aerospace
climate control
electromechanical
filtration
fluid & gas handling
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process control
sealing & shielding

Air Preparation & Airline Accessories

Catalogue PDE2611TCUK-ca. February 2009

Parker

ENGINEERING YOUR SUC

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Moduflex Air Preparation System

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Moduflex FRLs

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Moduflex80 P3M Series - 1/2", 3/4" and 1" ported

ISO 8573 - Compressed air quality standards

ISO 8573 is the group of International standards relating to the quality of compressed air and consists of nine separate parts. Part 1 specifies the quality requirements of the compressed air and parts 2 - 9 specify the methods of testing for a range of contaminants.

ISO 8573.1 : 2001 is the primary document used from the ISO 8573 series and it is this document which allows the user to specify the air quality or purity required at key points in a compressed air system.

Within ISO 8573.1 : 2001 purity levels for the main contaminants are shown in separate tables, however for ease of use, this document combines all three into one easy to understand table.

Purity	Solid Particulat					Water		Oil
	Maximum number of particles per m^3			Particle Size	Concentration	Vapour	Liquid	Total oil (aerosol, liquid and vapour)
Class	0.1 - 0.5 micron	0.5 - 1 micron	1 - 5 micron	micron	mg/m^3	Pressure Dewpoint	g/m^3	mg/m^3
0	*	*	*	*	*	*	*	*
1	100	1	0	-	-	-70°C	-	0.01
2	100,000	1,000	10	-	-	-40°C	-	0.1
3	-	10,000	500	-	-	-20°C	-	1
4	-	-	1,000	-	-	+3°C	-	5
5	-	-	20,000	-	-	+7°C	-	-
6	-	-	-	5	5	+10°C	-	-
7	-	-	-	40	10	-	0,5	-
8	-	-	-	-	-	-	5	-
9	-	-	-	-	-	-	10	-

* As specified by the equipment user or supplier

Specifying air purity in accordance with ISO 8573.1 : 2001

When specifying the purity of air required, the standard must always be referenced, followed by the purity class selected for each contaminant (a different purity class can be selected for each contaminant if required). An example of how to write an air quality specification is shown below :

ISO 8573.1 : 2001 Class 1.2.1 (Example)
ISO8573.1 : 2001 refers to the standard document and its revision, the three digits refer to the purity classifications selected for solid particulate, water and total oil. Selecting an air purity class of 1.2.1 would specify the following air quality when operating at the standard's reference conditions:

Class 1 Particulate
In each cubic metre of compressed air, no more than 100 particles in the 0.1 - 0.5 micron size range are allowed
In each cubic metre of compressed air, no more than 1 particle in the 0.5 - 1 micron size range is allowed
In each cubic metre of compressed air, no particles in the 1 - 5 micron size range are allowed

Class 2 Water
A pressure dewpoint of -40°C or better is required and no liquid water is allowed.

Class 1 Oil
In each cubic metre of compressed air, not more than 0.01mg of oil is allowed. This is a combined level for both oil aerosol and oil vapour.

Cost effective system design

To achieve the stringent air quality levels required for today's modern production facilities, a careful approach to system design, commissioning and operation must be employed. Treatment at one point alone is not enough and it is highly recommended that the compressed air is treated prior to entry into the distribution system to a quality level suitable for protecting air receivers and distribution piping.

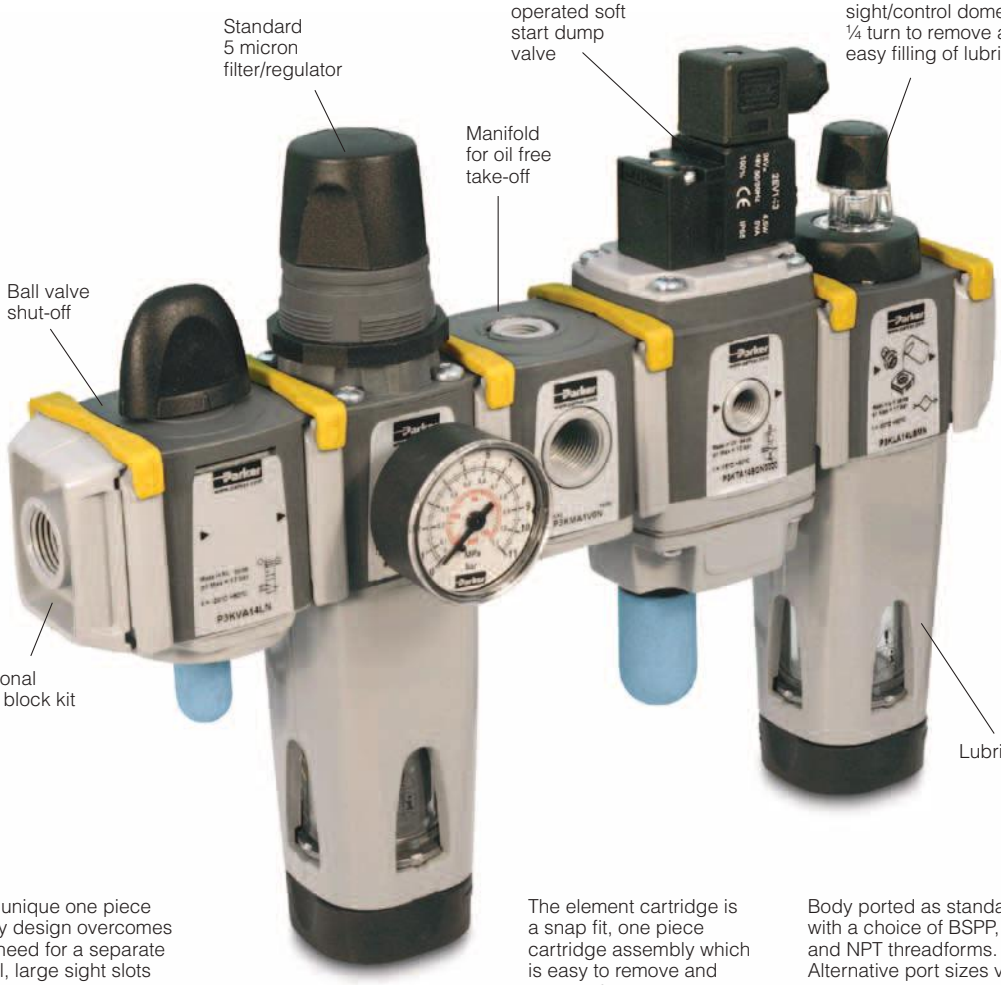
Point of use purification should also be employed, with specific attention being focused on the application and the level of air quality required. This approach to system design ensures that air is not "over treated" and provides the most cost effective solution to high quality compressed air.

The Moduflex modular air preparation system is constructed out of aluminium for the added advantages of both lightweight and strength.

The unique 'Cliplok' fastener enables combinations of units to be built in a fraction of the time taken by more traditional systems.

Combinations may be assembled quickly and easily, the individual units combine face to face with no intermediate block and ..... No increase in overall dimension.

Typical Combination Assembly



The unique one piece body design overcomes the need for a separate bowl, large sight slots are provided as standard.

The element cartridge is a snap fit, one piece cartridge assembly which is easy to remove and replace for servicing, no tools required

Body ported as standard with a choice of BSPP, and NPT threadforms. Alternative port sizes via optional port blocks.

Manual, semi-automatic and fully automatic drain options are available, recessed into the base plate for extra safety & protection from damage.

Cliplok Mounting System

The unique ‘Cliplok’ allows units to be connected together, without the use of pipe connectors, saving space whilst providing constant mounting centres. The ‘Cliploks’ slide into the units from the front and rear and are locked in place by the overstrap.

For wall mounting ‘Cliploks’ with integral wall brackets are available. They are assembled and locked in exactly the same way.

Wall mounted ‘Cliploks’ can be left attached to the wall and the unit will slide off, once the overstrap has been lifted.

‘Cliploks’ locate and fix units in combination, allowing easy removal for servicing with no width penalty.

Moduflex Series Filter Elements

Moduflex Series standard Filter units feature 5 micron elements as standard with a 40 micron option.

Options include Coalescing units for the removal of oil and water aerosols and Adsorber units with activated carbon elements for the removal of hydrocarbon vapours.

The unique one piece body design overcomes the need for a separate bowl. Featuring an easy to use 1/8 turn base plate for filter element removal with positive latch to ensure correct and safe refitting.

The element cartridge is a snap fit, one piece cartridge assembly which is easy to remove and replace for servicing, no tools required.

Body ported as standard with a choice of BSPP and NPT threadforms

Large sights provided as standard

Standard filter units feature 5 micron element.

Condensate bowl

Manual, semi-auto and automatic drain options are available.

One hand operation for easy servicing, no small easily lost part to worry about.

UKAS TESTING
2534

TRaC testing regulatory and compliance

The Moduflex range has been third party Shock & Vibration tested independently in accordance to BS EN 61373:1999, Category 2

Validated for transport applications

RAILWAY INDUSTRY ASSOCIATION

As you would expect from a member of the Rail Industry Association, Moduflex air preparation meets the test specification standards enabling the Moduflex series to be used as a validated product in a variety of rail applications.

BS EN / IEC 61373:1999, Category 2, Class B.

DECLARATION

We **Parker Hannifin Ltd**
Pneumatic Division
The Collins Centre
Lichfield South
Lichfield
WS14 0QP
UK

These products are out of scope of the ATEX Directive 94/9/EC; however they can be used in a Group II Category 2 environment assuming that the ATEX Directive and the following conditions are complied with:

- Maximum working temperature to be as stated on product label.
- Product cleaning must be undertaken using a method complying with the specifications of the ATEX Zone, preferably by aspiration and/or utilization of Antistatic Products.
- Deposits of dust on the product must not exceed 5mm thickness.
- Installation and Maintenance of the product must be done by qualified personnel.
- Do not mount products in an area where Impact may occur.

Solenoid Operated Valves:

- Are suitable for use in an ATEX environment, (Group II Category 2) providing ATEX approved solenoids are fitted.

Product	Series	Category
Filter	P3HFA, P3KFA, P3MFA	for zone 1,21
Regulator	P3HRA, P3KRA, P3MRA	for zone 1,21
Filter Regulator	P3HEA, P3KEA, P3MEA	for zone 1,21
Lubricator	P3HLA, P3KLA, P3MLA	for zone 1,21
Ball Valve	P3HVA, P3KVA, P3MVA	for zone 1,21
Manual Push Button Dump Valve	P3HDA, P3KDA	for zone 1,21
Manifold	P3HMA, P3KMA, P3MMA	for zone 1,21
For non solenoid fitted product		
Soft Start & Dump Valve	P3HTA, P3KTA, P3MTA	for zone 1,21
Soft Start Valve	P3HSA, P3KSA, P3MSA	for zone 1,21
Dump Valve	P3HDA, P3KDA, P3MDA	for zone 1,21
For ATEX solenoid operated product see relevent product order code		
Soft Start & Dump Valve	P3KTA, P3MTA	for zone 1,21
Soft Start Valve	P3KSA, P3MSA	for zone 1,21
Dump Valve	P3KDA, P3MDA	for zone 1,21

Approved by :

A. MacGuire.

A. MacGuire
Engineering Manager - Air Preparation EMEA

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E test@trlcompliance.com
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18th December 2008

To Whom It May Concern:

This letter refers to the following simple apparatus manufactured by:

Parker Hannifin Ltd
Pneumatic Division
The Collins Centre
Lichfield South
Lichfield, WS14 0QP, UK

Equipment Designation	Description	Ignition Hazard Assessment Reference	Date
P3HMA, P3KMA, P3MMA	Manifold	7509-47501	2008-09-19
	Moduflex Combinations	7509-47502	2008-09-19
P3HDA, P3KDA, P3MDA	Remote Dump Valves	7519-46501	2008-09-19
P3HSA, P3KSA, P3MSA	Soft Start Valves	7519-46501	2008-09-19
P3HTA, P3KTA, P3MTA	Soft Start & Dump Valves	7519-46501	2008-09-19
P3HDA, P3KDA	Manifold Dump Valves	7519-46502	2008-09-19
P3HFA, P3KFA, P3MFA	Filters	7539-41501	2008-09-19
P3HVA, P3KVA, P3MVA	Ball Valve	7559-45501	2008-09-19
P3HRA, P3KRA, P3MRA	Regulator	7569-42501	2008-09-19
P3HHA, P3KHA	Manifold Regulator	7569-42501	2008-09-19
P3HLA, P3KLA, P3MLA	Lubricator	7589-43501	2008-09-19
P3HEA, P3KEA, P3MEA	Filter Regulator	7599-44501	2008-09-19

Following a review of the Ignition Hazard Assessments performed on the products listed above by the manufacturer in accordance with the requirements of EN 13463-1:2001, it was considered that the equipment does not contain its own source of ignition, and therefore is not within the scope of directive 94/9/EC.
Refer to ATEX Guidelines (second edition) August 2008, sections 3.7.2 and 5.2.1.

Reviewed by :

D. Lyden
Senior ATEX Project Engineer

Authorised by :

S.K. Barrowcliff
Director - Safety Division (ATEX)

TRAC
testing regulatory and compliance

Easy to use large diameter oil filling orifice

Simple to use combined sight/ control dome, 1/4 turn to remove allows easy filling of lubricant (P3K & P3M series only) even under pressure.

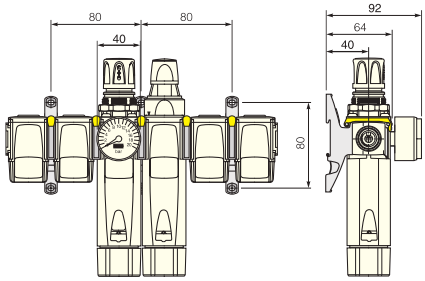
Optional Tamperproof Kit

Optional Manifold Mounted Regulators

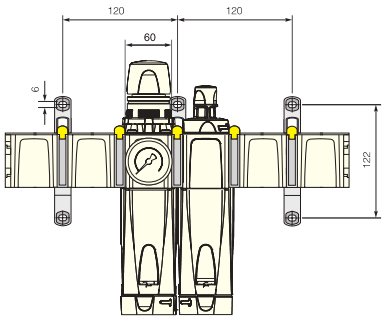
An optional version of the regulator may be Manifold Mounted for common inlet installations, providing any number of subsidiary p2 pressures.

Recommended Wall Mounting Configurations

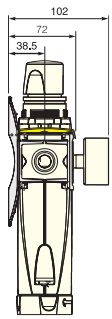
Moduflex 40
P3H Series



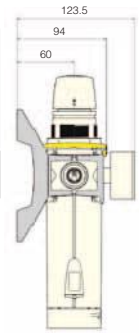
Moduflex 60
P3K Series



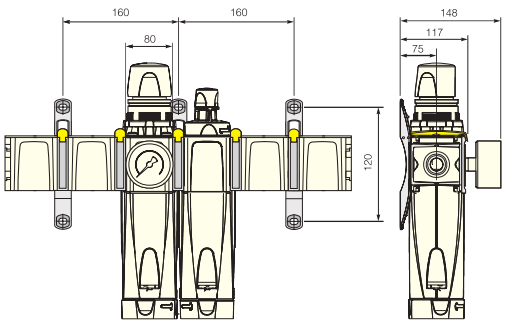
Compact Wall Bracket



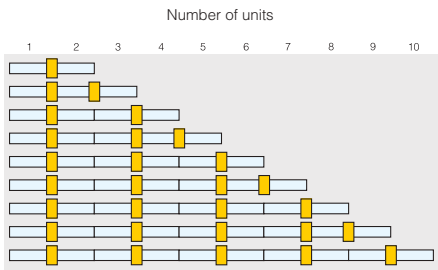
Standard Wall Bracket



Moduflex 80
P3M Series



Position of Wall Mounting Bracket for Combinations



Single Mounting Bracket

Facilitates the permanent mounting of a single unit without the use of the 'Cliplok' system. The single piece steel bracket may be fixed to the wall or machine and a single Moduflex unit simply and securely pushed into place.

This is a permanent mounting option, care must be exercised before the unit is assembled.

Suitable for individual Filter and Lubricator mounting.

For all other mounting arrangements the 'Clipok' system should be used.

Series	Description	Weight g	Order Code
P3H	Single unit mounting bracket	29	**P3HKA00MW**
P3K	Single unit mounting bracket	44	**P3KKA00MW**
P3M	Single unit mounting bracket	130	**P3MKA00MW**

Moduflex Airframe

Portable Compressed Air Preparation

Air preparation 'where and when you want it'. With the new Moduflex Airframe truly portable air preparation is yours.

Weighing typically only 4Kg, the handy carrying handle enables the Moduflex Airframe to be readily employed at the point of use.

Ideal for air tools, paint spraying, construction sites, body shops and garages and general workshops in fact just about any where you want quality regulated compressed air.

Product Features:

- **Body ported as standard with a choice of BSPP and NPT threadforms**
- **Manual, semi-auto and automatic drain options are available.**
- **The unique one piece body design overcomes the need for a separate bowl, large sight slots are provided as standard.**
- **Choice of high efficiency filtration units. 5 micron, 0.01 micron and adsorbers**
- **Excellent water and particle removal**
- **Rolling diaphragm for fast response and extended life**
- **No tools for servicing**
- **Easy to service filter cartridge**

Airframe Stand

Includes modular connection kit

Order code	Weight (g)
P3KKA00MF	1750

Ball Valve Filter Regulator Lubricator

Order codes		Weight (g)
Manual Drain	**P3KAA14SEMNGLM1**	3950
Semi Auto Drain	**P3KAA14SESNGLM1**	4000

Filter-Regulator Coalescing Filter Adsorber Filter

Order codes		Weight (g)
Manual Drain	**P3KCP14SEMNG5M1M1**	4030
Semi Auto Drain	**P3KCP14SESNG5S1M1**	4080

Filter Coalescing Filter Adsorber Filter

Order codes		Weight (g)
Manual Drain	**P3KCR14SEM5M1M1**	3930
Semi Auto Drain	**P3KCR14SES5S1M1**	3980

Other combinations available on request: Contact Sales Office

Operating and material specifications

Working pressure:	Max 17 bar
Working temperature:	-20 °C to +80 °C
Body:	Aluminium
Sight glass:	Technopolymer
Body cover:	Polyesther
Filter element 5µm:	Sintered polypropylene
Coalescing element 0.01µm:	Borosilicate
Adsorber element:	Activated charcoal
Elastomers:	Nitrile NBR
Bayonet support:	Acetal
Drain:	Acetal
Bonnet:	Glass filled polyamide
Control knob:	Polyamide
Valve:	Composite
Screws:	Steel/ zinc plated
Frame:	Steel

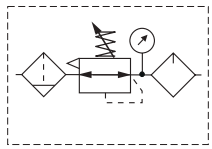
Lockable Tamperproof Kit

This facilitates the tamperproofing of the Reglator and Filter-Regulator units. The hinged black part clamps over the control knob and is locked in place by sliding over the yellow cover. Four pad lock location holes are provided for added security if required.

Order code
P3KKA00AL

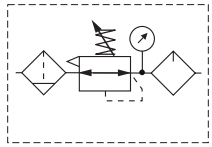
Note: Pad lock not included

Popular Combinations



Filter + Regulator + Lubricator Combinations
5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets

Port size	Manual Drain	Weight (g)	Semi-Auto Drain	Weight (g)
G1/4	**P3HCB12SEMNGLMB**	815	**P3HCB12SESNGLMB**	820



Filter/Regulator + Lubricator Combinations
5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets

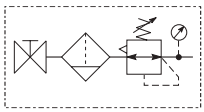
Port size	Manual Drain	Weight (g)	Semi-Auto Drain	Weight (g)
G1/4	**P3HCA12SEMNGLMB**	628	**P3HCA12SESNGLMB**	632

Options:

P3H	C					SE		N		LMB
Filter/Regulator + Lub	A	BSPP (G)	1	1/8	1	Manual Drain	M	0 - 2 bar with gauge	Z	
Filter + Regulator + Lub	B	NPT	9	1/4	2	Semi Auto Drain	S	0 - 4 bar with gauge	M	
								0 - 8 bar with gauge	G	
								0 - 16 bar with gauge	J	

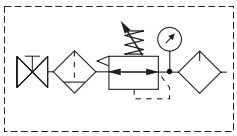
Note: Lubricator is always fitted with manual drain

Popular Combinations



Ball Valve + Filter/Regulator Combinations
5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets

Port size	Manual Drain	Weight (g)	Semi-Auto Drain	Weight (g)
G1/4	**P3HAN12SEMNGB**	533	**P3HAN12SESNGB**	538



Ball Valve + Filter/Regulator + Lubricator Combinations
5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets

Port size	Manual Drain	Weight (g)	Semi-Auto Drain	Weight (g)
G1/4	**P3HAA12SEMNGLMB**	730	**P3HAA12SESNGLMB**	735

Options:

P3H **A** ☐ ☐ ☐ **S E** ☐ **N** ☐ ☐ ☐ **B**

Ball valve + Filter/Reg	**N**
Ball valve + Filter/Reg + Lubricator	**A**

BSPP (G)	**1**	1/8	**1**
NPT	**9**	1/4	**2**

Manual Drain	**M**
Semi Auto Drain	**S**

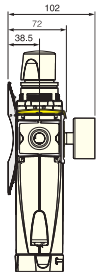
0 - 2 bar with gauge	**Z**
0 - 4 bar with gauge	**M**
0 - 8 bar with gauge	**G**
0 - 16 bar with gauge	**J**

Add only for options with Lubricator	**LM**

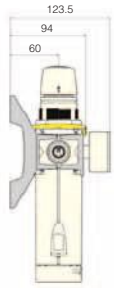
Note: Lubricator is always fitted with manual drain

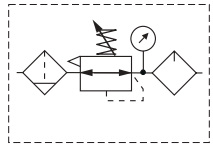
Popular Combinations

Compact Wall Bracket



Standard Wall Bracket

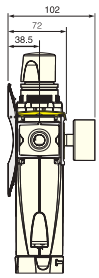




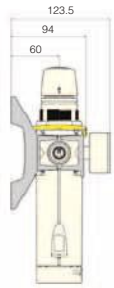
Filter + Regulator + Lubricator Combinations
5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets

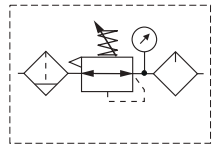
	Port size	Manual Drain	Weight (g)	Semi-Auto Drain	Weight (g)	Auto Drain	Weight (g)
Compact	G1/2	**P3KCB14SEMNGLMB**	2010	**P3KCB14SESNGLMB**	2015	**P3KCB14SEANGLMB**	2030
Standard	G1/2	**P3KCB14SEMNGLM4**	2010	**P3KCB14SESNGLM4**	2015	**P3KCB14SEANGLM4**	2030

Compact Wall Bracket



Standard Wall Bracket





Filter/Regulator + Lubricator Combinations
5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets

	Port size	Manual Drain	Weight (g)	Semi-Auto Drain	Weight (g)	Auto Drain	Weight (g)
Compact	G1/2	**P3KCA14SEMNGLMB**	1610	**P3KCA14SESNGLMB**	1615	**P3KCA14SEANGLMB**	1630
Standard	G1/2	**P3KCA14SEMNGLM4**	1610	**P3KCA14SESNGLM4**	1615	**P3KCA14SEANGLM4**	1630

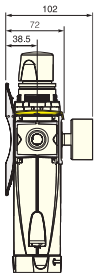
Options:

P3K	C					S E		N		L M	
Filter/Regulator + Lub	A	BSPP (G)	1	3/8	3	Manual Drain	M	0 - 2 bar with gauge	Z	Compact Wall Bracket	B
Filter + Regulator + Lub	B	NPT	9	1/2	4	Semi Auto Drain	S	0 - 4 bar with gauge	M	Standard Wall Bracket	4
						Auto Drain	A	0 - 8 bar with gauge	G		
								0 - 16 bar with gauge	J		

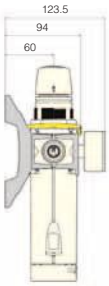
Note: Lubricator is always fitted with manual drain

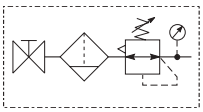
Popular Combinations

Compact Wall Bracket



Standard Wall Bracket

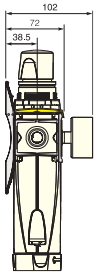




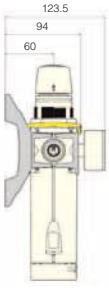
Ball Valve + Filter/Regulator Combinations
5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets

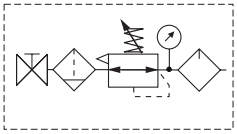
	Port size	Manual Drain	Weight (g)	Semi-Auto Drain	Weight (g)	Auto Drain	Weight (g)
Compact	G1/2	**P3KAN14SEMNGB**	1425	**P3KAN14SESNGB**	1430	**P3KAN14SEANGB**	1445
Standard	G1/2	**P3KAN14SEMNG4**	1425	**P3KAN14SESNG4**	1430	**P3KAN14SEANG4**	1445

Compact Wall Bracket



Standard Wall Bracket





Ball Valve + Filter/Regulator + Lubricator Combinations
5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets

	Port size	Manual Drain	Weight (g)	Semi-Auto Drain	Weight (g)	Auto Drain	Weight (g)
Compact	G1/2	**P3KAA14SEMNGLMB**	2210	**P3KAA14SESNGLMB**	2215	**P3KAA14SEANGLMB**	2230
Standard	G1/2	**P3KAA14SEMNGLM4**	2210	**P3KAA14SESNGLM4**	2215	**P3KAA14SEANGLM4**	2230

Options:

P3K | **A** | | | | **S E** | | **N** | | | |

Ball valve + Filter/Reg	**N**
Ball valve + Filter/Reg + Lubricator	**A**

BSPP (G)	**1**
NPT	**9**

3/8	**3**
1/2	**4**

Manual Drain	**M**
Semi Auto Drain	**S**
Auto Drain	**A**

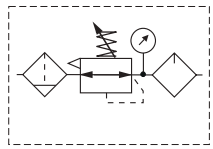
0 - 2 bar with gauge	**Z**
0 - 4 bar with gauge	**M**
0 - 8 bar with gauge	**G**
0 - 16 bar with gauge	**J**

Add only for options with Lubricator	**LM**

Compact Wall Bracket	**B**
Standard Wall Bracket	**4**

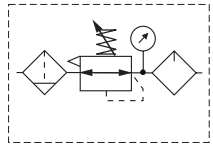
Note: Lubricator is always fitted with manual drain

Popular Combinations



Filter + Regulator + Lubricator Combinations
5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets

Port size	Manual Drain	Weight (g)	Semi-Auto Drain	Weight (g)	Auto Drain	Weight (g)
G3/4	**P3MCB16SEMNGLMB**	4229	**P3MCB16SESNGLMB**	4219	**P3MCB16SEANGLMB**	4249
G1	**P3MCB18SEMNGLMB**	4148	**P3MCB18SESNGLMB**	4138	**P3MCB18SEANGLMB**	4168



Filter/Regulator + Lubricator Combinations
5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets

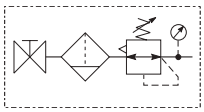
Port size	Manual Drain	Weight (g)	Semi-Auto Drain	Weight (g)	Auto Drain	Weight (g)
G3/4	**P3MCA16SEMNGLMB**	3526	**P3MCA16SESNGLMB**	3516	**P3MCA16SEANGLMB**	3546
G1	**P3MCA18SEMNGLMB**	3485	**P3MCA18SESNGLMB**	3475	**P3MCA18SEANGLMB**	3505

Options:

P3M	C				S E		N		L M B
Filter/Regulator + Lub	A	BSPP (G)	1	1/2	4	Manual Drain	M	0 - 2 bar with gauge	Z
Filter + Regulator + Lub	B	NPT	9	3/4	6	Semi Auto Drain	S	0 - 4 bar with gauge	M
				1	8	Auto Drain	A	0 - 8 bar with gauge	G
								0 - 16 bar with gauge	J

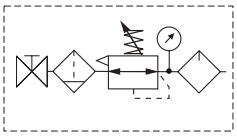
Note: Lubricator is always fitted with manual drain

Popular Combinations



Ball Valve + Filter/Regulator Combinations
5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets

Port size	Manual Drain	Weight (g)	Semi-Auto Drain	Weight (g)	Auto Drain	Weight (g)
G3/4	**P3MAN16SEMNGB**	2983	**P3MAN16SESNGB**	2973	**P3MAN16SEANGB**	3003
G1	**P3MAN18SEMNGB**	2918	**P3MAN18SESNGB**	2908	**P3MAN18SEANGB**	2938



Ball Valve + Filter/Regulator + Lubricator Combinations
5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets

Port size	Manual Drain	Weight (g)	Semi-Auto Drain	Weight (g)	Auto Drain	Weight (g)
G3/4	**P3MAA16SEMNGLMB**	4594	**P3MAA16SESNGLMB**	4584	**P3MAA16SEANGLMB**	4614
G1	**P3MAA18SEMNGLMB**	4553	**P3MAA18SESNGLMB**	4543	**P3MAA18SEANGLMB**	4573

Options:

P3M **A** ☐ ☐ ☐ **S E** ☐ **N** ☐ ☐ ☐ **B**

Ball valve + Filter/Reg	**N**
Ball valve + Filter/Reg + Lubricator	**A**

BSPP (G)	**1**
NPT	**9**

1/2	**4**
3/4	**6**
1	**8**

Manual Drain	**M**
Semi Auto Drain	**S**
Auto Drain	**A**

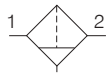
0 - 2 bar with gauge	**Z**
0 - 4 bar with gauge	**M**
0 - 8 bar with gauge	**G**
0 - 16 bar with gauge	**J**

Add only for options with Lubricator	**LM**

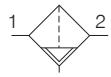
Note: Lubricator is always fitted with manual drain

Standard Filter

Symbols



Manual drain



Semi auto drain

- Integral 1/8 or 1/4 ports (BSPP or NPT)
- High efficiency 5 micron element as standard
- Excellent water removal efficiency
- Robust but lightweight aluminium construction
- One hand operation for easy element cartridge removal
- Positive bayonet latch to ensure correct & safe fitting
- No small easily lost parts
- No tools required for servicing

Options:

P3HFA □ □ □ □ **N**

BSPP (G)	**1**
NPT	**9**

1/8	**1**
1/4	**2**

5 Micron Element Standard	**E**
40 Micron Element Optional	**G**

Manual Drain	**SM**
Semi Auto Drain	**SS**

Port size	Description	Order Code	Flow dm^3/s *	Max bar	Min temp °C	Max temp °C	Bowl size cm^3	Height mm	Width mm	Depth mm	Weight g
G1/8	Manual drain	**P3HFA11ESMN**	15	17	-25	+80	10	145	40	40	274
G1/8	Semi auto drain	**P3HFA11ESSN**	15	17	-25	+80	10	145	40	40	274
G1/4	Manual drain	**P3HFA12ESMN**	18	17	-25	+80	10	145	40	40	274
G1/4	Semi auto drain	**P3HFA12ESSN**	18	17	-25	+80	10	145	40	40	274

* flow with 6,3 bar inlet pressure and 0,5 pressure drop.

Technical Information

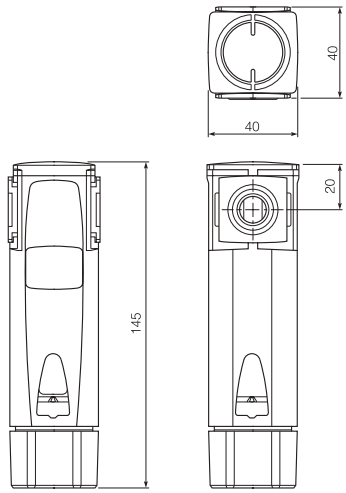
Fluid:	Compressed air
Maximum inlet pressure*:	17 bar Manual or Semi auto
Temperature range*:	-25°C to +80°C
Particle removal:	5 micron & 40 micron
Air quality:	Within ISO 8573-1 : 1991 Class 3 and 5 (particulates) Within ISO 8573-1 : 2001 Class 6 and 7 (particulates)
Typical flow with 5µm element 6,3 bar inlet pressure and 0.5 bar pressure drop:	18 dm^3/s
Manual drain:	twist grip open and barbed connection
Semi-auto drain: 0,2 bar @ min flow of 0,4 dm^3/s bowl pressure to close drain	with barbed connection
Bowl sump capacity:	10 cm^3

* Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Material Specification

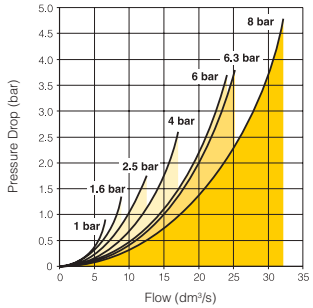
Body:	Aluminium
Sight glass:	Technopolymer
Body cover:	Polyester
Element:	Sintered polypropylene
Elastomers:	Nitrile NBR
Bayonet support:	Nylon
Drain:	Acetal

Dimensions (mm)

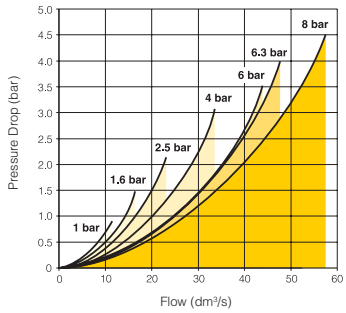


Flow characteristics

(1/8) 5 Micron Filter



(1/4) 5 Micron Filter

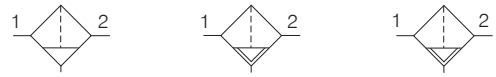


Service kits

Description	Order code
5 micron element kit	**P3HKA00ESE**
40 micron element kit	**P3HKA00ESG**
Sight glass & manual drain kit	**P3HKA00BSM**
Sight glass & semi-auto drain kit	**P3HKA00BSS**

Standard Filter

Symbols



Manual drain | Semi auto drain | Auto drain

- Integral 3/8 or 1/2 ports (BSPP or NPT)
- High efficiency 5 micron element as standard
- Excellent water removal efficiency
- Robust but lightweight aluminium construction
- One hand operation for easy element cartridge removal
- Positive bayonet latch to ensure correct & safe fitting
- No small easily lost parts
- No tools required for servicing

Options:

P3KFA □ □ □ □ **N**

BSPP (G)	**1**
NPT	**9**

3/8	**3**
1/2	**4**

5 Micron Element Standard	**E**
40 Micron Element Optional	**G**

Manual Drain	**SM**
Semi Auto Drain	**SS**
Auto Drain	**SA**

Port size	Description	Order Code	Flow dm^3/s *	Max bar	Min temp °C	Max temp °C	Bowl size cm^3	Height mm	Width mm	Depth mm	Weight g
3/8	Manual drain	**P3KFA13ESMN**	45	17	-25	80	48	194	60	60	660
3/8	Semi auto drain	**P3KFA13ESSN**	45	17	-25	80	48	194	60	60	650
3/8	Auto drain	**P3KFA13ESAN**	45	17	-25	80	48	194	60	60	680
1/2	Manual drain	**P3KFA14ESMN**	50	17	-25	80	48	194	60	60	650
1/2	Semi auto drain	**P3KFA14ESSN**	50	17	-25	80	48	194	60	60	650
1/2	Auto drain	**P3KFA14ESAN**	50	17	-25	80	48	194	60	60	670

* flow with 6,3 bar inlet pressure and 0,5 pressure drop.

Technical Information

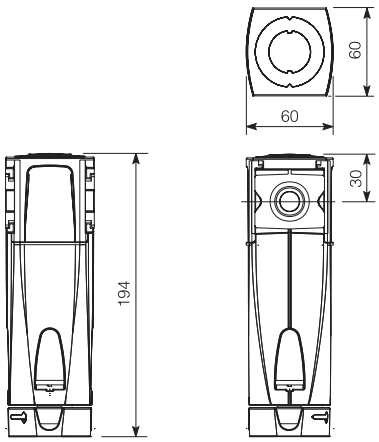
Fluid:	Compressed air
Maximum inlet pressure*:	17 bar
Temperature range*:	-25°C to +80°C
Particle removal:	5 micron and 40 micron
Air quality:	Within ISO 8573-1 : 1991 Class 3 and 5 (particulates) Within ISO 8573-1 : 2001 Class 6 and 7 (particulates)
Typical flow with 5µm element 6,3 bar inlet pressure and 0.5 bar pressure drop:	50 dm^3/s
Manual drain:	twist grip open and barbed connection
Semi-auto drain: 0,2 bar @ min flow of 0,4 dm^3/s bowl pressure to close drain	with barbed connection
Auto drain:	
bowl pressure to close drain	1 bar
Operating range	1 to 17 bar
manual override facility (depress pin) barbed connection.	
Bowl sump capacity:	48 cm^3

* Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Material Specification

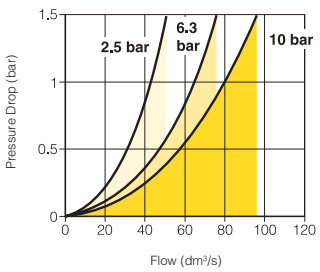
Body:	Aluminium
Sight glass:	Technopolymer
Body cover:	Polyester
Element:	Sintered polypropylene
Elastomers:	Nitrile NBR
Bayonet support:	Polyamide
Drain:	Acetal

Dimensions (mm)

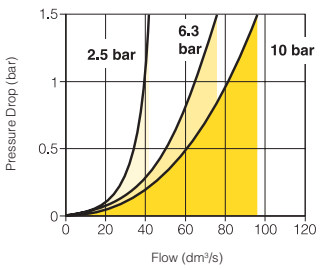


Flow characteristics

(3/8) 5 Micron Filter



(1/2) 5 Micron Filter



Service kits

Description	Order code
5 micron element kit	**P3KKA00ESE**
40 micron element kit	**P3KKA00ESG**
Sight glass & manual drain kit	**P3KKA00BSM**
Sight glass & semi-auto drain kit	**P3KKA00BSS**
Sight glass & auto drain kit	**P3KKA00BSA**
5µm element + manual drain bowl kit	**P3KKA00TSME**
5µm element + semi auto drain bowl kit	**P3KKA00TSSE**

Standard Filter

Symbols

Manual drain | Semi auto drain | Auto drain

- Integral 1/2, 3/4 or 1" ports (BSPP or NPT)
- High efficiency 5 micron element as standard
- Excellent water removal efficiency
- Robust but lightweight aluminium construction
- One hand operation for easy element cartridge removal
- Positive bayonet latch to ensure correct & safe fitting
- No small easily lost parts
- No tools required for servicing

Options:

P3MFA [ ] [ ] [ ] [ ] **N**

BSPP (G)	**1**
NPT	**9**

1/2	**4**
3/4	**6**
1"	**8**

5 Micron Element Standard	**E**
40 Micron Element Optional	**G**

Manual Drain	**SM**
Semi Auto Drain	**SS**
Auto Drain	**SA**

Port size	Description	Order Code	Flow dm^3/s *	Max bar	Min temp ^oC	Max temp ^oC	Bowl size cm^3	Height mm	Width mm	Depth mm	Weight g
3/4	Manual drain	**P3MFA16ESMN**	101	17	-25	80	100	255	80	80	1320
3/4	Semi auto drain	**P3MFA16ESSN**	101	17	-25	80	100	255	80	80	1310
3/4	Auto drain	**P3MFA16ESAN**	101	17	-25	80	100	255	80	80	1340
1"	Manual drain	**P3MFA18ESMN**	105	17	-25	80	100	255	80	80	1280
1"	Semi auto drain	**P3MFA18ESSN**	105	17	-25	80	100	255	80	80	1270
1"	Auto drain	**P3MFA18ESAN**	105	17	-25	80	100	255	80	80	1300

* flow with 6,3 bar inlet pressure and 0,5 pressure drop.

Technical Information

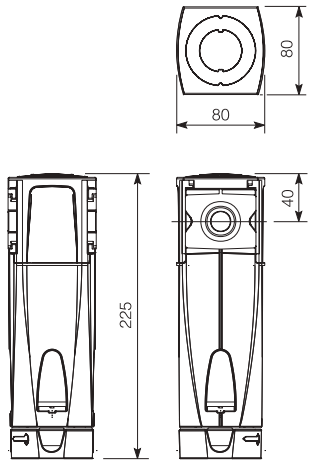
Fluid:	Compressed air
Maximum inlet pressure*:	17 bar
Temperature range*:	-25°C to +80°C
Particle removal:	5 & 40 micron
Air quality:	Within ISO 8573-1 : 1991 Class 3 and 5 (particulates) Within ISO 8573-1 : 2001 Class 6 and 7 (particulates)
Typical flow with 5µm element 6,3 bar inlet pressure and 0.5 bar pressure drop:	105 dm^3/s
Manual drain:	twist grip open and barbed connection
Semi-auto drain: 0,2 bar @ min flow of 0,4 dm^3/s bowl pressure to close drain	with barbed connection
Auto drain:	
bowl pressure to close drain	1 bar
Operating range	1 to 17 bar
manual override facility (depress pin) barbed connection.	
Bowl sump capacity:	100 cm^3

* Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Material Specification

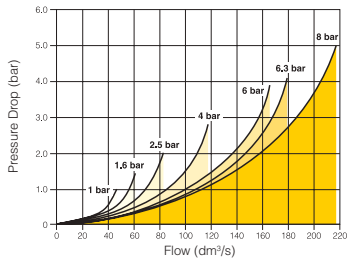
Body:	Aluminium
Sight glass:	Technopolymer
Body cover:	Polyester
Element:	Sintered polypropylene
Elastomers:	Nitrile NBR
Bayonet support:	Nylon
Drain:	Acetal

Dimensions (mm)

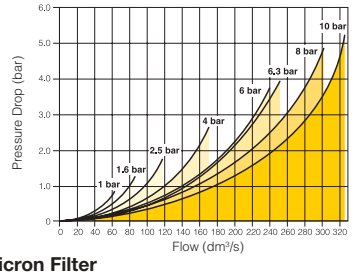


Flow characteristics

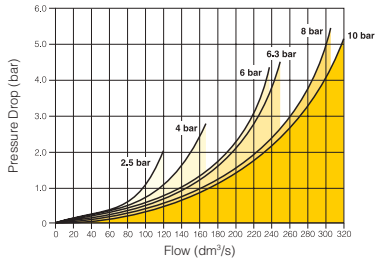
(1/2) 5 Micron Filter



(3/4) 5 Micron Filter



(1") 5 Micron Filter



Service kits

Description	Order code
5 micron element kit	**P3MKA00ESE**
40 micron element kit	**P3MKA00ESG**
Sight glass & manual drain kit	**P3MKA00BSM**
Sight glass & semi-auto drain kit	**P3MKA00BSS**
Sight glass & auto drain kit	**P3MKA00BSA**

Coalescing Filters

- Integral 1/8 or 1/4 ports (BSPP or NPT)
- Removes liquid aerosols and sub micron particles
- Oil free air for critical applications, such as air gauging, pneumatic instrumentation and control
- One hand operation for easy element cartridge removal

Note: To optimise the life of coalescing element, it is advisable to install a P3HFA pre-filter with a 5 micron element upstream of the coalescing filter.

Options:

P3HFA [ ] [ ] [ ] [ ] **N**

BSPP (G)	**1**
NPT	**9**

1/8	**1**
1/4	**2**

0.01 µm element with DPI Standard	**D**
0.01 µm element without DPI option	**C**
1 µm element with DPI option	**Q**
1 µm element without DPI option	**9**

Manual Drain	**SM**
Semi Auto Drain	**SS**

Port size	Description	Order Code	Flow dm^3/s *	Max bar	Min temp ^oC	Max temp ^oC	Bowl size cm^3	Height mm	Width mm	Depth mm	Weight g
G1/8	Coalescing Filter 0.01 µm, Manual drain	**P3HFA11DSMN**	2.6	17	-25	+66	10	157	40	40	274
G1/8	Coalescing Filter 0.01 µm, Semi auto drain	**P3HFA11DSSN**	2.6	17	-25	+66	10	157	40	40	274
G1/4	Coalescing Filter 0.01 µm, Manual drain	**P3HFA12DSMN**	3	17	-25	+66	10	157	40	40	274
G1/4	Coalescing Filter 0.01 µm, Semi auto drain	**P3HFA12DSSN**	3	17	-25	+66	10	157	40	40	274
G1/8	Coalescing Filter 1 µm, Manual	**P3HFA11QSMN**	3.8	17	-25	+66	10	157	40	40	274
G1/8	Coalescing Filter 1 µm, Semi auto	**P3HFA11QSSN**	3.8	17	-25	+66	10	157	40	40	274
G1/4	Coalescing Filter 1 µm, Manual	**P3HFA12QSMN**	4.3	17	-25	+66	10	157	40	40	274
G1/4	Coalescing Filter 1 µm, Semi auto	**P3HFA12QSSN**	4.3	17	-25	+66	10	157	40	40	274

* flow with 6,3 bar inlet pressure and 0,2 pressure drop (saturated element).

Technical Information

Fluid:	Compressed air
Maximum inlet pressure*:	17 bar
Temperature range*:	-25°C to +66°C
Media specifications: Coalescing efficiency Max. oil carryover (PPM w/w):	 (0.3 to 0.6 micron particles): 99.97% 0.008 mg/m^3
Typical flow element @ 6,3 bar inlet pressure and 0.2 bar pressure drop:	Dry element 0.01µm@5.1dm^3/s 1µm @ 7.3 dm^3/s Saturated element 0.01µm@3.0dm^3/s 1µm @ 4.3 dm^3/s
Manual drain:	twist grip open and barbed connection
Semi-auto drain: 0,2 bar @ min flow of 0,4 dm^3/s bowl pressure to close drain	 with barbed connection
Bowl sump capacity:	10 cm^3

* Air supply must be dry enough to avoid ice formation at temperatures below +2°C

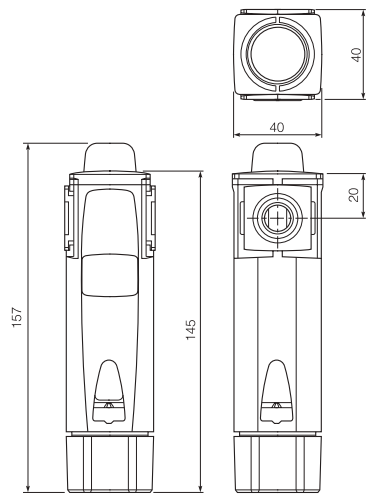
Material Specification

Body:	Aluminium
Sight glass:	Technopolymer
Filter cover:	Polyester
Coalescing element:	Borosilicate & micro fibre
Bottom endcap:	Glass filled nylon
Support cylinders:	Grade 430 stainless steel
Support media:	100% spun polypropylene or PET core with nylon sheath
Anti re-entrainment barrier:	Polyurethane (Red foam)
Encapsulant:	Epoxy resin / Hardener
Elastomers:	Nitrile NBR
Bayonet support:	Nylon
Drain:	Acetal

Differential pressure indicator materials:

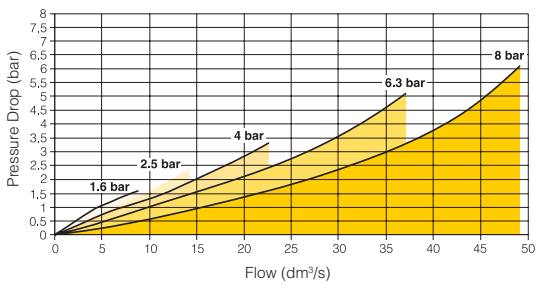
Body:	Technoplyomer
Internal parts:	Acetal
Spring:	Stainless steel
Elastomers:	Nitrile NBR
Support plate	Aluminium
Screws	Steel / zinc plated

Dimensions (mm)

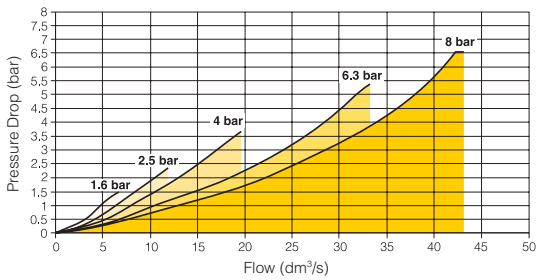


Flow characteristics

(1/4) 0.01µm Coalescing Filter Saturated



(1/4) 1µm Coalescing Filter Saturated



Service kits

Description	Order code
0.01 micron coalescing element kit	**P3HKA00ESC**
Sight glass & manual drain kit	**P3HKA00BSM**
Sight glass & semi-auto drain kit	**P3HKA00BSS**
Differential pressure indicator kit	**P3HKA00RQ**
1 micron fine filter element kit	**P3HKA00ES9**

Coalescing Filters

- Integral 3/8 or 1/2 ports (BSPP or NPT)
- Removes liquid aerosols and sub micron particles
- Oil free air for critical applications, such as air gauging, pneumatic instrumentation and control
- One hand operation for easy element cartridge removal

Note: To optimise the life of coalescing element, it is advisable to install a P3KFA pre-filter with a 5 micron element upstream of the coalescing filter.

Options:

P3KFA [ ] [ ] [ ] [ ] **N**

BSPP (G)	**1**
NPT	**9**

3/8	**3**
1/2	**4**

0.01 µm element with DPI Standard	**D**
0.01 µm element without DPI option	**C**
1 µm element with DPI option standard	**Q**
1 µm element without DPI option	**9**
1 µm element extended with DPI option	**N**
1 µm element extended without DPI option	**8**
0.01 µm element extended with DPI option	**5**
0.01 µm element extended without DPI option	**4**

Manual Drain	**SM**
Semi Auto Drain	**SS**
Auto Drain (1)	**SA**

Note (1) : Not available with extended element option.

Port size	Description	Order Code	Flow dm^3/s *	Max bar	Min temp °C	Max temp °C	Bowl size cm^3	Height mm	Width mm	Depth mm	Weight g
3/8	Coalescing Filter 0.01 µm, Manual drain	**P3KFA13DSMN**	11	17	-25	66	48	202	60	60	660
3/8	Coalescing Filter 0.01 µm, Semi auto drain	**P3KFA13DSSN**	11	17	-25	66	48	202	60	60	660
3/8	Coalescing Filter 0.01 µm, Auto drain	**P3KFA13DSAN**	11	17	-25	66	48	202	60	60	680
1/2	Coalescing Filter 0.01 µm, Manual drain	**P3KFA14DSMN**	11.8	17	-25	66	48	202	60	60	650
1/2	Coalescing Filter 0.01 µm, Semi auto drain	**P3KFA14DSSN**	11.8	17	-25	66	48	202	60	60	650
1/2	Coalescing Filter 0.01 µm, Auto drain	**P3KFA14DSAN**	11.8	17	-25	66	48	202	60	60	670
3/8	Coalescing Filter 1 µm, Manual drain	**P3KFA13QSMN**	13.1	17	-25	66	48	202	60	60	660
3/8	Coalescing Filter 1 µm, Semi auto drain	**P3KFA13QSSN**	13.1	17	-25	66	48	202	60	60	660
3/8	Coalescing Filter 1 µm, Auto drain	**P3KFA13QSAN**	13.1	17	-25	66	48	202	60	60	680
1/2	Coalescing Filter 1 µm, Manual drain	**P3KFA14QSMN**	14	17	-25	66	48	202	60	60	650
1/2	Coalescing Filter 1 µm, Semi auto drain	**P3KFA14QSSN**	14	17	-25	66	48	202	60	60	650
1/2	Coalescing Filter 1 µm, Auto drain	**P3KFA14QSAN**	14	17	-25	66	48	202	60	60	670

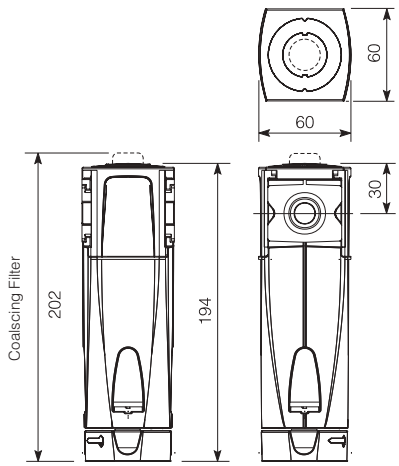
* flow with 6,3 bar inlet pressure and 0,2 pressure drop (saturated element).

Technical Information

Fluid:	Compressed air
Maximum inlet pressure*:	17 bar
Temperature range*:	-25°C to +66°C
Media specifications: Coalescing efficiency Max. oil carryover (PPM w/w):	 (0.3 to 0.6 micron particles): 99.97% 0.008 mg/m^3
Typical flow element @ 6,3 bar inlet pressure and 0.2 bar pressure drop:	Dry element 0.01µm@11.8dm^3/s 1µm @ 14dm^3/s Saturated element 0.01µm@10.4dm^3/s 1µm @ 10.8 dm^3/s Dry element 0.01µm@18.8dm^3/s 1µm @ 29.2 dm^3/s Saturated element 0.01µm@15.8dm^3/s 1µm @ 24.9 dm^3/s
Manual drain:	twist grip open and barbed connection
Semi-auto drain: 0,2 bar @ min flow of 0,4 dm^3/s bowl pressure to close drain	 with barbed connection
Auto drain: bowl pressure to close drain Operating range manual override facility (depress pin) barbed connection.	 1 bar 1 to 17 bar
Bowl sump capacity:	48 cm^3

* Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Dimensions (mm)



Service kits

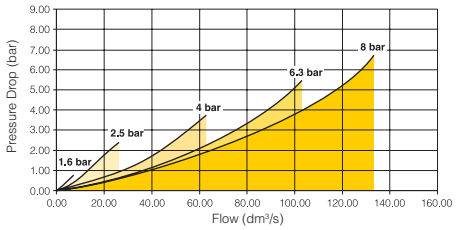
Description	Order code
0.01 micron coalescing element kit	**P3KKA00ESC**
Sight glass & manual drain kit	**P3KKA00BSM**
Sight glass & semi-auto drain kit	**P3KKA00BSS**
Sight glass & auto drain kit	**P3KKA00BSA**
Differential pressure indicator kit	**P3HKA00RQ**
0.01 micron element kit extended	**P3KKA00EAC**
1 micron element kit	**P3KKA00ES9**
1 micron element kit extended	**P3KKA00EA9**

Material Specification

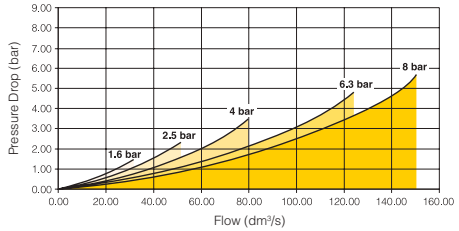
Body:	Aluminium
Sight glass:	Technopolymer
Filter cover:	Polyester
Coalescing element:	Borosilicate & micro fibre
Bottom endcap:	Glass filled nylon
Support cylinders:	Grade 430 stainless steel
Support media:	100% spun polypropylene or PET core with nylon sheath
Anti re-entrainment barrier:	Polyurethane (Red foam)
Encapsulant:	Epoxy resin / Hardener
Elastomers:	Nitrile NBR
Bayonet support:	Polyamide
Drain:	Acetal

Flow characteristics

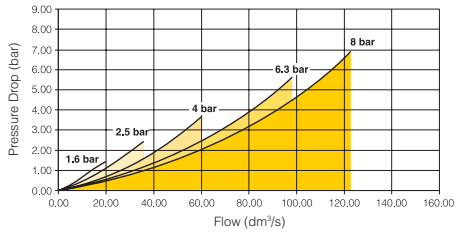
(1/2) 0.01µm Coalescing Filter Saturated



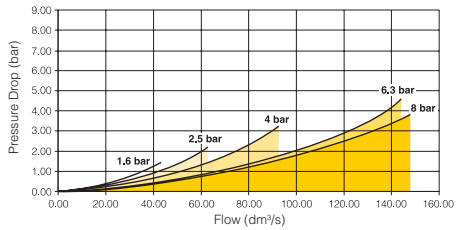
(1/2) 0.01µm Coalescing Extended Filter Saturated



(1/2) 1µm Coalescing Filter Saturated



(1/2) 1µm Coalescing Extended Filter Saturated



Coalescing Filters

- Deep pleated element that provides upto 450% more filtration surface area.
- Integral 1/2, 3/4 or 1" ports (BSPP or NPT)
- Removes liquid aerosols and sub micron particles
- Oil free air for critical applications, such as air gauging, pneumatic instrumentation and control
- One hand operation for easy element cartridge removal

Note: To optimise the life of coalescing element, it is advisable to install a P3MFA pre-filter with a 5 micron element upstream of the coalescing filter.

Options:

P3MFA [ ] [ ] [ ] **N**

BSPP (G)	**1**
NPT	**9**

1/2	**4**
3/4	**6**
1"	**8**

0.01 µm element with DPI Standard	**D**
0.01 µm element without DPI option	**C**
1 µm element with DPI option	**Q**
1 µm element without DPI option	**9**

Manual Drain	**SM**
Semi Auto Drain	**SS**
Auto Drain	**SA**

Port size	Description	Order Code	Flow dm^3/s *	Max bar	Min temp °C	Max temp °C	Bowl size cm^3	Height mm	Width mm	Depth mm	Weight g
3/4	Coalescing Filter 0.01µm, Manual drain	**P3MFA16DSMN**	33.5	17	-25	66	100	265	80	80	1420
3/4	Coalescing Filter 0.01µm, Semi auto drain	**P3MFA16DSSN**	33.5	17	-25	66	100	265	80	80	1410
3/4	Coalescing Filter 0.01µm, Auto drain	**P3MFA16DSAN**	33.5	17	-25	66	100	265	80	80	1440
1"	Coalescing Filter 0.01µm, Manual drain	**P3MFA18DSMN**	34.1	17	-25	66	100	265	80	80	1400
1"	Coalescing Filter 0.01µm, Semi auto drain	**P3MFA18DSSN**	34.1	17	-25	66	100	265	80	80	1400
1"	Coalescing Filter 0.01µm, Auto drain	**P3MFA18DSAN**	34.1	17	-25	66	100	265	80	80	1420
3/4	Coalescing Filter 1µm, Manual drain	**P3MFA16QSMN**	36.9	17	-25	66	100	265	80	80	1420
3/4	Coalescing Filter 1µm, Semi auto drain	**P3MFA16QSSN**	36.9	17	-25	66	100	265	80	80	1410
3/4	Coalescing Filter 1µm, Auto drain	**P3MFA16QSAN**	36.9	17	-25	66	100	265	80	80	1440
1"	Coalescing Filter 1µm, Manual drain	**P3MFA18QSMN**	40.9	17	-25	66	100	265	80	80	1400
1"	Coalescing Filter 1µm, Semi auto drain	**P3MFA18QSSN**	40.9	17	-25	66	100	265	80	80	1400
1"	Coalescing Filter 1µm, Auto drain	**P3MFA18QSAN**	40.9	17	-25	66	100	265	80	80	1420

* flow with 6,3 bar inlet pressure and 0,2 pressure drop (saturated element).

Technical Information

Fluid:	Compressed air
Maximum inlet pressure*:	17 bar
Temperature range*:	-25°C to +66°C
Media specifications: Coalescing efficiency Max. oil carryover (PPM w/w):	 (0.3 to 0.6 micron particles): 99.97% 0.008 mg/m^3
Typical flow element @ 6,3 bar inlet pressure and 0.2 bar pressure drop:	Dry element Saturated element 0.01µm@46.3dm^3/s 0.01µm@33.5dm^3/s 1µm @ 60.9dm^3/s 1µm @ 36.9dm^3/s
Manual drain:	twist grip open and barbed connection
Semi-auto drain: 0,2 bar @ min flow of 0,4 dm^3/s bowl pressure to close drain	 with barbed connection
Auto drain: bowl pressure to close drain Operating range manual override facility (depress pin) barbed connection.	 1 bar 1 to 17 bar
Bowl sump capacity:	100 cm^3

* Air supply must be dry enough to avoid ice formation at temperatures below +2°C

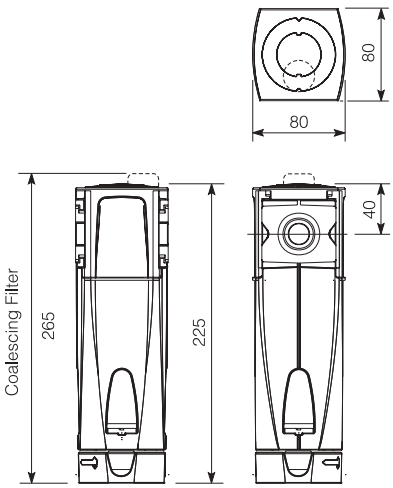
Material Specification

Body:	Aluminium
Sight glass:	Technopolymer
Filter cover:	Polyester
Coalescing element:	Borosilicate & Nano fibres
Top & bottom end cap:	Glass filled nylon - Black
Support cylinders:	Grade 430 stainless steel
Support media:	Polypropylene
Anti re-entrainment barrier:	Polyester
Ensapulate:	Epoxy resin / Hardener
Elastomers:	Nitrile NBR
Bayonet support:	Polyamide
Drain:	Acetal

Differential pressure indicator materials:

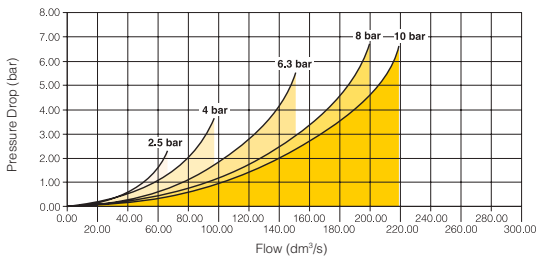
Body:	Technoplyomer
Internal parts:	Acetal
Spring:	Stainless steel
Elastomers:	Nitrile NBR
Support plate	Aluminium
Screws	Steel / zinc plated

Dimensions (mm)

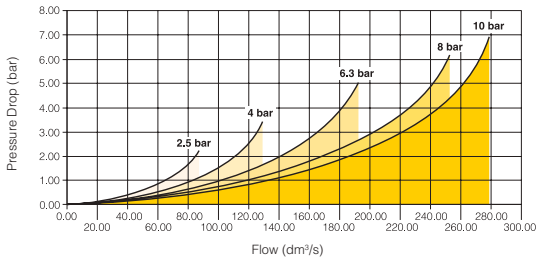


Flow characteristics

(3/4) 0.01µm Coalescing Filter Saturated



(3/4) 1µm Coalescing Filter Saturated



Service kits

Description	Order code
0.01 micron coalescing element kit	**P3MKA00ESC**
1 micron coalescing element kit	**P3MKA00ES9**
Sight glass & manual drain kit	**P3MKA00BSM**
Sight glass & semi-auto drain kit	**P3MKA00BSS**
Sight glass & auto drain kit	**P3MKA00BSA**
Differential pressure indicator kit	**P3HKA00RQ**

Adsorber Filters

- Integral 1/8 or 1/4 ports (BSPP or NPT)
- One hand operation for easy element cartridge removal
- Adsorbing activated carbon element removes oil vapours and most hydrocarbons

Note: To optimise the life of adsorber element, it is advisable to install a P3H coalescing 0.01 µm filter upstream of the adsorber filter.

Options:

P3HFA									
				A		S	M	N	
BSPP (G)	1	1/8	1	Adsorber element	A	Manual Drain	SM		
NPT	9	1/4	2						

Port size	Description	Order Code	Flow dm^3/s *	Max bar	Min temp °C	Max temp °C	Bowl size cm^3	Height mm	Width mm	Depth mm	Weight g
G1/8	Adsorber Filter, Manual drain	**P3HFA11ASMN**	6	17	-25	+50	10	145	40	40	269
G1/4	Adsorber Filter, Manual drain	**P3HFA12ASMN**	8	17	-25	+50	10	145	40	40	269

* flow with 6,3 bar inlet pressure and 0,2 pressure drop.

Technical Information

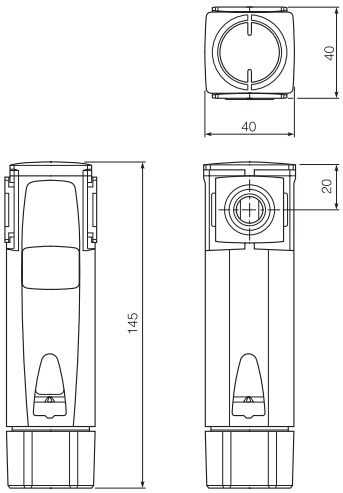
Fluid:	Compressed air
Maximum inlet pressure*:	17 bar
Temperature range*:	-25°C to +50°C
Media specifications:	
Max. oil carryover (PPM w/w):	0.008 mg/m^3
Typical flow at 6,3 bar inlet pressure and 0.2 bar pressure drop:	Adsorber 8 dm^3/s
Manual drain:	twist grip open and barbed connection
Bowl sump capacity:	10 cm^3

* Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Material Specification

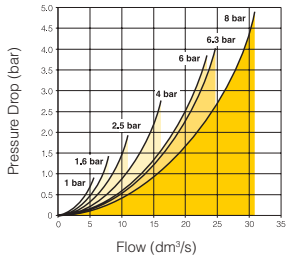
Body:	Aluminium
Sight glass:	Technopolymer
Filter cover:	Polyester
Adsorber element:	Activated carbon
Top & bottom endcap:	Glass filled nylon
Support cylinders:	Grade 430 stainless steel
Support media:	100% spun polypropylene
Support sock:	Polyester needlefelt
Encapsulant:	Epoxy resin / Hardener
Elastomers:	Nitrile NBR
Bayonet support:	Nylon
Drain:	Acetal

Dimensions (mm)

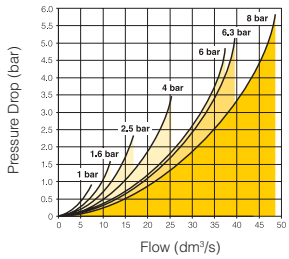


Flow characteristics

1/8) Adsorber Filter



(1/4) Adsorber Filter



Service kits

Description	Order code
Adsorber element kit	**P3HKA00ESA**
Sight glass & manual drain kit	**P3HKA00BSM**

Adsorber Filters

- Integral 3/8 or 1/2 ports (BSPP or NPT)
- One hand operation for easy element cartridge removal
- Adsorbing activated carbon element removes oil vapours and most hydrocarbons

Note: To optimise the life of adsorber element, it is advisable to install a P3K coalescing 0.01 µm filter upstream of the adsorber filter.

Options:

P3KFA									
							S	M	N
BSPP (G)	1	3/8	3	Adsorber element	A	Manual Drain	SM		
NPT	9	1/2	4	Adsorber extended element	1				

Port size	Description	Order Code	Flow dm^3/s *	Max bar	Min temp °C	Max temp °C	Bowl size cm^3	Height mm	Width mm	Depth mm	Weight g
3/8	Adsorber Filter, Manual drain	**P3KFA13ASMN**	21	17	-25	50	48	194	60	60	670
1/2	Adsorber Filter, Manual drain	**P3KFA14ASMN**	28	17	-25	50	48	194	60	60	660
3/8	Adsorber Filter, Manual drain extended	**P3KFA131SMN**	21	17	-25	50	48	194	60	60	670
1/2	Adsorber Filter, Manual drain extended	**P3KFA141SMN**	28	17	-25	50	48	194	60	60	660

* flow with 6,3 bar inlet pressure and 0,2 pressure drop.

Technical Information

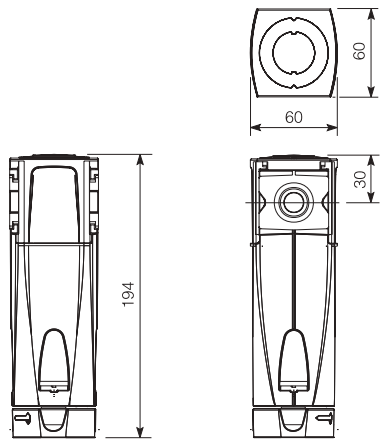
Fluid:	Compressed air
Maximum inlet pressure*:	17 bar
Temperature range*:	-25°C to +50°C
Media specifications:	
Max. oil carryover (PPM w/w):	0.008 mg/m^3
Typical flow at 6,3 bar inlet pressure and 0.2 bar pressure drop:	28 dm^3/s
Manual drain:	twist grip open and barbed connection
Bowl sump capacity:	48 cm^3

* Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Material Specification

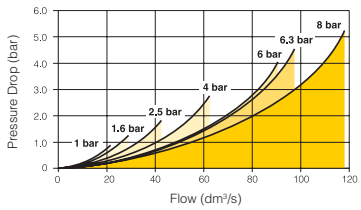
Body:	Aluminium
Sight glass:	Technopolymer
Filter cover:	Polyester
Adsorber element:	Activated carbon
Top & bottom endcap:	Glass filled nylon
Support cylinders:	Grade 430 stainless steel
Support media:	100% spun polypropylene
Encapsulant:	Epoxy resin / Hardener
Elastomers:	Nitrile NBR
Bayonet support:	Polyamide
Drain:	Acetal

Dimensions (mm)

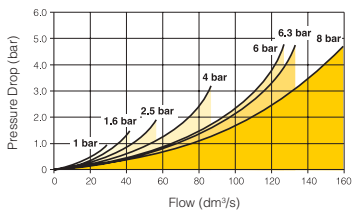


Flow characteristics

(3/8) Adsorber Filter



(1/2) Adsorber Filter



Service kits

Description	Order code
Sight glass & manual drain kit	**P3KKA00BSM**
Adsorber element kit	**P3KKA00ESA**
Adsorber extended element kit	**P3KKA00EAA**

Adsorber Filters

- Integral 1/2, 3/4 or 1" ports (BSPP or NPT)
- One hand operation for easy element cartridge removal
- Adsorbing activated carbon element removes oil vapours and most hydrocarbons

Note: To optimise the life of adsorber element, it is advisable to install a P3M coalescing 0.01 µm filter upstream of the adsorber filter.

Options:

P3MFA										
						A	S	M	N	
BSPP (G)	1	1/2	4	Adsorber element	A	Manual Drain	SM			
NPT	9	3/4	6							
		1"	8							

Port size	Description	Order Code	Flow dm^3/s *	Max bar	Min temp ^oC	Max temp ^oC	Bowl size cm^3	Height mm	Width mm	Depth mm	Weight g
3/4	Adsorber Filter, Manual drain	**P3MFA16ASMN**	41	17	-25	50	100	255	80	80	1350
1"	Adsorber Filter, Manual drain	**P3MFA18ASMN**	42	17	-25	50	100	255	80	80	1312

* flow with 6,3 bar inlet pressure and 0,2 pressure drop.

Technical Information

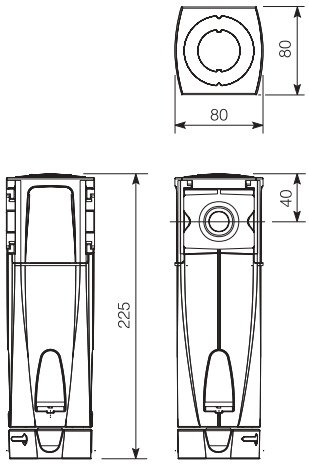
Fluid:	Compressed air
Maximum inlet pressure*:	17 bar
Temperature range*: Adsorber filter :	 -25°C to +50°C
Media specifications: Max. oil carryover (PPM w/w):	 0.008 mg/m^3
Typical flow at 6,3 bar inlet pressure and 0.2 bar pressure drop:	Adsorber 41 dm^3/s
Manual drain:	twist grip open and barbed connection
Bowl sump capacity:	100 cm^3

* Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Material Specification

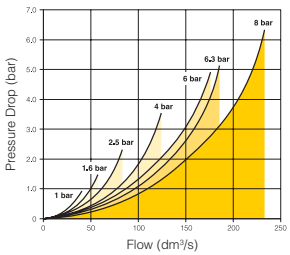
Body:	Aluminium
Sight glass:	Technopolymer
Filter cover:	Polyester
Adsorber element:	Activated Carbon
Top & bottom end cap:	Glass filled nylon - Black
Support cylinders:	Grade 430 stainless steel
Support media:	Polypropylene
Ensapulate:	Epoxy resin / Hardener
Elastomers:	Nitrile NBR
Bayonet support:	Polyamide
Drain:	Acetal

Dimensions (mm)

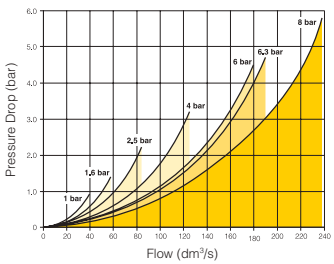


Flow characteristics

(3/4) Adsorber Filter



(1") Adsorber Filter

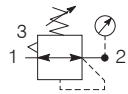


Service kits

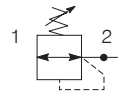
Description	Order code
Adsorber element kit	**P3MKA00ESA**
Sight glass & manual drain kit	**P3MKA00BSM**

Regulator

Symbols



Self relieving regulator with gauge



Non relieving regulator

- Integral 1/8 or 1/4 ports (BSPP or NPT)
- Robust but lightweight aluminium construction
- Secondary pressure ranges 2, 4, 8 & 16 bar
- Rolling diaphragm for extended life
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation.
- Padlockable tamperproof kit
- Relieving & Non-relieving types
- Removable non-rising knob for panel mounting and tamper resistance.

Options:

P3HRA [ ] [ ] [ ] **N** [ ] **P**

BSPP (G)	**1**
NPT	**9**

1/8	**1**
1/4	**2**

Relieving	**B**
Non-relieving	**N**

0 - 2 bar No Gauge	**Y**
0 - 4 bar No Gauge	**L**
0 - 8 bar No Gauge	**N**
0 -16 bar No Gauge	**H**
0 - 2 bar Gauge	**Z**
0 - 4 bar Gauge	**M**
0 - 8 bar Gauge	**G**
0 -16 bar Gauge	**J**

Port size	Description	Order Code	Flow dm^3/s *	Max bar	Min temp ^oC	Max temp ^oC	Height mm	Width mm	Depth mm	Weight g
G1/8	8 bar relieving	**P3HRA11BNNP**	15	17	-25	+80	112	40	40	196
G1/8	8 bar relieving + pressure gauge	**P3HRA11BNGP**	15	17	-25	+80	112	40	78	200
G1/4	8 bar relieving	**P3HRA12BNNP**	29	17	-25	+80	112	40	40	196
G1/4	8 bar relieving + pressure gauge	**P3HRA12BNGP**	29	17	-25	+80	112	40	78	200

*flow with 10 bar inlet pressure, 6,3 bar set pressure and 1 bar pressure drop.

Technical Information

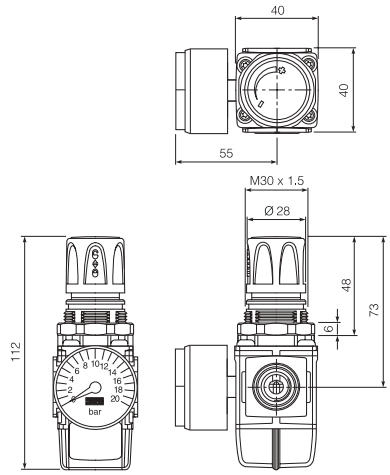
Fluid:	Compressed air
Maximum inlet pressure*:	17 bar
Temperature range*:	-25°C to +80°C
Typical flow with 10 bar inlet pressure, 6.3 bar set pressure and 1 bar pressure drop:	29 dm^3/s
Gauge ports (x 2):	1/8"

* Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Material Specification

Body:	Aluminium
Bonnet:	Glass filled polyamide
Regulator cover:	Polyester
Control Knob:	Polyamide
Valve:	Composite
Elastomers:	Nitrile NBR
Screws:	Steel / zinc plated

Dimensions (mm)



Service kits

Description	Order code
Angle bracket + metal lock ring	**P3HKA00MS**
Angle bracket + plastic lock ring	**P3HKA00MR**
Panel Mounting nut (aluminium)	**P3HKA00MM**
Panel mounting nut (plastic)	**P3HKA00MP**
Diaphragm kit (relieving type)	**P3HKA00RR**
Diaphragm kit (non-relieving type)	**P3HKA00RN**
Lockable tamperproof kit	**P3HKA00AL**
Tamperproof knob kit	**P3HKA00AT**

Lockable Tamperproof Kit

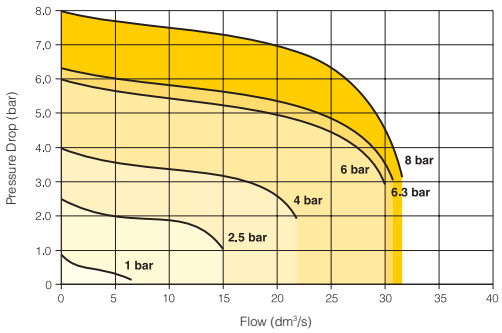
This facilitates the tamperproofing of the Reglator and Filter-Regulator units. The hinged black part clamps over the control knob and is locked in place by sliding over the yellow cover. Four pad lock location holes are provided for added security if required.

Order code
P3HKA00AL

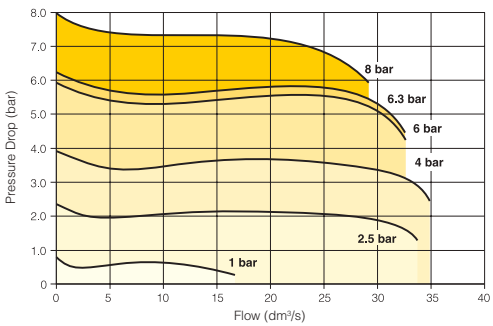
Note: Pad lock not included

Flow characteristics

Regulation characteristics: (1/8)

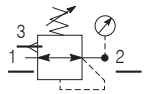


Regulation characteristics: (1/4)

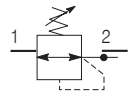


Manifold Regulators

Symbols



Self relieving regulator with gauge



Non relieving regulator

- Integral 1/4 ports (BSPP or NPT)
- Robust but lightweight aluminium construction
- Secondary pressure ranges 2, 4, 8 & 16 bar
- Rolling diaphragm for extended life
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation.
- Padlockable tamperproof kit
- Relieving & Non-relieving types
- Removable non-rising knob for panel mounting and tamper resistance.

Options:

P3HHA [ ] [ ] [ ] **N** [ ] **P**

BSPP (G)	**1**
NPT	**9**

1/4	**2**

Relieving	**B**
Non-relieving	**N**

0 - 2 bar No Gauge	**Y**
0 - 4 bar No Gauge	**L**
0 - 8 bar No Gauge	**N**
0 -16 bar No Gauge	**H**
0 - 2 bar Gauge	**Z**
0 - 4 bar Gauge	**M**
0 - 8 bar Gauge	**G**
0 -16 bar Gauge	**J**

Port size	Description	Order Code	Flow dm^3/s *	Max bar	Min temp ^oC	Max temp ^oC	Height mm	Width mm	Depth mm	Weight g
G1/4	8 bar relieving	**P3HHA12BNNP**	31	17	-25	+80	112	40	40	196
G1/4	8 bar relieving + pressure gauge	**P3HHA12BNGP**	31	17	-25	+80	112	40	78	200

*flow with 10 bar inlet pressure, 6,3 bar set pressure and 1 bar pressure drop.

Technical Information

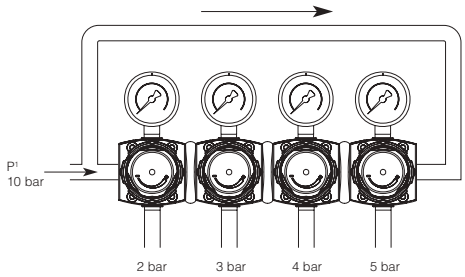
Fluid:	Compressed air
Maximum inlet pressure*:	17 bar
Temperature range*:	-25°C to +80°C
Typical flow with 10 bar inlet pressure, 6.3 bar set pressure and 1 bar pressure drop:	31 dm^3/s
Gauge port:	1/8"
Outlet port:	1/4"

* Air supply must be dry enough to avoid ice formation at temperatures below +2°C

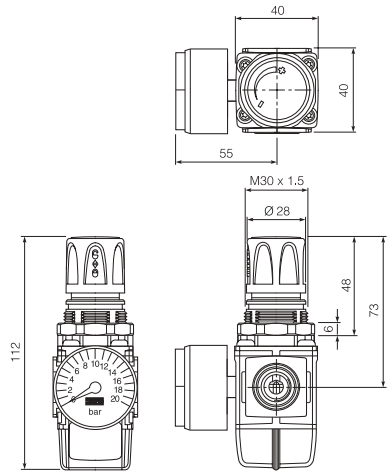
Material Specification

Body:	Aluminium
Bonnet:	Glass filled polyamide
Regulator cover:	Polyester
Control Knob:	Polyamide
Valve:	Composite
Elastomers:	Nitrile NBR
Screws:	Steel / zinc plated

Manifold Pressure Regulators

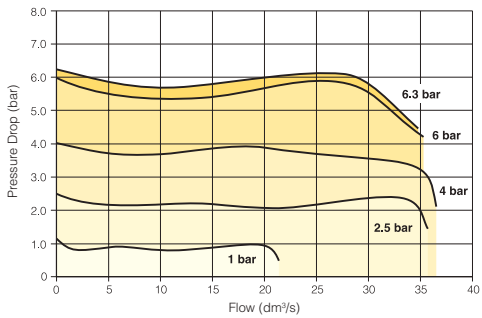


Dimensions (mm)



Flow characteristics

Regulation characteristics: (1/4)

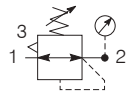


Service kits

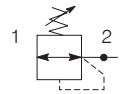
Description	Order code
Angle bracket + metal lock ring	**P3HKA00MS**
Angle bracket + plastic lock ring	**P3HKA00MR**
Panel Mounting nut (aluminium)	**P3HKA00MM**
Panel mounting nut (plastic)	**P3HKA00MP**
Diaphragm kit (relieving type)	**P3HKA00RR**
Diaphragm kit (non-relieving type)	**P3HKA00RN**
Lockable tamperproof kit	**P3HKA00AL**
Tamperproof knob kit	**P3HKA00AT**

Regulator

Symbols



Self relieving regulator with gauge



Non relieving regulator

- Integral 3/8 or 1/2 ports (BSPP or NPT)
- Robust but lightweight aluminium construction
- Secondary pressure ranges 2, 4, 8 & 16 bar
- Rolling diaphragm for extended life
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation.
- Padlockable tamperproof kit
- Relieving & Non-relieving types
- Removable non-rising knob for panel mounting and tamper resistance.

Options:

P3KRA [ ] [ ] [ ] **N** [ ] **P**

BSPP (G)	**1**
NPT	**9**

3/8	**3**
1/2	**4**

Relieving	**B**
Non-relieving	**N**

0 - 2 bar No Gauge	**Y**
0 - 4 bar No Gauge	**L**
0 - 8 bar No Gauge	**N**
0 -16 bar No Gauge	**H**
0 - 2 bar Gauge	**Z**
0 - 4 bar Gauge	**M**
0 - 8 bar Gauge	**G**
0 -16 bar Gauge	**J**

Port size	Description	Order Code	Flow dm^3/s *	Max bar	Min temp ^oC	Max temp ^oC	Height mm	Width mm	Depth mm	Weight g
3/8	8 bar relieving	**P3KRA13BNNP**	63	17	-25	80	144	60	60	465
3/8	8 bar relieving + pressure gauge	**P3KRA13BNGP**	63	17	-25	80	144	60	97	540
1/2	8 bar relieving	**P3KRA14BNNP**	73	17	-25	80	144	60	60	455
1/2	8 bar relieving + pressure gauge	**P3KRA14BNGP**	73	17	-25	80	144	60	97	455

*flow with 10 bar inlet pressure, 6,3 bar set pressure and 1 bar pressure drop.

Technical Information

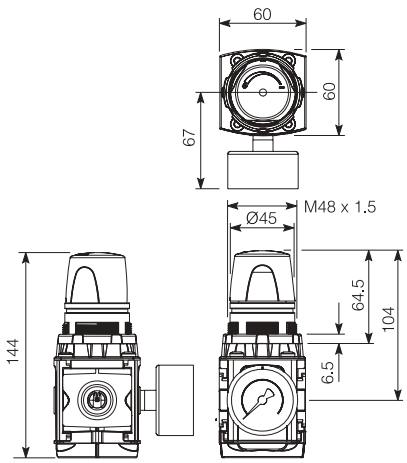
Fluid:	Compressed air
Maximum inlet pressure*:	17 bar
Temperature range*:	-25°C to +80°C
Typical flow with 10 bar inlet pressure, 6.3 bar set pressure and 1 bar pressure drop:	73 dm^3/s
Gauge ports (x 2):	1/4"

* Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Material Specification

Body:	Aluminium
Bonnet:	Glass filled polyamide
Regulator cover:	Polyester
Control Knob:	Polyamide
Valve:	Composite
Elastomers:	Nitrile NBR
Screws:	Steel / zinc plated

Dimensions (mm)



Service kits

Description	Order code
Angle bracket + metal lock ring	**P3KKA00MS**
Angle bracket + plastic lock ring	**P3KKA00MR**
Panel Mounting nut (aluminium)	**P3KKA00MM**
Panel mounting nut (plastic)	**P3KKA00MP**
Lockable tamper-proof kit	**P3KKA00AL**
Tamper-proof knob kit	**P3KKA00AT**
Diaphragm kit (relieving type)	**P3KKA00RR**
Diaphragm kit (non-relieving type)	**P3KKA00RN**

Lockable Tamperproof Kit

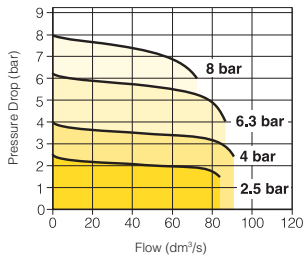
This facilitates the tamperproofing of the Reglator and Filter-Regulator units. The hinged black part clamps over the control knob and is locked in place by sliding over the yellow cover. Four pad lock location holes are provided for added security if required.

Order code
P3KKA00AL

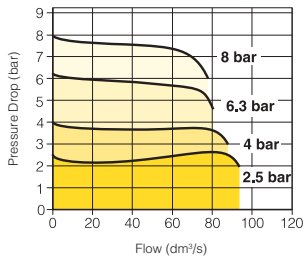
Note: Pad lock not included

Flow characteristics

Regulation characteristics: (3/8)

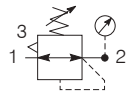


Regulation characteristics: (1/2)

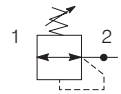


Manifold Regulators

Symbols



Self relieving regulator with gauge



Non relieving regulator

- Integral 3/8 or 1/2 ports (BSPP or NPT)
- Robust but lightweight aluminium construction
- Secondary pressure ranges 2, 4, 8 & 16 bar
- Rolling diaphragm for extended life
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation.
- Padlockable tamperproof kit
- Relieving & Non-relieving types
- Removable non-rising knob for panel mounting and tamper resistance.
- 1/2" aspirated full flow outlet port

Options:

P3KHA [ ] [ ] [ ] **N** [ ] **P**

BSPP (G)	**1**
NPT	**9**

3/8	**3**
1/2	**4**

Relieving	**B**
Non-relieving	**N**

0 - 2 bar No Gauge	**Y**
0 - 4 bar No Gauge	**L**
0 - 8 bar No Gauge	**N**
0 -16 bar No Gauge	**H**
0 - 2 bar Gauge	**Z**
0 - 4 bar Gauge	**M**
0 - 8 bar Gauge	**G**
0 -16 bar Gauge	**J**

Port size	Description	Order Code	Flow dm^3/s *	Max bar	Min temp ^oC	Max temp ^oC	Height mm	Width mm	Depth mm	Weight g
3/8	8 bar relieving	**P3KHA13BNNP**	63	17	-25	80	144	60	60	490
3/8	8 bar relieving + pressure gauge	**P3KHA13BNGP**	63	17	-25	80	144	60	97	565
1/2	8 bar relieving	**P3KHA14BNNP**	73	17	-25	80	144	60	60	480
1/2	8 bar relieving + pressure gauge	**P3KHA14BNGP**	73	17	-25	80	144	60	97	555

Technical Information

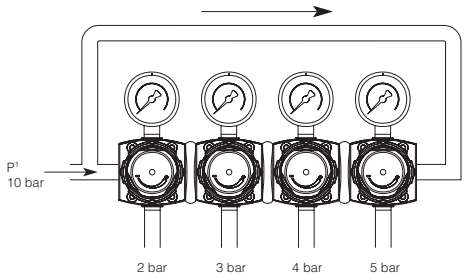
Fluid:	Compressed air
Maximum inlet pressure*:	17 bar
Temperature range*:	-25°C to +80°C
Typical flow with 10 bar inlet pressure, 6.3 bar set pressure and 1 bar pressure drop:	73 dm^3/s
Gauge (pressure) port:	1/4"
Outlet port:	1/2"

* Air supply must be dry enough to avoid ice formation at temperatures below +2°C

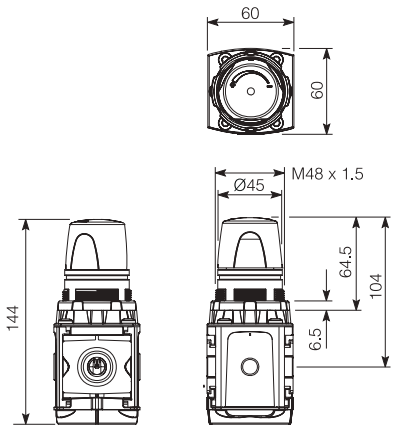
Material Specification

Body:	Aluminium
Bonnet:	Glass filled polyamide
Regulator cover:	Polyester
Control Knob:	Polyamide
Valve:	Composite
Elastomers:	Nitrile NBR
Screws:	Steel / zinc plated

Manifold Pressure Regulators

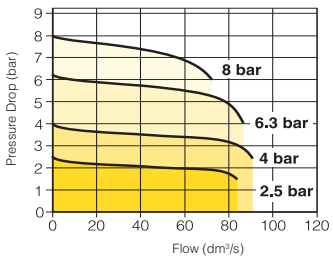


Dimensions (mm)

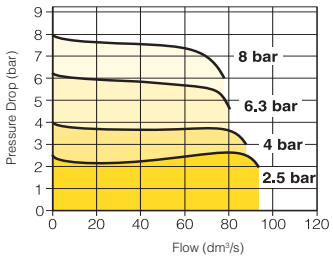


Flow characteristics

Regulation characteristics: (3/8)



Regulation characteristics: (1/2)

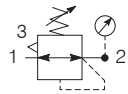


Service kits

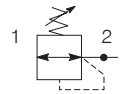
Description	Order code
Angle bracket + metal lock ring	**P3KKA00MS**
Angle bracket + plastic lock ring	**P3KKA00MR**
Panel Mounting nut (aluminium)	**P3KKA00MM**
Panel mounting nut (plastic)	**P3KKA00MP**
Lockable tamper-proof kit	**P3KKA00AL**
Tamper-proof knob kit	**P3KKA00AT**
Diaphragm kit (relieving type)	**P3KKA00RR**
Diaphragm kit (non-relieving type)	**P3KKA00RN**

Key Lockable Regulator

Symbols



Self relieving regulator with gauge



Non relieving regulator

- Integral 3/8 or 1/2 ports (BSPP or NPT)
- Robust but lightweight aluminium construction
- Secondary pressure ranges 2, 4, 8 & 16 bar
- Rolling diaphragm for extended life
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation.
- Relieving & Non-relieving types

Options:

P3KRA [ ] [ ] [ ] **K** [ ] **M**

BSPP (G)	**1**
NPT	**9**

3/8	**3**
1/2	**4**

Relieving	**B**
Non-relieving	**N**

0 - 2 bar No Gauge	**Y**
0 - 4 bar No Gauge	**L**
0 - 8 bar No Gauge	**N**
0 -16 bar No Gauge	**H**
0 - 2 bar Gauge	**Z**
0 - 4 bar Gauge	**M**
0 - 8 bar Gauge	**G**
0 -16 bar Gauge	**J**

Port size	Description	Order Code	Flow dm^3/s *	Max bar	Min temp ^oC	Max temp ^oC	Height mm	Width mm	Depth mm	Weight g
3/8	8 bar relieving	**P3KRA13BKNM**	63	17	-25	80	186	60	60	810
3/8	8 bar relieving + pressure gauge	**P3KRA13BKGM**	63	17	-25	80	186	60	97	860
1/2	8 bar relieving	**P3KRA14BKNM**	73	17	-25	80	186	60	60	800
1/2	8 bar relieving + pressure gauge	**P3KRA14BKGM**	73	17	-25	80	186	60	97	850

*flow with 10 bar inlet pressure, 6,3 bar set pressure and 1 bar pressure drop.

Technical Information

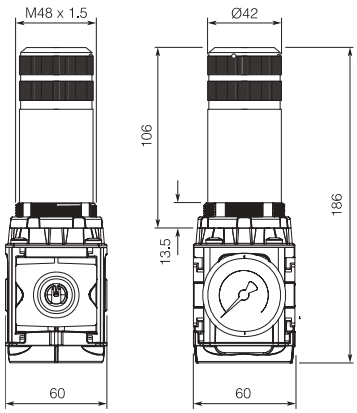
Fluid:	Compressed air
Maximum inlet pressure*:	17 bar
Temperature range*:	-25°C to +80°C
Typical flow with 10 bar inlet pressure, 6.3 bar set pressure and 1 bar pressure drop:	73 dm^3/s
Gauge ports (x 2):	1/4"

* Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Material Specification

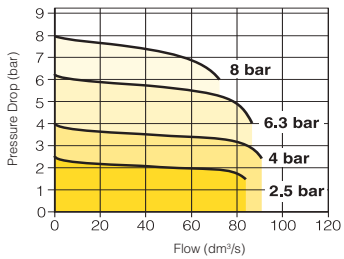
Body:	Aluminium
Bonnet:	Aluminium
Regulator cover:	Polyester
Control Knob:	Aluminium
Valve:	Composite
Elastomers:	Nitrile NBR
Screws:	Steel / zinc plated

Dimensions (mm)

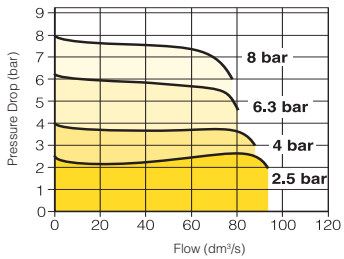


Flow characteristics

Regulation characteristics: (3/8)



Regulation characteristics: (1/2)

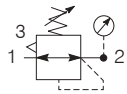


Service kits

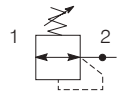
Description	Order code
Angle bracket + metal panel mounting ring	**P3KKA00MS**
Panel Mounting nut (aluminium)	**P3KKA00MM**
Diaphragm kit (relieving type)	**P3KKA00RR**
Diaphragm kit (non-relieving type)	**P3KKA00RN**

Regulator

Symbols



Self relieving regulator with gauge



Non relieving regulator

- Integral 1/2, 3/4 or 1" ports (BSPP or NPT)
- Robust but lightweight aluminium construction
- Secondary pressure ranges 2, 4, 8 & 16 bar
- Rolling diaphragm for extended life
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation.
- Padlockable tamperproof kit
- Relieving & Non-relieving types
- Removable non-rising knob for panel mounting and tamper resistance.

Options:

P3MRA [ ] [ ] [ ] **N** [ ] **N**

BSPP (G)	**1**
NPT	**9**

1/2	**4**
3/4	**6**
1"	**8**

Relieving	**B**
Non-relieving	**N**

0 - 2 bar No Gauge	**Y**
0 - 4 bar No Gauge	**L**
0 - 8 bar No Gauge	**N**
0 -16 bar No Gauge	**H**
0 - 2 bar Gauge	**Z**
0 - 4 bar Gauge	**M**
0 - 8 bar Gauge	**G**
0 -16 bar Gauge	**J**

Port size	Description	Order Code	Flow dm^3/s *	Max bar	Min temp ^oC	Max temp ^oC	Height mm	Width mm	Depth mm	Weight g
3/4	8 bar relieving	**P3MRA16BNNN**	129	17	-25	80	185	80	80	1080
3/4	8 bar relieving + pressure gauge	**P3MRA16BNGN**	129	17	-25	80	185	80	115	1130
1"	8 bar relieving	**P3MRA18BNNN**	130	17	-25	80	185	80	80	1075
1"	8 bar relieving + pressure gauge	**P3MRA18BNGN**	130	17	-25	80	185	80	115	1125

*flow with 10 bar inlet pressure, 6,3 bar set pressure and 1 bar pressure drop.

Technical Information

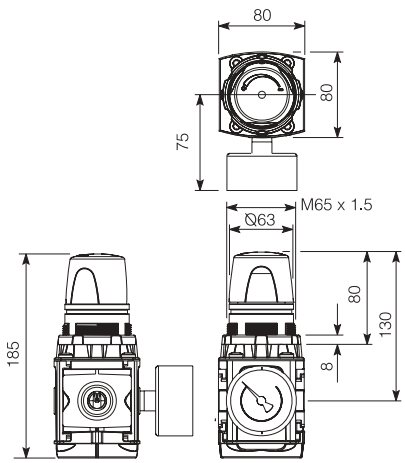
Fluid:	Compressed air
Maximum inlet pressure*:	17 bar
Temperature range*:	-25°C to +80°C
Typical flow with 10 bar inlet pressure, 6.3 bar set pressure and 1 bar pressure drop:	129 dm^3/s
Gauge port (x 2):	1/4"

* Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Material Specification

Body:	Aluminium
Bonnet:	Glass filled polyamide
Regulator cover:	Polyester
Control Knob:	Polyamide
Valve:	Composite
Elastomers:	Nitrile NBR
Screws:	Steel / zinc plated

Dimensions (mm)



Service kits

Description	Order code
Angle bracket + metal lock ring	**P3MKA00MS**
Panel mounting nut (aluminium)	**P3MKA00MM**
Lockable tamper-proof kit	**P3MKA00AL**
Tamper-proof knob kit	**P3MKA00AT**
Diaphragm kit (relieving type)	**P3MKA00RR**
Diaphragm kit (non-relieving type)	**P3MKA00RN**

Lockable Tamperproof Kit

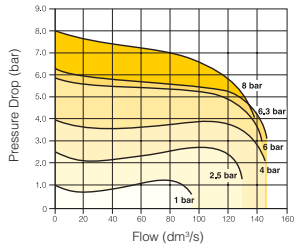
This facilitates the tamperproofing of the Reglator and Filter-Regulator units. The hinged black part clamps over the control knob and is locked in place by sliding over the yellow cover. Four pad lock location holes are provided for added security if required.

Order code
P3MKA00AL

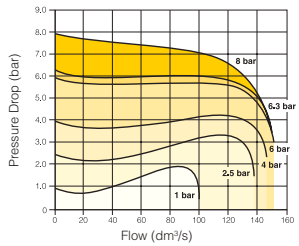
Note: Pad lock not included

Flow characteristics

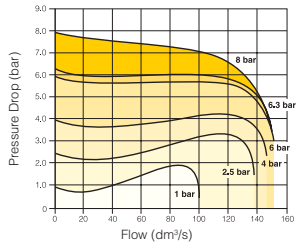
Regulation characteristics: (1/2)



Regulation characteristics: (3/4)

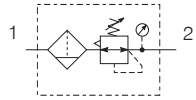


Regulation characteristics: (1")



Filter/Regulator

Symbols



- Integral 1/8 or 1/4 ports (BSPP or NPT)
- High efficiency 5 micron element as standard
- Excellent water removal efficiency
- Robust but lightweight aluminium construction
- One hand operation for easy element cartridge removal
- Positive bayonet latch to ensure correct & safe fitting
- No tools required for servicing filter element
- Secondary pressure ranges 2, 4, 8 and 16 bar
- Rolling diaphragm for extended life
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation.

Options:

P3HEA [ ] [ ] [ ] [ ] [ ] [ ] [ ] **N** [ ] **P**

BSPP (G)	**1**
NPT	**9**

1/8	**1**
1/4	**2**

5 Micron Element Standard	**E**
40 Micron Element Optional	**G**

Manual Drain	**SM**
Semi Auto Drain	**SS**

Non Relieving	**N**
Relieving	**B**

0 - 2 bar No Gauge	**Y**
0 - 4 bar No Gauge	**L**
0 - 8 bar No Gauge	**N**
0 -16 bar No Gauge	**H**
0 - 2 bar Gauge	**Z**
0 - 4 bar Gauge	**M**
0 - 8 bar Gauge	**G**
0 -16 bar Gauge	**J**

Port size	Description	Order Code	Flow dm^3/s *	Max bar	Min temp °C	Max temp °C	Bowl size cm^3	Height mm	Width mm	Depth mm	Weight g
G1/8	8 bar, relieving, manual drain	**P3HEA11ESMBNNP**	15	17	-25	+80	10	196	40	40	307
G1/8	8 bar, relieving, semi-auto drain	**P3HEA11ESSBNNP**	15	17	-25	+80	10	196	40	40	307
G1/8	8 bar, relieving, gauge, manual drain	**P3HEA11ESMBNGP**	15	17	-25	+80	10	196	40	40	307
G1/8	8 bar, relieving, gauge, semi-auto drain	**P3HEA11ESSBNGP**	15	17	-25	+80	10	196	40	40	307
G1/4	8 bar, relieving, manual drain	**P3HEA12ESMBNNP**	25	17	-25	+80	10	196	40	40	312
G1/4	8 bar, relieving, semi-auto drain	**P3HEA12ESSBNNP**	25	17	-25	+80	10	196	40	40	312
G1/4	8 bar, relieving, gauge, manual drain	**P3HEA12ESMBNGP**	25	17	-25	+80	10	196	40	40	312
G1/4	8 bar, relieving, gauge, semi-auto drain	**P3HEA12ESSBNGP**	25	17	-25	+80	10	196	40	40	312

*flow with 10 bar inlet pressure, 6,3 bar set pressure and 1 bar pressure drop.

Technical Information

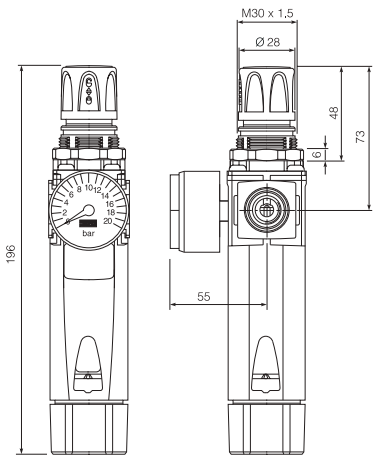
Fluid:	Compressed air
Maximum inlet pressure*:	17 bar Manual or Semi auto
Temperature range*:	-25°C to +80°C
Particle removal:	5 micron and 40 micron
Air quality:	Within ISO 8573-1 : 1991 Class 3 and 5 (particulates) Within ISO 8573-1 : 2001 Class 6 and 7 (particulates)
Typical flow with 10 bar inlet pressure 6,3 bar set pressure and 1 bar pressure drop 25 dm^3/s	
Manual drain:	twist grip open and barbed connection
Semi-auto drain: 0,2 bar @ min flow of 0,4 dm^3/s bowl pressure to close drain	with barbed connection
Bowl sump capacity:	10 cm^3
Gauge ports (x 2):	1/8"

* Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Material Specification

Body:	Aluminium
Sight glass:	Technopolymer
Body cover:	Polyester
Element:	Sintered polypropylene
Elastomers:	Nitrile NBR
Bayonet support:	Nylon
Drain:	Acetal
Bonnet:	Glass filled polyamide
Control knob:	Polyamide
Valve:	Composite
Screws:	Steel/ zinc plated

Dimensions (mm)

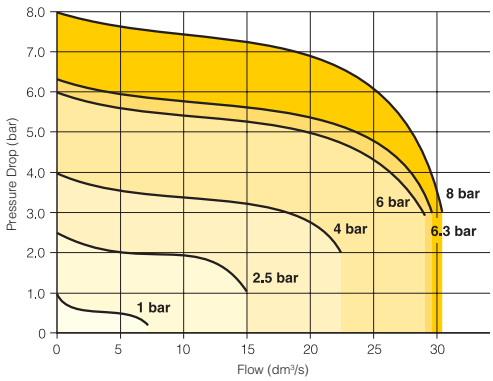


Service kits

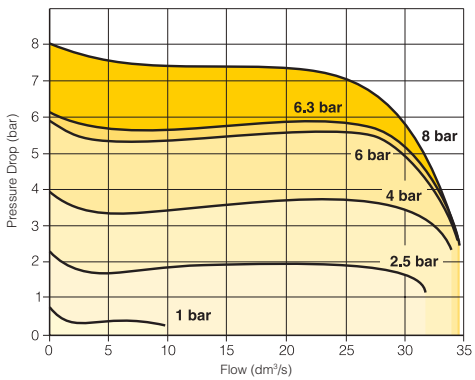
Description	Order code
5 micron element kit	**P3HKA00ESE**
40 micron element kit	**P3HKA00ESG**
Sight glass & manual drain kit	**P3HKA00BSM**
Sight glass & semi-auto drain kit	**P3HKA00BSS**
Diaphragm kit (relieving type)	**P3HKA00RR**
Diaphragm kit (non-relieving type)	**P3HKA00RN**
Angle bracket + metal lock ring	**P3HKA00MS**
Angle bracket + plastic lock ring	**P3HKA00MR**
Panel mount nut (aluminium)	**P3HKA00MM**
Lockable tamperproof kit	**P3HKA00AL**
Tamperproof knob kit	**P3HKA00AT**

Flow characteristics

Regulation characteristics: (1/8) 5 micron

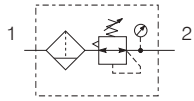


Regulation characteristics: (1/4) 5 micron



Filter/Regulator

Symbols



- Integral 3/8 or 1/2 ports (BSPP or NPT)
- High efficiency 5 micron element as standard
- Excellent water removal efficiency
- Robust but lightweight aluminium construction
- One hand operation for easy element cartridge removal
- Positive bayonet latch to ensure correct & safe fitting
- No tools required for servicing filter element
- Secondary pressure ranges 2, 4, 8 and 16 bar
- Rolling diaphragm for extended life
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation.

Options:

P3KEA □ □ □ □ □ **N** □ **P**

BSPP (G)	**1**
NPT	**9**

3/8	**3**
1/2	**4**

5 Micron Element Standard	**E**
40 Micron Element Optional	**G**

Manual Drain	**SM**
Semi Auto Drain	**SS**
Auto Drain	**SA**

Non Relieving	**N**
Relieving	**B**

0 - 2 bar No Gauge	**Y**
0 - 4 bar No Gauge	**L**
0 - 8 bar No Gauge	**N**
0 -16 bar No Gauge	**H**
0 - 2 bar Gauge	**Z**
0 - 4 bar Gauge	**M**
0 - 8 bar Gauge	**G**
0 -16 bar Gauge	**J**

Port size	Description	Order Code	Flow dm^3/s *	Max bar	Min temp °C	Max temp °C	Bowl size cm^3	Height mm	Width mm	Depth mm	Weight g
3/8	8 bar, relieving, manual drain	**P3KEA13ESMBNNP**	48	17	-25	80	48	267	60	60	845
3/8	8 bar, relieving, semi-auto drain	**P3KEA13ESSBNNP**	48	17	-25	80	48	267	60	60	840
3/8	8 bar, relieving, auto drain	**P3KEA13ESABNNP**	48	17	-25	80	48	267	60	60	865
3/8	8 bar, relieving, gauge, manual drain	**P3KEA13ESMBNGP**	48	17	-25	80	48	267	60	97	920
3/8	8 bar, relieving, gauge, semi-auto drain	**P3KEA13ESSBNGP**	48	17	-25	80	48	267	60	97	925
3/8	8 bar, relieving, gauge, auto drain	**P3KEA13ESABNGP**	48	17	-25	80	48	267	60	97	940
1/2	8 bar, relieving, manual drain	**P3KEA14ESMBNNP**	61	17	-25	80	48	267	60	60	855
1/2	8 bar, relieving, semi-auto drain	**P3KEA14ESSBNNP**	61	17	-25	80	48	267	60	60	860
1/2	8 bar, relieving, auto drain	**P3KEA14ESABNNP**	61	17	-25	80	48	267	60	60	875
1/2	8 bar, relieving, gauge, manual drain	**P3KEA14ESMBNGP**	61	17	-25	80	48	267	60	97	930
1/2	8 bar, relieving, gauge, semi-auto drain	**P3KEA14ESSBNGP**	61	17	-25	80	48	267	60	97	935
1/2	8 bar, relieving, gauge, auto drain	**P3KEA14ESABNGP**	61	17	-25	80	48	267	60	97	950

*flow with 10 bar inlet pressure, 6,3 bar set pressure and 1 bar pressure drop.

Technical Information

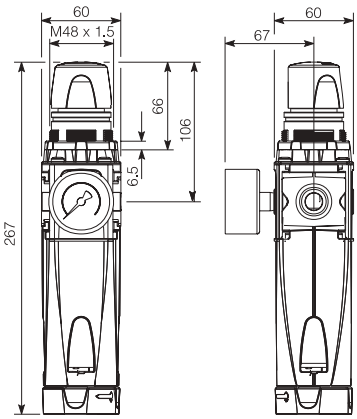
Fluid:	Compressed air
Maximum inlet pressure*:	17 bar
Temperature range*:	-25°C to +80°C
Particle removal:	5 micron and 40 micron
Air quality:	Within ISO 8573-1 : 1991 Class 3 and 5 (particulates) Within ISO 8573-1 : 2001 Class 6 and 7 (particulates)
Typical flow with 10 bar inlet pressure 6,3 bar set pressure and 1 bar pressure drop 61dm³/s	
Manual drain:	twist grip open and barbed connection
Semi-auto drain: 0,2 bar @ min flow of 0,4 dm³/s bowl pressure to close drain	with barbed connection
Auto drain: bowl pressure to close drain Operating range manual override facility (depress pin) barbed connection.	1 bar 1 to 17 bar
Bowl sump capacity:	48 cm³
Gauge ports (x 2):	1/4"

* Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Material Specification

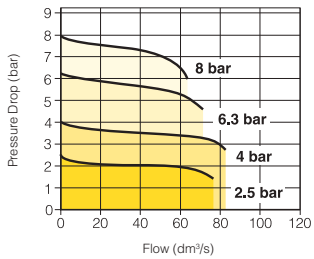
Body:	Aluminium
Sight glass:	Technopolymer
Body cover:	Polyester
Element:	Sintered polypropylene
Elastomers:	Nitrile NBR
Bayonet support:	Polyamide
Drain:	Acetal
Bonnet:	Glass filled polyamide
Control knob:	Polyamide
Valve:	Composite
Screws:	Steel/ zinc plated

Dimensions (mm)

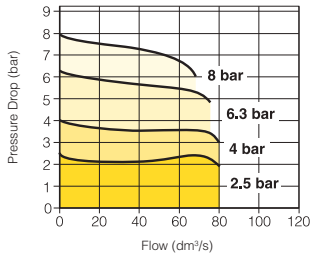


Flow characteristics

(3/8) 5 Micron Filter/Regulator



(1/2) 5 Micron Filter/Regulator

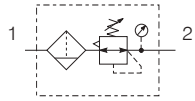


Service kits

Description	Order code
5 micron element kit	**P3KKA00ESE**
40 micron element kit	**P3KKA00ESG**
Sight glass & manual drain kit	**P3KKA00BSM**
Sight glass & semi-auto drain kit	**P3KKA00BSS**
Sight glass & auto drain kit	**P3KKA00BSA**
Lockable tamper-proof kit	**P3KKA00AL**
Tamper-proof knob kit	**P3KKA00AT**
Diaphragm kit (relieving type)	**P3KKA00RR**
Diaphragm kit (non-relieving type)	**P3KKA00RN**
Maximum pressure limiter kit	**P3KKA00AM**

Filter/Regulator

Symbols



- Integral 1/2, 3/4 or 1" ports (BSPP or NPT)
- High efficiency 5 micron element as standard
- Excellent water removal efficiency
- Robust but lightweight aluminium construction
- One hand operation for easy element cartridge removal
- Positive bayonet latch to ensure correct & safe fitting
- No tools required for servicing filter element
- Secondary pressure ranges 2, 4, 8 and 16 bar
- Rolling diaphragm for extended life
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation.

Options:

P3MEA □ □ □ □ □ □ **N** □ **N**

BSPP (G)	**1**
NPT	**9**

1/2	**4**
3/4	**6**
1"	**8**

5 Micron Element Standard	**E**
40 Micron Element Option	**G**

Manual Drain	**SM**
Semi Auto Drain	**SS**
Auto Drain	**SA**

Non Relieving	**N**
Relieving	**B**

0 - 2 bar No Gauge	**Y**
0 - 4 bar No Gauge	**L**
0 - 8 bar No Gauge	**N**
0 -16 bar No Gauge	**H**
0 - 2 bar Gauge	**Z**
0 - 4 bar Gauge	**M**
0 - 8 bar Gauge	**G**
0 -16 bar Gauge	**J**

Port size	Description	Order Code	Flow dm^3/s *	Max bar	Min temp °C	Max temp °C	Bowl size cm^3	Height mm	Width mm	Depth mm	Weight g
3/4	8 bar, relieving, manual drain	**P3MEA16ESMBNNN**	120	17	-25	80	100	340	80	80	1865
3/4	8 bar, relieving, semi-auto drain	**P3MEA16ESSBNNN**	120	17	-25	80	100	340	80	80	1855
3/4	8 bar, relieving, auto drain	**P3MEA16ESABNNN**	120	17	-25	80	100	340	80	80	1885
3/4	8 bar, relieving, gauge, manual drain	**P3MEA16ESMBNGN**	120	17	-25	80	100	340	80	115	1915
3/4	8 bar, relieving, gauge, semi-auto drain	**P3MEA16ESSBNGN**	120	17	-25	80	100	340	80	115	1905
3/4	8 bar, relieving, gauge, auto drain	**P3MEA16ESABNGN**	120	17	-25	80	100	340	80	115	1935
1"	8 bar, relieving, manual drain	**P3MEA18ESMBNNN**	120	17	-25	80	100	340	80	80	1860
1"	8 bar, relieving, semi-auto drain	**P3MEA18ESSBNNN**	120	17	-25	80	100	340	80	80	1850
1"	8 bar, relieving, auto drain	**P3MEA18ESABNNN**	120	17	-25	80	100	340	80	80	1880
1"	8 bar, relieving, gauge, manual drain	**P3MEA18ESMBNGN**	120	17	-25	80	100	340	80	115	1910
1"	8 bar, relieving, gauge, semi-auto drain	**P3MEA18ESSBNGN**	120	17	-25	80	100	340	80	115	1900
1"	8 bar, relieving, gauge, auto drain	**P3MEA18ESABNGN**	120	17	-25	80	100	340	80	115	1930

*flow with 10 bar inlet pressure, 6,3 bar set pressure and 1 bar pressure drop.

Technical Information

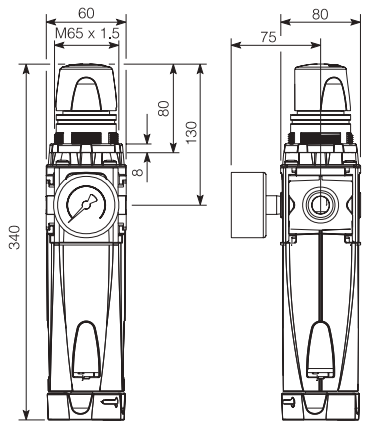
Fluid:	Compressed air
Maximum inlet pressure*:	17 bar
Temperature range*:	-25°C to +80°C
Particle removal:	5 micron and 40 micron
Air quality:	Within ISO 8573-1 : 1991 Class 3 and 5 (particulates) Within ISO 8573-1 : 2001 Class 6 and 7 (particulates)
Typical flow with 10 bar inlet pressure 6,3 bar set pressure and 1 bar pressure drop 120 dm^3/s	
Manual drain:	twist grip open and barbed connection
Semi-auto drain: 0,2 bar @ min flow of 0,4 dm^3/s bowl pressure to close drain	with barbed connection
Auto drain: bowl pressure to close drain Operating range manual override facility (depress pin) barbed connection.	 1 bar 1 to 17 bar
Bowl sump capacity:	100 cm^3
Gauge ports (x 2):	1/4"

* Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Material Specification

Body:	Aluminium
Sight glass:	Technopolymer
Body cover:	Polyester
Element:	Sintered polypropylene
Elastomers:	Nitrile NBR
Bayonet support:	Polyamide
Drain:	Acetal
Bonnet:	Glass filled polyamide
Control knob:	Polyamide
Valve:	Composite
Screws:	Steel/ zinc plated

Dimensions (mm)

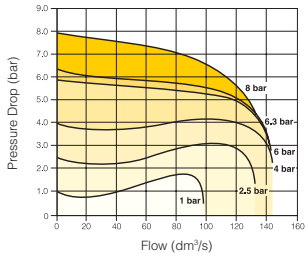


Service kits

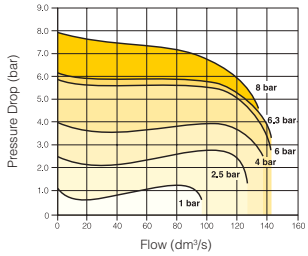
Description	Order code
5 micron element kit	**P3MKA00ESE**
40 micron element kit	**P3MKA00ESG**
Sight glass & manual drain kit	**P3MKA00BSM**
Sight glass & semi-auto drain kit	**P3MKA00BSS**
Sight glass & auto drain kit	**P3MKA00BSA**
Lockable tamper-proof kit	**P3MKA00AL**
Tamper-proof knob kit	**P3MKA00AT**
Maximum pressure limiter kit	**P3MKA00AM**
Diaphragm kit (relieving type)	**P3MKA00RR**
Diaphragm kit (non-relieving type)	**P3MKA00RN**
Angle bracket + metal lock ring	**P3MKA00MS**
Panel mount nut (aluminium)	**P3MKA00MM**

Flow characteristics

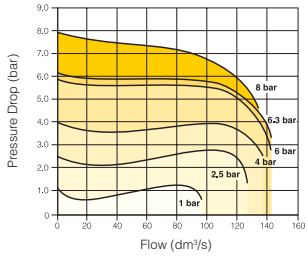
(1/2) 5 Micron Filter/Regulator



(3/4) 5 Micron Filter/Regulator

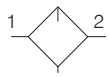


(1") 5 Micron Filter/Regulator



Moduflex Lubricator

Symbols



Lubricator
with drain

- Integral 1/8 or 1/4 ports (BSPP or NPT)
- Robust but lightweight aluminium construction
- Proportional oil delivery over a wide range of air flows.
- Finger tip rachet control for precise oil drip rate adjustment
- '2 stage' bayonet to reveal large filling orifice
- Large oil reservoir

Options:

P3HLA [ ] [ ] **L S M N**

BSPP (G)	**1**
NPT	**9**

1/8	**1**
1/4	**2**

Port size	Description	Order Code	Flow dm^3/s *	Max bar	Min temp ^oC	Max temp ^oC	Bowl size cm^3	Height mm	Width mm	Depth mm	Weight g
G1/8	Oil mist	**P3HLA11LSMN**	13	10	-20	+80	32	195	40	40	285
G1/4	Oil mist	**P3HLA12LSMN**	26	10	-20	+80	32	195	40	40	280

* flow with 6,3 bar inlet pressure and 0,5 pressure drop.

Technical Information

Fluid:	Compressed air
Maximum inlet pressure*:	10 bar
Temperature range*:	-20°C to +80°C
Manual drain:	twist grip open and barbed connection

* Air supply must be dry enough to aviod ice formation at temperatures below +2° C
Low flow start point (lubrication pick-up): at 6.3bar inlet pressure 0.76 dm^3/s
Typical flow with 6.3bar inlet pressure and 0.7 bar pressure drop: 26 dm^3/s

Note : Fill lubricant from top only
Isolate from pressure prior to filling

Material Specification

Body:	Aluminium
Bowl sight glass:	Technopolymer
Sight dome:	Technopolymer
Lubricator cover:	Polyester
Bayonet support:	Nylon
Drain:	Acetal
Elastomers:	Nitrile NBR

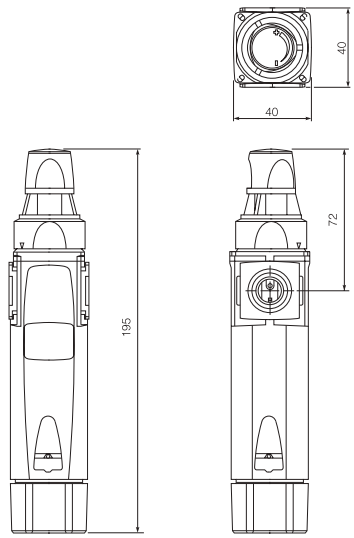
Lubrication of airlines

	High speed tools and systems		Air Cylinders and valves	
Oil Company	**ISO Grade**	**Grade**	**ISO Grade**	**Grade**
Century Oils	Century P - 198	15	P.W.L.A	32
Alexander Duckham	Zurcon 2	15	Zurcon 4 32	
Gulf	Harmony 38AW	15	Harmony 43AW	32
Shell (UK) Oil	Tellus 22	22	Tellus 37	37
Burmah Castrol	Hyspin AWS15	15	Hyspin AWS32	32
Edgar Vaughan	KSO 5L	10	Hydrodrive HP100	32
Esso Petroleum	NUTO 1115	15	NUTO H32	32
B.P.	HLP 22	22	HLP 32	32
Mobile Oil Company	Velocite No.6	10	DTE Oil - Light	32
Mobile			VPI-A	32
Silkolene	Silkair GP22	22	Derwent 32	32
Silkolene	Dove 15	15		
Shell	Cassida Fluid HF*	32		
Klüberoil	4UH1*	32		

* For food industry applications : approved oil USDA-H1

Do not use oils with additives, compounds oils containing solvents, graphite, detergents or synthetic oils.

Dimensions (mm)

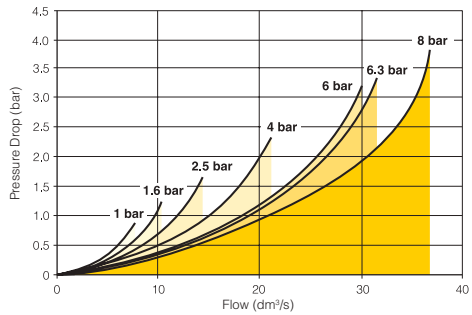


Service kits

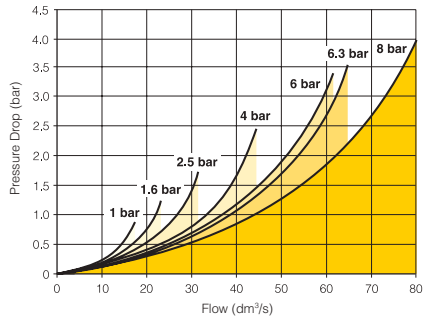
Description	Order code
Sight glass & manual drain kit	**P3HKA00BSM**
Drip control assembly kit	**P3HKA00PG**

Flow characteristics

(1/8) Lubricator

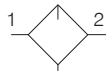


(1/4) Lubricator



Moduflex Lubricator

Symbols



Lubricator
with drain

- Integral 3/8 or 1/2 ports (BSPP or NPT)
- Robust but lightweight aluminium construction
- Proportional oil delivery over a wide range of air flows.
- Finger tip rachet control for precise oil drip rate adjustment
- Fill from top under system pressure
- '2 stage' bayonet to reveal large filling orifice
- Large oil reservoir

Options:

P3KLA [ ] [ ] **L S M N**

BSPP (G)	**1**
NPT	**9**

3/8	**3**
1/2	**4**

Port size	Description	Order Code	Flow dm^3/s *	Max bar	Min temp °C	Max temp °C	Bowl size cm^3	Height mm	Width mm	Depth mm	Weight g
3/8	Oil mist, fill under pressure	**P3KLA13LSMN**	44	17	-20	80	130	241	60	60	745
1/2	Oil mist, fill under pressure	**P3KLA14LSMN**	70	17	-20	80	130	241	60	60	735

* flow with 6,3 bar inlet pressure and 0,5 pressure drop.

Technical Information

Fluid:	Compressed air
Maximum inlet pressure*:	17 bar
Temperature range*:	-20°C to +80°C
Manual drain:	twist grip open and barbed connection

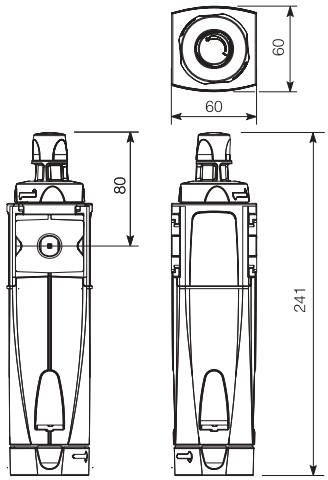
* Air supply must be dry enough to aviod ice formation at temperatures below +2° C
Low flow start point (lubrication pick-up): at 6.3bar inlet pressure 0.76 dm^3/s
Typical flow with 6.3bar inlet pressure and 0.7 bar pressure drop: 76 dm^3/s

Note : Fill lubricant from top only
For recommended lubricants see page 59

Material Specification

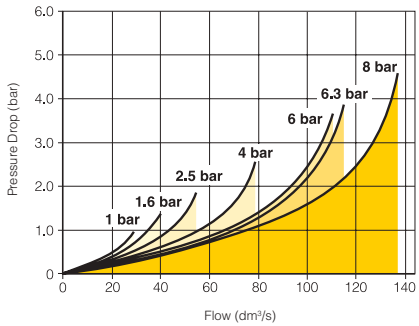
Body:	Aluminium
Bowl sight glass:	Technopolymer
Sight dome:	Technopolymer
Lubricator cover:	Polyester
Bayonet support:	Acetal
Drain:	Acetal
Elastomers:	Nitrile NBR

Dimensions (mm)

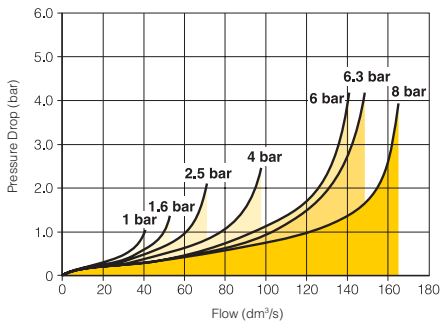


Flow characteristics

(3/8) Lubricator



(1/2) Lubricator

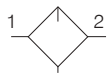


Service kits

Description	Order code
Sight glass & manual drain kit	**P3KKA00BSM**
Drip control assembly kit	**P3KKA00PG**

Moduflex Lubricator

Symbols



Lubricator
with drain

- Integral 1/2, 3/4 or 1” ports (BSPP or NPT)
- Robust but lightweight aluminium construction
- Proportional oil delivery over a wide range of air flows.
- Finger tip rachet control for precise oil drip rate adjustment
- Fill from top under system pressure
- ‘2 stage’ bayonet to reveal large filling orifice
- Large oil reservoir

Options:

P3MLA [ ] [ ] **L S M N**

BSPP (G)	**1**
NPT	**9**

1/2	**4**
3/4	**6**
1”	**8**

Port size	Description	Order Code	Flow dm^3/s *	Max bar	Min temp ^oC	Max temp ^oC	Bowl size cm^3	Height mm	Width mm	Depth mm	Weight g
3/4	Oil mist, fill under pressure	**P3MLA16LSMN**	103	17	-20	80	320	303	80	80	1443
1”	Oil mist, fill under pressure	**P3MLA18LSMN**	108	17	-20	80	320	303	80	80	1407

* flow with 6,3 bar inlet pressure and 0,5 pressure drop.

Technical Information

Fluid:	Compressed air
Maximum inlet pressure*:	17 bar
Temperature range*:	-20°C to +80°C
Manual drain:	twist grip open and barbed connection

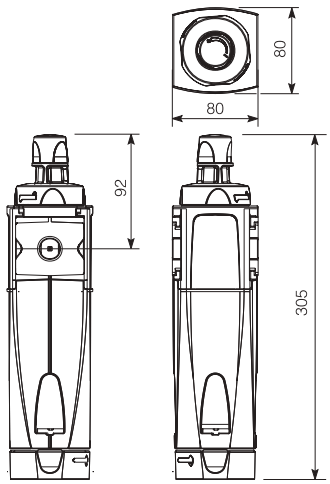
* Air supply must be dry enough to aviod ice formation at temperatures below +2° C
Low flow start point (lubrication pick-up): at 6.3bar inlet pressure 0.76 dm^3/s
Typical flow with 6.3bar inlet pressure and 0.7 bar pressure drop: 108 dm^3/s

Note : Fill lubricant from top only
For recommended lubricants see page 59

Material Specification

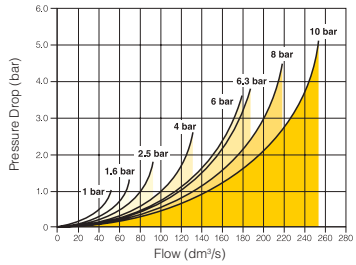
Body:	Aluminium
Bowl sight glass:	Technopolymer
Sight dome:	Technopolymer
Lubricator cover:	Polyester
Bayonet support:	Nylon
Drain:	Acetal
Elastomers:	Nitrile NBR

Dimensions (mm)

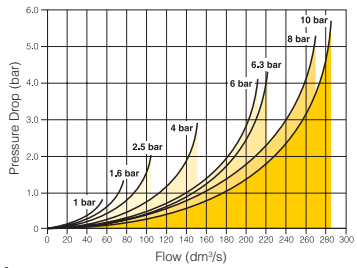


Flow characteristics

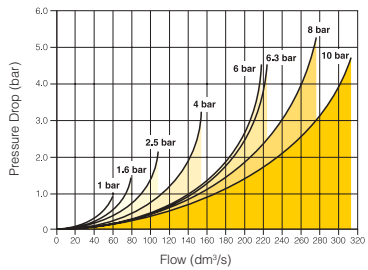
(1/2) Lubricator



(3/4) Lubricator



(1") Lubricator

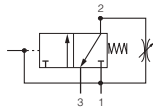


Service kits

Description	Order code
Sight glass & manual drain kit	**P3MKA00BSM**
Drip control assembly kit	**P3KKA00PG**

Combined Soft Start Dump Valve

Symbols



- Modular design with 1/4" integral ports (BSPP or NPT)
- Provides for the safe introduction of pressure
- Automatically dumps downstream pressure on the loss of pilot signal
- Adjustable slow start
- Solenoid or air pilot options
- High flow & exhaust capability
- Silencer included

Moduflex Series Combined Soft Start/Dump Valves, provide for the safe introduction of pressure to machines or systems. Soft Start/Dump Valves when set, allow the pressure to gradually build to the set point before fully opening to deliver full flow at line pressure.

The controlled introduction of pressure can be an important safety factor and prevent damage to tooling when air pressure is introduced at machine or system start up.

Options:

P3HTA [ ] **2** [ ] [ ] **N** [ ] [ ] [ ] [ ] — **Solenoid type only**

BSPP (G)	**1**	External air pilot	**P**	15mm solenoid	**G**	None	**0**	Solenoid / coil not fitted	**000**
NPT	**9**	Solenoid pilot	**S**	Threaded air pilot	**P**	15mm	**C**	24V DC non locking manual overide	**2CN**

Combined soft start dump valve

Port size	Description	Order Code	Flow dm^3/s	Max bar	Min temp °C	Max temp °C	Height mm	Width mm	Depth mm	Weight g
1/4	Solenoid operated (not included)	**P3HTA12SGN0000**	17	10	-10	50	107	55	40	285
1/4	24VDC Solenoid & cable plug	**P3HTA12SGNC2CN**	17	10	-10	50	164*	55	40	322
1/4	Air pilot operated	**P3HTA12PPN**	17	17	-20	80	107	55	40	285

* Includes exhaust silencer. Flow with 6.3 bar inlet and 1 bar pressure drop.

Technical Information

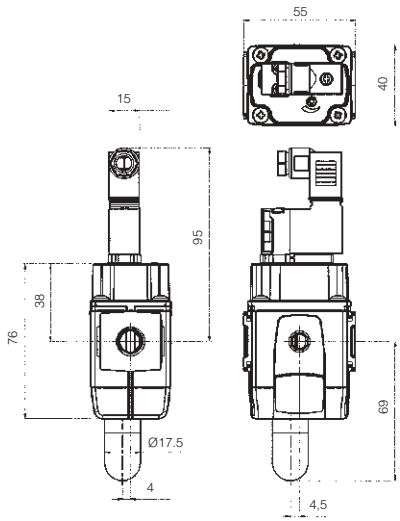
Fluid:	Compressed air
Maximum pressure Solenoid operated:	10 bar
Maximum pressure Air Pilot operated:	17 bar
Minimum operating pressure:	3 bar
Temperature range* Solenoid operated:	-10° to + 50° C
Temperature range* Air Pilot operated:	-20° to + 80° C
Air Pilot port:	1/8"
Exhaust port:	1/4"
Gauge port:	1/8"
Typical flow with 6.3bar inlet pressure and 1 bar pressure drop:	17 dm^3/s

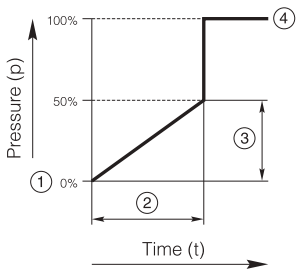
* Air supply must be dry enough to avoid ice formation at temperatures below +2°C
Snap pressure: Full flow when downstream pressure reaches 50% of the inlet pressure

Material Specification

Body:	Aluminium
Body cover:	Polyester
Elastomers:	Nitrile NBR

Dimensions (mm)





① Start signal

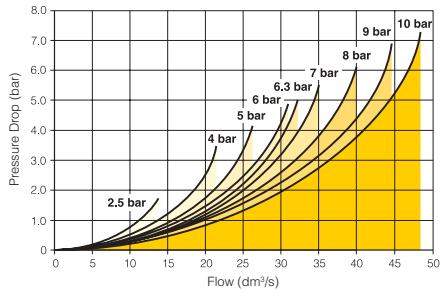
② Switching time delay

③ Gradual pressure build up

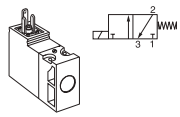
④ Operating pressure p^2 (=p^1)

Flow characteristics

1/4 Soft Start & Dump Valve



Solenoids 15mm NC, standard flow DIN 1.2W / 1.6 VA

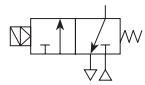


Voltage	Weight g	Order code Override, blue, non locking flush
12 VDC	38	**P2E-KV32B1**
24 VDC	38	**P2E-KV32C1**
48 VDC	38	**P2E-KV32D1**
24 VAC 50 Hz	38	**P2E-KV31C1**
48 VAC 50/60 Hz	38	**P2E-KV34D1**
115 VAC 50 Hz/ 120 VAC 60 Hz	38	**P2E-KV31F1**
230 VAC 50 Hz/ 240 VAC 60 Hz	38	**P2E-KV31J1**

Note: For cable plugs see page 84
For individual mounting options please refer to page 92

Remote Operated Dump Valve

Symbols



- Modular design with 1/4" integral ports (BSPP or NPT)
- Automatically dumps downstream pressure on the loss of pilot signal
- Solenoid or air pilot options
- High flow & exhaust capability
- Silencer included

Remotely operated dump valves automatically shut off upstream pressure and exhaust the downstream pressure when the pilot pressure is released.

To maintain these units in the open position a pilot supply to the air pilot operated version or an electrical signal to the solenoid operated version must be maintained. The valve will automatically dump when the holding signal is removed.

Options:

P3HDA		2				N		Solenoid type only	
BSPP (G)	1	External air pilot	P	15mm solenoid	G	None	0	Solenoid / coil not fitted	000
NPT	9	Solenoid pilot	S	Threaded air pilot	P	15mm	C	24V DC non locking manual overide	2CN

Remote operated dump valve

Port size	Description	Order Code	Flow dm^3/s	Max bar	Min temp °C	Max temp °C	Height mm	Width mm	Depth mm	Weight g
1/4	Solenoid operated (not included)	**P3HDA12SGN0000**	17	10	-10	50	107	55	40	282
1/4	24VDC Solenoid & cable plug	**P3HDA12SGNC2CN**	17	10	-10	50	164*	55	40	320
1/4	Air pilot operated	**P3HDA12PPN**	17	17	-20	80	107	55	40	282

* Includes exhaust silencer

Technical Information

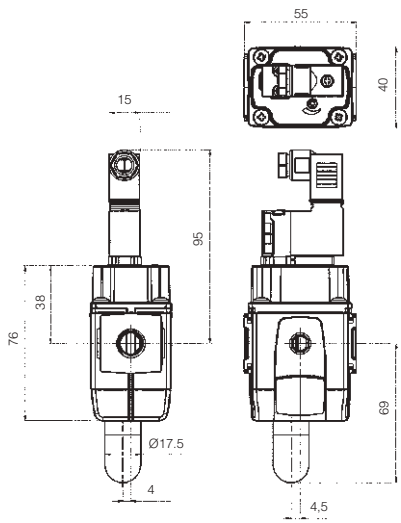
Fluid:	Compressed air
Maximum pressure Solenoid operated:	10 bar
Maximum pressure Air Pilot operated:	17 bar
Minimum operating pressure:	3 bar
Temperature range* Solenoid operated:	-10° to + 50° C
Temperature range* Air Pilot operated:	-20° to + 80° C
Air Pilot port:	1/8"
Exhaust port:	1/4"
Gauge port:	1/8"
Typical flow with 6.3bar inlet pressure and 1 bar pressure drop:	17 dm^3/s

* Air supply must be dry enough to avoid ice formation at temperatures below +2°C
Snap pressure: Full flow when downstream pressure reaches 50% of the inlet pressure

Material Specification

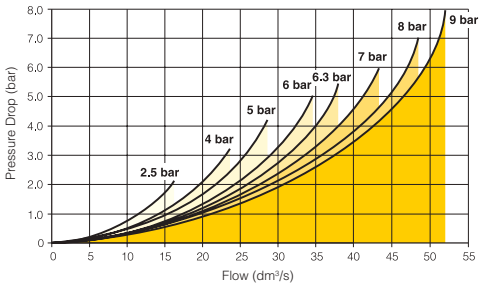
Body:	Aluminium
Body cover:	Polyester
Elastomers:	Nitrile NBR

Dimensions (mm)



Flow characteristics

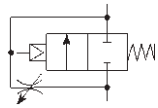
1/4 Remote Dump Valve



Note: For solenoid options please see page 65
For cable plugs see page 84
For individual mounting options please refer to page 92

Soft Start Valve

Symbols



- Modular design with 1/4" integral ports (BSPP or NPT)
- Provides for the safe introduction of pressure
- Adjustable slow start
- Solenoid or air pilot options
- High flow

Moduflex Series Soft Start Valves, provide for the safe introduction of pressure to machines or systems. Soft Start Valves, allow the pressure to gradually build to the set point before fully opening to deliver full flow at line pressure.

The controlled introduction of pressure can be an important safety factor and prevent damage to tooling when air pressure is introduced at machine or system start up.

Note: Soft Start Valves must be installed downstream of a directional control valve such as the Moduflex 3/2 Ball Valve

Options:

P3HSA [ ]

BSPP (G)	**1**
NPT	**9**

2 [ ]

External air pilot	**P**
Solenoid pilot	**S**
Internal air pilot	**Y**

[ ]

Internal pilot	**0**
15mm solenoid	**G**
Threaded air pilot	**P**

N [ ]

None	**0**
15mm	**C**

Solenoid type only [ ] [ ][ ][ ]

Solenoid / coil not fitted	**000**
24V DC non locking manual overide	**2CN**

Soft Start Valve

Port size	Description	Order Code	Flow dm^3/s	Max bar	Min temp °C	Max temp °C	Height mm	Width mm	Depth mm	Weight g
1/4	Solenoid operated (not included)	**P3HSA12SGN0000**	17	10	-10	50	76	55	40	280
1/4	24VDC Solenoid & cable plug	**P3HSA12SGNC2CN**	17	10	-10	50	133	55	40	317
1/4	Internal air pilot operated	**P3HSA12Y0N**	17	17	-20	80	76	55	40	280
1/4	External air pilot (1/8 threaded)	**P3HSA12PPN**	17	17	-20	80	76	55	40	280

Technical Information

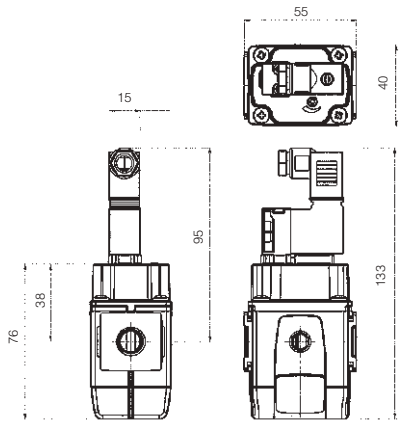
Fluid:	Compressed air
Maximum pressure Solenoid operated:	10 bar
Maximum pressure Air Pilot operated:	17 bar
Minimum operating pressure:	3 bar
Temperature range* Solenoid operated:	-10° to + 50° C
Temperature range* Air Pilot operated:	-20° to + 80° C
Air Pilot port:	1/8"
Gauge port:	1/4"
Typical flow with 6.3bar inlet pressure and 0.7 bar pressure drop:	17 dm^3/s

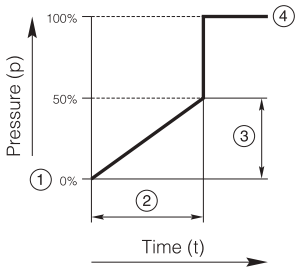
* Air supply must be dry enough to avoid ice formation at temperatures below +2°C
Snap pressure: Full flow when downstream pressure reaches 50% of the inlet pressure

Material Specification

Body:	Aluminium
Body cover:	Polyester
Elastomers:	Nitrile NBR

Dimensions (mm)





① Start signal

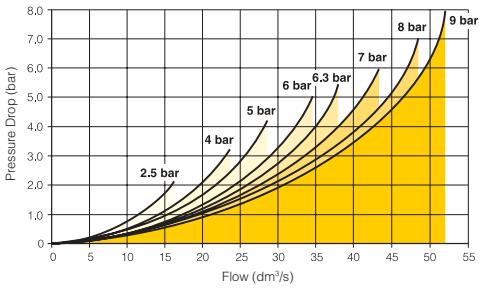
② Switching time delay

③ Gradual pressure build up

④ Operating pressure p^2 (=p^1)

Flow characteristics

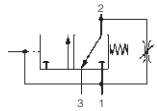
1/4 Soft Start Valve



Note: For solenoid options please see page 65
For cable plugs see page 84
For individual mounting options please refer to page 92

Combined Soft Start Dump Valve and Remote Operated Dump Valve

Symbols



- Modular design with 1/2" integral ports (BSPP or NPT)
- Provides for the safe introduction of pressure
- Automatically dumps downstream pressure on the loss of pilot signal
- Adjustable slow start
- Solenoid or air pilot options
- High flow & exhaust capability
- Silencer included

Moduflex Series Combined Soft Start/Dump Valves, provide for the safe introduction of pressure to machines or systems. Soft Start/Dump Valves when set, allow the pressure to gradually build to the set point before fully opening to deliver full flow at line pressure.

The controlled introduction of pressure can be an important safety factor and prevent damage to tooling when air pressure is introduced at machine or system start up.

Options:

P3KTA [ ] **4** [ ] [ ] **N** [ ]

Solenoid type only [ ] [ ] [ ] [ ]

BSPP (G)	**1**
NPT	**9**

External air pilot	**P**
Solenoid pilot	**S**

30mm operator	**C**
Threaded air pilot	**P**

None (operator is fitted to valve)	**0**
30mm CNOMO coil (form connection)	**A**
22mm coil (form connection)	**B**
30mm CNOMO coil (M12 connection)	**D**
22mm coil (M12 connection)	**E**

Solenoid / coil not fitted	**000**
24V DC	**2CN**

For ATEX Order:

P3KTA [ ] **4 S C N X 2 C N**

* ATEX product supplied with ATEX approved solenoid **P05539EXS49**

Combined soft start dump valve

Port size	Description	Order Code	Flow dm^3/s	Max bar	Min temp °C	Max temp °C	Height mm	Width mm	Depth mm	Weight g
1/2	Solenoid operated (not included)	**P3KTA14SCN0000**	46	10	-10	50	163*	75	60	675
1/2	24VDC 22mm coil & cable plug incl.	**P3KTA14SCNB2CN**	46	10	-10	50	227.5*	75	60	720
1/2	Air pilot operated	**P3KTA14PPN**	46	17	-10	80	163*	75	60	675

* Includes exhaust silencer

Technical Information

Fluid:	Compressed air
Maximum pressure Solenoid operated:	10 bar
Maximum pressure Air Pilot operated:	17 bar
Minimum operating pressure:	3 bar
Temperature range* Solenoid operated:	-10° to + 50° C
Temperature range* Air Pilot operated:	-20° to + 80° C
Air Pilot port:	1/8"
Exhaust port:	1/2"
Gauge port:	1/4"
Typical flow with 6.3bar inlet pressure and 0.7 bar pressure drop:	46 dm^3/s

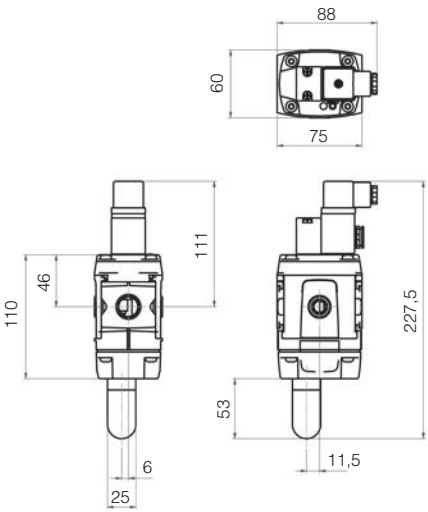
* Air supply must be dry enough to avoid ice formation at temperatures below +2°C
Snap pressure: Full flow when downstream pressure reaches 50% of the inlet pressure

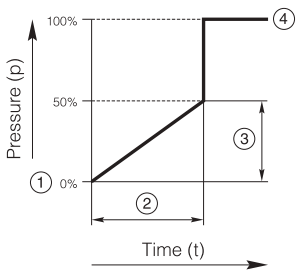
Material Specification

Body:	Aluminium
Body cover:	Polyester
Elastomers:	Nitrile NBR

P05539EXS49: ATEX solenoid coil.
30 x 30mm, 24 V DC,
Power consumption 2.6w, temp class T6.
Supplied with 3 metre flying leads.

Dimensions (mm)





① Start signal

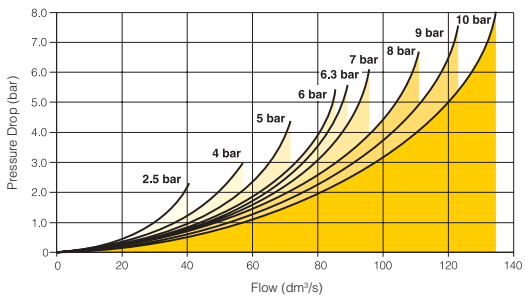
② Switching time delay

③ Gradual pressure build up

④ Operating pressure p^2 (=p^1)

Flow characteristics

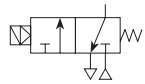
1/2 Soft Start & Dump Valve



Note: for solenoid coil and cable plug options see pages 82 - 85
For individual mounting options please refer to page 92

Remote Operated Dump Valve

Symbols



- Modular design with 1/2" integral ports (BSPP or NPT)
- Automatically dumps downstream pressure on the loss of pilot signal
- Solenoid or air pilot options
- High flow & exhaust capability
- Silencer included

Remotely operated dump valves automatically shut off upstream pressure and exhaust the downstream pressure when the pilot pressure is released.

To maintain these units in the open position a pilot supply to the air pilot operated version or an electrical signal to the solenoid operated version must be maintained. The valve will automatically dump when the holding signal is removed.

Options:

P3KDA [ ] **4** [ ] [ ] **N** [ ] [ ] [ ] [ ]

Solenoid type only

BSPP (G)	1
NPT	9

External air pilot	P
Solenoid pilot	S

30mm operator	C
Threaded air pilot	P

None (operator is fitted to valve)	0
30mm CNOMO coil (form connection)	A
22mm coil (form connection)	B
30mm CNOMO coil (M12 connection)	D
22mm coil (M12 connection)	E

Solenoid / coil not fitted	000
24V DC	2CN

For ATEX Order:

P3KDA [ ] **4 S C N X 2 C N**

* ATEX product supplied with ATEX approved solenoid **P05539EXS49**

Remote operated dump valve

Port size	Description	Order Code	Flow dm^3/s	Max bar	Min temp °C	Max temp °C	Height mm	Width mm	Depth mm	Weight g
1/2	Solenoid operated (not included)	**P3KDA14SCN0000**	51	10	-10	50	163*	75	60	675
1/2	24VDC 22mm coil & cable plug incl.	**P3KDA14SCNB2CN**	51	10	-10	50	227.5*	75	60	720
1/2	Air pilot operated	**P3KDA14PPN**	51	17	-10	80	163*	75	60	675

* Includes exhaust silencer

Technical Information

Fluid:	Compressed air
Maximum pressure Solenoid operated:	10 bar
Maximum pressure Air Pilot operated:	17 bar
Minimum operating pressure:	3 bar
Temperature range* Solenoid operated:	-10° to + 50° C
Temperature range* Air Pilot operated:	-20° to + 80° C
Air Pilot port:	1/8"
Exhaust port:	1/2"
Gauge port:	1/4"
Typical flow with 6.3bar inlet pressure and 0.7 bar pressure drop:	51 dm^3/s

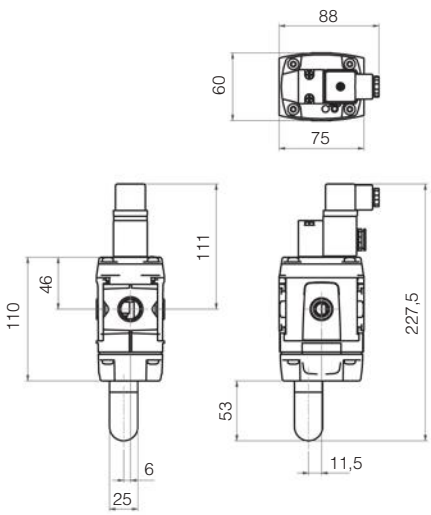
* Air supply must be dry enough to avoid ice formation at temperatures below +2°C
Snap pressure: Full flow when downstream pressure reaches 50% of the inlet pressure

Material Specification

Body:	Aluminium
Body cover:	Polyester
Elastomers:	Nitrile NBR

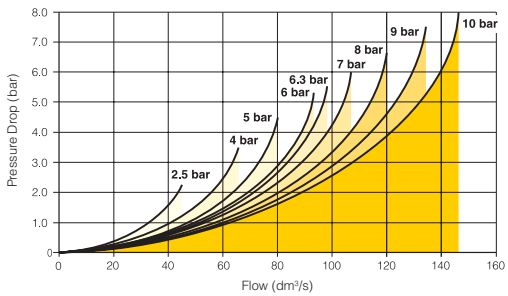
P05539EXS49: ATEX solenoid coil.
30 x 30mm, 24 V DC,
Power consumption 2.6w, temp class T6.
Supplied with 3 metre flying leads.

Dimensions (mm)



Flow characteristics

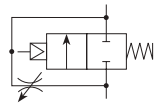
1/2 Remote Dump Valve



Note: for solenoid coil and cable plug options see pages 82 - 85
For individual mounting options please refer to page 92

Soft Start Valve

Symbols



- Modular design with 1/2" integral ports (BSPP or NPT)
- Provides for the safe introduction of pressure
- Adjustable slow start
- Solenoid or air pilot options
- High flow
- Silencer included

Moduflex Series Soft Start Valves, provide for the safe introduction of pressure to machines or systems. Soft Start Valves, allow the pressure to gradually build to the set point before fully opening to deliver full flow at line pressure.

The controlled introduction of pressure can be an important safety factor and prevent damage to tooling when air pressure is introduced at machine or system start up.

Note: Soft Start Valves must be installed downstream of a directional control valve such as the Moduflex 3/2 Ball Valve

Options:

P3KSA [ ] **4** [ ] [ ] **N** [ ] [ ] [ ] [ ]

Solenoid type only

BSPP (G)	**1**
NPT	**9**

External air pilot	**P**
Solenoid pilot	**S**
Internal air pilot	**Y**

Internal pilot	**0**
30mm operator	**C**
Threaded air pilot	**P**

None (operator is fitted to valve)	**0**
30mm CNOMO coil (form connection)	**A**
22mm coil (form connection)	**B**
30mm CNOMO coil (M12 connection)	**D**
22mm coil (M12 connection)	**E**

Solenoid / coil not fitted	**000**
24V DC	**2CN**

For ATEX Order:

P3KSA [ ] **4 S C N X 2 C N**

* ATEX product supplied with ATEX approved solenoid **P05539EXS49**

Soft Start Valve

Port size	Description	Order Code	Flow dm^3/s	Max bar	Min temp °C	Max temp °C	Height mm	Width mm	Depth mm	Weight g
1/2	Solenoid operated (not included)	**P3KSA14SCN0000**	48	10	-10	50	110	75	60	675
1/2	24VDC Solenoid & cable plug	**P3KSA14SCNB2CN**	48	10	-10	50	174.5	88	60	720
1/2	Internal air pilot operated	**P3KSA14Y0N**	48	17	-20	80	110	75	60	675
1/2	External air pilot (1/8 threaded)	**P3KSA14PPN**	48	17	-20	80	110	75	60	675

Technical Information

Fluid:	Compressed air
Maximum pressure Solenoid operated:	10 bar
Maximum pressure Air Pilot operated:	17 bar
Minimum operating pressure:	3 bar
Temperature range* Solenoid operated:	-10° to + 50° C
Temperature range* Air Pilot operated:	-20° to + 80° C
Air Pilot port:	1/8"
Gauge port:	1/4"
Typical flow with 6.3bar inlet pressure and 0.7 bar pressure drop:	48 dm^3/s

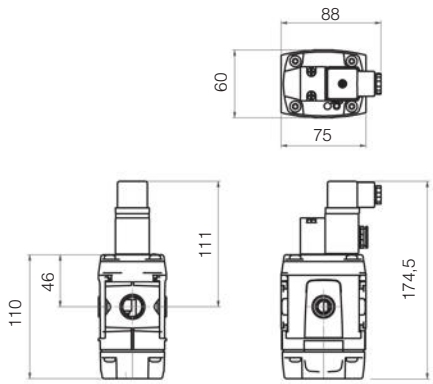
* Air supply must be dry enough to avoid ice formation at temperatures below +2°C
Snap pressure: Full flow when downstream pressure reaches 50% of the inlet pressure

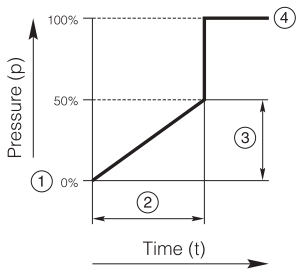
Material Specification

Body:	Aluminium
Body cover:	Polyester
Elastomers:	Nitrile NBR

P05539EXS49: ATEX solenoid coil.
30 x 30mm, 24 V DC,
Power consumption 2.6w, temp class T6.
Supplied with 3 metre flying leads.

Dimensions (mm)





① Start signal

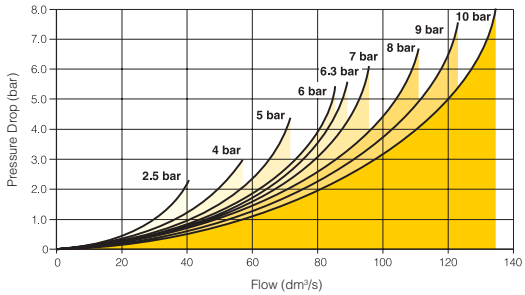
② Switching time delay

③ Gradual pressure build up

④ Operating pressure p^2 (=p^1)

Flow characteristics

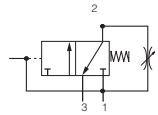
1/2 Soft Start Valve



Note: for solenoid coil and cable plug options see pages 82 - 85
For individual mounting options please refer to page 92

Combined Soft Start Dump Valve and Remote Operated Dump Valve

Symbols



- Modular design with 1/2, 3/4 & 1" integral ports (BSPP or NPT)
- Provides for the safe introduction of pressure
- Automatically dumps downstream pressure on the loss of pilot signal
- Adjustable slow start
- Solenoid or air pilot options
- High flow & exhaust capability
- Silencer included

Moduflex Series Combined Soft Start/Dump Valves, provide for the safe introduction of pressure to machines or systems. Soft Start/Dump Valves when set, allow the pressure to gradually build to the set point before fully opening to deliver full flow at line pressure.

The controlled introduction of pressure can be an important safety factor and prevent damage to tooling when air pressure is introduced at machine or system start up.

Options:

P3MTA [ ] [ ] [ ] [ ] **N** [ ] [ ] [ ] [ ]

Solenoid type only

BSPP (G)	1
NPT	9

1/2	4
3/4	6
1"	8

External air pilot	P
Solenoid pilot	S

30mm operator	C
Threaded air pilot	P

None (operator is fitted to valve)	0
30mm CNOMO coil (Form connection)	A
22mm coil (Form connection)	B
30mm CNOMO coil (M12 connection)	D
22mm coil (M12 connection)	E

Solenoid / coil not fitted	000
24V DC	2CN

For ATEX Order:
P3MTA [ ] [ ] **S C N X 2 C N**

* ATEX product supplied with ATEX approved solenoid **P05539EXS49**

Combined soft start dump valve

Port size	Description	Order Code	Flow dm^3/s	Max bar	Min temp °C	Max temp °C	Height mm	Width mm	Depth mm	Weight g
3/4	Solenoid operated (not included)	**P3MTA16SCN0000**	99	10	-10	50	226*	80	80	1100
3/4	24VDC 22mm coil & cable plug incl.	**P3MTA16SCNB2CN**	99	10	-10	50	244*	80	80	1210
3/4	Air pilot operated	**P3MTA16PPN**	99	17	-20	80	179*	80	80	1050

* Includes exhaust silencer

Technical Information

Fluid:	Compressed air
Maximum pressure Solenoid operated:	10 bar
Maximum pressure Air Pilot operated:	17 bar
Minimum operating pressure:	3 bar
Temperature range* Solenoid operated:	-10° to + 50° C
Temperature range* Air Pilot operated:	-20° to + 80° C
Air Pilot port:	1/8"
Exhaust port:	1/2"
Gauge port:	1/4"
Typical flow with 6.3bar inlet pressure and 1 bar pressure drop:	99 dm^3/s

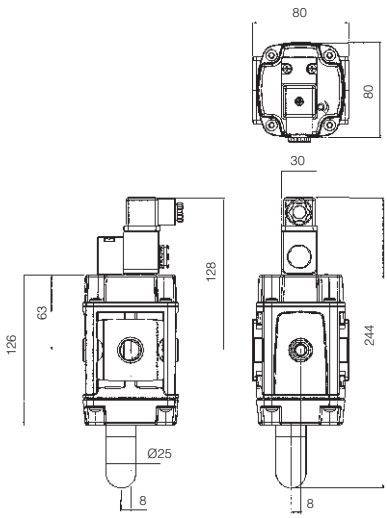
* Air supply must be dry enough to avoid ice formation at temperatures below +2°C
Snap pressure: Full flow when downstream pressure reaches 50% of the inlet pressure

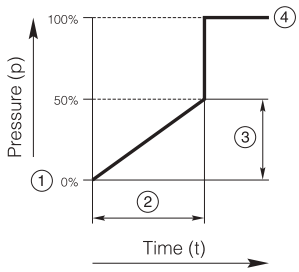
Material Specification

Body:	Aluminium
Body cover:	Polyester
Elastomers:	Nitrile NBR

P05539EXS49: ATEX solenoid coil.
30 x 30mm, 24 V DC,
Power consumption 2.6w, temp class T6.
Supplied with 3 metre flying leads.

Dimensions (mm)





① Start signal

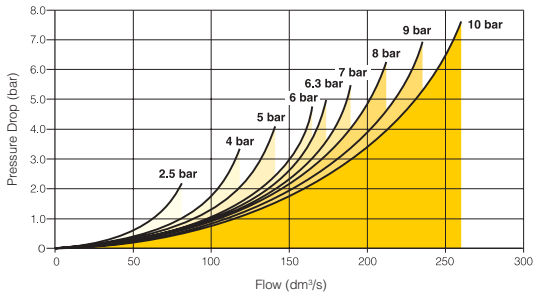
② Switching time delay

③ Gradual pressure build up

④ Operating pressure p^2 (=p^1)

Flow characteristics

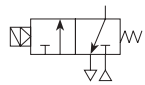
3/4 Soft Start & Dump Valve



Note: for solenoid coil and cable plug options see pages 82 - 85
For individual mounting options please refer to page 92

Remote Operated Dump Valve

Symbols



- Modular design with 1/2, 3/4 & 1" integral ports (BSPP or NPT)
- Automatically dumps downstream pressure on the loss of pilot signal
- Solenoid or air pilot options
- High flow & exhaust capability
- Silencer included

Remotely operated dump valves automatically shut off upstream pressure and exhaust the downstream pressure when the pilot pressure is released.

To maintain these units in the open position a pilot supply to the air pilot operated version or an electrical signal to the solenoid operated version must be maintained. The valve will automatically dump when the holding signal is removed.

Options:

P3MDA [ ] [ ] [ ] [ ] **N** [ ] [ ] [ ] [ ]

Solenoid type only

BSPP (G)	1
NPT	9

1/2	4
3/4	6
1"	8

External air pilot	P
Solenoid pilot	S

30mm operator	C
Threaded air pilot	P

None (operator is fitted to valve)	0
30mm CNOMO coil (Form connection)	A
22mm coil (Form connection)	B
30mm CNOMO coil (M12 connection)	D
22mm coil (M12 connection)	E

Solenoid / coil not fitted	000
24V DC	2CN

For ATEX Order:

P3MDA [ ] [ ] **S C N X 2 C N**

* ATEX product supplied with ATEX approved solenoid **P05539EXS49**

Remote operated dump valve

Port size	Description	Order Code	Flow dm^3/s	Max bar	Min temp °C	Max temp °C	Height mm	Width mm	Depth mm	Weight g
3/4	Solenoid operated (not included)	**P3MDA16SCN0000**	107	10	-10	50	226*	80	80	1100
3/4	24VDC 22mm coil & cable plug incl.	**P3MDA16SCNB2CN**	107	10	-10	50	244*	80	80	1210
3/4	Air pilot operated	**P3MDA16PPN**	107	17	-20	80	179*	80	80	1050

* Includes exhaust silencer

Technical Information

Fluid:	Compressed air
Maximum pressure Solenoid operated:	10 bar
Maximum pressure Air Pilot operated:	17 bar
Minimum operating pressure:	3 bar
Temperature range* Solenoid operated:	-10° to + 50° C
Temperature range* Air Pilot operated:	-20° to + 80° C
Air Pilot port:	1/8"
Exhaust port:	1/2"
Gauge port:	1/4"
Typical flow with 6.3bar inlet pressure and 1 bar pressure drop:	107 dm^3/s

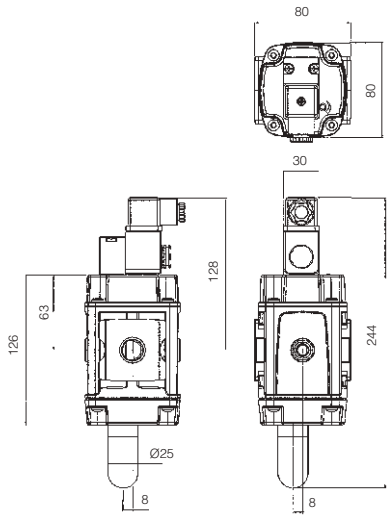
* Air supply must be dry enough to avoid ice formation at temperatures below +2°C
Snap pressure: Full flow when downstream pressure reaches 50% of the inlet pressure

Material Specification

Body:	Aluminium
Body cover:	Polyester
Elastomers:	Nitrile NBR

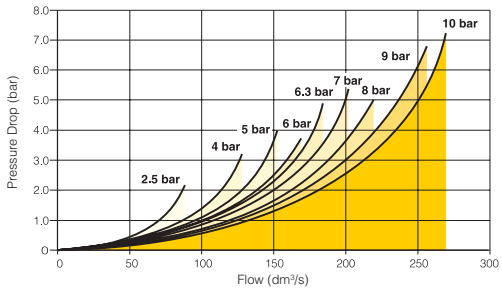
P05539EXS49: ATEX solenoid coil.
30 x 30mm, 24 V DC,
Power consumption 2.6w, temp class T6.
Supplied with 3 metre flying leads.

Dimensions (mm)



Flow characteristics

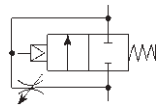
3/4 Remote Dump Valve



Note: for solenoid coil and cable plug options see pages 82 - 85
For individual mounting options please refer to page 92

Soft Start Valve

Symbols



- Modular design with 1/2, 3/4 & 1" integral ports (BSPP or NPT)
- Provides for the safe introduction of pressure
- Adjustable slow start
- Solenoid or air pilot options
- High flow & exhaust capability

Moduflex Series Soft Start Valves, provide for the safe introduction of pressure to machines or systems. Soft Start Valves, allow the pressure to gradually build to the set point before fully opening to deliver full flow at line pressure.

The controlled introduction of pressure can be an important safety factor and prevent damage to tooling when air pressure is introduced at machine or system start up.

Note: Soft Start Valves must be installed downstream of a directional control valve such as the Moduflex 3/2 Ball Valve

Options:

P3MSA [ ] [ ] [ ] [ ] **N** [ ] [ ] [ ] [ ]

Solenoid type only

BSPP (G)	1
NPT	9

1/2	4
3/4	6
1"	8

External air pilot	P
Solenoid pilot	S
Internal air pilot	Y

Internal pilot	0
30mm operator	C
Threaded air pilot	P

None (operator is fitted to valve)	0
30mm CNOMO coil (Form connection)	A
22mm coil (Form connection)	B
30mm CNOMO coil (M12 connection)	D
22mm coil (M12 connection)	E

Solenoid / coil not fitted	000
24V DC	2CN

For ATEX Order:

P3MSA [ ] [ ] **S C N X 2 C N**

* ATEX product supplied with ATEX approved solenoid **P05539EXS49**

Soft Start Valve

Port size	Description	Order Code	Flow dm^3/s	Max bar	Min temp °C	Max temp °C	Height mm	Width mm	Depth mm	Weight g
3/4	Solenoid operated (not included)	**P3MSA16SCN0000**	99	10	-10	50	126	80	80	1100
3/4	24VDC Solenoid & cable plug	**P3MSA16SCNB2CN**	99	10	-10	50	191	80	80	1210
3/4	Internal air pilot operated	**P3MSA16Y0N**	99	17	-20	80	126	80	80	1050
3/4	External air pilot (1/8 threaded)	**P3MSA16PPN**	99	17	-20	80	126	80	80	1050

Technical Information

Fluid:	Compressed air
Maximum pressure Solenoid operated:	10 bar
Maximum pressure Air Pilot operated:	17 bar
Minimum operating pressure:	3 bar
Temperature range* Solenoid operated:	-10° to + 50° C
Temperature range* Air Pilot operated:	-20° to + 80° C
Air Pilot port:	1/8"
Gauge port:	1/4"
Typical flow with 6.3bar inlet pressure and 0.7 bar pressure drop:	99 dm^3/s

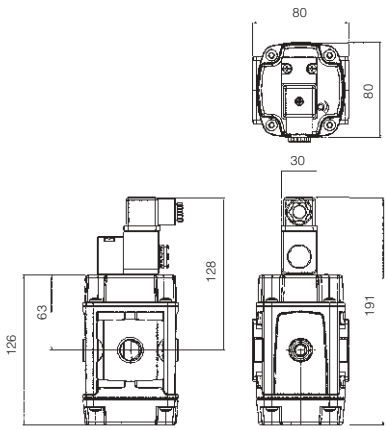
* Air supply must be dry enough to avoid ice formation at temperatures below +2°C
Snap pressure: Full flow when downstream pressure reaches 50% of the inlet pressure

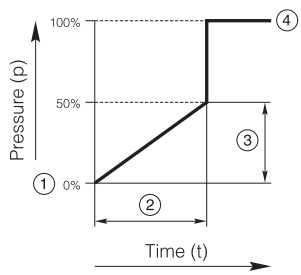
Material Specification

Body:	Aluminium
Body cover:	Polyester
Elastomers:	Nitrile NBR

P05539EXS49: ATEX solenoid coil.
30 x 30mm, 24 V DC,
Power consumption 2.6w, temp class T6.
Supplied with 3 metre flying leads.

Dimensions (mm)





① Start signal

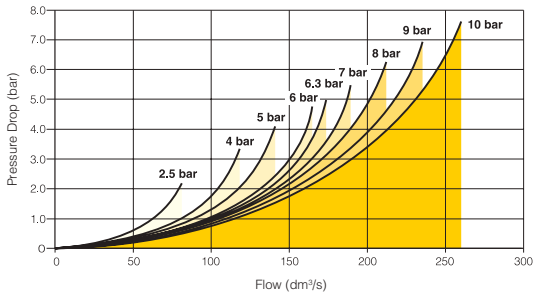
② Switching time delay

③ Gradual pressure build up

④ Operating pressure p^2 (=p^1)

Flow characteristics

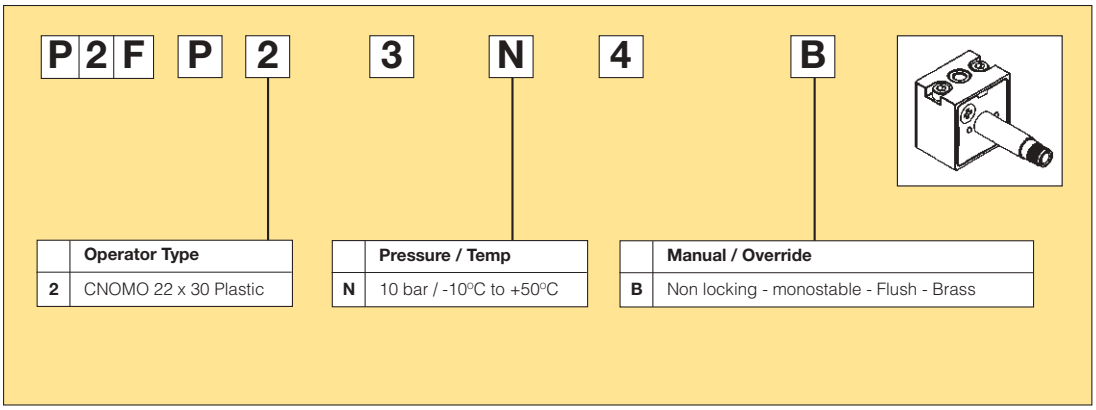
3/4 Soft Start Valve



Note: for solenoid coil and cable plug options see pages 82 - 85
For individual mounting options please refer to page 92

Solenoid operator - CNOMO

Order key



	Operator Type
2	CNOMO 22 x 30 Plastic

	Pressure / Temp
N	10 bar / -10°C to +50°C

	Manual / Override
B	Non locking - monostable - Flush - Brass

Technical data - Solenoid operators, coil combinations

	NC Normal Operator with 30 x 30 standard coil	NC Normal Operator with 22 x 30 standard coil
Working pressure	0 to10 bar	0 to 10 bar
Ambient temperature	-10 °C to 60 °C (1)	-10 °C to 60 °C (1)
Orifice	1.3/1.5mm	1.3/1.5mm
Flow Qn	0.84 dm^3/s	0.84 dm^3/s
Power (DC)	2.7W	4.8W
Power (AC)	4.9VA	8.5VA
Voltage tolerance	+/- 10%	+/- 10%
Duty cycle	100%	100%
Insulation class	F	F
Electric connection	Form A	Industrial B
Protection	IP65	IP65
Shock & Vibration	1g	1g
Approval	UL/CSA	
Working media	All neutral media such as compressed air and inert gases.	

(1) limited to 50°C if use with 100% duty cycle

Transients

Interrupting the current through the solenoid coil produces momentary voltage peaks which, under unfavourable conditions, can amount to several hundred times the rated operating voltage. Normally, these transients do not cause problems, but to achieve the maximum life of relays in the circuit (and particularly of transistors, thyristors and integrated circuits) it is desirable to provide protection by means of voltage-dependent resistors (varistors). All connectors/ cable plugs EN175301-803 with LED's include this type of circuit protection.

Materials

Pilot Valve

Body:	Polyamide
Armature tube:	Brass
Plunger & core:	Corrosion resistant Cr-Ni steel
Seals:	FKM (Viton™)
Screws:	Stainless steel

Coil

Encapsualtion material:	Thermoplastic as standard Duroplast for M12 connection

Solenoid coils with Din A or Industrial B connection

Voltage	30mm x 30mm Order code DIN A Standard	Weight (Kg)	22mm x 30mm Order code Industrial B standard	Weight (Kg)
Direct current				
12V DC	**P2FCA445**	0.105	**P2FCB445**	0.093
24V DC	**P2FCA449**	0.105	**P2FCB449**	0.093
48V DC	**P2FCA453***	0.105	**P2FCB451**	0.093
Alternative current				
12V 50/60Hz	**P2FCA440**	0.105	**P2FCB440**	0.093
24V 50/60Hz	**P2FCA442**	0.105	**P2FCB442**	0.093
48V 50/60Hz	**P2FCA469#**	0.105		
110V 50Hz, 120V 60Hz	**P2FCA453**	0.105	**P2FCB453**	0.093
230V 50Hz, 230V 60Hz	**P2FCA457**	0.105	**P2FCB457**	0.093

* P2FCA453 is compatible with 110 V AC and 48 V DC
\# P2FCA469 is 24 V DC 6.8W or 48 V 50Hz 9.9 VA

Solenoid coils with M12 connection

Voltage	Order code Form A 30 x 30	Weight (Kg)	Order code Form B 22 x 30	Weight (Kg)
Direct current				
24V DC	**P2FC6419**	0.065	**P2FC7419**	0.065

Spare Solenoid Nuts

Valves requiring captured exhaust should be fitted with plastic knurled nut

Order code
P2FNP

Valves with vented exhaust are fitted with diffuser plastic nut

Order code
P2FND

Spare Solenoid Operators

Solenoid pilot operator CNOMO NC

Description	Order code Non-lock manual override	Weight (Kg)
Standard duty	**P2FP23N4B**	0.065

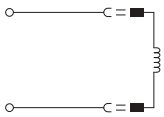
Note.

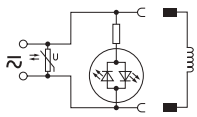
Solenoid pilot operators are fitted to the Moduflex range. Order the above part numbers for spares. The operators are supplied with mounting screws and interface 'O' rings.

Coils and connectors must be ordered separately.

Solenoid Connectors / Cable Plugs EN175301-803

	Description	Order code 15mm Form C ISO15217	Order code 22mm Form B Industrial	Order code 30mm Form A ISO4400
With large headed screw suitable for mounting in inaccessible or recess position 	Standard IP65	**P8C-C**		
	24V DC LED and protection IP65	**P8C-C26C**		
	110V AC LED and protection IP65	**P8C-C21E**		
With standard screw 	Standard IP65 without flying lead	**P8C-D**	**3EV10V10**	**3EV290V10**
	With LED and protection 24V AC/DC	**P8C-D26C**	**3EV10V20-24**	**3EV290V20-24**
	With LED and protection 110V AC	**P8C-D21E**	**3EV10V20-110**	**3EV290V20-110**
	With LED and protection 230V AC		**3EV10V20-230**	**3EV290V20-230**
With cable 	Standard with 2m cable IP65	**P8L-C2**		
	Standard with 5m cable IP65	**P8L-C5**		
	24V AC/DC, 2m cable LED and protection IP65	**P8L-C226C**		
	24V AC/DC, 5m cable LED and protection IP65	**P8L-C526C**	**3EV10V20-24L5**	**3EV290V20-24L5**
	24V AC/DC, 10m cable LED and protection IP65	**P8L-CA26C**		
	110V AC/DC, 2m cable LED and protection IP65	**P8L-C221E**		
	110V AC/DC, 5m cable LED and protection IP65	**P8L-C521E**	**3EV10V20-110L5**	**3EV290V20-110L5**
	230V AC, 5m cable LED and protection IP65		**3EV10V20-230L5**	**3EV290V20-230L5**



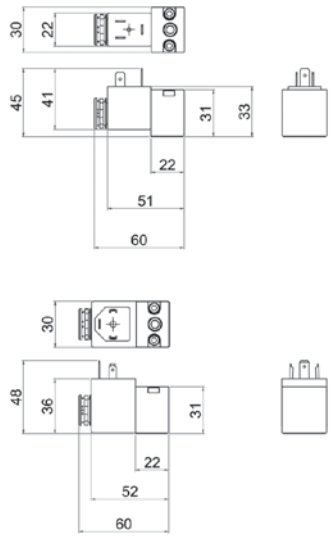


P8C-C	
P8C-D	
P8L-C2	
P8L-C5	
3EV10V10	

P8C-D26C	**P8L-C226C**
P8C-D21E	**P8L-C526C**
P8C-C26C	**P8L-CA26C**
P8C-C21E	**P8L-C221E**
	P8L-C521E
3EV10V20-24	**3EV10V20-24L5**
3EV10V20-110	**3EV10V20-110L5**
3EV10V20-230	**3EV10V20-230L5**

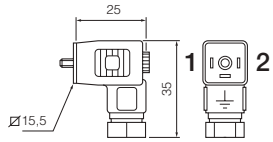
Solenoid Coil & Cable Plug Dimensions (mm)

P2F - CNOMO - 22 x 30mm



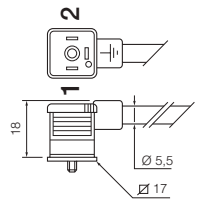
Form C
Cable plugs

P8C-C
P8C-C26C
P8C-C21E
P8C-D
P8C-D26C
P8C-D21E



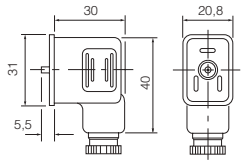
Form C
Cable plugs

P8L-C2
P8LC5
P8L-C226C
P8L-C526C
P8L-CA26C
P8L-C221E
P8L-C521E



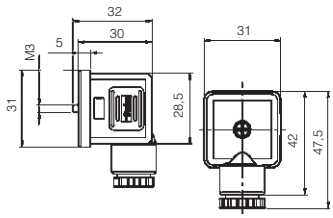
Form B
Cable plugs

3EV10V10



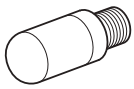
Form A
Cable plugs

3EV290V10



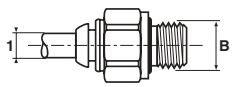
Accessories

Silencers



Port	Ordercode	Pack Qty
G1/8	P6M-PAB1	10
G1/4	P6M-PAB2	10
G3/8	P6M-PAB3	10
G1/2	P6M-PAB4	10

Fittings

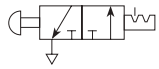


Male connector - BSPP

Tube dia 1	Thread B	Ordercode	Box Qty
4	1/8	F4PB4-1/8	20
4	1/8	F4PB4-1/8	20
6	1/8	F4PB6-1/8	30
8	1/8	F4PB8-1/8	40
6	1/4	F4PB6-1/4	30
8	1/4	F4PB8-1/4	30
10	1/4	F4PB10-1/4	20
12	1/4	F4PB12-1/4	10
8	3/8	F4PB8-3/8	20
10	3/8	F4PB10-3/8	20
12	3/8	F4PB12-3/8	10
14	3/8	F4PB14-3/8	10
10	1/2	F4PB10-1/2	10
12	1/2	F4PB12-1/2	10
14	1/2	F4PB14-1/2	10

Manually Operated Dump Valves

Symbols



- Shuts off upstream and dumps downstream pressure.
- Padlockable version.

Moduflex Series Dump Valves enable the depressurisation of downstream air in the event of an emergency or system failure. They are provided with high visibility large striker knobs and vent through the exhaust port.

The padlock slide may be assembled on either side. It is recommended that this is assembled after mounting.

Note: This is a permanent assembly and may not be removed later

Options:

P3		D A				L N
40 Series **H**		BSPP (G) **1**		**40** 1/4 **2**		Red knob (Mono stable)(1) **N**
60 series **K**		NPT **9**		**60** 1/2 **4**		Red knob (Bistable) **R**

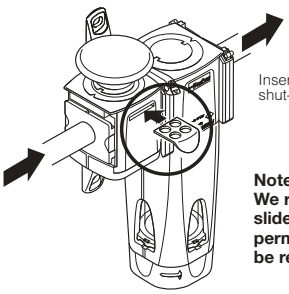
(1) 40 Series Only

Technical Information

Flow Capacity		1/4	
		1/2	47 dm³/s
Operating Temperature		1/4	-20°C to +80°C
		1/2	-20°C to +80°C
Supply Range	Bistable	1/4	0,4 - 17 bar
		1/2	0,4 - 17 bar
	Monostable	1/4	2,2 - 17 bar

Weight (g)

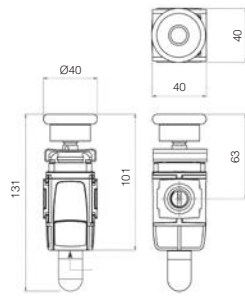
	1/4	1/2
Bistable 3/2 valve with lockable facility	227	400
Mono stable 3/2 valve with lockable facility	227	



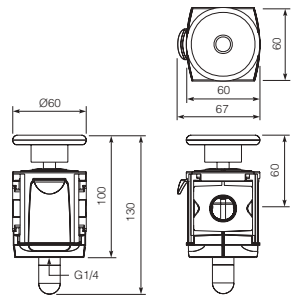
Note:
We recommend that the locking slide is assembled last. It is a permanent assembly and cannot be removed later.

Dimensions (mm)

Moduflex 40



Moduflex 60

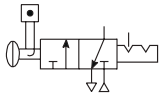


For exhaust mufflers see page 85

Modular Ball Valve

Moduflex Series Ball Valves provide shut off line pressure with a non-sticking 90° turn handle to prevent unauthorised adjustment. When the inlet pressure is turned off the downstream vents through the exhaust port.

Symbols



- Positive bubble tight shut-off.
- 90° turn handle to prevent unauthorised adjustment.
- Padlockable.
- When the inlet pressure is turned off the downstream vents through the exhaust port.

The padlock slide may be assembled on either side.
It is recommended that this is assembled after mounting.

Note: This is a permanent assembly and may not be removed later

Options:

P3		V A			L N
40 Series	H		BSPP (G)	1	
60 Series	K		NPT	9	
80 Series	M				

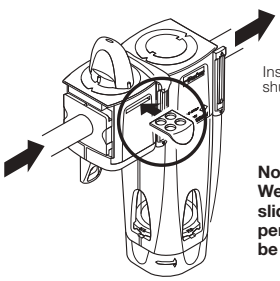
40	G1/8	1
	G1/4	2
60	G3/8	3
	G1/2	4
80	G1/2	4
	G3/4	6
	G1	8

Technical Information

Flow Capacity:	Size 40	Size 60	Size 80
	1/8=20 dm³/s	3/8=90 dm³/s	1/2 = 265 dm³/s
	1/4=20 dm³/s	1/2=122 dm³/s	3/4 = 320 dm³/s
			1" = 340 dm³/s
Operating Temperature:		-20°C to +80°C	
Maximum Supply Pressure:		17 bar	

Weight (g)

3/2 valve with lockable facility	Size 40	Size 60	Size 80
	1/8 = 195	3/8 = 470	1/2 = 920
	1/4 = 190	1/2 = 450	3/4 = 900
			1" = 840

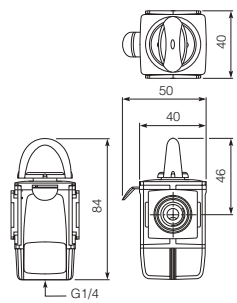


Insert slide in shut-off position

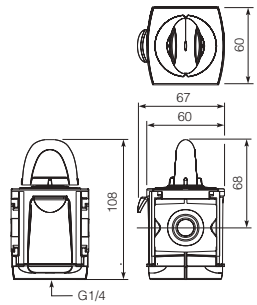
Note:
We recommend that the locking slide is assembled last. It is a permanent assembly and cannot be removed later.

Dimensions (mm)

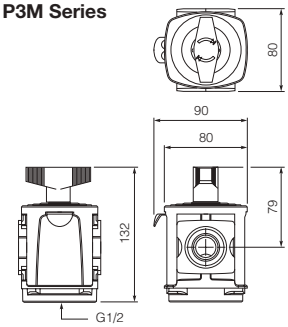
P3H Series



P3K Series



P3M Series



For exhaust mufflers see page 85

Modular Manifold

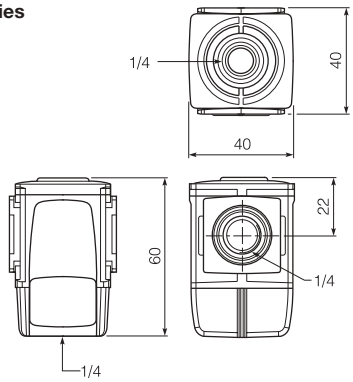
Moduflex Series Manifolds, provide up to 4 extra outlet ports, they may be assembled at any position in a combination e.g. before the lubricator to provide oil free take off or at the end of a combination to provide extra outlet ports.

Series	Description	Order code	Weight (g)
P3H	G1/4	**P3HMA1V0N**	148
P3K	G1/2	**P3KMA1V0N**	226
P3M	G1/2	**P3MMA140N**	572
P3M	G3/4	**P3MMA160N**	545
P3M	G1	**P3MMA180N**	500

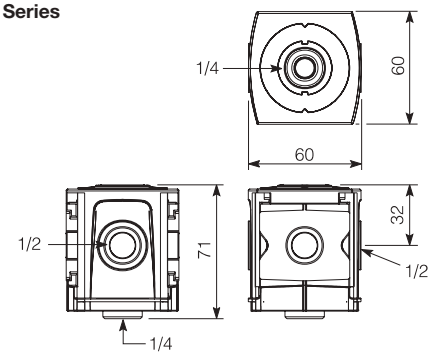
Note: For NPT version replace figure **1** with **9**

Dimensions (mm)

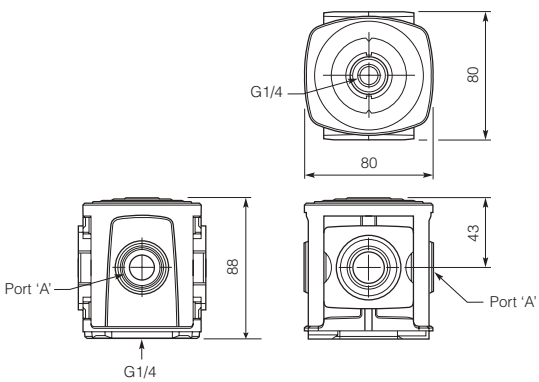
P3H Series



P3K Series



P3M Series



Inlet port	Port A
1/2	1/2
3/4	3/4
1"	3/4

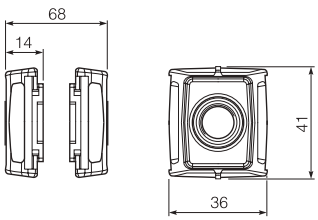
Optional Port Block Kits

- To change port sizes Port Block Kits are available, they are attached to any unit utilising the 'Cliplok' system.
- Allows assemblies to be removed from a hard piped system.

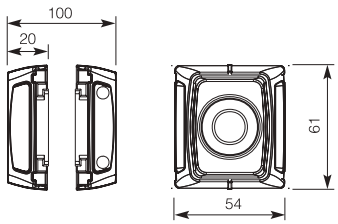
Series	Connection	Order Code	Weight (g)
P3H	G1/8	**P3HKAD1CP**	26
P3H	G1/4	**P3HKAD2CP**	26
P3K	G3/8	**P3KKAD3CP**	190
P3K	G1/2	**P3KKAD4CP**	180
P3K	G3/4	**P3KKAD6CP**	180
P3M	G1/2	**P3MKAD4CP**	518
P3M	G3/4	**P3MKAD6CP**	483
P3M	G1"	**P3MKAD8CP**	438

Note: For NPT version replace figure **D** with **F**

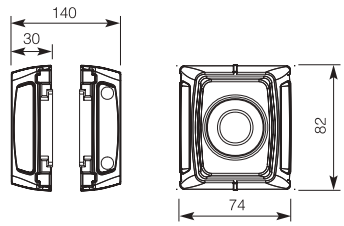
P3H Series



P3K Series



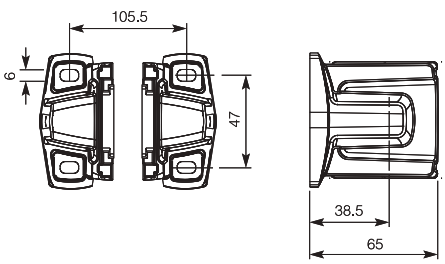
P3M Series



Rear Entry Connector Kits - P3K Series

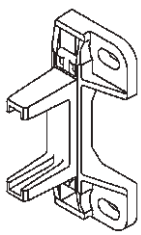
The Rear Entry Connector is available in 1/2".port size and enables single units or combinations to be mounted on a bulkhead with the air connections made from the rear.

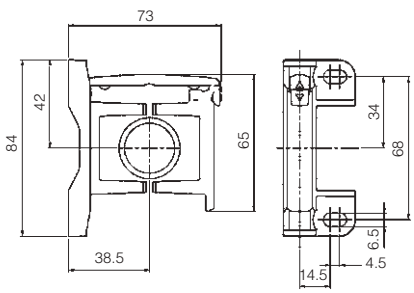
Please note: Only to be used with **P3KKB00CW** and **P3KKA00CH**



Thread	Connection	Order Code	Weight (g)
BSPP	1/2	**P3KKAR4CR**	250
NPT	1/2	**P3KKAT4CR**	250

Universal Wall Connector Kit - P3K Series

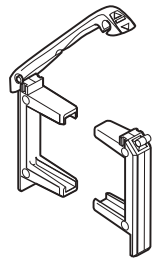




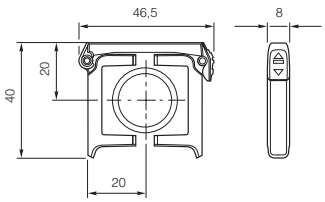
Overstrap type	Order Code	Weight (g)
Plastic	**P3KKA00CK**	56
Metal	**P3KKA00CM**	56

Accessories

Modular Connector (Cliplok) Kit

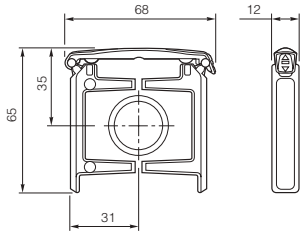


P3H Series



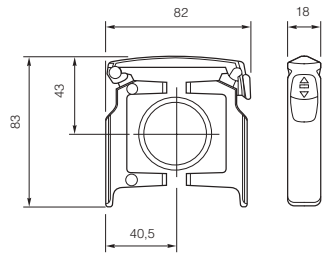
Overstrap type	Weight (g)	Order code
Plastic	8	**P3HKA00CB**
Metal	8	**P3HKA00CG**

P3K Series



Overstrap type	Weight (g)	Order code
Plastic	22	**P3KKB00CB**
Metal	22	**P3KKA00CG**

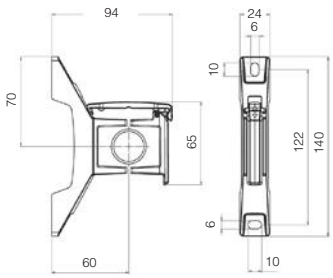
P3M Series

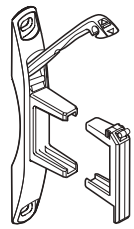


Overstrap type	Weight (g)	Order code
Plastic	71	**P3MKA00CB**
Metal	71	**P3MKA00CG**

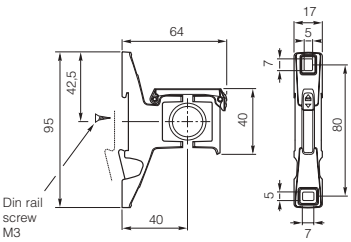
Wall Mounting Bracket Connector Kit

P3K Series - Standard



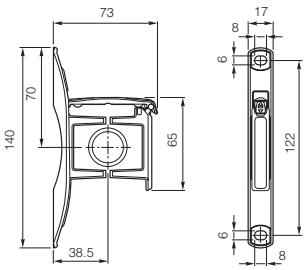


P3H Series



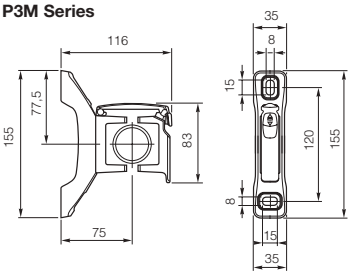
Overstrap type	Weight (g)	Order code
Plastic	32	**P3HKA00CW**
Metal	32	**P3HKA00CH**
Din rail mounting kit	2	**P3HKA00MD**

P3K Series - Compact



Overstrap type	Weight (g)	Order code
Plastic compact	70	**P3KKB00CW**
Metal compact	70	**P3KKA00CH**
Plastic standard	80	**P3KKC00CW**
Metal standard	80	**P3KKC00CH**

P3M Series

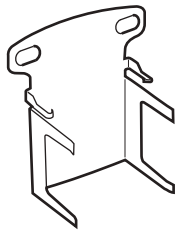


Overstrap type	Weight (g)	Order code
Plastic	168	**P3MKA00CW**
Metal	168	**P3MKA00CH**

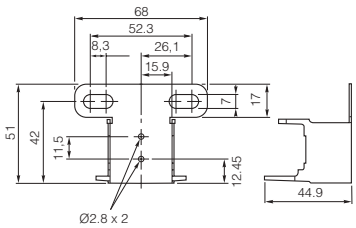
Accessories

Single Unit Mounting Bracket

Suitable for individual Filters and Lubricator mounting

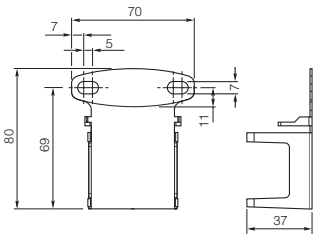


P3H Series



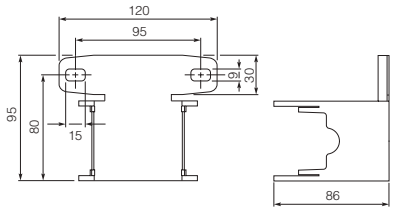
Series	Weight (g)	Order code
P3H	25	**P3HKA00MW**

P3K Series



Series	Weight (g)	Order code
P3K	44	**P3KKA00MW**

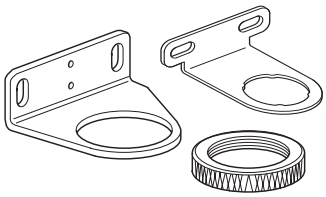
P3M Series



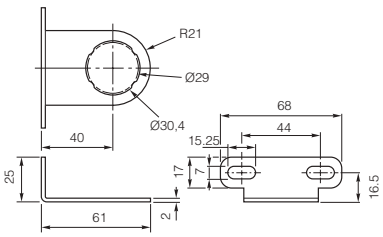
Series	Weight (g)	Order code
P3M	130	**P3MKA00MW**

Regulator & Filter Regulator Angle Bracket

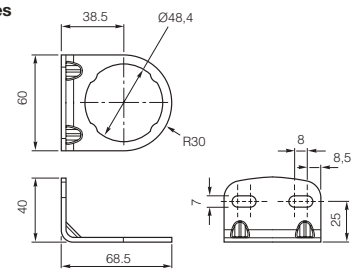
Suitable for individual Regulator and Filter-Regulator mounting



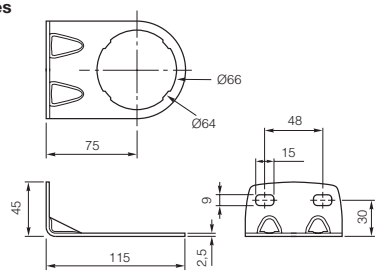
P3H Series



P3K Series



P3M Series



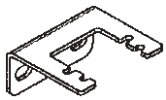
Series	Description	Weight (g)	Order code
P3H	Angle bracket + plastic nut	44.5	**P3HKA00MR**
P3H	Angle bracket + metal nut	47	**P3HKA00MS**
P3K	Angle bracket + plastic nut	74.5	**P3KKA00MR**
P3K	Angle bracket + metal nut	79	**P3KKA00MS**

Series	Description	Weight (g)	Order code
P3M	Angle bracket + metal nut	171	**P3MKA00MS**

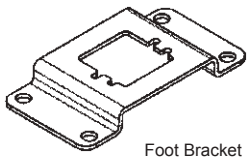
Dimension Drawings

Soft Start & Dump Valve Mounting Brackets

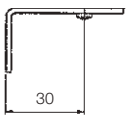
Order Code	Description
P3HKA00ML	L-Bracket mounting kit
P3HKA00MC	Foot bracket mounting kit

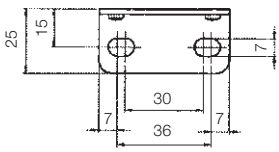


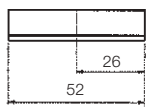
L-Bracket

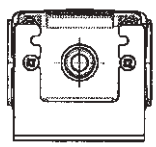


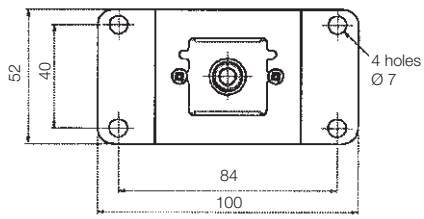
Foot Bracket





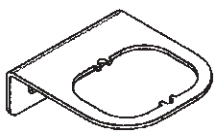




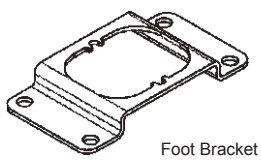


Soft Start & Dump Valve Mounting Brackets

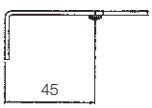
Order Code	Description
P3KKA00ML	L-Bracket mounting kit
P3KKA00MC	Foot bracket mounting kit

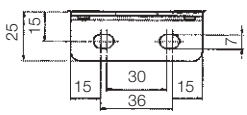


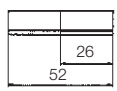
L-Bracket

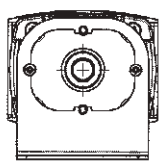


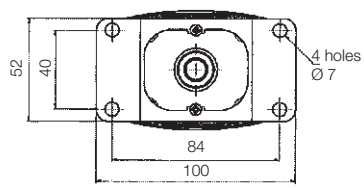
Foot Bracket



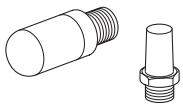
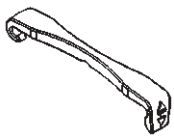
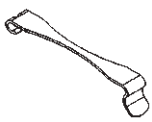








Accessories

Series	Description		Connection	Weight (g)	Order code	
P3H	Panel mounting nut (Aluminium)			5	**P3HKA00MM**	
P3K	Panel mounting nut (Aluminium)			8.5	**P3KKA00MM**	
P3M	Panel mounting nut (Aluminium)			24	**P3MKA00MM**	
P3H	Regulator & Filter/Regulator - Tamperproof kit			29	**P3HKA00AL**	
P3K				75	**P3KKA00AL**	
P3M				105	**P3MKA00AL**	
	* Padlock not included					
P3H	Tamperproof knob kit			6.7	**P3HKA00AT**	
P3K				14	**P3KKA00AT**	
P3M				36	**P3MKA00AT**	
P3H	Pressure gauge	0 to 2 bar	1/8	35	**P3D-KAB1AYN**	
		0 to 4 bar	1/8	35	**P3D-KAB1ALN**	
		0 to 10 bar	1/8	35	**P3D-KAB1ANN**	
		0 to 20 bar	1/8	35	**P3D-KAB1AHN**	
P3K	Pressure gauge	0 to 4 bar	1/4	50	**P6G-ERB2040**	
P3M		0 to 11 bar	1/4	50	**P6G-ERB2110**	
		0 to 20 bar	1/4	50	**P6G-ERB2200**	
P3H	Exhaust Muffler					
P3K	Plastic Series		1/4		**P6M-PAB2**	
	Sintered Bronze Series		1/4		**P6M-BAA2**	
P3M	Plastic Series		1/2		**P6M-PAB4**	
P3H	Overstrap (Spares kit)			10	**P3HKA00CF**	
P3K	(pack of 10)			20	**P3KKB00CF**	
P3M				50	**P3MKA00CF**	
P3H	Connector O ring (Spares kit)			2	**P3HKA02CY**	
P3K	(pack of 5)			2	**P3KKA04CY**	
P3M				5	**P3MKA08CY**	
P3H	Metal Overstrap (Spares kit)			13.6	**P3HKA00CJ**	
P3K	(pack of 10)			29.7	**P3KKA00CJ**	
P3M				62	**P3MKA00CJ**	

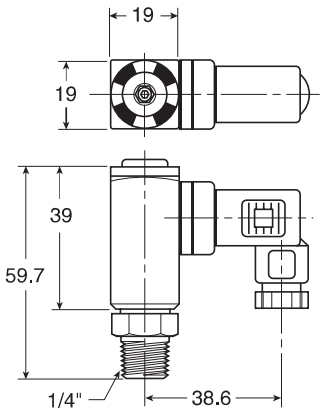
Pressure Switch

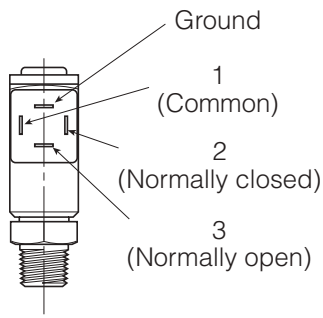
- Inline Mounting
- Dial indicator for easy pressure setting
- 5 amp rated snap action micro switch
- Heavy duty aluminium component
- Compact size
- DIN 43650HCM connector included
- IP65 Rated
- Field adjustable 2 - 10 bar
- +/- 2% repeatability
- Single pole / Double throw switch

The Pressure Switch monitors the air pressure in your pneumatic system. When the pressure in your system either drops below or exceeds the set point, an electrical output is generated.

Using a 3mm hex wrench, turn the adjusting screw on top of the unit clockwise to increase the pressure set point and couterclockwise to decrease the pressure setting. One complete revolution of the adjusting screw covers the complete adjustment range (2 - 10 bar).

Description	Order code	Weight (g)
G1/4	**P01913**	90



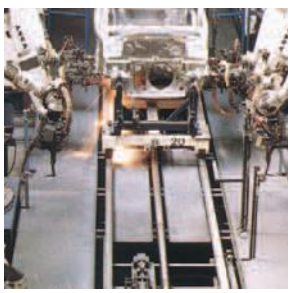


Technical Information

Electrical:	5 amp, 12/24VDC, 125/250VAC
Maximum inlet pressure:	20 bar
Mechanical life:	10^6 at standard operating conditions
Electrical connection:	DIN 43650HCM
Electrical protection:	IP65
Repeatability:	±2% at 20°C ambient
Temperature range:	-40°C to 80°C
Weight:	60 g

Material Specification

Diaphragm:	Nitrile
Housing:	Anodised aluminium



Moduflex Proportional Regulator

1/4" and 1/2" ported

Energy Saving

Low Watt Power Consumption

No Unnecessary Loss of Air in Steady State

Man-machine interface

High visibility LED display

Easy to read characters

All controls on the same face

Total flexibility

User friendly and easily accessible software

One basic unit suits all customer requirements

Special applications

Clean line design

Forced exhaust

Side exhaust

Compact & light weight

Small envelope

Light weight

Flexible mounting options

Stand-alone

Foot bracket mounting

DIN-rail mounting

Modular mounting to Moduflex Air Prep

Outstanding performance

Very fast response times

Full flow exhaust

Excellent linearity

Generic Industries

The Moduflex Proportional Regulators are designed to quickly and accurately adjust and maintain a set output pressure.

The unit will operate regardless of flow, in response to an electronic control signal. The medium can be compressed air or an inert gas.

Applications for this technology are virtually unlimited; from paint spray control, paper manufacture and printing to weaving and laser cutting control; in fact anywhere that requires accurate remote pressure control.

Automation

In the field of general automation, the need to control processes or movement via electronic signals is of paramount importance. This new unit provides the facility to incorporate pressure control into a fully integrated control system.

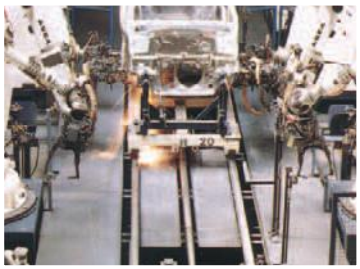
Packaging and Food

The Packaging and Food industry provides another ideal area for application of the Electronic Proportional Regulator, where fine control of tension on wrapping foils and paper is required. The degree of control and the ability to manually change parameters makes this unit ideally suited to the varying requirements of this industry.

Automotive

Applications for this innovative product in the Automotive industry can be seen in major manufacturers 'body-in-white' lines.

The control of clamping and welding forces during panel assembly is an ideal application, also accurate control in paint dipping and spraying can be achieved



Why proportional technology ?

The difference between open or closed circuit control

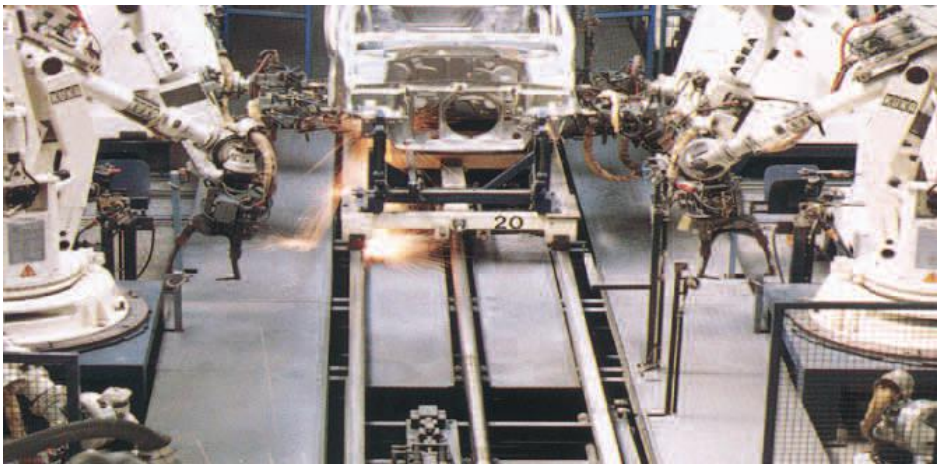
Standard pressure regulators, designed as part of our FRL series go a long way towards meeting our customers needs. In most cases these regulators work well in general pneumatic and automation applications. However, sometimes the application calls for more precise pressure control. The effects of time, cycling, input, back pressure or pressure and flow variation can all cause inconsistencies in pneumatic systems. Our new Proportional Regulators are designed to eliminate those inconsistencies.

Open Control Circuit
In a normal pressure regulated control system, the inlet pressure (p1) is converted into the output pressure (p2) by the regulator. The set pressure (set value) is usually manually set by adjusting the control knob and in normal circumstances the regulator maintains the output pressure (actual value).
No facility for monitoring the output pressure is provided and there is consequently no way of checking that the set value and the actual value are the same. Also, no account is taken of external influences such as air consumption by the system, which can drastically alter the actual value.

Closed Loop Control Circuit
The input signal (set value) is converted into the output value (actual value) - as in control systems but this output value is continuously measured and compared with the input signal. If they are different, the regulation unit intervenes and adjusts the output value to correspond to the set value.

Proportional Pressure Regulators
The unit provides all the advantages of a closed circuit regulated system. When a set value is defined via the input signal (e.g. 0-10V), the pressure regulator sets the corresponding output pressure (e.g. 0-10 bar). At the same time the integrated pressure sensor measures the actual pressure at the unit's outlet (actual value).
If the electronic regulation system finds that the actual value has deviated from the set value, it immediately corrects the actual value. This is a continuous process ensuring fast, accurate pressure regulation.

Typical application in automotive body in white welding pressure control



- Very fast response times
- Accurate output pressure
- Micro parameter settings
- Selectable I/O parameters
- Quick, full flow exhaust
- LED display indicates output pressure
- No air consumption in steady state
- Multiple mounting options
- Protection to IP65


P3HN series
Bottom exhaust


P3KN series
Bottom exhaust


Side exhaust
versions


Modular
mounting

Order Key

P 3 [ ] N A 1 [ ] A [ ] 2 [ ] [ ] 1 A

	Series
H	Moduflex 40 (1/4")
K	Moduflex 60 (1/2")

	Port type
1	G Thread (BSP)
9	NPT Thread

	Port size
2	1/4
4	1/2

	Version
A	Bottom exhaust
B	Side exhaust
E	Forced exhaust *

	Pressure Range
Z	0 - 2 bar
S	0 - 7 bar
D	0 - 10 bar

	Power supply
2	24 volts

	Control Signal
A	4-20mA
V	0-10 V

	Output Signal	
D	Digital, PNP	1)
P	PNP or 0-10V	2)
N	NPN or 0-10V	3)
M	4-20mA fixed	4)

	Input connector
1	M12 (4 pin)

On request

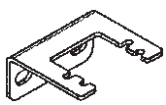
* When the supply voltage is lost the unit will automaticaly exhaust the regulated pressure to 0 bar (atmospheric pressure)

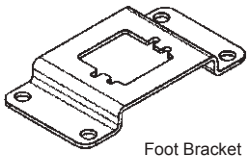
1) Digital PNP output only, no analogue output selectable
2) Digital PNP and analogue 0-10V outputs selectable, by means of parameter 6. (Factory default 0-10V)
3) Digital NPN and analogue 0-10 V outputs selectable by means of parameter 6. (Factory default 0-10V)
4) Analogue 4-20mA output only.

Note: On all analogue outputs the F.S. value can be adjusted by means of parameter 8

P3HNA Mounting brackets

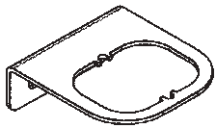
Order Code	Description
P3HKA00ML	L-Bracket mounting kit
P3HKA00MC	Foot bracket mounting kit

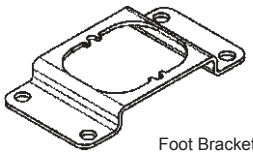

L-Bracket


Foot Bracket

P3KNA Mounting brackets

Order Code	Description
P3KKA00ML	L-Bracket mounting kit
P3KKA00MC	Foot bracket mounting kit


L-Bracket


Foot Bracket

Cables

Order Code	Description
P8L-MC04A2A-M12	2 mtr. cable with moulded straight M12x1 connector
P8L-MC04R2A-M12	2 mtr. cable with moulded 90 degree M12x1 connector.

Popular Options

Port Size	Order Code	Control Signal	Output Signal	Output Pressure
G1/4	**P3HNA12AS2VD1A**	0-10 V	Digital, PNP only	0 - 7 bar
G1/4	**P3HNA12AZ2VD1A**	0-10 V	Digital, PNP only	0 - 2 bar
G1/4	**P3HNA12AD2VD1A**	0-10 V	Digital, PNP only	0 -10 bar
G1/4	**P3HNA12AS2AD1A**	4-20Ma	Digital, PNP only	0 - 7 bar
G1/4	**P3HNA12AZ2AD1A**	4-20Ma	Digital, PNP only	0 - 2 bar
G1/4	**P3HNA12AD2AD1A**	4-20Ma	Digital, PNP only	0 -10 bar
G1/4	**P3HNA12AS2AP1A**	4-20Ma	Digital, PNP or 0-10V	0 - 7 bar
G1/4	**P3HNA12AZ2AP1A**	4-20Ma	Digital, PNP or 0-10V	0 - 2 bar
G1/4	**P3HNA12AD2AP1A**	4-20Ma	Digital, PNP or 0-10V	0 -10 bar
G1/4	**P3HNA12AS2AN1A**	4-20Ma	Digital, NPN or 0-10V	0 - 7 bar
G1/4	**P3HNA12AZ2AN1A**	4-20Ma	Digital, NPN or 0-10V	0 - 2 bar
G1/4	**P3HNA12AD2AN1A**	4-20Ma	Digital, NPN or 0-10V	0 -10 bar
G1/4	**P3HNA12AS2AM1A**	4-20Ma	4-20mA, analogue only	0 - 7 bar
G1/4	**P3HNA12AZ2AM1A**	4-20Ma	4-20mA, analogue only	0 - 2 bar
G1/4	**P3HNA12AD2AM1A**	4-20Ma	4-20mA, analogue only	0 - 10 bar
G1/4	**P3HNA12AS2VP1A**	0-10 V	Digital, PNP or 0-10V	0 - 7 bar
G1/4	**P3HNA12AZ2VP1A**	0-10 V	Digital, PNP or 0-10V	0 - 2 bar
G1/4	**P3HNA12AD2VP1A**	0-10 V	Digital, PNP or 0-10V	0 -10 bar
G1/4	**P3HNA12AS2VN1A**	0-10 V	Digital, NPN or 0-10V	0 - 7 bar
G1/4	**P3HNA12AZ2VN1A**	0-10 V	Digital, NPN or 0-10V	0 - 2 bar
G1/4	**P3HNA12AD2VN1A**	0-10 V	Digital, NPN or 0-10V	0 -10 bar
G1/4	**P3HNA12AS2VM1A**	0-10 V	4-20mA, analogue only	0 - 7 bar
G1/4	**P3HNA12AZ2VM1A**	0-10 V	4-20mA, analogue only	0 - 2 bar
G1/4	**P3HNA12AD2VM1A**	0-10 V	4-20mA, analogue only	0 - 10 bar
G1/2	**P3KNA14AS2VD1A**	0-10 V	Digital, PNP only	0 - 7 bar
G1/2	**P3KNA14AZ2VD1A**	0-10 V	Digital, PNP only	0 - 2 bar
G1/2	**P3KNA14AD2VD1A**	0-10 V	Digital, PNP only	0 -10 bar
G1/2	**P3KNA14AS2AD1A**	4-20Ma	Digital, PNP only	0 - 7 bar
G1/2	**P3KNA14AZ2AD1A**	4-20Ma	Digital, PNP only	0 - 2 bar
G1/2	**P3KNA14AD2AD1A**	4-20Ma	Digital, PNP only	0 -10 bar
G1/2	**P3KNA14AS2AP1A**	4-20Ma	Digital, PNP or 0-10V	0 - 7 bar
G1/2	**P3KNA14AZ2AP1A**	4-20Ma	Digital, PNP or 0-10V	0 - 2 bar
G1/2	**P3KNA14AD2AP1A**	4-20Ma	Digital, PNP or 0-10V	0 -10 bar
G1/2	**P3KNA14AS2AN1A**	4-20Ma	Digital, NPN or 0-10V	0 - 7 bar
G1/2	**P3KNA14AZ2AN1A**	4-20Ma	Digital, NPN or 0-10V	0 - 2 bar
G1/2	**P3KNA14AD2AN1A**	4-20Ma	Digital, NPN or 0-10V	0 -10 bar
G1/2	**P3KNA14AS2AM1A**	4-20Ma	4-20mA, analogue only	0 - 7 bar
G1/2	**P3KNA14AZ2AM1A**	4-20Ma	4-20mA, analogue only	0 - 2 bar
G1/2	**P3KNA14AD2AM1A**	4-20Ma	4-20mA, analogue only	0 - 10 bar
G1/2	**P3KNA14AS2VP1A**	0-10 V	Digital, PNP or 0-10V	0 - 7 bar
G1/2	**P3KNA14AZ2VP1A**	0-10 V	Digital, PNP or 0-10V	0 - 2 bar
G1/2	**P3KNA14AD2VP1A**	0-10 V	Digital, PNP or 0-10V	0 -10 bar
G1/2	**P3KNA14AS2VN1A**	0-10 V	Digital, NPN or 0-10V	0 - 7 bar
G1/2	**P3KNA14AZ2VN1A**	0-10 V	Digital, NPN or 0-10V	0 - 2 bar
G1/2	**P3KNA14AD2VN1A**	0-10 V	Digital, NPN or 0-10V	0 -10 bar
G1/2	**P3KNA14AS2VM1A**	0-10 V	4-20mA, analogue only	0 - 7 bar
G1/2	**P3KNA14AZ2VM1A**	0-10 V	4-20mA, analogue only	0 - 2 bar
G1/2	**P3KNA14AD2VM1A**	0-10 V	4-20mA, analogue only	0 - 10 bar

- Very fast response times
- Accurate output pressure
- Micro parameter settings
- Selectable I/O parameters
- Quick, full flow exhaust
- LED display indicates output pressure
- No air consumption in steady state
- Multiple mounting options

Order Key

P 3 H P A 1 ☐ A ☐ 2 ☐ ☐ 1 A

	Port type
1	G Thread (BSP) Female
9	NPT Thread Female

	Port size
1	1/8
2	1/4

	Version
A	Bottom exhaust
B	Side exhaust
E	Forced exhaust *

	Pressure Range
Z	0 - 2 bar
S	0 - 7 bar
D	0 - 10 bar

	Power supply
2	24 volts

	Control Signal
A	4-20mA
V	0-10 V

	Output Signal	
D	Digital, PNP	1)
P	PNP or 0-10V	2)
N	NPN or 0-10V	3)
M	4-20mA fixed	4)

	Input connector
1	M12 (4 pin)

☐ **On request**

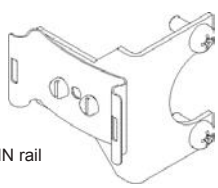
*** When the supply voltage is lost the unit will automaticaly exhaust the regulated pressure to 0 bar (atmospheric pressure)**

1) **Digital PNP output only, no analogue output selectable**
2) **Digital PNP and analogue 0-10V outputs selectable, by means of parameter 6. (Factory default 0-10V)**
3) **Digital NPN and analogue 0-10 V outputs selectable by means of parameter 6. (Factory default 0-10V)**
4) **Analogue 4-20mA output only.**

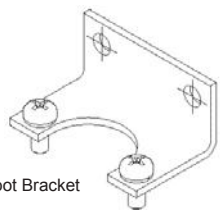
Note: On all analogue outputs the F.S. value can be adjusted by means of parameter 8

P3HKA Mounting brackets

Order Code	Description
P3HKA00MK	DIN rail mounting kit
P3HKA00MF	Foot bracket mounting kit



DIN rail



Foot Bracket

Cables

Order Code	Description
P8L-MC04A2A-M12	2 mtr. cable with moulded straight M12x1 connector
P8L-MC04R2A-M12	2 mtr. cable with moulded 90 degree M12x1 connector.

Popular Options

Port Size	Order Code	Control Signal	Output Signal	Output Pressure
G1/4	**P3HPA12AZ2VD1A**	0-10 V	Digital, PNP only	0 - 2 bar
G1/4	**P3HPA12AS2VD1A**	0-10 V	Digital, PNP only	0 - 7 bar
G1/4	**P3HPA12AD2VD1A**	0-10 V	Digital, PNP only	0 -10 bar
G1/4	**P3HPA12AZ2VP1A**	0 - 10 V	Digital, PNP or 0-10V	0 - 2 bar
G1/4	**P3HPA12AS2VP1A**	0 - 10 V	Digital, PNP or 0-10V	0 - 7 bar
G1/4	**P3HPA12AD2VP1A**	0 - 10 V	Digital, PNP or 0-10V	0 - 10 bar
G1/4	**P3HPA12AZ2VN1A**	0 - 10 V	Digital, NPN or 0-10V	0 - 2 bar
G1/4	**P3HPA12AS2VN1A**	0 - 10 V	Digital, NPN or 0-10V	0 - 7 bar
G1/4	**P3HPA12AD2VN1A**	0 - 10 V	Digital, NPN or 0-10V	0 -10 bar
G1/4	**P3HPA12AZ2VM1A**	0 - 10 V	4-20mA, analogue only	0 - 2 bar
G1/4	**P3HPA12AS2VM1A**	0 - 10 V	4-20mA, analogue only	0 - 7 bar
G1/4	**P3HPA12AD2VM1A**	0 - 10 V	4-20mA, analogue only	0 - 10 bar
G1/4	**P3HPA12AZ2AD1A**	4-20mA	Digital, PNP only	0 - 2 bar
G1/4	**P3HPA12AS2AD1A**	4-20mA	Digital, PNP only	0 - 7 bar
G1/4	**P3HPA12AD2AD1A**	4-20mA	Digital, PNP only	0 -10 bar
G1/4	**P3HPA12AZ2AP1A**	4-20mA	Digital, PNP or 0-10V	0 - 2 bar
G1/4	**P3HPA12AS2AP1A**	4-20mA	Digital, PNP or 0-10V	0 - 7 bar
G1/4	**P3HPA12AD2AP1A**	4-20mA	Digital, PNP or 0-10V	0 - 10 bar
G1/4	**P3HPA12AZ2AN1A**	4-20mA	Digital, NPN or 0-10V	0 - 2 bar
G1/4	**P3HPA12AS2AN1A**	4-20mA	Digital, NPN or 0-10V	0 - 7 bar
G1/4	**P3HPA12AD2AN1A**	4-20mA	Digital, NPN or 0-10V	0 -10 bar
G1/4	**P3HPA12AZ2AM1A**	4-20mA	4-20mA, analogue only	0 - 2 bar
G1/4	**P3HPA12AS2AM1A**	4-20mA	4-20mA, analogue only	0 - 7 bar
G1/4	**P3HPA12AD2AM1A**	4-20mA	4-20mA, analogue only	0 - 10 bar

Technical information

Pneumatics

Working medium
Compressed air or inert gasses, filtered to min. 40µ, lubricated or non-lubricated, dried or un-dried, pressure dewpoint 3-5°C.

Supply pressure

	Max. Operating Pressure:
2 bar unit:	3 bar (43.5 PSI)
7 bar unit:	10.5 bar (152 PSI)
10 bar unit:	10.5 bar (152 PSI)
Min. Operating Pressure	P2 Pressure + 0,5 bar (7.3 PSI)

Pressure control range
Available in three pressure ranges, 0-2 bar, 0-7 bar or 0-10 bar. Pressure range can be changed through the software at all times. (parameter 19)

Temperature range
0°C up to +50°C (32°F up to122°F)

Weights:
P3HP = 285 g
P3HN = 291 g
P3KN = 645 g

Air consumption
No consumption in stable regulated situation.

Display
The regulator is provided with a digital display, indicating the output pressure, either in BAR or PSI.
The factory setting is as indicated on the label, can be changed through to software at all times (parameter 14).

Electronics

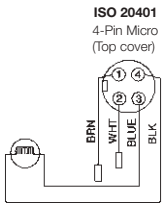
Supply voltage
24 VDC +/- 10%

Power consumption
Max. 1.1W with unloaded signal outputs

Control signals
The electronic pressure regulator can be externally controlled through an analogue control signal of either 0-10V or 4-20mA.(parameter 4).

Output signals
As soon as the output pressure is within the signal band a signal is given of 24V DC, PNP Ri = 1 kOhm
Outside the signal band this connection is 0V.

Connections
(In case of output signal (option D))
Central M12 connector 4-pole

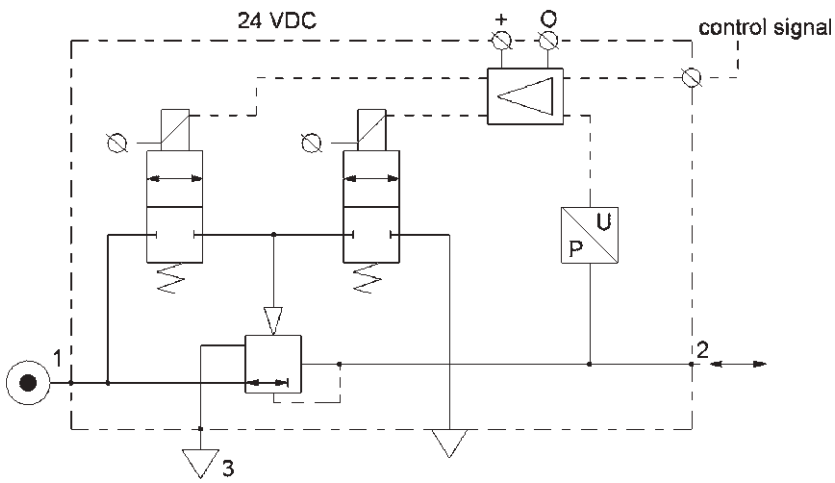


The electrical connections are as follows:

Pin no.		Function	Colour
1	24V	supply	brown
2*	0-10V*	control signal Ri = 100 kOhm	white
3	0V (GND)	supply	blue
4	24V	alarm output signal	black

* In case of 4-20 mA the Ri will be 500 Ohm.

Schematic



Technical information

Dead band
The dead band is preset at 1,3% F.S.
(parameter 13).

Accuracy
Linearity: = < 0,3% F.S.

Proportional band
The proportional band is preset at 10% F.S.

Fail safe operation
After interrupting the **power supply** the present output pressure is maintained at approximately the same level. After switching on the power supply again the pressure can be adjusted immediately by giving a new control signal.

Full exhaust
Complete exhaust of the regulator is defined as P2 ≤ 1% F.S.

Full scale (F.S.)
For 2 bar versions this will 2 bar, for the 7 and 10 bar version full scale will be 10 bar.

EU conformity
CE: standard
EMC: according to directive 89/336/EEC
The new pressure regulator is in accordance with:

EN 61000-6-1:2001
EN 61000-6-2:2001
EN 61000-6-3:2001
EN 61000-6-4:2001

These standards ensure that this unit meets the highest level of EMC protection.

Mounting position
Preferably vertically, with the cable gland on top.

Materials: P3HN & P3KN Versions
- Magnet Core .....Steel
- Solenoid Valve Poppet ..... FPM
- Solenoid Valve Housing ..... Techno Polymer
- Regulator Body (P3HN & P3KN versions) .....Aluminium
- Regulator Top Housing ..... Nylon
- Valve head .....Brass & NBR
- Remaining Seals ..... NBR

Materials: P3HP Versions
- Magnet Core .....Steel
- Solenoid Valve Poppet ..... FPM
- Solenoid Valve Housing ..... Techno Polymer
- Valve .....Polyurethane
- Seats and Auxilliary Piston ..... Delrin, Brass
- Remaining Seals ..... NBR
- Port Connections ..... Brass
- Regulator Top Housing .....ABS

Advanced functionality

Pilot valve protection
When the required output pressure can not be achieved because of a lack of input pressure the unit will open fully and will display NoP. Approximately every 10 seconds the unit will retry. The output pressure will then be approximately equal to the inlet pressure. As soon as the input pressure is back on the required level, the normal control function follows.

Safety exhaust
Should the **control signal** fall below 0,1 volts the valve will automatically dump downstream system pressure .

Fail safe
When the supply voltage drops, the electronic control reverts to the fail safe mode. The last known output pressure is maintained at approximately the same level depending upon air consumption. The digital display indicates the last known pressure setting.
When the supply voltage is reinstated to the correct level, the valve moves from the fail safe mode and the output pressure immediately follows the control signal requirement.
The display indicates the actual output pressure.

Input protection
The unit has built-in protection against failure and burnout resulting from incorrect input value, typically:

The 24v DC supply is incorrectly connected to the setpoint input, the display will show 'OL', as an overload indication. The unit will need to be rewired and when correctly connected will operate normally.

The overload indicator 'OL' will also appear should the wrong input value be applied or the wrong input value be programmed: 4 - 20m instead of 0 - 10V. To correct this a different set point value should be input or the unit reprogrammed to correct the set point value acceptance. (via parameter 4).

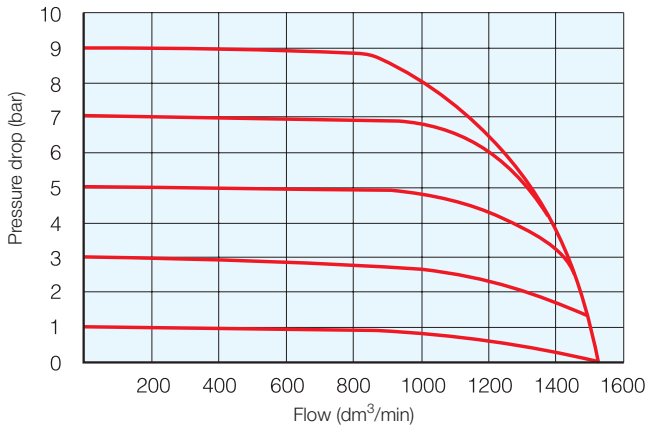
	P3HP Plastic body	P3HN Aluminium body	P3KN Aluminium body
2 to 4 bar	30 msecs	25 msecs	35 msecs
1 to 6 bar	120 msecs	55 msecs	135 msecs
4 to 2 bar	60 msecs	70 msecs	85 msecs
6 to 1 bar	160 msecs	80 msecs	225 msecs

To fill volume of:
100cm^3 - P3HP & P3HN
330cm^3 - P3KN
connected to the outlet of the regulator.

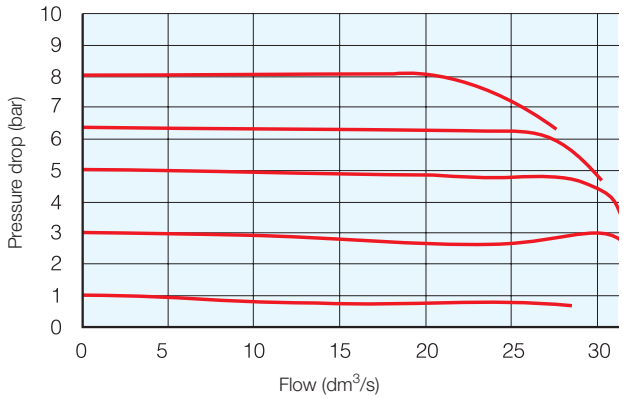
Flow charcteristics

Flow characteristics supply pressure 10 bar (150 PSI)

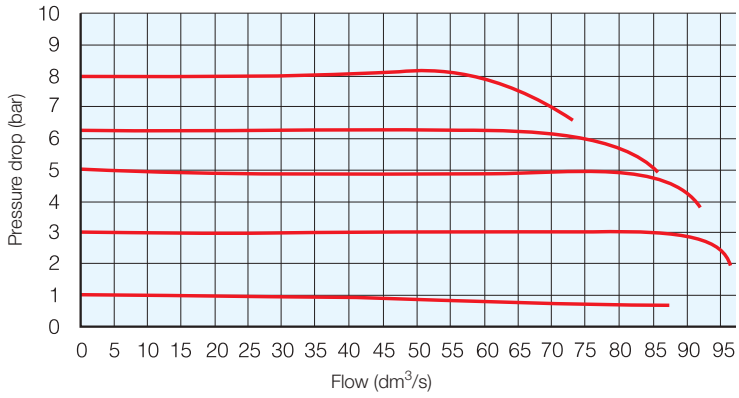
P3HPA Regulator 1/4" Ports



P3HNA Regulator 1/4" Ports



P3KNA Regulator 1/2" Ports



How to change parameters

Pressing the Accept key “acc” for more than 3 seconds, will activate parameter change mode. The user can then select the parameters by pressing up or down key. (display will show Pxx). When parameter number is correct, pressing accept again will enter parameter number.(display will show parameter value).

Pressing the up or down key will change the parameter itself. (display will flash indicating parameter editing mode). Pressing the accept key will accept the new parameter value. (all digits will flash whilst being accepted).

After releasing all keys , the next parameter number will be presented on the display. (you may step to the next parameter). When no key is pressed, after 3 seconds the display will show the actual output pressure.

When the unit is initially powered up allow approximately 10 seconds for the unit to “boot-up” before changing parameter settings.

Only parameter numbers 0, 4, 6, 8, 9, 14, 18, 19, 20, 12, 13 and 21 are accessible to edit. All other parameters are fixed.

Manual mode

When keys DOWN and UP are pressed during startup, (connecting to the 24V power supply) manual mode is activated. This means that the user is able to in/decrease the output pressure of the P3HP, by pressing the UP or DOWN key. During this action the display will blink, indicating that the manual mode is activated. After powering up again, the unit will revert back to normal mode.

Back to Factory Setting

After start up. (Power is on)
Entering this value in parameter 0 will store the calibrated factory data into the working parameters.
(Default calibration data is used)

Parameter Number 0 – Reset Back to Factory Settings

Step	1	2	3	4	5	
Press	acc 3-6 seconds	▼ or ▲	acc	▼ or ▲	acc	
Until Display Reads	Pxx	P00	000. Flashing Decimal	003. Flashing Decimal	003 Flashing	P01
Description	Accesses changeable parameters	Accesses parameter no. 0	Displays current parameter value.	Edits parameter. 3 = standard factory settings. If other than 3, use Up or Down Arrow and accept 3	Accepts and saves new parameter setting.	Sequences to next parameter.

Set Control Signal

The unit is factory set for 0-10 V control signal. If 4-20 mA control signal is required, change parameter 4.

Parameter Number 4 – Set Control Signal in Volts or Milliamps

Step	1	2	3	4	5	
Press	acc 3-6 seconds	▼ or ▲	acc	▼	acc	
Until Display Reads	Pxx	P04	001. Flashing Decimal	000. Flashing Decimal	000 Flashing	P05
Description	Accesses changeable parameters	Accesses parameter no. 4	Displays current parameter value. 1 = V 0 = mA	Edits parameter	Accepts and saves new parameter setting.	Sequences to next parameter.

Parameter Number 6 – Set output signal

Step	1	2	3	4	5	
Press	acc 3-6 seconds	or	acc	or	acc	
Until Display Reads	Pxx	P06	001 Flashing Decimal	###. Flashing Decimal (value 0, 1 or 2)	### Flashing	P07
Description	Accesses changeable parameters	Accesses parameter no. 06	Displays current parameter value. 1 =m factory default for P3H with analog options	Edits parameter 0 = digital (NPN or PNP) 1= analog 0 .. 10 V 2 = analog 4...20 mA	Accepts and saves new parameter setting.	Sequences to next parameter.

Parameter Number 8 – Adjust span analogue output signal

Step	1	2	3	4	5	
Press	acc 3-6 seconds	or	acc	or	acc	
Until Display Reads	Pxx	P08	125 Flashing Decimal (for 2 bar versions value = 92)	###. Flashing Decimal (value between 0 and 130)	### Flashing	P09
Description	Accesses changeable parameters	Accesses parameter no. 8	Displays current parameter value.	Edits parameter	Accepts and saves new parameter setting and implements the new analog signal span	Sequences to next parameter.

Adjust Digital Display

If necessary, adjustments can be made to the digital display readout in order to match to an external pressure gauge.

Parameter Number 9 – Adjust Displayed Pressure

Step	1	2	3	4	5	
Press	acc 3-6 seconds	or	acc	or	acc	
Until Display Reads	Pxx	P09	###. Flashing Decimal	###. Flashing Decimal	### Flashing	P 10
Description	Accesses changeable parameters	Accesses parameter no. 9	Displays current digital display.	Use up or down arrows and accept, to match the readout to an external pressure gauge.	Accepts and saves new parameter setting.	Sequences to next parameter.

Set Pressure Scale

Units with NPT port threads are supplied with a factory set PSI pressure scale. Use parameter 14 to change scale to bar.

Parameter Number 14 – Set Pressure Scale in PSI or bar

Step	1	2	3	4	5	
Press	acc 3-6 seconds	▼ or ▲	acc	▼ or ▲	acc	
Until Display Reads	Pxx	P 14	001. Flashing Decimal	000. Flashing Decimal	000 Flashing	P 15
Description	Accesses changeable parameters	Accesses parameter no. 14	Displays current parameter value. 1 = PSI 0 = bar	Edits parameter	Accepts and saves new parameter setting.	Sequences to next parameter.

Preset Minimum Pressure

If there is a need for a pre-set minimum pressure, use parameter 18. (Note: preset pressure is affected by % P19.)

Parameter Number 18 – Set Minimum Preset Pressure

Step	1	2	3	4	5	
Press	acc 3-6 seconds	▼ or ▲	acc	▼ or ▲	acc	
Until Display Reads	Pxx	P 18	000. Flashing Decimal	###. Flashing Decimal (value between 0 and 200)	### Flashing	P 19
Description	Accesses changeable parameters	Accesses parameter no. 18	Displays current parameter value. Incremental value is: 2 bar unit: x 2 mbar x % P19 10 bar unit: x 10 mbar x % P19	Edits parameter	Accepts and saves new parameter setting.	Sequences to next parameter.

Set Pressure Correction

Pressure correction allows the user to set a maximum pressure as a percentage of secondary pressure F.S.
Example: If F.S. is 10 bar, set parameter 19 to 50 for maximum preset pressure of 5 bar.
Pressure correction also affects the minimum preset pressure in parameter 18.
Example: If F.S. is 10 bar and parameter 18 is set to a value of 100 (1 bar), and parameter 19 is set to 50%, then the actual minimum preset pressure seen is 0.5 bar.

Parameter Number 19 – Set Maximum Preset Pressure

Step	1	2	3	4	5	
Press	acc 3-6 seconds	▼ or ▲	acc	▼ or ▲	acc	
Until Display Reads	Pxx	P 19	100. Flashing Decimal	###. Flashing Decimal (value between 0 and 100)	### Flashing	P20
Description	Accesses changeable parameters	Accesses parameter no. 19	Displays current parameter value. Incremental value is % of F.S.	Edits parameter	Accepts and saves new parameter setting.	Sequences to next parameter.

Behavior Control

The regulation speed of the pressure regulator can be modified by means of one parameter. (P 20)
The value in this parameter has a range from 0-5. A higher value indicates slower regulation speed, but will be more

Parameter Number 20 – Set Behavior Control

Step	1	2	3	4	5	
Press	acc 3-6 seconds	▲	acc	▼ or ▲	acc	
Until Display Reads	Pxx	P20	003. Flashing Decimal	###. Flashing Decimal (value between 0 and 5)	### Flashing	P21
Description	Accesses changeable parameters	Accesses parameter no. 20	Displays current parameter value.	Edits parameter 0 = custom set* 1 = fastest (narrow proportional band) 2 = fast 3 = normal 4 = slow 5 = slowest (proportional band is broad)	Accepts and saves new parameter setting.	Sequences to next parameter.

*When the value 0 is entered, you are able to create your own custom settings true parameters 12, 13 and 21.

Fine Settings

Set Proportional Band

Proportional band is used for setting the reaction sensitivity of the regulator. The displayed value is X 10 mbar and has a range between 50 (0.5 bar) and 250 (2.5 bar).

Parameter Number 12 – Set Proportional Band (P20 Must be Set to 0)

Step	1	2	3	4	5	
Press	acc 3-6 seconds	▼ or ▲	acc	▼ or ▲	acc	
Until Display Reads	Pxx	P 12	100. Flashing Decimal	### Flashing Decimal (value between 50 and 250)	### Flashing	P 13
Description	Accesses changeable parameters	Accesses parameter no. 12	Displays current parameter value. Incremental value is X 10 mbar.	Edits parameter	Accepts and saves new parameter setting.	Sequences to next parameter.

Set Deadband

Deadband is the minimum limit of accuracy at which the regulator is set for normal operation.
The displayed value is X 10 mbar and has a range between 2 (20 mbar) and 40 (400 mbar).

Parameter Number 13 – Set Deadband (P20 Must be Set to 0)

Step	1	2	3	4	5	
Press	acc 3-6 seconds	▼ or ▲	acc	▼ or ▲	acc	
Until Display Reads	Pxx	P 13	015. Flashing Decimal	### Flashing Decimal (value between 4 and 40)	### Flashing	P 14
Description	Accesses changeable parameters	Accesses parameter no. 13	Displays current parameter value. Incremental value is X 10 mbar.	Edits parameter	Accepts and saves new parameter setting.	Sequences to next parameter.

Proportional Effect

Parameter Number 21 – Set Proportional Effect (P20 Must be Set to 0)

Step	1	2	3	4	5	
Press	acc 3-6 seconds	▲	acc	▼ or ▲	acc	
Until Display Reads	Pxx	P21	010. Flashing Decimal	### Flashing Decimal (value between 5 and 100)	### Flashing	P22
Description	Accesses changeable parameters	Accesses parameter no. 21	Displays current parameter value.	Edits parameter 5 = fastest regulation 100 = slowest regulation	Accepts and saves new parameter setting.	Sequences to next parameter.

Parameter Number 39 – Displays Current Software Version

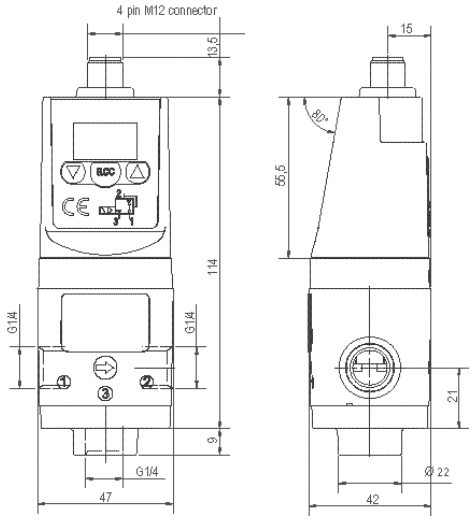
Step	1	2	3	
Press	acc 3-6 seconds	▲	acc	
Until Display Reads	Pxx	P39	### Flashing Decimal	
Description	Accesses parameters	Accesses parameter no. 39	Displays current parameter value. XXX = current software version	

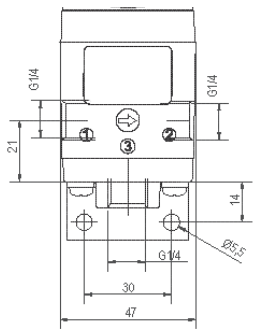
Troubleshooting guide

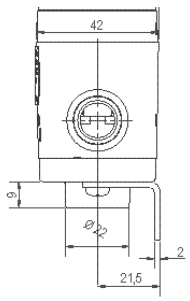
Problem	Possible Reason	Solution
Display will not light up	No 24 volts power supply	Check if the wiring is connected according to the schematic wiring diagram
Unit will not, or not correctly respond to given setpoint	Wrong current applied (I.e. Volt instead of mA or mA instead of Volt	Change setpoint current or re configure the setpoint current through the software by changing parameter 4
		Check wiring if the setpoint signal lead is connected to the right pin within the male M12 connector (should be pin 2)
	Setpoint signal is not stable enough	Stabilize setpoint signal input
Display shows NoP.	Unit detects that required output pressure is higher than the supplied pressure	Adjust the inlet pressure to a higher value, preferably 0,5 bar higher than requested output pressure
		Give lower setpoint value which corresponds to a output pressure lower than the inlet pressure
	No inlet pressure at all	Connect port 1 to the supply pressure
Unit behaviour is not considered normal	Faulty settings made in the parameters	Reset the unit to factory settings by using the green key function under parameter 0
Desired pressure can not be reached	Setpoint value to low	Increase setpoint value
	Pre-set pressure limit has been changed to a lower max. outlet pressure	Change max. outlet pressure back to required pressure by changing parameter 19
	Supply pressure is to low	Increase supply pressure
Secondary side stays pressurized	Setpoint value is higher than 0,1 Volt	Lower your setpoint value, preferably to 0 Volts
	Pre-set pressure has been enabled to a certain pressure	Reset parameter 18 to 0
Display shows unrealistic value	Display maybe configured in the wrong value (bar instead of psi)	Check through parameter 14, if the display value is set on either psi or bar, if necessary change it to the required setting
Unit response time too slow or too quick	Volume behind the unit is either too big or too small	Adjust the regulating speed of the unit through parameter 20
Unit gives too much overshoot	Relation between volume and response time is out of balance	Adjust response time to a higher value through parameter 20, to acheive more accurate behaviour
Unit is adjusting/regulating constantly	Airleakage in the system behind the unit	Resolve leakage
	Constant changing volume behind the unit	Unit needs to regulate to keep required pressure at the same level
		Try to minimize the volume changes
	“Deadband “area is set too small	Enlarge deadband setting through parameter 13 in the software (parameter 20 has to be set to 0 before changing parameter 13)
Can not enter software through touchpad	Unit is currently working/processing	Make sure that the unit is in steady state while activating the software
	Activating time is too short	Hold the accept button for at least 3 seconds
Display indicates ‘OL’	Wiring not according to diagram (24 volt connected on the setpoint connection pin)	Rewire so that on the setpoint connection pin will be either 0-10v or 4-20mA
	Wrong setpoint value given in relation to programmed setpoint value acceptance	Change over setpoint value to either V or mA or Reprogramme the unit to the correct setpoint value via parameter 4
Any other problem		Please consult factory

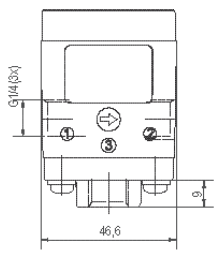
Dimensional drawings P3HPA (mm)

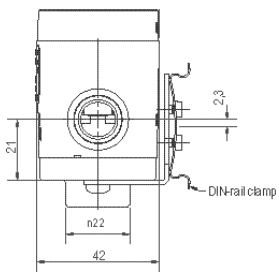
Bottom exhaust version



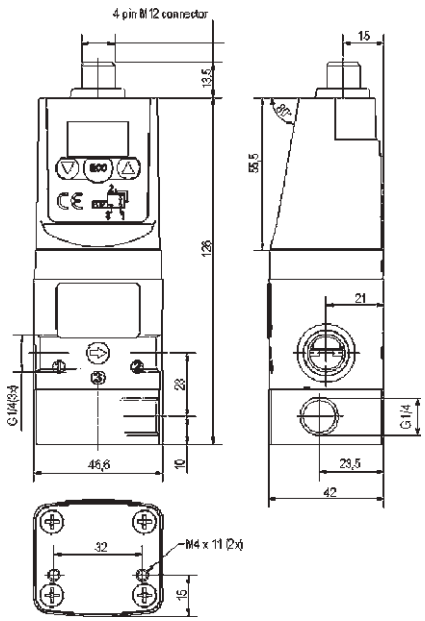


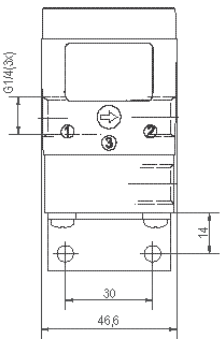


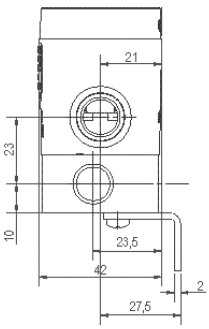


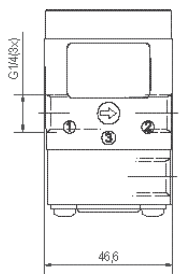


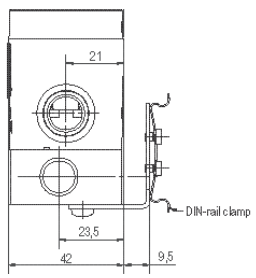
Side exhaust version





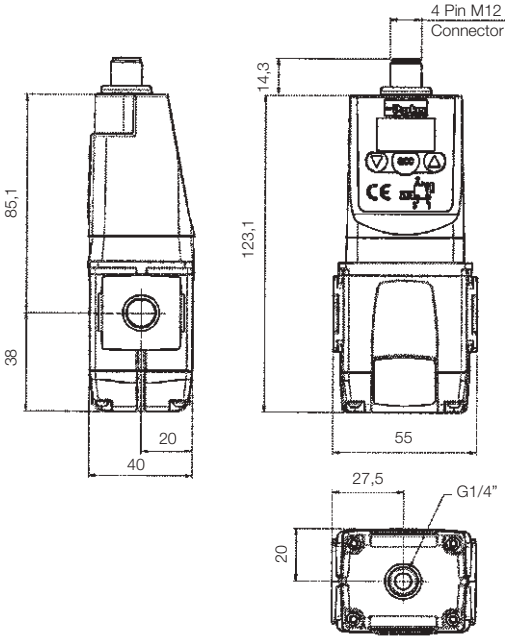




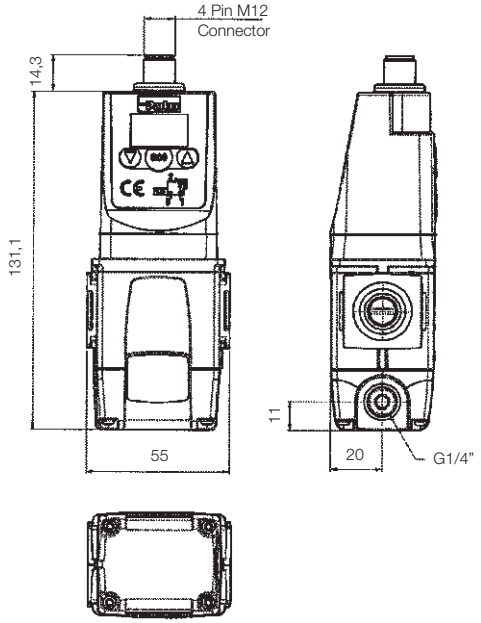


Dimensional drawings P3HNA (mm)

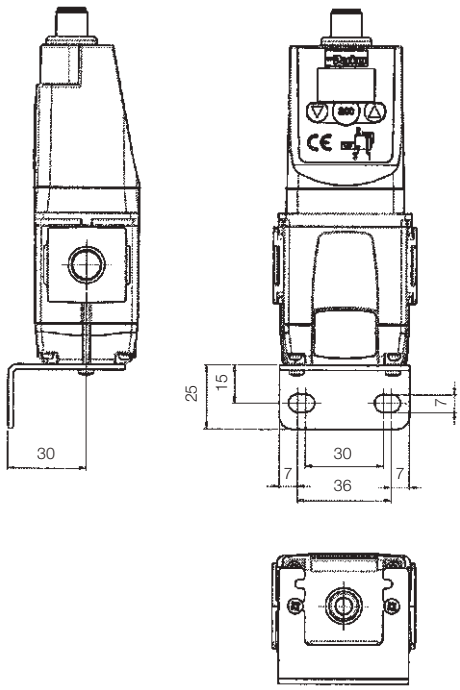
Bottom exhaust version



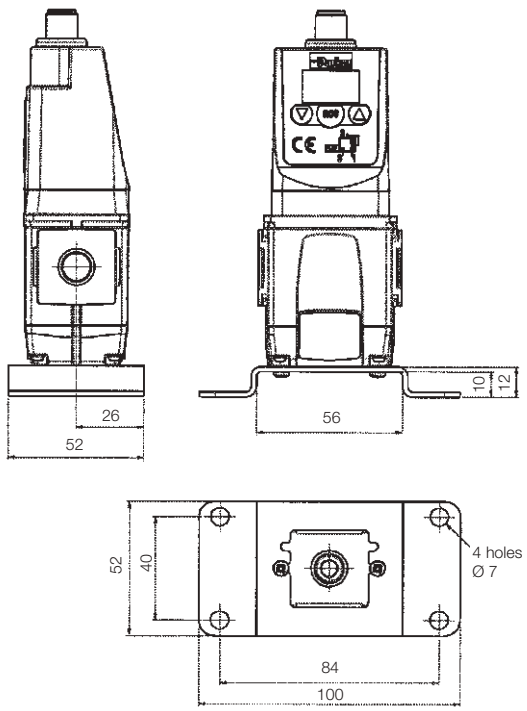
Side exhaust version



L-Bracket mounting

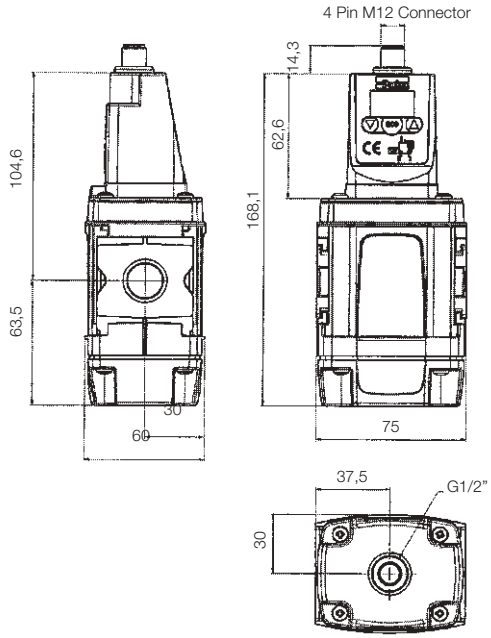


Foot bracket mounting

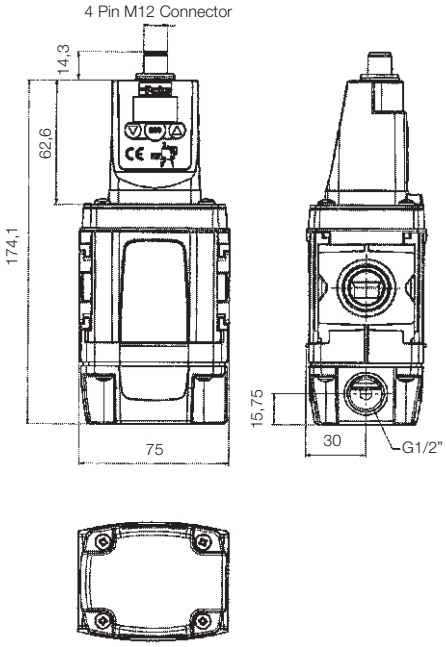


Dimensional drawings P3KNA (mm)

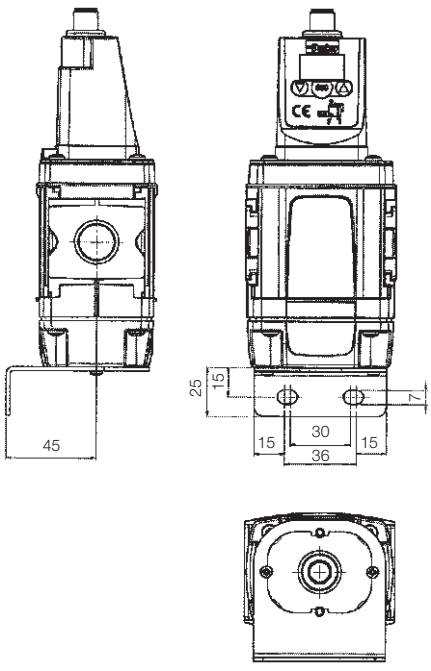
Bottom exhaust version



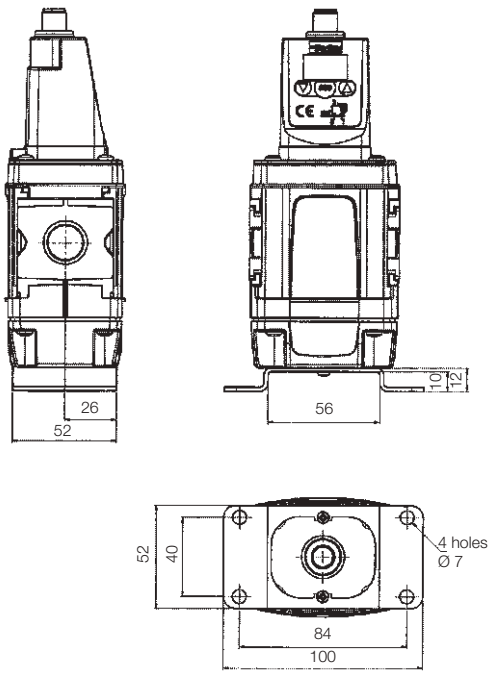
Side exhaust version



L-Bracket mounting



Foot bracket mounting



Glossary

Hysterisis - The mechanical limits of accuracy of the unit. The regulator cannot be adjusted within the inherent mechanical limits of the design.

Dead Band - The minimum limit of accuracy at which the regulator is set for normal operation. This band must be equal to, or exceed, the inherent design limits of the regulator or the hysteresis band.

Proportional Band - The band used for setting reaction sensitivity of the regulator. The regulator senses the excursion from the set pressure and adjusts response in relation to the degree of excursion beyond the dead band. This band must exceed the dead band of the unit.

Proportional Effect - The speed at which the unit approaches P2 (secondary pressure).

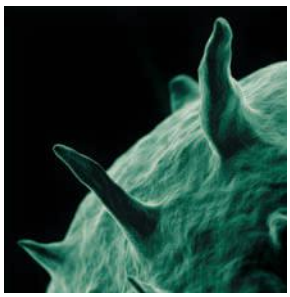
Sensitivity - The smallest change in the control signal, or feedback signal, to cause a change in regulated output pressure.

Repeatability - A measurement of how consistently the unit can reproduce an output pressure in relation to a specific set pressure.

Linearity - A measure of how closely the relationship of output pressure vs. the control signal deviates from a straight line function.

PNP Output - Referred to as a “Sourcing” open collector transistor output where the voltage sources towards 24VDC when activated.

NPN Output - Referred to as a “Sinking” open collector transistor output. The output sinks towards 0VDC when activated.



Moduflex Compressed Air Filters

The most energy efficient compressed air filters in the world

Compressed Air - The 4th Utility

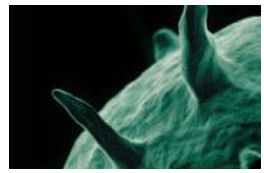
Compressed air is a safe and reliable power source that is widely used throughout industry. approximately 90% of all companies use compressed air in some aspect of their operations, however unlike gas, water and electricity, compressed air is generated on-site, giving the user responsibility for air quality and operational costs.

compressed air is not without it's problems, with all systems suffering from performance and reliability issues. almost all of these can be directly attributed to contamination, the main sources of which are :

- **the ambient air being drawn into the compressor**
- **the type and operation of the air compressor**
- **compressed air storage vessels**
- **distribution pipework**

There are 10 major contaminants found in a compressed air system, these are:

- **Water Vapour**
- **Condensed Water**
- **Water Aerosols**
- **Atmospheric Dirt**
- **Rust**
- **Pipescale**
- **Liquid Oil**
- **Oil Aerosols**
- **Oil Vapour**
- **Micro-organisms**



The largest quantity of contamination introduced into the compressed air system originates from the atmospheric air drawn into the compressor and not as often believed, introduced by the compressor itself. The most prolific and problematic of the contaminants is water which accounts for 99.9% of the total liquid contamination found in a compressed air system.

High efficiency compressed air filtration is not only used to remove particulate and oil, but more importantly it removes water aerosols and is key to operating an efficient and cost effective compressed air system.

Regardless of what type of compressor is installed, the same level of filtration is required.

Contaminant removal

Failure to remove this contamination can cause numerous problems in the compressed air system, such as:

- **Corrosion within storage vessels and the distribution system**
- **Blocked or frozen valves, cylinders, air motors and tools**
- **Damaged production equipment**
- **Premature unplanned desiccant changes for adsorption dryers**

In addition to problems associated with the compressed air system itself, allowing contamination such as water, particulate, oil and micro-organisms to exhaust from valves, cylinders, air motors and tools, can lead to an unhealthy working environment with the potential for personal injury, staff absences and financial compensation claims.

Compressed air contamination will ultimately lead to:

- **Inefficient production processes**
- **Spoiled, damaged or reworked products**
- **Reduced production efficiency**
- **Increase manufacturing costs**

Not all Compressed Air Filters are the same

Compressed air filtration is essential to all modern production facilities. It must deliver promising performance and reliability whilst providing the right balance of air quality with the lowest cost of operation. today, many manufacturers offer products for the filtration and purification of contaminated compressed air, which are often selected only upon their initial purchase cost, with little or no regard for the air quality they provide or the cost of operation throughout their life. when purchasing purification equipment, the delivered air quality, cost of operation and the overall cost of ownership must always be considered.

Air quality

Compressed air purification equipment is installed to deliver high quality, clean dry air, and to eliminate the problems and costs associated with contamination. When selecting this type of equipment, the delivered air quality and the verification of performance must always be the primary driver, otherwise why install it in the first place.

- **Moduflex Extras filters provide air quality in accordance with ISO 8573.1:2001, the international standard for compressed air quality**
- **Moduflex Extras coalescing filters are the first range of filters specifically designed to deliver air quality in accordance with ISO 8573.1 : 2001 when tested with the stringent requirements of the new ISO 12500-1 international standard for Compressed Air Filter Testing**
- **Moduflex Extras adsorption filters are also tested in accordance with the test methods of the ISO 8573 series**
- **Moduflex Extras filter performance has been independently verified by Lloyds Register**
- **Moduflex Extras coalescing filters are covered by a one year compressed air quality guarantee**
- **The air quality guarantee is automatically renewed with annual maintenance**

Energy efficiency

After air quality, the next consideration when selecting a compressed air filter is the cost of operation. Moduflex Extras filters not only provide air quality in accordance with the international standards, they are designed to do so with the lowest operational costs available.

- **Moduflex Extras filters use aerospace technology to keep pressure losses to a minimum**
- **Deep pleat element technology and specially treated filtration media provides a low pressure loss filter element with 450% more filtration surface area when compared to a conventional wrapped filter, and 200% greater area than typical pleated filter elements**
- **Overall pressure losses start low and stay low throughout the 12 month life of the filter element**
- **Can help to significantly reduce your carbon footprint**

Alternative Manufacturer	Annual Savings with Moduflex Extras	
Initial saturated differential pressure	Energy Savings Kw	Environmental Saving Kg/CO_2
200	4,973	2,139
250	6,259	2,691
300	9,619	4,136
350	12,979	5,581
400	16,339	7,026
450	19,699	8,470
500	23,059	9,915

Example based upon :

System pressure : 7 bar g

Compressor Size : 120 Kw

Duration of Operation : 8000 Hrs

Moduflex Extras Coalescing Filter

0.01 micron (0.01mg/m^3)

Alternative Manufacturer's Coalescing Filter

0.01 micron (0.01mg/m^3)

Low lifetime costs

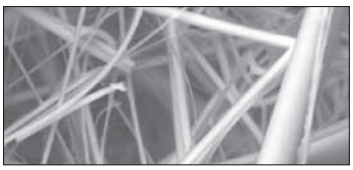
Equipment with a low purchase price may turn out to be a more costly investment in the long term. By guaranteeing air quality and ensuring energy consumption is kept to a minimum, Parker Moduflex Extras filters can reduce the total cost of ownership and help improve your bottom line through improved manufacturing efficiencies.

Air Quality

The Moduflex Extras range of compressed air filters has been designed from the outset to meet the requirements of ISO 8573.1 : 2001, the International standard for compressed air quality, when validated in accordance with the requirements of ISO 12500, the International standard for filter testing and the test methods of ISO 8573.2, ISO 8573.4 and ISO 8573.5.

Correct selection of filtration media

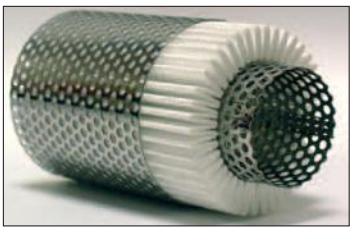
Coalescing and dust removal filters use a high efficiency borosilicate glass nanofibre material which has a 96% voids volume, providing media with excellent filtration efficiency and a high dirt holding capacity.



Construction of the filtration media into a filter element

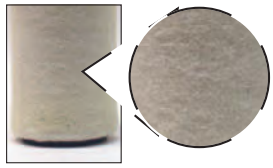
Modufex Extras filter elements use pleated not wrapped filter media, which is constructed using a unique deep bed pleating technique. This provides 450% more filtration surface area when compared to a traditional wrapped filter element and around 200% more surface area compared to a traditional pleated element.

Deep bed pleating also reduces the air flow velocity within the media, which further improves filtration performance.



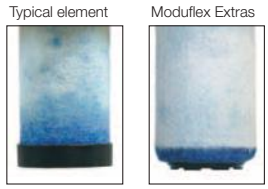
Moduflex Extras coalescing filters utilise four drainage methods to ensure high performance, whilst conventional filters only use one.

Drainage method 1



High efficiency drainage layer provides increased liquid drainage, improved chemical compatibility and higher operational temperatures when compared to conventional materials.

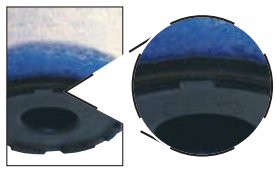
Drainage method 2



Traditional elements have a build up of liquid known as a “wet band” where the drainage layer is glued into the lower endcap.

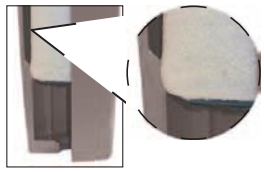
The Moduflex Extras design wraps the drainage layer under lower endcap removing coalesced liquid from the air flow path, increasing liquid removal efficiency, and providing more usable filtration surface area.

Drainage method 3



Surface tension breakers are moulded into the lower filter element endcap to prevent liquid from sticking, and to ensure fast and efficient drainage of coalesced liquid.

Drainage method 4



Drainage ribs cast into the filter bowl compress the lower part of the filter element, allowing bulk liquid to rapidly drain from the filter element through capillary action.

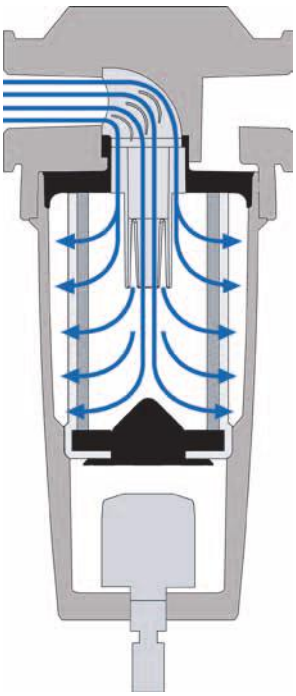
Energy Efficiency

Any restriction to airflow within a filter housing / element will reduce the system pressure, to generate compressed air, large amounts of electrical energy is required, therefore any pressure lost within the system can be directly converted into a cost for wasted energy. The higher the pressure loss, the higher the energy costs.

Pressure loss in a compressed air filter is a combination of fixed pressure losses and incremental pressure losses. Fixed pressure losses come from the filter housing and the interface between the filter housing and filter element. Incremental pressure losses come from the filter element as it blocks up with contamination during operation.

In most filters, high operational costs are generally due to a poorly designed airflow path within the filter housing and element and poorly selected filtration media. In addition to this, the high differential pressure change points recommended by many filter manufacturers increase operational costs even further.

Providing an optimal flow path for the compressed air is key to reducing system operating costs.



Aerospace Flow Management System

"Bell mouth" housing inlet & full flow inlet conduit

Moduflex Extras filter housings feature a "Bell Mouth" inlet to provide a smooth, turbulent free transition for the air as it enters into the filter element without restriction through the full flow element inlet conduit.

Smooth 90° elbow & aerospace turning vanes

In aerodynamic terms, a design which turns the air sharply through 90° is known as an inefficient corner. This typically has always been the method used to direct air into a compressed air filter element.

Moduflex Extras uses a smooth 90° elbow to direct air into the filter element, reducing turbulence and pressure losses significantly by turning the inefficient, sharp 90° corner into an efficient one.

As the diameter for the conduit increases, the benefits are reduced, therefore filter sizes 3/8" to 3" also include aerospace turning vanes which channels the air through a number of smaller, more efficient corners, reducing pressure loss and energy consumption even further.

Flow distributor

Filter sizes 3/8" to 3" include an upper flow distributor and all models include a lower conical flow diffuser.

The upper flow distributor provides turbulent free distribution of the air flow throughout the filter element ensuring full utilisation of all available filtration media, increasing filtration performance and reducing energy consumption.

Conical flow diffuser

The combination of conical flow diffuser and a drainage layer wrapped under the lower endcap allows airflow through the lowest section of the element, which is not possible on conventional filters due to the position of the "wet band".

Advanced Filter housing

Moduflex Extras filter housings have been designed to provide simple installation, long housing life and reduced maintenance times.

The unique design of the Moduflex Extras filter provides more port sizes for flexibility and ensures service technicians do not have to contact contaminated elements during maintenance.

No corrosion with Alocrom treatment.

Rapid corrosion of untreated aluminium.

Float drain

Filter connections

Port sizes are available to match both pipe size and system flow rate giving additional customer choice and reduced inistallation costs.

Compact and lightweight

Advanced element design provides a smaller, more compact filter.

Fully corrosion protected

All Moduflex Extras filters undergo cleaning, de-greasing and Alocrom treatment before painting. Alocrom treatment not only primes the aluminium surface for painting, it also provides corrosion protection. Additionally, all Moduflex Extras filter housings are also externally protected with a tough, durable dry powder epoxy coating.

Moduflex Extras filter housings are provided with a 10 year housing guarantee.

'Clean change' filter element

Element changes are now easy and do not require the user to touch the contaminated element during annual element change.

Minimal service clearance

Space saving design minimises service clearance and allows installation in confined spaces.

Choice of drains

Coalescing filters are fitted as standard with energy efficient, zero air loss float drains for the removal of coalesced liquids. Adsorption filters are fitted with a manual drain.

Optional accessories

Additional mounting and interconnecting hardware is available.

LRQ4003083

LRQ4001479

INTERNATIONAL APPROVALS

CRN

ASME VIII National Board

AS1210

Maintaining air quality and energy efficiency through regular maintenance

It has long been the practice to change filter elements based upon the pressure drop measured across the filter as this is directly attributable to operational costs.

However, one must remember the reason for installing the filter in the first place, i.e. to remove contamination.

Filter elements must always be replaced in accordance with the manufacturers instructions to ensure the delivered air quality is never compromised.

'Why should I change my filter element?'

To achieve the stringent air quality levels required by both modern industry and ISO 8573.1 : 2001 the international standard for compressed air quality, highly specialised filtration materials are employed, which has both a finite life and a finite capacity to retain contamination.

It is important to remember that when the filter life has expired, the required air quality can no longer be maintained.

Filters are installed to provide contaminant removal to a specific air quality requirement, therefore the primary reason to change filter elements should always be to maintain air quality.

Filter elements should be changed based upon manufacturers recommendations to maintain air quality.

"My filter is fitted with a differential pressure gauge and the needle is in the green - why should I change my element ?"

Many filter housings are fitted with "Differential Pressure Gauges". Generally, these are indicators not precise gauges and offer no level of calibration. Typically these will show an area of green and red, indicating if the needle is in the green, that the element does not require changing.

Differential pressure gauges are not filter service indicators or air quality indicators, they are simply measuring differential pressure and offer an indication of premature blockage.

As the filter media in an element degrades, even a tiny hole can result in the filter media rupturing, allowing all contamination to be carried past the filter into the system. If this should happen, the needle on the gauge would always indicate in the green area and the element would never be serviced until the user spotted contamination downstream. If the element was replaced after such an incident, contamination will still be present downstream of the filter for some time.

What are the consequences of not changing filter elements?

What seems like a cost saving in the short term can turn out to be a very costly mistake. Having identified a contamination problem in the compressed air system and the need for purification equipment, what would be the cost to your business of poor air quality?

- **Damaged adsorption dryer beds requiring unplanned desiccant changes**
- **Corrosion within the compressed air storage and distribution system**
- **Blocked / frozen valves and air motors**
- **Damaged machinery**
- **Contamination exhausting from valves and cylinders leading to unhealthy working environments, risk of personal injury, staff absences and personal injury claims**
- **Inefficient production processes**
- **Spoiled, damaged products**
- **Re-worked products**
- **Increased manufacturing costs**
- **Increased production downtime**

What are the benefits of regularly changing filter elements?

- **High quality compressed air - Guaranteed**
- **Protection of adsorption dryer beds**
- **Protection of downstream equipment, personnel and processes**
- **Reduced operational costs**
- **Increased productivity & profitability**
- **Continued peace of mind**

High Efficiency 0.01 µm Filtration

Fitration Grade

Filtration type	Coalescing
Particle removal (inc water & oil aerosols)	Down to 0.01 micron
Max remaining oil content at 21°C	0.01 mg/m³ 0.01 ppm(w)
Filter efficiency	99.9999%
Test methods used	ISO 8573.2 ISO 8573.4 ISO 12500-1
ISO 12500-1 Inlet Challenge concentration	10 mg/m³
Initial dry differential pressure	<140 mbar (2psi)
Initial saturated differential pressure	<200 mbar (3psi)
Change element every	12 months
Precede with filtration grade	1 micron Moduflex Coalescer

Product selection

Stated flows are for operation at 7 bar (g) with reference to 20°C, 1 bar (a), 0% relative water vapour pressure. For flows at other pressures apply the correction factors shown.

Port Size	Part Number	dm³/s	m3/hr	cfm	0.01 µm Replacement Element Kit
1/4"	**P3TFA22CAAN**	10	36	21	**P3TKA00ESCA**
3/8"	**P3TFA23CBAN**	20	72	42	**P3TKA00ESCB**
1/2"	**P3TFA24CCAN**	30	108	64	**P3TKA00ESCC**
3/4"	**P3TFA26CDAN**	60	216	127	**P3TKA00ESCD**
1 "	**P3TFA28CEAN**	110	396	233	**P3TKA00ESCE**
1.1/4"	**P3TFA2ACEAN**	110	396	233	**P3TKA00ESCE**
1.1/2"	**P3TFA2BCFAN**	160	576	339	**P3TKA00ESCF**
1.1/2"	**P3TFA2BCGAN**	220	792	466	**P3TKA00ESCG**
2"	**P3TFA2CCHAN**	330	1188	699	**P3TKA00ESCH**
2.1/2"	**P3TFA2DCJAN**	430	1548	911	**P3TKA00ESCJ**
3"	**P3TFA2ECJAN**	430	1548	911	**P3TKA00ESCJ**
2.1/2"	**P3TFA2DCKAN**	620	2232	1314	**P3TKA00ESCK**
3"	**P3TFA2ECKAN**	620	2232	1314	**P3TKA00ESCK**

Correction factors

Line pressure bar g	Line pressure psi g	Correction factor
1	15	0.38
2	29	0.53
3	44	0.65
4	58	0.76
5	73	0.85
6	87	0.93
7	100	1.00
8	116	1.07
9	131	1.13
10	145	1.19
11	160	1.25
12	174	1.31
13	189	1.36
14	203	1.41
15	218	1.46
16	232	1.51

To find the correction factor for 8.5 bar g (122psi g) =

$$\sqrt{\frac{\text{System Operating Pressure}}{\text{Nominal Pressure}}}$$

$$= \sqrt{\frac{8.5 \text{ bar g}}{7 \text{ bar g}}} = 1.10$$

Filter selection example

Selecting a filter model to match a system flow rate and pressure.
Example: System flow 1050 m³/hr at a pressure of 8.5 bar g

1. Obtain pressure correction factor from table or calculate factor using method shown. Correction factor for 8.5 bar g = 1.10
2. Divide system flow by correction factor to give equivalent flow rate at 7 bar g 1050m³/hr ÷ 1.10 = 955 m³/hr (at 7 bar g)
3. Select a filter model from the above table with a flow rate above or equal to 955 m³/hr. Filter model selected : P3TFA2CCHAN
4. Select pipe connection & Thread type System uses 2" piping and BSP threads: Model P3TFA2CCHAN

High Efficiency 0.01 µm Filtration

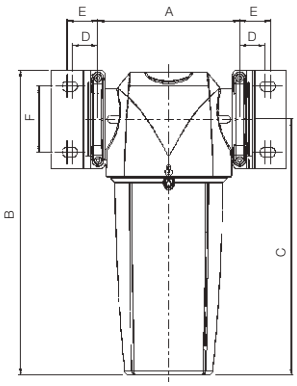
Technical data

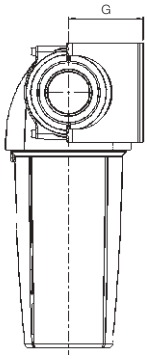
Filter Grade	Drain type	Max operating pressure bar g	Max operating pressure psi g	Max recommended operating temp.		Min recommended operating temp.	
0.01 micron	Auto	16	232	80°C	176°F	1.5°C	35°F

Weights and dimensions

Port Size	Part Number	A mm	A ins	B mm	B ins	C mm	C ins	D mm	D ins	E mm	E ins	F mm	F ins	G mm	G ins	Weight kg	Weight lbs	Modular Connection Kit	Wall Mounting Bracket Kit
1/4"	**P3TFA22CAAN**	76.0	3.0	181.5	7.2	153.0	6.0	18.0	0.71	24.5	0.96	30.0	1.18	52.0	2.05	0.4	0.9	**P3TKA00CBA**	**P3TKA00MWA**
3/8"	**P3TFA23CBAN**	97.5	3.8	235.0	9.3	201.0	7.9	20.5	0.81	25.5	1.00	40.0	1.57	60.0	2.36	1.0	2.2	**P3TKA00CBB**	**P3TKA00MWB**
1/2"	**P3TFA24CCAN**	97.5	3.8	235.0	9.3	201.0	7.9	20.5	0.81	25.5	1.00	40.0	1.57	60.0	2.36	1.0	2.2	**P3TKA00CBB**	**P3TKA00MWB**
3/4"	**P3TFA26CDAN**	129.0	5.1	275.0	10.8	232.5	9.2	23.0	0.91	28.0	1.10	60.0	2.36	68.0	2.68	2.2	4.8	**P3TKA00CBD**	**P3TKA00MWD**
1 "	**P3TFA28CEAN**	129.0	5.1	364.5	14.3	322.0	12.7	23.0	0.91	28.0	1.10	60.0	2.36	68.0	2.68	2.6	5.7	**P3TKA00CBD**	**P3TKA00MWD**
1.1/4"	**P3TFA2ACEAN**	129.0	5.1	364.5	14.3	322.0	12.7	23.0	0.91	28.0	1.10	60.0	2.36	68.0	2.68	2.6	5.7	**P3TKA00CBD**	**P3TKA00MWD**
1.1/2"	**P3TFA2BCFAN**	170.0	6.7	432.5	17.0	382.5	15.1	32.0	1.26	39.0	1.54	84.0	3.31	92.0	3.62	4.5	9.9	**P3TKA00CBF**	**P3TKA00MWF**
1.1/2"	**P3TFA2BCGAN**	170.0	6.7	524.5	20.6	474.5	18.7	32.0	1.26	39.0	1.54	84.0	3.31	92.0	3.62	5.3	11.6	**P3TKA00CBF**	**P3TKA00MWF**
2"	**P3TFA2CCHAN**	170.0	6.7	524.5	20.6	474.5	18.7	32.0	1.26	39.0	1.54	84.0	3.31	92.0	3.62	5.3	11.6	**P3TKA00CBF**	**P3TKA00MWF**
2.1/2"	**P3TFA2DCJAN**	205.0	8.1	641.5	25.3	581.5	22.9	35.5	1.40	42.5	1.67	100.0	3.94	135.0	5.31	10.0	22.0	**P3TKA00CBJ**	**P3TKA00MWJ**
3"	**P3TFA2ECJAN**	205.0	8.1	641.5	25.3	581.5	22.9	35.5	1.40	42.5	1.67	100.0	3.94	135.0	5.31	10.0	22.0	**P3TKA00CBJ**	**P3TKA00MWJ**
2.1/2"	**P3TFA2DCKAN**	205.0	8.1	832.0	32.8	772.0	30.4	35.5	1.40	42.5	1.67	100.0	3.94	135.0	5.31	12.0	26.4	**P3TKA00CBJ**	**P3TKA00MWJ**
3"	**P3TFA2ECKAN**	205.0	8.1	832.0	32.8	772.0	30.4	35.5	1.40	42.5	1.67	100.0	3.94	135.0	5.31	12.0	26.4	**P3TKA00CBJ**	**P3TKA00MWJ**

Optional Accessories





DPI Kit

P3TKA00RQ

Incident Monitor

Used to indicate premature high differential pressure. Indicator can be retrofitted to existing housings without depressurising the system.

Wall Mounting Bracket Kit

Mounting brackets provide additional support to filters installed in flexible piping systems or OEM equipment.

Modular Connection Kit

Fixing clamp allows quick and simple connection of multiple filter housings.

Drain Kits

Auto drain	**P3TKA00DA**
Manual drain	**P3TKA00DM**

1 µm Filtration

Fitration Grade

Filtration type	Coalescing
Particle removal (inc water & oil aerosols)	Down to 1 micron
Max remaining oil content at 21°C	0.06 mg/m³ 0.05 ppm(w)
Filter efficiency	99.925%
Test methods used	ISO 8573.2 ISO 8573.4 ISO 12500-1
ISO 12500-1 Inlet Challenge concentration	40 mg/m³
Initial dry differential pressure	<70 mbar (2psi)
Initial saturated differential pressure	<140 mbar (3psi)
Change element every	12 months
Precede with filtration grade	1 micron Moduflex Coalescer

Product selection

Stated flows are for operation at 7 bar (g) with reference to 20°C, 1 bar (a), 0% relative water vapour pressure. For flows at other pressures apply the correction factors shown.

Port Size	Part Number	dm³/s	m3/hr	cfm	1 µm Replacement Element Kit
1/4"	**P3TFA229AAN**	10	36	21	**P3TKA00ES9A**
3/8"	**P3TFA239BAN**	20	72	42	**P3TKA00ES9B**
1/2"	**P3TFA249CAN**	30	108	64	**P3TKA00ES9C**
3/4"	**P3TFA269DAN**	60	216	127	**P3TKA00ES9D**
1 "	**P3TFA289EAN**	110	396	233	**P3TKA00ES9E**
1.1/4"	**P3TFA2A9EAN**	110	396	233	**P3TKA00ES9E**
1.1/2"	**P3TFA2B9FAN**	160	576	339	**P3TKA00ES9F**
1.1/2"	**P3TFA2B9GAN**	220	792	466	**P3TKA00ES9G**
2"	**P3TFA2C9HAN**	330	1188	699	**P3TKA00ES9H**
2.1/2"	**P3TFA2D9JAN**	430	1548	911	**P3TKA00ES9J**
3"	**P3TFA2E9JAN**	430	1548	911	**P3TKA00ES9J**
2.1/2"	**P3TFA2D9KAN**	620	2232	1314	**P3TKA00ES9K**
3"	**P3TFA2E9KAN**	620	2232	1314	**P3TKA00ES9K**

Correction factors

Line pressure bar g	Line pressure psi g	Correction factor
1	15	0.38
2	29	0.53
3	44	0.65
4	58	0.76
5	73	0.85
6	87	0.93
7	100	1.00
8	116	1.07
9	131	1.13
10	145	1.19
11	160	1.25
12	174	1.31
13	189	1.36
14	203	1.41
15	218	1.46
16	232	1.51

To find the correction factor for 8.5 bar g (122psi g) =

$$\sqrt{\frac{\text{System Operating Pressure}}{\text{Nominal Pressure}}}$$

$$= \sqrt{\frac{8.5 \text{ bar g}}{7 \text{ bar g}}} = 1.10$$

Filter selection example

Selecting a filter model to match a system flow rate and pressure.
Example: System flow 1050 m³/hr at a pressure of 8.5 bar g

1. Obtain pressure correction factor from table or calculate factor using method shown. Correction factor for 8.5 bar g = 1.10
2. Divide system flow by correction factor to give equivalent flow rate at 7 bar g 1050m³/hr ÷ 1.10 = 955 m³/hr (at 7 bar g)
3. Select a filter model from the above table with a flow rate above or equal to 955 m³/hr. Filter model selected : P3TFA2C9HAN
4. Select pipe connection & Thread type System uses 2" piping and BSP threads: Model P3TFA2C9HAN

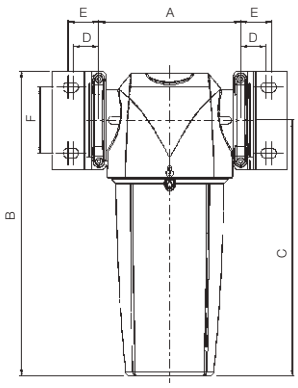
1 µm Filtration

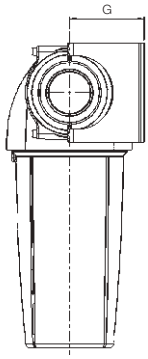
Technical data

Filter Grade	Drain type	Max operating pressure bar g	Max operating pressure psi g	Max recommended operating temp.		Min recommended operating temp.	
1 micron	Auto	16	232	80°C	176°F	1.5°C	35°F

Weights and dimensions

Port Size	Part Number	A mm	A ins	B mm	B ins	C mm	C ins	D mm	D ins	E mm	E ins	F mm	F ins	G mm	G ins	Weight kg	Weight lbs	Modular Connection Kit	Wall Mounting Bracket Kit
1/4"	**P3TFA229AAN**	76.0	3.0	181.5	7.2	153.0	6.0	18.0	0.71	24.5	0.96	30.0	1.18	52.0	2.05	0.4	0.9	**P3TKA00CBA**	**P3TKA00MWA**
3/8"	**P3TFA239BAN**	97.5	3.8	235.0	9.3	201.0	7.9	20.5	0.81	25.5	1.00	40.0	1.57	60.0	2.36	1.0	2.2	**P3TKA00CBB**	**P3TKA00MWB**
1/2"	**P3TFA249CAN**	97.5	3.8	235.0	9.3	201.0	7.9	20.5	0.81	25.5	1.00	40.0	1.57	60.0	2.36	1.0	2.2	**P3TKA00CBB**	**P3TKA00MWB**
3/4"	**P3TFA269DAN**	129.0	5.1	275.0	10.8	232.5	9.2	23.0	0.91	28.0	1.10	60.0	2.36	68.0	2.68	2.2	4.8	**P3TKA00CBD**	**P3TKA00MWD**
1 "	**P3TFA289EAN**	129.0	5.1	364.5	14.3	322.0	12.7	23.0	0.91	28.0	1.10	60.0	2.36	68.0	2.68	2.6	5.7	**P3TKA00CBD**	**P3TKA00MWD**
1.1/4"	**P3TFA2A9EAN**	129.0	5.1	364.5	14.3	322.0	12.7	23.0	0.91	28.0	1.10	60.0	2.36	68.0	2.68	2.6	5.7	**P3TKA00CBD**	**P3TKA00MWD**
1.1/2"	**P3TFA2B9FAN**	170.0	6.7	432.5	17.0	382.5	15.1	32.0	1.26	39.0	1.54	84.0	3.31	92.0	3.62	4.5	9.9	**P3TKA00CBF**	**P3TKA00MWF**
1.1/2"	**P3TFA2B9GAN**	170.0	6.7	524.5	20.6	474.5	18.7	32.0	1.26	39.0	1.54	84.0	3.31	92.0	3.62	5.3	11.6	**P3TKA00CBF**	**P3TKA00MWF**
2"	**P3TFA2C9HAN**	170.0	6.7	524.5	20.6	474.5	18.7	32.0	1.26	39.0	1.54	84.0	3.31	92.0	3.62	5.3	11.6	**P3TKA00CBF**	**P3TKA00MWF**
2.1/2"	**P3TFA2D9JAN**	205.0	8.1	641.5	25.3	581.5	22.9	35.5	1.40	42.5	1.67	100.0	3.94	135.0	5.31	10.0	22.0	**P3TKA00CBJ**	**P3TKA00MWJ**
3"	**P3TFA2E9JAN**	205.0	8.1	641.5	25.3	581.5	22.9	35.5	1.40	42.5	1.67	100.0	3.94	135.0	5.31	10.0	22.0	**P3TKA00CBJ**	**P3TKA00MWJ**
2.1/2"	**P3TFA2D9KAN**	205.0	8.1	832.0	32.8	772.0	30.4	35.5	1.40	42.5	1.67	100.0	3.94	135.0	5.31	12.0	26.4	**P3TKA00CBJ**	**P3TKA00MWJ**
3"	**P3TFA2E9KAN**	205.0	8.1	832.0	32.8	772.0	30.4	35.5	1.40	42.5	1.67	100.0	3.94	135.0	5.31	12.0	26.4	**P3TKA00CBJ**	**P3TKA00MWJ**





Optional Accessories

DPI Kit

P3TKA00RQ

Incident Monitor

Used to indicate premature high differential pressure. Indicator can be retrofitted to existing housings without depressurising the system.

Modular Connection Kit

Fixing clamp allows quick and simple connection of multiple filter housings.

Wall Mounting Bracket Kit

Mounting brackets provide additional support to filters installed in flexible piping systems or OEM equipment.

Drain Kits

Auto drain	**P3TKA00DA**
Manual drain	**P3TKA00DM**

Oil Vapour Removal Filter

Fitration Grade

Filtration type	Oil vapour removal
Particle removal (inc water & oil aerosols)	N/A
Max remaining oil content at 21°C	0.003 mg/m³ 0.003 ppm(w)
Filter efficiency	N/A
Test methods used	ISO 8573.5
ISO 12500-1 Inlet Challenge concentration	N/A
Initial dry differential pressure	<200 mbar (3psi)
Initial saturated differential pressure	N/A
Change element every	When oil vapour is detected
Precede with filtration grade	0.01 micron Moduflex Coalescer filter

Product selection

Stated flows are for operation at 7 bar (g) with reference to 20°C, 1 bar (a), 0% relative water vapour pressure. For flows at other pressures apply the correction factors shown.

Port Size	Part Number	dm³/s	m3/hr	cfm	Oil vapour removal Replacement Element Kit
1/4"	**P3TFA22AAMN**	10	36	21	**P3TKA00ESAA**
3/8"	**P3TFA23ABMN**	20	72	42	**P3TKA00ESAB**
1/2"	**P3TFA24ACMN**	30	108	64	**P3TKA00ESAC**
3/4"	**P3TFA26ADMN**	60	216	127	**P3TKA00ESAD**
1 "	**P3TFA28AEMN**	110	396	233	**P3TKA00ESAE**
1.1/4"	**P3TFA2AAEMN**	110	396	233	**P3TKA00ESAE**
1.1/2"	**P3TFA2BAFMN**	160	576	339	**P3TKA00ESAF**
1.1/2"	**P3TFA2BAGMN**	220	792	466	**P3TKA00ESAG**
2"	**P3TFA2CAHMN**	330	1188	699	**P3TKA00ESAH**
2.1/2"	**P3TFA2DAJMN**	430	1548	911	**P3TKA00ESAJ**
3"	**P3TFA2EAJMN**	430	1548	911	**P3TKA00ESAJ**
2.1/2"	**P3TFA2DAKMN**	620	2232	1314	**P3TKA00ESAK**
3"	**P3TFA2EAKMN**	620	2232	1314	**P3TKA00ESAK**

Correction factors

Line pressure bar g	Line pressure psi g	Correction factor
1	15	0.38
2	29	0.53
3	44	0.65
4	58	0.76
5	73	0.85
6	87	0.93
7	100	1.00
8	116	1.07
9	131	1.13
10	145	1.19
11	160	1.25
12	174	1.31
13	189	1.36
14	203	1.41
15	218	1.46
16	232	1.51
17	247	1.56
18	261	1.60
19	275	1.65
20	290	1.70

To find the correction factor for 8.5 bar g (122psi g) =

$$\sqrt{\frac{\text{System Operating Pressure}}{\text{Nominal Pressure}}}$$

$$= \sqrt{\frac{8.5 \text{ bar g}}{7 \text{ bar g}}} = 1.10$$

Filter selection example

Selecting a filter model to match a system flow rate and pressure.
Example: System flow 1050 m³/hr at a pressure of 8.5 bar g

1. Obtain pressure correction factor from table or calculate factor using method shown. Correction factor for 8.5 bar g = 1.10
2. Divide system flow by correction factor to give equivalent flow rate at 7 bar g 1050m³/hr ÷ 1.10 = 955 m³/hr (at 7 bar g)
3. Select a filter model from the above table with a flow rate above or equal to 955 m³/hr. Filter model selected : P3TFA2CAHMN
4. Select pipe connection & Thread type System uses 2" piping and BSP threads: Model P3TFA2CAHMN

Oil Vapour Removal Filter

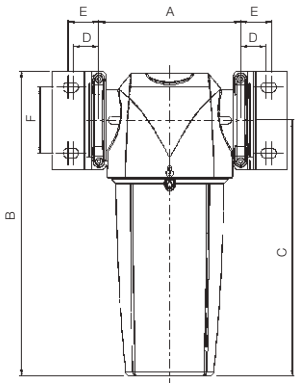
Technical data

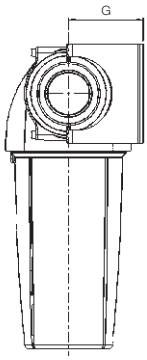
Filter Grade	Drain type	Max operating pressure bar g	Max operating pressure psi g	Max recommended operating temp.		Min recommended operating temp.	
Oil vapour removal	Manual	20	290	100°C	212°F	1.5°C	35°F

Weights and dimensions

Port Size	Part Number	A mm	A ins	B mm	B ins	C mm	C ins	D mm	D ins	E mm	E ins	F mm	F ins	G mm	G ins	Weight kg	Weight lbs	Modular Connection Kit	Wall Mounting Bracket Kit
1/4"	**P3TFA22AAMN**	76.0	3.0	181.5	7.2	153.0	6.0	18.0	0.71	24.5	0.96	30.0	1.18	52.0	2.05	0.4	0.9	**P3TKA00CBA**	**P3TKA00MWA**
3/8"	**P3TFA23ABMN**	97.5	3.8	235.0	9.3	201.0	7.9	20.5	0.81	25.5	1.00	40.0	1.57	60.0	2.36	1.0	2.2	**P3TKA00CBB**	**P3TKA00MWB**
1/2"	**P3TFA24ACMN**	97.5	3.8	235.0	9.3	201.0	7.9	20.5	0.81	25.5	1.00	40.0	1.57	60.0	2.36	1.0	2.2	**P3TKA00CBB**	**P3TKA00MWB**
3/4"	**P3TFA26ADMN**	129.0	5.1	275.0	10.8	232.5	9.2	23.0	0.91	28.0	1.10	60.0	2.36	68.0	2.68	2.2	4.8	**P3TKA00CBD**	**P3TKA00MWD**
1 "	**P3TFA28AEMN**	129.0	5.1	364.5	14.3	322.0	12.7	23.0	0.91	28.0	1.10	60.0	2.36	68.0	2.68	2.6	5.7	**P3TKA00CBD**	**P3TKA00MWD**
1.1/4"	**P3TFA2AAEMN**	129.0	5.1	364.5	14.3	322.0	12.7	23.0	0.91	28.0	1.10	60.0	2.36	68.0	2.68	2.6	5.7	**P3TKA00CBD**	**P3TKA00MWD**
1.1/2"	**P3TFA2BAFMN**	170.0	6.7	432.5	17.0	382.5	15.1	32.0	1.26	39.0	1.54	84.0	3.31	92.0	3.62	4.5	9.9	**P3TKA00CBF**	**P3TKA00MWF**
1.1/2"	**P3TFA2BAGMN**	170.0	6.7	524.5	20.6	474.5	18.7	32.0	1.26	39.0	1.54	84.0	3.31	92.0	3.62	5.3	11.6	**P3TKA00CBF**	**P3TKA00MWF**
2"	**P3TFA2CAHMN**	170.0	6.7	524.5	20.6	474.5	18.7	32.0	1.26	39.0	1.54	84.0	3.31	92.0	3.62	5.3	11.6	**P3TKA00CBF**	**P3TKA00MWF**
2.1/2"	**P3TFA2DAJMN**	205.0	8.1	641.5	25.3	581.5	22.9	35.5	1.40	42.5	1.67	100.0	3.94	135.0	5.31	10.0	22.0	**P3TKA00CBJ**	**P3TKA00MWJ**
3"	**P3TFA2EAJMN**	205.0	8.1	641.5	25.3	581.5	22.9	35.5	1.40	42.5	1.67	100.0	3.94	135.0	5.31	10.0	22.0	**P3TKA00CBJ**	**P3TKA00MWJ**
2.1/2"	**P3TFA2DAKMN**	205.0	8.1	832.0	32.8	772.0	30.4	35.5	1.40	42.5	1.67	100.0	3.94	135.0	5.31	12.0	26.4	**P3TKA00CBJ**	**P3TKA00MWJ**
3"	**P3TFA2EAKMN**	205.0	8.1	832.0	32.8	772.0	30.4	35.5	1.40	42.5	1.67	100.0	3.94	135.0	5.31	12.0	26.4	**P3TKA00CBJ**	**P3TKA00MWJ**

Optional Accessories





Modular Connection Kit

Fixing clamp allows quick and simple connection of multiple filter housings.

Wall Mounting Bracket Kit

Mounting brackets provide additional support to filters installed in flexible piping systems or OEM equipment.

Drain Kits

Auto drain	**P3TKA00DA**
Manual drain	**P3TKA00DM**

High Efficiency Bulk Liquid Removal

- Tested in accordance with ISO 8573.9
- Performance independently verified by Lloyds Register
- High liquid removal efficiencies at all flow conditions
- Low pressure losses for low operational costs
- Multiple port sizes for a given flow rate provides increased flexibility during installation
- Suitable for variable flow compressors
- Works with all types of compressor and compressor condensate
- Low maintenance
- 10 Year Housing Guarantee

Typical Applications

- Bulk liquid removal at any point in a compressed air system
- Protection of refrigeration and adsorption dryer pre-filtration
- Liquid removal from compressor inter-coolers / after-coolers
- Liquid separation within refrigeration dryers

Product selection

Stated flows are for operation at 7 bar (g) with reference to 20°C, 1 bar (a), 0% relative water vapour pressure.

Port Size	Part Number	dm^3/s	m3/hr	cfm	Max operating pressure		Max Operating temperature		Min Operating temperature	
					bar g	psi g				
1/4"	P3TFA22WAAN	10	36	21	16	232	80 C	176 F	1.5 C	35 F
3/8"	P3TFA23WBAN	40	144	85	16	232	80 C	176 F	1.5 C	35 F
1/2"	P3TFA24WCAN	40	144	85	16	232	80 C	176 F	1.5 C	35 F
3/4"	P3TFA26WDAN	110	396	233	16	232	80 C	176 F	1.5 C	35 F
1"	P3TFA28WEAN	110	396	233	16	232	80 C	176 F	1.5 C	35 F
1.1/4"	P3TFA2AWFAN	350	1260	742	16	232	80 C	176 F	1.5 C	35 F
1.1/2"	P3TFA2BWGAN	350	1260	742	16	232	80 C	176 F	1.5 C	35 F
2"	P3TFA2CWHAN	350	1260	742	16	232	80 C	176 F	1.5 C	35 F
2.1/2"	P3TFA2DWKAN	800	2880	1695	16	232	80 C	176 F	1.5 C	35 F
3"	P3TFA2EWKAN	800	2880	1695	16	232	80 C	176 F	1.5 C	35 F

Correction factors

Line pressure bar g	psi g	Correction factor
1	15	0.25
2	29	0.38
3	44	0.50
4	58	0.63
5	73	0.75
6	87	0.88
7	100	1.00
8	116	1.06
9	131	1.12
10	145	1.17
11	160	1.22
12	174	1.27
13	189	1.32
14	203	1.37
15	218	1.41
16	232	1.46

To find the correction factor for 8 bar g =

$$\sqrt{\frac{\text{System Operating Pressure}}{\text{Nominal Pressure}}}$$

$$= \sqrt{\frac{8 \text{ bar g}}{7 \text{ bar g}}} = 1.06$$

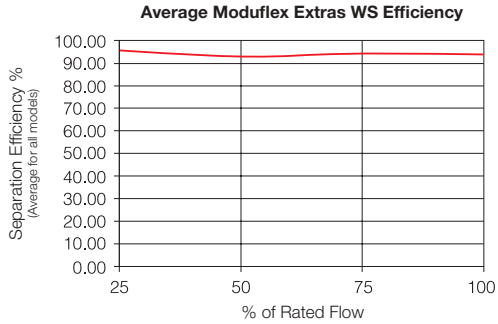
Filter selection example

Selecting a Water Separator model to match a system flow rate and pressure.
Example: System flow 1050 m^3/hr at a pressure of 8 bar g

1. Obtain pressure correction factor from table.
   Correction factor for 8 bar g = 1.06
2. Divide system flow by correction factor to give equivalent flow rate at 7 bar g
   $1050 m^3/hr \div 1.06 = 984 m^3/hr$ (at 7 bar g)
3. Select a filter model from the above table with a flow rate above or equal to 984 m^3/hr. Suitable Water Separator models : P3TFA2AWFAN
   P3TFA2AWGAN
   P3TFA2AWHAN
4. Select pipe connection & Thread type
   System uses 1.1/2" piping and BSP threads: Model P3TFA2BWGAN

High Efficiency Bulk Liquid Removal

Separation Efficiency

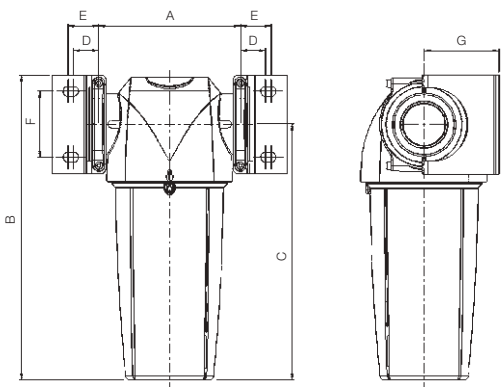


Tested with an inlet challenge concentration of 33ml/m3hr and in accordance with ISO 8573.9.
Performance shown is an average for all models in range. Individual model performance available on request.

Weights and dimensions

Optional Accessories

Port Size	Part Number	A		B		C		D		E		F		G		Weight		Modular Connection Kit	Wall Mounting Bracket Kit
		mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	kg	lbs		
1/4"	P3TFA22WAAN	76.0	3.0	181.5	7.2	153.0	6.0	18.0	0.71	24.5	0.96	30.0	1.18	52.0	2.05	0.4	0.9	P3TKA00CBA	P3TKA00MWA
3/8"	P3TFA23WBAN	97.5	3.8	235.0	9.3	201.0	7.9	20.5	0.81	25.5	1.00	40.0	1.57	60.0	2.36	1.0	2.2	P3TKA00CBB	P3TKA00MWB
1/2"	P3TFA24WCAN	97.5	3.8	235.0	9.3	201.0	7.9	20.5	0.81	25.5	1.00	40.0	1.57	60.0	2.36	1.0	2.2	P3TKA00CBB	P3TKA00MWB
3/4"	P3TFA26WDAN	129.0	5.1	275.0	10.8	232.5	9.2	23.0	0.91	28.0	1.10	60.0	2.36	68.0	2.68	2.2	4.8	P3TKA00CBD	P3TKA00MWD
1 "	P3TFA28WEAN	129.0	5.1	364.5	14.3	322.0	12.7	23.0	0.91	28.0	1.10	60.0	2.36	68.0	2.68	2.6	5.7	P3TKA00CBD	P3TKA00MWD
1.1/4"	P3TFA2BWFAN	170.0	6.7	432.5	17.0	382.5	15.1	32.0	1.26	39.0	1.54	84.0	3.31	92.0	3.62	4.5	9.9	P3TKA00CBF	P3TKA00MWF
1.1/2"	P3TFA2BWGAN	170.0	6.7	524.5	20.6	474.5	18.7	32.0	1.26	39.0	1.54	84.0	3.31	92.0	3.62	5.3	11.6	P3TKA00CBF	P3TKA00MWF
2"	P3TFA2CWHAN	170.0	6.7	524.5	20.6	474.5	18.7	32.0	1.26	39.0	1.54	84.0	3.31	92.0	3.62	5.3	11.6	P3TKA00CBF	P3TKA00MWF
2.1/2"	P3TFA2DWKAN	205.0	8.1	832.0	32.8	772.0	30.4	35.5	1.40	42.5	1.67	100.0	3.94	135.0	5.31	12.0	26.4	P3TKA00CBJ	P3TKA00MWJ
3"	P3TFA2EWKAN	205.0	8.1	832.0	32.8	772.0	30.4	35.5	1.40	42.5	1.67	100.0	3.94	135.0	5.31	12.0	26.4	P3TKA00CBJ	P3TKA00MWJ



Modular Connection Kit

Fixing clamp allows quick and simple connection of multiple filter housings.

Wall Mounting Bracket Kit

Mounting brackets provide additional support to filters installed in flexible piping systems or OEM equipment.

ISO 8573 - Compressed air quality standards

ISO 8573 is the group of International standards relating to the quality of compressed air and consists of nine separate parts. Part 1 specifies the quality requirements of the compressed air and parts 2 - 9 specify the methods of testing for a range of contaminants.

ISO 8573.1 : 2001 is the primary document used from the ISO 8573 series and it is this document which allows the user to specify the air quality or purity required at key points in a compressed air system.

Within ISO 8573.1 : 2001 purity levels for the main contaminants are shown in separate tables, however for ease of use, this document combines all three into one easy to understand table.

Purity	Solid Particulat					Water		Oil
	Maximum number of particles per m^3			Particle Size	Concentration	Vapour	Liquid	Total oil (aerosol, liquid and vapour)
Class	0.1 - 0.5 micron	0.5 - 1 micron	1 - 5 micron	micron	mg/m^3	Pressure Dewpoint	g/m^3	mg/m^3
0	*	*	*	*	*	*	*	*
1	100	1	0	-	-	-70°C	-	0.01
2	100,000	1,000	10	-	-	-40°C	-	0.1
3	-	10,000	500	-	-	-20°C	-	1
4	-	-	1,000	-	-	+3°C	-	5
5	-	-	20,000	-	-	+7°C	-	-
6	-	-	-	5	5	+10°C	-	-
7	-	-	-	40	10	-	0,5	-
8	-	-	-	-	-	-	5	-
9	-	-	-	-	-	-	10	-

* As specified by the equipment user or supplier

Specifying air purity in accordance with ISO 8573.1 : 2001

When specifying the purity of air required, the standard must always be referenced, followed by the purity class selected for each contaminant (a different purity class can be selected for each contaminant if required). An example of how to write an air quality specification is shown below :

ISO 8573.1 : 2001 Class 1.2.1 (Example)
ISO8573.1 : 2001 refers to the standard document and its revision, the three digits refer to the purity classifications selected for solid particulate, water and total oil. Selecting an air purity class of 1.2.1 would specify the following air quality when operating at the standard's reference conditions:

Class 1 Particulate
In each cubic metre of compressed air, no more than 100 particles in the 0.1 - 0.5 micron size range are allowed
In each cubic metre of compressed air, no more than 1 particle in the 0.5 - 1 micron size range is allowed
In each cubic metre of compressed air, no particles in the 1 - 5 micron size range are allowed

Class 2 Water
A pressure dewpoint of -40°C or better is required and no liquid water is allowed.

Class 1 Oil
In each cubic metre of compressed air, not more than 0.01mg of oil is allowed. This is a combined level for both oil aerosol and oil vapour.

Cost effective system design

To achieve the stringent air quality levels required for today's modern production facilities, a careful approach to system design, commissioning and operation must be employed. Treatment at one point alone is not enough and it is highly recommended that the compressed air is treated prior to entry into the distribution system to a quality level suitable for protecting air receivers and distribution piping.

The following table highlights the Moduflex Extras filtration and drying products required to achieve each air purity classification shown in ISO 8573.1 : 2001.

Point of use purification should also be employed, with specific attention being focused on the application and the level of air quality required. This approach to system design ensures that air is not "over treated" and provides the most cost effective solution to high quality compressed air.

ISO 8573.1:2001 Class	Solid Particulate	Water Vapour	Total Oil (Aerosol Liquid & Vapour)
1	Coalescing Grade 1µm filter + Grade 0.01µm filter + Sterile filter	Moduflex Adsorption Dryer -70°C PDP	Coalescing Grade 0.01µm filter + Grade 1µm filter + Vapour removal filter
2	Coalescing Grade 1µm filter + Grade 0.01µm filter	Moduflex Adsorption Dryer -40°C PDP	Coalescing Grade 0.01µm filter + Grade 1µm filter
3	Coalescing Grade 1µm filter		Coalescing Grade 1µm filter

Moduflex Dry Air System

Totally clean and dry compressed air

Moduflex Dry Air System

The Problem

Compressed air is an essential power source that is widely used throughout industry. This safe, powerful and reliable utility can be the most important part of your production process.

However, your compressed air will contain water, dirt, wear particles and even degraded lubricating oil which all mix together to form an unwanted condensate. This condensate often acidic, rapidly wears tools and pneumatic machinery, blocks valves and orifices causing high maintenance and costly air leaks. It also corrodes piping systems and can bring your production process to an extremely expensive standstill!

The use of high efficiency compressed air filters fitted with condensate drains will remove the oil, water and dirt particles to eliminate the abrasive sludge in the compressed air system.

In many cases this action alone is not enough, as modern production systems and processes demand an even higher level of air quality. Where required, “point of use” desiccant air dryers can provide the correct air quality, without the need for drying the complete compressed air installation, which can be both costly and totally unneccessary.

The Efficient Solution

The Parker Moduflex Dry Air System range of desiccant air dryers, offers the user uncompromised performance from a dedicated “point of use” Clean Dry Air system. It is easy to install and will transform an ordinary process into a highly reliable and efficient production operation.

The Moduflex Dry Air System has been designed with “quick change” filter, dryer combi-cartridges and in-line air connections to facilitate easy maintenance.

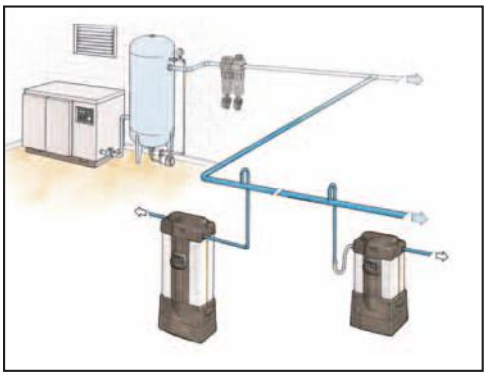
The Moduflex Dry Air System totally cleans and dries compressed air down to –40°C (–40°F) pressure dewpoint.

For critical applications, a pressure dewpoint of –70°C (–100°F) is achievable.

The principles of the Moduflex Dry Air System are based upon well proven concepts which embody true innovation and excellent value for money with technically superior yet simple design, while leading the way in compressed air drying.

Prevents unnecessary downtime.

Increases product output by reducing plant downtime.



The Benefits are obvious

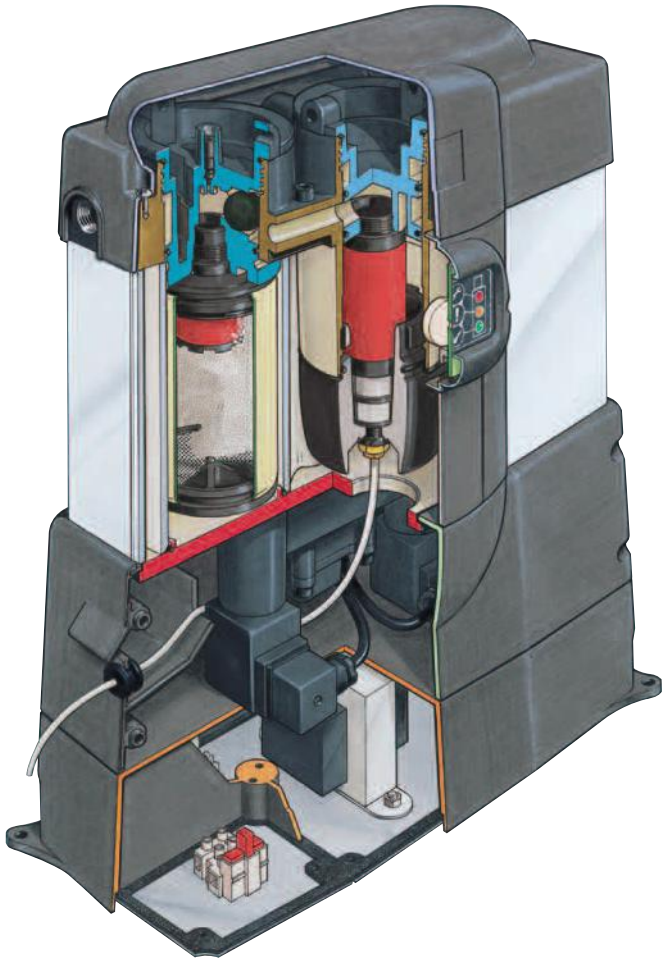
- **Point Of Use Application.**
  Bringing Clean Dry Air just where you need it.
- **Approved to International Standards**
  Designed in accordance with ASME VIII Div.1, approved to CSA/UL/CRN and fully CE Marked (PED, EMC, LVD) as standard.
- **Simple to install**
  Flexible installation utilising the multiple in-line inlet & outlet connection ports.
- **Compact and lightweight.**
  Can be Floor, Bench or Wall/Canopy mounted.
- **Very Quiet Operation.**
  Noise level less than 70dB(A).
- **Can be installed almost anywhere.**
  IP66 / NEMA 4 protection as standard.
- **Audible alarm.**
  Indicating Service interval for optimal performance.
- **Simple & easy to maintain.**
  A 100% service can be achieved insitu in under 15 minutes due to the quick release top cap arrangement, which does NOT require the inlet / outlet ports to be disconnected as with traditional systems.

The Moduflex Dry Air System, is the reliable, cost effective and flexible way to provide Clean Dry Air exactly where needed.

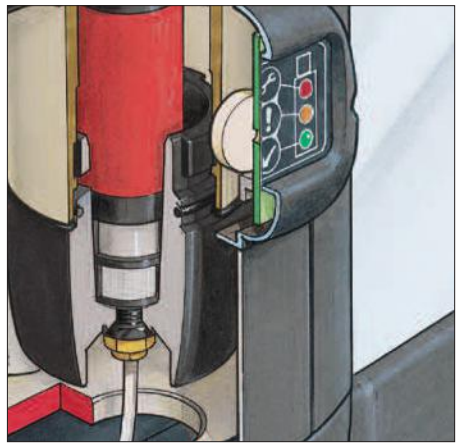
Easy desiccant cartridge replacement

Seven models in range

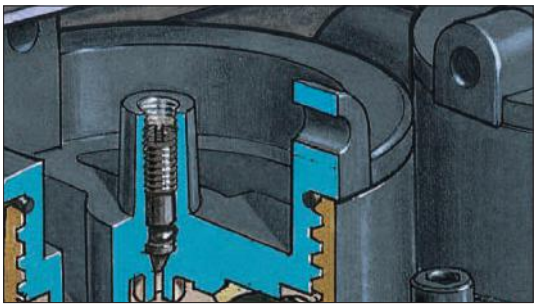
Features



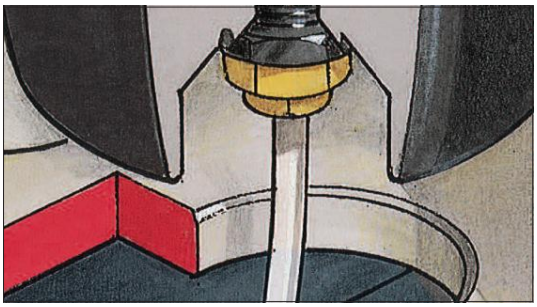
ISO7000 inlet & outlet symbols cast into the top cover ensure correct piping installation.



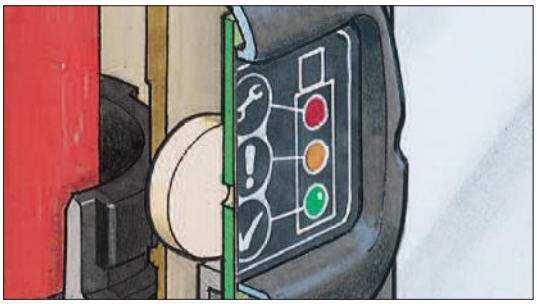
Integral 0.01µm high efficiency filter.



Top End Repressurisation – ensuring uninterrupted compressed air at all times.

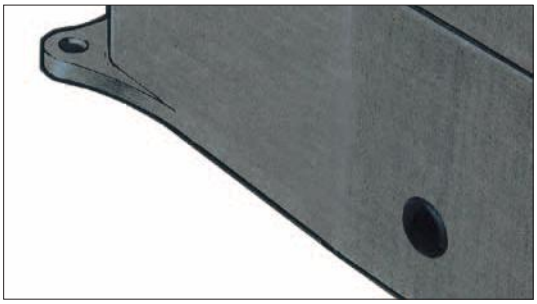


Positive removal of prefilter condensate by piping away for remote collection.

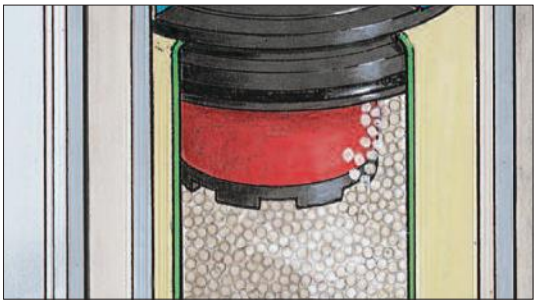


Electronic display providing high visibility LED indication with an internal audible alarm.

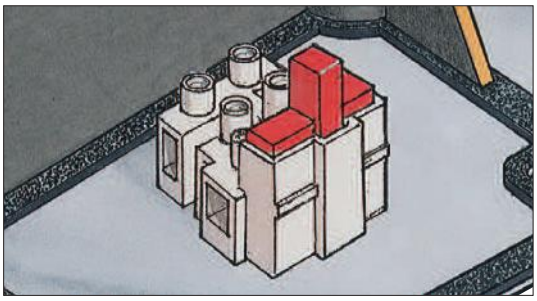
Patented high tensile extruded aluminium column with twin drying chambers.



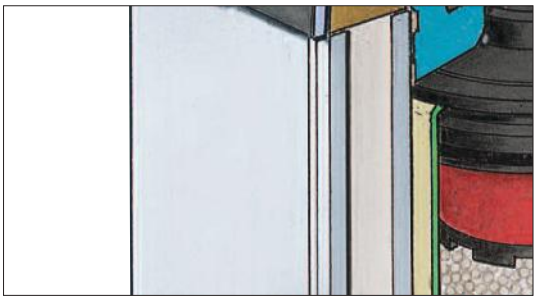
Alarm reset facility to cancel the audible alarm for 24 hours while replacement components are sourced.



One Combi-Cartridge per column containing DRYFIL® MS desiccant and a 1µm particulate filter.



Easy access to electronic control box for mains connection.



Corrosion protected by alocrom and epoxy painting.

Optional Features

- For totally quiet operation, the regeneration exhaust air can be positively piped away.
- Remote indication provides a warning of the dryers need for servicing. (Audible alarm not included)
- Wall mounting kit for vertically securing the dryer to a wall or canopy.

Tilt mounting kit facilitates easy cartridge replacement

A 45° tilt, wall mounting kit is also available for vertically securing the dryer to a wall, canopy or inside a customers product where access to the top of the dryer is restricted.

- In conditions of limited access, the electronic control box (base) can be detached and relocated remotely from the dryer.

Electronic control box can be remotely located

Product Applications

The Moduflex Dry Air System will benefit users who have a specific need for Clean Dry Air (CDA) directly after a compressor, or for a particular application where the air is critical to the operating process or end product.

Moduflex Dray Air System installed to supply control air for a CNC machining centre

Typical Applications:

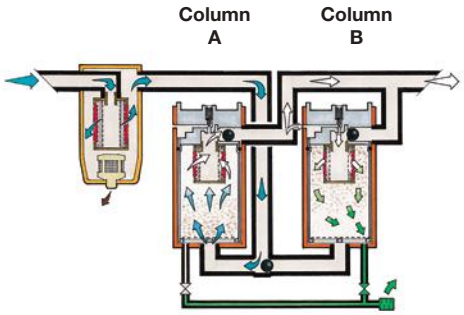
- Computer Numerical Control (CNC) Machines
- Co-ordinate Measuring Machines
- Laboratories
- Lasers
- Packaging Machines
- Instrumentation
- Processing equipment
- Conveying Machines

Operation

1

Compressed air enters the integral pre-filter and passes into the left hand chamber (Column A) where the air is dried before passing to the application.

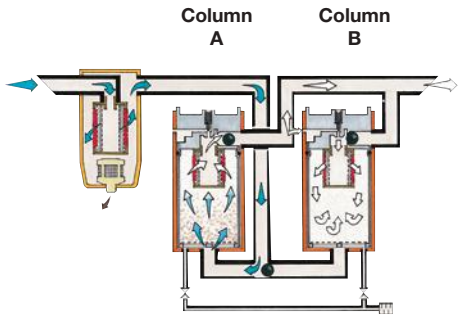
A small amount of dry purge air is used to regenerate the right hand chamber (Column B) which is wet, using the PSA (Pressure Swing Adsorption) method of regeneration, venting the saturated air to atmosphere under pressure. The same regeneration air is also used to “back flush” the integral filter to prolong its working life.



2

Prior to changeover, the right hand chamber (Column B) enters repressurisation where the exhaust valve is closed to allow pressure to increase.

This process ensures a smooth uninterrupted changeover, preventing the loss of any system pressure, before the process repeats itself.



Service Indication Sequence & Alarm

During operation, The Moduflex Dry Air System Power On (yellow) LED and Check (Green) LED indicators will illuminate, remaining in this configuration for 11500 hours. At this time, the Warning (Yellow) LED will illuminate and cancel the Check (Green) LED. This signals the user to order service replacement components at the optimum time.

500 hours later (a total of 12000 hours from initial start up) the Service (Red) LED will illuminate and cancel the Warning (Yellow) LED, the Audible Alarm housed inside the display will sound intermittently (every 6 seconds) drawing attention to the need for a service.

Selection Criteria

To correctly select the dryer best suited for your application, the following details are required to ensure optimum performance and trouble free operation.

- **Maximum Inlet Flow.**
- **Minimum Inlet Pressure.**
- **Maximum Inlet Temperature.**

Once these operating parameters have been established, you can select the most economical Moduflex Dry Air System for your application.

Technical Specifications

Flow Range:		85 L/min to 567 L/min at 7 bar
Minimum Operating Pressure:		4 bar
Maximum Operating Pressure:		12 bar
Minimum Operating Temperature:		1.5°C
Maximum Inlet Temperature:		50°C
Noise Level (Average):		≤ 70dB(A)
Pressure Dewpoint	**(Standard):**	-40°C pdp
	(Optional):	-70°C pdp
Standard Electrical Supply:		230/1ph/50Hz (Tolerance +/- 10%)
		115/1ph/60Hz (Tolerance +/- 10%)
Controls:		Electronic Control Timer
Inlet Connections:		G3/8
Outlet Connections:		G3/8

Ordering Information

P3	T	J	A		3	A			N

Thread type	
1	BSPP
9	NPT

Size
1
2
3
4
5
6
7

Supply Voltage	
A	(230 V AC)
C	(24 V AC)
J	(110 V AC)
M	(24 V DC)

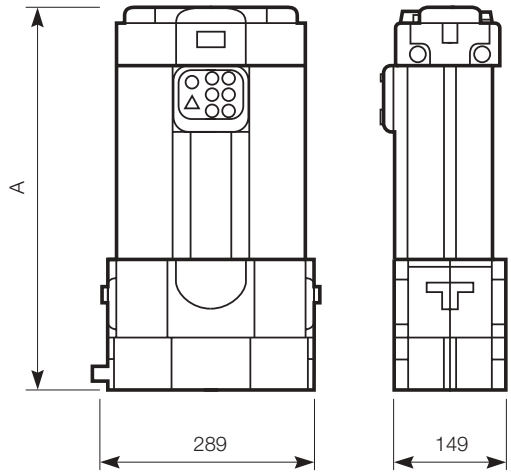
NOTE: BOLD OPTIONS ARE STANDARD.

Standard nominal flow rate qnN (NL/min) at pressure dew point -40°C

Model	Port Size	Max inlet temperature	Inlet Pressure (bar)								
			4	5	6	7	8	9	10	11	12
P3TJA13A1AN	3/8”	20°C	53	63	75	85	82	92	100	110	118
	3/8”	35°C	33	47	66	85	80	99	118	142	165
	3/8”	40°C	32	46	64	82	77	97	114	138	160
	3/8”	45°C	29	42	58	75	70	87	104	125	145
	3/8”	50°C	24	35	48	62	58	73	86	103	142
P3TJA13A2AN	3/8”	20°C	90	107	125	142	137	153	167	183	198
	3/8”	35°C	57	80	110	142	133	165	197	236	277
	3/8”	40°C	55	78	106	138	129	161	190	229	269
	3/8”	45°C	50	71	96	125	116	145	174	209	244
	3/8”	50°C	41	59	80	104	97	121	144	172	238
P3TJA13A3AN	3/8”	20°C	143	170	200	277	220	245	267	292	317
	3/8”	35°C	90	128	176	227	213	265	315	377	444
	3/8”	40°C	87	124	170	220	207	257	304	365	431
	3/8”	45°C	79	112	154	200	187	233	278	333	390
	3/8”	50°C	66	94	128	166	156	194	230	274	380
P3TJA13A4AN	3/8”	20°C	178	213	250	283	275	307	335	365	397
	3/8”	35°C	112	160	220	283	267	332	395	471	556
	3/8”	40°C	109	155	213	275	259	322	382	456	540
	3/8”	45°C	98	141	193	249	234	292	348	416	488
	3/8”	50°C	82	117	160	207	195	243	288	343	476
P3TJA13A5AN	3/8”	20°C	232	277	323	368	357	398	435	475	515
	3/8”	35°C	146	208	284	368	346	430	513	613	721
	3/8”	40°C	142	202	275	357	336	418	496	594	700
	3/8”	45°C	128	183	249	324	303	378	452	542	633
	3/8”	50°C	107	152	207	269	253	314	374	447	618
P3TJA13A6AN	3/8”	20°C	268	318	373	425	412	458	502	548	595
	3/8”	35°C	169	239	328	425	400	495	592	707	833
	3/8”	40°C	163	232	317	412	387	481	572	685	809
	3/8”	45°C	147	210	287	374	350	435	522	625	732
	3/8”	50°C	123	175	239	310	293	362	432	515	714
P3TJA13A7AN	3/8”	20°C	357	425	498	567	550	612	668	732	793
	3/8”	35°C	225	319	438	567	534	661	788	944	1110
	3/8”	40°C	218	310	423	550	517	643	762	915	1078
	3/8”	45°C	196	281	383	499	468	581	695	834	975
	3/8”	50°C	164	234	319	414	391	483	574	688	952

Weights and Dimensions

Model	Dimensions mm (ins) A	Weight kg (lbs)
P3TJA13A1AN	422 (16.6)	11 (24.2)
P3TJA13A2AN	500 (19.7)	13 (28.7)
P3TJA13A3AN	616 (24.2)	16 (35.3)
P3TJA13A4AN	692 (27.2)	18 (39.7)
P3TJA13A5AN	847 (33.3)	20 (44.1)
P3TJA13A6AN	906 (35.7)	23 (50.7)
P3TJA13A7AN	1098 (43.2)	28 (61.7)



Service Kits

Model	Service Kit
P3TJA13A1AN	**P3TKA00JA1**
P3TJA13A2AN	**P3TKA00JA2**
P3TJA13A3AN	**P3TKA00JA3**
P3TJA13A4AN	**P3TKA00JA4**
P3TJA13A5AN	**P3TKA00JA5**
P3TJA13A6AN	**P3TKA00JA6**
P3TJA13A7AN	**P3TKA00JA7**

Mounting Kits

Description	Kit
Fixed Wall Mounting Bracket	**P3TKA00MJ**
45° Tilt Wall Mounting Bracket	**P3TKA00MK**

ISO 8573 - Compressed air quality standards

ISO 8573 is the group of International standards relating to the quality of compressed air and consists of nine separate parts. Part 1 specifies the quality requirements of the compressed air and parts 2 - 9 specify the methods of testing for a range of contaminants.

ISO 8573.1 : 2001 is the primary document used from the ISO 8573 series and it is this document which allows the user to specify the air quality or purity required at key points in a compressed air system.

Within ISO 8573.1 : 2001 purity levels for the main contaminants are shown in separate tables, however for ease of use, this document combines all three into one easy to understand table.

Purity Class	Solid Particulat: Maximum number of particles per m^3 0.1 - 0.5 micron	0.5 - 1 micron	1 - 5 micron	Particle Size micron	Concentration mg/m^3	Water: Vapour Pressure Dewpoint	Liquid g/m^3	Oil: Total oil (aerosol, liquid and vapour) mg/m^3
0	*	*	*	*	*	*	*	*
1	100	1	0	-	-	-70°C	-	0.01
2	100,000	1,000	10	-	-	-40°C	-	0.1
3	-	10,000	500	-	-	-20°C	-	1
4	-	-	1,000	-	-	+3°C	-	5
5	-	-	20,000	-	-	+7°C	-	-
6	-	-	-	5	5	+10°C	-	-
7	-	-	-	40	10	-	0,5	-
8	-	-	-	-	-	-	5	-
9	-	-	-	-	-	-	10	-

* As specified by the equipment user or supplier

Specifying air purity in accordance with ISO 8573.1 : 2001

When specifying the purity of air required, the standard must always be referenced, followed by the purity class selected for each contaminant (a different purity class can be selected for each contaminant if required). An example of how to write an air quality specification is shown below :

ISO 8573.1 : 2001 Class 1.2.1 (Example)
ISO8573.1 : 2001 refers to the standard document and its revision, the three digits refer to the purity classifications selected for solid particulate, water and total oil. Selecting an air purity class of 1.2.1 would specify the following air quality when operating at the standard's reference conditions:

Class 1 Particulate
In each cubic metre of compressed air, no more than 100 particles in the 0.1 - 0.5 micron size range are allowed
In each cubic metre of compressed air, no more than 1 particle in the 0.5 - 1 micron size range is allowed
In each cubic metre of compressed air, no particles in the 1 - 5 micron size range are allowed

Class 2 Water
A pressure dewpoint of -40°C or better is required and no liquid water is allowed.

Class 1 Oil
In each cubic metre of compressed air, not more than 0.01mg of oil is allowed. This is a combined level for both oil aerosol and oil vapour.

Cost effective system design

To achieve the stringent air quality levels required for today's modern production facilities, a careful approach to system design, commissioning and operation must be employed. Treatment at one point alone is not enough and it is highly recommended that the compressed air is treated prior to entry into the distribution system to a quality level suitable for protecting air receivers and distribution piping.

The following table highlights the Moduflex Extras filtration and drying products required to achieve each air purity classification shown in ISO 8573.1 : 2001.

Point of use purification should also be employed, with specific attention being focused on the application and the level of air quality required. This approach to system design ensures that air is not "over treated" and provides the most cost effective solution to high quality compressed air.

ISO 8573.1:2001 Class	Solid Particulate	Water Vapour	Total Oil (Aerosol Liquid & Vapour)
1	Coalescing Grade 1µm filter + Grade 0.01µm filter + Sterile filter	Moduflex Adsorption Dryer -70°C PDP	Coalescing Grade 0.01µm filter + Grade 1µm filter + Vapour removal filter
2	Coalescing Grade 1µm filter + Grade 0.01µm filter	Moduflex Adsorption Dryer -40°C PDP	Coalescing Grade 0.01µm filter + Grade 1µm filter
3	Coalescing Grade 1µm filter		Coalescing Grade 1µm filter

Moduflex AirGuard Protection System

Airfuse - protection of personnel, machinery and equipment

Protect your most important assets: your employees and their equipment!

The AirGuard offers simple but efficient protection to pneumatic systems in the event of a broken compressed-air hose or pipe. The air supply is immediately shut off by the AirGuard, should the volume of air exceed a set value. This “value” is factory preset and is set to allow normal air consumption when using air tools.

Should the air consumption exceeds the set value, e.g. the air line is severed, then the internal piston instantly shuts off the main flow. An integral bleed hole allows some air to flow though. This enables the line pressure to automatically reset the AirGuard once the main line break is repaired.

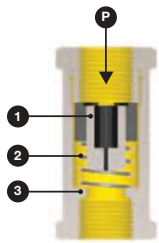
Management Responsibility:
It is the duty of management to ensure a safe working environment for their employees and that the equipment complies with the **Machinery Directive EN983** or **“PUWER”** (the Provision and Use of Work Equipment Regulations)

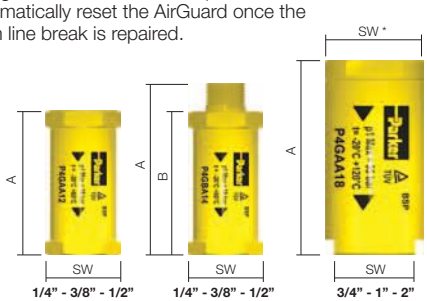
EU Standard EN983-1996 (5.3.4.3.2) currently states:
“Failure of flexible hose assemblies and plastic piping:
If the failure of a flexible hose assembly constitutes a whiplash hazard or a fluid ejection hazard, it shall be restrained or shielded”.

Complies with the 2009 ISO4414 (5.4.5.11.1)
“When failure of a hose assembly of plastic piping constitutes a whiplash hazard, it shall be restrained or shielded by suitable means and/or an air fuse for compressed air shall be mounted”.

Function:

(P) is the inlet. Air passes the piston (1) and continues through the seat (3). The air flow, passing the piston, is slowed down by means of length wise grooves on the outer side of the piston. If the flow is too high, the air cannot pass the piston quickly enough, and the piston is forced against the spring (2) and towards the seat. The maximum flow is shown in the graph. If the value indicated is exceeded e.g. if the hose suddenly breaks - the air supply is automatically shut off. An integral bleed hole allows some air to flow though. This enables the line pressure to automatically reset the AirGuard once the main line break is repaired.





Special Applications

Stainless Steel AirGuard available in 1/2” size

Some branches of industry with a high hazard potential, such as chemical and pharmaceutical as well as clean room and offshore technologies place extremely high demands on both the safety of their employees and the protection of their facilities. Compressed air is typically used as an energy transfer medium in these industries and is no means without its dangers: compressed air hoses can rupture or burst, as can fixed pipes. This may expose personnel working in such areas to extreme hazards as well as potential damage to expensive facilities and costly production downtime.

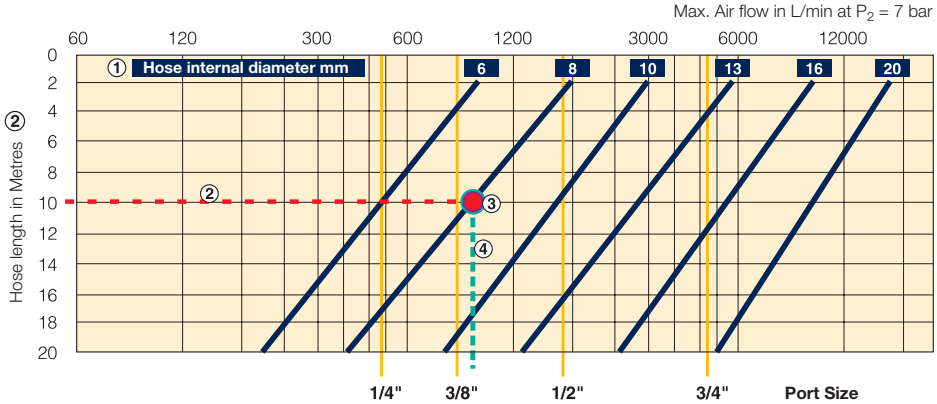
Technical Data and Ordering Information

Thread connection BSP	dimensions (mm)			Weight (g)	Maximum inlet pressure	Temperature range	Material	P1 inlet thread	P2 outlet thread	Order Code
	A	B	SW							
1/4”	48	-	22	30	18 bar (255 PSIG)	-20°C to 80°C (-4°F to 176°F)	Housing: aluminium Piston: polyoxy-methylene	female	female	**P4GAA12**
1/4”	58	49	22	36				male	female	**P4GBA12**
3/8”	59	-	27	58				female	female	**P4GAA13**
3/8”	71	59	27	62				male	female	**P4GBA13**
1/2”	65	-	30	78				female	female	**P4GAA14**
1/2”	80	65	30	85				male	female	**P4GBA14**
1/2”	62	-	28	132			Housing: stainless steel Piston: polyoxy methylene	female	female	**P4GCA14**
3/4”	76	-	30 / 36*	107		-20°C to 120°C (-4°F to 248°F)	Housing: aluminium Piston: aluminium	female	female	**P4GAA16**
1”	100	-	41 / 50*	300	35 bar (500 PSIG)			female	female	**P4GAA18**
2”	130	-	70 / 80*	775				female	female	**P4GAA1C**

Note: NPT version available on request - 1/4” high flow version available on request.

How to select the optimal size of an AirGuard

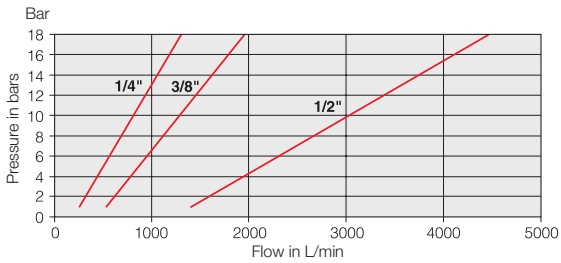
Information based on an inlet pressure of 7 bar



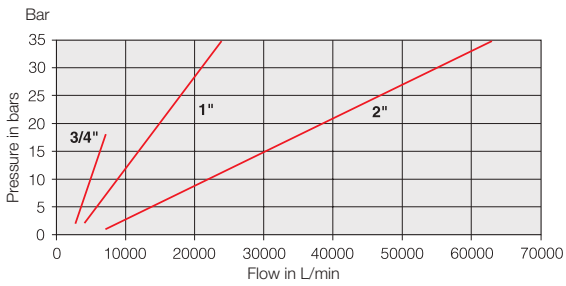
a. Determine the internal diameter of the hose, tube or pipe being used ① (see specification Hose-internal Diameter in blue box, blue diagonal line).
b. Determine the length of the hose, tube or pipe ② (Hose length in meters).
c. Define the intersection of point a and b, and mark a vertical line downwards. ③ - ④ (In the example the red/green dot and the green dashed line).
d. The next vertical yellow line, left of the intersection line ④ (example: green dashed) tells the correct Airguard size (in inches).
e. Important: Every flow value to the right of the respective vertical line (yellow) would activate the Airguard in case of a bursting hose, pipe or tube. All Airguard sizes right of the intersection line (green) are too big and will not close up.
f. Example: Which air fuse should be used for a hose, pipe or tube bearing 8 mm inner diameter and 10 meters of length - follow the 10 meter line (red ②) to the intersection point (red/green dot ③). Now the next left yellow line marks the correct size.
g. Result: The correct size in our example is the Airguard 3/8"

Closing Flow Graphs

1/4", 3/8" and 1/2" flow rates



3/4", 1" and 2" flow rates



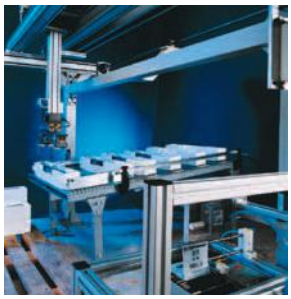
Dimensioning of compressed air hoses and equipment

Connection Size	Hose length 0 to 10 meters			Hose length 10 to 20 meters		
	Inner diameter Minimum mm	Minimum pressure bar	Flow at 6 bar l/min	Inner diameter minimum	Minimum pressure bar	Flow at 6 bar l/min
1/4"	7	4	480	8	4	480
3/8"	10	4	1100	12	4	1100
1/2"	12	4	2000	14	4	2000
3/4"	18	4	3800	20	4	3800
1"	24	4	6500	26	4	6500
2"	45	4	16000	50	4	16000

If the pressure is lower than stated in the table, a hose with a larger internal diameter must be used.

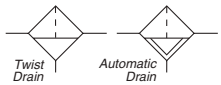
To select the correct size AirGuard, the pneumatic tool or equipment must have a maximum flow requirement to the left of the red line.

e.g.: 15 bar @20000 L/m = 2" size AirGuard
8 bar @1000 L/m = 3/8" size AirGuard



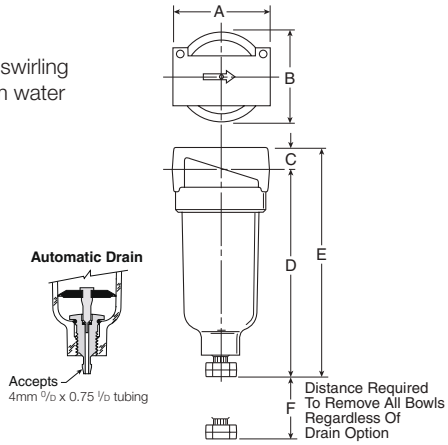
Miniature FRL Series

14F Filters - Miniature



Features

- Excellent water removal efficiency.
- Unique deflector plate that creates swirling of the air stream ensuring maximum water and dirt separation.
- 5 micron element standard.
- High Flow: 1/8" – 10 dm^3/s
  1/4" – 11 dm^3/s



Port Size	BSPP	
	Twist Drain	Automatic Pulse Drain
Poly Bowl		
1/8"	**14F01BB1**	**14F05BB1**
1/4"	**14F11BB1**	**14F15BB1**

Standard part numbers shown.
For other models refer to ordering information below.

§ dm^3/s = 6.2 bar inlet and 0.3 bar pressure drop.

14F Filter Dimensions (mm)		
A 43	B 39	C 10
D 97	D† 99	E 107
E† 108	F 41	

† **With Automatic Pulse Drain.**

Ordering Information

1 4 F | 1 | 1 | B | B | 1

	Port size
0	**1/8 Inch**
1	**1/4 Inch**

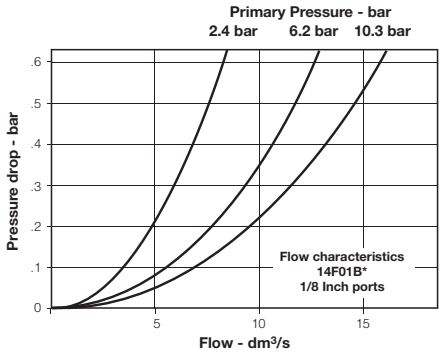
	Bowl options
1	**Twist drain**
5	**Automatic pulse drain**

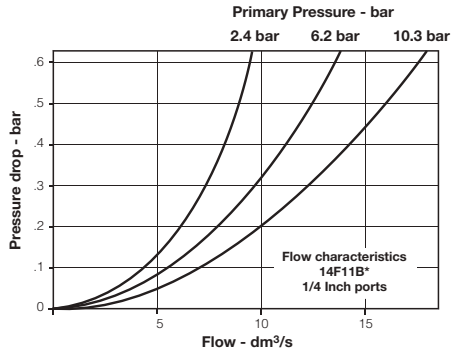
	Elements
B	**5 Micron**

	Port type
Blank	NPT
1	**BSPP**

NOTE: BOLD OPTIONS ARE STANDARD.

Technical Information





14F Filter Kits & Accessories

Bowl Kits –
Poly Bowl –
Automatic Pulse Drain PS408P
Twist Drain PS404P
Filter Element Kits –
5 Micron PS403P
Mounting Bracket Kit PS417BP

Specifications

Automatic Pulse Drain Tube Barb ..... 4mm O/D x 0.75 I/D
Bowl Capacity ..... 30 cm^3
Port Threads ..... 1/8, 1/4 Inch
Pressure & Temperature Ratings –
Polycarbonate Bowl ..... 0 to 10.3 bar
0°C to 52°C
Automatic Pulse Drain ..... 0.7 to 10.3 bar
at 52°C or less
Weight ..... 180 g

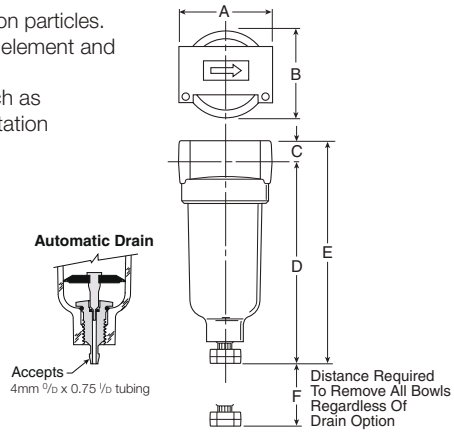
Materials of Construction

Body ..... Zinc Bowl Transparent Polycarbonate
Deflector, Element Holder & Baffle ..... Plastic
Drains –
Twist Drain –
Body & Stem ..... Plastic
Seals ..... Nitrile
Automatic Pulse Drain –
Piston & Seals ..... Nitrile
Stem, Seat, Adaptor & Washers ..... Aluminum
Filter Elements –
5 Micron (Standard) ..... Plastic
Seals ..... Nitrile

10F Coalescing Filters - Miniature

Features

- Removes liquid aerosols and sub-micron particles.
- Liquids gravitate to the bottom of the element and will not re-enter the airstream.
- Oil free air for critical applications, such as air gauging and pneumatic instrumentation and controls.
- 99.97% DOP efficiency.
- High Flow: Grade 6 Element
  1/8" – 8 dm^3/s
  1/4" – 9 dm^3/s



Port Size	BSPP	
	Twist Drain	Automatic Pulse Drain
Poly Bowl		
1/8"	**10F01ED1**	**10F05ED1**
1/4"	**10F11ED1**	**10F15ED1**

Standard part numbers shown.

§ dm^3/s = 6.2 bar inlet and 0.3 bar pressure drop.

10F Coalescing Filter Dimensions (mm)		
A 43	B 39,6	C 10
D 97	D† 93	E 107
E† 103	F 41	

† **With Automatic Pulse Drain.**

Ordering Information

1 0 F 1 1 E D -

	Port size
0	**1/8 Inch**
1	**1/4 Inch**

	Bowl options
1	**Twist drain**
5	**Automatic pulse drain**

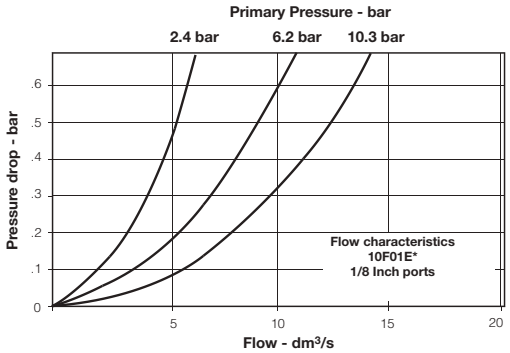
	Elements
E	**0.01 um**

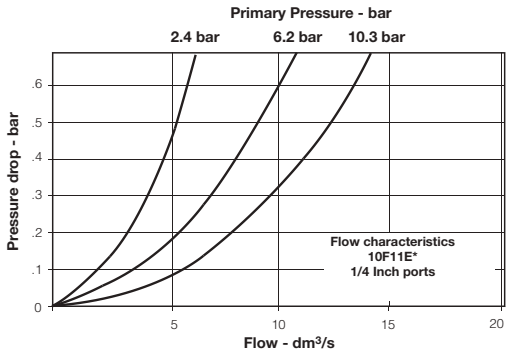
	Port type
Blank	NPT
1	**BSPP**

NOTE: BOLD OPTIONS ARE STANDARD.

Technical Information

Grade 6





10F Coalescing Filter Kits & Accessories

Bowl Kits –
Poly Bowl – Automatic Pulse Drain PS408P
Twist Drain PS404P
Filter Element Kits – 0.01 um PS446P
Mounting Bracket Kit PS417BP

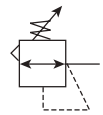
Specifications

Automatic Pulse Drain Tube Barb ..... 4mm$^{O}/_{D}$ x 0.75 $^{I}/_{D}$
Bowl Capacity ..... 30cm^3
Operation –
Normal Operating Pressure Drop ..... 0.1 bar
Maximum Recommended Pressure Drop ..... 0.7 bar
(Element should be replaced)
Port Threads ..... 1/8, 1/4 Inch
Pressure & Temperature Ratings –
Polycarbonate Bowl – 0 to 10.3 bar
0°C to 52°C
Weight ..... 180 g

Materials of Construction

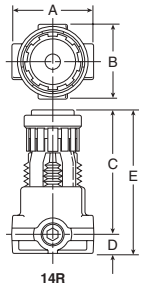
Body ..... Zinc
Bowls ..... Transparent Polycarbonate
Drains – Twist Drain –
Body & Stem ..... Plastic
Seals ..... Nitrile
Automatic Pulse Drain –
Piston & Seals ..... Nitrile
Stem, Seat, Adaptor & Washers ..... Aluminum
Element Holder ..... Plastic
Filter Element –
Borosilicate & felt glass fibers 99.97% DOP efficiency
Seals ..... Nitrile

14R Regulators - Miniature



Features

- Unbalanced poppet standard.
- Solid control piston with lip seal for extended life.
- Non-rising adjusting knob.
- Compact, 73,2mm high by 42mm wide.
- High Flow: 1/8" – 6 dm^3/s
  1/4" – 7 dm^3/s



Port Size	8 bar - BSP
Without Gauge	
1/8"	**14R013FC1**
1/4"	**14R113FC1**

14R Regulator Dimensions (mm)					
14R	**A** 42	**B** 40	**C** 63,5	**D** 10	**E** 73

Standard part numbers shown bold. For other models refer to ordering information below.

NOTE: 31mm dia. hole required for panel mounting.

§ dm^3/s = 6.9 bar inlet, 6.2 bar no flow secondary setting and 0.7 bar pressure drop.

Ordering Information

1 4 R 1 13 F C 1

	Port size
0	**Port size 1/8 Inch pipe 1/8 Inch gauge port**
1	**1/4 Inch pipe 1/8 Inch gauge port**

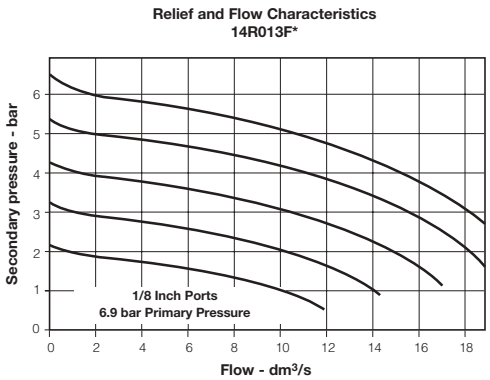
	Pressure range
	Without gauge - Yellow knob
10	2 bar
11	4 bar
13	**8 bar**

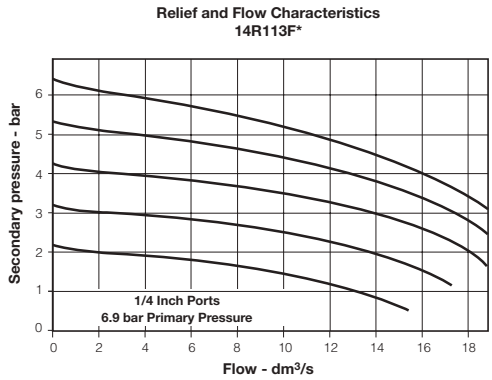
	Relief
F	**Relieving**
G	Non-Relieving

	Port type
Blank	NPT
1	**BSPP**

NOTE: BOLD OPTIONS ARE STANDARD.

Technical Information





CAUTION:

REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design.

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

⚠ WARNING

Product rupture can cause serious injury.
Do not connect regulator to bottled gas.
Do not exceed maximum primary pressure rating.

14R Regulator Kits & Accessories

Bonnet Assembly Kit L01369
Gauges – 0 to 2 bar - 1/8.....P3D-KAB1AYN
0 to 4 bar - 1/8.....P3D-KAB1ALN
0 to 10 bar - 1/8.....P3D-KAB1ANN
Mounting Bracket Kit (Includes Panel Mount Nut) PS417BP
Panel Mount Nuts – Plastic.....P78652
Metal.....P01531
Service Kits – Non-Relieving..... PS422P
Relieving..... PS423P

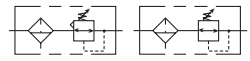
Specifications

Gauge Ports (2) 1/8
(Can be used for Full Flow)
Port Threads ..... 1/8, 1/4 Inch
Pressure & Temperature Ratings – 0 to 20.7 bar 0°C to 52°C
Secondary Pressure Ranges –
Standard Pressure..... 0 to 8 bar
Medium Pressure ..... 0 to 4 bar
Medium Pressure ..... 0 to 2 bar
Weight – 14R ..... 140 g

Materials of Construction

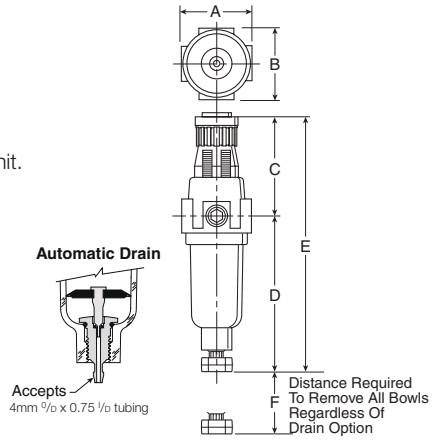
Adjusting Nut ..... Brass
Adjusting Stem & Spring .....Steel
Body .....Zinc
Bonnet, Seat, Piston & Valve Poppet ..... Plastic
Seals .....Nitrile

14E Filter / Regulator - Miniature



Features

- Excellent water removal efficiency.
- Unbalanced poppet standard.
- Solid control piston for extended life.
- Space saving package offers both filter and regulator features in one integral unit.
- Non-rising adjustment knob.
- Two full flow 1/8" gauge ports.
- High Flow: 1/8" – 7 dm^3/s§
  1/4" – 8 dm^3/s§



Port Size	8 BAR - BSPP	
	Twist Drain	Automatic Pulse Drain
Poly Bowl‡		
1/8"	**14E01B13FC1**	**14E05B13FC1**
1/4"	**14E11B13FC1**	**14E15B13FC1**

Standard part numbers shown. For other models refer to ordering information below.

§ dm^3/s = 6.9 bar inlet, 6.2 bar no flow secondary setting and 0.7 bar pressure drop.

NOTE: 31mm hole required for panel mounting.

14E Filter / Regulator Dimensions (mm)		
A 41	B 40	C 61
D 96	D† 92	E 158
E† 154	F 41	

† With Auto Drain

Ordering Information

1	4	E		1		1		B		13		F		C		1

	Port size
0	1/8 Inch
1	1/4 Inch

	Bowl options
1	Twist drain
5	Automatic drain

	Elements
B	5 Micron

	Relief
F	Relieving
G	Non-Relieving

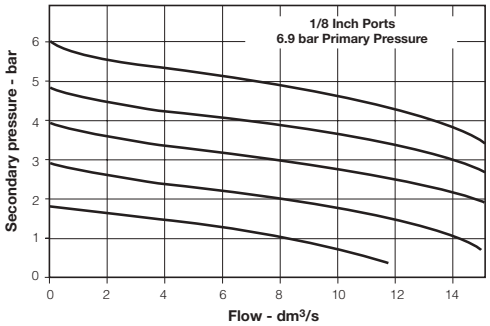
	Port type
Blank	NPT
1	BSPP

	Pressure range
	Without gauge - Yellow knob
10	2 bar
11	4 bar
13	8 bar

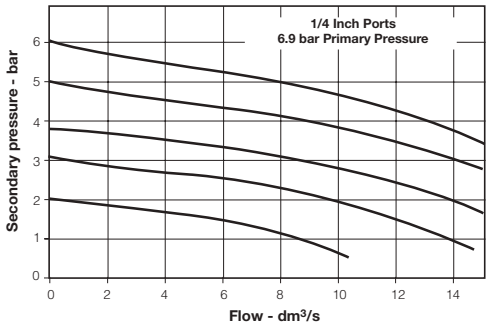
NOTE: BOLD OPTIONS ARE STANDARD.

Technical Information

Relief and Flow Characteristics
14E01B13F*



Relief and Flow Characteristics
14E11B13F*



CAUTION:

REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design.

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

⚠ WARNING

Product rupture can cause serious injury.
Do not exceed maximum primary pressure rating.

14E Filter / Regulator Kits & Accessories

Bowl Kits –
Poly Bowl – Automatic Drain PS408P
Twist Drain PS404P
Filter Element Kits – 40 Micron PS401P
5 Micron PS403P

Gauges – 0 to 2 bar - 1/8 ..... P3D-KAB1AYN
0 to 4 bar - 1/8 ..... P3D-KAB1ALN
0 to 10 bar - 1/8 ..... P3D-KAB1ANN

Mounting Bracket Kit (Includes Panel Mount Nut) **PS417BP**
Panel Mount Nut **P78652**
Service Kits – Non-Relieving PS422P
Relieving PS423P

Specifications

Automatic Pulse Drain Tube Barb ..... 4mm O/D x 0.75 I/D
Bowl Capacity ..... 30 cm^3
Gauge Ports (2) (Can be used for Full Flow) ..... 1/8 Inch
Port Threads ..... 1/8, 1/4 Inch
Pressure & Temperature Ratings –
Polycarbonate Bowl ..... 0 to 10.3 bar, 0°C to 52°C
Secondary Pressure Ranges –
Standard Pressure ..... 0 to 8 bar
Medium Pressure ..... 0 to 2 bar
Medium Pressure ..... 0 to 4 bar
Weight ..... 180 g

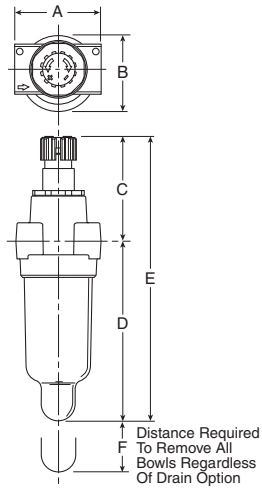
Materials of Construction

Adjusting Nut ..... Brass
Adjusting Stem & Spring ..... Steel
Body ..... Zinc
Bonnet, Knob, Seat, Piston, Holder & Deflector ..... Plastic
Bowl Available – Transparent ..... Polycarbonate
Drains – Manual – Twist Type
Body & Stem ..... Plastic
Seals ..... Nitrile
Automatic – Pulse Type
Piston & Seals ..... Nitrile
Stem, Seat, Adaptor & Washers ..... Aluminum
Filter Elements – 5 Micron (Standard) ..... Plastic
Seals ..... Nitrile

04L Mist Lubricators - Miniature

Features

- Proportional oil delivery over a wide range of air flows.
- Precision needle valve assures repeatable oil delivery and provides simple adjustment of delivery rate.
- Ideal for low and high flow applications with changing air flow.
- Transparent sight dome for 360° visibility.
- High Flow: 1/8" – 9 dm^3/s§
  1/4" – 10 dm^3/s§



Port Size	BSPP No Drain
Poly Bowl	
1/8"	**04L00GB1**
1/4"	**04L10GB1**

Standard part numbers shown bold.
For other models refer to ordering information below.
§ dm^3/s **= 6.2 bar inlet and 0.3 bar pressure drop.**

04L Lubricator Dimensions (mm)		
A 44	B 40	C 55
D 92	D† 96	E 147
E† 151	F 41	

Ordering Information

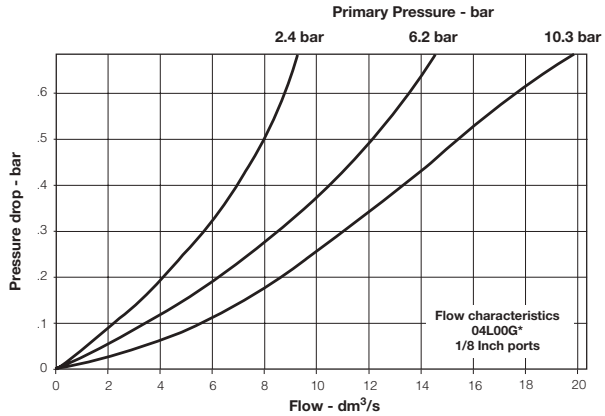
0 4 L 1 0 G B -

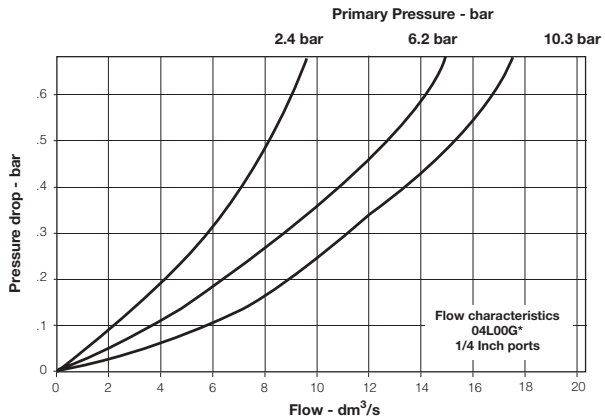
	Port size
0	**1/8 Inch**
1	**1/4 Inch**

	Port type
Blank	NPT
1	**BSPP**

NOTE: BOLD OPTIONS ARE STANDARD.

Technical Information





04L Mist Lubricator Kits & Accessories

Bowl Kits –
Poly Bowl – No Drain PS421P

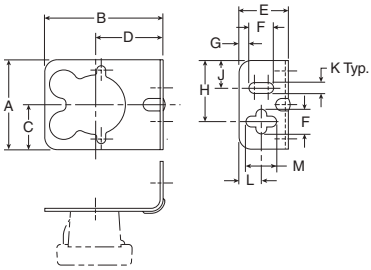
Specifications

Bowl Capacity ..... 30 cm^3
Minimum Flow for Lubrication ..... 0.2 dm^3/s at 6.9 bar
Port Threads ..... 1/8, 1/4 Inch
Pressure & Temperature Ratings –
Polycarbonate Bowl – 0 to 10.3 bar
0°C to 52°C
Weight ..... 180 g

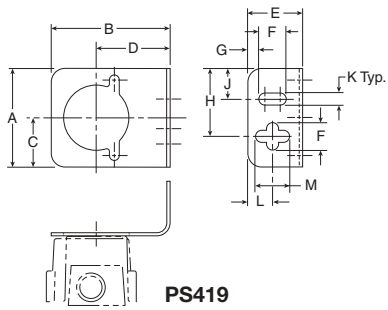
Materials of Construction

Body ..... Zinc
Bowls – Transparent ..... Polycarbonate
Seals ..... Nitrile
Sight Dome ..... Polycarbonate

Mounting Bracket Kits



PS417BP
(Includes Panel Mount Nut)



PS419

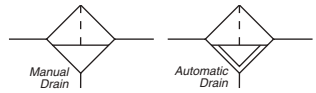
Dimensions (mm)

A	B	C	D	E	F	G	H	J	K	L	M	Kit
46	60	23	34	25	13	5	31	14	6	11	16	**PS417BP** (10F, 14F, 14R, 14E)
46	55	23	34	25	13	5	31	14	6	11	16	**PS419** (04L)

Stainless Steel FRLs

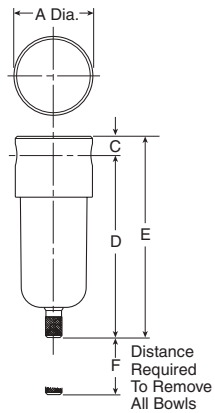
Air Preparation Units

PF504 Filter – Miniature



Features

- Stainless steel construction handles most corrosive environments
- Fluorocarbon seals standard
- Meets NACE specifications MR-01-75/ISO 15156
- High flow: 1/4" - 10.85 $dm^3/s^{\S}$
- 1/8" female threaded drain



Port Size	BSPP	NPT
	Manual Twist Drain	Manual Twist Drain
1/4"	**PF504G02DHSS**	PF504-02DHSS

Standard part numbers shown bold.
For other models refer to ordering information below.

§ dm^3/s = Flow at 6.2 bar and a 0.3 bar pressure drop.

PF504 Filter Dimensions (mm)		
A	C	D
40	8	94
E	F	
102	40	

Ordering Information

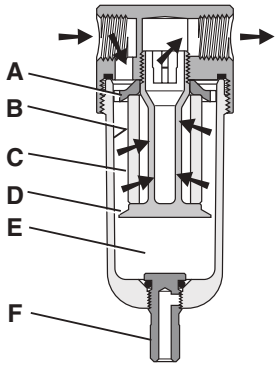
PF504	G	02	D	H		SS

Port Type	Port Size	Bowl	Element	Options	Material
G BSPP	**02 1/4 Inch**	**D Metal Bowl without Sight Gauge**	**H 20 Micron**	**Blank Manual Twist Drain**	**SS Stainless Steel**
- NPT			G 5 Micron	R Automatic Pulse Drain	

BOLD ITEMS ARE MOST POPULAR.

Technical Specifications – PF504

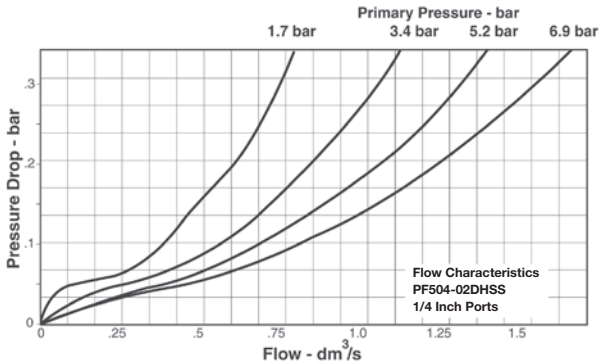
Operation



First Stage Filtration:
Air enters at inlet port and flows through deflector plate **(A)** which causes a swirling action. Liquids and coarse particles are forced to the bowl interior wall **(B)** by the centrifugal action of the swirling air. They are then carried down the bowl wall by the force of gravity. The baffle **(D)** separates the lower portion of the bowl into a "quiet zone" **(E)** where the removed liquid and particles collect, unaffected by the swirling air, and are therefore not reentrained into the flowing air.

Second Stage Filtration:
After liquids and large particles are removed in the first stages of filtration, the air flows through element **(C)** where smaller particles are filtered out. The filtered air then passes downstream. Collected liquids and particles in the "quiet zone" **(E)** should be drained before their level reaches a height where they would be reentrained in the flowing air. This can be accomplished by unscrewing the drain valve **(F)** slightly until the liquid begins to drain.

Technical Information



PF504 Filter Kits & Accessories

Filter Element Kits –
Particulate (5 Micron) EK504VY
Particulate (20 Micron) EK504Y
Manual Twist Drain –
Small (Old) SA600Y7-1SS
Large (New) SAP05481
Pipe Nipple –
1/4" NPT 316 Stainless Steel 616Y28-SS
1/4" BSPT 316 Stainless Steel AC-2SS

Specifications

Bowl Capacity ..... 29 cm^3
Filter Rating ..... 20 Micron
Sump Capacity ..... 12 cm^3
Port Threads ..... 1/4 Inch

Pressure & Temperature Ratings –
Manual Twist Drain ..... 0 to 20.7 bar
-18°C to 82°C
Auto Pulse Drain ..... 0 to 12 bar
0°C to 66°C
Note: Air must be dry enough to avoid ice formation at temperatures below 2°C.
Weight ..... 274 g

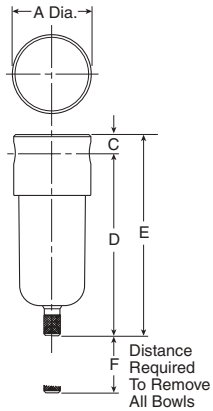
Materials of Construction

Body ..... 316 Stainless Steel
Bowls ..... 316 Stainless Steel
Deflector ..... Acetal
Drain ..... 316 Stainless Steel
Element Holder ..... Acetal
Filter Element ..... Polyethylene
Seals ..... Fluorocarbon

PF501 Coalescing Filter – Miniature

Features

- Stainless steel construction handles most corrosive environments
- Meets NACE specifications MR-01-75/ISO 15156
- High flow: 1/4" - 755 dm^3/s§
- 1/8" female threaded drain



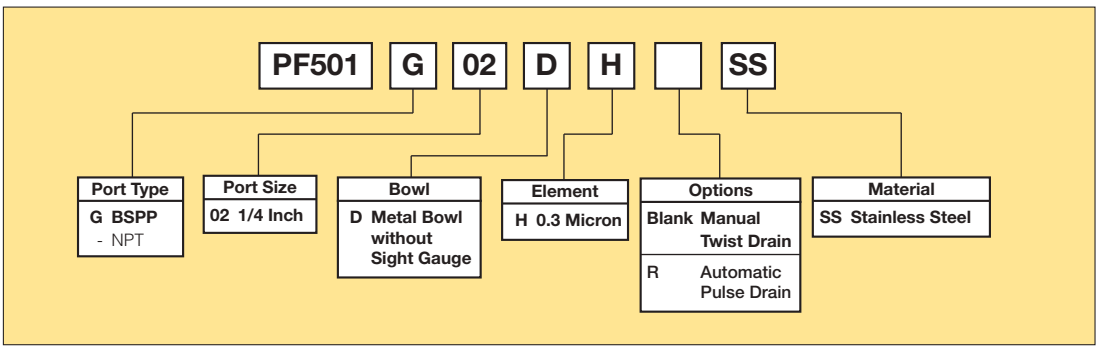
Port Size	BSPP	NPT
	Manual Twist Drain	Manual Twist Drain
1/4"	**PF501G02DHSS**	PF501-02DHSS

Standard part numbers shown bold.
For other models refer to ordering information below.

§ dm^3/s = Flow at 6.2 bar and a 0.3 bar pressure drop.

PF501 Coalescing Filter Dimensions (mm)		
A 40	**C** 8	**D** 94
E 102	**F** 40	

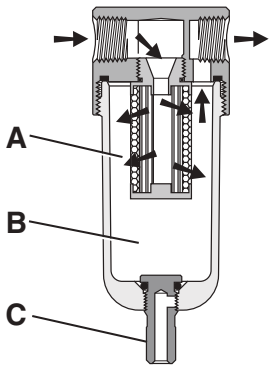
Ordering Information



BOLD ITEMS ARE MOST POPULAR.

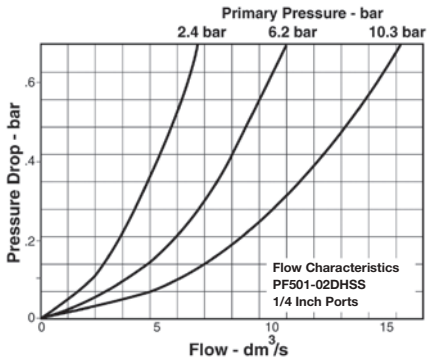
Technical Specifications – PF501

Operation



The contaminated air enters the element interior and is forced through a thick membrane **(A)** of "borosilicate" glass fibers coated with epoxy. Flow then passes through the element, and at this stage 99.97% of the sub micronic particles have been removed from the air stream. The tiny droplets coalesce together and are collected from the filter element by the outer drain layer.
The clean, filtered air now passes through and out into the pneumatic system. The air line coalescing filter removes liquid aerosols and sub-micron particulate matter.
Collected liquids and particles in the "quiet zone" **(B)** should be drained before their level reaches a height where they would be reentrained in the flowing air. This can be accomplished by unscrewing the drain valve **(C)** slightly until the liquid begins to drain.

Technical Information



F501 Filter Kits & Accessories

Filter Element Kits –
0.3 Micron EKF31
Manual Twist Drain –
Small (Old) SA600Y7-1SS
Large (New) SAP05481
Pipe Nipple –
1/4" NPT 316 Stainless Steel 616Y28-SS
1/4" BSPT 316 Stainless Steel AC-2SS

Specifications

Bowl Capacity ..... 29 cm^3
Filter Rating ..... 0.3 Micron
Port Threads ..... 1/4 Inch

Pressure & Temperature Ratings –
Manual Twist Drain ..... 0 to 20.7 bar
-18°C to 82°C
Auto Pulse Drain ..... 0 to 12 bar
0°C to 66°C
Note: Air must be dry enough to avoid ice formation at temperatures below 2°C.
Sump Capacity ..... 12 cm^3
Weight ..... 275 g

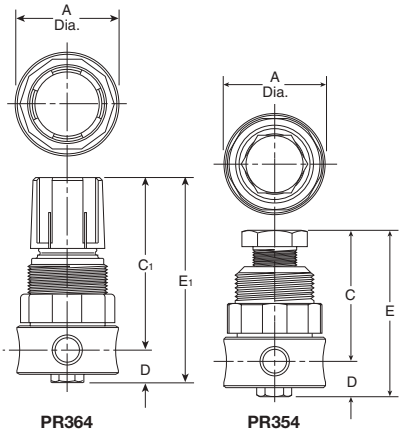
Materials of Construction

Body ..... 316 Stainless Steel
Bowls ..... 316 Stainless Steel
Drain ..... 316 Stainless Steel
Element Holder ..... Acetal
Filter Element ..... Borosilicate Fiber
Seals ..... Fluorocarbon

PR354, PR364 Regulator – Miniature

Features

- Stainless steel construction handles most corrosive environments
- Large diaphragm to valve area ratio for precise regulation and high flow capacity
- Meets NACE specifications MR-01-75/ISO 15156
- High flow: 1/4" – 5.75 dm^3/s§



Series	Adjustment Type	Port Size	BSPP	NPT
PR364	Knob	1/4"	**PR364G02CSS**	PR364-02CSS
PR354	All Metal	1/4"	**PR354G02CSS**	PR354-02CSS

Standard part numbers shown bold.

For other models refer to ordering information below.

§ dm^3/s = 7 bar inlet pressure with 5.5 bar set pressure and 1 bar pressure drop.

PR354, PR364 Regulator Dimensions (mm)		
A 40	**C** 51	**C1** 65
D 13	**E** 64	**E1** 78

(mm)
NOTE: 32mm dia. hole required for panel mounting.

⚠ WARNING

Product rupture can cause serious injury.
Do not connect regulator to bottled gas.
Do not exceed maximum primary pressure rating.

Ordering Information

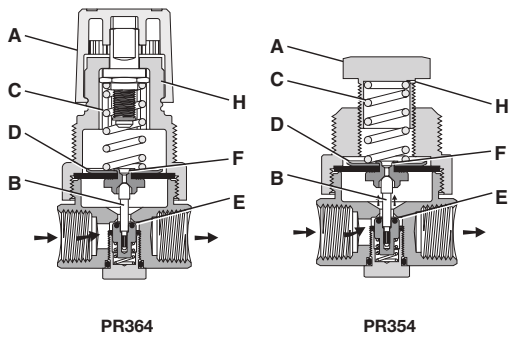
PR364	G	02	C		SS

Series	Port Type	Port Size	Pressure Range	Options	Material
PR354 Stainless Steel **PR364 Standard Knob**	**G BSPP** - NPT	**02 1/4 Inch**	A 0-1.7 bar B 0-4.1 bar **C 0-8.5 bar**	**Blank Relieving** K Non-Relieving	**SS Stainless Steel**

BOLD ITEMS ARE MOST POPULAR.

Technical Specifications – PR354, PR364

Operation



PR364 PR354

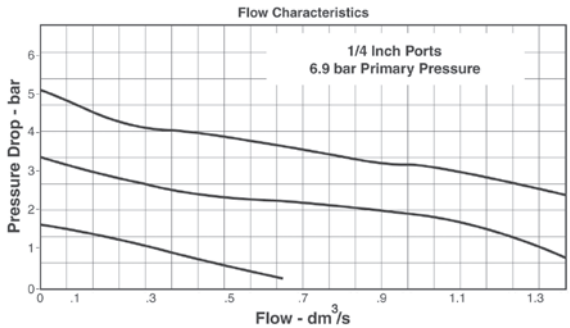
With the adjusting knob (A) turned fully counter-clockwise (no spring load), and pressure supplied to the regulator inlet port, the valve poppet assembly (B) is closed. Turning the adjusting knob clockwise applies a load to control spring (C). This load causes the diaphragm (D) and the valve poppet assembly (B) to move downward allowing flow across the seat area (E) created between the poppet assembly and the seat. Pressure in the downstream line is sensed below the diaphragm (D) and offsets the load of spring (C). As downstream pressure rises, poppet assembly (B) and diaphragm (D) move upward until the area (E) is closed and the load of the spring (C) and pressure under diaphragm (D) are in balance. A reduced outlet pressure has now been obtained, depending on spring load. Creating a demand downstream, such as opening a valve, results in a reduced pressure under the diaphragm (D). The load of control spring (C) now causes the poppet assembly to move downward opening seat area (E) allowing air to flow to meet the downstream demand. The flow of downstream air is metered by the amount of opening (E). Should downstream pressure exceed the desired regulated pressure, the excess pressure will cause the diaphragm (D) to move upward against control spring (C), open vent hole (F), and vent the excess pressure to atmosphere through the hole in the bonnet (H). (This occurs in the relieving type regulator only.)

Technical Information

CAUTION:

REGULATOR PRESSURE ADJUSTMENT –
The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design.

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.



R354, R364 Regulator Kits & Accessories

R354 Bonnet Kit CKR354YSS
R364 Bonnet Kit (Knob Included) CKR364YSS
Gauge –
0 to 10 bar M1/4G40S-10
Panel Mount Bracket (Stainless) 161X57-SS
Panel Mount Nut –
Stainless R05X51SS
Plastic R05X51-P
Pipe Nipple –
1/4" NPT 316 Stainless Steel 616Y28-SS
1/4" BSPT 316 Stainless Steel AC-2SS
Service Kit –
Relieving RKR364YSS
Non-Relieving RKR364KYSS

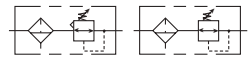
Specifications

Gauge Port ..... 1/4 Inch
Operation ..... Fluorocarbon Diaphragm
Port Threads ..... 1/4 Inch
Pressure & Temperature Ratings –
PR354 ..... 20.7 bar
-18°C to 82°C
PR364 ..... 20.7 bar
-18°C to 66°C
Note: Air must be dry enough to avoid ice formation at temperatures below 2°C.
Weight ..... 230 g

Materials of Construction

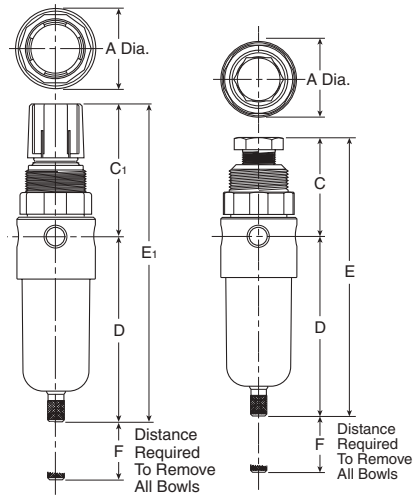
Adjustment Mechanism / Springs ..... 316 Stainless Steel
Adjusting Knob (PR354) ..... 316 Stainless Steel
Adjusting Knob (PR364) ..... Polypropylene
Body ..... 316 Stainless Steel
Bonnet (PR354) ..... 316 Stainless Steel
Bonnet (PR364) ..... Acetal
Bottom Plug ..... 316 Stainless Steel
Poppet ..... 316 Stainless Steel
Seals ..... Fluorocarbon

PB548, PB558 Filter / Regulator – Miniature



Features

- Stainless steel construction handles most corrosive environments
- Large diaphragm to valve area ratio for precise regulation and high flow capacity
- Meets NACE specifications MR-01-75/ISO 15156.
- High flow: 1/4" – 5.75 dm^3/s§
- 1/8" female threaded drain



PB548 PB558

Port Size	BSPP	NPT
1/4"	**PB548G02DHCSS**	PB548-02DHCSS
1/4"	**PB558G02DHCSS**	PB558-02DHCSS

Standard part numbers shown bold.

For other models refer to ordering information below.

§ dm^3/s = 7 bar inlet pressure with 5.5 bar set pressure and 1 bar pressure drop.

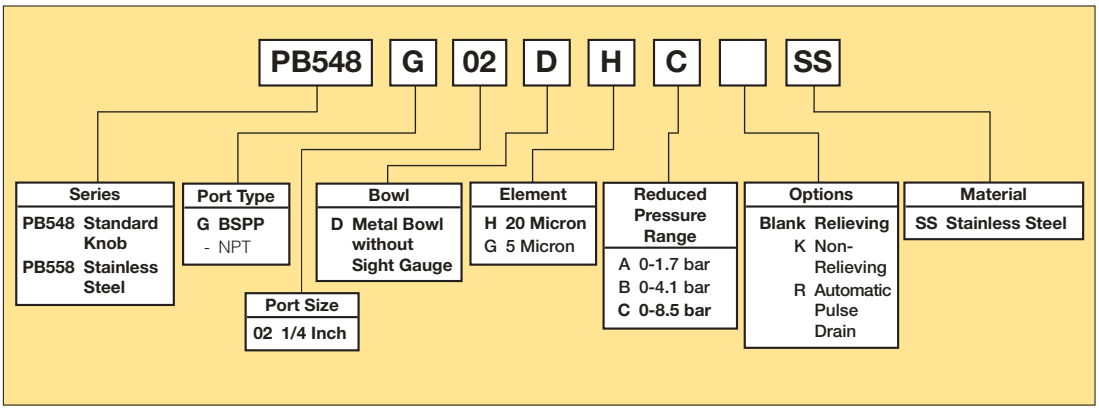
PB548, PB558 Piggyback Dimensions (mm)		
A 40	**C** 55	**C1** 67
D 92	**E** 78	**E1** 147
F 40		

(mm)
NOTE: 32mm dia. hole required for panel mounting.

⚠ WARNING

Product rupture can cause serious injury.
Do not connect regulator to bottled gas.
Do not exceed maximum primary pressure rating.

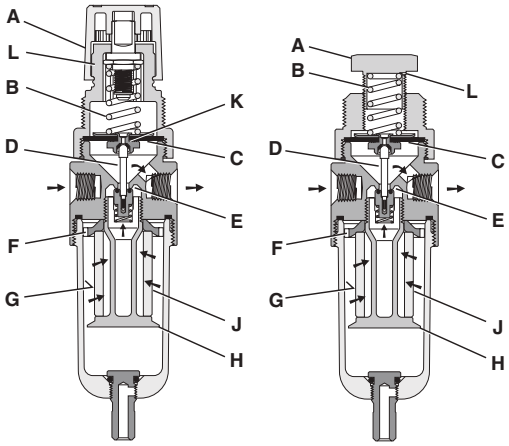
Ordering Information



BOLD ITEMS ARE MOST POPULAR.

Technical Specifications – PB548, PB558

Operation



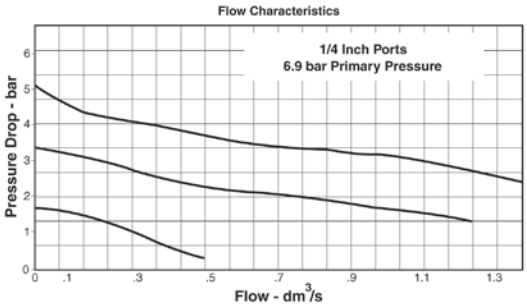
Turning the adjusting knob clockwise applies a load tocontrol spring **(B)** which forces diaphragm **(C)** and valve poppet assembly **(D)** to move downward allowing filtered air to flow through the seat area **(E)** created between the poppet assembly and the seat. **"First stage filtration".** Air pressure supplied to the inlet port is directed through deflector plate **(F)** causing a swirling centrifugal action forcing liquids and coarse particles to the inner bowl wall **(G)** and down below the lower baffle **(H)** to the quiet zone. After liquids and large particles are removed in the first stage of filtration **"second stage filtration"** occurs as air flows through element **(J)** where smaller particles are filtered out and retained. The air flow now passes through seat area **(E)** to the outlet port of the unit. Pressure in the downstream line is sensed below the diaphragm **(C)** and offsets the load of spring **(B).** When downstream pressure reaches the set-point, poppet valve assembly **(D)** and diaphragm **(C)** move upward closing seat area **(E).** Should downstream pressure exceed the desired regulated pressure, the excess pressure will cause the diaphragm **(C)** to move upward opening vent hole **(K)** venting the excess pressure to atmosphere through the hole in the bonnet **(L).** (This occurs in the standard relieving type filter/

Technical Information

CAUTION:

REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design.

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.



PB548, B558 Regulator Kits & Accessories

Filter Element Kits –
- Particulate (5 Micron) EK504VY
- Particulate (20 Micron) EK504Y

Gauge –
- 0 - 10 bar M1/4G40S-10

Manual Twist Drain SA600Y7-1SS
Panel Mount Bracket (Stainless) 161X57-SS
Panel Mount Nut –
- Stainless R05X51SS
- Plastic R05X51-P

Pipe Nipple –
- 1/4" NPT 316 Stainless Steel 616Y28-SS
- 1/4" BSPT 316 Stainless Steel AC-2SS

Service Kit –
- Relieving RK549YSS
- Non-Relieving RK548YSS

Materials of Construction

Adjustment Mechanism / Springs ..... 316 Stainless Steel
Body ..... 316 Stainless Steel
Bonnet (PB548) ..... Acetal
Bonnet (PB558) ..... 316 Stainless Steel
Bottom Plug ..... 316 Stainless Steel
Knob (PB548) ..... Polypropylene
Knob (PB558) ..... 316 Stainless Steel
Poppet ..... 316 Stainless Steel
Seals ..... Fluorocarbon

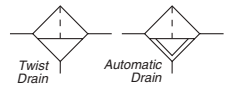
Specifications

Bowl Capacity ..... 29 cm^3
Filter Rating ..... 20 Micron
Gauge Port ..... 1/4 Inch
Operation ..... Fluorocarbon Diaphragm
Port Threads ..... 1/4 Inch
Pressure & Temperature Ratings –
- PB548 ..... 20.7 bar max. -18°C to 82°C
- PB558 ..... 20.7 bar max. -18°C to 82°C
- Auto Pulse Drain ..... 0 to 12 bar max. 0°C to 66°C

Note: Air must be dry enough to avoid ice formation at temperatures below 2°C.

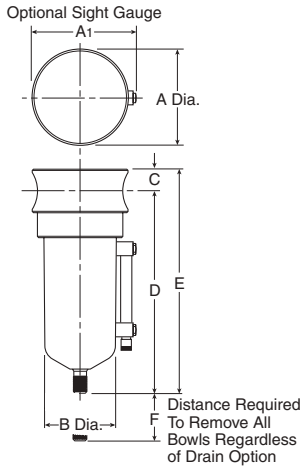
Sump Capacity ..... 12 cm^3
Weight ..... 270 g

PF10 Filter – Standard



Features

- Stainless steel construction handles most corrosive environments
- Meets NACE specifications MR-01-75/ISO 15156
- High flow: 1/2" - 34 dm^3/s§
- 1/8" female threaded drain



Port Size	BSPP		NPT	
	Manual Twist Drain	Automatic Float Drain	Manual Twist Drain	Automatic Float Drain
1/2"	Metal Bowl Without Sight Gauge			
	PF10G04DJSS	**PF10G04DJRSS**	PF10-04DJSS	PF10-04DJRSS

Standard part numbers shown bold.
For other models refer to ordering information below.

§ dm^3/s = Flow at 6.2 bar and a 0.3 bar pressure drop.

PF10 Filter Dimensions (mm)		
A 60	**A1** 64	**B** 44
C 14	**D** 127	**E** 141
F 54		

(mm)

Ordering Information

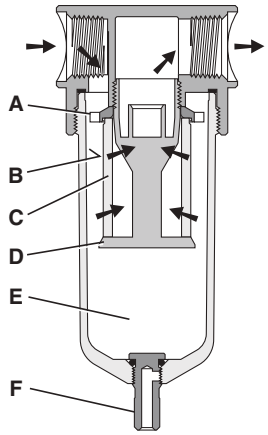
PF10 | G | 04 | D | J | | SS

Port Type	Port Size	Bowl	Element	Options	Material
G BSPP - NPT	**04 1/2 Inch**	**D Metal Bowl without Sight Gauge** W Metal Bowl with Sight Gauge	**J 40 Micron** **G 5 Micron**	**Blank Manual Twist Drain** **R Automatic Float Drain**	**SS Stainless Steel**

BOLD ITEMS ARE MOST POPULAR.

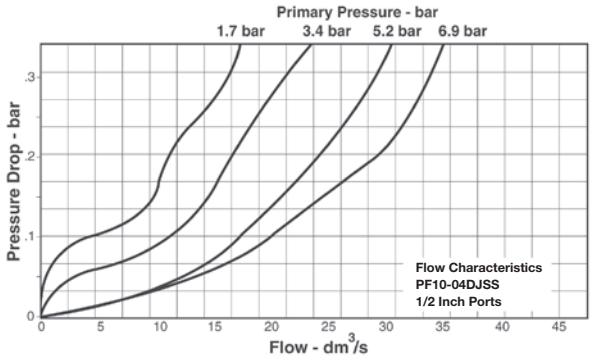
Technical Specifications – PF10

Operation



First Stage Filtration:
Air enters at inlet port and flows through deflector plate **(A)** which causes a swirling action. Liquids and coarse particles are forced to the bowl interior wall **(B)** by the centrifugal action of the swirling air. They are then carried down the bowl wall by the force of gravity. The baffle **(D)** separates the lower portion of the bowl into a "quiet zone" **(E)** where the removed liquid and particles collect, unaffected by the swirling air, and are therefore not reentrained into the flowing air.
Second Stage Filtration:
After liquids and large particles are removed in the first stages of filtration, the air flows through element **(C)** where smaller particles are filtered out. The filtered air then passes downstream. Collected liquids and particles in the "quiet zone" **(E)** should be drained before their level reaches a height where they would be reentrained in the flowing air. This can be accomplished by unscrewing the drain valve **(F)** slightly until the liquid begins to drain.

Technical Information



PF10 Filter Kits & Accessories

Drain Kit –
Automatic Float Drain SA602MDSS
Manual Twist Drain–
Small (Old) SA600Y7-1SS
Large (New) SAP05481
Filter Element Kits –
Particulate (40 Micron) EK55J
Particulate (5 Micron) EK55G
Pipe Nipple – 1/2" NPT 316 Stainless Steel 616A28-SS
1/2" BSPT 316 Stainless Steel AC-4SS

Specifications

Bowl Capacity ..... 118 cm^3
Filter Rating ..... 40 Micron
Sump Capacity ..... 50 cm^3
Port Threads ..... 1/2 Inch

Pressure & Temperature Ratings –
Manual Twist Drain (D) ..... 0 to 20.7 bar
-18°C to 82°C
Manual Twist Drain (W) ..... 0 to 17.2 bar
-18°C to 66°C
Automatic Float Drain ..... 0 to 12 bar
0°C to 66°C
Note: Air must be dry enough to avoid ice formation at temperatures below 2°C.
Weight ..... 850 g

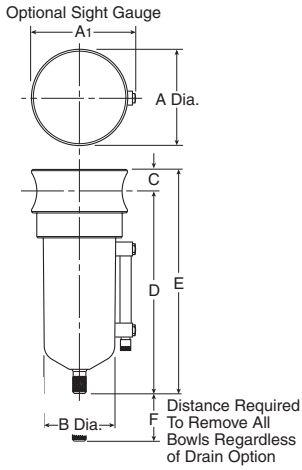
Materials of Construction

Body ..... 316 Stainless Steel
Bowls ..... 316 Stainless Steel
Deflector ..... Acetal
Drain ..... 316 Stainless Steel
Element Holder ..... Acetal
Filter Element ..... Polyethylene
Seals ..... Fluorocarbon
Sight Gauge ..... Isoplast

PF11 Coalescing Filter – Standard

Features

- Stainless steel construction handles most corrosive environments
- Meets NACE specifications MR-01-75/ISO 15156
- High flow: 1/2" - 21 dm^3/s§
- 1/8" female threaded drain
- High efficiency 0.01µm filtration
- Removes liquid aerosols and sub micron particles



Port Size	BSPP		NPT	
	Manual Twist Drain	Automatic Float Drain	Manual Twist Drain	Automatic Float Drain
1/2"	Metal Bowl Without Sight Gauge			
	PF11G04DJSS	**PF11G04DJRSS**	PF11-04DJSS	PF11-04DJRSS

Standard part numbers shown bold.
For other models refer to ordering information below.

§ dm^3/s = Flow at 6.2 bar and a 0.3 bar pressure drop.

F11 Coalescing Filter Dimensions (mm)		
A 60	**A1** 64	**B** 44
C 14	**D** 127	**E** 141
F 54		

(mm)

Ordering Information

PF11	G	04	D	J		SS

Port Type
G BSPP
- NPT

Port Size
04 1/2 Inch

Bowl
D Metal Bowl without Sight Gauge
W Metal Bowl with Sight Gauge

Element
J 0.01 Micron

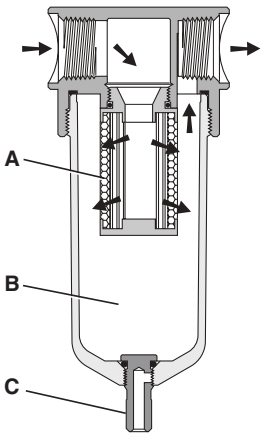
Options
Blank Manual Twist Drain
R Automatic Float Drain

Material
SS Stainless Steel

BOLD ITEMS ARE MOST POPULAR.

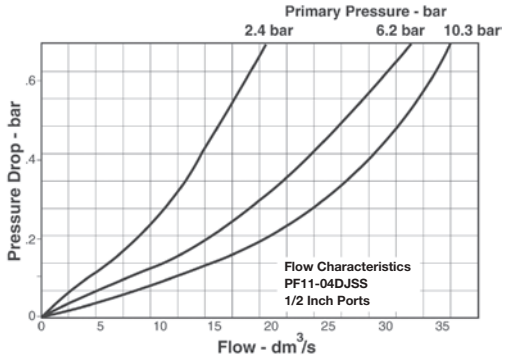
Technical Specifications – PF11

Operation



The contaminated air enters the element interior and is forced through a thick membrane **(A)** of "borosilicate" glass fibers coated with epoxy. Flow then passes through the element, and at this stage 99.97% of the sub micronic particles have been removed from the air stream. The tiny droplets coalesce together and are collected from the filter element by the outer drain layer.
The clean, filtered air now passes through and out into the pneumatic system. The air line coalescing filter removes liquid aerosols and sub-micron particulate matter.
Collected liquids and particles in the "quiet zone" **(B)** should be drained before their level reaches a height where they would be reentrained in the flowing air. This can be accomplished by unscrewing the drain valve **(C)** slightly until the liquid begins to drain.

Technical Information



F11 Filter Kits & Accessories

Drain Kit –
Automatic Float Drain SA602MDSS
Manual Twist Drain–
Small (Old) SA600Y7-1SS
Large (New) SAP05481
Filter Element Kits –
0.3 Micron EKF71
Pipe Nipple –
1/2" NPT 316 Stainless Steel 616A28-SS
1/2" BSPT 316 Stainless Steel AC-4SS

Specifications

Bowl Capacity ..... 118 cm^3
Filter Rating ..... 0.01 Micron
Sump Capacity ..... 50 cm^3
Port Threads ..... 1/2 Inch

Pressure & Temperature Ratings –
Manual Twist Drain ..... 0 to 20.7 bar
-18°C to 82°C
Manual Twist Drain (W) ..... 0 to 17.2 bar
-18°C to 66°C
Automatic Float Drain ..... 0 to 12 bar
0°C to 66°C
Note: Air must be dry enough to avoid ice formation at temperatures below 2°C.
Weight ..... 850 g

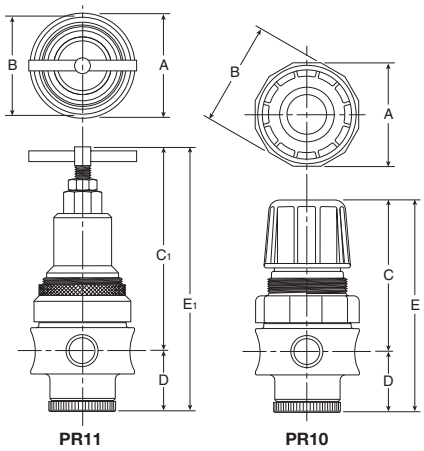
Materials of Construction

Body ..... 316 Stainless Steel
Bowls ..... 316 Stainless Steel
Drain ..... 316 Stainless Steel
Element Holder ..... Acetal
Filter Element ..... Borosilicate Fiber
Seals ..... Fluorocarbon
Sight Gauge ..... Isoplast

PR10, PR11 Regulator – Standard

Features

- Stainless steel construction handles most corrosive environments
- Large daphragm to valve area ratio for precise regulation and high flow capacity
- Meets NACE specifications MR-01-75/ISO 15156
- Low temperature version available
- High flow: 1/2" – 37.75 dm^3/s§



Port Size	BSPP	NPT
1/2"	**PR10G04CSS**	PR10-04CSS
1/2"	**PR11G04CSS**	PR11-04CSS

Standard part numbers shown bold.

For other models refer to ordering information below.

§ dm^3/s = 7 bar inlet pressure with 5.5 bar set pressure and 1 bar pressure drop.

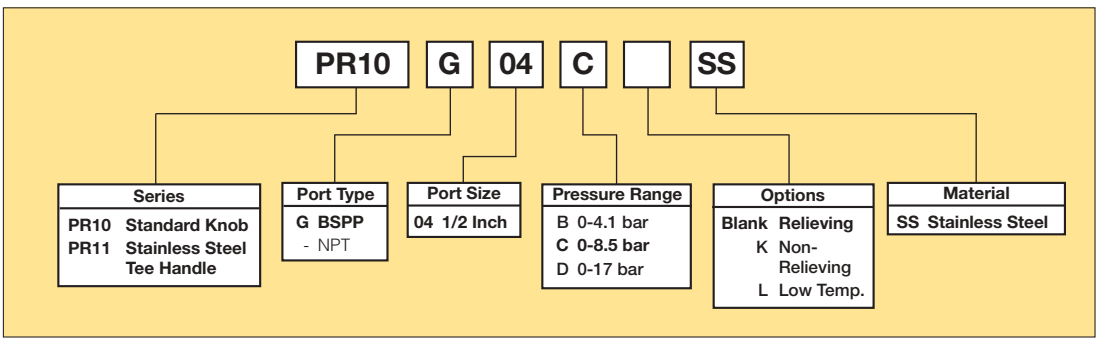
⚠ WARNING

Product rupture can cause serious injury.
Do not connect regulator to bottled gas.
Do not exceed maximum primary pressure rating.

PR10, PR11 Regulator Dimensions (mm)		
A 60	**B** 62	**C** 91
C1 119	**D** 35	**E** 126
E1 154		

(mm)
NOTE: 44mm dia. hole required for panel mounting.

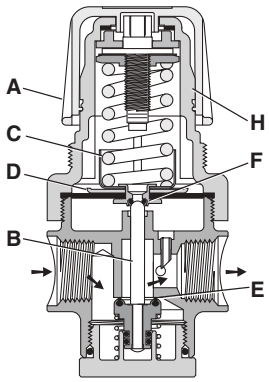
Ordering Information



BOLD ITEMS ARE MOST POPULAR.

Technical Specifications – PR10, PR11

Operation



With the adjusting knob **(A)** turned fully counter-clockwise (no spring load), and pressure supplied to the regulator inlet port, the valve poppet assembly **(B)** is closed. Turning the adjusting knob clockwise applies a load to control spring **(C)**. This load causes the diaphragm **(D)** and the valve poppet assembly **(B)** to move downward allowing flow across the seat area **(E)** created between the poppet assembly and the seat. Pressure in the downstream line is sensed below the diaphragm **(D)** and offsets the load of spring **(C)**. As downstream pressure rises, poppet assembly **(B)** and diaphragm **(D)** move upward until the area **(E)** is closed and the load of the spring **(C)** and pressure under diaphragm **(D)** are in balance. A reduced outlet pressure has now been obtained, depending on spring load. Creating a demand downstream, such as opening a valve, results in a reduced pressure under the diaphragm **(D)**. The load of control spring **(C)** now causes the poppet assembly to move downward opening seat area **(E)** allowing air to flow to meet the downstream demand. The flow of downstream air is metered by the amount of opening **(E)**.

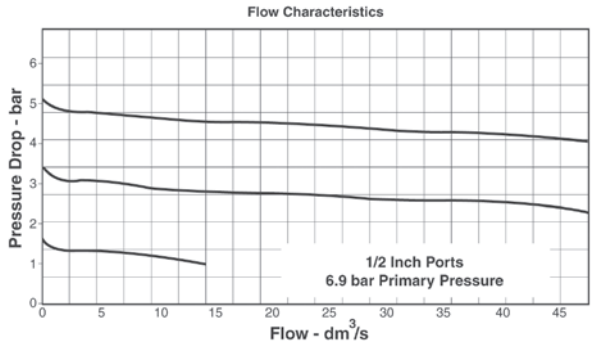
Should downstream pressure exceed the desired regulated pressure, the excess pressure will cause the diaphragm **(D)** to move upward against control spring **(C)**, open vent hole **(F)**, and vent the excess pressure to atmosphere through the hole in the bonnet **(H)**. (This occurs in the relieving type regulator only.)

Technical Information

CAUTION:

REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design.

For best performance, regulated pressure should always be set by increasing the pressure



PR10, PR11 Regulator Kits & Accessories

R10 Bonnet Kit (Knob Included) CKR10YSS
R11 Bonnet Kit CKR11YSS
Gauge –
0 - 10 bar M1/4G40S-10
Panel Mount Bracket (Stainless) R10Y57-SS
Panel Mount Nut –
Stainless R10X51SS
Plastic R10X51-P
Pipe Nipple –
1/2" NPT 316 Stainless Steel 616A28-SS
1/2" BSPT 316 Stainless Steel AC-4SS
Service Kit –
Relieving RKR10YSS
Non-Relieving RKR10KYSS

Materials of Construction

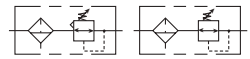
Adjustment Mechanism / Springs ..... 316 Stainless Steel
Body ..... 316 Stainless Steel
Bonnet / Tee Handle (PR11) ..... 316 Stainless Steel
Bonnet / Knob (PR10) ..... Acetal
Bottom Plug ..... 316 Stainless Steel
Poppet ..... 316 Stainless Steel
Seals ..... Fluorocarbon

Specifications

Gauge Port ..... 1/4 Inch
Operation ..... Fluorocarbon Diaphragm
Port Threads ..... 1/2 Inch
Pressure & Temperature Ratings –
PR10 ..... 20.7 bar max.
-18°C to 66°C
PR11 ..... 20.7 bar max.
-18°C to 82°C
Option "L" minimum operating temperature* ..... 40° C/F
Note: Air must be dry enough to avoid ice formation at temperatures below 2°C.
Weight ..... 810 G

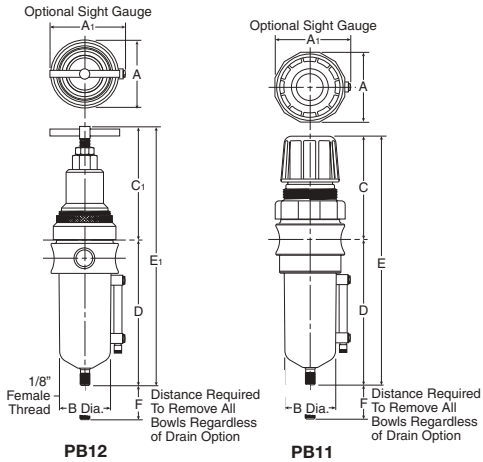
*** Note:** "Low Temperature" option is intended for applications where the ambient temperature may be down to -40° C/F. Air supply must be free of moisture to prevent ice formation and malfunction of units. These units contain EPDM seals. Make sure any oils in the airstream are compatible.

PB11, PB12 Filter / Regulator – Standard



Features

- Stainless steel construction handles most corrosive environments
- Large diaphragm to valve area ratio for precise regulation and high flow capacity
- Meets NACE specifications MR-01-75/ISO-15156
- Low temperature version available
- High flow: 1/2" – 34 dm^3/s§



Port Size	Adjustment Type	BSPP		NPT	
		Manual Twist Drain	Automatic Float Drain	Manual Twist Drain	Automatic Float Drain
	Metal Bowl without Sight Gauge				
1/2"	Knob	**PB11G04DJCSS**	**PB11G04DJCRSS**	PB11-04DJCSS	PB11-04DJCRSS
	Tee-Handle	**PB12G04DJCSS**	**PB12G04DJCRSS**	PB12-04DJCSS	PB12-04DJCRSS

Standard part numbers shown bold. For other models refer to ordering information below.

§ dm^3/s = 7 bar inlet pressure with 5.5 bar set pressure and 1 bar pressure drop.

PB11, PB12 Piggyback Dimensions (mm)		
A 60	A_1 64	B 44
C 91	C_1 55	D 127
E 218	E_1 246	F 54

(mm)
NOTE: 44mm dia. hole required for panel mounting.

⚠ WARNING

Product rupture can cause serious injury.
Do not connect regulator to bottled gas.
Do not exceed maximum primary pressure rating.

Ordering Information

PB11 G 04 D J C [ ] SS

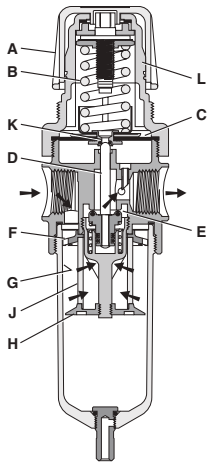
Series	Port Type	Port Size	Bowl	Element	Reduced Pressure Range	Options	Material
PB11 Standard Knob	**G BSPP**	**04 1/2 Inch**	**D Metal Bowl without Sight Gauge**	**J 40 Micron**	**B 0-4.1 bar**	**Blank Relieving**	**SS Stainless Steel**
PB12 Stainless Steel	- NPT		W Metal Bowl with Sight Gauge	**G 5 Micron**	**C 0-8.5 bar**	**K Non-Relieving**	
					D 0-17 bar	**R Automatic Float Drain**	
						L Low Temp. *	

* Manual drain without sight gauge only

BOLD ITEMS ARE MOST POPULAR.

Technical Specifications – PB11, PB12

Operation



Turning the adjusting knob clockwise applies a load to control spring **(B)** which forces diaphragm **(C)** and valve poppet assembly **(D)** to move downward allowing filtered air to flow through the seat area **(E)** created between the poppet assembly and the seat. **"First stage filtration".** Air pressure supplied to the inlet port is directed through deflector plate **(F)** causing a swirling centrifugal action forcing liquids and coarse particles to the inner bowl wall **(G)** and down below the lower baffle **(H)** to the quiet zone. After liquids and large particles are removed in the first stage of filtration **"second stage filtration"** occurs as air flows through element **(J)** where smaller particles are filtered out and retained. The air flow now passes through seat area **(E)** to the outlet port of the unit. Pressure in the downstream line is sensed below the diaphragm **(C)** and offsets the load of spring **(B)**. When downstream pressure reaches the set-point, poppet valve assembly **(D)** and diaphragm **(C)** move upward closing seat area **(E)**. Should downstream pressure exceed the desired regulated pressure, the excess pressure will cause the diaphragm **(C)** to move upward opening vent hole **(K)** venting the excess pressure to atmosphere through the hole in the bonnet **(L)**. (This occurs in the standard relieving

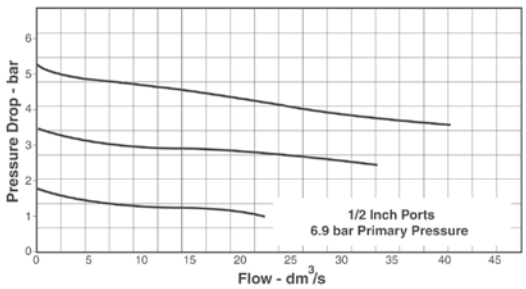
Technical Information

CAUTION:

REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design.

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

Flow Characteristics
PB11-04DJC-SS



PB11, PB12 Regulator Kits & Accessories

Drain Kit –
- Automatic Float Drain SA602MDSS
- Manual Twist Drain SA600Y7-1SS

Filter Element Kits –
- Particulate (40 Micron) EKF10Y
- Particulate (5 Micron) EKF10VY

Gauge –
- 0 - 10 bar M1/4G40S-10

Panel Mount Bracket (Stainless) R10Y57-SS

Panel Mount Nut –
- Stainless R10X51SS
- Plastic R10X51-P

Pipe Nipple –
- 1/2" NPT 316 Stainless Steel 616A28-SS
- 1/2" BSPT 316 Stainless Steel AC-4SS

Service Kit –
- Relieving RKR10YSS
- Non-Relieving RKR10KYSS

Materials of Construction

Adjustment Mechanism / Springs ..... 316 Stainless Steel
Body ..... 316 Stainless Steel
Bonnet / Knob (PB11) ..... Acetal
Bonnet / Tee Handle (PB12) ..... 316 Stainless Steel
Bottom Plug ..... 316 Stainless Steel
Poppet ..... 316 Stainless Steel
Seals ..... Fluorocarbon
Sight Gauge ..... Isoplast

Specifications

Bowl Capacity ..... 118 cm^3
Filter Rating ..... 40 Micron
Gauge Port ..... 1/4 Inch
Operation ..... Fluorocarbon Diaphragm
Port Threads ..... 1/2 Inch
Pressure & Temperature Ratings –
- Metal Bowl (D) ..... 20.7 bar max. -18°C to 66°C
- Metal Bowl (W) ..... 0 to 17.2 bar -18°C to 66°C
- Automatic Float Drain ..... 1 to 12 bar 0°C to 66°C

Option "L" minimum operating temperature* 40° C/F

Note: Air must be dry enough to avoid ice formation at temperatures below 2°C.

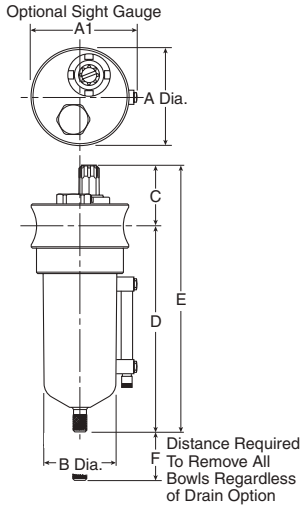
Sump Capacity ..... 50 cm^3
Weight ..... 1090 g

*** Note:** "Low Temperature" option is intended for applications where the ambient temperature may be down to -40° C/F. Air supply must be free of moisture to prevent ice formation and malfunction of units. These units contain EPDM seals. Make sure any oils in the airstream are compatible.

PL10 Lubricator – Standard

Features

- Stainless steel construction handles most corrosive environments
- Fillable under pressure
- Meets NACE specifications MR-01-75/ISO 15156
- High flow: 1/2" - 47 dm^3/s§



Port Size	BSPP	NPT
	Manual Twist Drain	Manual Twist Drain
1/2"	Metal Bowl Without Sight Gauge	
	PL10G04DSS	PL10-04DSS

Standard part numbers shown bold.
For other models refer to ordering information below.

§ dm^3/s = Flow at 6.2 bar and a 0.3 bar pressure drop.

PL10 Lubricator Dimensions (mm)		
A 60	**A_1** 64	**B** 44
C 46	**D** 127	**E** 173
F 89		

Ordering Information

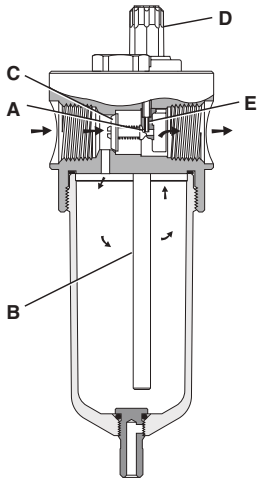
PL10 | **G** | **04** | **D** | **SS**

Port Type	Port Size	Bowl	Material
G BSPP - NPT	**04 1/2 Inch**	**D Metal Bowl without Sight Gauge** W Metal Bowl with Sight Gauge	**SS Stainless Steel**

BOLD ITEMS ARE MOST POPULAR.

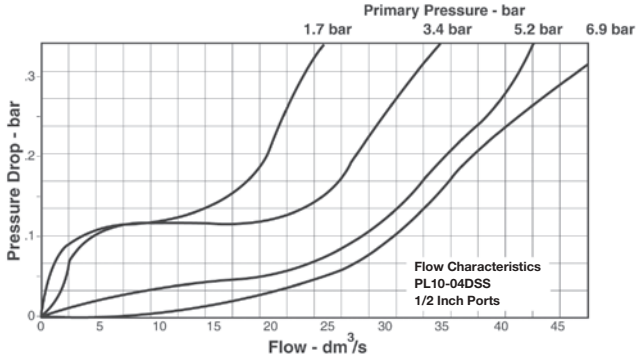
Technical Specifications – PL10

Operation



Air flowing through the unit goes through two paths. At low flow rates the majority of the air flows through the Venturi section **(A)**. The rest of the air opens the check valve **(C)**. The velocity of the air flowing through the Venturi section **(A)** creates a pressure drop. This lower pressure allows the oil to be forced from the reservoir through the pickup tube **(B)** and travels up to the metering screw **(D)**. The rate of oil delivery is then controlled by adjusting the metering screw **(D)**. Oil flows past the metering screw **(D)** and forms a drop in the nozzle tube **(E)**. As the oil drops through the dome **(F)** and back into the Venturi section **(A)**, it is broken up into fine particles. It is then mixed with the air flowing past the check valve **(C)** and is carried downstream. As the air flow increases the check valve **(C)** will open more fully. This additional flow will assure that the oil delivery rate will increase linearly with the increase of air flow.

Technical Information



L10 Filter Kits & Accessories

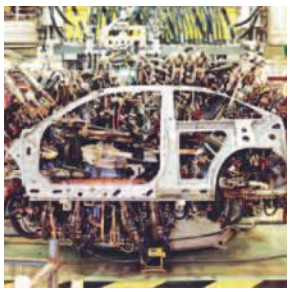
Drain Kit –
Manual Twist Drain SA600Y7-1SS
Pipe Nipple –
1/2" NPT 316 Stainless Steel..... 616A28-SS
1/2" BSPT 316 Stainless Steel..... AC-4SS
Sight Dome Kit RKL10SS

Specifications

Bowl Capacity ..... 118 cm^3
Port Threads ..... 1/2 Inch
Pressure & Temperature Ratings –
Metal Bowl (D) ..... 20.7 bar max.
-18°C to 66°C
Metal Bowl (W) ..... 0 to 17.2 bar
-18°C to 66°C
Note: Air must be dry enough to avoid ice formation at temperatures below 2°C.
Weight ..... 850 g

Materials of Construction

Body ..... 316 Stainless Steel
Bowl ..... 316 Stainless Steel
Dip Tube ..... 316 Stainless Steel
Drain ..... 316 Stainless Steel
Fill Plug ..... 316 Stainless Steel
Seals ..... Fluorocarbon
Sight Dome ..... Nylon
Sight Gauge ..... Isoplast



Modular Hi Flow FRLs

P3N 1 Inch Series

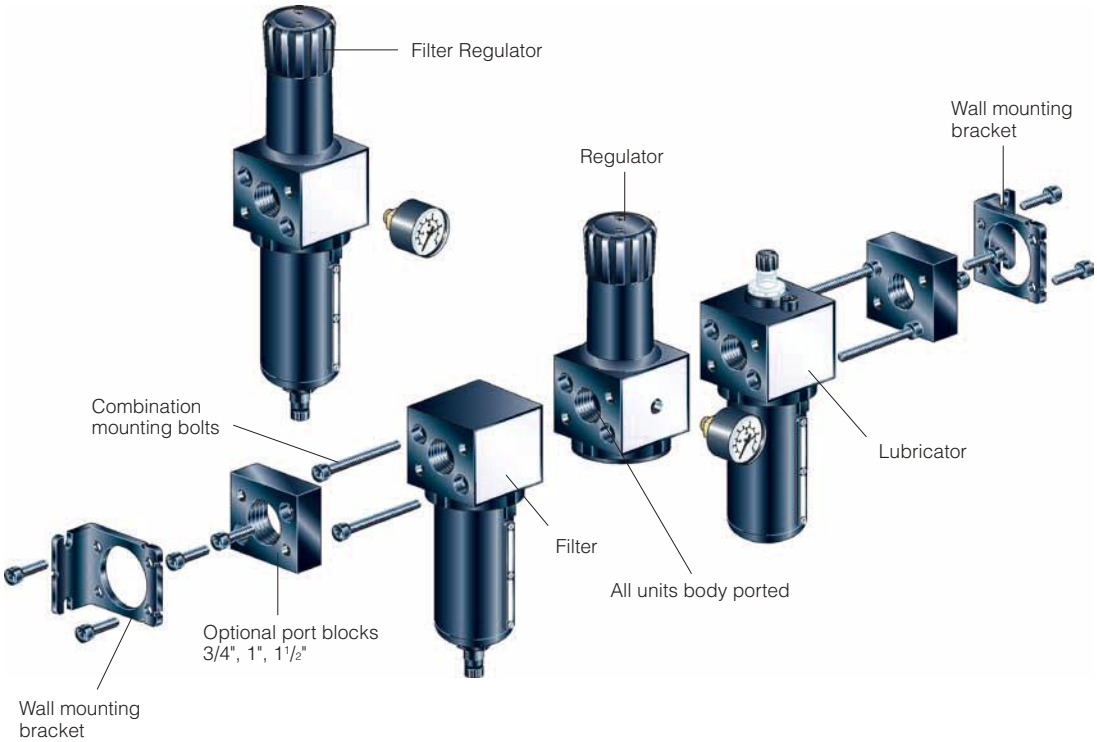
The System

The Modular system allows units to be connected together, without the use of pipe connectors, saving space; providing constant mounting centres; whilst maintaining a modern aesthetically pleasing appearance.

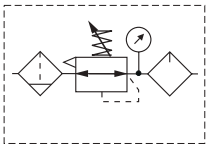
The 1" Series filters are specially designed to efficiently filter out rust, dirt, moisture and other impurities from compressed air lines. Operation is fully automatic with a minimum of pressure drop.

The 1" Series Regulators are designed to provide quick response and accurate pressure regulation for the most demanding Hi-flow industrial applications. The unique solid piston was designed for long trouble-free operation and will not rupture or tear under high cycle or other demanding applications.

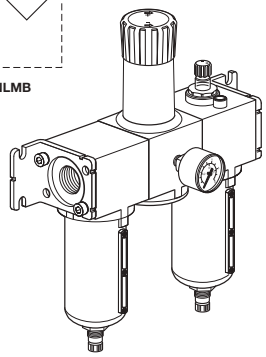
The 1" Series mist lubricators are designed to provide lubrication for many general purpose applications in a pneumatic system.



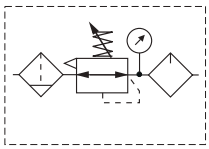
Combinations



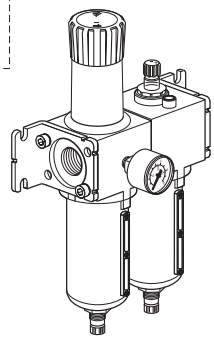
P3NCB18SGMNNLMB



Typical Combination
1" FRL
40 micron elements, 8 bar regulator
+ wall mounting brackets



P3NCA18SGMNNLMB



Typical Combination
Filter/Regulator - Lubricato
40 micron elements, 8 bar regulator
+ wall mounting brackets

P3N C [ ] 1 [ ] S [ ] [ ] [ ] [ ] L [ ] B

Modular Combinations

Units	
Filter/reg + Lubricator	A
Filter+Regulator + Lubricator	B

Port type	
'G' Thread (BSPP)	1
NPT	9

Port size	
1" ports	8
1.1/2" ports (1" units with 1.1/2" port extensions	P
3/4" ports	6

Metal bowl with sight glass

Filter elements	
40 micron element (Standard)	G
5 micron element (Optional)	E

Filter drain options	
Manual Drain	M
Auto Drain	A

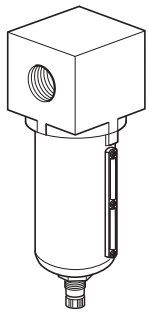
Regulator type	
Relieving	B
Non-relieving	N

Reg. Pressure range	
Without gauge	
0 - 2 bar	Y
0 - 4 bar	L
0 - 8 bar	N
0 - 16 bar	H
With gauge	
0 - 2 bar	Z
0 - 4 bar	M
0 - 8 bar	G
0 - 16 bar	J

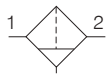
Lubricator drain options	
Metal bowl Manual drain	M
Metal bowl No drain	N

Wall mounting brackets

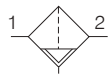
Filters



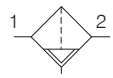
Symbols



Manual drain



Semi auto drain



Auto drain

- Excellent water removal efficiency.
- Metal bowl with sight gauge.
- Larger filter element surface guarantees low pressure drop and increased element life.
- Manual drain or Auto Drain options.

Options:

P3N **F** **A** [ ] [ ] [ ] [ ] [ ]

Filter

Port type	
'G' Thread (BSPP)	1
NPT	9

Port size	
1" ports	8
3/4" ports	6

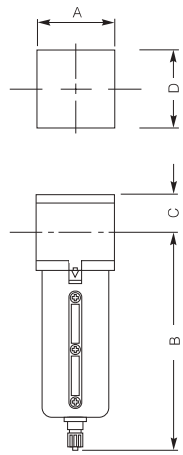
Filter elements	
40 micron element (Standard)	G
5 micron element (Optional)	E

Bowl/drain options	
Metal bowl Manual drain	SM
Metal bowl Auto drain	SA

Technical information

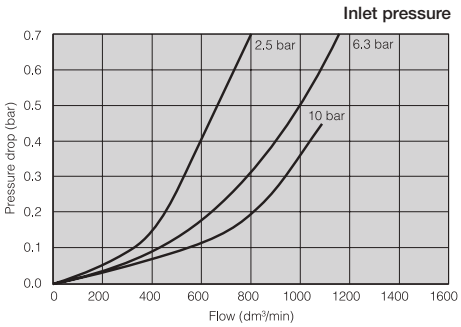
Port sizes	3/4" & 1"
Filter element grade:	Standard 40 micron
	Option 5 micron
Pressure range:	17 bar max
Temperature range:	-20°C to +80°C
Weight:	1600 g

Dimensions (mm)



Port sizes	A	B	C	D
3/4" & 1"	92	254	35	92

Flow characteristics



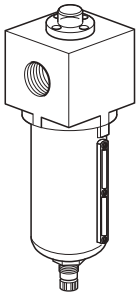
Filter Element Kits

5 Micron element	**P3NKA00ESE**
40 Micron element	**P3NKA00ESE**

Filter Spare Kits

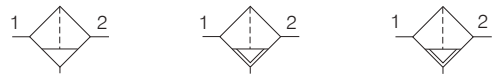
Description	Order code
Manual drain kit	**P3E-KA00DBN**
Auto drain kit	**P3E-KA00DDN**

Coalescing and adsorber filters



Note: To optimise the life of the coalescing element, it is advisable to install a P3NFA 5 micron pre-filter upstream of the coalescing filter. Always install a coalescing filter up-stream of the adsorber filter.

Symbols



Manual drain | Semi auto drain | Auto drain

- DPI indicator as standard.
- Removes liquid aerosols and sub micron particles.
- Oil free air for critical applications.
- Metal bowl with sight gauge.
- Larger filter element surface guarantees low pressure drop and increased element life.
- Manual drain as standard or optional auto drain available (only on coalescing filter).
- Adsorbing activated carbon element removes oil vapour and most hydrocarbons.

Options:

P3N **F** **A** [ ] [ ] [ ] [ ]

Coalescing Filter

Port type	
'G' Thread (BSPP)	1
NPT	9

Port size	
1" ports	**8**
3/4" ports	**6**

Filter elements	
Coalescing 0.01µm with pressure drop indicator (Standard)	**D**
Adsorber element with pressure drop indictor	**B**
Adsorber element without pressure drop indictor	**A**

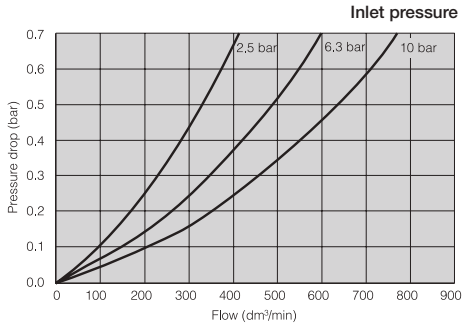
Bowl/drain options	
Metal bowl Manual drain	**SM**
Metal bowl * Auto drain	**SA**

* Coalescing filter only.

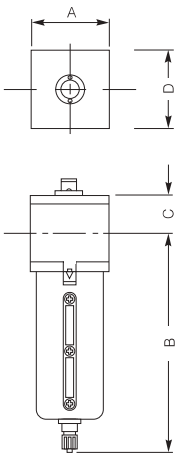
Technical information

Port sizes	3/4" & 1"
Coalescing element grade:	0.01 microns
Pressure range:	17 bar max
Temperature range:	-20°C to +80°C
Weight:	1600 g

Flow characteristics



Dimensions (mm)

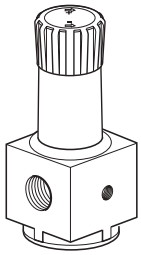


Port sizes	A	B	C	D
3/4" & 1"	92	254	35	92

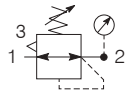
Filter Element Kits

Coalescing element	**P3NKA00ESC**
Adsorber element	**P3NKA00ESA**

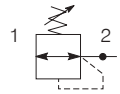
Regulators



Symbols



Self bleed regulator with gauge



Non bleed regulator

- Self relieving feature plus balanced poppet provides quick response and accurate pressure regulation.
- Solid control piston for extended life.

Options:

P3N **R** **A** **1** [ ] [ ] **N** [ ]

Regulator

Port type	
'G' Thread (BSPP)	1
NPT	9

Port size	
1" ports	8
3/4" ports	6

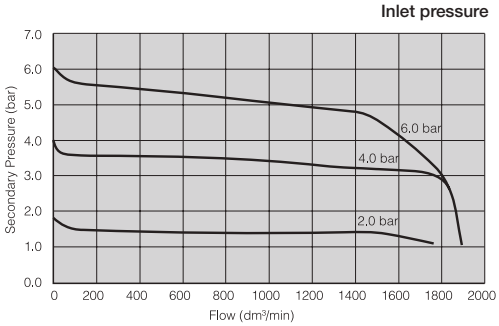
Regulator type	
Relieving	B
Non-relieving	N

Regulator Pressure range			
Without gauge		With gauge	
0 - 2 bar	Y	0 - 2 bar	Z
0 - 4 bar	L	0 - 4 bar	M
0 - 8 bar	N	0 - 8 bar	G
0 - 16 bar	H	0 - 16 bar	J

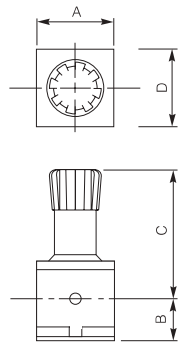
Technical information

Port sizes	3/4" & 1"	
Gauge ports:	1/4"	
Max inlet pressure (p1):	17 bar max	
Secondary pressure range: (p2)	Standard:	0.1 to 8 bar
	Option 1:	0.1 to 2 bar
	Option 2:	0.1 to 4 bar
	Option 3:	0.3 to 16 bar
Temperature range:	-20°C to +80°C	
Weight:	1900 g	

Flow characteristics



Dimensions (mm)



Port sizes	A	B	C	D
3/4" & 1"	92	53	162	92

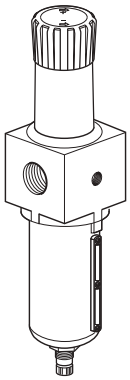
Regulator Spare Kits

Repair kit (self-relieving)	**P3NKA00RR**
Repair kit (non-relieving)	**P3NKA00RN**

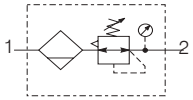
Gauges

Description	Pressure range (bar)	Port size	Dial mm	Weight g	Order code
Rear entry	0-4	G1/4	50	74	**P6G-ERB2040**
Rear entry	0-14	G1/4	50	74	**P6G-ERB2140**
Rear entry	0-20	G1/4	50	74	**P6G-ERB2200**

Filter/Regulators



Symbol



- Self relieving feature plus balanced poppet provides quick response and accurate pressure regulation.
- Solid control piston for extended life.

Options:

P3N	E	A	1					B	N	
Filter/ Regulator		Port type		Port size		Filter elements		Bowl/drain options		Relieving

Port type	
'G' Thread (BSPP)	1
NPT	9

Port size	
1" ports	8
3/4" ports	6

Filter elements	
40 micron element (Standard)	G
5 micron element (Optional)	E

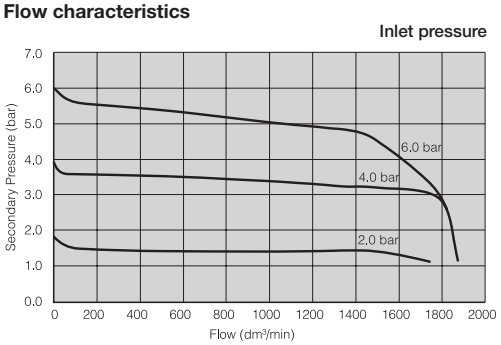
Bowl/drain options	
Metal bowl Manual drain	SM
Metal bowl Auto drain	SA

Spring rating			
Without gauge		With gauge	
0 - 2 bar	Y	0 - 2 bar	Z
0 - 4 bar	L	0 - 4 bar	M
0 - 8 bar	N	0 - 8 bar	G
0 - 16 bar	H	0 - 16 bar	J

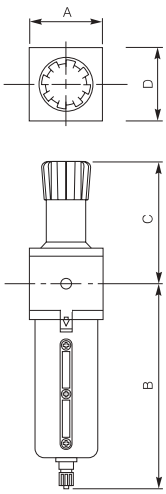
Technical information

Port sizes	3/4" & 1"
Gauge ports:	1/4"
Max inlet pressure (p1):	17 bar max
Secondary pressure range: (p2)	Standard: 0.1 to 8 bar
	Option 1: 0.1 to 2 bar
	Option 2: 0.1 to 4 bar
	Option 3: 0.3 to 16 bar
Temperature range:	-20°C to +80°C
Weight:	2400 g

Flow characteristics



Dimensions (mm)

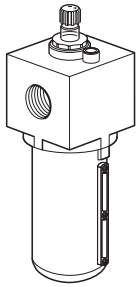


Port sizes	A	B	C	D
3/4" & 1"	92	243	162	92

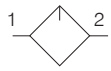
Filter/Regulator Spare Kits

5 Micron element	**P3NKA00ESE**
40 Micron element	**P3NKA00ESG**
Repair kit (self-relieving)	**P3NKA00RR**
Repair kit (non-relieving)	**P3NKA00RN**

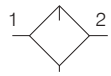
Lubricators



Symbols



Lubricator



Lubricator with drain

- Proportional oil delivery over a wide range of air flows.
- Bowl can be filled while air line is under pressure.
- Transparent sight dome for 360° visibility.

Options:

P3N **L** **A** [ ] [ ] **L** [ ][ ]

L — Lubricator

Port type	
'G' Thread (BSPP)	1
NPT	9

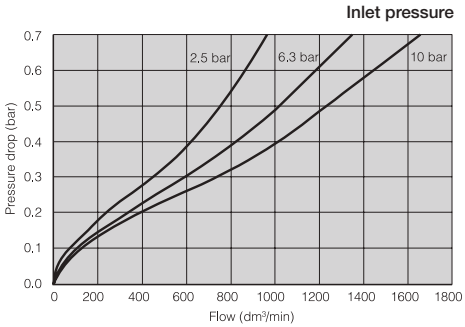
Port size	
1" ports	8
3/4" ports	6

Bowl/drain options	
Metal bowl Manual drain	SM
Metal bowl No drain	SN

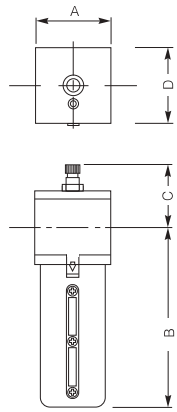
Technical information

Port sizes	3/4" & 1"
Max inlet pressure (p1):	17 bar max
Min flow oil pickup:	3.7 dm^3/s
Bowl capacity:	300cc
Recommended lubricant:	See page 190
Temperature range:	-20°C to +80°C
Weight:	1600 g

Flow characteristics

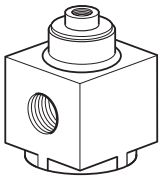


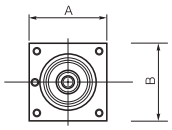
Dimensions (mm)

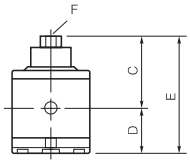


Port sizes	A	B	C	D
3/4" & 1"	92	230	71.3	92

Air pilot regulators







- Self relieving feature plus balanced poppet provides quick response and accurate pressure regulation.
- Solid control piston for extended life.

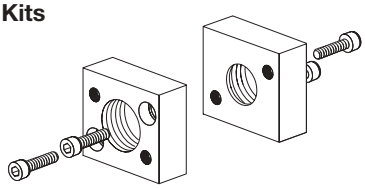
Order code
P3NRA18BPP

Dimensions (mm)

A	A (PB)	B	C	D	E	F
92	142	92	86	53	139	G1/4

(PB = Port blocks)

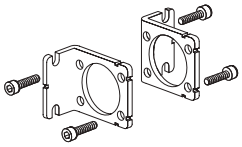
Port Block Kits

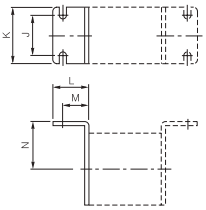


Description	Connection	Weight g	Order Code
Kits for single Units or Combinations without Lubricators (2 port blocks + 2 seals)	G3/4	574	**P3NKB16CP**
	G1	554	**P3NKB18CP**
	G1 1/2	534	**P3NKB1BCP**
Kits for Combinations with Lubricators (2 port blocks + 2 seals)	G3/4	574	**P3NKB16CL**
	G1	554	**P3NKB18CL**
	G1 1/2	534	**P3NKB1BCL**

For NPT threads change **1** to **9**.

Mounting brackets





Order code		Dimensions (mm)				
		L	M	N	J	K
P3NKA00MW	For 3/4 & 1" sizes	45	33	60	50	70
P3NKB00MW	For 1.1/2" port size					

Body Covers

Order code
P3NKA00PM

Each kit contains two covers.

Materials

Filter

Body	Aluminium
Bowl	Aluminium
Deflector	Plastic
Drain	Plastic
Seals	Nitril
Element	Plastic
Sight Glass	Polyamide

Regulator

Adjustment Stem	Steel
Body	Aluminium
Bonnet	Aluminium
Knob	Plastic
Piston	Plastic
Poppet Assembly	Brass
Seals	Nitrile
Spring (Poppet & Control)	Steel

Lubricator

Body	Aluminium
Bowl (metal)	Aluminium
Drains	Plastic
Injector meter block & brass assembly	Plastic
Seals	Nitrile
Sight glass	Polyamide
Sight dome	Polycarbonate

Filter/Regulator

Body, Bonnet & Bowl	Aluminium
Deflector	Plastic
Drains	Plastic
Seals	Nitrile
Element	Plastic
Sight glass	Polyamide
Piston	Plastic
Knob	Plastic
Spring (Poppet & Control)	Steel

Lubrication of airlines

Satisfactory operation of airline equipment and effective lubrication depends upon the proper selection of lubrication oil. Oils having a viscosity below ISO3448 Grade 10 to 22 will satisfy most high-speed pneumatic tools and other light duty requirements.

Heavy duty tools and pneumatic valves and cylinders will normally require oils in the viscosity ISO3448 Grade 32 to 68.

Only Paraffinic based oils can be used and the following recommendations are given as a general guide to types of oil that are suitable for use with Parker airline equipment.

	High speed tools and systems		Air Cylinders and valves	
Oil Company	**ISO Grade**	**Grade**	**ISO Grade**	**Grade**
Century Oils	Century P - 198	15	P.W.L.A	32
Alexander Duckham	Zurcon 2	15	Zurcon 4 32	
Gulf	Harmony 38AW	15	Harmony 43AW	32
Shell (UK) Oil	Tellus 22	22	Tellus 37	37
Burmah Castrol	Hyspin AWS15	15	Hyspin AWS32	32
Edgar Vaughan	KSO 5L	10	Hydrodrive HP100	32
Esso Petroleum	NUTO 1115	15	NUTO H32	32
B.P.	HLP 22	22	HLP 32	32
Mobile Oil Company	Velocite No.6	10	DTE Oil - Light	32
Mobile			VPI-A	32
Silkolene	Silkair GP22	22	Derwent 32	32
Silkolene	Dove 15	15		
Shell	Cassida Fluid HF*	32		
Klüberoil	4UH1*	32		

* For food industry applications : approved oil USDA-H1

Most Parker Pneumatic valves and cylinders are designed for use in non-lube operation. However airline lubrication will increase the service life.

Note! If oil lubrication is used, it must be maintained for the service life of the product.

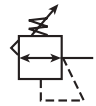
Some specialised lubricants, particular synthetic reclaimed oils and low temperature additives, may contain compounds which are incompatible with certain materials, internal 'O' rings and seals. They may also attack plastic piping or the transparent bowls of the airline lubricator. Attention is drawn to BS6005 (Specification for moulded transparent polycarbonate bowls used in compressed air filters and lubricators).

Do not use oils with additives, compounds oils containing solvents, graphite, detergents or synthetic oils.

High Precision Regulators

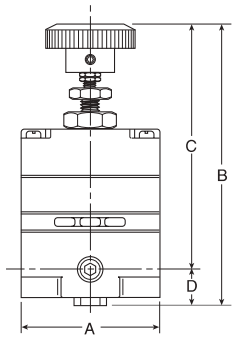
R210 / R220 / R230 Series

R210 / 220 High Precision Regulator



Features

- Accurate Pressure Regulation.
  Controls Output Pressure to within 0.1% Accuracy.
- Multi-Stage Regulation for Maximum Control and Stability.
- Two Full Flow Gauge Ports.
- Super Sensitive Relief. Downstream Pressure Buildup, Down to 0.3m bar Above the Set Pressure, is Automatically Vented through Internal Relief Valve.
- R220 has High Exhaust Relief Capacity.



R210 / R220 Regulator Dimensions		
A 52mm	**B** 110mm	**C** 97mm
D 13.5mm		

WARNING

Do not connect regulator to bottled gas.

Do not exceed maximum primary pressure rating.

Product rupture can cause serious injury.

Applications

The R210 and R220 regulators are well suited for any process that requires very precise regulation of air pressure in pipes and vessels. These regulators are often used, but not limited to the following applications:

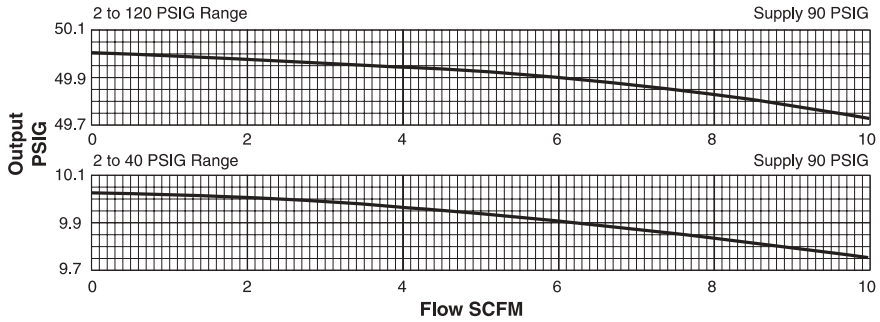
- Air Gauging
- Gas Mixing
- Calibration Standards
- Air Hoists
- Web Tensioning
- Gate Actuators
- Roll Loading
- Valve Operators
- Cylinder Loading

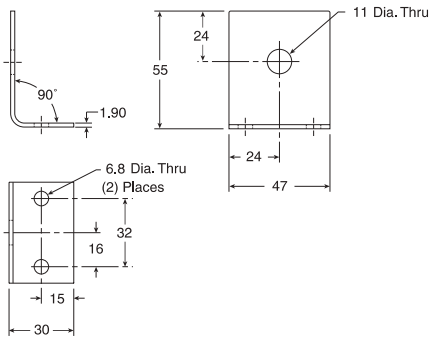
The R210 / R220 are high precision, multi-stage pressure regulators. This pressure controller provides the highest level of regulation accuracy and repeatability available and is ideal for applications that call for the utmost in control and maximum stability under variable operating conditions. A stainless steel measuring capsule is used as a sensing element to activate the high gain servo balanced control mechanism in which the main valve is controlled by a pilot valve. This allows for greater accuracy and eliminates many of the problems associated with conventional regulators using range springs and diaphragms.

Ordering Information

		Reduced Pressure Range (Bar)		
Relieving		0.13 to 2.7	0.13 to 8.2	0.13 to 8.2 High Relief
In / Out Ports	1/4”	**R210G02A**	**R210G02C**	**R220G02C**

Technical Information





Mounting Bracket: 446-707-045

R210 / R220 Regulator Kits & Accessories

Mounting Bracket Kits

Pipe Mounting	**SA200YW57**
Right Angle Mounting	**446-707-045**

Service Kits

0.13 to 2.7 bar	**RKR210A**
0.13 to 8.2 bar	**RKR210C**
0.13 to 8.2 bar (High Relieving)	**RKR220C**

Materials of Construction

Adjusting Stem & Capsule	Stainless Steel
Body	Zinc
Control Knob	Plastic
Diaphragm(s)	Buna-N
Seals	Buna-N
Springs	Stainless Steel
Valve Poppet	Stainless Steel

Specifications

Constant Bleed Rate ..... Less than 0.15m³/hr
(Equals Bleed Rate plus other consumption)

Total Air Consumption ..... 0.21m³/hr.

Effect of Supply Pressure Variation
of 1.7 bar on outlet: ..... Less than 0.3m bar

Exhaust (Relief) Capacity
At 0.34 bar above 1.38 bar Setpoint
Standard Model 3.4m³/hr
High-Relief Model 17m³/hr

Flow Capacity
At 9 bar Supply,
1.38 bar Outlet 25m³/hr

Gauge Ports ..... 1/4"
(Can be used as additional full flow 1/4" outlet ports)

Operating Pressure Range:		bar
PRIMARY – Maximum		10
SECONDARY – Spring Pressure		
2.7 bar	Minimum	0.14
	Maximum	2.70
8.2 bar	Minimum	0.14
	Maximum	8.2

Operating Temperature Range ..... -18°C * to 65°C

* Temperatures below 0°C require moisture free air.

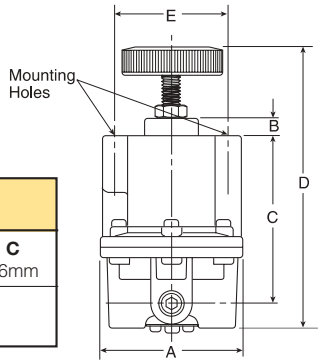
Repeatability / Sensitivity ..... 0.3m bar
Inches of Water Column = 1/8"

Weight 640g

R230 High Flow Precision Regulator

Features

- Adjusting Knob.
- Diaphragm Design for Good Repeatability, Response and Sensitivity.
- Balanced Poppet.
- Two Full Flow Gauge Ports.
- Precise Regulation. Will Sense a Decrease in Downstream Pressure as Small as 1/4" of Water.
- High Fow Capacity. Flows of 37.8dm³/s Attainable with Minimal Drop.
- Stable Output. Dampening Action of Aspiration Tube makes Regulator Insensitive to Changes in Flow.
- On-line Maintenance. Can be Serviced Without Removal of Air Line.



R230 Regulator Dimensions		
A 76mm	**B** 10mm	**C** 86mm
D 154mm	**E** 57mm	

Applications

The R230 regulators are an ideal choice for any application that calls for accurately maintained output pressure under high flow conditions. This includes, but is not limited to such applications as:

Test Equipment

- Gas Mixing
- Valve Operators
- Positioning Cylinders
- Laboratory Equipment
- Web Tensioning
- Clutch & Brake Controls
- Roll Loading
- Test Panels
- Actuators

⚠ WARNING

Do not connect regulator to bottled gas.

Do not exceed maximum primary pressure rating.

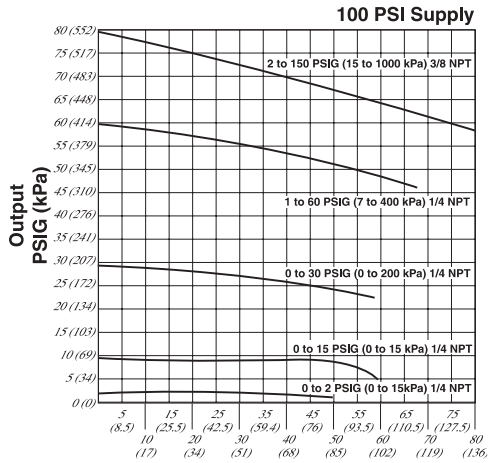
Product rupture can cause serious injury.

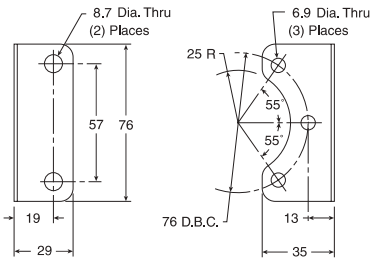
The R230 is designed for applications that require high flow capacity and accurate process control. A poppet valve which is balanced by utilizing a rolling diaphragm, insures a constant output pressure even during wide supply pressure variations. Stability of regulated pressure is maintained under varying flow conditions through the use of an aspirator tube which adjusts the air supply in accordance with the flow velocity.

Ordering Information

		Reduced Pressure Range (Bar)			
Relieving		0 to 0.13	0 to 2	0 to 4	0 to 10
In / Out Ports	1/4"	**R230G02E**	**R230G02B**	**R230G02C**	**R230G02D**

Technical Information





Mounting Bracket: 446-707-025

R230 Regulator Kits & Accessories

Mounting Bracket Kit **446-707-025**

Service Kits – Relieving

0 to 0.13 bar **RKR230E**
0 to 2 bar **RKR230B**
0 to 4 bar **RKR230C**
0 to 10 bar **RKR230D**

Materials of Construction

Adjusting Stem & Spring ..... Steel
Biased Spring ..... Stainless Steel
Body, Bonnet ..... Aluminum
Control Knob ..... Plastic
Diaphragm ..... Buna-N Elastomer and Polyester Fabric
Seals ..... Buna-N
Valve Poppet ..... Brass
Valve Poppet Seat ..... Buna-N

Specifications

Constant Bleed Rate ..... upto 0.35m³/h
(Depending upon output pressure)

Gauge Ports ..... Two Ports 1/4"
(Can be used as additional Full Flow 1/4 Inch Outlet Ports)

Effect of Supply Pressure Variation –
Less than 6mbar for 6.89 bar change

Exhaust (Relief) Capacity –
1.88 dm³/s with downstream pressure 0.3 bar above set pressure.
Exhaust commences at 0.7m bar above set pressure.

Flow Capacity –
At 6.89 bar Supply,
5.5 bar Outlet ..... 37.8 dm²/s

Operating Temperature Range – -40°C to 71°C

Operating Pressure Range –	bar
PRIMARY – Maximum	17

Port Threads ..... 1/4"

Exhaust (Relief) Capacity ..... 1.88 dm³/s
(Downstream pressure 0,3 bar above set pressure)

Repeatability / Sensitivity ..... 6m bar
Inches of Water Column = 1/4"

Response ..... 250 ms
The valve will open to full flow and fill a volume of 1250 cm³

Weight 740g

Cylinder Control Accessories

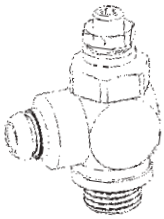
Cylinder Control Accessories

- For direct mounting on to cylinder
- Allen key adjustment
- Push-in connection
- Wide range of sizes

Operating and additional information

Operating pressure:	1 to 10 bar
Operating temperature:	-25°C to +100°C
Sealing device:	M5 Nylon washer
	1/8 - 1/2 BSPP Nitrile E.D. seal
Terminations:	4mm - 12mm push-in connection
	6mm - 12mm - compression connection
Maximum connecting torque:	M5= 0,5Nm ; 1/8=9Nm ; 1/4=15Nm ; 3/8=22Nm ; 1/2=42Nm
Body material:	Brass black epoxy coated
Lock nut:	Brass

PTFL4/8PB - Flow regulator with push-in connection

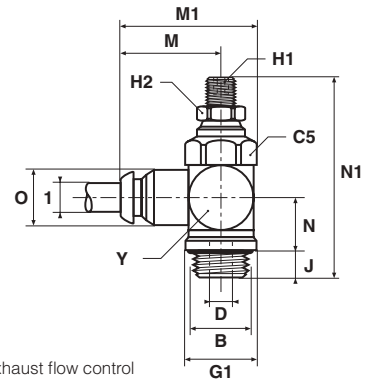


Symbol

Thread	Push-in connection	Number of turns	Qmax input at 6 bar, l/min*	Weight g	Order code
M5x0,8	4	19	33,4	15	**PTFL8PB4M5****
G1/8	4	18	105	42	**PTFL4PB4-1/8**
M5x0,8	6	19	36	19	**PTFL8PB6M5****
G1/8	6	18	160	44	**PTFL4PB6-1/8**
G1/4	6	12,5	360	74	**PTFL4PB6-1/4**
G3/8	6	17	440	147	**PTFL4PB6-3/8**
G1/8	8	18	160	64	**PTFL4PB8-1/8**
G1/4	8	12,5	355	79	**PTFL4PB8-1/4**
G3/8	8	17	720	152	**PTFL4PB8-3/8**
G1/4	10	12,5	380	76	**PTFL4PB10-1/4**
G3/8	10	17	835	138	**PTFL4PB10-3/8**
G1/2	10	21	974	224	**PTFL4PB10-1/2**
G3/8	12	17	805	143	**PTFL4PB12-3/8**
G1/2	12	21	1284	225	**PTFL4PB12-1/2**

* Screw closed

** These fittings are supplied with Nylon seal



Exhaust flow control

Order code	C5	D	G1	H1	H2	J	M	M1	N	N1	O	Y
PTFL8PB4M5**	8	1,65	10,0	1,5	8	4	19,5	24,5	6,3	28,5	10	10
PTFL4PB4-1/8	14	3,00	14,4	2,0	7	6	22,0	30,1	10,7	43,7	10	14
PTFL8PB6M5**	8	1,65	10,0	1,5	8	4	20,5	26,5	7,3	31,0	12	12
PTFL4PB6-1/8	14	3,20	14,4	2,0	7	6	23,5	31,6	10,7	43,7	12	14
PTFL4PB6-1/4	17	5,20	18,4	4,0	11	7	25,0	34,9	13,8	51,8	12	17
PTFL4PB6-3/8	22	5,50	21,6	4,0	11	7	28,0	40,7	17,3	63,7	12	22
PTFL4PB8-1/8	14	3,20	14,4	2,0	7	6	25,0	33,1	10,7	43,7	14	14
PTFL4PB8-1/4	17	5,20	18,4	4,0	11	7	28,5	38,3	13,8	51,8	14	17
PTFL4PB8-3/8	22	6,00	21,6	4,0	11	7	29,5	42,2	17,3	63,7	14	22
PTFL4PB10-1/4	17	5,20	18,4	4,0	11	7	31,5	41,3	13,8	51,8	17	17
PTFL4PB10-3/8	22	6,00	21,6	4,0	11	7	34,0	46,7	17,3	63,7	17	22
PTFL4PB10-1/2	27	8,00	26,5	4,0	14	9	36,5	52,1	20,1	76,1	17	27
PTFL4PB12-3/8	22	6,00	21,6	4,0	11	7	34,0	46,7	17,3	63,7	20	22
PTFL4PB12-1/2	27	8,50	26,5	4,0	14	9	36,5	52.,1	20,1	76,1	20	27

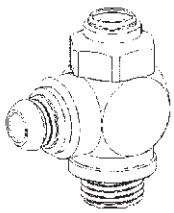
Dimensions (mm)

- For direct mounting on to cylinder
- Allen key adjustment
- Push-in connection
- Wide range of sizes

Operating and additional information

Operating pressure:	1 to 10 bar
Operating temperature:	-25°C to +100°C
Sealing device:	M5 Nylon washer
	1/8 - 1/2 BSPP Nitrile E.D. seal
Terminations:	4mm - 12mm push-in connection
	1/8 - 1/2 BSPP + M5 Female thread DIN 3852 long
Maximum connecting torque:	M5= 0,5Nm ; 1/8=9Nm ; 1/4=15Nm ; 3/8=22Nm ; 1/2=42Nm
Body material:	Brass blackepoxy coated
Lock nut:	Brass

PTF4/8PB - Flow regulator with push-in connection

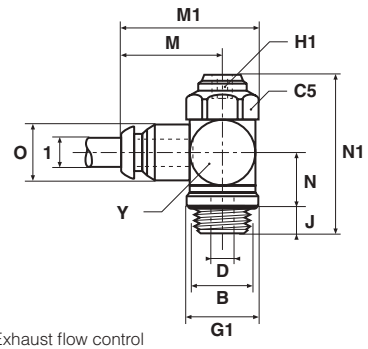


Symbol

Thread	Push-in connection	Number of turns	Qmax input at 6 bar, l/min*	Weight g	Order code
M5x0,8	4	19	33,4	14	**PTF8PB4M5****
G1/8	4	18	105	35	**PTF4PB4-1/8**
M5x0,8	6	19	36	19	**PTF8PB6M5****
G1/8	6	18	160	37	**PTF4PB6-1/8**
G1/4	6	12,5	360	65	**PTF4PB6-1/4**
G1/4	6	17	440	142	**PTF4PB6-3/8**
G1/8	8	18	160	43	**PTF4PB8-1/8**
G1/4	8	12,5	355	70	**PTF4PB8-1/4**
G3/8	8	17	720	146	**PTF4PB8-3/8**
G1/4	10	12,5	380	67	**PTF4PB10-1/4**
G3/8	10	17	835	131	**PTF4PB10-3/8**
G1/2	10	21	974	231	**PTF4PB10-1/2**
G3/8	12	17	805	200	**PTF4PB12-3/8**
G1/2	12	21	1284	232	**PTF4PB12-1/2**

* Screw closed

** These fittings are supplied with Nylon seal



Exhaust flow control

Order code	C5	D	G1	H1	J	M	M1	N	N1	O	Y
PTF8PB4M5**	8	1,65	10,0	1,5	4	19,5	24,5	6,3	22,0	10	10
PTF4PB4-1/8	14	3,00	14,4	2,0	6	22,0	30,1	10,7	34,5	10	14
PTF8PB6M5**	8	1,65	10,0	1,5	4	20,5	26,5	7,3	24,5	12	12
PTF4PB6-1/8	14	3,20	14,4	2,0	6	23,5	31,6	10,7	34,5	12	14
PTF4PB6-1/4	17	5,20	18,4	4,0	7	25,0	34,9	13,8	41,0	12	17
PTF4PB6-3/8	22	5,50	21,6	4,0	7	28,0	40,7	17,3	51,0	12	22
PTF4PB8-1/8	14	3,20	14,4	2,0	6	25,0	33,1	10,7	34,5	14	14
PTF4PB8-1/4	17	5,20	18,4	4,0	7	28,5	38,3	13,8	41,0	14	17
PTF4PB8-3/8	22	6,00	21,6	4,0	7	29,5	42,2	17,3	51,0	14	22
PTF4PB10-1/4	17	5,20	18,4	4,0	7	31,5	41,3	13,8	41,0	17	17
PTF4PB10-3/8	22	6,00	21,6	4,0	7	34,0	46,7	17,3	51,0	17	22
PTF4PB10-1/2	27	8,00	26,5	4,0	9	36,5	52,1	20,1	61,0	17	27
PTF4PB12-3/8	22	6,00	21,6	4,0	7	34,0	46,7	17,3	51,0	20	22
PTF4PB12-1/2	27	8,50	26,5	4,0	9	36,5	52,1	20,1	61,0	20	27

- For direct mounting on to cylinder
- Allen key adjustment
- Push-in connection
- Wide range of sizes

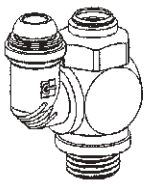
Operating and additional information

Operating pressure:	1 to 10 bar
Operating temperature:	-25°C to +70°C
Bolt material:	Brass black epoxy coated
Swivel elbow material:	High resistance polyamide
Bolt material:	Brass
Bolt threads:	M5 - 1/8 BSPP - 1/4 BSPP - 3/8 BSPP
Sealing device:	Nylon washer 1/8 - 3/8 BSPP Nitrile E.D. seal
Terminations:	4mm - 8mm push-in connection
Maximum connecting torque:	M5= 0,5Nm ; 1/8=9Nm ; 1/4=15Nm ; 3/8=22Nm ; 1/2=42Nm
Adjustment screw:	Brass

Flow adjustment

Flow control is adjusted with an Allen key.
The large number of turns from fully closed to fully open allows for precise flow control.

PTF4/8E6PB - Flow regulator with push-in connection

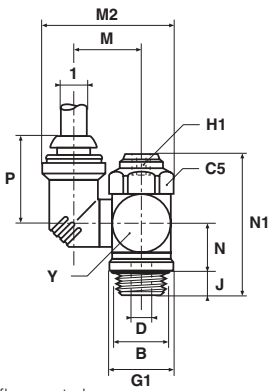


Symbol

Thread	Push-in connection	Number of turns	Qmax input at 6 bar, l/min*	Weight g	Order code
M5x0,8	4	19	35	16	**PTF8E6PB4M5****
G1/8	4	18	68	37	**PTF4E6PB4-1/8**
M5x0,8	6	18	37	20	**PTF8E6PB6M5****
G1/8	6	18	175	38	**PTF4E6PB6-1/8**
G1/4	6	12,5	215	70	**PTF4E6PB6-1/4**
G3/8	6	17	250	132	**PTF4E6PB6-3/8**
G1/8	8	18	155	40	**PTF4E6PB8-1/8**
G1/4	8	12,5	343	73	**PTF4E6PB8-1/4**
G3/8	8	17	505	136	**PTF4E6PB8-3/8**

* Screw closed

** These fittings are supplied with Nylon seal



Exhaust flow control

Order code	Dimensions (mm) C5	D	G1	H1	J	M	M2	N	N1	P	Y
PTF8E6PB4M5**	8	1,65	10,0	1,5	4	11,7	18,4	6,2	22,5	20,5	10
PTF4E6PB4-1/8	14	3,00	14,4	2,0	6	14,3	30,0	10,7	34,5	20,5	14
PTF8E6PB6M5**	8	1,65	10,0	1,5	4	12,7	20,4	7,2	24,5	23,0	12
PTF4E6PB6-1/8	14	3,20	14,4	2,0	6	15,3	31,0	10,7	34,5	23,0	14
PTF4E6PB6-1/4	17	5,20	18,4	4,0	7	17,3	35,0	13,8	41,0	23,0	17
PTF4E6PB6-3/8	22	5,50	21,6	4,0	7	19,8	40,0	17,3	51,0	23,0	22
PTF4E6PB8-1/8	14	3,20	14,4	2,0	6	16,8	33,5	10,7	34,5	25,0	14
PTF4E6PB8-1/4	17	5,20	18,4	4,0	7	18,3	37,0	13,8	41,0	25,0	17
PTF4E6PB8-3/8	22	6,00	21,6	4,0	7	20,8	42,0	17,3	51,0	25,0	22

- Micrometer type adjustment
- Fine control
- Non-return and needle valves

- Screw driver adjustment
- Rugged bodies
- High flow rate
- High flow by-pass
- Wide range of sizes

Operating and additional information

Micrometer flow control valves

Operating pressure:	0 to 17 bar
Operating temperature:	-40ºC to +80ºC
Body material:	Brass
Control knob:	Aluminium
Adjustment mode:	Knurled knob

Heavy duty Inline flow control valves

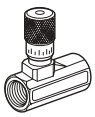
Operating pressure:	0 to 17 bar for air or oil
Operating temperature:	-18ºC to +82ºC
Body material:	Brass
Control knob:	Brass
Adjustment mode:	Screw driver adjustment

Flow Control with By-pass

Symbol

Thread	Number of turns	Qmax input at 6 bar, l/min	Weight g	Order code
G1/8	5	300	76	**337A**
G1/4	6	780	134	**337B**

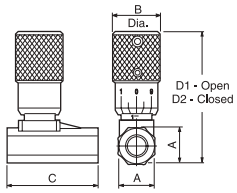
Flow Control with By-directional Control



Symbol

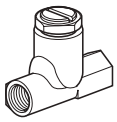
Thread	Number of turns	Qmax input at 6 bar, l/min	Weight g	Order code
G1/8	5	300	78	**338A**
G1/4	6	780	132	**338B**

Micrometer Flow Control Valves - Dimensions



Order code	Port size	A	B	C	D1 open	D2 closed
		Dimensions (mm)				
337A	G1/8	14,5	19	37.5	51.5	46
337B	G1/4	17,5	19	37.5	58	51
338A	G1/8	14,5	19	37.5	51.5	46
338B	G1/4	17,5	19	37.5	58	51

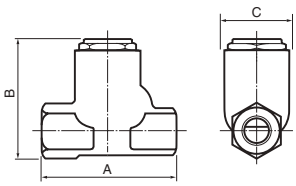
Standard type



Symbol

Thread	Number of turns	Qmax input at 6 bar, l/min	Weight g	Order code
G1/8	6	1320	114	**B3250X**
G1/4	5	2880	224	**B3250AB**
G3/8	5	6300	378	**B3250BB**
G1/2	5	7680	792	**B3250CB**
G3/4	4,5	10680	1300	**B3250DB**

Flow Control Valves, Standard Type



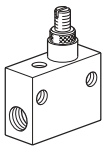
Order code	Port size	A	B	C
		Dimensions (mm)		
B3250X	G1/8	44	40	21
B3250AB	G1/4	57	51	28
B3250BB	G3/8	68	64	35
B3250CB	G1/2	79	78	41
B3250DB	G3/4	90	92	51

- Integral mounting holes
- Screw driver adjustable
- Panel mounting option

Operating and additional information

Working pressure	Max 10 bar
Working temperature	-20 °C to +70 °C

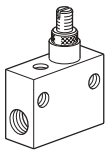
Flow Control Valves with By-pass



Symbol

Thread	Number of turns	Qmax input at 6 bar, l/min	Weight g	Order code
G1/8	13	72	30	**VQB12-Q-0X-5***
G1/8	13	240	30	**VQB12-Q-0-5**
G1/4	13	1320	70	**VQB22-Q-0-5**
G1/2	13	3600	270	**VQB42-Q-0-5**

Flow Control Valves with By-directional Control

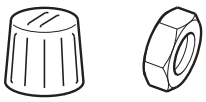


Symbol

Thread	Number of turns	Qmax input at 6 bar, l/min	Weight g	Order code
G1/8	13	72	30	**VQB12-0X-5***
G1/8	13	240	30	**VQB12-0-5**
G1/4	13	1320	70	**VQB22-0-5**
G1/2	13	3600	260	**VQB42-0-5**

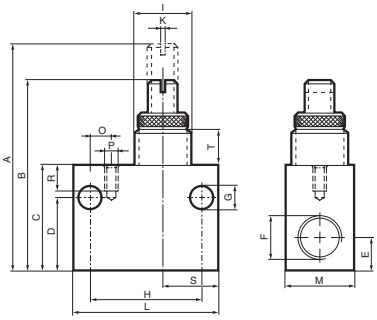
* Extra fine adjustment

Knob and nut for Panel Mounting



To Suit	Weight g	Order code
VQB12	8	**9128177212**
VQB22	14	**9128177222**
VQB42	37	**9128177242**

Flow Control Valves - Dimensions



Order code	A	B	C	D	E	F	G	H	I
VQB12-(Q)-OX-5	49	42	22	15	6,5	G1/8	5,8	24	M12x1
VQB12-(Q)-O-5	49	42	22	15	6,5	G1/8	5,8	24	M12x1
VQB22-(Q)-O-5	64	53	30	21	8,5	G1/4	7,0	32	M16x1
VQB42-(Q)-O-5	99	85	50	36	16,5	G1/2	7,0	50	M24x1,5

Order code	K	L	M	O	P	R	S	T
VQB12-(Q)-OX-5	1,2	32	15	-	-	-	13,5	8,8
VQB12-(Q)-O-5	1,2	32	15	-	-	-	13,5	8,8
VQB22-(Q)-O-5	1,2	42	20	6,0	M4	7	16,0	10,0
VQB42-(Q)-O-5	1,8	62	30	19,5	M4	7	20,5	15,2

- For inline or surface mounting
- Manual adjustment by knob with lock nut
- Instant push-in fitting
- High flow
- Wide range of sizes

Suitable for use:-

- Flow Regulators
- Blockers
- Unloaders
- Combined devices
- Optimisers
- Soft Start

Operating and additional information

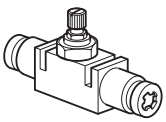
Speed flow control valves - PWR-L

Operating pressure:	1 to 10 bar
Permissible fluids:	Air or neutral gas
Operating temperature:	-15°C to +70°C
Storage temperature:	-20°C to +70°C
Vibration resistance:	Conforming to section 19-2 of Bureau Veritas regulations
Body material:	Thermo plastic
Adjustment:	Knurled knob
Adjustment locking:	Hexagonal lock nut

Terminal block - Sub-bases

Operating pressure:	0,2 to 10 bar
Operating temperature:	-15°C to +70°C
Storage temperature	-20°C to +70°C
Body material:	Thermo plastic

Main data for Speed Controls, PWR-L Series

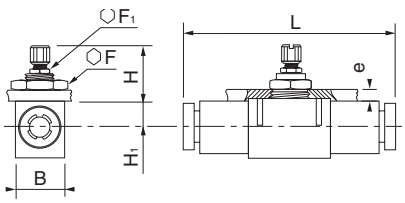


With push-in connection knob adjustment and locknut

Symbol

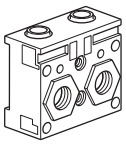
Push-in connection	Adjustment angle	Qmax input at 6 bar, l/min*	Weight g	Order code
4	13	200	20	**PWR-L1444**
6	12	400	40	**PWR-L1466**
8	15	720	60	**PWR-L1488**
10	18	1360	130	**PWR-L1499**
12	20	1950	150	**PWR-L1411**

* Screw closed



Order code	Dimensions (mm) B	F	F1	e	H+	H-	H1	L	Q
PWR-L1444	12,0	14	*	6	25,5	21,5	6,5	39,0	10,5
PWR-L1466	17,0	19	*	7	32,5	27,5	7,5	54,0	17,0
PWR-L1488	18,5	24	11	7	34,5	28,5	9,0	60,5	19,0
PWR-L1499	24,0	30	14	7	38,5	29,5	11,5	76,0	25,0
PWR-L1411	28,0	32	14	8	42,0	32,0	12,5	86,0	28,0

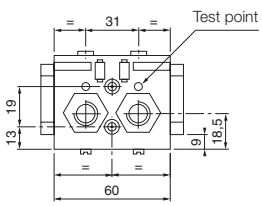
Terminal Block Subbases for Cylinder Controls*

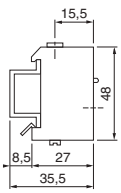


For Mounting Other Cylinder Controls	Push-in Connection Ømm	Bore Ømm	Weight g	Order code
G1/8	6	4	50	**PZC-B2268**
G1/4	8	6	50	**PZC-B2289**

* For remote mounting of all cylinder controls, when mounting on power valves or cylinders is impractical.
The subbase is designed for mounting two components side by side.

Dimensions





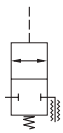
- For direct cylinder mounting
- Blocker only or multifunction options
- Threaded or push-in ports
- Blocker/Flow Regulator device adjustable with manual barrel
- Wide range of sizes

Operating and additional information

Operating pressure:	1 to 10 bar
Permissible fluids:	Air or neutral gas 50micron or filtration, lubricated or not
Operating temperature:	-15°C to +60°C
Storage temperature:	-40°C to +70°C
No. of operations with dry air at 6 bar 20°C 1 Hz:	10 million
Maximum operating freqency:	10Hz
Vibration resistance:	According to IEC 68 - 2 - 6
Maximum connecting torque:	1/8 = 8Nm ; 1/4 = 12Nm; 3/8 = 30Nm; 1/2 = 35Nm
Body material (Blocker):	Zinc alloy
Body material (Blcoker/Flow Regulator):	Thermo plastic
Connection thread:	Brass
Adjustment mode (Blocker/Flow Regulator):	Rotating barrel
Adjustment locking (Blocker/Flow Regulator):	Knurled lock nut
Internal seal at 6 bar:	≤ 0,6 l/h ANR

With Push-in Connection

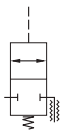
Symbol



Connection for pilot port	Thread	Connection for tube ,Ømm	Qmax input at 6 bar, l/min	Weight g	Order code
Push-in Ø4mm	G1/8	6	500	150	**PWB-A1468**
	G1/4	6	650	150	**PWB-A1469**
	G1/4	8	650	150	**PWB-A1489**
	G3/8	8	1600	180	**PWB-A1483**
	G3/8	10	1750	180	**PWB-A1493**
	G1/2	12	2050	500	**PWB-A1412**

With Threaded Connection

Symbol

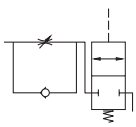


Connection for pilot port	Thread	Connection for tube ,Ømm	Qmax input at 6 bar, l/min*	Weight g	Order code
Push-in Ø4mm	G1/8	G1/4	500	180	**PWB-A1898**
	G1/4	G1/4	650	180	**PWB-A1899**
M5*	G3/8	G3/8	1750	190	**PWB-A1833**
	G1/2	G1/2	2050	480	**PWB-A1822**

*** Available with** Ø4mm push-in connection, add 4 to the end of the Order code; example: **PWB-A18994**

With Push-in Connection, Barrel Adjustment and Locknut

Symbol

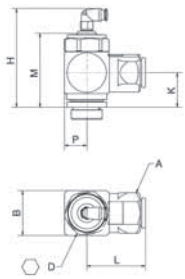


Connection for pilot port	Thread	Connection for tube ,Ømm	Qmax input at 6 bar, l/min	Weight g	Order code
Ø4mm	G1/8	4	330	130	**PWR-HB1448**
	G1/8	6	500	130	**PWR-HB1468**
	G1/4	6	500	130	**PWR-HB1469**
	G1/4	8	600	130	**PWR-HB1489**
	G3/8	8	1200	180	**PWR-HB1483**
	G3/8	10	1300	180	**PWR-HB1493**
	G1/2	10	1400	130	**PWR-HB1492**

Blockers	Pilot				Depilot			
	operating pressure				operating pressure			
	2bar	4bar	6bar	8bar	2bar	4bar	6bar	8bar
PWB-A1898	3,1	3,5	4,0	4,5	0,8	1,0	1,2	1,4
PWB-A1899	3,1	3,5	4,0	4,5	0,8	1,0	1,2	1,4
PWB-A1833	2,5	2,8	2,9	3,4	1,1	1,3	1,6	1,9
PWB-A1822	2,5	2,8	2,9	3,4	1,1	1,3	1,6	1,9

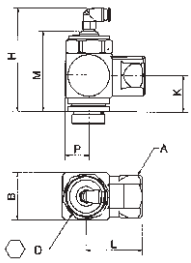
Combined speed controllers & blockers	Pilot				Depilot			
	operating pressure				operating pressure			
	2bar	4bar	6bar	8bar	2bar	4bar	6bar	8bar
PWR-HB1448	3,1	3,5	4,0	4,5	0,8	1,0	1,2	1,4
PWR-HB1468	3,1	3,5	4,0	4,5	0,8	1,0	1,2	1,4
PWR-HB1469	3,1	3,5	4,0	4,5	0,8	1,0	1,2	1,4
PWR-HB1489	3,1	3,5	4,0	4,5	0,8	1,0	1,2	1,4
PWR-HB1483	2,5	2,8	2,9	3,4	1,1	1,3	1,6	1,9
PWR-HB1493	2,5	2,8	2,9	3,4	1,1	1,3	1,6	1,9

Blocker with push-in connection



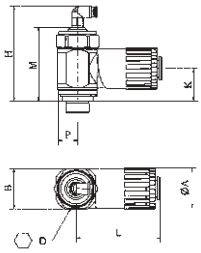
Order code	Dimensions (mm) A	B	D	H	K	L	P	M
PWB-A1468	Ø 22	21	21	59,0	16,5	39	11	43
PWB-A1469	Ø 22	21	21	59,0	16,5	39	11	43
PWB-A1489	⬠ 22	21	21	59,0	16,5	39	11	43
PWB-A1483	□ 27	30	27	66,5	22,5	39	15	52
PWB-A1493	□27	30	27	66,5	22,5	39	15	52
PWB-A1412	27	30	27	66,5	22,5	39	15	52

Blocker with threaded connection



Order code	Dimensions (mm) A	B	D	H	K	L	C	P	M
PWB-A1898	Ø 22	21	21	59,0	16,5	43,5	⬡24	11	43
PWB-A1899	⬠ 22	21	21	59,0	16,5	43,5	⬡24	11	43
PWB-A1833	□ 27	30	27	66,5	22,5	36,0	□27	15	52
PWB-A1822	27	30	27	66,5	22,5	36,0	□27	15	52

Blocker/Flow regulator



Order code	Dimensions (mm) ØA	B	D	H	K	L	P
PWR-HB1448	22,5	21	21	59	16,5	47,0	12,5
PWR-HB1468	22,5	21	21	59	16,5	47,0	12,5
PWR-HB1469	22,5	21	21	59	16,5	47,0	12,5
PWR-HB1489	22,5	21	21	59	16,5	47,0	12,5
PWR-HB1483	29,0	30	27	64,5	22,5	60,0	15,0
PWR-HB1493	29,0	30	27	64,5	22,5	60,0	15,0
PWR-HB1492	29,0	30	27	64,5	22,5	60,0	15,0

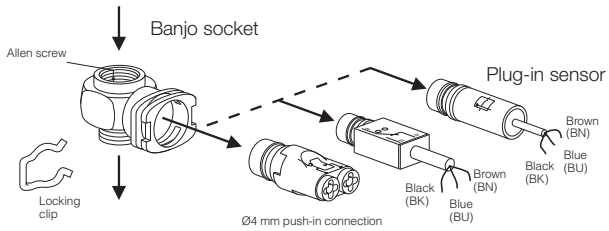
- Detects stoppage of a cylinder due to a pressure drop in the exhaust chamber
- For direct mounting to cylinders
- Choice of pneumatic, electrical or electronic output
- Wide range of sizes

Operating and additional information

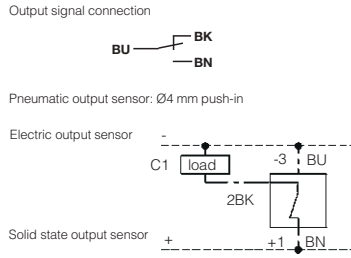
Operating pressure:	0 to 10 bar
Permissible fluids:	Air or neutral gas 50micron or filtration, lubricated or not
Operating temperature:	-15°C to +60°C
Storage temperature:	-40°C to +70°C
No. of operations with dry air at 6 bar 20°C 1 Hz:	10 million
Maximum operating frequency:	10 Hz
Output characteristics:	Pneumatic: Flow at 6 bar 90l/mn Electrical:C/contact 2,5A/250V AC, 5W 48V DC Electronic: PNP N/C or N/O 10 to 30V 75 mA DC
Maximum connecting torque:	M5 = 1Nm; 1/8 = 8Nm; 1/4 = 12Nm; 3/8 = 30Nm; 1/2 = 35Nm
Body material:	Thermo plastic
Connection thread:	Brass

Assembly

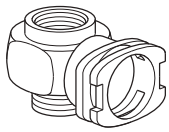
All back pressure sensors are a combination of two distinct parts: a banjo socket + a plug-in sensor.



Connection

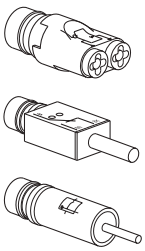


Banjo Sockets



Thread Size for Cylinder Port	Female Thread	Tool Required	Weight g	Order code
M5	M5	8mm flat spanner	40	**PWS-B155**
G1/8	G1/8	5mm Allen key	40	**PWS-B188**
G1/4	G1/4	8mm Allen key	50	**PWS-B199**
G3/8	G3/8	10mm Allen key	70	**PWS-B133**
G1/2	G1/2	12mm Allen key	110	**PWS-B122**

Plug-in Sensors



Sensing function	Output function	Output Connection	Output characteristics	Weight g	Order code
Exhaust back pressure decay	Pneumatic	Push-in Ø4mm	NO valve flow rate at 6 bar 90 l/mn	90	**PWS-P111**
	Electrical ~Ve = 3A	3 wires 0,5mm² length 2m	CO contact 12 to 230V ~ / 10VA* 12 to 48 VDC/5W*	80	**PWS-M1012**
	Solid state	3 wires 0,1mm² length 2m	PNP type NC 10/30VDC** 75 mA, NO	70 70	**PWS-E101** **PWS-E111**

* Suitable for low currents : 250 V ~ / 4 mA ; 24 VDC / 10 mA ** Including ripple

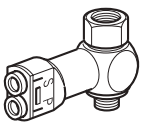
- Detects stoppage of a cylinder due to a pressure drop in the exhaust chamber
- Single unit design
- For direct mounting to cylinders
- Pneumatic output
- Wide range of sizes

Operating and additional information

Operating pressure:	0 to 10 bar
Permissible fluids:	Air or neutral gas 50micron or filtration, lubricated or not
Operating temperature:	-15°C to +70°C
Storage temperature:	-20°C to +70°C
No. of operations with dry air at 6 bar 20°C 1 Hz:	10 million
Maximum operating frequency:	1 Hz
Output characteristics:	Flow @ 6 bar 90l/m
Maximum connecting torque:	M5 = 1Nm; 1/8 = 8Nm; 1/4 = 12Nm; 3/8 = 30Nm; 1/2 = 35Nm
Body material:	Zinc alloy / Thermo plastic
Connection thread:	Brass

Plug-in & Monoblock back pressure sensors	Pilot operating pressure 6 bar	Depilot operating pressure 6 bar
PWS-P111	4,4	0,4
PWS-M1012	1,5	0,6
PWS-E101 & E111	1,5	0,6
PWS-C	1,6 ±0,2	0,3

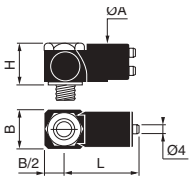
Back Pressure Sensor for Cylinder Mounting



Symbol

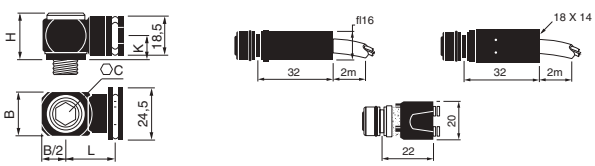
Thread Cylinder Port	Thread Supply Port	Bore Ømm	Weight g	Order code
M5	M5	2	100	**PWS-C5145**
G1/8	G1/8	5	110	**PWS-C5148**
G1/4	G1/4	7	100	**PWS-C5149**
G3/8	G3/8	10	170	**PWS-C5143**
G1/2	G1/2	14	150	**PWS-C5142**

Back Pressure Sensors - Mono block



Order code	Dimensions (mm) ØA	B	H	L
PWS-CS145	19	11,0	16,0	42
PWS-CS148	22	16,5	29,0	40
PWS-CS149	22	23,5	26,0	43
PWS-CS143	22	23,5	36,5	43
PWS-CS142	22	32,0	29,5	48

Back Pressure Sensors - Modular



Order code	Dimensions (mm) C	B	H	K	L
PWS-B155	8	11	16,5	10	17
PWS-B188	5	16	20,0	10	20
PWS-B199	8	21	20,0	10	22
PWS-B133	10	28	22,0	12	25
PWS-B122	12	33	26,0	14	26

- Adjusts the actuating force developed by a cylinder
- For direct mounting to power valve
- Threaded or push-in ports
- Adjustment by allen key or knurled knob
- Wide range of sizes

Operating and additional information

Operating pressure:	1 to 8 bar
Permissible fluids:	Air or neutral gas 50micron or filtration, lubricated or not
Operating temperature:	-15°C to +70°C
Storage temperature:	-20°C to +70°C
Maximum connecting torque:	1/8 = 8Nm ; 1/4 = 12Nm; 3/8 = 30Nm
Body material:	Zinc alloy
Connection thread:	Brass
Adjustment mode:	Allen key

With Push-in Connection

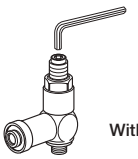
Symbol

With setting indicator*

Thread size for cylinder port	Push-in Connection, Ømm	Qmax input at 6 bar, l/min*	Weight g	Order code
G1/8	6	570	300	**PWP-B1268**
G1/4	6	530	300	**PWP-B1269**
G1/4	8	870	300	**PWP-B1289**
G1/4	10	1400	540	**PWP-B1299**
G3/8	10	1530	550	**PWP-B1293**

* Adjustment is carried out using a 6mm Allen key or a knurled knob.

With Threaded Connection



Symbol

With setting indicator*

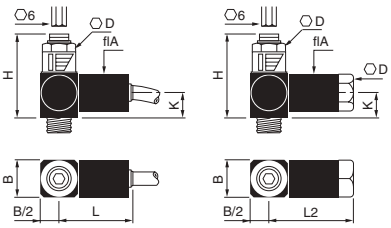
Thread size for cylinder port	Push-in Connection, Ømm	Qmax input at 6 bar, l/min*	Weight g	Order code
G1/8	G1/8	570	340	**PWP-B1888**
G1/4	G1/4	870	340	**PWP-B1899**
G3/8	G3/8	3200	620	**PWP-B1833**

* Adjustment is carried out using a 6mm Allen key or a knurled knob.

Clip-in knurled adjustment knob for optimisers

Weight g	Order code
30	**PWP-Z13**

Dimensions (mm)



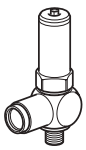
Order code	ØA	B	D	H	K	L	L2
PWP-B1268	22	21	19	58,0	13,5	39	
PWP-B1269	22	21	19	58,0	13,5	39	
PWP-B1289	22	21	19	58,0	13,5	39	
PWP-B1299	27	28	19	65,5	16,5	50	
PWP-B1293	27	28	27	65,5	16,5	50	
PWP-B1888	22	21	19	58,0	13,5		43
PWP-B1899	22	21	19	58,0	13,5		43
PWP-B1833	27	28	27	65,5	16,5		55

- Enables a gradual increase in pressure
- For direct mounting to power valve
- Instant push-in connections
- Adjustment by allen key

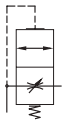
Operating and additional information

Operating pressure:	3 to 10 bar
Permissible fluids:	Air or neutral gas
Operating temperature:	-15°C to +70°C
Storage temperature:	-20°C to +70°C
No. of operations with dry air at 6 bar 20°C 1 Hz:	1/4 : 10 million; 3/8 : 5 million
Maximum operating frequency:	1 Hz
Maximum connecting torque:	1/4 = 12Nm; 3/8 = 30Nm
Body material:	Thermo plastic
Connection thread:	Brass
Adjustment mode:	Allen key

With Push-in Connection

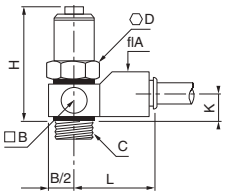


Symbol



Thread	Push-in Connection, Ømm	Flow rate at 6 bar, l/min	Weight g	Order code
G1/4	8	1500	70	**PWD-P2489**
G1/4	10	2000	120	**PWD-P2499**
G3/8	10	2000	130	**PWD-P2493**

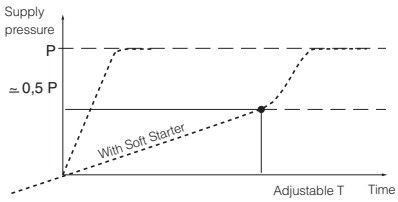
Dimensions (mm)



Order code	ØA	B	ØC	D	H maxi	K	L
PWD-P2489	15,0	20	G1/4	17	61	8,5	27,5
PWD-P2499	19,5	25	G1/4	22	62	11,8	41,0
PWD-P2493	19,5	25	G3/8	22	62	11,8	41,0

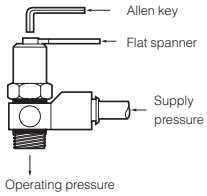
Operation

A Soft starter provides a progressive increase in pressure, in a section of a pneumatic system. When pressure reaches half the supply pressure, full pressure is applied automatically.



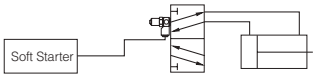
Adjustment

Allen key adjustment of flow rate for slow pressure increase.



Mounting

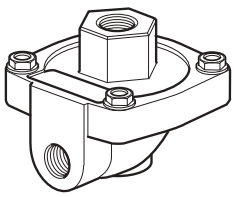
These compact devices with push-in tube connection are fitted to the N°1 port of the power valve.



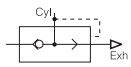
- Increases piston speeds, super sensitive diaphragm
- Extremely low operating differential
- Virtually stiction free
- May be used as differential shuttle valve
- High temperature option

Operating and additional information

Operating pressure:	0,2 to 10 bar
Operating temperature (Standard):	-10°C to +80°C
Operating temperature (High):	-10°C to +180°C
Body material:	Aluminium
Diaphragm material (Standard):	Nitrile
Diaphragm material (High):	Viton



Symbol



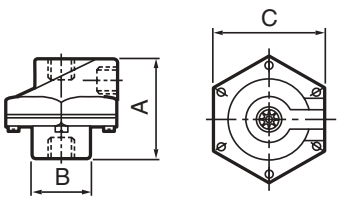
Standard version

Port Size	Cv Rating	Weight g	Order Code
G1/4	2,3	200	**P4Q-BA12**
G3/8	3,6	180	**P4Q-BA13**
G1/2	6,6	500	**P4Q-CA14**
G3/4	7,3	440	**P4Q-CA16**

High temperature version

Port Size	Cv Rating	Weight g	Order Code
G1/4	2,3	200	**P4Q-BV12**
G3/8	3,6	180	**P4Q-BV13**
G1/2	6,6	500	**P4Q-CV14**
G3/4	7,3	440	**P4Q-CV16**

Quick Exhaust Valves



Order code	Port Size	Dimensions (mm) A	B	C
P4Q-B*12	G1/4	52	25	62
P4Q-B*13	G3/8	52	25	62
P4Q-B*14	G1/2	73	38	86
P4Q-B*16	G3/4	73	38	86

- Aluminium bodies
- Rugged brass body design
- Standard or high temperature options
- Long life
- Low 0,1 bar operating pressure
- Full flow in one direction only
- Instant push-in connections

Operating and additional information

Non return valves - Female - VB

Operating pressure:	0,1 to 10 bar
Operating temperature:	-20°C to +70°C
Body material:	Anodised aluminium
Seal material	Nitrile

Non return valves - Push-in - PWA

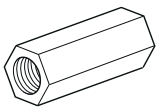
Operating pressure:	0,2 to 10 bar
Operating temperature:	-15°C to +70°C
Storage temperature	-20°C to +70°C
Body material:	Thermo plastic

Non return valves - Male thread - 3047

Operating pressure:	0,1 to 17 bar	
Flow:	Qmax at 6 bar, l/min*	
	1/8 = 1200L/m;	
	1/4 - 1350 L/m	
Operating temperature:		
	Standard:	-26°C to +85°C
	High:	-26°C to +230°C
Body material:	Brass	
Seal material	Standard:	Nitrile
	High:	Viton

VB Series

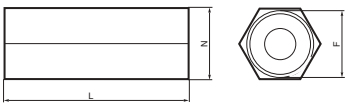
VB - Aluminium



Symbol

Port size	Weight g	Order code
G1/8	10	**VB12-Q-NQ-5**
G1/4	10	**VB22-Q-NQ-5**
G1/2	50	**VB42-Q-NQ-5**

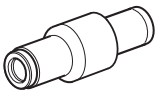
Dimensions (mm)



Order code	F	L	N
VB12-Q-NQ-5	G1/8	31	14
VQB22-Q-NQ-5	G1/4	40	17
VB42-Q-NQ-5	G1/2	59	27

PWA Series

Line Mounted

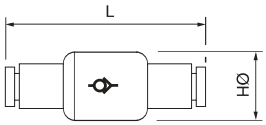


Symbol

Sold in lots of 10

Push-in Connection Ømm	Flow Rate at 6 bar, l/min	Order code
4	200	**PWA-L1444**
6	660	**PWA-L1466**
8	1600	**PWA-L1488**

Dimensions (mm)



Order code	ØH	L
PWA-L1444	16,0	38,5
PWA-L1466	16,0	41,0
PWA-L1488	19,0	51,5

3047 Series

Standard version

Symbol

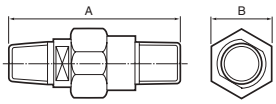
Thread Size	Weight g	Order code
R1/8	68	**3047X**
R1/4	72	**3047B**

High temperature version

Symbol

Thread Size	Weight g	Order code
R1/8	68	**3047XV**
R1/4	72	**3047BV**

Dimensions (mm)

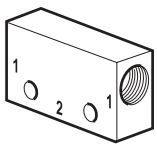


Order code	Port Size	A	B
3047X/XV	R1/8	51	21
3047B/BV	R1/4	49	21

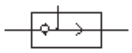
- Allows two separate signals to be applied to the air pilot
- 0,6 bar differential, Viton seals as standard

Operating and additional information

Operating pressure:	1,3 to 17 bar
Operating temperature:	-10°C to +60°C
Body material:	Aluminium
Shuttle ball material:	Plastic

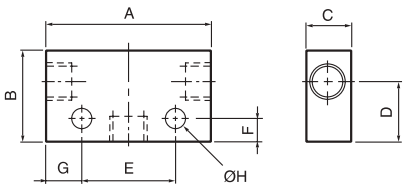


Symbol



Port Size	Qmax input at 6 bar, l/min	Weight g	Order Code
M5	36	40	**M33005**
G1/8	509	100	**B43005B**
G1/4	1076	172	**B53005A**

Shuttle Valves



Order code	Port Size	Dimensions (mm) A	B	C	D	E	F	G	H
M33005	M5	27,5	24	15	16,0	15	6	6,3	3,2
M43005B	G1/8	44,0	24	15	16,0	25	6	9,5	4,5
B53005A	G1/4	52,0	30	22	20,5	35	10	8,5	5,5

- Twistlok action
- Wide choice of adaptors
- Non whip adaptors
- Rugged design

Twistlok Units

Designed for single hand connection or disconnection. A twist on the cap will release the adaptor and the airline is automatically resealed. When coupled the check unit allows the adaptors to swivel, to eliminate kinking of the hose.

Operating and additional information

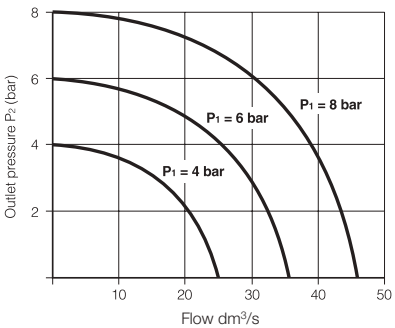
	Standard	Heavy Duty
Pressure range	Partial vacuum to 17 bar	Partial vacuum to 17 bar
Temperature range	-10°C to +80°C	-10°C to +80°C
Fluids	Air	Air
Q max	23.6 dm³/s	51.9 dm³/s
Cv	1.07	1.9

Materials

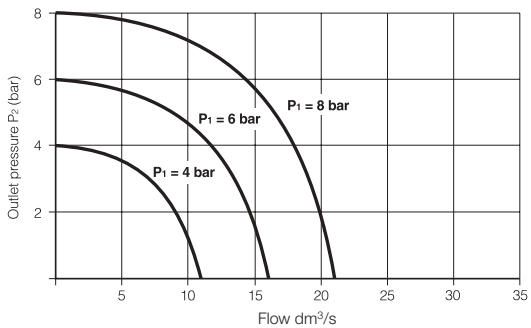
Body	Aluminium
Washer holder	Brass chrome plated
Spring	Stainless steel
Deflector	Brass
Sleeve	Steel zinc plated
Seals	Nitrile (viton on request)
Adaptors	Plated mild steel

Flow Rates

Pressure vs Flow
Schrader Standard 1/4 Female Coupling



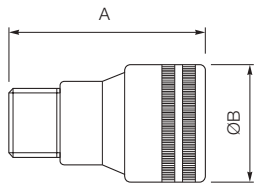
Pressure vs Flow
Schrader Heavy Duty 1/2 Female Coupling

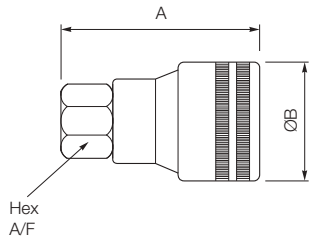


Twistlok Standard Check Units

Profile

Symbol



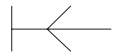


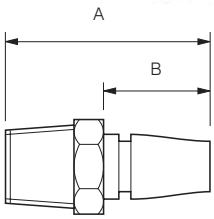
Order Code	Pack Qty	Connection		Weight (g)	Dimensions (mm)		
					A	ØB	Hex A/F
8952DL-12	1	G1/4 Female	(BSPP)	120	45	30	17,5
9793D-12	1	R1/4 Male	(BSPT)	132	55	30	18,0
9792D-12	1	R3/8 Male	(BSPT)	138	55	30	18,0

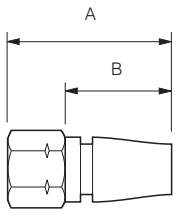
Standard Adaptors

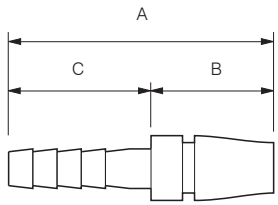
Profile

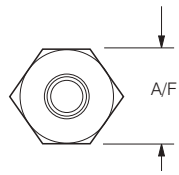
Symbol









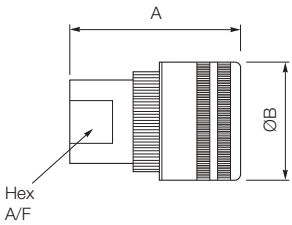


Order Code	Pack Qty	Connection		Weight (g)	Dimensions (mm)			
					A	B	C	Hex A/F
8051B-11	1	R1/8 Male	(BSPT)	15	42	24,5	-	14,0
8050B-11	1	R1/4 Male	(BSPT)	20	44	24,5	-	14,0
2047B	1	G1/8 Female	(BSPP)	26	42	24,5	-	14,0
8278L-11	1	G1/4 Female	(BSPP)	34	46	31,0	-	17,5
8787-11	1	1/4" (6mm)	Hose Tail	22	57	30,0	27	14,0
9750-11	1	5/16" (8mm)	Hose Tail	24	57	30,0	27	14,0
8788-11	1	3/8" (10mm)	Hose Tail	24	57	30,0	27	14,0
9031	1	G1/4 Female Non-whip	(BSPP)	48	55	31,0	-	17,5

Twistlok Heavy Duty Check Units

Profile

Symbol

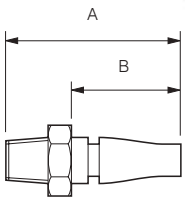


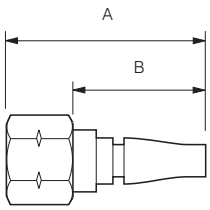
Order Code	Pack Qty	Connection	Weight (g)	Dimensions (mm)		
				A	ØB	Hex A/F
1054EL-12	1	G1/4 Female (BSPP)	168	58	37	17,5
1095EL-12	1	G3/8 Female (BSPP)	160	58	38	24,0
1461EL-12	1	G1/2 Female (BSPP)	180	58	37	25,5
1462EL-12	1	G3/4 Female (BSPP)	220	63	37	33,0

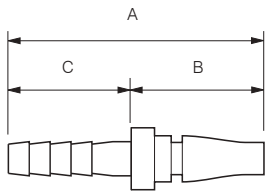
Heavy Duty Adaptors

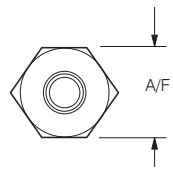
Profile

Symbol









Order Code	Pack Qty	Connection		Weight (g)	Dimensions (mm)			
					A	B	C	Hex A/F
8624B-11	1	R1/4 Male	(BSPT)	44	48,0	28	-	17,5
9739-11	1	R3/8 Male	(BSPT)	60	48,0	28	-	22,0
8807-11	1	R1/2 Male	(BSPT)	86	54,0	28	-	22,0
1462B-11	1	G3/4 Male	(BSPP)	102	55,0	28	-	27,0
1261L-11	1	G1/4 Female (6mm)	(BSPP)	44	43,0	28	-	17,5
1096B-11	1	G3/8 Female (8mm)	(BSPP)	64	47,0	28	-	22,0
1097-11	1	3/8" (10mm)	Hose Tail	46	71,0	33	38	-
1098-11	1	1/2" (12mm)	Hose Tail	64	71,0	33	38	-
9042	1	G3/8 Female Non-whip	(BSPP)	90	57,5	28	-	22,0

- Ideal when space is at a premium
- Male or female threads
- Two hand operation

The sleeve action design requires two hand operation for added security, before the adaptor is connected. On disconnection the check unit automatically reseals the airline. When coupled the check unit allows the adaptors to swivel to eliminate kinking of the hose.

Operating and additional information

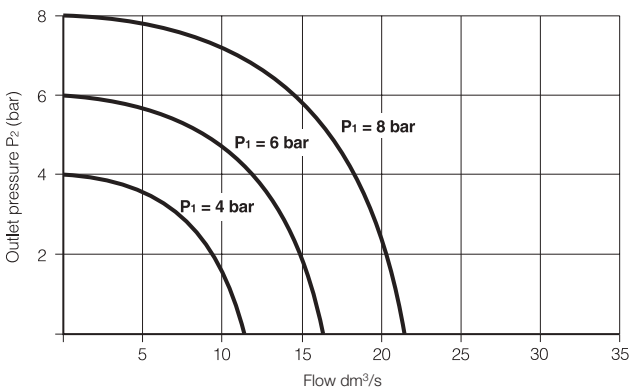
Pressure range	0-16 bar
Temperature range	-10° to +80°C
Fluids	Air
Flow rate	Q max = 17.9 dm^3/s
	Cv = 0.57

Materials

Body	Brass nickel plated
Spring	Stainless steel
Balls	Stainless steel
Seals	Nitrile
Adaptors	Brass nickel plated

Typical Flow Rates

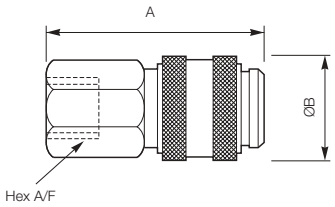
Pressure vs Flow
Schrader Mini 1/4 Male Coupling

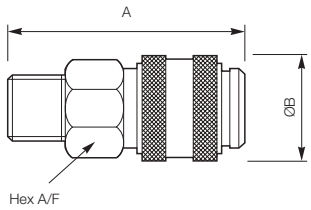


Mini Check Units

Profile

Symbol



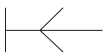


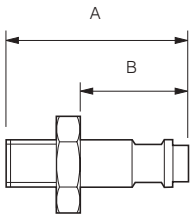
Order Code	Pack Qty	Connection		Weight (g)	Dimensions (mm)		
					A	ØB	Hex A/F
7073	1	G1/8 Female	(BSPP)	28	36,5	16,5	14
7071	1	G1/8 Male	(BSPP)	28	36,5	16,5	14

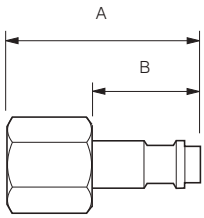
Mini Adaptors

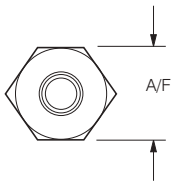
Profile

Symbol









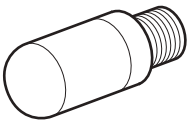
Order Code	Pack Qty	Connection		Weight (g)	Dimensions (mm)		
					A	ØB	Hex A/F
7370	5	G1/8 Female	(BSPP)	16	27	14	14
7170	5	G1/8 Male	(BSPP)	12	25	14	14

- All plastic ultra light weight versions
- Sintered metal
- All metal versions for heavy duty applications
- Versions with push-in connections
- High noise level reduction
- Low back pressure generation

Operating and additional information

Plastic	Working temperature:	-10°C to +80°C		
	Efficiency	92%		
Metal	Working temperature:	-10°C to +74°C	Working pressure	up to 17 bar

P6M-P Plastic Series



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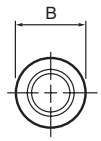


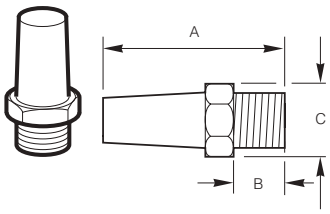
Dimensions (mm)					
Port thread	A	Ø B	C	Weight g	Order code
M5	23	6,5	4	0,01	**P6M-PAC5**
G1/8	29	14	6	0,02	**P6M-PAB1**
G1/4	34	17	6	0,04	**P6M-PAB2**
G3/8	60	25	9	0,06	**P6M-PAB3**
G1/2	64	25	11	0,10	**P6M-PAB4**
G3/4	140	38	14	0,50	**P6M-PAB6**
G1	160	48	20	0,62	**P6M-PAB8**

Push-in Series

Symbol

Port mm	Height on Push-in	Weight g	Order code
4	20,0	0,040	**PXC-X14**
6	35,5	0,025	**PZC-S1006**
8	34,0	0,030	**PZC-S1008**

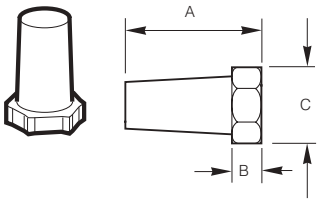
Sintered bronze Series



Symbol

Port thread	A	B	A/F C	Weight g	Order code
M5	23	6,5	4	0,003	**9721900005**
G1/8	24	10	12	0,009	**9090050700**
G1/4	32	11	16	0,019	**P6M-BAA2**
G3/8	43	13	21	0,041	**9090050900**
G1/2	60	16	24	0,068	**9090051000**
G3/4	75	10	32	0,126	**9090051100**
G1	77	12	37	0,188	**9090051500**

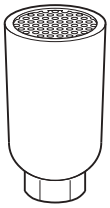
Sintered Bronze Series (female)

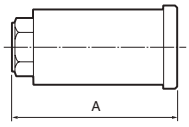


Symbol

Port mm	A	Ø B	A/F C	Weight g	Order code
G1/8	15	8	13	0,060	**9721900404**

Heavy Duty Series





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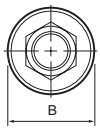
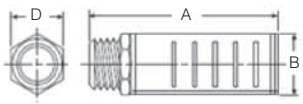


Port Female	A	Ø B	Weight g	Order code
G3/8	83	37	0,124	**P6M-MA13**
G1/2	105	51	0,362	**P6M-MA14**
G3/4	143	73	0,670	**P6M-MA16**
G1	143	73	0.666	**P6M-MA18**

Self Cleaning, 48 Series

Symbol

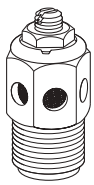


Port thread	A	Ø B	A/F E	Order code
R1/8	47	21	16 (5/8")	**ESB12MC**
R1/4	47	21	16 (5/8")	**ESB25MC**
R3/8	84	32	25.4 (1")	**ESB37MC**
R1/2	84	32	25.4 (1")	**ESB50MC**
R3/4	116	52	41.2 (1-5/8")	**ESB75MC**
R1	116	52	41.2 (1-5/8")	**ESB100MC**
R1-1/4	145	73.5	-	**ESB125MC**
R1-1/2	145	73.5	-	**ESB150MC**

Restrictors - Silencers

- Metal, stainless steel or plastic versions
- Screwdriver adjustment
- Simple control of cylinder speeds
- High noise level reduction

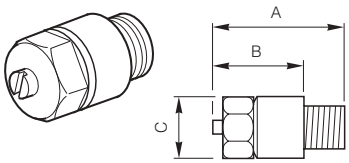
Sintered Metal Series



Symbol

Port thread	Overall length	A/F	Order code
R1/8	29.5	9/16"	**43006**
R1/4	36.0	1/2"	**T53006**
R3/8	38.0	11/16"	**T63006A**
G1/2	45.0	7/8"	**B73006**

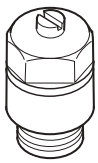
Sintered Plastic Series



Symbol

Port thread	A	B	Ø C	Order code
G1/8	23	16	7	**9301050901**
G1/4	32	23	9	**9301050902**
G3/8	40	30	10	**9301050903**
G1/2	50	38	12	**9301050904**

Sintered Stainless Steel Series



Symbol

Port thread	Overall length	Ø	A/F	Order code
G1/8	33	16	13,0	**9126900195**
G1/4	36	20	17,0	**9126900196**

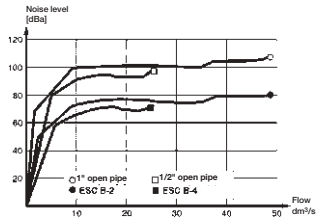
Reclassifier - Silencers Metal Series, Repairable and Disposable versions

- Removes oil mist from exhaust airs
- Efficiently silences exhaust air
- Improves working conditions

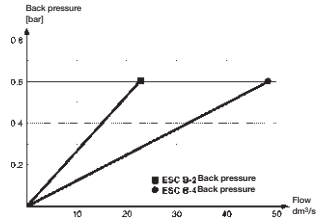
Operating and additional information

Metal repairable version		Disposable version	
Working temperature	0 °C to 66 °C max.	Working temperature	0° C to 52 °C max.
Working pressure	Max 7 bar	Working pressure	Max 7 bar
Efficiency	Better than 99%	Efficiency	Better than 99%
Maximum flow rate	G1/2, G3/4 small unit 27,8 dm^3/s G3/4, G1 large unit 50 dm^3/s	Maximum flow rate	See graph

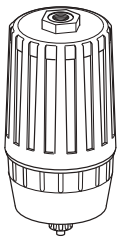
Disposable version
Flow vs. Noise level

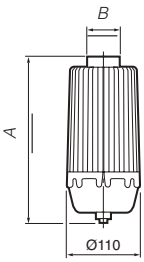


Flow vs. Back pressure

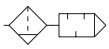


Metal Repairable Series





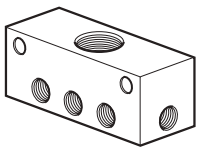
Symbol



Port thread	Type	A	Ø	A/F B	Weight kg	Order code
G1/2	Small	182	110	50	0,572	**3514S**
G3/4	Small	182	110	50	0,592	**3516S**
G3/4	Large	297	110	55	1,100	**3516**
G1	Large	297	110	55	1,100	**3518**

Replacement Element	Weight kg	Order code
Small	0,200	**3514S-2**
Large	0,200	**3516-2**

Manifold for Metal Repairable version



The manifold is available for G3/4 sizes only.

Number of ports	Weight kg	Order code
5	0,270	**M3516-5**
7	0,432	**M3516-7**
9	0,574	**M3516-9**
13	0,870	**M3516-13**

Wall mounting kit	0,040	**3516-W**

- 2 different types for various applications
- Different types of safety nozzle available
- Ergonomically designed
- Lightweight operating forces

Operating information

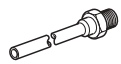
Blowguns 600

Working pressure	Max 7 bar
Working temperature	-20 °C to +100 °C

600-601

Symbol	Note	Inlet Thread	Order code
	Standard Safety	G1/4	**600**
	Air shield	G1/4	**601**

Accessories

Type	Description	Order code
	Aluminium nozzle with 1mm orifice*	**607**
	Aluminium nozzle, blank*	**606**
	Domed nozzle*	**8972-8**
	Aspirator Safety nozzle	**401C**
	Flexible nozzle*	**8726A**

*** Note!** When used with pressure above 2 bar, adequate safety precautious must be taken.

Control Devices

A complete range of pneumatic valves

Parker is the world leader in motion and control technologies, providing systematic, precision-engineered solutions for a wide variety of, industrial markets. Throughout the world, Parker Hannifin is working together with companies to make their machines more reliable and more productive. Parker products are in operation on satellites orbiting the earth: in machine tools and mobile plant; on oil rigs and refineries; in hospitals and laboratories. In fact, wherever there are machines that depend on motion or fluid control, you will find innovative and reliable Parker components and systems.

The Parker range of control devices is much more than just valves, we have within our product programme field bus enabled valve systems , limit switches, logic process components, two hand control units, metal valves for arduous applications and ultra lightweight plastic valves.

General Lightweight Applications & Individual/ Multiple Field Bus Connections

P2M Moduflex Valves

- High flow, compact size.
- Mixable valve sizes.
- Stand alone valves, modular islands with individual, multiconnector or bus connections.
- Integrated selectable internal or external pilot supply and exhaust.
- Optional peripheral modules.
- Push-in connection.

Valve Islands

PVL-C10

- Compact lightweight, high flow valves
- 2 x 3/2,5/2 or 5/3 configuration
- Push-in Ø8mm or G1/4 threaded connections
- High performance 15mm solenoids
- Stacking type modules with DIN rail mounting
- Bus protocols: Interbus S, Profibus DP, Devicenet, ASI.

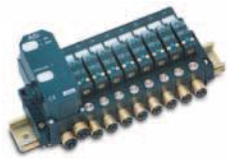
Miniature Valves

ADEX Directional Control Valves

- 2 sizes: M5 and 1/8"
- Compact body with large flow
- Quick response time, faster than 10ms
- Expected life time more than 50,000,000 cycles
- Low power consumption only 0.6W
- Optional multipin connector manifold
- Manual override

Stackable Inline Lightweight Valve

Interface 2000



- 3/2 or 4/2 configuration
- Push-in connections Ø4mm and Ø6mm
- High performance 15mm solenoids
- Electrical connection : Cable gland, Sub D25 or Industrial connector
- Bus protocols: Interbus S, Profibus DP, Devicenet, ASI.

Poppet Valve for Enclosures

PS1 Interface

- High speed poppet valve
- Push-in connection
- Built-in terminal block
- Pneumatic output indicator
- DIN rail mounting

Industrial Applications

B Series Valves

- 2 sizes: 1/8" and 1/4"
- Compact size
- Inlet-exhaust-mounting facility
- Fast response, high flow
- Integrated mounting holes
- Wear compensating seal system
- DIN rail mountable manifolds

Valve Islands

PVL-B10

- Compact lightweight, high flow valves
- 2 x 3/2,5/2 or 5/3 configuration
- Push-in Ø6mm or G1/8 threaded connections
- High performance 15mm solenoids
- Stacking type modules with DIN rail mounting
- Bus protocols: Interbus S, Profibus DP, Devicenet, ASI.

Stackable Inline Lightweight Valve

PVL Compact Valves

- High flow, compact size
- Push-in or threaded connection
- DIN rail or block mounting
- Light weight construction

Heavy Duty Applications / Mobile

Viking Xtreme Metal Spool Valves

- 4 sizes: G1/8, G1/4, G3/8 and G1/2.
- Wide operating temperature range
- Compact design with good corrosion resistance.
- Wide range of 5/2 and 5/3 versions.
- High and low temperature versions available for transport applications.

Heavy Duty Applications / Multiple Connection and Plug-in

Isomax Valves - ISO 15407 / ISO 5599

- Size 1, 2 and 3 ISO 5599-1
- Size 01 and 02 (26 and 18 mm) ISO 15407-1
- Ceramic technology for long live operation
- From vacuum up to 12 bar applications
- Internal or external pilot supply with same valves
- Pressure supply possible on exhaust port

ISYS Valves - ISO 15407 / ISO 5599

- Size 1, 2 and 3 ISO 5599-1 / 2
- Size 01 and 02 ISO 15407-1 / 2
- Excellent reliability, long life in excess of 30 million operations.
- Complete range, plug-in and non-plug-in
- WCS Spool technology

Hi Flow Valves

P2V Flowstar Valves ISO 15407-1

- Compact high flow design
- To VDMA 24563, ISO 15407-1 standard
- 5/2 & 5/3 configurations
- 18mm & 26mm body widths
- Single sub-base or manifold mounted
- Air pilot and solenoid actuators
- Suitable for Food Industry applications.

Ceramic Valves

PVD Everdure

- Available in 3 sizes
- 4/2 Directional control valves
- 3/2 dump valves & 2/2 slow start valves
- Stand alone or manifolds.
- Built-in manual override
- Ceramic slide provides extremely long life
- DIN rail mounting.

Metal Spool Valves

Midget Spool Valves

- G1/8 body ported
- Rugged die cast body
- 3/2 & 5/2 configurations
- Stainless steel spool
- Viton body seals as standard
- Integral mounting holes
- Manual, mechanical and automatic actuators.

Metal Spool Valves

Intermediate Spool Valves

- G1/4 body ported
- Rugged die cast body
- 3/2, 5/2 & 5/3 configurations
- Stainless steel spool
- Viton body seals as standard
- Integral mounting holes
- Manual, mechanical and automatic actuators.

Push Button Actuators

PXB Push Buttons

- Facia mounted operators
- 3/2 NO or NC versions
- Pneumatic valves combinable with electrical switches
- Modular construction
- Wide choice of actuators.

Heavy Duty Applications

VA - Brass bodied spool valves

- Rugged valves for heavy duty applications
- Large and robust actuators for easy operation
- Excellent corrosion resistance
- Integral mounting holes
- Panel mounting versions

Limit Switches

PXC Limit Switches

- 3/2 Nc spring return as standard
- Ø4mm, M5 & G1/8 ported versions
- Miniature and Compact designs
- Wide choice of actuators include levers, rollers & ultra light whisker types.

Metal Poppet Valves

Mini Poppet Valves

- M5 body ported
- 3/2 NC spring return as standard
- Manual and mechanical actuators
- Light actuation forces.

Midget Poppet Valves

- G1/8 body ported poppet design
- 3/2 NC spring return as standard
- Manual, mechanical and air pilot actuators
- Light actuation forces
- Integral mounting holes.

Heavy Duty Poppet Valves

- G3/8 & G1/2 body ported
- 2/2 & 3/2 NC spring return as standard
- High flow poppet design
- Manual and mechanical and solenoid actuators
- Light actuation forces
- Integral mounting holes.

Heavy Duty Valves

VE Heavy Duty Isolator Valves

- G1/4, G1/2 & G1 versions
- 2/2 or 3/2 option
- Inline installation
- High flow
- Suitable as a remotely controlled main shut off valve.
- Air or solenoid pilot

Lockout Valves

LV Series Lockout Valves

- G1/4 - G1 Ported emergency shut-off valves
- High flow G1 exhaust port
- Manually operated
- High visibility, rugged aluminium body
- Detented spool with padlock 'lockout' facility.

Processing Modules

Two Hand Control Units

- Ergonomic design
- Robust polymer or metal enclosure
- Meets requirements for protection against accidental operation and tampering
- Metal enclosure features a wrist rest bar which prevents illness due to repetative actions
- Conforms to EN574 and EN954-1 requirements

Shut Off Valves

Ball Valves and Sliding Sleeve Valves

Ball Valves

- 3 distinct series
- Vented and non vented
- Bubble tight shut-off
- Positive 90 ° movement
- Wide variety of fluids

Sliding sleeve valves

- Linear sleeve operated
- 3/2 valve
- Simple airline isolation
- Compact
- Minimum space for valve operation

Processing Modules

Logic Control

- Complete range of logic processing modules
- Stand alone or stackable and combinable units
- Ultra fast response times
- Visual indication
- DIN rail mounting.

Vacuum Products

A complete range of vacuum products and accessories

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The Parker Convum range of vacuum products is one of the mostcompre-hensive in the market. The product range incliudes vacuum cups in wide variety os styles and materials, ejectors and generators from mini units to fully integrated units along with sensors and a wide selection of accessories.

Wide choice of styles and materials

Ventouses

- Flat & Bellow Pads
- Male & Female Connections
- Different Materials
- Range of Diameters

High performance accessories

Accessoires

- High performance silencers and vacuum filters
- Electronic cables with M8 connector 4 pin

Vacuum generators to suit most applications

Générateurs de vide

- Basic Ejectors
- Basic Ejectors with electro-mechanical Switch
- In-line Ejectors
- Integrated Ejectors small & large

Digital or analog out put

Vacuostats et pressostats

- -1 to +10 bar
- Analog and/or Digital Outputs
- With display

Rotary Actuator and Air Motor Products

A complete range of rotary actuator and air motor products

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The Parker range of rotary actuators and airmotors offers a choice of ocilating or continuous rotary motion. Stainless steel versions specifically for food industry or more robust models for general industrial applications are available.

Harsh Environments & Food Industry

P1V-S Air Motors

- All stainless steel design
- From 0.120kW - 1.2kW power
- For arduous applications
- Non-lube intermittent operation
- External seals viton
- Ideal for food industry applications.

Arduous Applications

P1V-B Large Vane Air Motors

- Power 5,1 kW, 9 kW and 18 kW
- For the very heavy applications
- Free speed from 400 up to 300 rpm
- High torque from 57 to 160 Nm by max ouput power

Packaging, Process, Electronic Applications

PRO-PRN Rotary Actuators

- Compact design
- Durable construction
- Long maintenance-free life
- High output torque/weight ratio
- Wide choice of torques available (up to 247 Nm)

Minimum Noise Level

P1V-P Radial Piston Air Motors

- P1V-P piston motor
- Power 0,73 kW, 0,125kW and 0,228kW
- Low speed and high torque
- Available as base and brake motors
- Free speed from 2200 down to 7,4 rpm
- High torque from 0,637Nm up to 500Nm

Arduous Applications

P1V-A Large Air Motors

- Designed for arduous applications.
- Wide range of optional gears
- Wide speed and torque range 1.6kW, 2.6kW, 3.6kW

Rack and Pinnion Piston Rods

RA Rotary Actuators Rack & Pinion Type

- High torque
- Uniform torque in both directions
- Compact design
- 90^{O} or 180^{O} rotation
- Output shaft with key

Robust Air Motor

P1V-M Robust Vane Air Motors

- Power 0,2 kW, 0,4 kW and 0,6 kW
- Patented way for simple change of vanes
- Free speeds from 28 up to 10000 rpm
- Torque from 0,38 Nm up to 380NM by max output power
- Standard equipped with flange mounting
- Footmountings as accesories

Heavy Duty Applications

P5W Rotary Table Units

- Rack and pinion patented movement.
- Continuously adjustable stroke.
- Large ball bearings on the shaft.
- Through hole in the pinion.
- Optional rubber end stroke or hydraulic shock-absorber.
- Mid position stop (MPS)

Linear Actuator Products

A complete range of pneumatic actuators

Parker is the world leader in motion and control technologies, providing systematic, precision-engineered solutions for a wide variety of, industrial markets. Throughout the world, Parker Hannifin is working together with companies to make their machines more reliable and more productive. Parker products are in operation on satellites orbiting the earth: in machine tools and mobile plant; on oil rigs and refineries; in hospitals and laboratories. In fact, wherever there are machines that depend on motion or fluid control, you will find innovative and reliable Parker components and systems.

The Parker range of linear actuators encompasses both compact, lightweight and rodless versions and ISO/VDMA models. Versions specifically for the food industry both in aluminium and stainless steel and products for arduous applications in harsh environments are all featured.

Minimum Space Applications

P1G Compact Cylinders

- Ø6, 10 & 16mm Bore sizes
- Non-lube operation
- Corrosion resistant design
- Integral mounting thread
- Compact construction
- Single acting as standard.

Clamping & Locking Operations

C05 Short Stroke Cylinders

- Ø8 - 63mm bore sizes
- Short stroke providing high clamping force
- Compact dimensions for confined spaces
- Single and double acting
- Simple installation and mounting.

Light Duties in Packaging, Food and Textile

P1A Mini ISO Cylinders

- Ø10 - 25mm Bore size to ISO 6432
- Magnetic piston as standard
- End stroke buffers for long service life
- Adjustable cushioning Ø16 - 25mm Bore sizes
- Complete range of mountings & sensors
- Piston rod guidance units available.

Confined Space Applications

P1J Compact Cylinders

- Ø12 - 63mm
- Stroke lengths up to 100mm
- Single and double acting
- Magnetic piston as standard
- Compact dimensions for confined spaces
- Complete range of mountings & sensors.

Flexible Porting Options

P1M Cylinders

- Ø12 - 100mm
- Stroke lengths up to 500mm
- Single and double acting
- Magnetic piston as standard
- Flexible porting options
- Complete range of mountings & sensors.

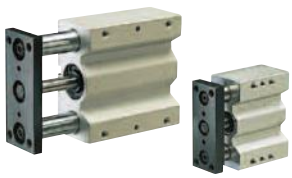
Harsh Environments / Food Industry

P1S Stainless Steel Cylinders

- All stainless steel design
- Mini ISO 6432 Ø10 - 25mm Bore sizes
- Stanrdard ISO 6431 Ø32 - 125mm Bore sizes
- Magnetic piston as standard
- Clean design ideal for washdown
- Adjustable end cushioning.
- Initial lubrication with food grade grease.

Resistance to Side Load

P5T Compact Cylinders



- Ø12 - 100mm bore size
- Complete cylinder with integral guidance
- Plain bearing or twin recirculating bearings
- End stop cushioning as standard
- Magnetic as standard
- Flexible porting and mounting
- Standard strokes 10 - 200mm

Light Duty Applications

P1K Cylinders

- Ø32 - 125mm Bore sizes
- Single and double acting
- Clean line profile design
- Designed for dry piston rod operation
- End stroke buffers for long service life
- Position sensing versions.

Short Stroke, High Thrust Single Acting Applications

Air Bellows

- 10 sizes Ø70 - 660mm
- Strokes from 45 - 430mm
- High thrust frictionless movement
- Single, double or triple convolutions
- Maintenance free.

General Industrial & Food Industry Versions

P1D ISO/VDMA Cylinders

- Ø32 - 125mm Bore size ISO/VDMA standard
- Double acting with adjustable end cushioning
- Magnetic piston as standard
- Flexible porting option
- Non-lube operation
- 'Clean' version for food industry
- Complete range of sensors and mountings

Clamping & Tightening

Hydraulic Clamp Cylinders

- Single acting cylinders with built-in hydro-pneumatic intensifier
- Compact size with large clamping forces up to 2700 daN (depending on air pressure)
- Operated using a compressed air supply, no special installation required
- Easy adjustment through a fully threaded body
- Simple and rapid installation

Gripping for most applications

P5G-C Robotic Grippers

- 4 sizes available
- Parallel or angular action
- Square jaw carriers
- One or two magneto-inductive sensor can be mounted on all sizes to provide signal to monitor gripper opening and closing.

Demanding Environments

P1E VDMA 24562 Cylinders

- Ø160 - 200mm Bore sizes VDMA standard
- Double acting with adjustable end cushioning
- Magnetic piston as standard
- Non-lube operation
- Tie rod construction
- Complete range of mountings & sensors.

Wide Variety of Industrial Applications

PV Rotary Actuators - Vane Type

- Double acting actuators
- Single or double vane
- Compact smooth design
- Uniform torque in both directions
- Angle adjustment and sensors available.

Hydraulic Damping Cylinder

Hydrockecks

- Range of imperial sizes
- Gives smooth control feeds
- Strokes up to 450mm

Door Actuation, Special Purpose Machinery

Rodless Cylinders

- High precision cushioning
- Flexible porting
- High efficiency sealing technology
- Integral sensor slot with enhancement strip
- Heavy load carrying capability

Clamping, Riveting & Punching Applications

C0D - C0P Thrust Cylinders

- Short stroke high thrust design
- Compact dimensions
- Diaphragm or piston versions
- Single or double acting.

Chip Mounting, Glass, Injection Mold, Sheet Metal

Vacuum

- Mini vacuum generators
- Compact "air saver" vacuum generators
- Multi-function vacuum generators with holding
- Valve and rapid release options
- Wide range of suction cups
- Wide range materials

At Parker, we're guided by a relentless drive to help our customers become more productive and achieve higher levels of profitability by engineering the best systems for their requirements. It means looking at customer applications from many angles to find new ways to create value. Whatever the motion and control technology need, Parker has the experience, breadth of product and global reach to consistently deliver. No company knows more about motion and control technology than Parker. For further info call 00800 27 27 5374.

AEROSPACE

Key Markets
- Aircraft engines
- Business & general aviation
- Commercial transports
- Land-based weapons systems
- Military aircraft
- Missiles & launch vehicles
- Regional transports
- Unmanned aerial vehicles

Key Products
- Flight control systems & components
- Fluid conveyance systems
- Fluid metering delivery & atomization devices
- Fuel systems & components
- Hydraulic systems & components
- Inert nitrogen generating systems
- Pneumatic systems & components
- Wheels & brakes

CLIMATE CONTROL

Key Markets
- Agriculture
- Air conditioning
- Food, beverage & dairy
- Life sciences & medical
- Precision cooling
- Processing
- Transportation

Key Products
- CO^2 controls
- Electronic controllers
- Filter driers
- Hand shut-off valves
- Hose & fittings
- Pressure regulating valves
- Refrigerant distributors
- Safety relief valves
- Solenoid valves
- Thermostatic expansion valves

ELECTROMECHANICAL

Key Markets
- Aerospace
- Factory automation
- Food & beverage
- Life science & medical
- Machine tools
- Packaging machinery
- Paper machinery
- Plastics machinery & converting
- Primary metals
- Semiconductor & electronics
- Textile
- Wire & cable

Key Products
- AC/DC drives & systems
- Electric actuators
- Controllers
- Gantry robots
- Gearheads
- Human machine interfaces
- Industrial PCs
- Inverters
- Linear motors, slides and stages
- Precision stages
- Stepper motors
- Servo motors, drives & controls
- Structural extrusions

FILTRATION

Key Markets
- Food & beverage
- Industrial machinery
- Life sciences
- Marine
- Mobile equipment
- Oil & gas
- Power generation
- Process
- Transportation

Key Products
- Analytical gas generators
- Compressed air & gas filters
- Condition monitoring
- Engine air, fuel & oil filtration & systems
- Hydraulic, lubrication & coolant filters
- Process, chemical, water & microfiltration filters
- Nitrogen, hydrogen & zero air generators

FLUID & GAS HANDLING

Key Markets
- Aerospace
- Agriculture
- Bulk chemical handling
- Construction machinery
- Food & beverage
- Fuel & gas delivery
- Industrial machinery
- Mobile
- Oil & gas
- Transportation
- Welding

Key Products
- Brass fittings & valves
- Diagnostic equipment
- Fluid conveyance systems
- Industrial hose
- PTFE & PFA hose, tubing & plastic fittings
- Rubber & thermoplastic hose & couplings
- Tube fittings & adapters
- Quick disconnects

HYDRAULICS

Key Markets
- Aerospace
- Aerial lift
- Agriculture
- Construction machinery
- Forestry
- Industrial machinery
- Mining
- Oil & gas
- Power generation & energy
- Truck hydraulics

Key Products
- Diagnostic equipment
- Hydraulic cylinders & accumulators
- Hydraulic motors & pumps
- Hydraulic systems
- Hydraulic valves & controls
- Power take-offs
- Rubber & thermoplastic hose & couplings
- Tube fittings & adapters
- Quick disconnects

PNEUMATICS

Key Markets
- Aerospace
- Conveyor & material handling
- Factory automation
- Food & beverage
- Life science & medical
- Machine tools
- Packaging machinery
- Transportation & automotive

Key Products
- Air preparation
- Compact cylinders
- Field bus valve systems
- Grippers
- Guided cylinders
- Manifolds
- Miniature fluidics
- Pneumatic accessories
- Pneumatic actuators & grippers
- Pneumatic valves and controls
- Rodless cylinders
- Rotary actuators
- Tie rod cylinders
- Vacuum generators, cups & sensors

PROCESS CONTROL

Key Markets
- Chemical & refining
- Food, beverage & dairy
- Medical & dental
- Microelectronics
- Oil & gas
- Power generation

Key Products
- Analytical sample conditioning products & systems
- Fluoropolymer chemical delivery fittings, valves & pumps
- High purity gas delivery fittings, valves & regulators
- Instrumentation fittings, valves & regulators
- Medium pressure fittings & valves
- Process control manifolds

SEALING & SHIELDING

Key Markets
- Aerospace
- Chemical processing
- Consumer
- Energy, oil & gas
- Fluid power
- General industrial
- Information technology
- Life sciences
- Military
- Semiconductor
- Telecommunications
- Transportation

Key Products
- Dynamic seals
- Elastomeric o-rings
- EMI shielding
- Extruded & precision-cut, fabricated elastomeric seals
- Homogeneous & inserted elastomeric shapes
- High temperature metal seals
- Metal & plastic retained composite seals
- Thermal management

ENGINEERING YOUR SUCCESS.

Need something ?

It's on the CD

Using the Technical Catalogue CD

If you already have Adobe Acrobat 4.0
Insert the CD into your PC
Click on Parker Pneumatic PDF and the CD will run.
On the opening page are displayed the options available.

On the opening page are displayed the options available.

1. **Search.** You may search by Part Number, Name or Product type.
2. **Getting Started.** This displays a guide to Adobe Acrobat 4.0.
3. **View Bookshelf.** Simple to use navigation, click on the product type and the overview of all products in that type will open. Click on the product you require and the Technical Catalogue will be displayed
4. **Exit**
5. **Contact us.** Lists the main Sales Offices around Europe with Telephone and Fax numbers

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If you do not have Adobe Acrobat 4.0.

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Catalogue PDE2611TCUK-ca. February 2009

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