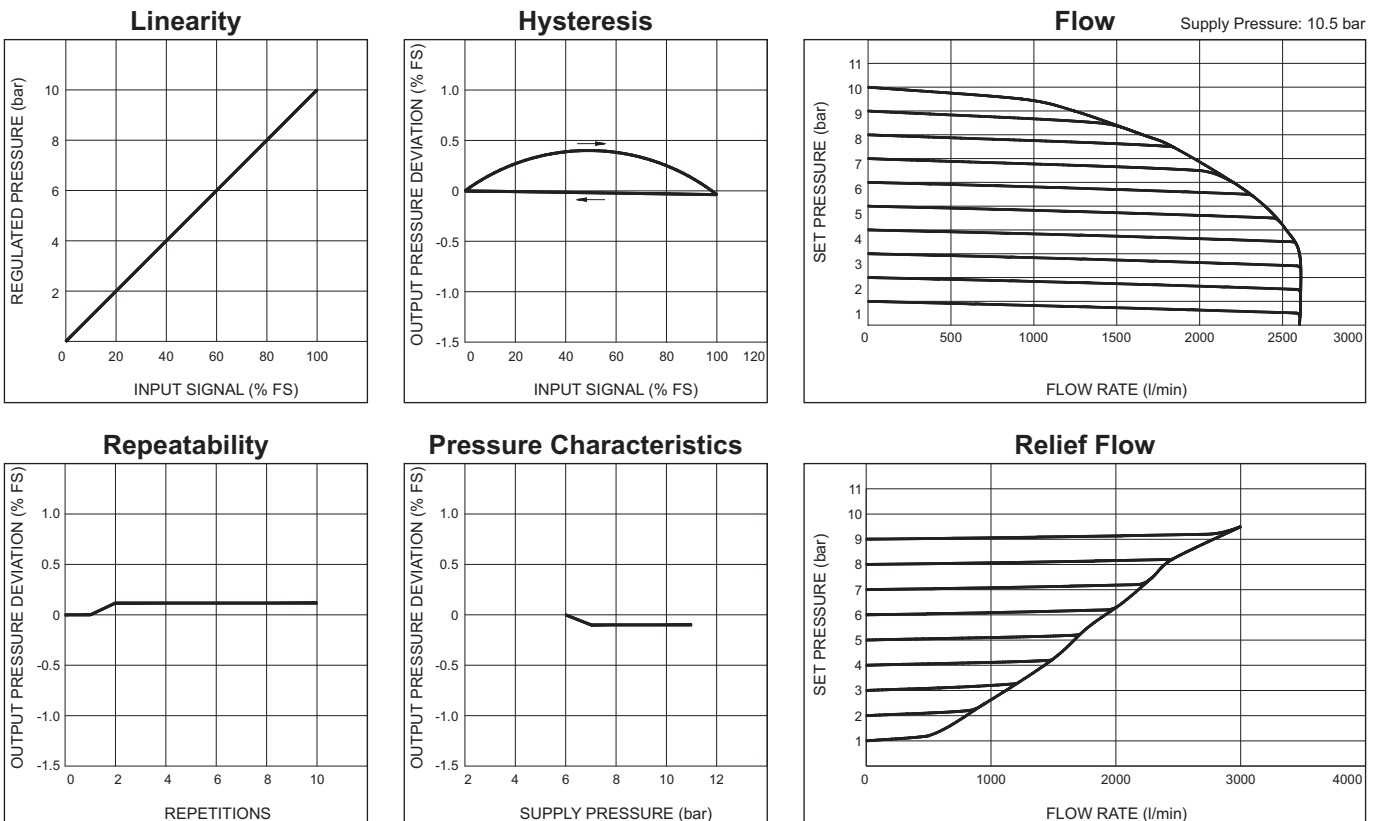
PROPORTIONAL PRESSURE REGULATOR Series PPR

Cat No PPR - 01 - 01 - D

PPR15634X-WXX (G1/2, 10 bar)



PPR14614X-WXX (G1/4, 10 bar)



AIR PREPARATION UNITS

PROPORTIONAL PRESSURE REGULATOR Series PPR

Cat No PPR - 01 - 01 - D

How to order

PPR1	563	4	1	-	W	1	2	-	X	X			
Body & Port size	Pressure range	Pressure unit		Operating voltage		Input signal		Output signal		Mounting		Cable connector	
461 G1/4	1 0.05-1 bar	1 bar (Standard)		W 24V DC		1 0-10V DC	1 0.2-4.7V	X Without Clamp		X	Without Cable		
491 NPT1/4	2 0.05-2.5 bar	2 Psi				2 0-5V DC	2 1-5V (Standard)	L L-Clamp		S	Straight PVC 2m		
462 G3/8	3 0.05-6 bar	3 Kg/cm ²				3 0-20 mA	3 4-20 mA	F Foot Clamp		L	Right angle PVC 2m		
492 NPT3/8	4 0.05-10 bar (Standard)					4 4-20 mA	4 0-10V			M	Straight PVC 5m		
563 G1/2										N	Right Angle PVC 5m		
593 NPT1/2										O	Straight PUR 2m		
										P	Right angle PUR 2m		
										Q	Straight PUR 5m		
										R	Right Angle PUR 5m		

Ordering example:

Proportional Pressure Regulator - Body and Port size G1/2", Pressure range 0.05 to 10 bar, Pressure unit - bar, Operating voltage - 24V DC, Input signal - 0 to 10V, Output signal - 1.5V, Ordering number: **PPR156341-W12**

Proportional Pressure Regulator with L-Clamp and without Cable connector, Ordering number: **PPR156341-W12-LX**

Proportional Pressure Regulator without Clamp and with Straight connector cable, Ordering number: **PPR156341-W12-XS**



FLOW METER

Series FM1

Cat No FM1 - 01 - 01 - B

FLOW METER - G3/4

Features

- 2 line LCD display for monitoring flow rate and total value
- Fast response
- Analog output for monitoring flow rate



Application

- Air audit
- Leakage detection

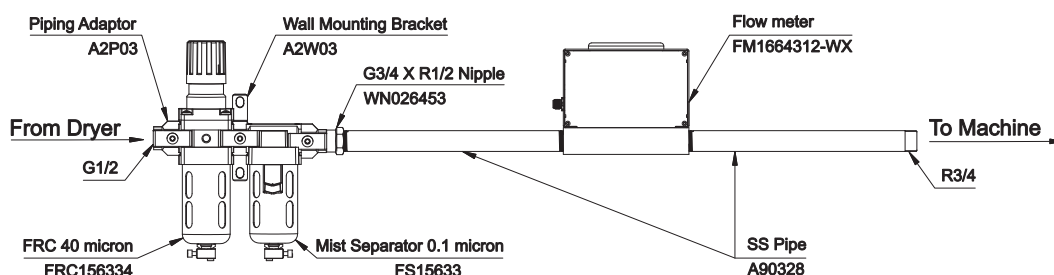
Technical Specifications

Model	FM166431X-WX	
Medium	Compressed air, Filtered #, Non-lubricated	
Port size	G3/4	
Measuring flow range	60 to 3000 lts/min	
Maximum operating pressure	8 bar	
Medium	Compressed air	
Medium temperature	0° to 50° C	
Power Supply	Voltage	24V DC ±10%
	Power consumption	3 Watts
	Current consumption	0.125A at 24V DC
Analog output	Voltage	0-10V (Output impedance 10KΩ), Output accuracy ±3% of full span
	Current	4-20mA (Output impedance 270Ω), Output accuracy ±3% of full span
Accuracy	±6% of full span or less	
Repeatability	±1% of full span or less	
Mounting	Horizontal	
Weight	1.750 Kg	

Use a Filter (40 micron) and a Mist separator (0.1 micron) in addition at the inlet.

Precautions

1. Note the direction of air flow before installation and connect piping accordingly
2. Flush pipings for dirt, dust, rust and other foreign particles.
3. Install in clean atmosphere.
4. Nipples of taper threads (R) to be used with teflon tape. Ensure teflon tape does not enter the unit during tightening. Nipples of straight threads (G) to be used with sealing washer.
5. Mount the flow meter in line, next to a dual filter with 40 micron and 0.1 micron respectively coupled with appropriate piping arrangement and maintain the pipe length min 300mm as per ISO 6358 standards

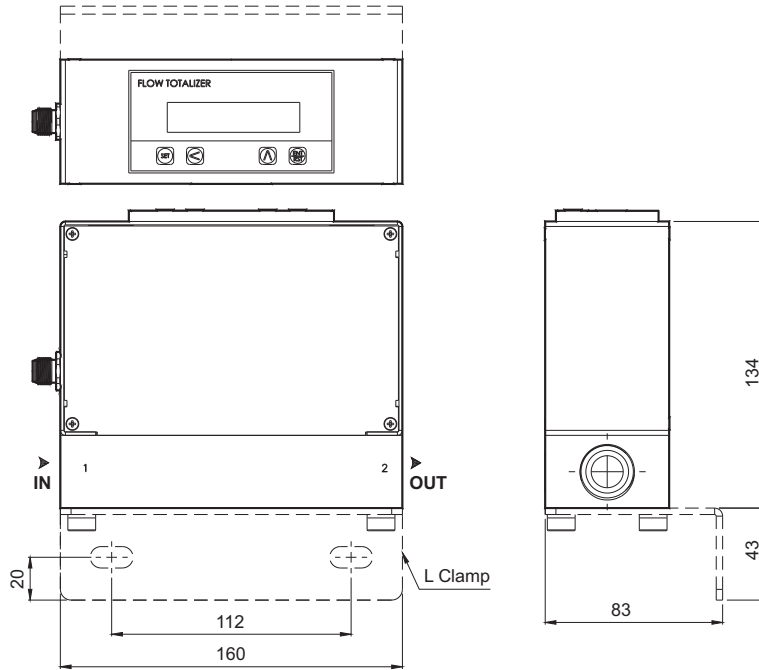


FLOW METER

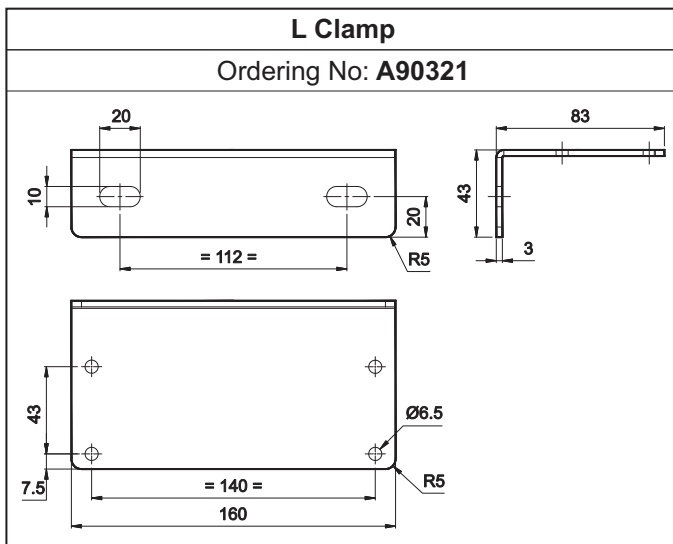
Series FM1

Cat No FM1 - 01 - 01 - B

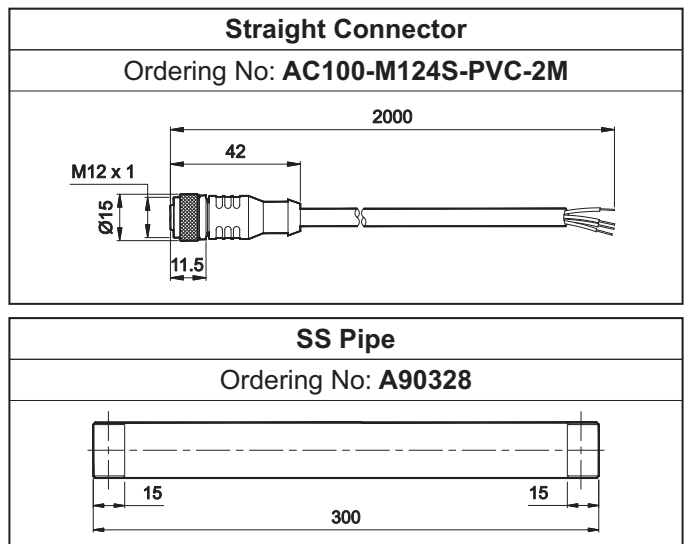
Model FM166431X-WX



Mounting



Accessories



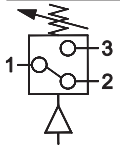
How to order

FM1	664	3	1	1	-	W	2
Body & Port size	Flow Range	Medium	Unit	Operating voltage	Output signal		
664 G3/4	3 60 - 3000 lpm	1 Compressed air	1 LPM 2 CFM	W 24V DC	1 0-10V DC 2 4-20 mA		

Ordering example:

Flow meter, port size G3/4, Flow range 60-3000 LPM, Compressed air medium, CFM unit, Operating voltage - 24V DC, Output 4-20mA : **FM1664312-W2**

Subject to change



PRESSURE SWITCH

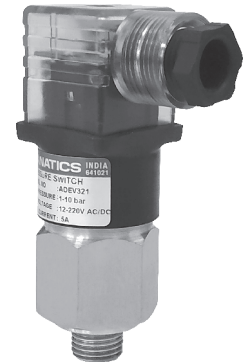
Series PT1

Cat No PT1 - 01 - 01 - D

PRESSURE SWITCH - G1/8, G1/4

Features

- Suitable for DIN 43650 connector
- Variants available with Integrated LED for switching status indication
- Robust design
- Variants available with Nitrile and Viton seals



Application

- Used to monitor / maintain the system pressure
- Protect pneumatic component / system against over pressure

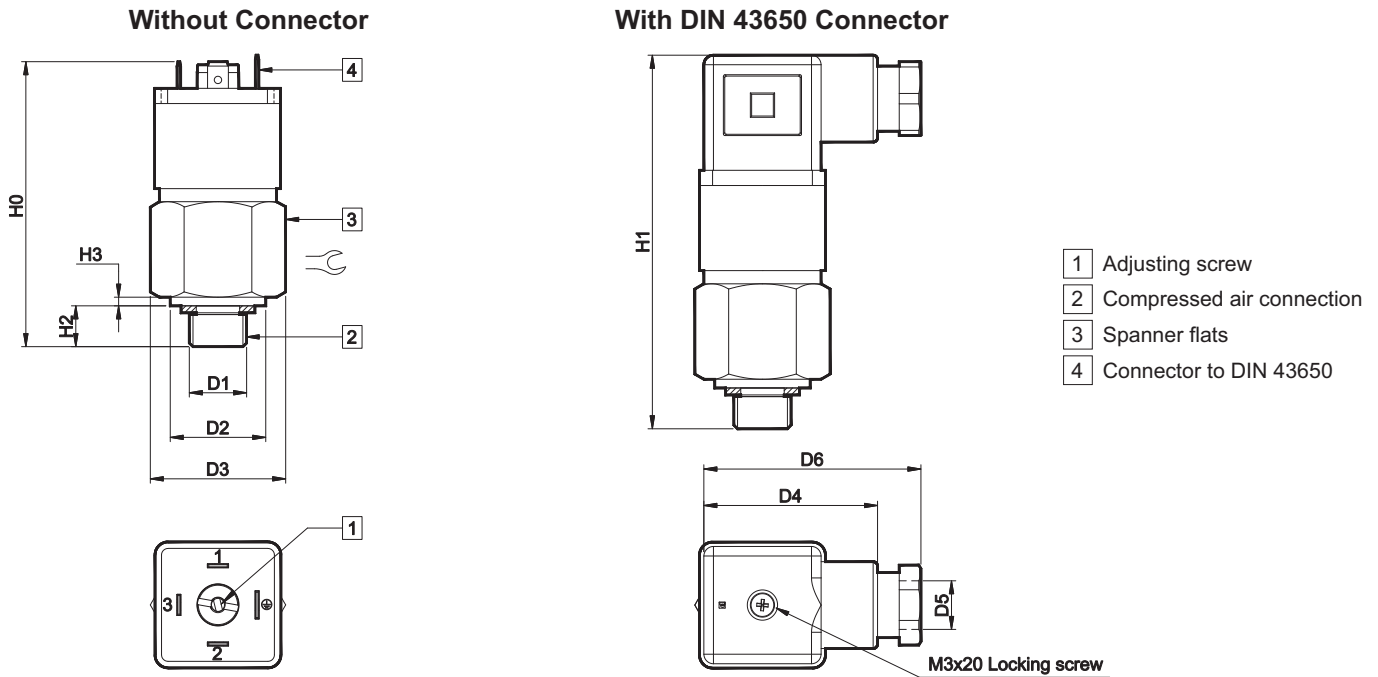
Technical Specifications

Model	PT1					
Adjustable switching pressure	1 to 10 bar					
Maximum supply pressure	20 bar					
Medium	Compressed air, Filtered					
Seal	Diaphragm					
Ambient / Medium temperature	-10° to +60° C					
Repeatability	±5%					
Hysteresis (relative to switch-on pressure)	(20±6%) at 2 bar, (15±6%) at 6 bar (Non - Adjustable)					
Switching element	Changeover contact					
Switching frequency	Max. 3Hz					
Connector type	Without connector / DIN 43650 Type A			DIN 43650 Type A with LED		
Ready status display	-			Green LED		
Switching status display	-			Yellow LED		
Power supply voltage	12, 24, 60, 110, 220V AC / DC			24V AC / DC		
Maximum output current	AC / DC	AC	DC	AC / DC	AC / DC	
	12 V	6 A	6 A	24V	3A	
	24 V		3 A			
	60 V		1 A			
	110 V		0.5 A			
220 V	0.25 A					
Mounting position	Any					
Cable entry	PG9 (cable OD 6 - 8mm)					
Enclosure (Ingress protection)	IP65 (When plugged & screwed with gasket)					
Material of construction	Brass, Nylon, NBR, Viton, Stainless steel					
Weight	0.135 Kg					
Pin & Meaning				1 - Common (Switchable voltage) 2 - N/C Contact 3 - N/O Contact		

PRESSURE SWITCH

Series PT1

Cat No PT1 - 01 - 01 - D



D1	D2	D3	D4	D5	D6	H0	H1	H2	H3	
G1/8	22	31	45	11.2	50 Max	67	85.5	9	2	27
G1/4										

How to order

PT1
1
1
61
N
0
-

Body material		Thread type		Thread size		Seal material		Connector type		Set pressure (bar)	
1	Brass	1	Male	60	1/8	N	NBR	0	Without Connector	Nil	Without factory set pressure (Default setting 5bar - adjustable)
				61	1/4	V	Viton	1	Connector without LED	0100 to 1000	Factory set pressure (Required set pressure)
								2	Connector with LED		

Ordering example:

Pressure switch, Brass body, Male thread, 1/4", NBR Seal, without Connector, without factory set pressure - Ordering No: **PT11161N0**

Pressure switch, Brass body, Male thread, 1/4", NBR Seal, Connector without LED & Set pressure 06 bar - Ordering No: **PT11161N1-0600**

Pressure switch, Brass body, Male thread, 1/4", NBR Seal, Connector with LED & Set pressure 2.2 bar - Ordering No: **PT11161N2-0220**

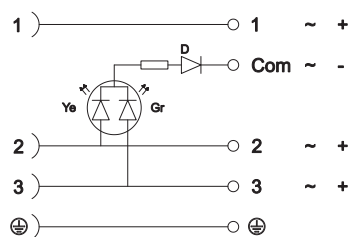
Ordering code for connectors:

Connector without LED

Ordering No: **KA0**

Connector with LED

Ordering No: **KA0T2Y0**



Transparent housing with Bicolour LED Indicator confirming switching status

Subject to change

AIR TANK

Series AT

Cat No AT - 01 - 01 - A

AIR TANK (STAINLESS STEEL) - 0.75, 2, 5, 10, 20 L

Features

- Attractive and clean design
- Available with drain ports
- SS304 material for corrosion resistance



Applications

- Compressed air braking system in railway rolling stock, commercial vehicles
- Air suspension systems in automotive application
- Pulsation dampening and high cycle applications in automation and machine tools
- Systems to safely shutdown in an emergency situation
- Testing of products

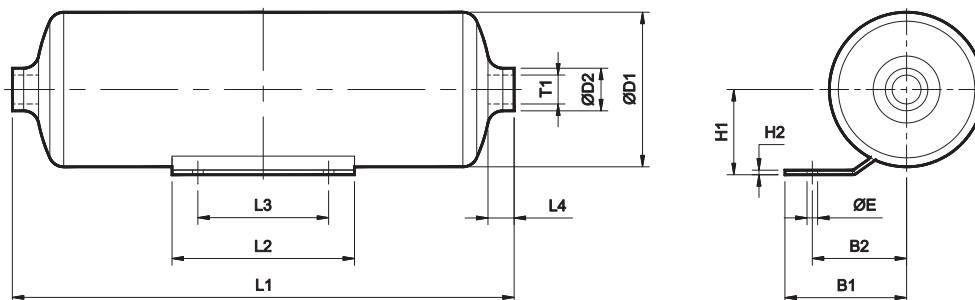
Technical Specifications

Standard size*	(L)	0.75	2	5	10	20
Medium		Compressed Air, Nitrogen #				
Operating pressure	bar	0.5 to 16				
Ambient / Medium temperature	C	-10° to +100°				
Thread connection		Female : G - Parallel thread				
Type of mounting		Through holes				
Installation position		Any position		Condensate drain downwards		
Materials of construction		SS304				

* - for Non-standard, contact your regional dealer or **JANATICS**

- for other fluids, contact **JANATICS**

For 0.75L & 2 L



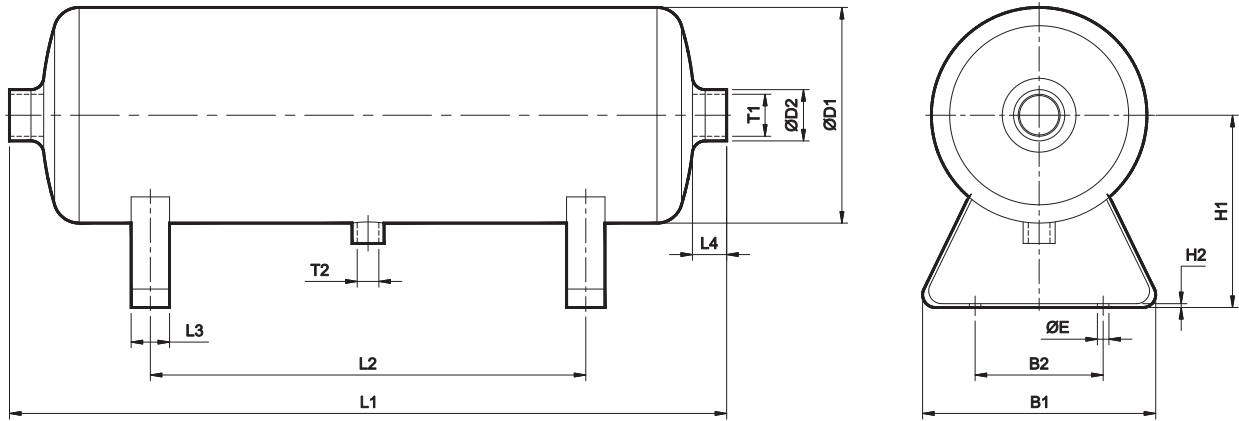
Size	ØD1	ØD2	L1	L2	L3	L4	T1	B1	B2	H1	H2	ØE	Ordering No
0.75L	73	19	250	100	60	15	G1/4	55	42	40	3	4.5	AT0075S061061BS
2L	102	28	330	120	86	17	G1/2	80	62	56	3	7	AT0200S063063BS

AIR TANK

Series AT

Cat No AT - 01 - 01 - A

For 5L, 10L & 20 L



Size	ØD1	ØD2	L1	L2	L3	L4	T1	T2	B1	B2	H1	H2	ØE	Ordering No
5L	168	40	310	150	30	22	G1	G3/8	172	90	140	3	9	AT0500S065065062AS
10L	168	40	560	340	30	28	G1	G3/8	182	100	150	3	9	AT1000S065065062AS
20L	219	40	680	400	40	30	G1	G3/8	202	110	180	3	12	AT2000S065065062AS

How to order

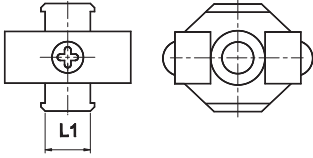
While ordering Air Tank, mention the Ordering number given in the corresponding tables.

AIR PREPARATION UNITS - ACCESSORIES

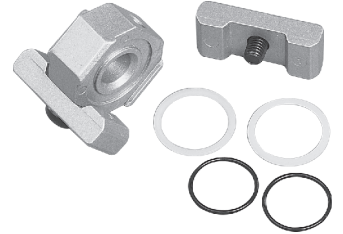
Accessories - for Modular construction

Cat No APA - 01 - C

SPACER



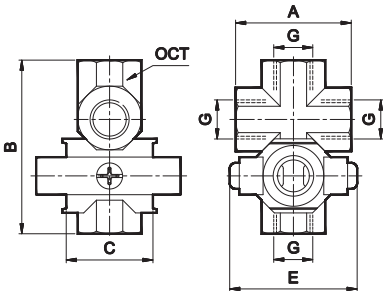
Adoptable to Model series	L1	Ordering No.
F13, L13, R13, FRC13	12	A2S01
F14, L14, R14, FRC14	14	A2S02
F15, L15, R15, FRC15	16	A2S03
F17, R17, L17, FRC17	15	A2S04



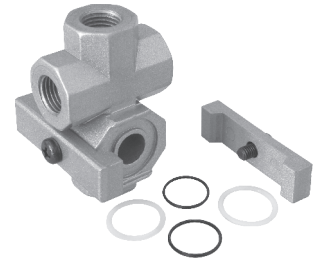
How to order :- Mention the ordering number required

Example :- Spacer for 3/8 Filter, Regulator, Lubricator series F14, R14, L14 - Ordering no : A2S02

X SPACER ASSEMBLY - Mountable between FRL, FRC modular units. - 4 way connector



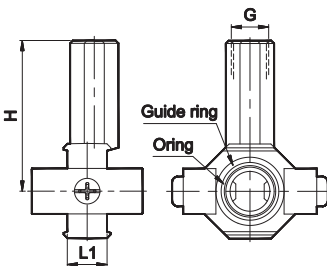
Adoptable to Model series	G	A	B	C	E	OCT	Ordering No.
FRLM13, FRCLM13	1/4	40	60	30	45	22	A2M01
FRLM14, FRCLM14	3/8	45	66.5	35	55	27	A2M02
FRLM15, FRCLM15	1/2	56	83	40	70	30	A2M03



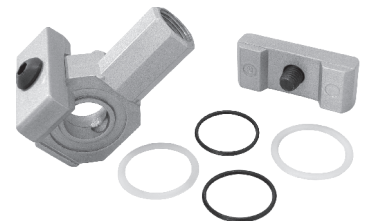
How to order :- Mention the ordering number required

Example :- X Spacer assembly for 3/8 FRLM, FRCLM Series : Ordering no : A2M02

T SPACER



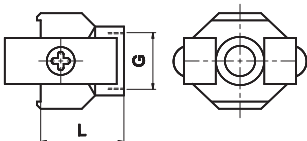
Adoptable to Model series	Size	G	L1	H	Ordering No.
F13, R13, L13, FRC13	1/4	1/8	12	50	A2T01
F14, R14, L14, FRC14	3/8	1/4	14	53	A2T02
F15, R15, L15, FRC15	1/2	3/8	16	52	A2T03



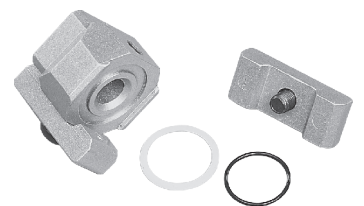
How to order :- Mention the ordering number required

Example :- T Spacer for 3/8 Filter, Regulator, Lubricator, FRC Series F14, R14, L14, FRC14 : Ordering no : A2T02

PIPING ADAPTOR



Adoptable to Model series	G	L	Ordering No.
F13, L13, R13, FRC13	1/4	27	A2P01
F14, L14, R14, FRC14	3/8	29	A2P02
F15, L15, R15, FRC15	1/2	32	A2P03
F17, R17, L17, FRC17	G3/4	35	A2P07
	G1	35	A2P08



How to order :- Mention the ordering number required

Example :- Piping Adaptor for 3/8 Filter, Regulator, Lubricator series F14, R14, L14 - Ordering no : A2P02

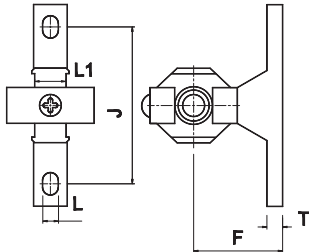
Subject to change

AIR PREPARATION UNITS - ACCESSORIES

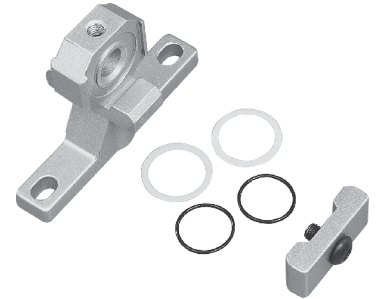
Accessories - for Modular construction

Cat No APA - 01 - C

WALL MOUNTING BRACKET



Adoptable to Model series	L1	J	L	F	T	Ordering No.
F13, L13, R13, FRC13	12	50	7	35	7	A2W01
F14, L14, R14, FRC14	14	70	7	45	7	A2W02
F15, L15, R15, FRC15	16	90	9	55	9	A2W03
F17, R17, L17, FRC17	15	100	12	70	10	A2W04



How to order :- Mention the ordering number required

Example :- Wall mounting Bracket for 3/8 Filter, Regulator, Lubricator series F14, R14, L14 : Ordering no : A2W02

KIT FOR MODULAR CONSTRUCTION

For Modular construction, order accessories as given below

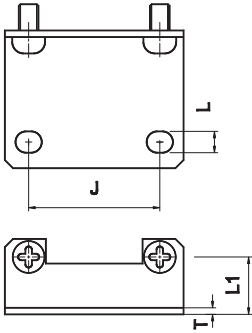
	Wall mounting bracket	Piping Adaptor
FRCLM	1	2
FRLM	2	2

AIR PREPARATION UNITS - ACCESSORIES

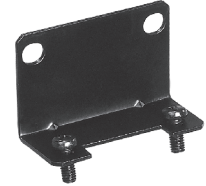
Accessories - CLAMPS

Cat No APA - 01 - C

CLAMP for FILTER, LUBRICATOR



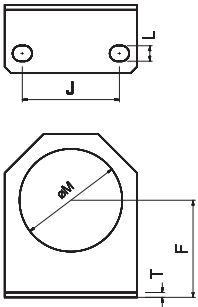
Adoptable to Model series	J	L	L1	T	Ordering No.
F13, L13	28	5.5	14	2	A2C31
F14, L14	40	6.5	17.5	2	A2C32
F15, L15	55	8.5	22	2	A2C33
F17, L17	66	11	33	5	A2C34



How to order :- Mention the ordering number required

Example :- Clamp for 3/8 Filter, Lubricator series F14, L14 - Ordering no : A2C32

CLAMP for REGULATOR



Adoptable to Model series	ØM	F	L	J	T	Ordering No.
R13, FRC13	30.5	30	5.5	28	2	A2C01
R14, FRC14	42.5	40	6.5	40	2	A2C02
R15, FRC15	52.5	50	8.5	55	2	A2C03
R17, FRC17	52.5	70	11	66	5	A2C04



How to order :- Mention the ordering number required

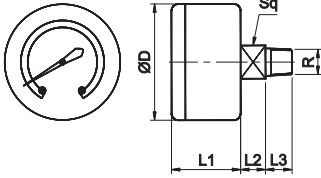
Example :- Clamp for 3/8 Regulator series R14, FRC 14 - Ordering no : A2C02

AIR PREPARATION UNITS - ACCESSORIES

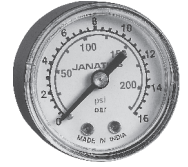
Accessories - Pressure Gauge

Cat No APA - 01 - C

PRESSURE GAUGE



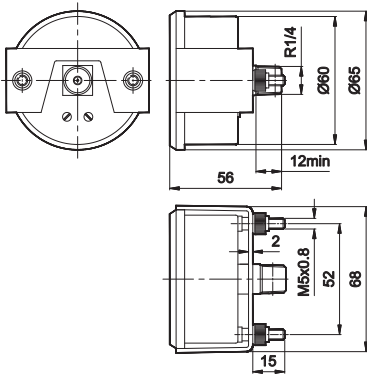
Thread R	Pressure range bar	Adoptable to Model series	ØD	L1	L2	L3	Sq	Ordering No.
R1/8	0 - 4	R13, R14, R15, FRC13, FRC14, FRC15	42 ⁺²	24 ⁺¹	9 ⁺²	8 ⁺²	11/12	A2G01
	0 - 10							A2G02
	0 - 16							A2G03
R1/4	0 - 4	R17, FRC17	50	28	9 ⁺²	13 ⁺¹	14	A2G07
	0 - 10							A2G08
	0 - 16							A2G09



How to order :- Mention the ordering number required

Example :- Pressure Gauge for Regulator with Pressure range 0 - 10 bar : Ordering no : A2G02

PANEL MOUNTING PRESSURE GAUGE



Thread	Pressure range bar	Adoptable to Model series	Ordering No.
R1/4	0 - 10	R17, FRC17	A2GP08



How to order :- Mention the ordering number required

Example :- 1/4 Pressure Gauge for Regulator with Pressure range 0 - 10 bar : Ordering no : A2GP08



AUTO DRAIN VALVE

Series NA1

Cat No APA - 01

AUTO DRAIN VALVE suitable for Filter Series F13, F14, F15 and F17
Filter Regulator combination series FRC13, FRC14, FRC15 and FRC17

Features

- Individual unit (Externally mountable)
- Low operating pressure
- Compact size
- Elegant design and finish
- Long life



Function

These Auto drain units are externally mountable on G1/4, 3/8 and 1/2, 3/4, 1 size Filters and FRC units.

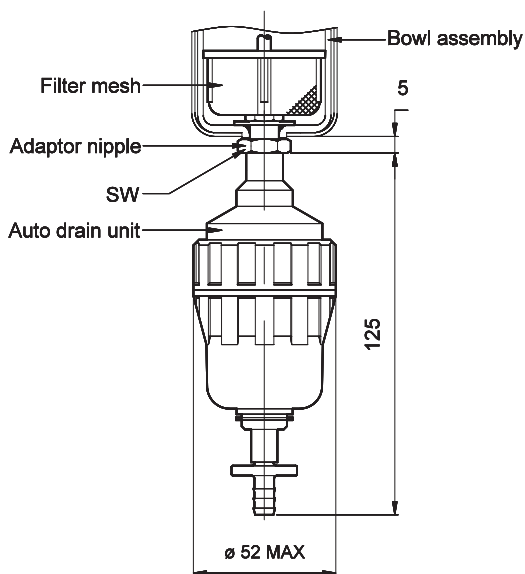
As the condensed water collects in the drain unit, the float moves up and drains the water.

The condensate water can also be drained manually.

A plastic tube can be fitted at the bottom of the auto drain unit to take the drained water away from the unit.

Technical Specifications

Ordering No.	A2D01	A2D02	A2D03
Size	1/4	3/8	1/2, 3/4, 1
Medium	Compressed air		
Operating pressure (bar)	2 - 10 bar		
Ambient Temperature	+5° to +50° C		
Medium Temperature	+5° to +50° C		
Installation	Vertical (as in the picture)		
Materials of construction	Aluminium, Brass, Acetal, Stainless steel, Nitrile		



Size	SW	Ordering no.
G1/4	19	A2D01
G3/8	19	A2D02
G1/2, G3/4, G1	22	A2D03



Note

When ordered as A2D01, auto drain unit with a adaptor kit and a filter mesh for G1/4 Filter or FRC will be supplied.

Subject to change

PRESSURE SWITCH

Series PW

Cat No PW - 01 - 01

PRESSURE SWITCH - R1/8

Features

- Quick response
- Easy adjustability of set pressure
- Hysteresis adjustable



Applications

Pressure switch can be used in compressed air applications. Some of the applications include,

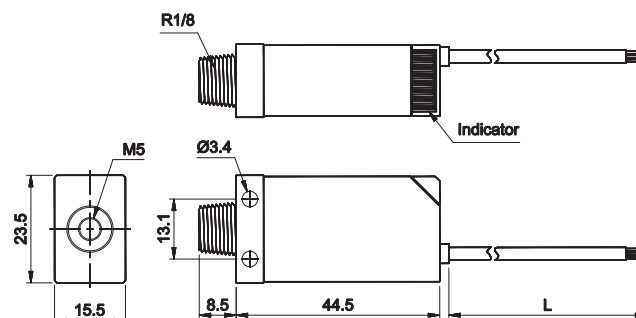
- Protect pneumatic equipment / against over pressure
- For pressure sequencing
- Can be used in application, to operate sequentially

Technical Specifications

Ordering No.		PW0103504	PW0104504
Port size		R1/8	
Operating pressure range		0 - 10 bar	
Withstand pressure		15 bar	
Fluid		Air	
Power supply voltage		12 to 24V DC $\pm 10\%$, Ripple (P-P) 10% or less	
Response time		5ms or less	
Repeatability		$\pm 1\%$ F.S.	
Current consumption		21mA MAX.	
Environment	Enclosure	IP40	
	Ambient temp. range	Operation : 0 ~ 50°C, Storage : -20 ~ 60°C (No condensation or freezing)	
	Ambient humidity range	Operation / Storage : 35 ~ 85% RH (No condensation)	
	Withstand voltage	1000VAC in 1-min (between case and lead wire)	
	Insulation resistance	50Mohm min. (at 500V DC M, between case and lead wire)	
	Vibration	Total amplitude 1.5mm, 10Hz-55Hz,-10Hz scan for 1 minute, two hours each direction of X, Y and Z	
	Shock	980m/s ² (100G), 3 times each in direction of X, Y and Z	
Temperature characteristic		$\pm 3\%$ F.S. (Standard: 25° C)	
Weight		50g (each including 1M lead wires)	

Output Specifications

Connect diagram		
Characteristics	NPN open collector 30V 80mA	PNP open collector 80mA
Output method	NPN open collector 30V 80mA	PNP open collector 80mA
Hysteresis	1 ~ 10% of setting pressure (Adjustable)	
Setting points	1 point	
Operation indicating lamp	Light at ON (Red)	



Subject to change

DIGITAL PRESSURE SENSOR

(Two Output) Series PS

Cat No PS - 01 - 01 - B

DIGITAL PRESSURE SENSOR - R1/8

Features

- Set pressure selectable (Mpa, psi, kgf/cm², bar)
- Both upper and lower limits of pressure can be set independently
- Panel mountable
- Direct mountable
- Both PNP & NPN versions
- Two outputs



Technical Specifications

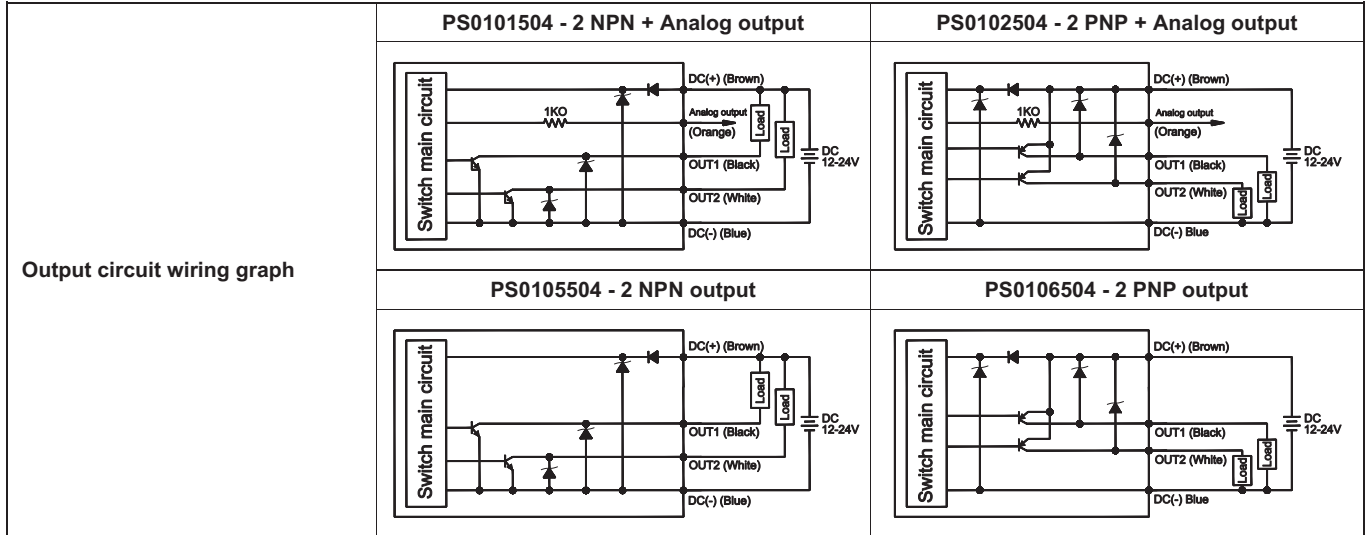
Model	PS0101504	PS0105504	PS0102504	PS0106504
Port size	R 1/8			
Rated pressure range	0 ~ 10 bar			
Operating / Setting pressure range	-1 ~ 10 bar			
Withstand pressure	1.5 times of rated pressure range			
Fluid	Air			
Set pressure resolution	Mpa	0.001		
	Kgf/cm ²	0.01		
	Bar	0.01		
	Psi	0.1		
Power supply voltage	12 to 24V DC $\pm 10\%$, Ripple (P-P) 10% or less			
Current consumption	≤ 55 mA			
Switch output	NPN: open collector 2 outputs Max. load current: 80 mA Max. supply voltage: 30V DC Residual voltage: $\leq 1V$ (load current 80 mA)		PNP: open collector 2 outputs Max. load current: 80 mA Max. supply voltage: 24V DC Residual voltage: $\leq 1V$ (load current 80 mA)	
Repeatability (Switch output)	$\leq \pm 0.2\%$ F.S. ± 1 digit			
Hysteresis	Hysteresis mode	Adjustable		
	Window comparator mode	Fixed (3 digits)		
Response time	≤ 2.5 ms (chattering-proof function: 24ms, 192ms and 768ms selections)			
Output short circuit protection	Yes			
7 segment LED display	3½ digit LED display (Sampling rate: 5 times/1sec.)			
Indicator accuracy	$\leq \pm 2\%$ F.S. ± 1 digit (ambient temperature: 25 $\pm 3^\circ$ C)			
Indicator	Green LED (OUT1) Red LED (OUT2)			
Analog output (Only type PS0101504, PS0102504)	Output voltage: 1 to 5V $\leq \pm 2.5\%$ (within rated pressure range) Linearity: $\leq \pm 1\%$ F.S.			
Environment	Enclosure	IP40		
	Ambient temp. range	Operation : 0 ~ 50°C, Storage : -20 ~ 60°C (No condensation or freezing)		
	Ambient humidity range	Operation / Storage : 35 ~ 85% RH (No condensation)		
	Withstand voltage	1000VAC in 1-min (between case and lead wire)		
	Insulation resistance	50Mohm min. (at 500V DC M, between case and lead wire)		
	Vibration	Total amplitude 1.5mm, 10Hz-55Hz-10Hz scan for 1 minute, two hours each direction of X, Y and Z		
	Shock	980m/s ² (100G), 3 times each in direction of X, Y and Z		
Temperature characteristic	$\leq \pm 2\%$ F.S. of detected pressure (25°C) at temp. Range of 0-50°C			
Lead wire	Oil-resistance cable (0.15mm ²)			
Product weight	Approximate 105g (with 2-metre lead wire)			

DIGITAL PRESSURE SENSOR

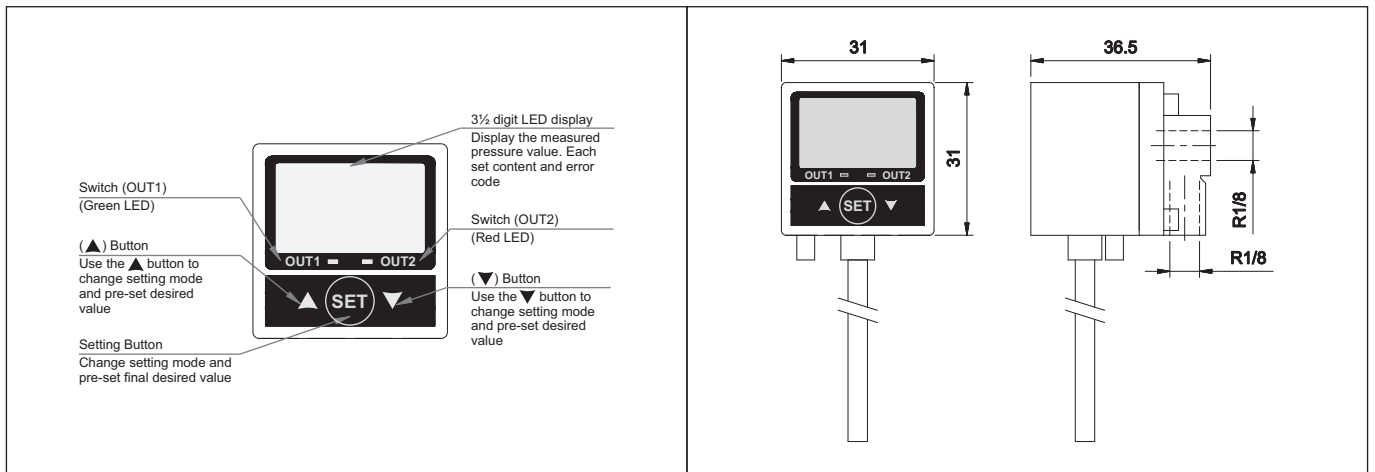
(Two Output) Series PS

Cat No PS - 01 - 01 - B

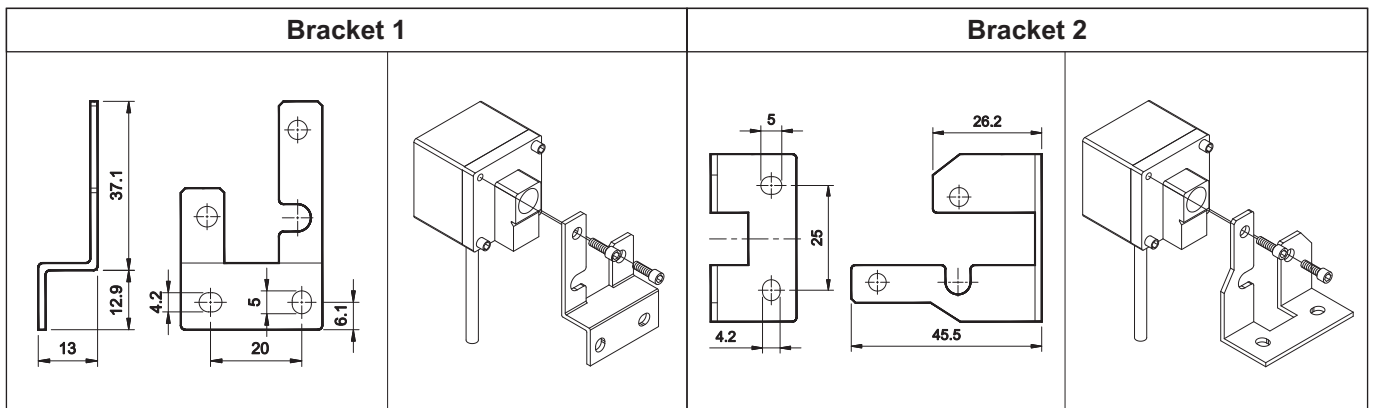
Output Circuit Wiring Graph



Dimension / Panel instructions



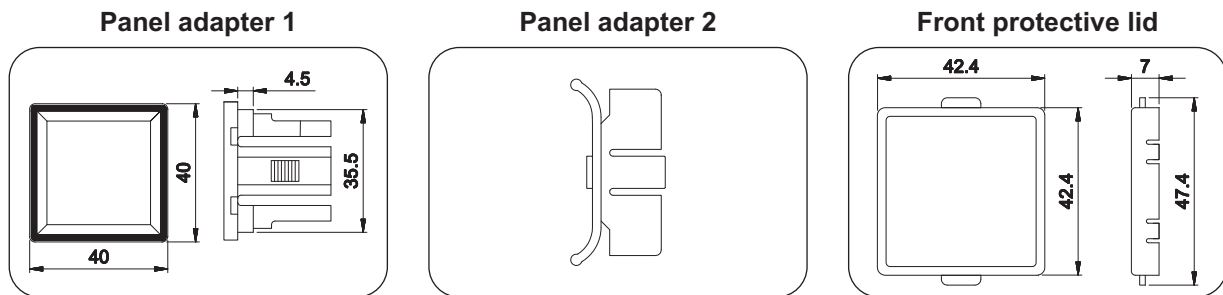
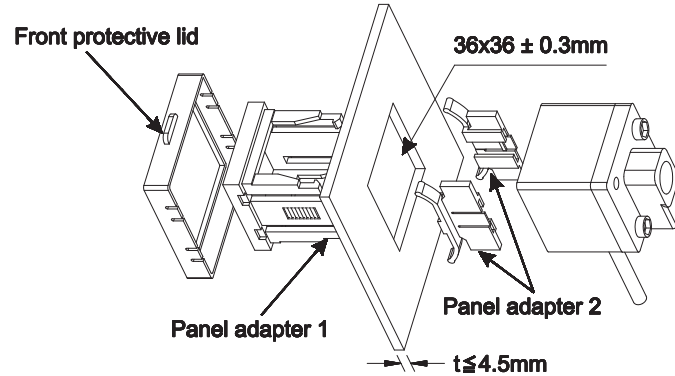
1. Mounting Bracket



DIGITAL PRESSURE SENSOR (Two Output) Series PS

Cat No PS - 01 - 01 - B

2. Panel type



Optional spare parts

S. No.	Optional spare parts	Ordering No.
1	Mounting bracket	A4C10
2.	Panel adapter 1 + Panel adapter 2	A4C11
3.	Panel adapter 1 + Panel adapter 2 + Front productive lid	A4C12

How to order

PS		01		01		50		4		A	
Series		Switch type		Port size		Pressure range		Mounting		No code: Without mounting	
01	Voltage version	01	2 NPN output + 1 Analog output	50	R1/8	4	0 to 10 bar	A	Mounting bracket		
		02	2 PNP output + 1 Analog output					B	Panel adapter 1&2		
		05	2 NPN output					C	Panel adapter 1&2 + Front productive lid		
		06	2 PNP output								

Ordering example:

1. Pressure sensor Voltage version, 2 NPN output + 1 analog output, R1/8 port size, 0 to 10 bar pressure range with mounting bracket - **PS0101504A**
2. Pressure sensor Voltage version, 2 NPN output + 1 analog output, R1/8 port size, 0 to 10 bar pressure range without mounting - **PS0101504**

DIGITAL PRESSURE SENSOR

(Single Output) Series PS

Cat No PS - 01 - 02 - A

2 Colour Display Digital Pressure Sensor - R1/8

Features

- 2 Colours display (Red / Green)
- Set pressure selectable (kPa, psi, kgf/cm², bar)
- Both upper and lower limits of pressure can be set independently
- Panel mountable
- Direct mountable
- Both PNP & NPN versions
- Single output



Technical Specifications

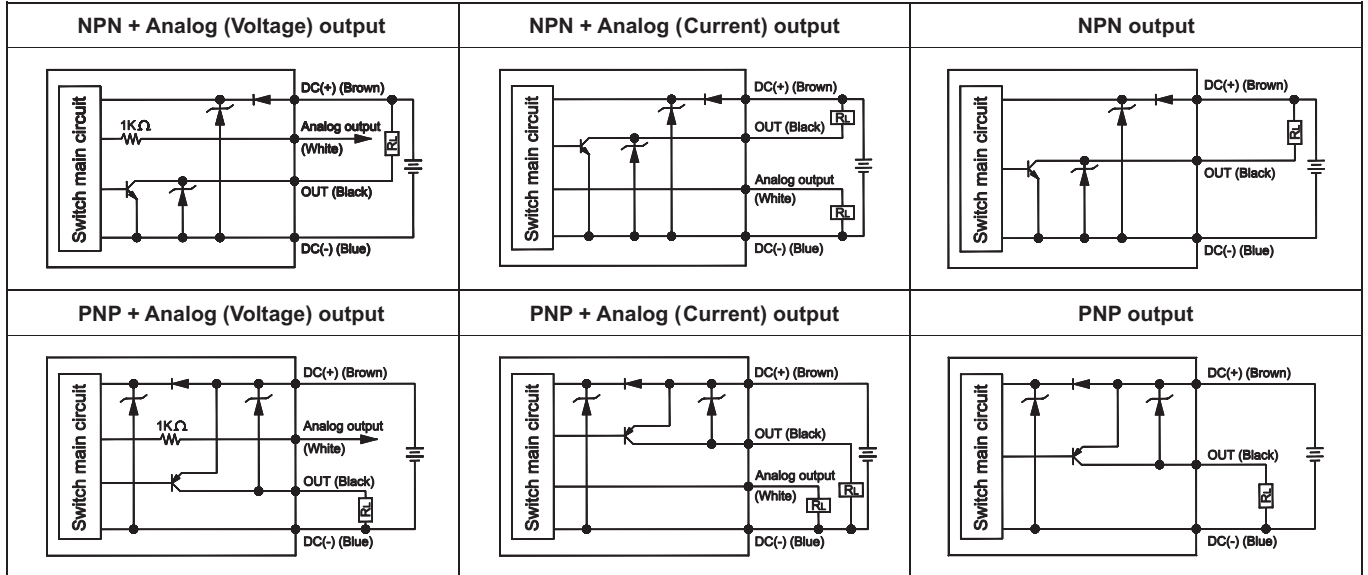
Model		PS01, PS20, PS40
Port size		R 1/8
Rated pressure range		0 ~ 10 bar
Operating / Setting pressure range		-1 ~ 10 bar
Withstand pressure		15 bar
Fluid		Air, Non-corrosive gases, Incombustible gases
Set pressure resolution	kPa	1
	Kgf/cm ²	0.01
	Bar	0.01
	Psi	0.1
Power supply voltage		12 to 24V DC $\pm 10\%$, Ripple (P-P) 10% or less
Current consumption		≤ 45 mA (With no load)
Switch output		NPN: open collector 1 output Max. load current: 125 mA Max. supply voltage: 30V DC Residual voltage: ≤ 1.5 V (load current 125 mA) PNP: open collector 1 output Max. load current: 125 mA Max. supply voltage: 24V DC Residual voltage: ≤ 1.5 V (load current 125 mA)
Repeatability (Switch output)		$\leq \pm 0.2\%$ F.S. ± 1 digit
Hysteresis	Hysteresis mode	Adjustable
	Window comparator mode	
Response time		≤ 2.5 ms (chattering-proof function: 24ms, 250ms, 500ms, 1000ms and 1500ms selections)
Output short circuit protection		Yes
7 segment LED display		Two colour (Red / Green) display (Sampling rate: 5 times/1sec.)
Indicator accuracy		$\leq \pm 2\%$ F.S. ± 1 digit (ambient temperature: 25 $\pm 3^\circ$ C)
Switch on Indicator		Green out Indicator
Analog output (Voltage output)		Output voltage: 1 to 5V $\leq \pm 2.5\%$ FS (within rated pressure range) Linearity: $\leq \pm 1\%$ F.S. Output impedance: about 1k Ω
Analog output (Current output)		Output current: 4 to 20mA $\leq \pm 2.5\%$ FS (within rated pressure range) Linearity: $\leq \pm 1\%$ F.S. Maximum load impedance: 300 Ω at power supply of 12V 600 Ω at power supply of 24V Minimum load impedance: 50 Ω
Environment	Enclosure	IP40
	Ambient temp. range	Operation : 0 ~ 50 $^\circ$ C, Storage : -10 ~ 60 $^\circ$ C (No condensation or freezing)
	Ambient humidity range	Operation / Storage : 35 ~ 85% RH (No condensation)
	Withstand voltage	1000VAC in 1-min (between case and lead wire)
	Insulation resistance	50Mohm min. (at 500V DC M, between case and lead wire)
	Vibration	Total amplitude 1.5mm, 10Hz-55Hz-10Hz scan for 1 minute, two hours each direction of X, Y and Z
	Shock	100m/s ² (10G), 3 times each in direction of X, Y and Z
Temperature characteristic		$\leq \pm 2\%$ F.S. of detected pressure (25 $^\circ$ C) at temp. Range of 0~50 $^\circ$ C
Lead wire		Oil-resistance cable (0.15mm ²)
Product weight		Approximate 75g (with 2-metre lead wire)

DIGITAL PRESSURE SENSOR

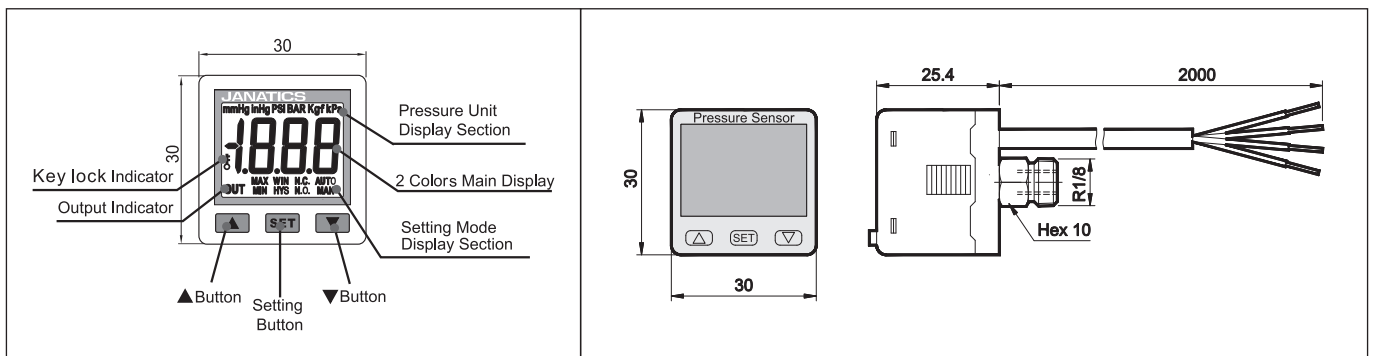
(Single Output) Series PS

Cat No PS - 01 - 02 - A

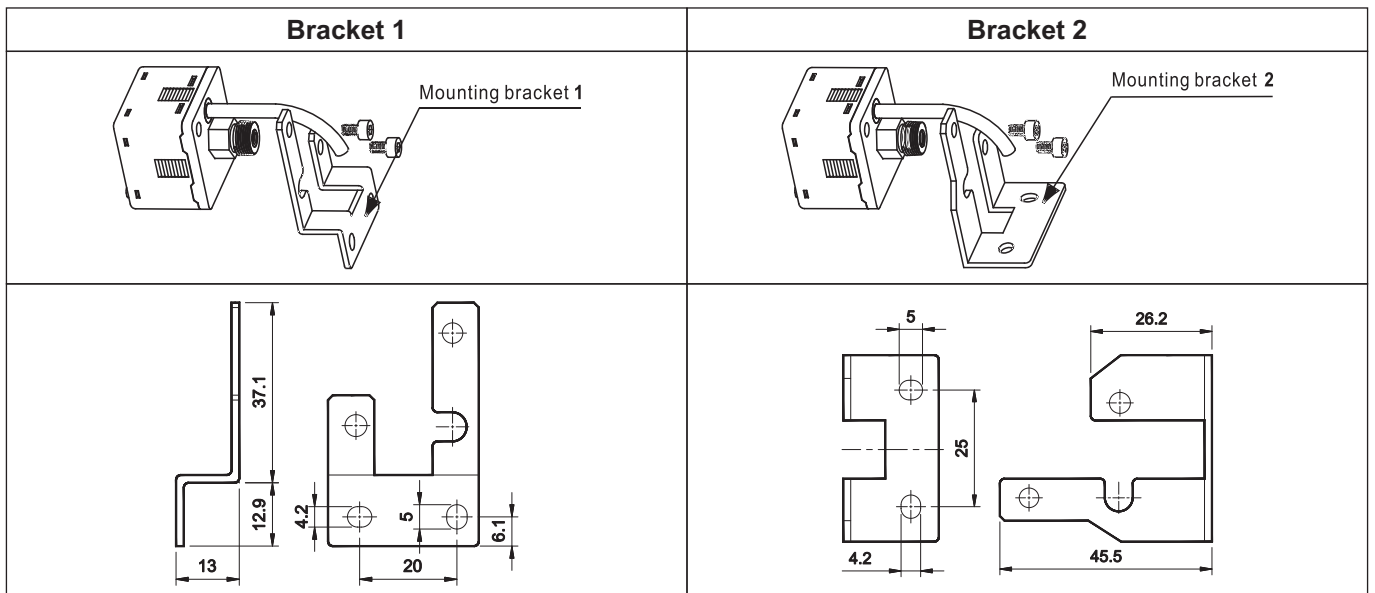
Output circuit wiring graph



Panel instructions / Dimensions



1. Mounting Bracket

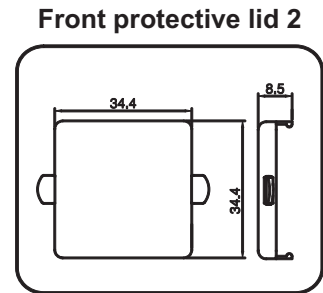
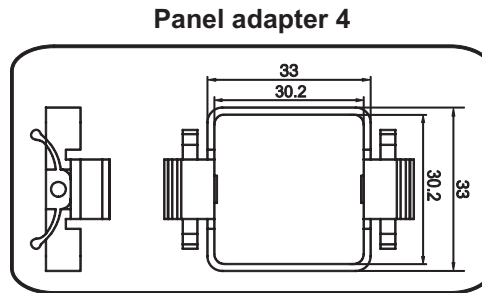
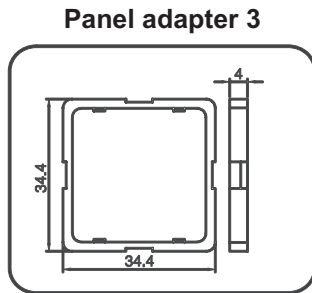
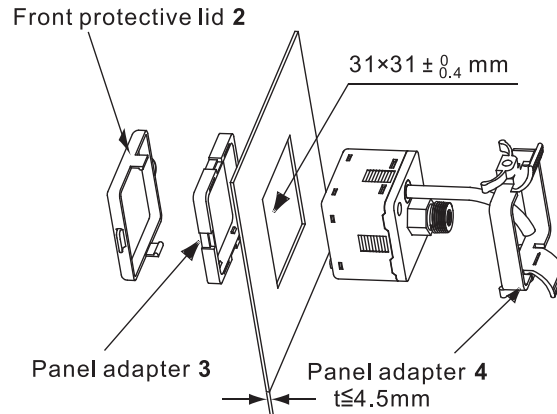


DIGITAL PRESSURE SENSOR

(Single Output) Series PS

Cat No PS - 01 - 02 - A

2. Panel type



Optional spare parts

S. No.	Optional spare parts	Ordering No.
1	Mounting bracket	A4C10
2.	Panel adapter 3 + Panel adapter 4	A4C13
3.	Panel adapter 3 + Panel adapter 4 + Front productive lid 2	A4C14

How to order

PS	01	07	50	4	A
Series	Switch type	Port size	Pressure range	Mounting	
01 Voltage version with Analog	07 1 NPN output	50 R1/8	4 0 to 10 bar	A Mounting bracket	
20 Current version with Analog	08 1 PNP output			B Panel adapter 3&4	
40 Without analog				C Panel adapter 3&4 + Front productive lid	

No code: Without mounting

Ordering example:

- Pressure sensor Voltage version with analog, 1 NPN output, R1/8 port size, 0 to 10 bar pressure range with mounting bracket - **PS0107504A**
- Pressure sensor Voltage version with analog, 1 NPN output, R1/8 port size, 0 to 10 bar pressure range without mounting - **PS0107504**

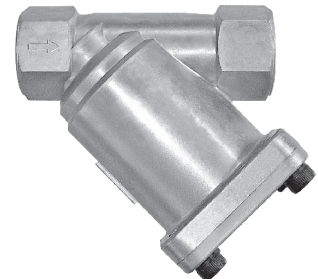
AIR PREPARATION UNITS ACCESSORIES - Angular Line Strainer

Cat No APA - 04 - A

ANGULAR LINE STRAINER - G1/2

Features

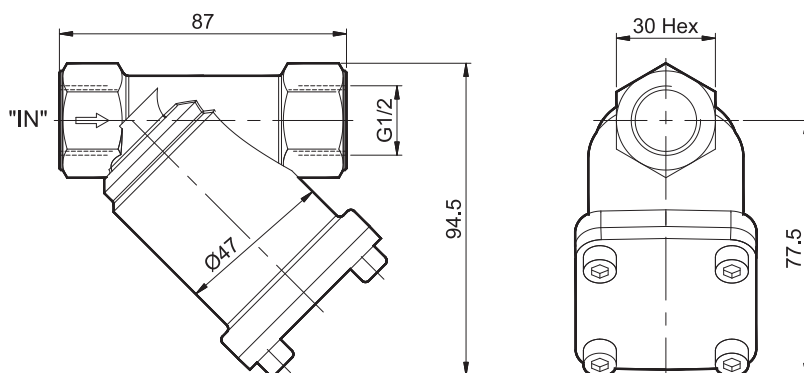
- Can be assembled with F15, FRC15, FS15 & L15 series of products
- Can be assembled directly in airline
- Bronze filtering element
- Serviceable



Technical Specifications

Ordering No.	FL15633
Port size	G1/2
Maximum working pressure	10 bar
Flow	3750 lts / min
Filtration *	40 micron (standard)
Ambient / Medium temperature	-10° to +60° C
Ambient / Medium temperature	+5° to +50° C
Installation	Vertical position (as shown in figure)
Materials of construction	Aluminium, Bronze, Steel, NBR

* Other microns - Optional 1, 5, 25, 50, 100 microns



How to order

Mention the ordering number required

Example :- Angular line strainer (40 micron) - Ordering no : FL15633



PRESSURE INDICATOR

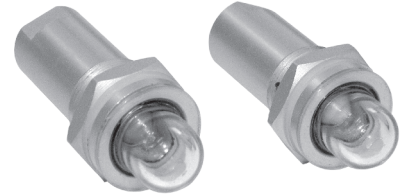
Series PN

Cat No PN - 01 - 01 - A

PRESSURE INDICATOR - M5, G1/8, G1/4

Features

- Compact size
- Quick response
- Panel mountable
- Noiseless performance



Function

Indicates the presence of pneumatic pressure.

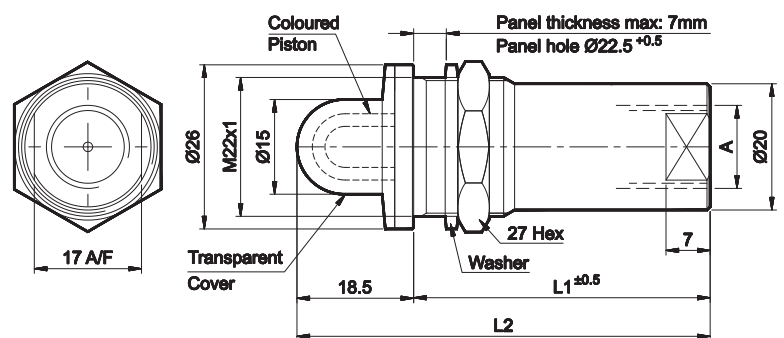
Precautions

1. Flush piping for dirt, dust, rust and other foreign particles.
2. Install in clean atmosphere
3. Nipples of taper thread (R) to be used with teflon tape. Ensure teflon tape does not enter the unit during tightening.
Nipples of straight thread (G) to be used with sealing washer.

Technical Specifications

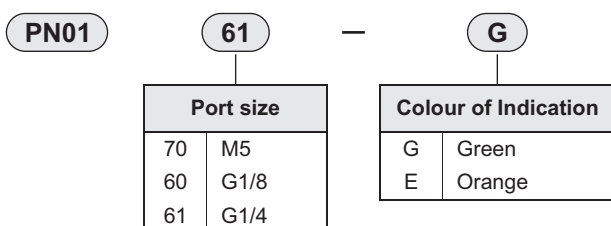
Port size	M5	G1/8	G1/4
Operating pressure	1 to 10 bar		
Ambient temperature	-10° to +50° C		
Medium temperature	+5° to +50° C		
Medium	Compressed air		
Frequency	100 Cycle/min or less		
Colour of indication	Green, Orange		
Materials of construction	Aluminium, Polyacetal, Acrylic, Polyamide		
Weight (grams)	31.3	33.6	33

A	Piston	Ordering No	L1	L2
M5	Green	PN0170-G	40.5	59
	Orange	PN0170-E		
G1/8	Green	PN0160-G	45	63.5
	Orange	PN0160-E		
G1/4	Green	PN0161-G	47	65.5
	Orange	PN0161-E		



Note : Lock Nut tightening torque : 6-7 Nm

How to order



Ordering example : G1/4 Pressure indicator - Green : PN0161-G

Subject to change

Safety Instructions

Compressed Air Safety



Following Safety instructions should be strictly followed. Failure to do so may result in accidents, equipment malfunctioning, serious personal injury and / or loss of life.

Compressed air is a source of considerable energy. When handling products dealing with compressed air, the following precautions must be taken to prevent accidents.

1. Human hands or any parts of a human body should not block compressed air. Compressed air should not be allowed to impinge on any portion of the human body.
2. Before connecting any pneumatic equipment to the compressed air supply, all mounted fittings, piping assemblies and electrical connections should be checked for security. All plastic plugs in the equipment used for protection during shipping should be removed.
3. No piping alterations, removal of fittings, repairing of equipment etc. should be attempted with air supplies connected. Air and electrical supplies must be disconnected before beginning any adjustment, maintenance or dismantling of equipment.
4. The maximum allowable operating pressures, temperature, flows etc. must be strictly observed. Failure to do so might result in catastrophic failure of equipment, and result in serious personal injury and / or death. Refer to individual catalogs for this information, and any other operating or application limitations.

Compressed Air Safety for Pneumatic Equipment :

Warning



1. Compatibility of pneumatic equipment

Ensuring the compatibility of the procured FRL equipment is the responsibility of the person who designs the Pneumatic system and / or System specifications. This should be based on specifications or after analysis and / or tests to meet specific requirements.

2. Repair & Maintenance

Assembly, handling, or repair of pneumatic systems should be performed by only trained and experienced operators.

3. Safety First

Do not service machinery / equipment or attempt to remove any component until safety is confirmed.

- Inspection and maintenance of machinery / equipment should only be performed after confirmation that both compressed air and electrical supply have been positively disconnected and all residual compressed air in the system has been completely exhausted to the atmosphere.

4. Contact Janatics if equipment is to be used in any of the following conditions :

1. Equipment is to be used in conditions beyond the given specifications, or if equipment is to be used outdoors.
2. Equipment is to be used in conjunction with atomic energy, railroad, air navigation, automobiles or related vehicles, medical equipment or safety equipment.
3. In applications that adversely effect humans, animals, or property requiring special safety analysis.

Product Selection

Warning



Standard Filters, Regulators, Lubricators and Filter- Regulator Combination units should be used in accordance with the specifications mentioned in the catalogs / specification sheets. While installing and using this equipment, please also follow the respective specification & instruction manual available for each product.



Wherever this symbol is shown, it indicates **Caution!** and / or **Warning!**

It indicates that operator error can lead to damage and malfunctioning of the pneumatic equipment and can lead to serious personal injury or loss of life.

1. Air Filter and Lubricator

Standard Filters and Lubricators incorporate polycarbonate bowls and / or observation windows. Do not use filters & lubricators in an environment that will expose the above components to synthetic fluids, organic solvents, corrosive chemicals, cutting lubricants, thread sealant or similar materials.

Make sure that the condensate is periodically drained when using manual drain valves on Filters.

2. Regulator

- a. Safety devices shall be placed to prevent secondary (output) pressure from rising past the set pressure. This will ensure that damage to the components on the secondary side will be minimized in the event of a malfunction.
- b. In a standard regulator, when the supply pressure is removed or disconnected, either of the following may happen :
 1. The residual pressure will remain on the secondary side of the regulator.
 2. The pressure on the secondary side of the regulator will exhaust.

The designer should add components to the circuit to compensate for any of the above conditions.

- c. Regulator operation may be affected when used in Balanced or Secondary sealed circuits. Please consult Janatics regarding these applications.

3. Lubricators

Ensure proper function of the Lubricator. Minimum airflow rate should be ensured for effective lubrication.

4. Automatic Drains - Normally Open

Ensure minimum working pressure for proper functioning of the Auto drain. The Filter unit must be periodically checked for condensate that would not be drained in case of any drain malfunction.

Compressed Air Safety - Valves

1. Check security of fittings, pipes, valve installation and electrical connections before use.
2. All electrical connections are to be completed by a person qualified to undertake electrical work.
3. Ensure that all air supplies and electrical connections are isolated before dismantling valves from sub plates, or removing fittings, cables or solenoids from valves
4. During prolonged or frequent energisation, valve solenoids can become hot. Ensure that this will not affect surrounding material and components, and that adequate ventilation is provided.
5. The spool and sleeve assemblies of metal seal valves incorporate sharp edges. Protective gloves should be worn for dismantling and maintenance operations.
6. When selecting valves for applications, the design method of actuation and fundamental operating principles of differing valve models and ranges must be considered.
7. Machinery designated as Annex 4 by the EC Directive of Machinery, Which includes pneumatically controlled power presses, have special requirements for control valves and preclude the use of other than specialized equipment.

Warranty

Janatics products are warranted to be free of defects in design, material or workmanship under proper use, installation, application & maintenance in accordance with Janatics written specifications and Safety Instructions for a period of 12 months from the date of shipment from the factory. Janatics warrants that all the Products are suitable for their intended purposes only. Janatics obligation under this warranty is limited to repair or replacement of the product at the discretion of Janatics and provided such product is returned to Janatics freight prepaid and upon examination by Janatics such is found to be defective.

This is the only authorised Janatics Warranty and is in Lieu of all other expressed or implied warranties or representation including any implied warranties of merchantability or fitness or any other obligations on the part of Janatics

In no event will Janatics be liable for business interruptions, loss of profits, personal injury, cost of delay or for any other special indirect, incidental or consequential losses, cost or damages.

Not covered under Janatics warranty :

- Normal wear or deterioration of components and product
- Product(s) not used or installed as designed or intended
- Product is not installed or maintained as described and directed in the product installation and operations manual
- Product contains non-original OEM parts, or was previously repaired or serviced by an unauthorised distributor or repair facility

General: Due to continuous product improvement, all specifications are subject to change.

Instructions for Product Disposal & End of Life treatment

Ordinary industrial waste (recyclable and non-recyclable) is generated by industrial or commercial activities, but is similar to household waste by its nature and composition. It is not toxic or hazardous and thus requires no special treatment. These non-hazardous wastes can be either recycled & reused or treated & disposed, safeguarding the environment, in compliance with the statutory and regulatory requirements for quality, environment and Occupational Health & Safety (OHS).

Internally every Janatics personal is well informed on disposal categorization of components through the Bill of materials.

Disposal method :

The main parts of the Janatics product are metals & can be recycled to preserve natural resources and energy.

1. Dismantle the product and detach each component separately and dispose according to the legislation of the country
2. Generally all metals such as Steel, Aluminum, Copper and its Alloys, and Precious metals can be recycled again as raw materials according to local regulations.
3. Also some plastics like PET, HDPE, PVC, PA, PoM, & packing materials like PU foam & PE film can be recycled with the aid of local regulations.
4. Other plastics like PP and LDPE are difficult to recycle which requires special processes to avoid adverse environmental impact.
5. Rubber parts can be disposed by land fill or incineration following international and national regulations
6. Electrical & Electronic components like Printed circuit boards and reed switches need selective treatment and IEC 62635 guidelines can be referred.
7. To aid recycling and disposal approach deposition either by own or through the authorized agency to sustain the environment.
8. Remove all organic coatings, paint, and lacquered scrap by thermal decoating treatment prior to melting so as to avoid gaseous emissions and decomposition.
9. Follow national & international regulations for End of Life treatment of all components and consumables.

