

# MODULAR

## units



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key products



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## Main features and certifications

Aluminium modular air treatment units.  
Supplied as standard in compliance to Reach and RoHS directives, and SIL certified.



### Filters series A..F, 1/4" ÷ 1"

from page 3.2.20



Aluminium modular filters, available in sizes 1/4", 3/8", 1/2" and 1". Equipped with 25µm filtering element and semi-automatic condense drain. The polycarbonate cup is with metal protection.  
Mounting brackets to be ordered separately.  
Spare parts available for filter cartridge, cup and cup seals.



### Mist separators series A..FD, 3/8" ÷ 1"

from page 3.2.30



Aluminium modular mist separators, available in sizes 3/8", 1/2" and 1". Equipped with 0.3µm filtering element and semi-automatic condense drain. The polycarbonate cup is with metal protection.  
Mounting brackets to be ordered separately.  
Spare parts available for filter cartridge, cup and cup seals.



### Regulators series A..R, 1/4" ÷ 1"

from page 3.2.50



Aluminium modular regulators, available in sizes 1/4", 3/8", 1/2" and 1". Equipped with relieving valve and practical plastic regulation knob with position lock.  
Pressure-gauges and mounting brackets to be ordered separately.  
Spare parts available for regulator diaphragm.



### Precision regulators series A..RP, 1/8" ÷ 1/2"

from page 3.2.60



Aluminium modular precision regulators, available in sizes 1/8", 1/4" and 1/2". Equipped with relieving valve (also with threaded exhaust for size 1/2" only) and practical plastic regulation knob.  
Pressure-gauges and mounting brackets to be ordered separately.  
Note:  
Size 1/8" can be mounted in combination with modular component size 1/4" only.  
Size 1/4" can be mounted in combination with modular component size 3/8" only.  
Size 1/2" can be mounted in combination with modular component size 1/2" only.



### Lubricators series A..L, 1/4" ÷ 1"

from page 3.2.80



Aluminium modular lubricators, available in sizes 1/4", 3/8", 1/2" and 1". Equipped with oil regulation cup, and polycarbonate cup with metal protection.  
The lubricant can be added without stopping the air supply.  
Mounting brackets to be ordered separately.  
Spare parts available for oil regulation cup, cup and cup seals.



Lubricators with large capacity cup series A..LG, 1/4" from page 3.2.90



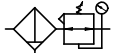
Aluminium modular lubricators with large capacity cup, available in size 1/4" only. Equipped with oil regulation cup and wide visibility polycarbonate cup. The lubricant can be added without stopping the air supply. Mounting brackets to be ordered separately.



Filter-regulators series A..FRR, 1/4" ÷ 1" from page 3.2.110



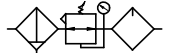
Aluminium modular filter-regulators, available in sizes 1/4", 3/8", 1/2" and 1". Equipped with 25µm filtering element, semi-automatic condensate drain, relieving valve and plastic handy regulation knob with position lock. The polycarbonate cup is with metal protection. Pressure-gauges and mounting brackets to be ordered separately. Spare parts available for regulator diaphragm, filter cartridge, cup and cup seals.



Filter-regulators + lubricators series A..FRRL, 1/4" ÷ 1" from page 3.2.140



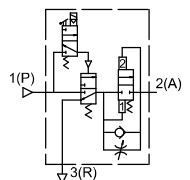
Aluminium modular filter-regulators with lubricator, available in sizes 1/4", 3/8", 1/2" and 1". Equipped with 25µm filtering element, semi-automatic condensate drain, relieving valve, oil regulation cup and plastic handy regulation knob with position lock. The polycarbonate cups are with metal protection. The lubricant can be added without stopping the air supply. Supplied assembled with "T" type bracket. Pressure-gauges and further mounting brackets to be ordered separately. Spare parts available for regulator diaphragm, oil regulation cup, filter cartridge, cup and cup seals.



Soft-start solenoid operated valves series AVP..E, 1/4" ÷ 1/2" from page 3.2.200



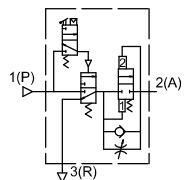
Aluminium modular soft-start solenoid operated valves, available in sizes 1/4", 3/8" and 1/2", allow the gradual pressurization of pneumatic systems at startup. Ideal as emergency sectioning valves, with rapid downstream line exhaust. These valves ensure low consumption, are equipped with manual override and exhaust function. Coils, connectors, pressure-gauges and mounting brackets to be ordered separately.



Soft-start air operated valves series AVP..P, 1/4" ÷ 1/2" from page 3.2.210



Aluminium modular soft-start air operated valves, available in sizes 1/4", 3/8" and 1/2", allow the gradual pressurization of pneumatic systems at startup. Ideal as emergency sectioning valves, with rapid downstream line exhaust. These valves ensure low consumption and are equipped with exhaust function. Pressure-gauges and mounting brackets to be ordered separately.



Exhaust manual operated valves series VMS, 1/4" ÷ 1" from page 3.2.250



Aluminium modular exhaust manual operated 3 way valves, available in sizes 1/4", 3/8", 1/2" and 1", allow manual exhaust of residual air from the system. Padlock applicable to the operating knob to prevent unauthorized use. Mounting brackets to be ordered separately.



## Options

Description	Symbol	Suffix
Filter cartridge 5 µm		<b>5</b>
Automatic condense drain for filter (only for sizes 3/8" - 1/2" - 1")		<b>SA</b>
Metal cup		<b>TM</b>
Regulation range 0,5 ÷ 4 bar		<b>04</b>
Regulation range 0,1 ÷ 4 bar		<b>01-4</b>
Regulation range 0,1 ÷ 8 bar		<b>01-8</b>
NPT thread		<b>NPT</b>

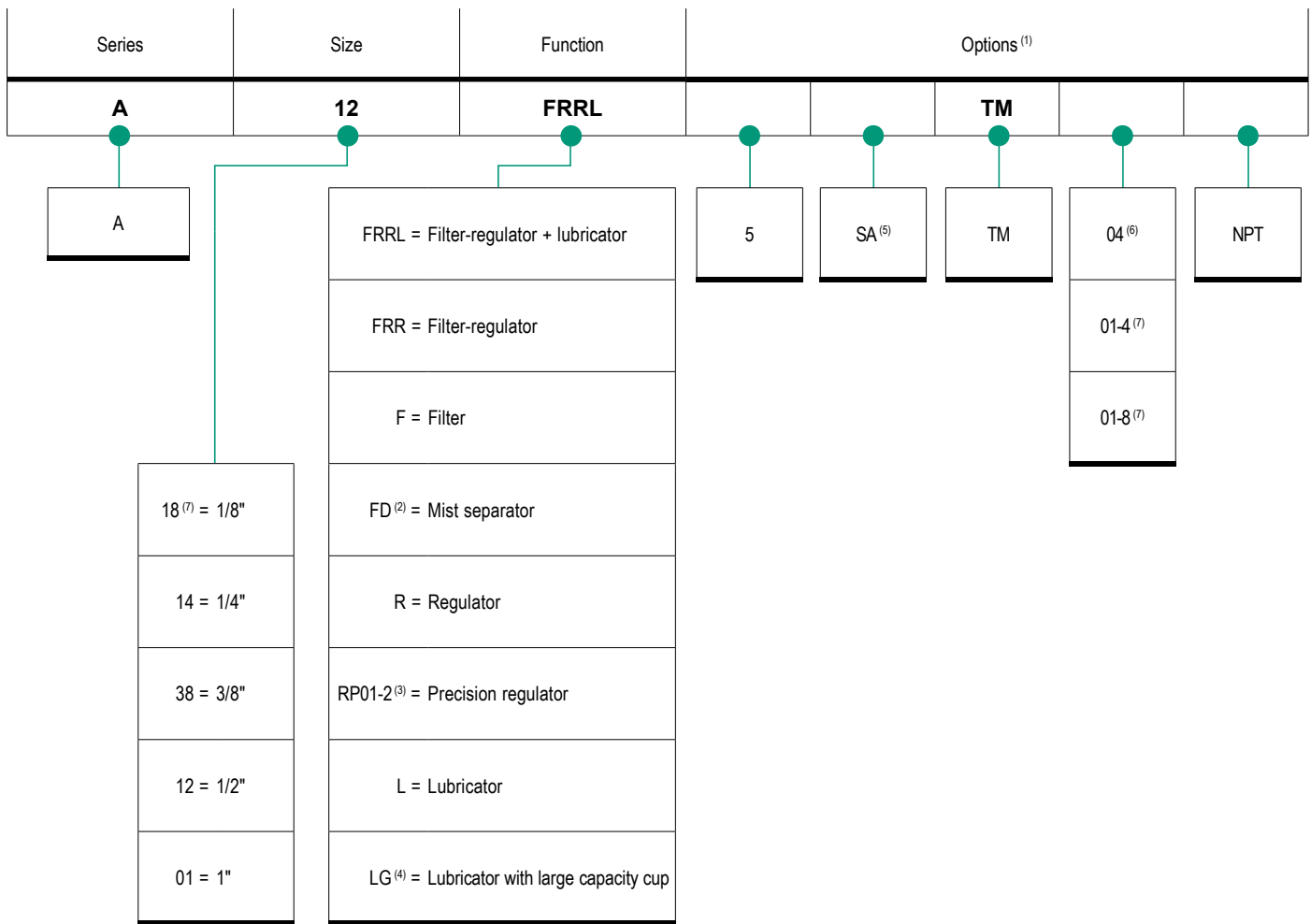
The options, when this is possible, can be combined with each other. For options matching see table on the next page; For code key see from page 3.2.6

Options matching

Type	Size	Model	Standard options matching						
			5	SA	TM	04	0,1-4	0,1-8	NPT
A..F	1/4"	Standard	●	-	●	-	-	-	●
		Metal cup (TM)	●	-		-	-	-	●
	3/8"-1/2"-1"	Standard	●	●	●	-	-	-	●
		Automatic condense drain (SA)	●		●	-	-	-	●
		Metal cup (TM)	●	●		-	-	-	●
A..FD	3/8"-1/2"-1"	Standard	-	●	●	-	-	-	●
		Automatic condense drain (SA)	-		●	-	-	-	●
		Metal cup (TM)	-	●		-	-	-	●
A..R	1/4"	Standard	-	-	-	●	-	-	●
		Regulation range 0,5 ÷ 4 bar (04)	-	-	-		-	-	●
	3/8"-1/2"-1"	Standard	-	-	-	●	-	-	●
		Regulation range 0,5 ÷ 4 bar (04)	-	-	-		-	-	●
A..RP	1/8"-1/4"-1/2"	Standard	-	-	-	-	●	●	●
		Regulation range 0,1 ÷ 4 bar (01-4)	-	-	-	-		-	●
		Regulation range 0,1 ÷ 8 bar (01-8)	-	-	-	-	-	-	●
A..L	1/4"	Standard	-	-	●	-	-	-	●
		Metal cup (TM)	-	-		-	-	-	●
	3/8"-1/2"-1"	Standard	-	-	●	-	-	-	●
		Metal cup (TM)	-	-		-	-	-	●
A..LG	1/4"	Standard	-	-	-	-	-	-	●
A..FRR	1/4"	Standard	●	-	●	●	-	-	●
		Metal cup (TM)	●	-		●	-	-	●
		Regulation range 0,5 ÷ 4 bar (04)	●	-	●		-	-	●
	3/8"-1/2"-1"	Standard	●	●	●	●	-	-	●
		Automatic condense drain (SA)	●		●	●	-	-	●
		Metal cup (TM)	●	●		●	-	-	●
		Regulation range 0,5 ÷ 4 bar (04)	●	●	●		-	-	●
A..FRRL	1/4"	Standard	●	-	●	●	-	-	●
		Metal cup (TM)	●	-		●	-	-	●
		Regulation range 0,5 ÷ 4 bar (04)	●	-	●		-	-	●
	3/8"-1/2"-1"	Standard	●	●	●	●	-	-	●
		Automatic condense drain (SA)	●		●	●	-	-	●
		Metal cup (TM)	●	●		●	-	-	●
		Regulation range 0,5 ÷ 4 bar (04)	●	●	●		-	-	●
AVP..E	1/4"-3/8"-1/2"	Standard	-	-	-	-	-	-	●
AVP..P	1/4"-3/8"-1/2"	Standard	-	-	-	-	-	-	●
VMS	1/4"-3/8"-1/2"-1"	Standard	-	-	-	-	-	-	●

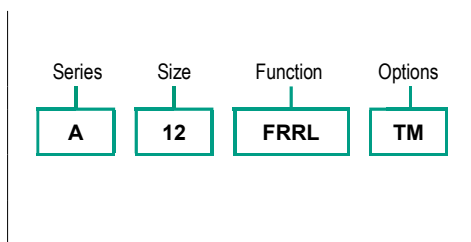
Key  
 ● allowed matching; - not allowed matching

Modular units (F-R-L) code key



3 - AIR TREATMENT

How to order



Notes

For standard materials see table at page 3.2.8  
 Options in the same grid are alternative to each others.  
 (1) For further information on options and their matching see from page 3.2.4  
 (2) Mist separator type FD available in sizes 3/8", 1/2" and 1" only.  
 (3) Precision regulator type RP available in sizes 1/8", 1/4" and 1/2" only.  
 (4) Lubricator with large capacity cup type LG available in size 1/4" only.  
 (5) Automatic condense drain (SA) option, available in sizes 3/8", 1/2" and 1" only.  
 (6) Available for regulators type R only.  
 (7) Available for precision regulators type RP only.  
 For examples of possible combinations between modular components, see from page 3.2.10  
 Combining modular components require spacers (with seals) and/or brackets, to be ordered separately, see page 3.2.300  
 For accessories, to be ordered separately, see from page 3.2.12  
 For spare parts, to be ordered separately, see from page 3.2.400

Modular soft-start valves code key

Series	Size	Actuation	Options <sup>(1)</sup>
<b>AVP</b>	<b>12</b>	<b>E</b>	<b>NPT</b>
AVP	14 = 1/4" 38 = 3/8" 12 = 1/2"	E = Electric P = Pneumatic	NPT

How to order



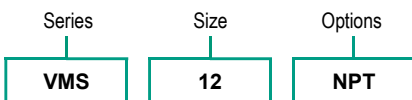
Notes

For standard materials see table at page 3.2.9  
Options in the same grid are alternative to each others.  
(1) For further information on options and their matching see from page 3.2.4  
For examples of possible combinations between modular components, see from page 3.2.10  
Combining modular components require spacers (with seals) and/or brackets, to be ordered separately, see page 3.2.300  
For accessories (including coils and connectors for solenoid operated valves), to be ordered separately, see from page 3.2.12

Modular exhaust manual operated valves code key

Series	Size	Options <sup>(1)</sup>
<b>VMS</b>	<b>12</b>	<b>NPT</b>
VMS	14 = 1/4" 38 = 3/8" 12 = 1/2" 01 = 1"	NPT

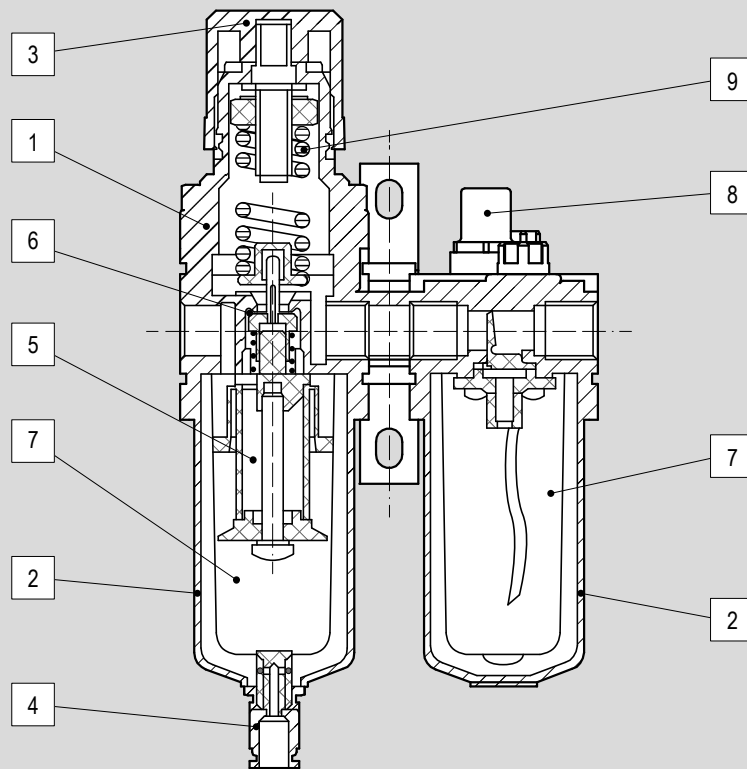
How to order



Notes

For standard materials see table at page 3.2.9  
Options in the same grid are alternative to each others.  
(1) For further information on options and their matching see from page 3.2.4  
For examples of possible combinations between modular components, see from page 3.2.10  
Combining modular components require spacers (with seals) and/or brackets, to be ordered separately, see page 3.2.300  
For accessories, to be ordered separately, see from page 3.2.12

Standard materials for modular filters, regulators and lubricators

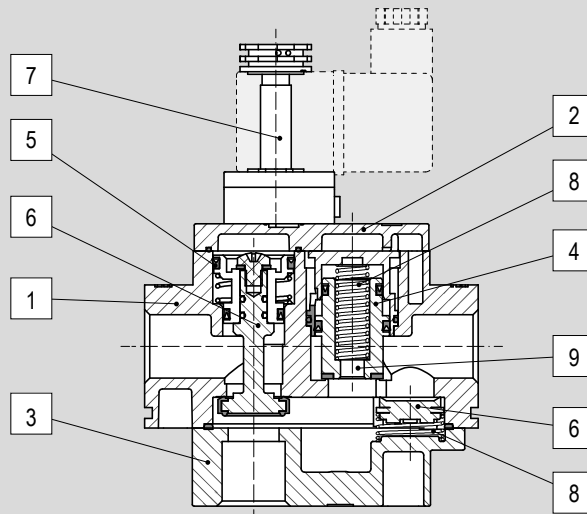


3 - AIR TREATMENT

Position	Description	Material
1	Body	Die-cast aluminium
2	Cup protection	Die-cast aluminium
3	Regulation group	Plastic
4	Condense drain	Nickel-plated brass
5	Filtering element	Sintered bronze
6	Diaphragm	NBR
7	Cups	Polycarbonate
8	Sight-glass	Polycarbonate
9	Springs	Spring steel

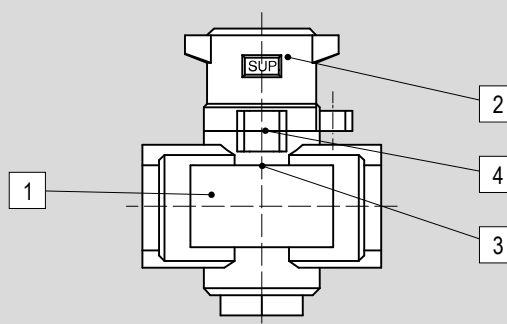


Standard materials for modular soft-start valves



Position	Description	Material
1	Body	Painted aluminium
2	Cover	Painted aluminium
3	End cover	Painted aluminium
4	Piston guide	POM / NBR
5	Seals	NBR
6	Internal components	Brass / NBR
7	Plunger	Brass
8	Springs	Stainless Steel
9	Piston	Brass / NBR

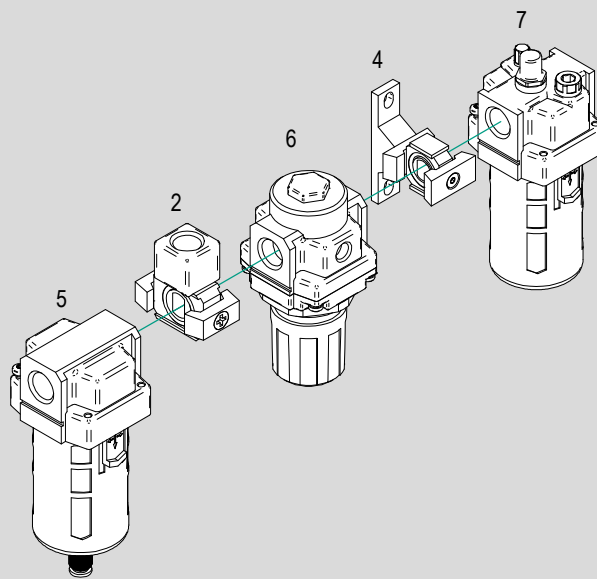
Standard materials for modular exhaust manual operated valves



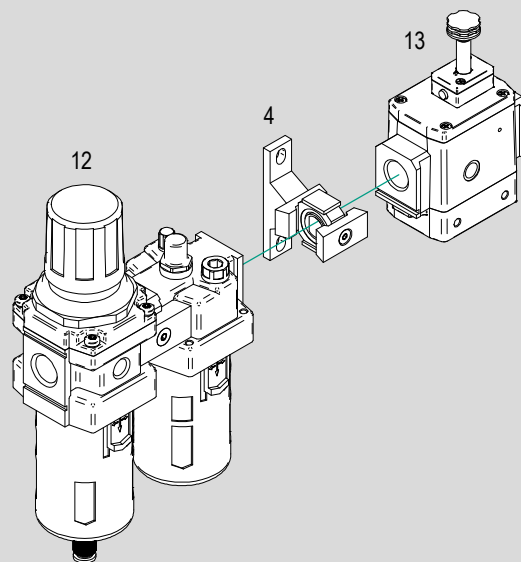
Position	Description	Material
1	Body	Painted aluminium
2	Knob	Painted aluminium
3	Seals	NBR
4	Bush	Stainless Steel

Most commonly used optional combinations

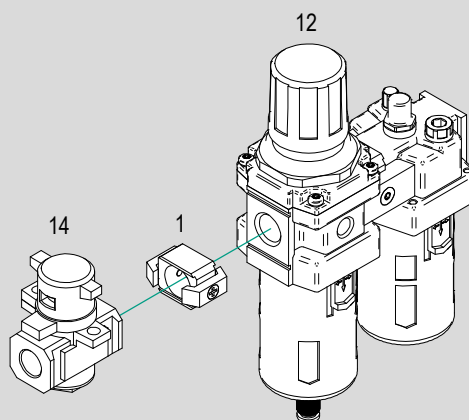
Type: **F+R+L**



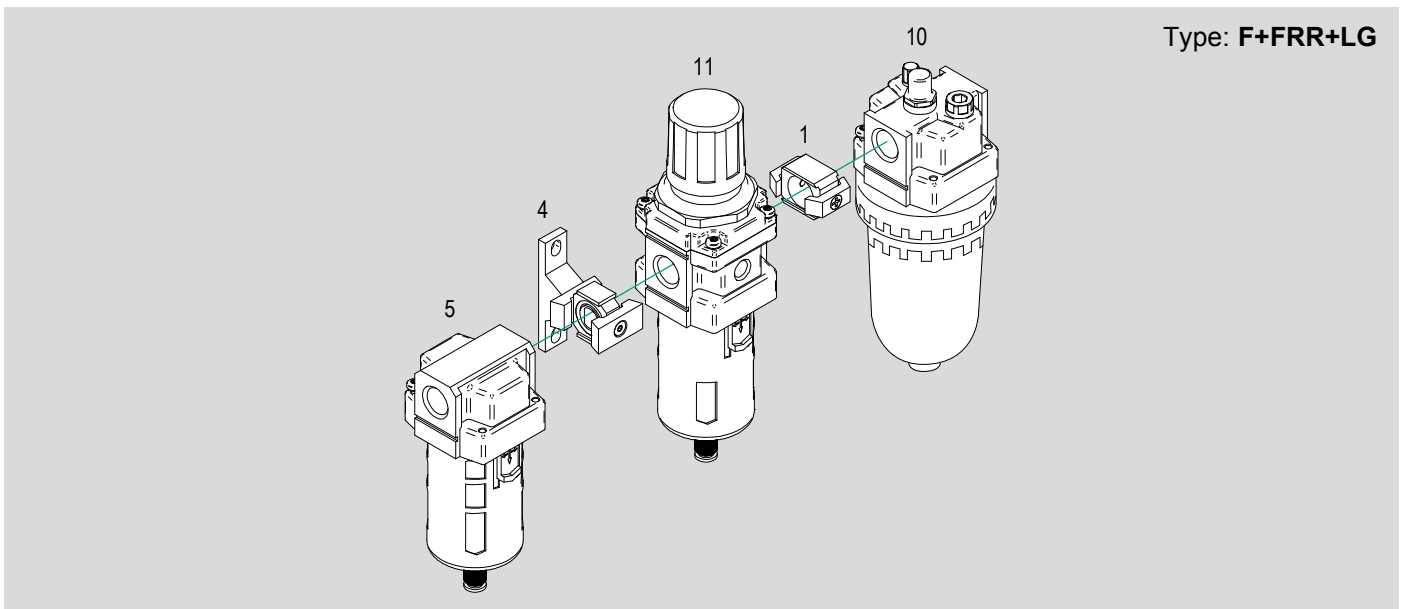
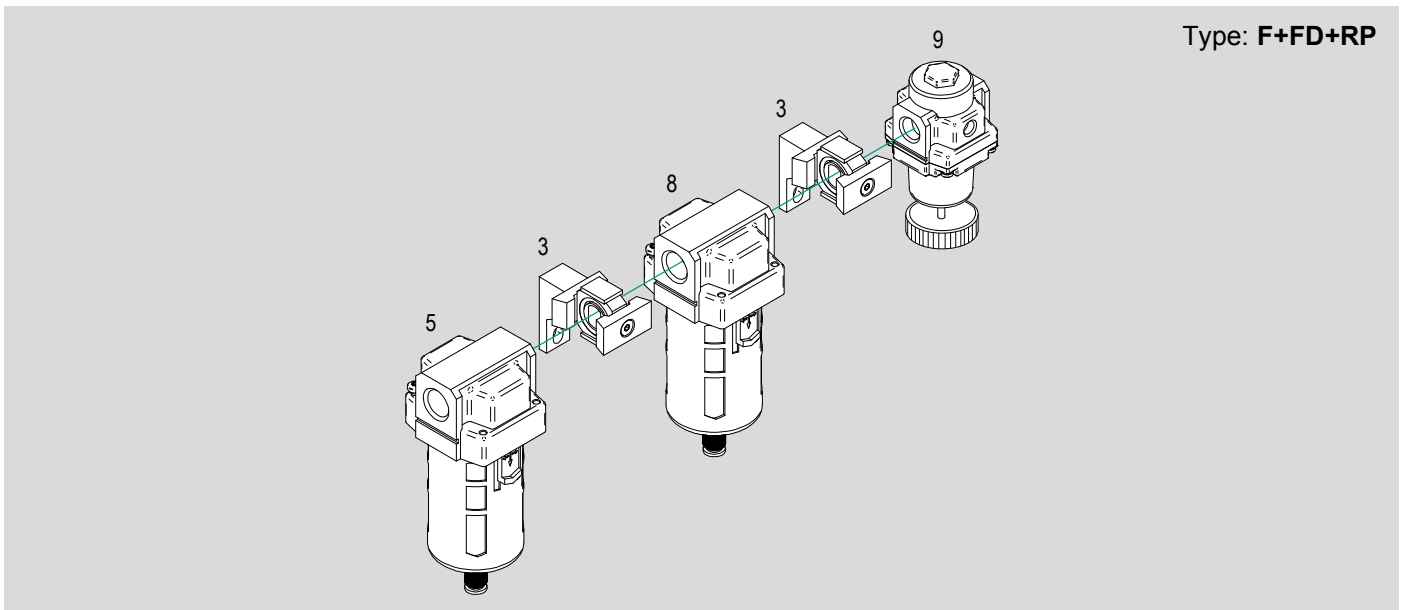
Type: **FRRL+AVP..E**



Type: **FRRL+VMS**



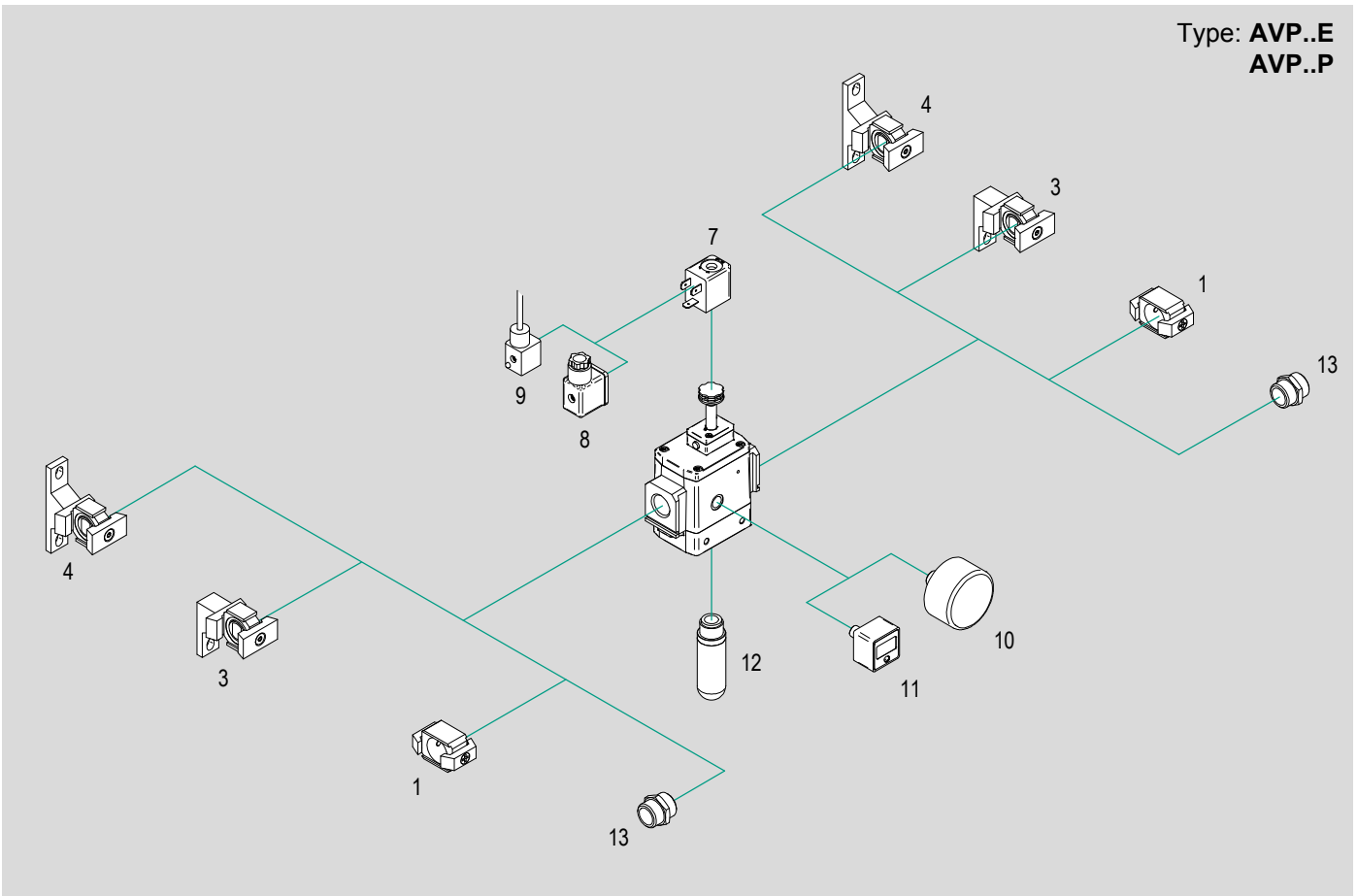
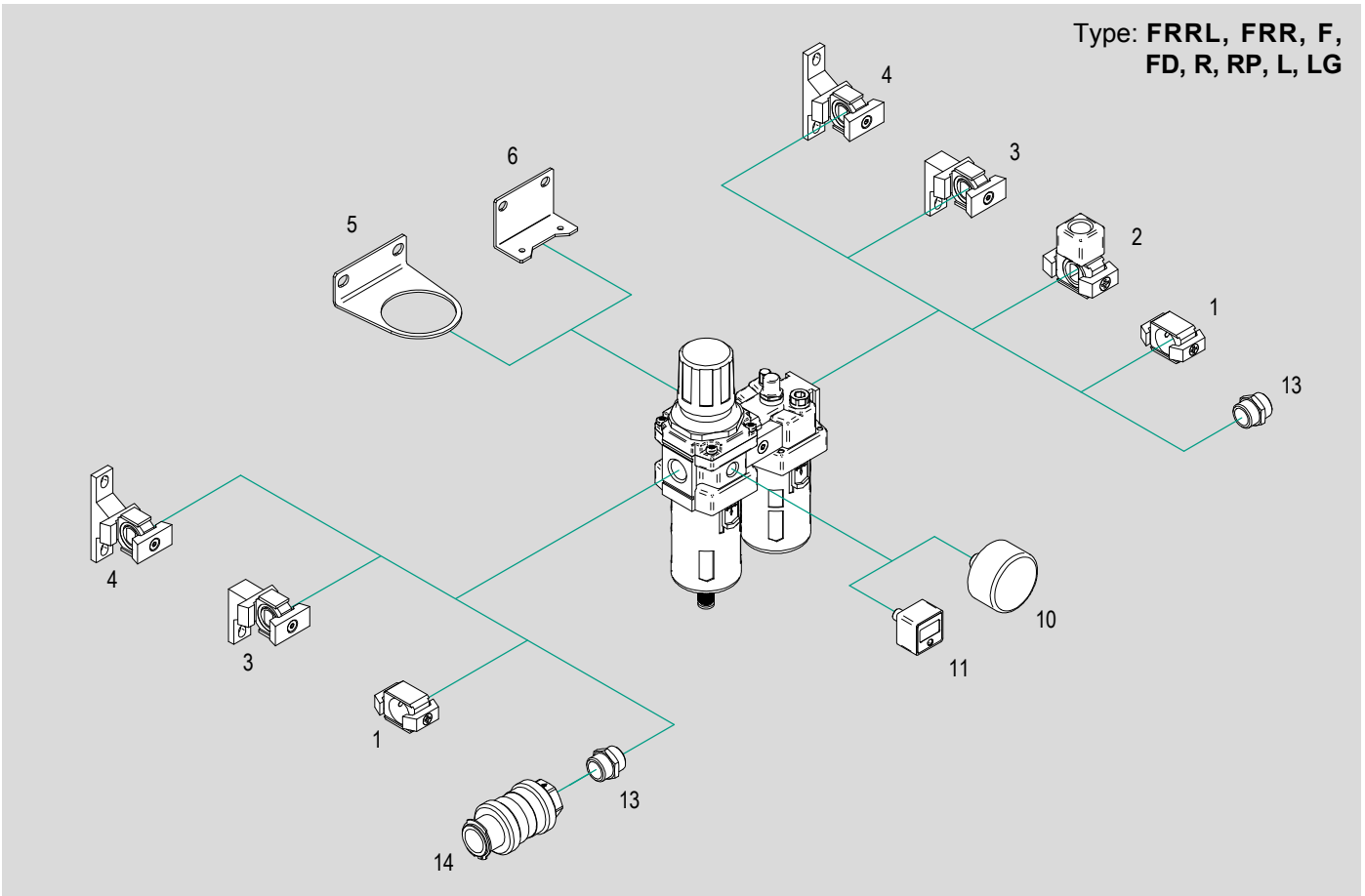
3 - AIR TREATMENT



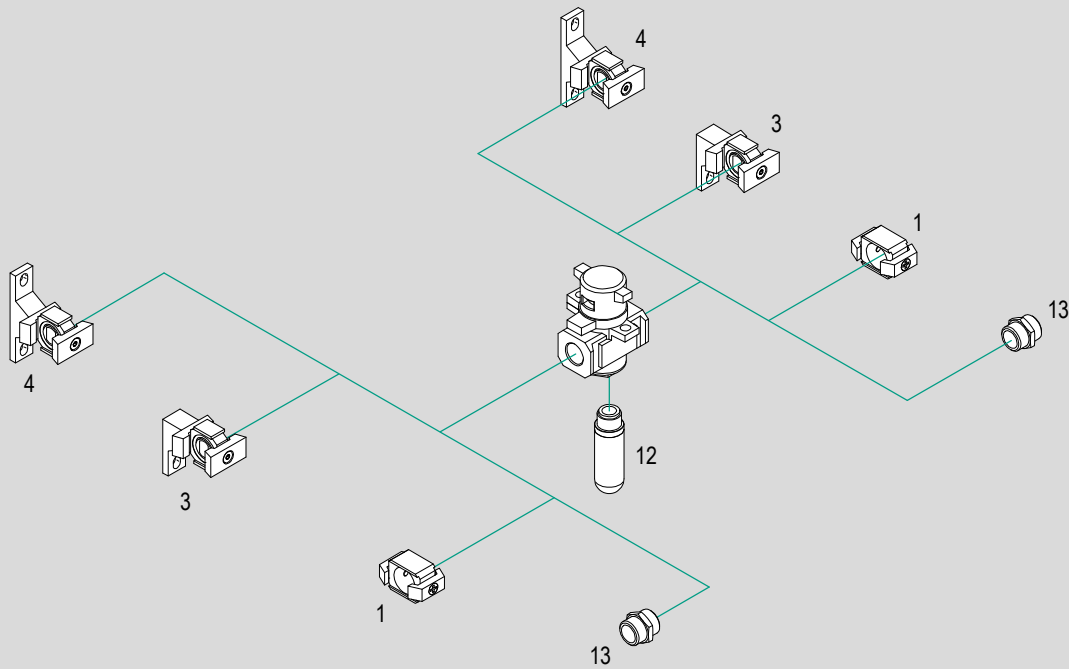
N.	Size	Item	Description	Data sheet page
1	1/4" ÷ 1"	D	Spacer	3.92.1
2	1/4" ÷ 1"	DT	Spacer with "T" type porting block	3.92.1
3	1/4" ÷ 1"	DSL	Spacer with "L" type bracket	3.92.2
4	1/4" ÷ 1"	DST	Spacer with "T" type bracket	3.92.3
5	1/4" ÷ 1"	F	Filter	3.2.20
6	1/4" ÷ 1"	R	Regulator	3.2.50
7	1/4" ÷ 1"	L	Lubricator	3.2.80
8	3/8" ÷ 1"	FD	Mist separator	3.2.30
9	1/8" ÷ 1/2"	RP	Precision regulator	3.2.60
10	1/4"	LG	Lubricator with large capacity cup	3.2.90
11	1/4" ÷ 1"	FRR	Filter-regulator	3.2.110
12	1/4" ÷ 1"	FRRL	Filter-regulator+lubricator	3.2.140
13	1/4" ÷ 1/2"	AVP..E	Soft-start solenoid operated valve	3.2.200
14	1/4" ÷ 1"	VMS	Exhaust manual operated valve	3.2.250

Accessories

3 - AIR TREATMENT



Type: VMS



N.	Size	Item	Description	Matching											Code key page	Data sheet page
				FRRL	FRR	F	FD	R	RP	L	LG	AVP..E	AVP..P	VMS		
1	1/4" ÷ 1"	D..	Spacer	●	●	●	●	●	●	●	●	●	●	●	3.2.300	3.92.1
2	1/4" ÷ 1"	DT..	Spacers with "T" type porting block	● <sup>1</sup>	-	●	●	●	●	● <sup>1</sup>	● <sup>1</sup>	-	-	-		3.92.1
3	1/4" ÷ 1"	DSL..	Spacer with "L" type bracket	●	●	●	●	●	●	●	●	●	●	3.92.2		
4	1/4" ÷ 1"	DST..	Spacer with "T" type bracket	● <sup>2</sup>	●	●	●	●	●	●	●	●	●	3.92.3		
5	1/4" ÷ 1"	SR..	Mounting brackets	●	●	-	-	●	-	-	-	-	-	3.94.1		
6	1/4" ÷ 1"	SL..		-	-	-	-	-	●	-	-	-	-	3.94.2		
	1/8" ÷ 1/2"	SRP..		-	-	-	-	-	●	-	-	-	-			
7	1/4" ÷ 1/2"	ASA12..	Coils	-	-	-	-	-	-	-	-	●	-	2.		
8	1/4" ÷ 1/2"	A12209N..	Connectors	-	-	-	-	-	-	-	-	●	-	2.		
9	1/4" ÷ 1/2"	A12209NK..	Cabled connectors	-	-	-	-	-	-	-	-	●	-			
10	1/4" ÷ 1"	M..	Analogic pressure-gauges	●	●	-	-	●	●	-	-	●	●	3.30.20		
11	1/4" ÷ 1"	AKP60P..	Digital pressure-gauges	●	●	-	-	●	●	-	-	●	●	3.30.40		
12	1/4" ÷ 1"	AS..	Plastic silencers	-	-	-	-	-	● <sup>3</sup>	-	-	●	●	4.		
13	1/4" ÷ 1"	A..	BSP nipple male/ male	●	●	●	●	●	●	●	●	●	●	4.35.1		
14	1/4" ÷ 1/2"	V26..	Slide valves	●	●	●	●	●	●	●	●	-	-	3.2.90	2.251.1	

Key  
 ● matching accessory; - not matching accessory

1) On the lubricator can only be mounted to the "out" port  
 2) supplied as standard  
 3) for size 1/2" only

3 - AIR TREATMENT



# Modular units

## Filters, 1/4" ÷ 1"



### Main features

Code	Item	Size	Function	Symbol
090102	A14F	1/4"	Filter	
090107	A38F	3/8"		
090112	A12F	1/2"		
090117	A01F	1"		



### Technical data

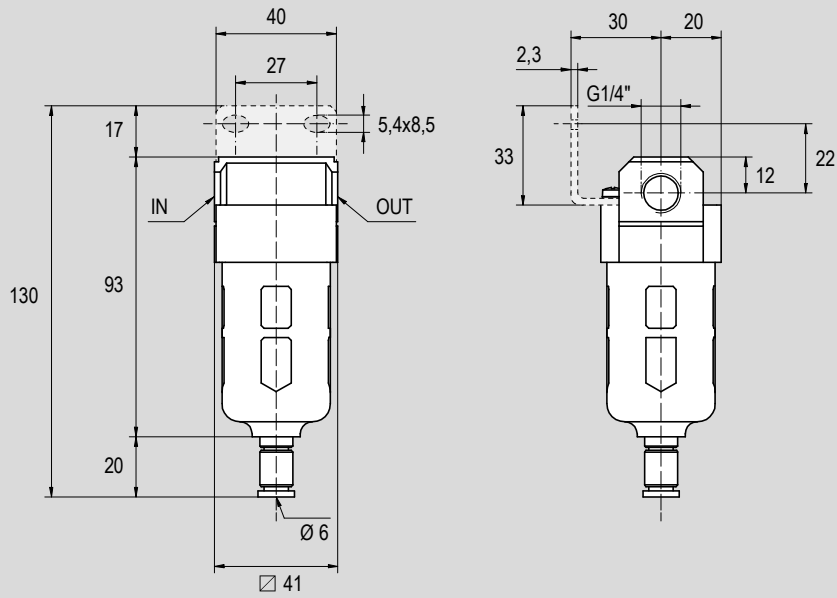
Type	A14F	A38F	A12F	A01F
Size	1/4"	3/8"	1/2"	1"
Fluid	Compressed air			
Maximum inlet pressure	10 bar			
Temperature range	0°C ÷ +60°C			
Flow (at 6 bar)	750 NI/min.	1500 NI/min.	4000 NI/min.	7000 NI/min.
Filtering element	25 µm (standard)		5 µm (5)	
Cup capacity	15 cm <sup>3</sup>	20 cm <sup>3</sup>	45 cm <sup>3</sup>	130 cm <sup>3</sup>
Condense drain	Semi-automatic		Semi-automatic (standard) Automatic (SA)	
Weight	180 g	260 g	520 g	1040 g

### Notes

Spacers and mounting brackets to be ordered separately, see page 3.2.300  
 For spare parts see from page 3.2.400

Standard dimensions

Type: **A14F**



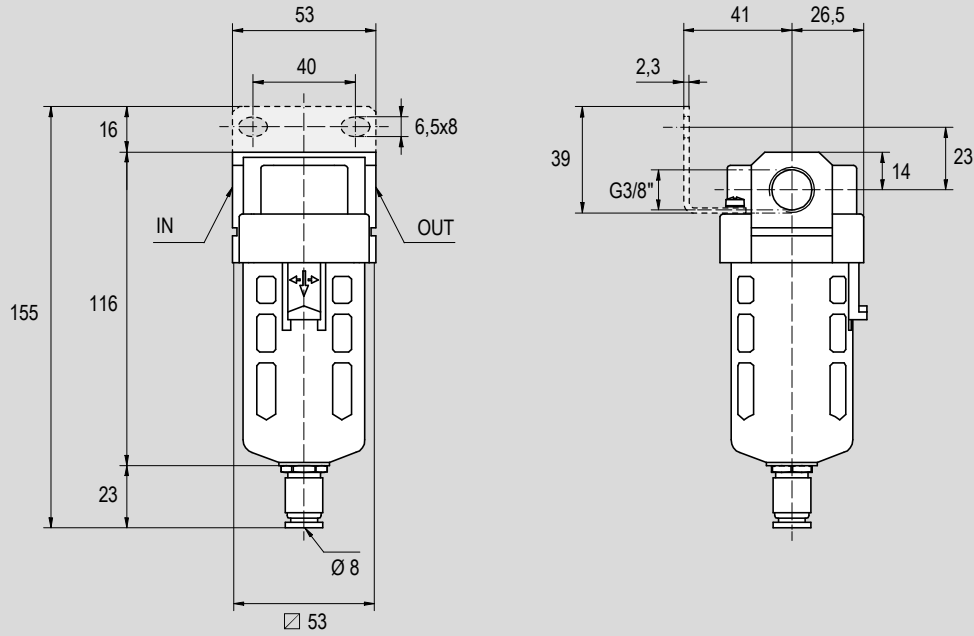
3 - AIR TREATMENT

Size	Function	Symbol	Code	Item
1/4"	Filter		090102	A14F



Standard dimensions

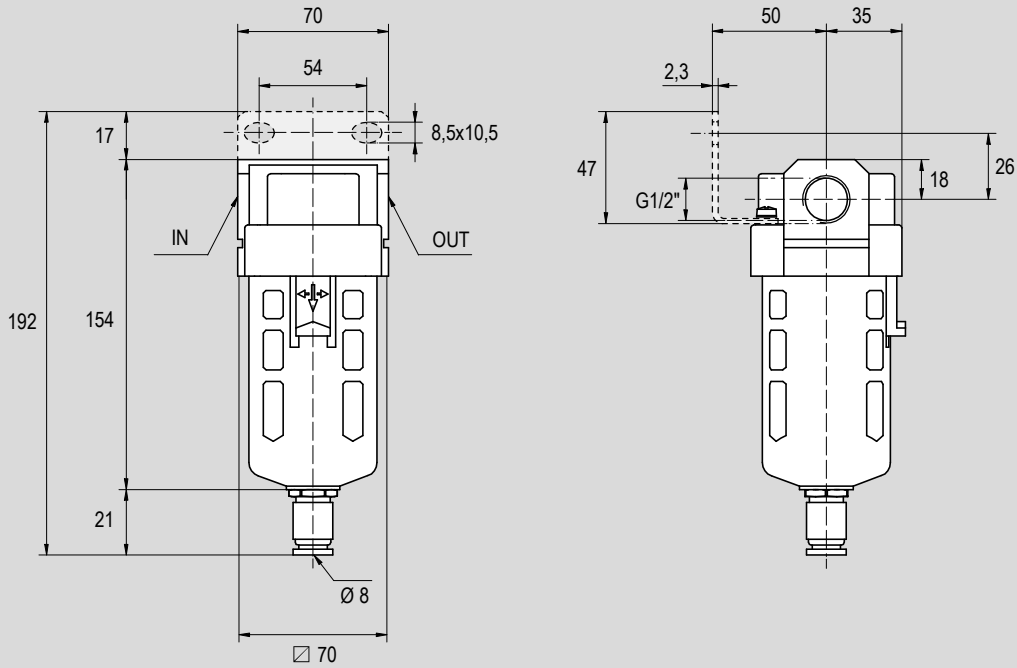
Type: **A38F**



Size	Function	Symbol	Code	Item
3/8"	Filter		090107	A38F

Standard dimensions

Type: **A12F**

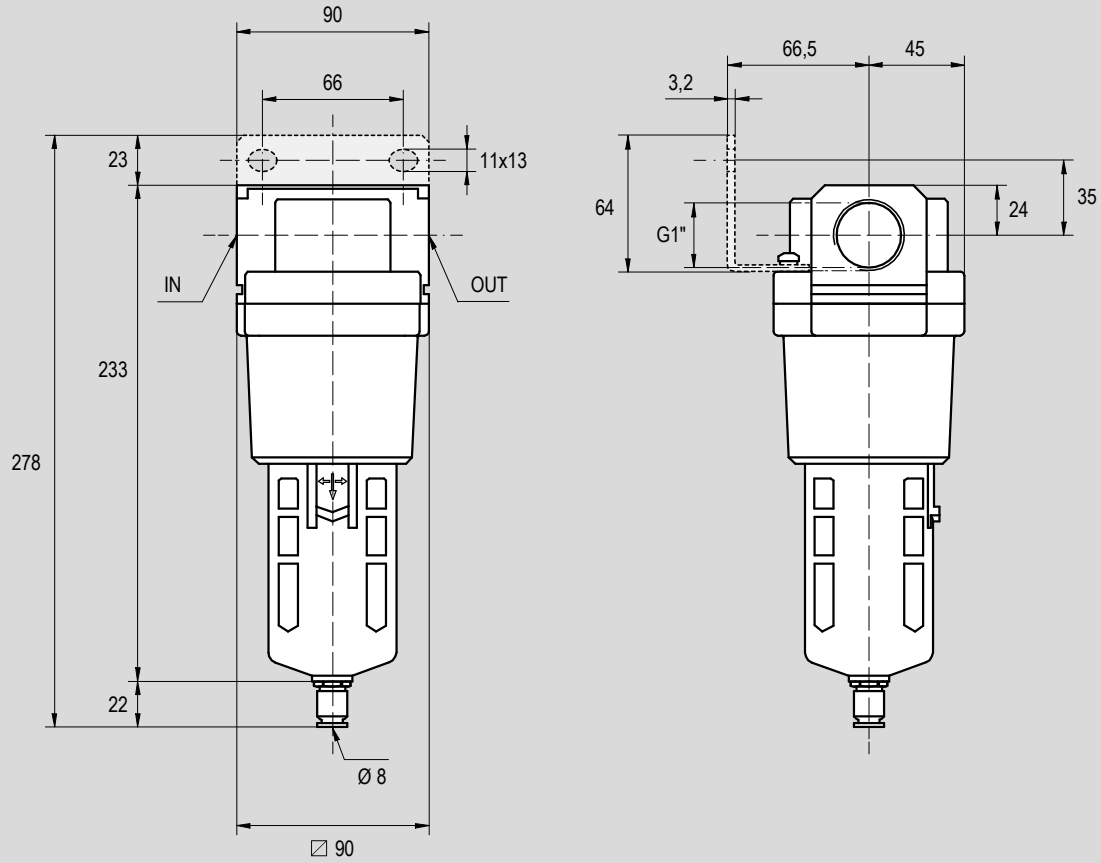


3 - AIR TREATMENT

Size	Function	Symbol	Code	Item
1/2"	Filter		090112	A12F

Standard dimensions

Type: **A01F**



Size	Function	Symbol	Code	Item
1"	Filter		090117	A01F

## Modular units

Mist separators, 3/8" ÷ 1"



### Main features

Code	Item	Size	Function	Symbol
090268	A38FD	3/8"	Mist separator	
090269	A12FD	1/2"		
090270	A01FD	1"		



### Technical data

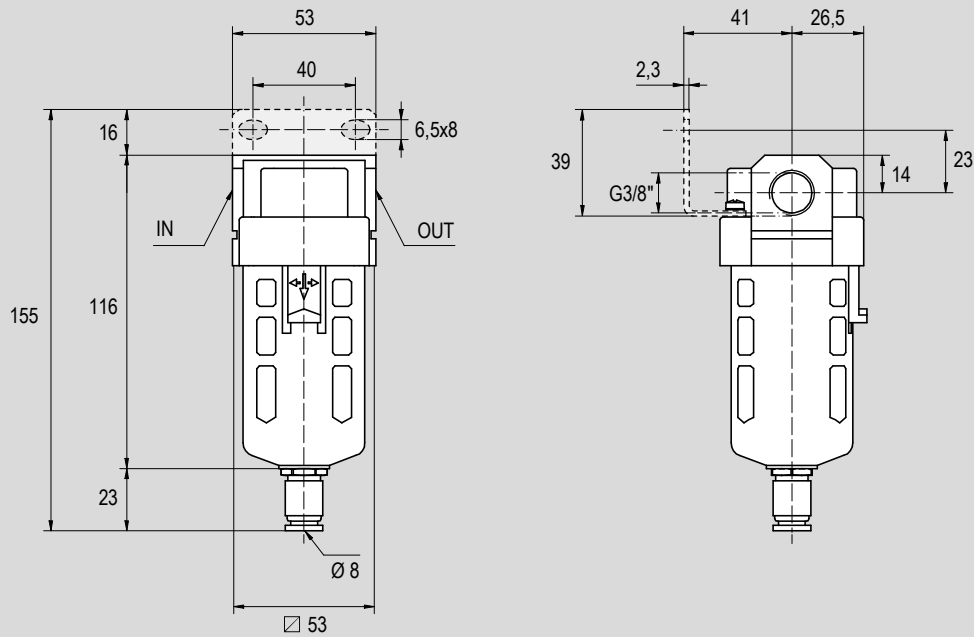
Type	A38FD	A12FD	A01FD
Size	3/8"	1/2"	1"
Fluid	Compressed air		
Maximum inlet pressure	10 bar		
Temperature range	0°C ÷ +60°C		
Flow (at 6 bar)	800 NI/min.	2000 NI/min.	2500 NI/min.
Filtering element	0.3 µm		
Cup capacity	20 cm <sup>3</sup>	45 cm <sup>3</sup>	130 cm <sup>3</sup>
Condense drain	Semi-automatic (standard)		Automatic (SA)
Weight	290 g	520 g	1050 g

### Notes

Spacers and mounting brackets to be ordered separately, see page 3.2.300  
 For spare parts see from page 3.2.400

Standard dimensions

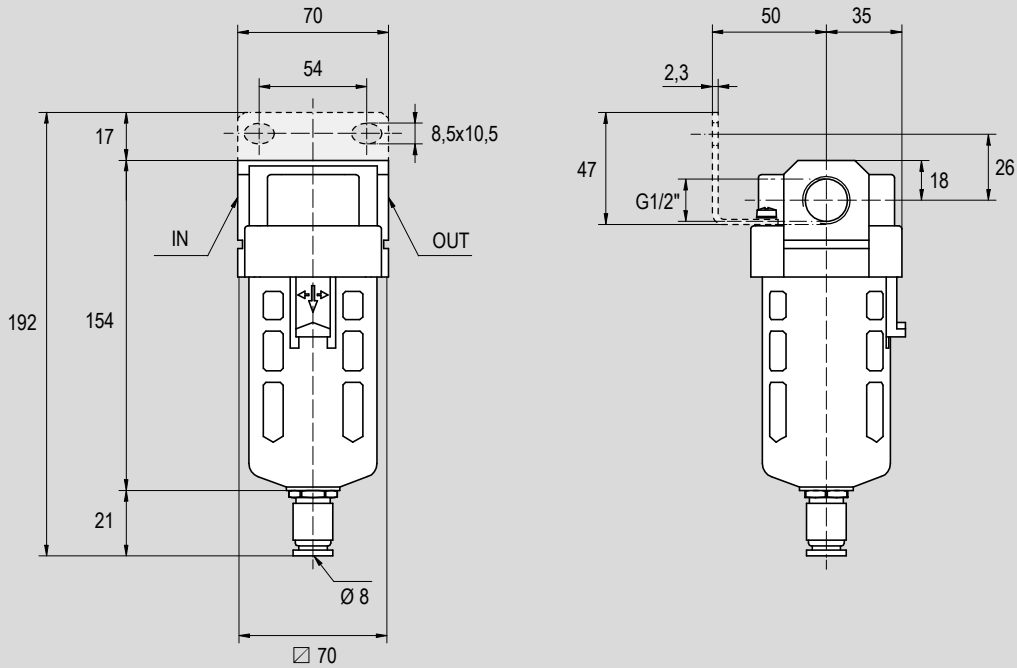
Type: **A38FD**



Size	Function	Symbol	Code	Item
3/8"	Mist separator		090268	A38FD

Standard dimensions

Type: A12FD

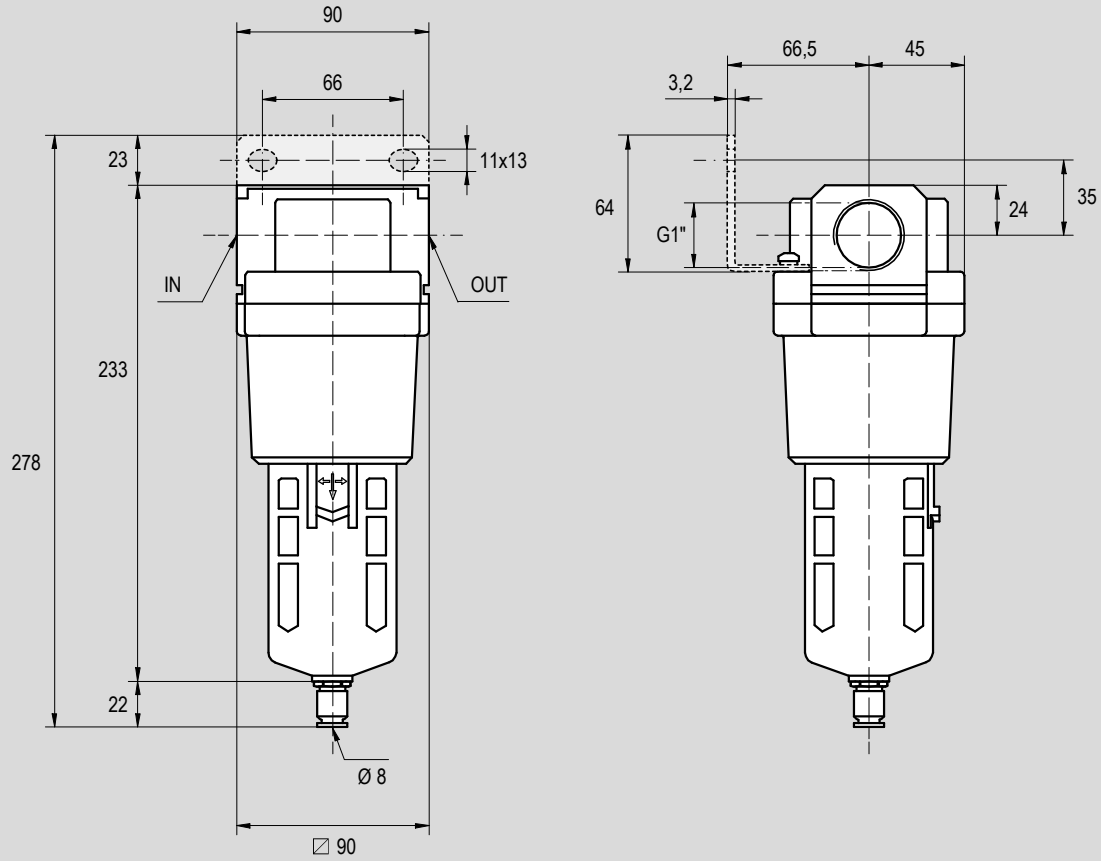


3 - AIR TREATMENT

Size	Function	Symbol	Code	Item
1/2"	Mist separator		090269	A12FD

Standard dimensions

Type: **A01FD**







Size	Function	Symbol	Code	Item
1"	Mist separator		090270	A01FD

## Modular units

### Regulators, 1/4" ÷ 1"



#### Main features

Code	Item	Size	Function	Symbol
090103	 A14R	1/4"	Regulator	
090108	 A38R	3/8"		
090113	 A12R	1/2"		
090118	A01R	1"		



#### Technical data

Type	A14R	A38R	A12R	A01R
Size	1/4"	3/8"	1/2"	1"
Fluid	Compressed air			
Maximum inlet pressure	10 bar			
Pressure regulation range	0,5 ÷ 8,5 (standard)		0,5 ÷ 4 (04)	
Temperature range	0°C ÷ +60°C			
Flow (at 6 bar)	550 NI/min.	2500 NI/min.	6000 NI/min.	8000 NI/min.
Pressure regulator	Piston			
Overpressure relief	Relieving			
Gauges port	1/8"		1/4"	
Weight	270 g	410 g	840 g	1190 g

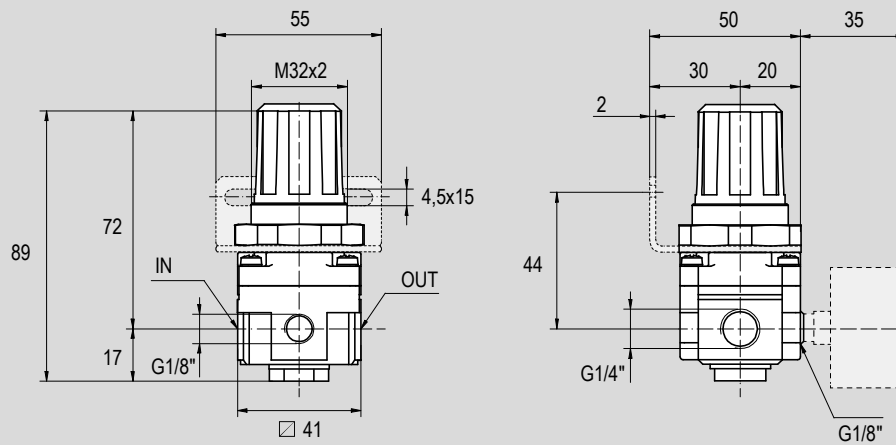
#### Notes

Spacers and mounting brackets to be ordered separately, see page 3.2.300  
 Pressure-gauges to be ordered separately, see from page 3.30.1



Standard dimensions

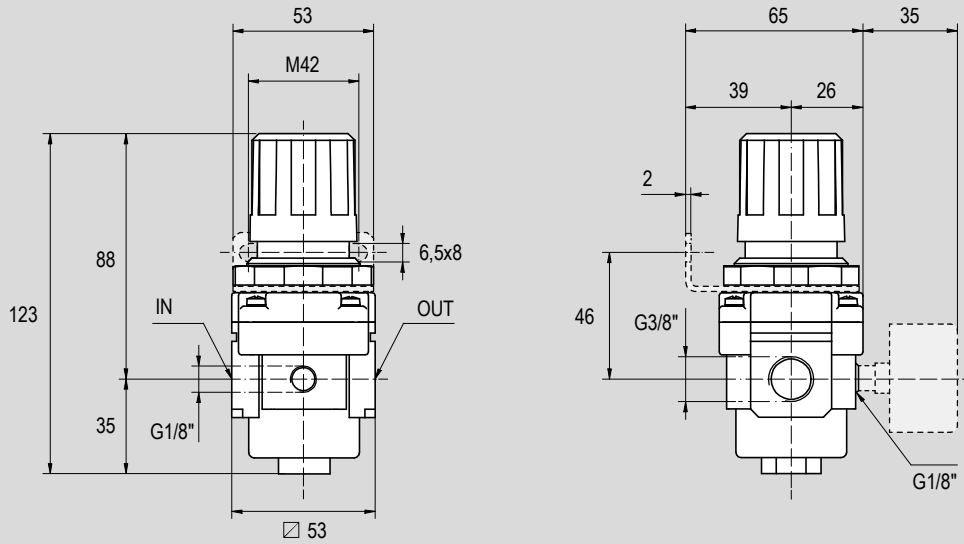
Type: **A14R**



Size	Function	Symbol	Code	Item
1/4"	Regulator		090103	A14R

Standard dimensions

Type: **A38R**

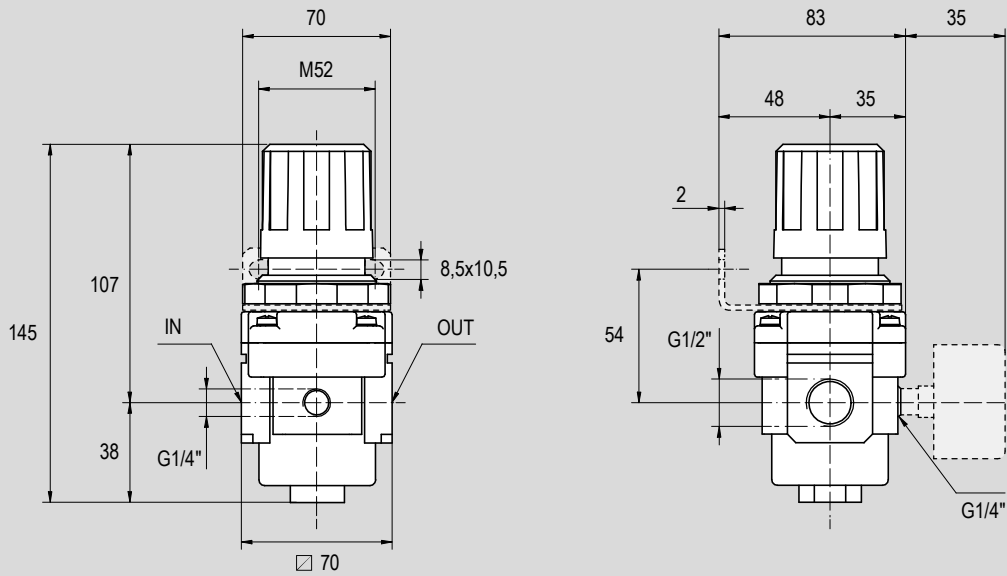


3 - AIR TREATMENT

Size	Function	Symbol	Code	Item
3/8"	Regulator		090108	A38R

Standard dimensions

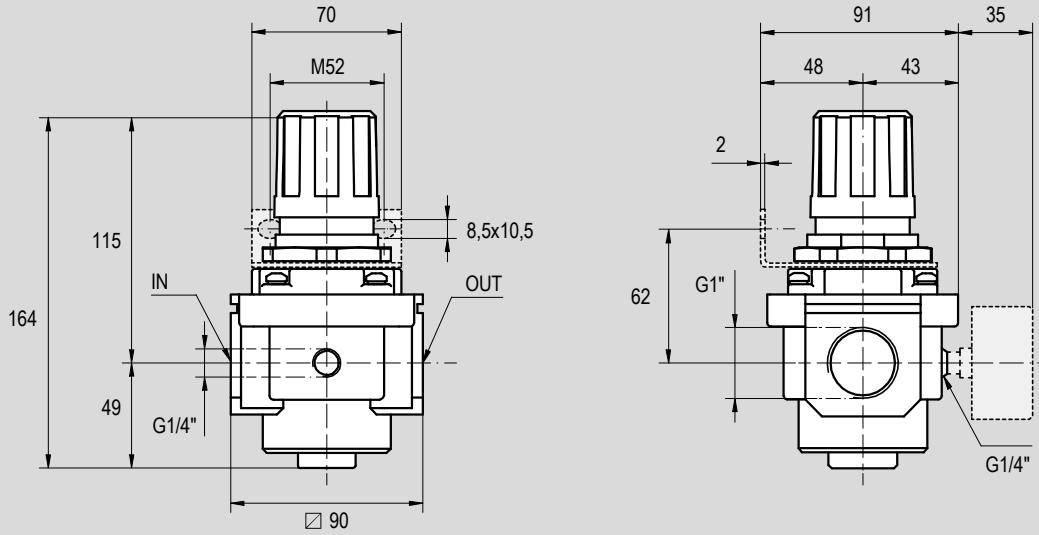
Type: **A12R**




Size	Function	Symbol	Code	Item
1/2"	Regulator		090113	A12R

Standard dimensions

Type: **A01R**



3 - AIR TREATMENT

Size	Function	Symbol	Code	Item
1"	Regulator		090118	A01R

# Modular units

Precision regulators, 1/8" ÷ 1/2"



## Main features

Code	Item	Size	Function	Symbol
090271	A18RP01-2	1/8"	Precision regulator	
090274	A14RP01-2	1/4"		
090277	A12RP01-2	1/2"		



## Technical data

Type	A18RP01-2	A14RP01-2	A12RP01-2
Size	1/8"	1/4"	1/2"
Fluid	Compressed air		
Maximum inlet pressure	10 bar		
Pressure regulation range	0,1 ÷ 2 bar (standard)	0,1 ÷ 4 bar (01-4)	0,1 ÷ 8 bar (01-8)
Temperature range	0°C ÷ +60°C		
Pressure regulator	Piston		
Overpressure relief	Relieving		Relieving + threaded exhaust (1/2")
Gauges port	1/8"		
Weight	150	330	680

## Matching note

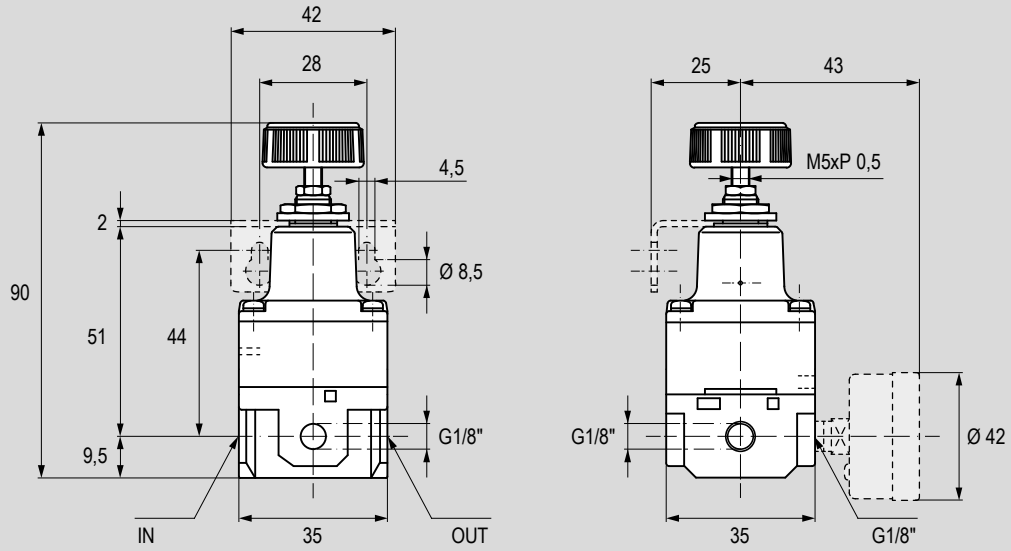
Size 1/8" can be mounted in combination with modular component size 1/4" only.  
 Size 1/4" can be mounted in combination with modular component size 3/8" only.  
 Size 1/2" can be mounted in combination with modular component size 1/2" only.

## Notes

Spacers and mounting brackets to be ordered separately, see page 3.2.300  
 Pressure-gauges to be ordered separately, see from page 3.30.1

Standard dimensions

Type: **A18RP01-2**

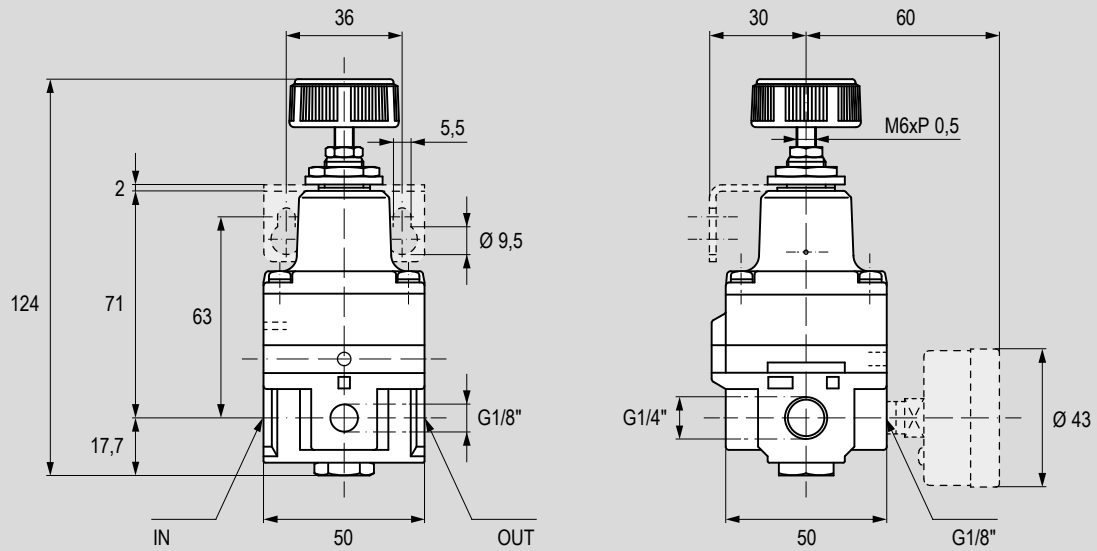


3 - AIR TREATMENT

Size	Function	Symbol	Code	Item
1/8"	Precision regulator		090271	A18RP01-2

Standard dimensions

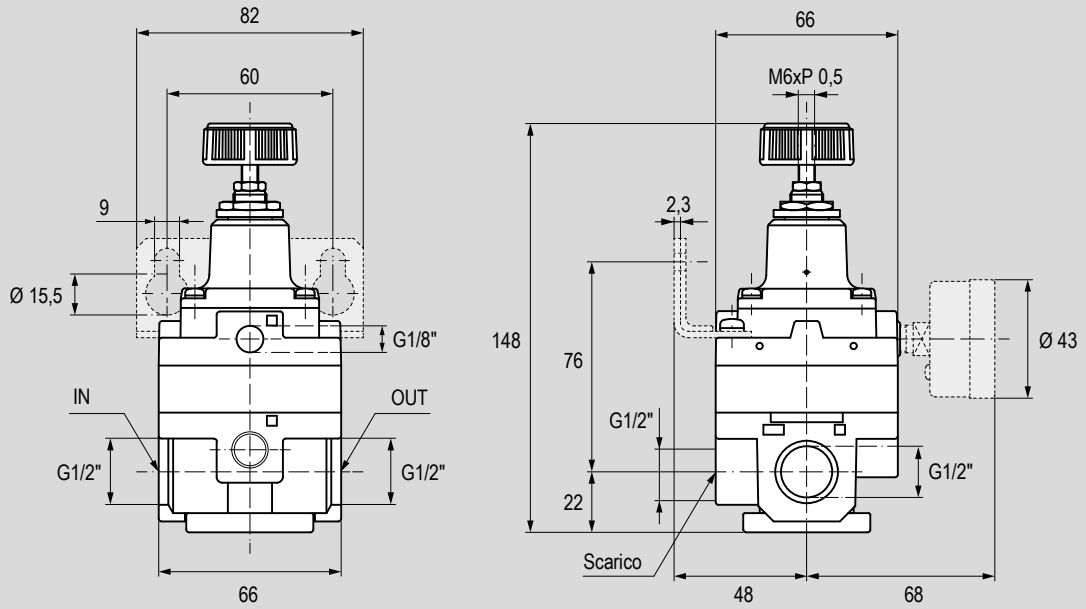
Type: A14RP01-2



Size	Function	Symbol	Code	Item
1/4"	Precision regulator		090274	A14RP01-2

Standard dimensions

Type: **A12RP01-2**



3 - AIR TREATMENT

Size	Function	Symbol	Code	Item
1/2"	Precision regulator		090277	A12RP01-2



Main features

Code	Item	Size	Function	Symbol
090104	A14L	1/4"	Lubricator	
090109	A38L	3/8"		
090114	A12L	1/2"		
090119	A01L	1"		



Technical data

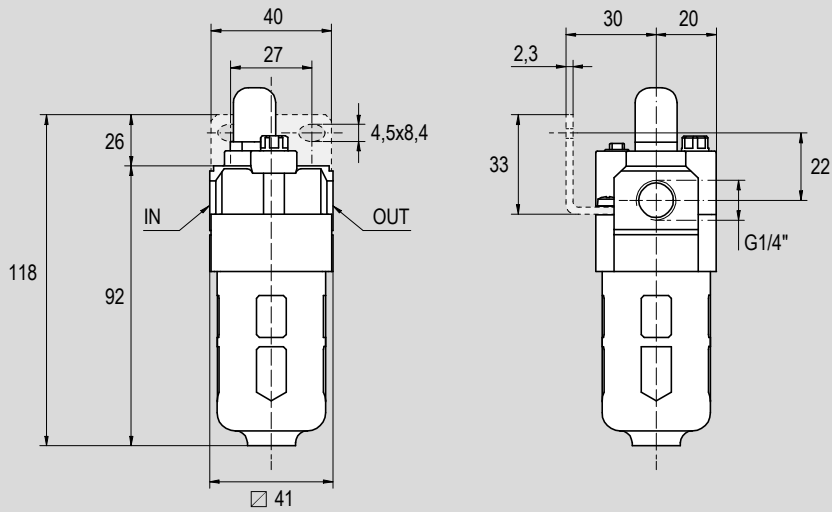
Type	A14L	A38L	A12L	A01L
Size	1/4"	3/8"	1/2"	1"
Fluid	Compressed air			
Maximum inlet pressure	10 bar			
Temperature range	0°C ÷ +60°C			
Flow (at 6 bar)	800 NI/min.	1700 NI/min.	5000 NI/min.	7000 NI/min.
Cup capacity	25 cm <sup>3</sup>	50 cm <sup>3</sup>	130 cm <sup>3</sup>	
Suggested lubricant	With viscosity ISO VG 32 compliant to ISO 3448 standards			
Weight	220 g	300 g	560 g	1080 g

Notes

Spacers and mounting brackets to be ordered separately, see page 3.2.300  
For spare parts see from page 3.2.400

Standard dimensions

Type: **A14L**

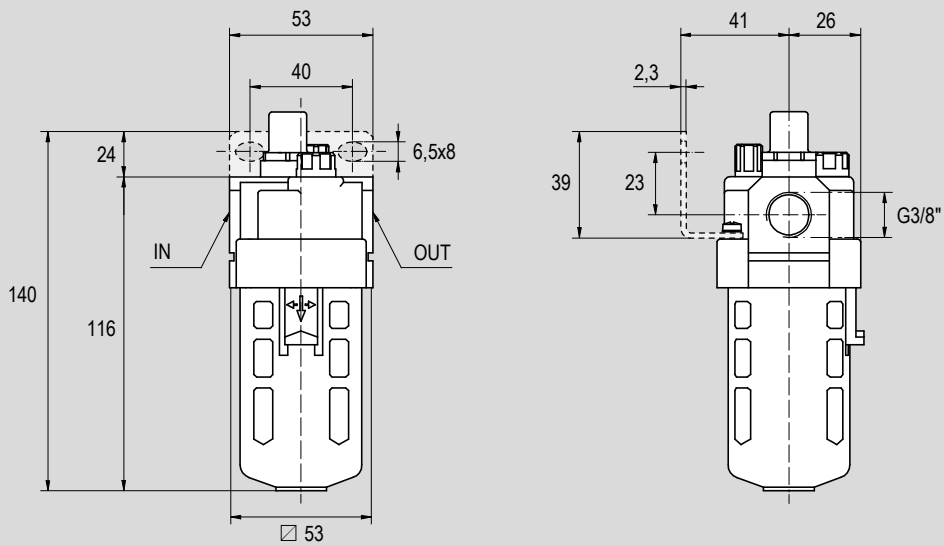


3 - AIR TREATMENT

Size	Function	Symbol	Code	Item
1/4"	Lubricator		090104	A14L

Standard dimensions

Type: **A38L**

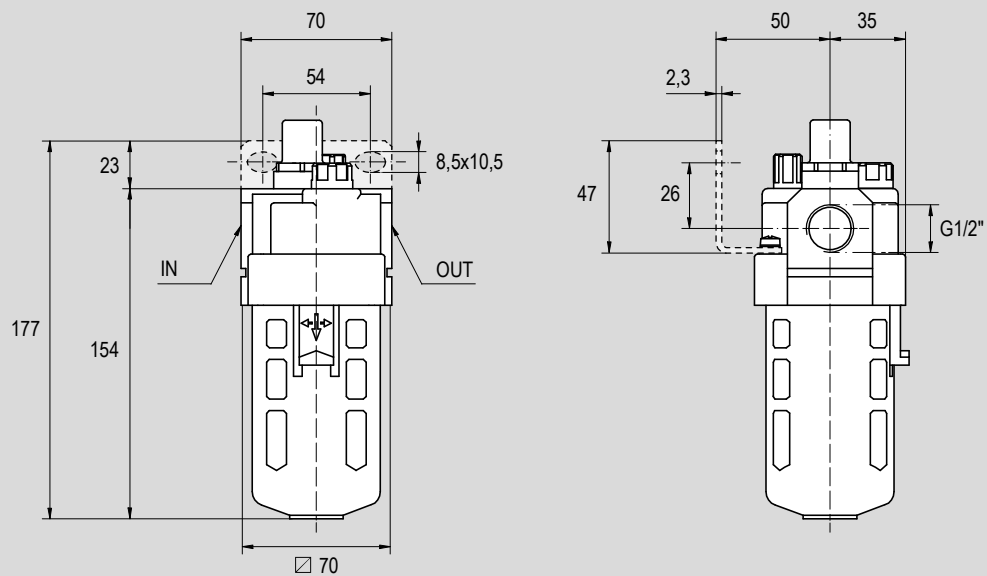


3 - AIR TREATMENT

Size	Function	Symbol	Code	Item
3/8"	Lubricator		090109	A38L

Standard dimensions

Type: **A12L**

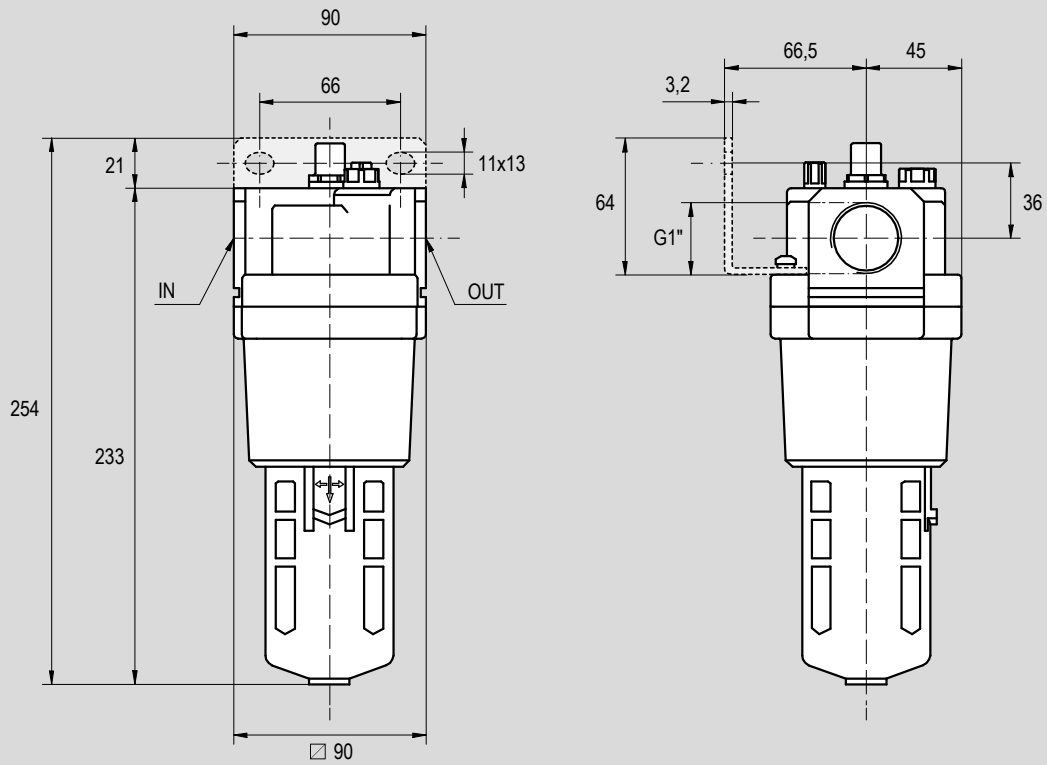


3 - AIR TREATMENT

Size	Function	Symbol	Code	Item
1/2"	Lubricator		090114	A12L

Standard dimensions

Type: **A01L**



3 - AIR TREATMENT

Size	Function	Symbol	Code	Item
1"	Lubricator		090119	A01L

## Modular units

Lubricators with large capacity cup, 1/4"



### Main features

Code	Item	Size	Function	Symbol
090280	A14LG	1/4"	Lubricators with large capacity cup	



### Technical data

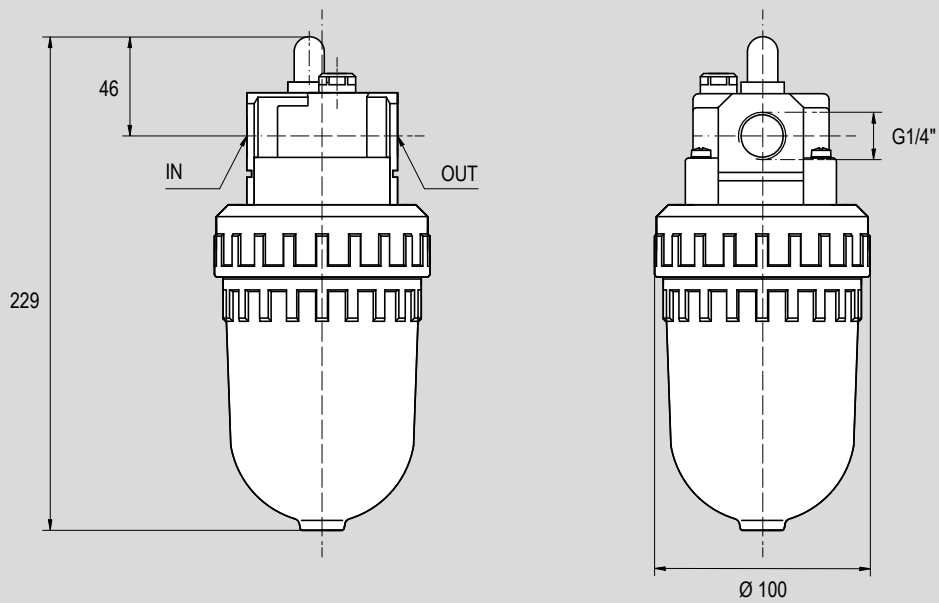
Type	A14LG
Size	1/4"
Fluid	Compressed air
Maximum inlet pressure	10 bar
Temperature range	0°C ÷ +60°C
Flow (at 6 bar)	800 NI/min.
Cup capacity	85 cm <sup>3</sup>
Suggested lubricant	With viscosity ISO VG 32 compliant to ISO 3448 standards

### Notes

Spacers and mounting brackets to be ordered separately, see page 3.2.300

Standard dimensions

Type: A14LG



Size	Function	Symbol	Code	Item
1/4"	Lubricator with large capacity cup		090280	A14LG

# Modular units

Filter-regulators, 1/4" ÷ 1"



## Main features

Code	Item	Size	Function	Symbol
090101	A14FRR	1/4"	Filter-regulator	
090106	A38FRR	3/8"		
090111	A12FRR	1/2"		
090116	A01FRR	1"		



## Technical data

Type	A14FRR	A38FRR	A12FRR	A01FRR
Size	1/4"	3/8"	1/2"	1"
Fluid	Compressed air			
Maximum inlet pressure	10 bar			
Pressure regulation range	0,5 ÷ 8,5 (standard)		0,5 ÷ 4 (04)	
Temperature range	0°C ÷ +60°C			
Flow (at 6 bar)	750 NI/min.	2000 NI/min.	4000 NI/min.	5500 NI/min.
Filtering element	25 µm (standard)		5 µm (5)	
Cup capacity	15 cm <sup>3</sup>	20 cm <sup>3</sup>	45 cm <sup>3</sup>	130 cm <sup>3</sup>
Condense drain	Semi-automatic	Semi-automatic (standard)	Automatic (SA)	
Pressure regulator	Piston			
Overpressure relief	Relieving M5			
Gauges port	1/8"		1/4"	
Weight	300 g	530 g	1150 g	1780 g

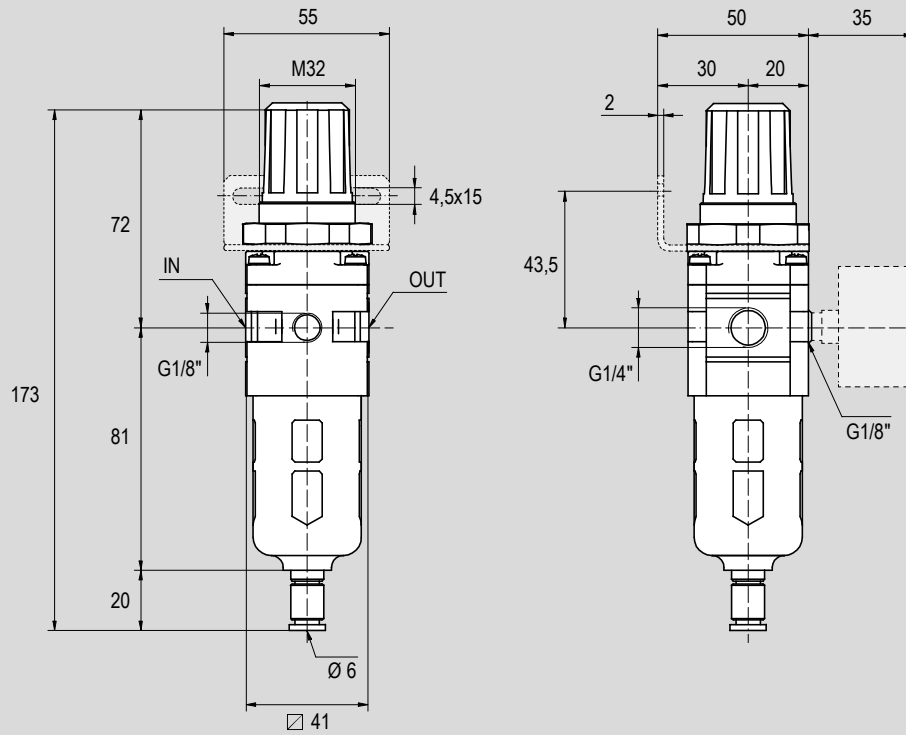
## Notes

Spacers and mounting brackets to be ordered separately, see page 3.2.300  
 Pressure-gauges to be ordered separately, see from page 3.30.1  
 For spare parts see from page 3.2.400



Standard dimensions

Type: A14FRR

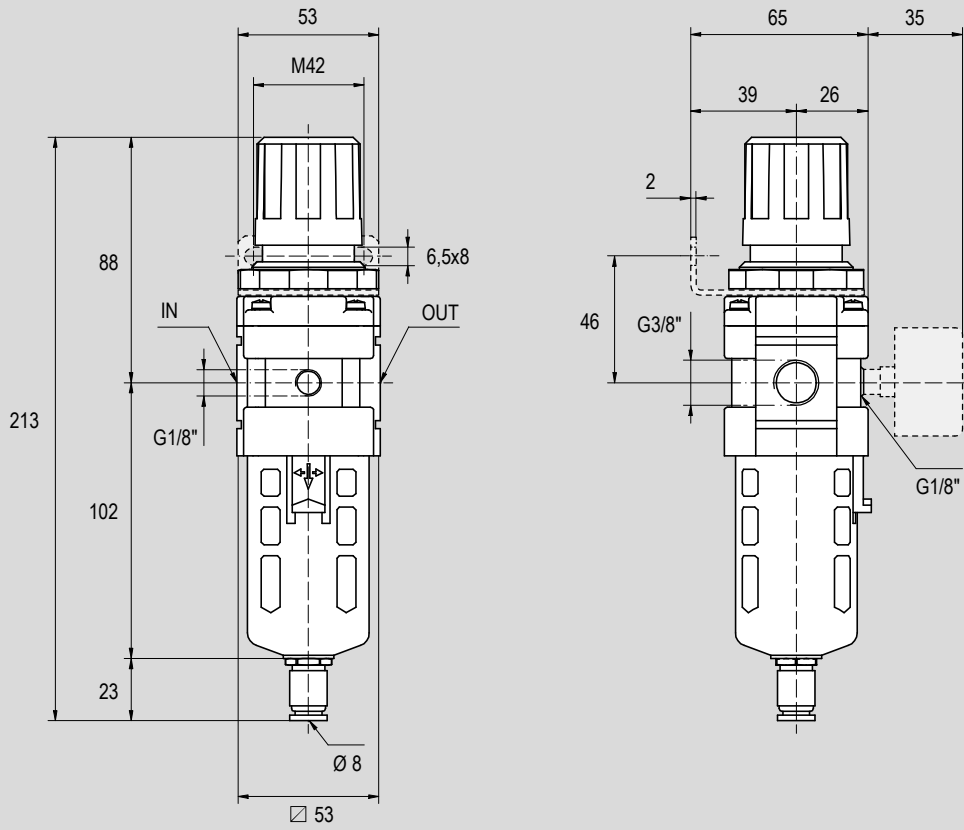


3 - AIR TREATMENT

Size	Function	Symbol	Code	Item
1/4"	Filter-regulator		090101	A14FRR

Standard dimensions

Type: **A38FRR**

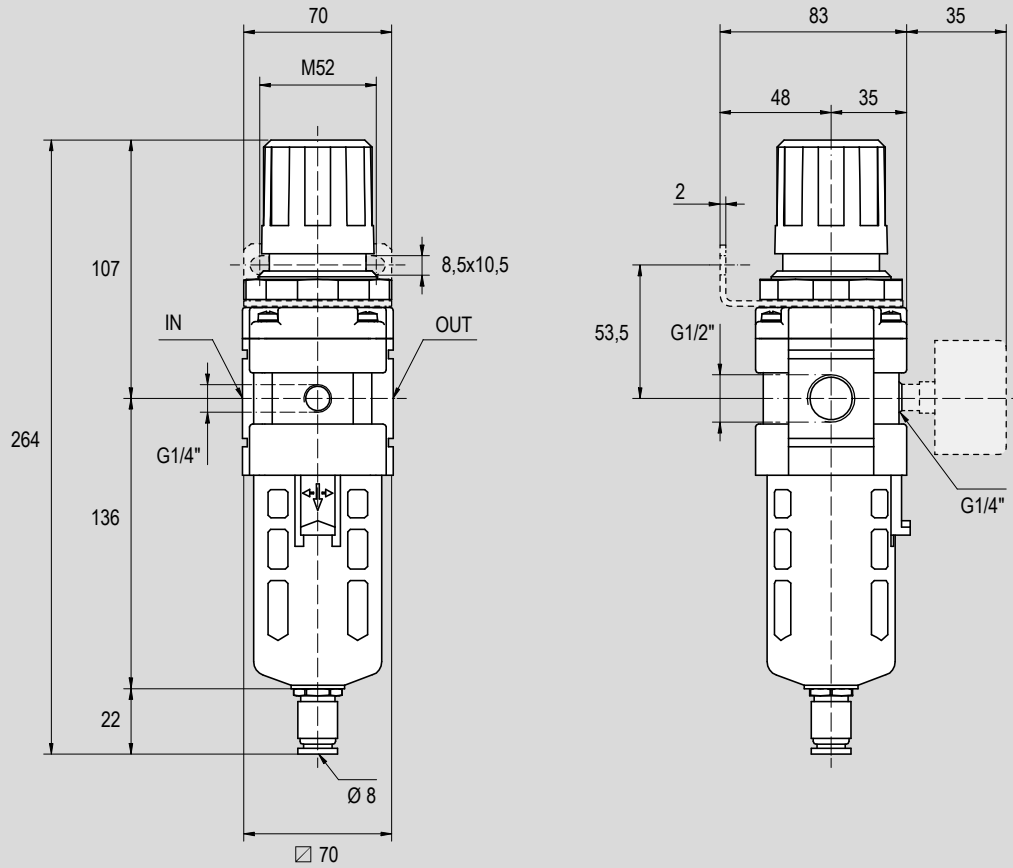


3 - AIR TREATMENT

Size	Function	Symbol	Code	Item
3/8"	Filter-regulator		090106	A38FRR

Standard dimensions

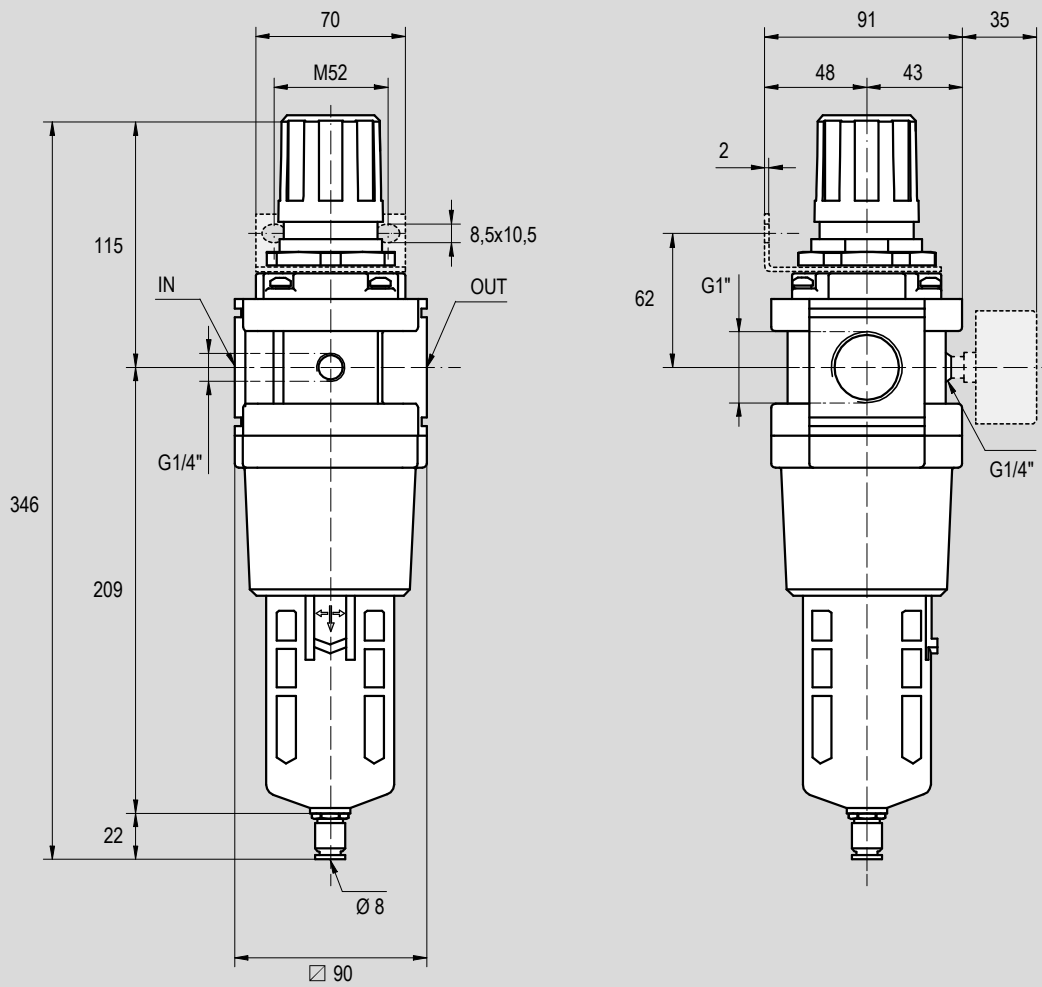
Type: A12FRR



Size	Function	Symbol	Code	Item
1/2"	Filter-regulator		090111	A12FRR

Standard dimensions

Type: **A01FRR**



3 - AIR TREATMENT

Size	Function	Symbol	Code	Item
1"	Filter-regulator		090116	A01FRR

# Modular units

Filter-regulators + lubricators, 1/4" ÷ 1"



## Main features

Code	Item	Size	Function	Symbol
090100	A14FRRL	1/4"	Filter-regulator + lubricator	
090105	A38FRRL	3/8"		
090110	A12FRRL	1/2"		
090115	A01FRRL	1"		



## Technical data

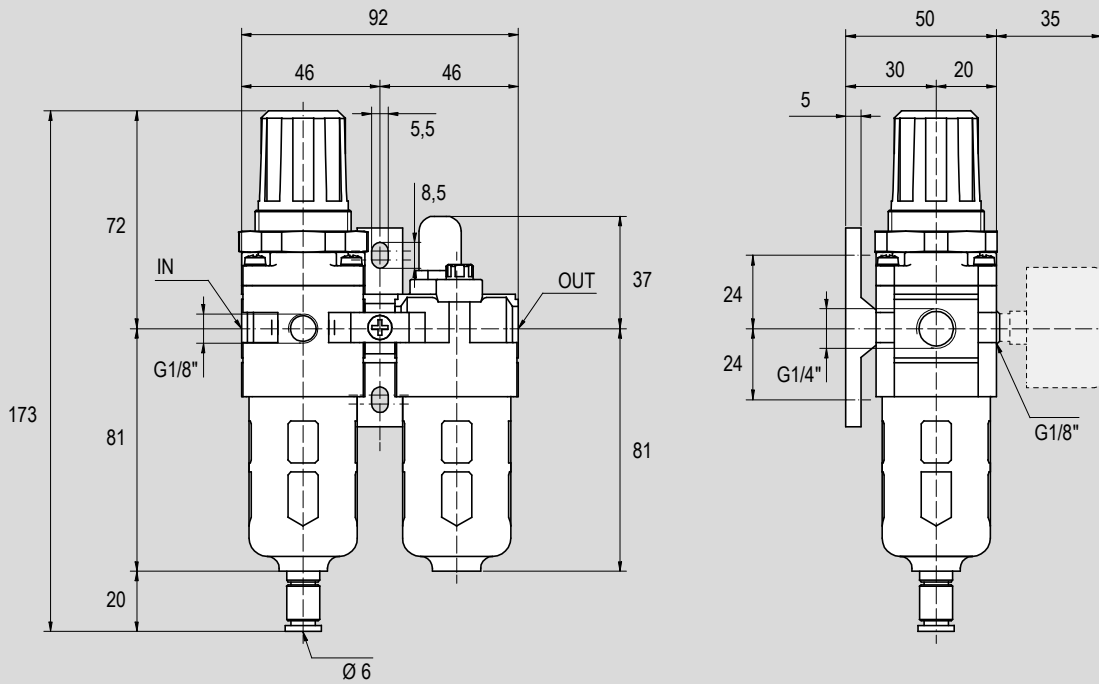
Type	A14FRRL	A38FRRL	A12FRRL	A01FRRL
Size	1/4"	3/8"	1/2"	1"
Fluid	Compressed air			
Maximum inlet pressure	0 ÷ 10 bar			
Pressure regulation range	0,5 ÷ 8,5 (standard)		0,5 ÷ 4 (04)	
Temperature range	0°C ÷ +60°C			
Flow (at 6 bar)	500 NI/min.	1700 NI/min.	3000 NI/min.	4000 NI/min.
Filtering element	25 µm (standard)		5 µm (5)	
Cup capacity	filter	15 cm <sup>3</sup>	20 cm <sup>3</sup>	45 cm <sup>3</sup>
	lubricator	25 cm <sup>3</sup>	50 cm <sup>3</sup>	130 cm <sup>3</sup>
Condense drain	Semi-automatic	Semi-automatic	Automatic (SA)	
Pressure regulator	Piston			
Overpressure relief	Relieving M5			
Gauges port	1/8"		1/4"	
Suggested lubricant	With viscosity ISO VG 32 compliant to ISO 3448 standards			
Weight	500 g	950 g	1980 g	3280 g

## Notes

Spacer with "T" type bracket supplied as standard. Other spacers and mounting brackets can be ordered separately, see page 3.2.300  
 Pressure-gauges to be ordered separately, see from page 3.30.1  
 For spare parts see from page 3.2.400

Standard dimensions

Type: A14FRRL

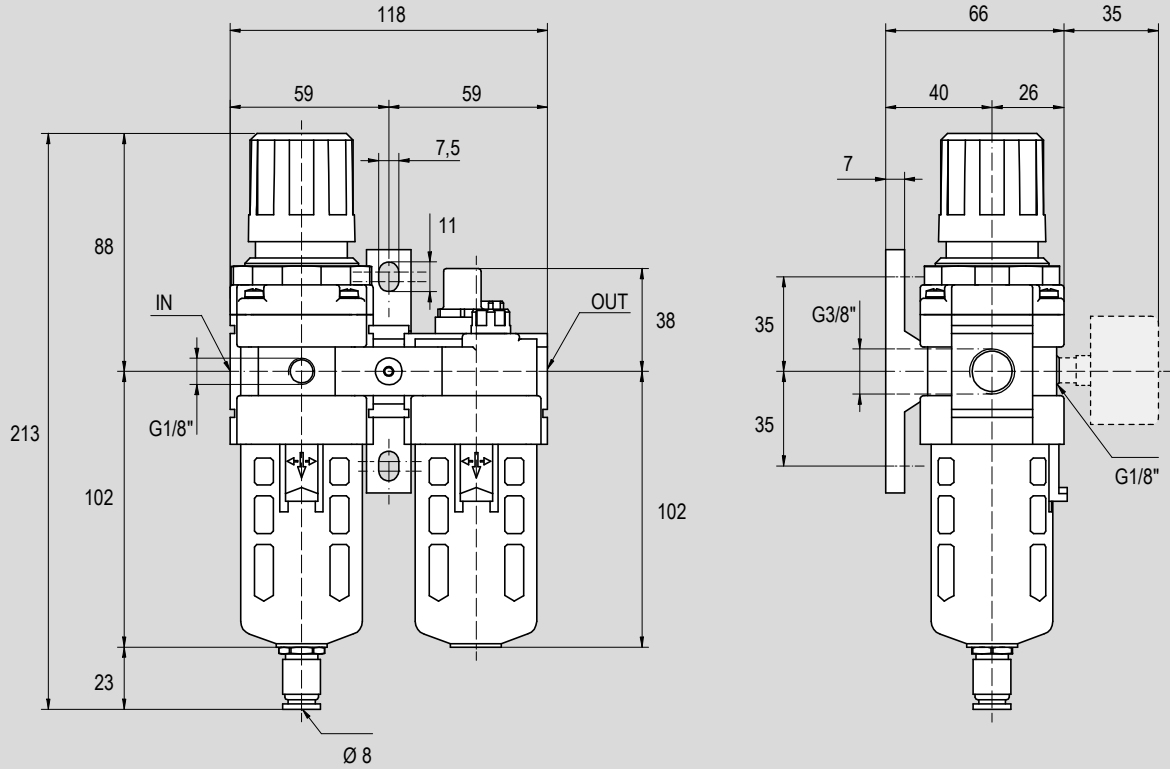


3 - AIR TREATMENT

Size	Function	Symbol	Code	Item
1/4"	Filter-regulator + lubricator		090100	A14FRRL

Standard dimensions

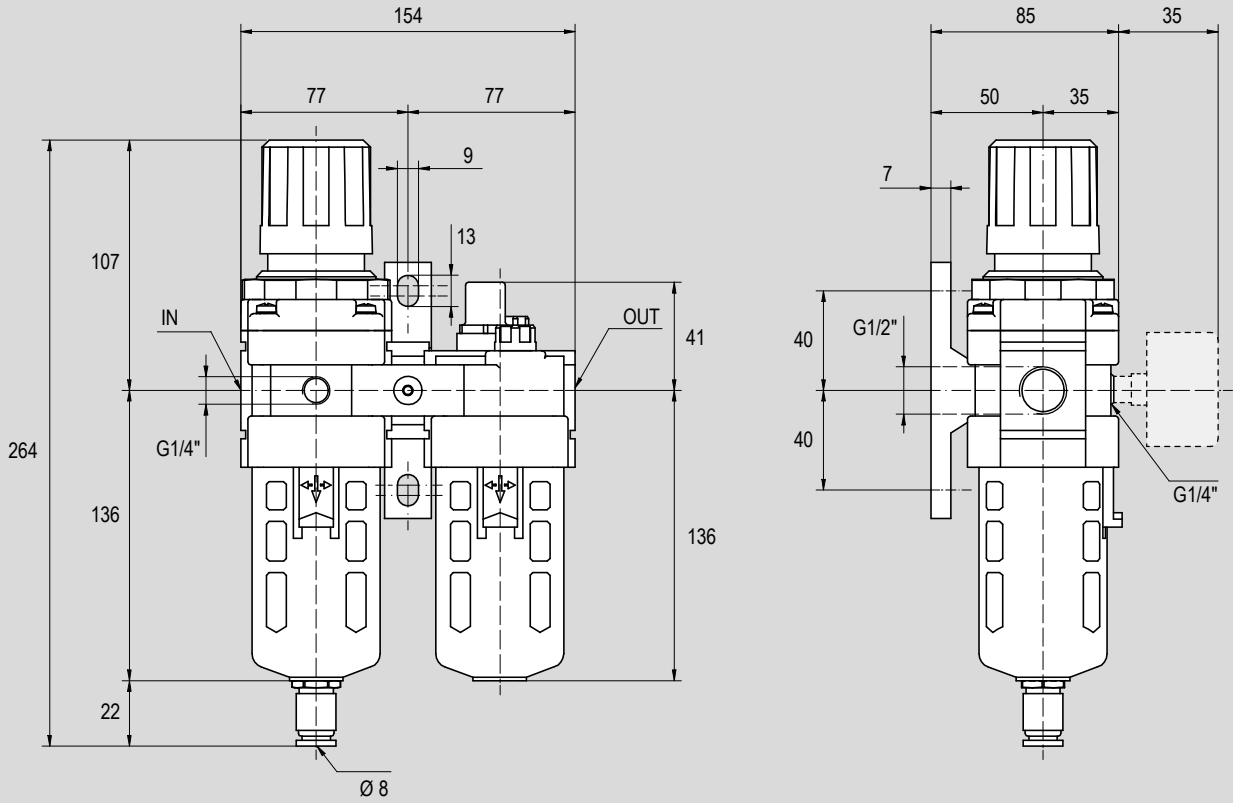
Type: **A38FRRL**



Size	Function	Symbol	Code	Item
3/8"	Filter-regulator + lubricator		090105	A38FRRL

Standard dimensions

Type: A12FRRL



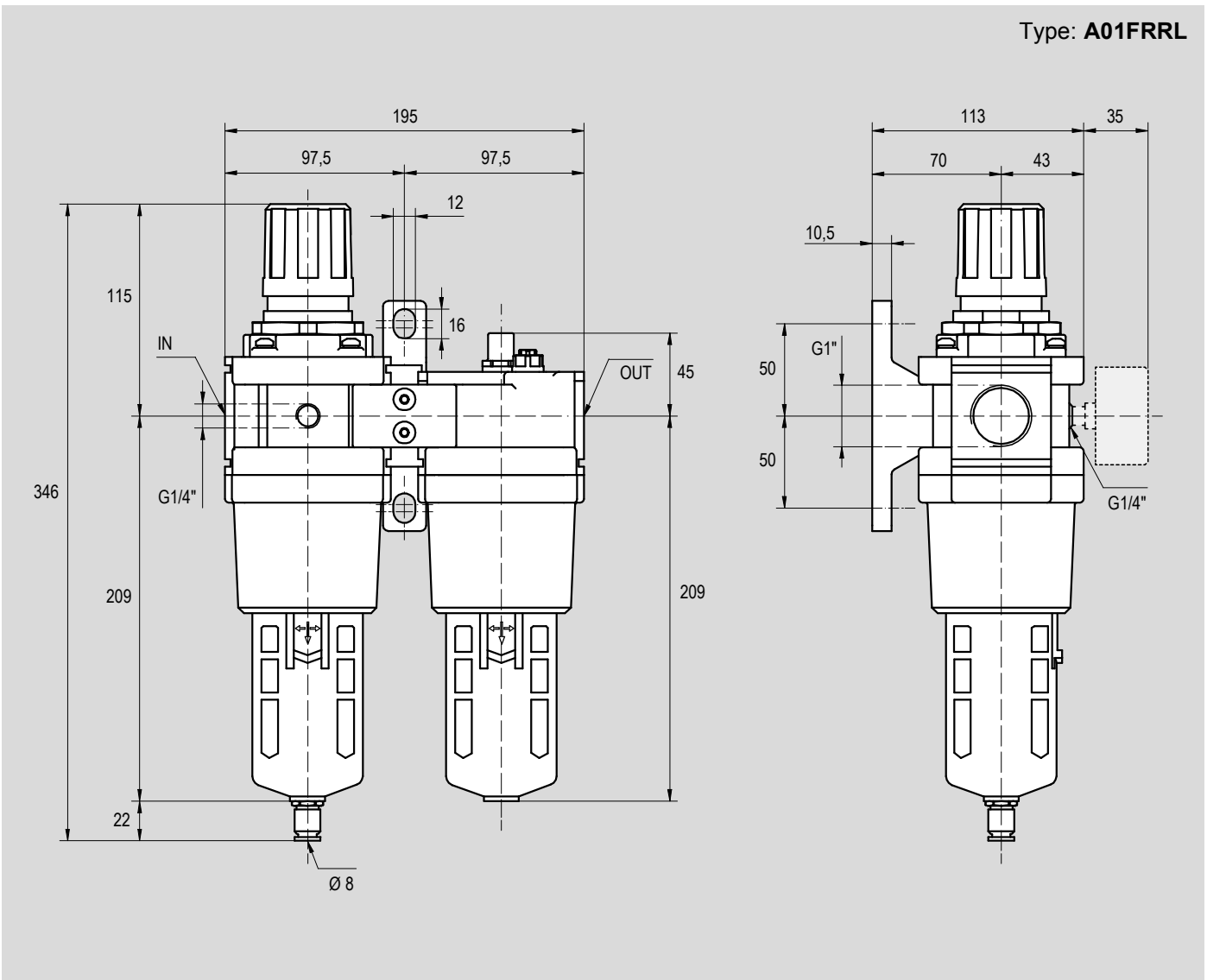
3 - AIR TREATMENT

Size	Function	Symbol	Code	Item
1/2"	Filter-regulator + lubricator		090110	A12FRRL



Standard dimensions

Type: **A01FRRL**



Size	Function	Symbol	Code	Item
1"	Filter-regulator + lubricator		090115	A01FRRL

# Modular units

Soft-start solenoid operated valves, 1/4" ÷ 1/2"



## Main features

Code	Item	Size	Function	Symbol
090231	AVP14E	1/4"	Soft-start solenoid operated valves	
090232	AVP38E	3/8"		
090233	AVP12E	1/2"		



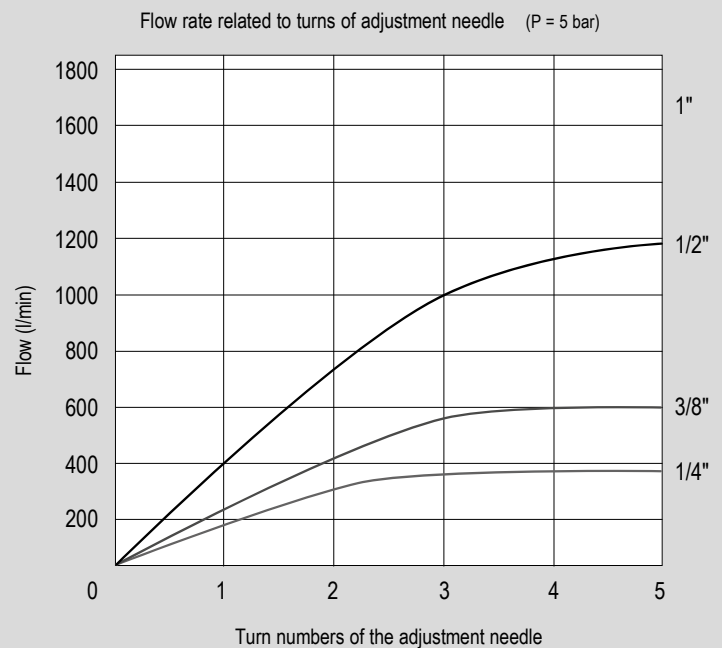
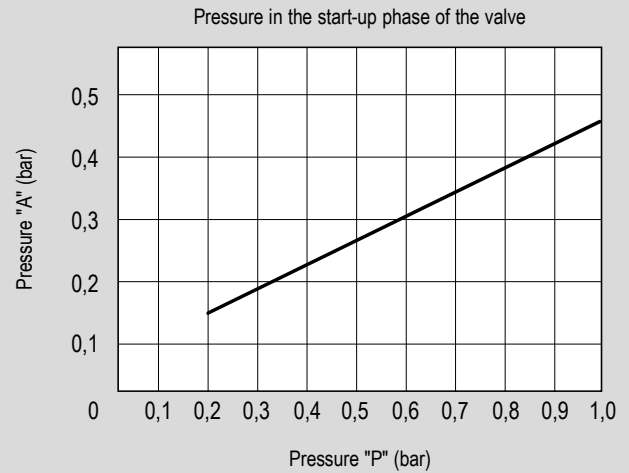
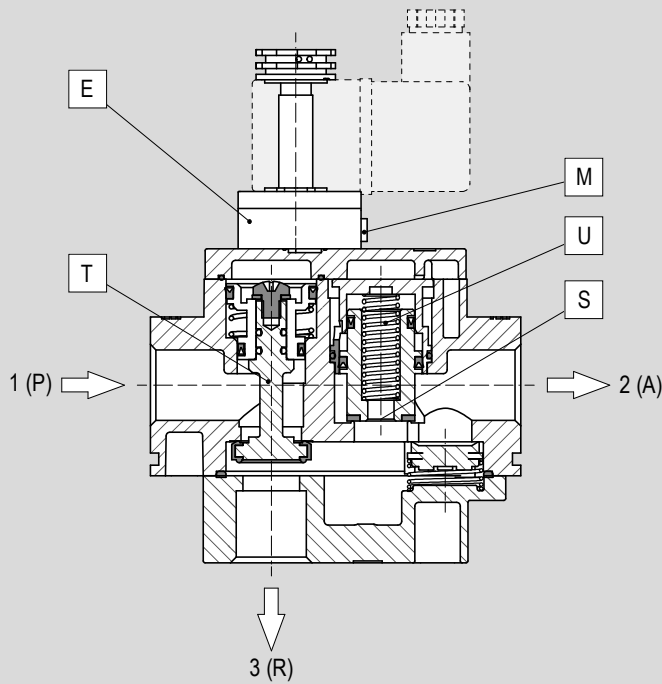
## Technical data

Type	AVP14E	AVP38E	AVP12E
Size	1/4"	3/8"	1/2"
Fluid	Compressed air		
Maximum inlet pressure	15 bar		
Minimum piloting pressure	0,2 bar		
Pressure range	0,3 ÷ 10 bar		
Temperature range	0°C ÷ +60°C		
Section	1 (P) → 2 (A)	20 mm <sup>2</sup>	37 mm <sup>2</sup>
	2 (A) → 3 (R)	24 mm <sup>2</sup>	49 mm <sup>2</sup>
Gauges port	1/8"		
Plunger	9 mm		
Manual override	Spring return		

## Notes

Spacers and mounting brackets to be ordered separately, see page 3.2.300  
 Pressure-gauges to be ordered separately, see from page 3.30.1  
 Coils and connectors to be ordered separately, see page 2.315.1

### Operating conditions



#### Start-up phase

By actuating the electro-pilot E, or pushing the manual override M, air will push the poppet T down opening this way the main power valve and at the same time, closing the exhaust (R). Air from inlet (P) will go through the regulation needle S and then to the outlet (A). Opening speed can be adjustable by the side screw.

#### Switching and working phase

In the moment the pressure difference between (A) and (P) is  $(A) \geq \frac{1}{2} (P)$ , the poppet U fully open and outlet pressure (A) rapidly increase until equalize inlet pressure in (P). Soft-start valve will not represent any obstacle for the air-flow going through it.

#### Closing and exhausting phase

By deactivating electro-pilot E, or releasing the manual override M, the poppet T will reposition stopping the air from inlet (P) and contemporary exhaust the downstream air in the circuit from the exhaust (R).

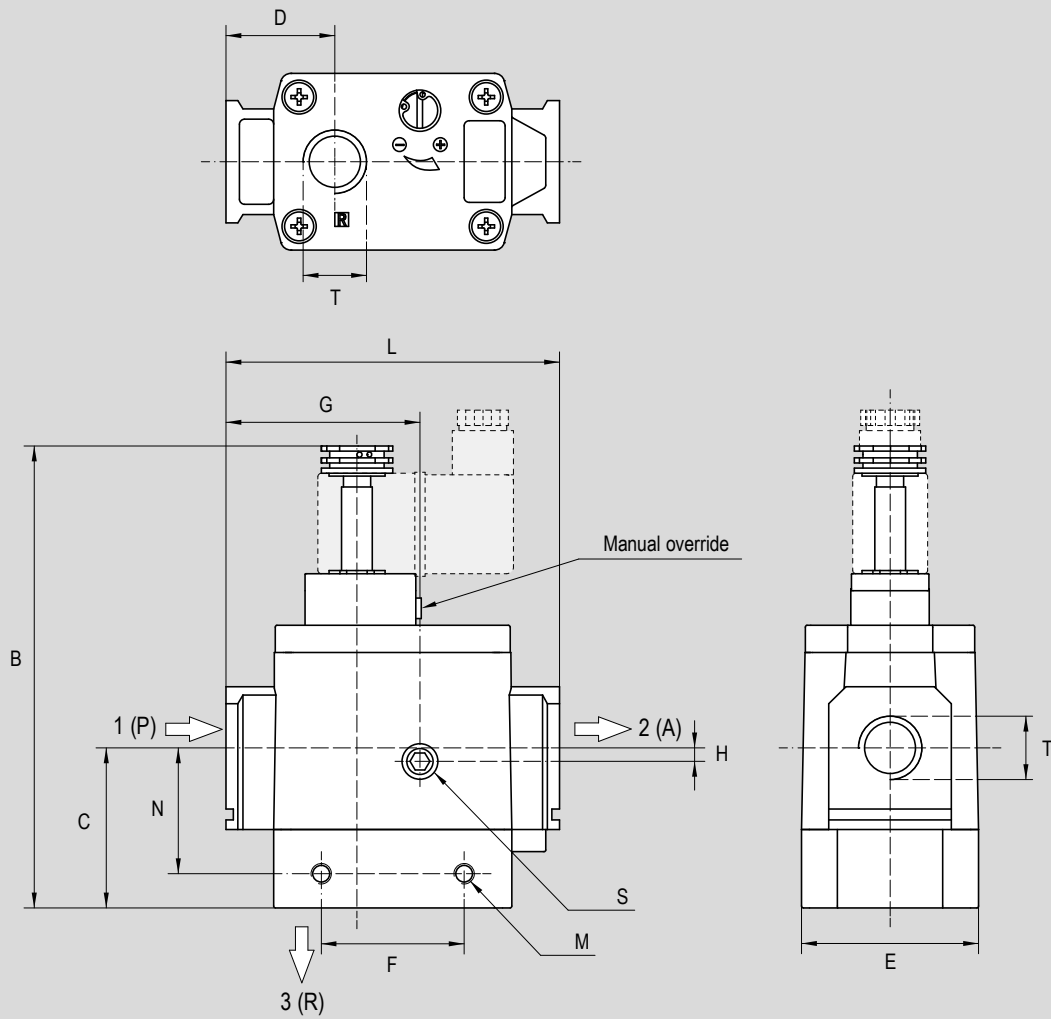
# Modular units

Soft-start solenoid operated valves, 1/4" ÷ 1/2"



## Standard dimensions

Type: AVP..E



3 - AIR TREATMENT

Item	Code	Size	B	C	D	E	F	G	H	L	M	N	S	T
AVP14E	090231	1/4"	114	31	22	40	29	38	0	66	M4	23,5	G1/8"	G1/4"
AVP38E	090232	3/8"	131	36	24	48	28	43	2	76	M5	27,5	G1/8"	G3/8"
AVP12E	090233	1/2"	146	47	32	52	42	57	3	98	M6	42	G1/8"	G1/2"

# Modular units

Soft-start air operated valves, 1/4" ÷ 1/2"



## Main features

Code	Item	Size	Function	Symbol
090247	AVP14P	1/4"	Soft-start air operated valves	
090248	AVP38P	3/8"		
090249	AVP12P	1/2"		



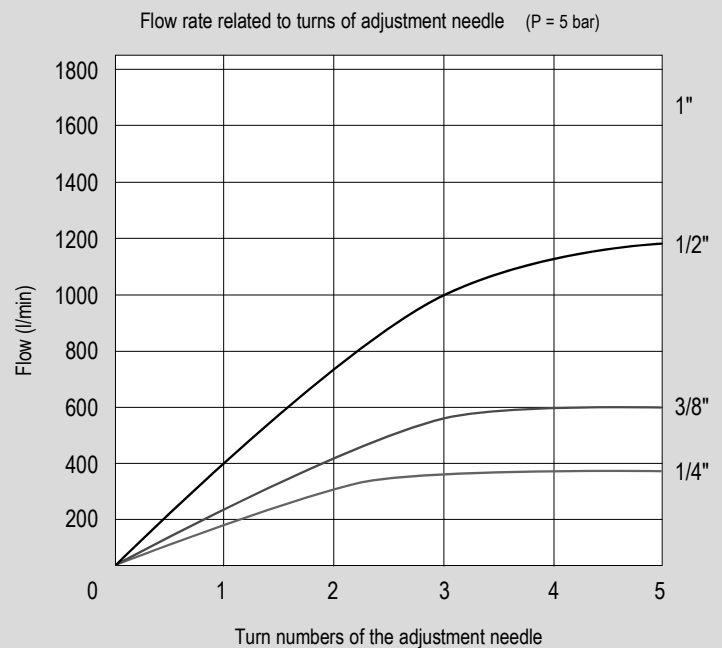
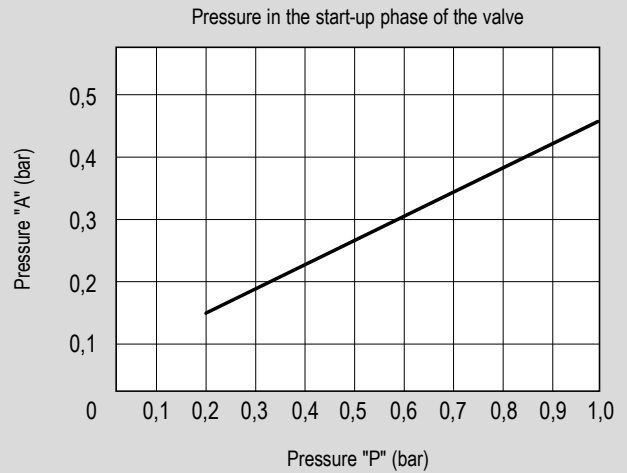
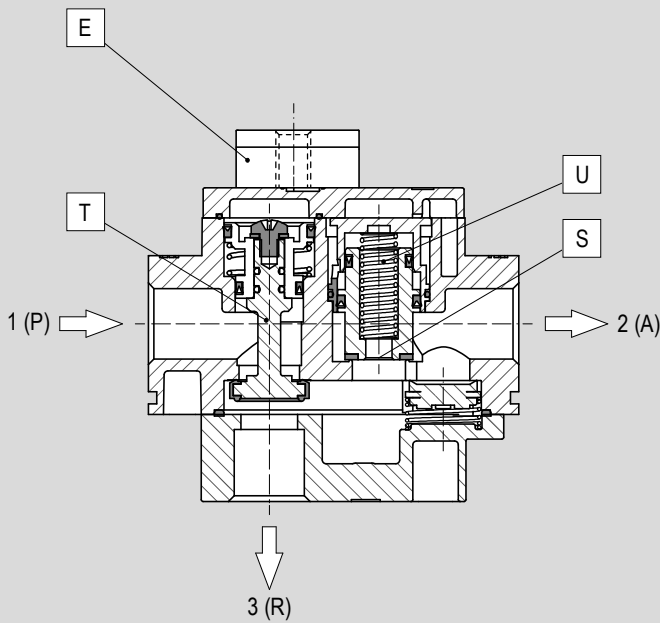
## Technical data

Type	AVP14P	AVP38P	AVP12P
Size	1/4"	3/8"	1/2"
Fluid	Compressed air		
Maximum inlet pressure	15 bar		
Minimum piloting pressure	0,2 bar		
Pressure range	0,3 ÷ 10 bar		
Temperature range	0°C ÷ +60°C		
Section	1 (P) → 2 (A)	20 mm <sup>2</sup>	37 mm <sup>2</sup>
	2 (A) → 3 (R)	24 mm <sup>2</sup>	49 mm <sup>2</sup>
Gauges port	1/8"		

## Notes

Spacers and mounting brackets to be ordered separately, see page 3.2.300

Operating conditions



**Start-up phase**

By actuating the pneumatic-pilot E air will push the poppet T down opening this way the main power valve and at the same time, closing the exhaust (R). Air from inlet (P) will go through the regulation needle S and then to the outlet (A). Opening speed can be adjustable by the side screw.

**Switching and working phase**

In the moment the pressure difference between (A) and (P) is  $(A) \geq \frac{1}{2} (P)$ , the poppet U fully open and outlet pressure (A) rapidly increase until equalize inlet pressure in (P). Soft-start valve will not represent any obstacle for the air-flow going through it.

**Closing and exhausting phase**

By deactivating pneumatic-pilot E the poppet T will reposition stopping the air from inlet (P) and contemporary exhaust the downstream air in the circuit from the exhaust (R).

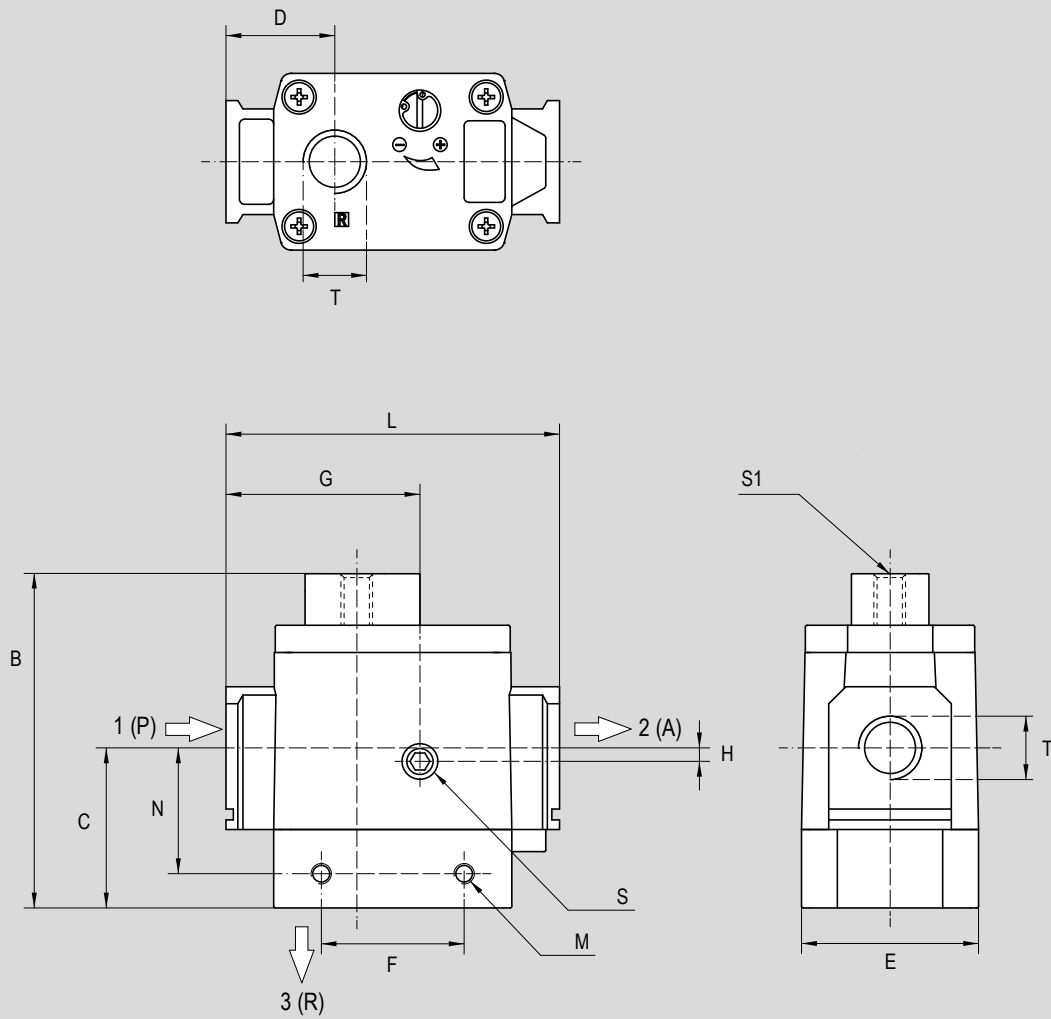
# Modular units

Soft-start air operated valves, 1/4" ÷ 1/2"



## Standard dimensions

Type: AVP..P







Item	Code	Size	B	C	D	E	F	G	H	L	M	N	S	S <sub>1</sub>	T
AVP14P	090247	1/4"	75	31	22	40	29	38	0	66	M4	23,5	G1/8"	G1/8"	G1/4"
AVP38P	090248	3/8"	82	36	24	48	28	43	2	76	M5	27,5	G1/8"	G1/8"	G3/8"
AVP12P	090249	1/2"	97	47	32	52	42	57	3	98	M6	42	G1/8"	G1/8"	G1/2"

## Modular units

Exhaust manual operated valves, 1/4" ÷ 1"



### Main features

Code	Item	Size	Function	Symbol
090152	 VMS14	1/4"	Exhaust manual operated valve	
090153	 VMS38	3/8"		
090154	 VMS12	1/2"		
090265	VMS01	1"		



### Technical data

Type	VMS14	VMS38	VMS12	VMS01
Size	1/4"	3/8"	1/2"	1"
Fluid	Compressed air			
Pressure range	0 ÷ 10 bar			
Temperature range	-5°C ÷ +60°C			
Connections	1/4"	3/8"	1/2"	1"
Exhaust	1/8"	1/4"	3/8"	1/2"
Safety	Lockable			

### Notes

Spacers and mounting brackets to be ordered separately, see page 3.2.300



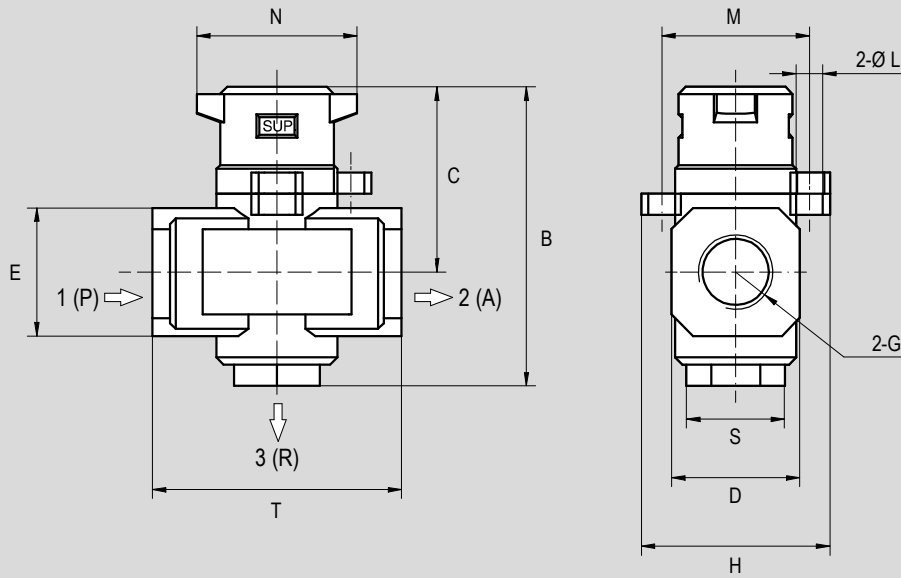
# Modular units

Exhaust manual operated valves, 1/4" ÷ 1"



## Standard dimensions

Type: **VMS**



Item	Code	Size	G	S	T	B	C	D	E	H	ØL	M	N
VSM14	090152	1/4"	G1/4"	G1/8"	40	59	39	28	22	41	6	32	40
VSM38	090153	3/8"	G3/8"	G1/4"	53	78	49	30	28	53	7,5	41,5	45
VSM12	090154	1/2"	G1/2"	G3/8"	70	84	52	36	36	53	7,5	41,5	45
VSM01	090265	1"	G1"	G1/2"	90	136	72	54	48	90	8,5	77	68

Spacer, D..

	Size	Code	Item	Matching
	1/4"	090148	D14	A..FRRL A..FRR
	3/8"	090149	D38	A..F.. A..R..
	1/2"	090150	D12	A..L.. AVP..
	1"	090151	D01	VMS..

Spacer with "T" type porting block, DT..

	Size	Code	Item	Matching
	1/4"	090129	DT14	A..FRRL*
	3/8"	090130	DT38	A..F.. A..R..
	1/2"	090131	DT12	A..L.. AVP..
	1"	090132	DT01	VMS..

\*To be applied exclusively on the "out" port

Spacer with "L" type bracket, DSL..

	Size	Code	Item	Matching
	1/4"	090133	DSL14	A..FRRL A..FRR
	3/8"	090134	DSL38	A..F.. A..R..
	1/2"	090135	DSL12	A..L.. AVP..
	1"	090136	DSL01	VMS..

Spacer with "T" type bracket, DST..

	Size	Code	Item	Matching
	1/4"	090137	DST14	A..FRRL*
	3/8"	090138	DST38	A..FRR A..F.. A..R..
	1/2"	090139	DST12	A..L.. AVP..
	1"	090140	DST01	VMS..

\*Supplied as standard

Mounting bracket for regulator and filter-regulator, SR..

	Size	Code	Item	Matching
	1/4"	090141	SR14	A..FRRL A..FRR A..R
	3/8"	090142	SR38	
	1/2"	090143	SR1201	
	1"			

Mounting bracket for filter and lubricator, SFL..

	Size	Code	Item	Matching
	1/4"	090144	SFL14	A..F A..L
	3/8"	090145	SFL38	
	1/2"	090146	SFL12	
	1"	090147	SFL01	

Mounting bracket for precision regulator, SRP..

	Size	Code	Item	Matching
	1/8"	090315	SRP18	A..RP
	1/4"	090316	SRP14	
	1/2"	090317	SRP12	

Slide valves V26..

	Size	Code	Item	Matching
	1/4"	030703	V260014	A..FRRL A..FRR
	3/8"	030704	V260038	A..F.. A..R..
	1/2"	030705	V260012	A..L..

Coils ASA12..

	Voltage	Code	Item	Matching
	12V DC	032100	ASA1201200	AVP..E
	12V AC	032101	ASA1201250	
	24V DC	032102	ASA1202400	
	24V AC	032103	ASA1202450	
	48V AC	032104	ASA1204850	
	110V AC	032105	ASA1211050	
	230V AC	032106	ASA1223050	

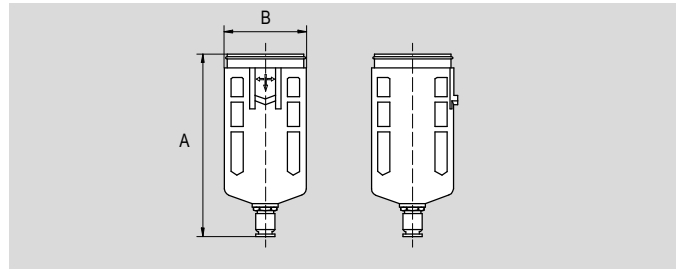
Connectors A122..\*

	Code	Item	Type
	032118	A12209N	Black standard
	033521	A12209NK	Black standard cabled
	032204	A12209T1	LED+VDR transparent 24VAC-DC
	032205	A12209T2	LED+VDR transparent 115VAC-DC
	032206	A12209T3	LED+VDR transparent 230VAC-DC
	033522	A12209N1K	LED+VDR black cabled 24VAC-DC
	033523	A12209N2K	LED+VDR black cabled 115VAC-DC
	033524	A12209N3K	LED+VDR black cabled 230VAC-DC

\* For coils type ASA12

Main features

Type	Description
TP..F	Polycarbonate cup with metal protection, for filter. Compatible with types FRRL, FRR, F and FD.

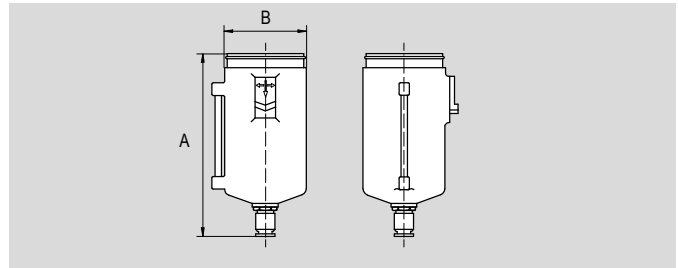


Dimensions

Size	Code	Item	A	B
1/4"	090155	TP14F	92	36
3/8"	090156	TP38F	114	44
1/2"	090157	TP12/01/112/200F	140	60
1"				

Main features

Type	Description
TM..F	Metal cup for filter. Compatible with types FRRL, FRR, F and FD.

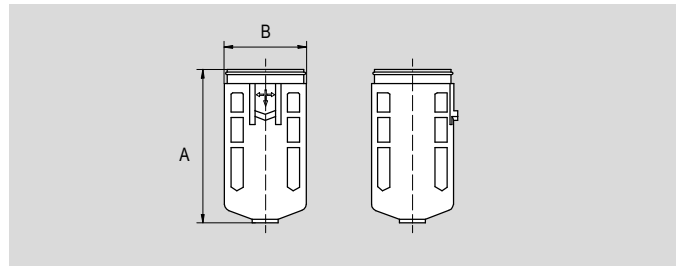


Dimensions

Size	Code	Item	A	B
1/4"	090121	TM14F	92	36
3/8"	090122	TM38F	114	44
1/2"	090123	TM12/01/112/200F	140	60
1"				

Main features

Type	Description
TP..L	Polycarbonate cup with metal protection, for lubricator. Compatible with types FRRL and L.

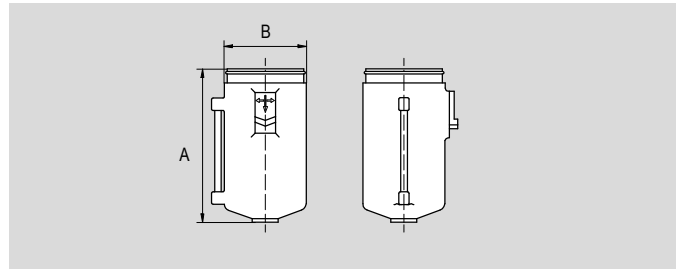


Dimensions

Size	Code	Item	A	B
1/4"	090159	TP14L	72	36
3/8"	090160	TP38L	90	44
1/2"	090161	TP12/01/112/200L	118	60
1"				

## Main features


Type	Description
TM..L	Metal cup for lubricator. Compatible with types FRRL and L.




## Dimensions

Size	Code	Item	A	B
1/4"	090125	TM14L	72	36
3/8"	090126	TM38L	90	44
1/2"	090127	TM12/01/112/200L	118	60
1"				


## Sintered bronze standard filter cartridge 25 µm, CA../25

	Size	Code	Item	Matching
	1/4"	090171	CA14/25	FRRL FRR F
	3/8"	090172	CA38/25	
	1/2"	090173	CA12/25	
	1"	090174	CA01/25	


## Plastic filter cartridge 5 µm, CA../5

	Size	Code	Item	Matching
	1/4"	090175	CA14/5	FRRL FRR F
	3/8"	090176	CA38/5	
	1/2"	090177	CA12/5	
	1"	090178	CA01/5	


## Plastic filter cartridge 0,3 µm, CA../03

	Size	Code	Item	Matching
	3/8"	090281	CA38/03	FD
	1/2"	090282	CA12/03	
	1"	090283	CA01/03	


## Diaphragm for regulators, DF

	Size	Code	Item	Matching
	1/4"	090179	DF14	FRRL FRR R
	3/8"	090180	DF38	
	1/2"	090181	DF12	
	1"	090182	DF01	

## Cup seals kit, ORT..

	Size	Code	Item	Matching
	1/4"	090187	ORT14	FRRL FRR F FD L
	3/8"	090188	ORT38	
	1/2"	090189	ORT12/01/112/200	
	1"			

## Oil regulation kit, OL..

	Size	Code	Item	Matching
	1/4"	090183	OL14	FRRL L
	3/8"	090184	OL38/12/01	
	1/2"			
	1"			