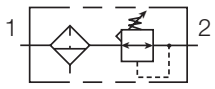
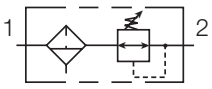
PB548, PB558 Filter / Regulator – Miniature

PB548

PB558

Symbols





- 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

Options:

PB548 G 02 D H C . SS

Series	
Standard knob	**PB548**
Stainless steel	**PB558**

Port size	
BSPP	**G**
NPT	**-**

Port size	
1/4"	**02**

Bowl type	
Metal bowl without sight gauge	**D**

Element	
20µ element	**H**
5µ element	G

Pressure range	
0 - 1.7 bar	A
0 - 4.1 bar	B
0 - 8.5 bar	**C**

Options	
Relieving	**Blank**
Non-Relieving	K
Auto Pulse Drain	R

Material	
Stainless steel	**SS**

Note: Bold options are most popular

Port size	Series	Description	Order code	Max bar	Height mm	Width mm	Depth mm
G1/4	**PB548**	BSPP - Standard knob - Manual drain	**PB548G02DHCSS**	20.7	147	40	40
G1/4	**PB548**	BSPP - Standard knob - Auto drain	**PB548G02DHCRSS**	12.0	147	40	40
G1/4	**PB548**	NPT - Standard knob - Manual drain	**PB548-02DHCSS**	20.7	147	40	40
G1/4	**PB548**	NPT - Standard knob - Auto drain	**PB548-02DHCRSS**	12.0	147	40	40
G1/4	**PB558**	BSPP - All metal - Manual drain	**PB558G02DHCSS**	20.7	78	40	40
G1/4	**PB558**	BSPP - All metal - Auto drain	**PB558G02DHCRSS**	12.0	78	40	40
G1/4	**PB558**	NPT - All metal - Manual drain	**PB558-02DHCSS**	20.7	78	40	40
G1/4	**PB558**	NPT - All metal - Auto drain	**PB558-02DHCRSS**	12.0	78	40	40

§ 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.

Specifications

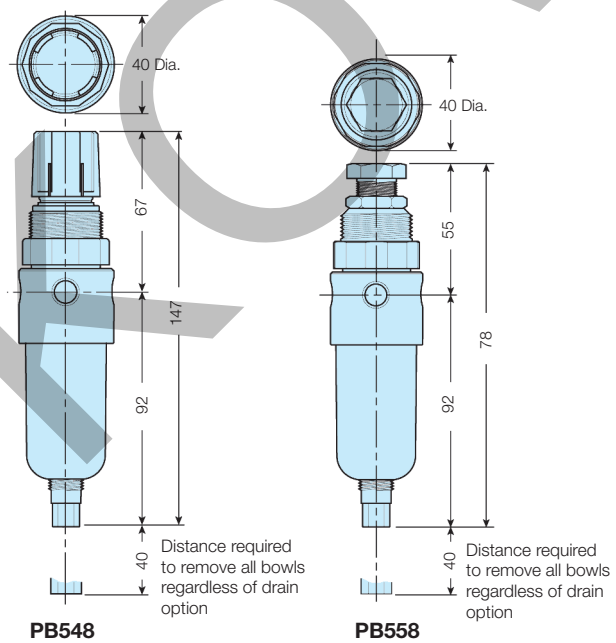
Bowl capacity		29 cm^3
Filter rating		20 micron
Gauge port		G1/4
Operation		Flourocarbon diaphragm
Port threads		G1/4
Operating temperature	PB548	-18°C to 82°C
	PB558	-18°C to 66°C
	Auto Pulse Drain	0°C to 66°C
Max supply pressure	PB548	0 to 20.7 bar
	PB558	0 to 20.7 bar
	Auto Pulse Drain	0 to 12 bar
Sump capacity		12 cm^3
Weight		270 g

Note: Air must be dry enough to avoid ice formation at temperatures below 2°C.

Materials of Construction

Adjustment mechanism / Springs	316 Stainless steel
Adjustment knob (PB548)	Polypropylene
Adjustment knob (PB558)	316 Stainless Steel
Body	316 Stainless steel
Bonnet (PB548)	Acetal
Bonnet (PB558)	316 Stainless Steel
Bottom plug	316 Stainless steel
Poppet	316 Stainless steel
Seals	Flourocarbon

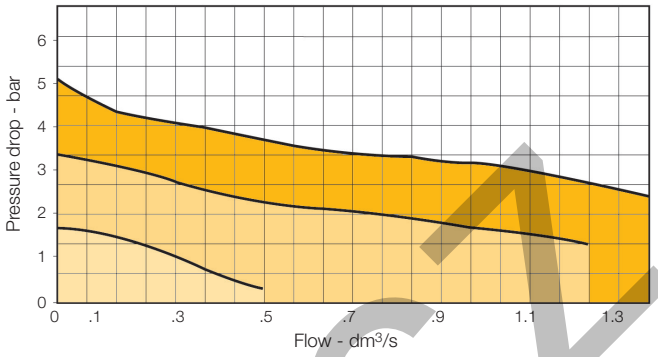
Dimensions (mm)



Note: 32mm dia. hole required for panel mounting.

Flow Charts

Flow Characteristics - 1/4 Inch Ports
6.9 bar Primary Pressure

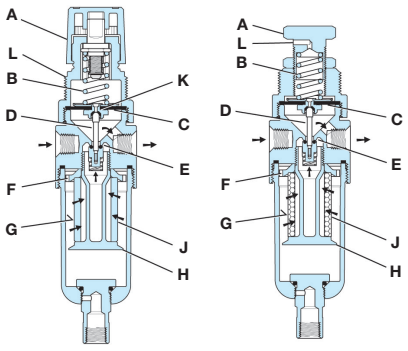


CAUTION:
REGULATOR PRESSURE ADJUSTMENT –
The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, 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.

Accessories

Filter Element Kits	Particulate (5 micron)	**EK504VY**
	Particulate (20 micron)	**EK504Y**
Gauge - 0 to 10 bar	BSPP	**M1/4G40S-10**
	NPT	**K4520N14160SS**
Drain Kits	Automatic Pulse Drain	**RK504SY-SS**
Manual Twist Drain	Small (Old)	**SA600Y7-1SS**
	Large (New)	**SAP05481**
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**

Operation



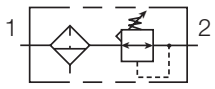
Turning the adjusting knob clockwise applies a load tocontrol spring (B) which forces diaphragm (C) and valve poppet assembly (D) to move downward allowing filtered air to flow through the seat area (E) created between the poppet assembly and the seat. “First stage filtration”. Air pressure supplied 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/regulators only.)

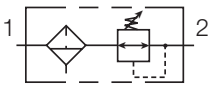
PB11, PB12 Filter / Regulator – Standard

PB12

PB11

Symbols





- 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 $dm^3/s^{\S}$
- 1/8" female threaded drain

Options:

PB11 G 04 D J C SS

Series	
Standard knob	**PB11**
Stainless steel	**PB12**

Port size	
BSPP	**G**
NPT	**-**

Port size	
1/2"	**04**

Bowl type	
Metal bowl without sight gauge	**D**
Metal bowl with sight gauge	W

Element	
40µ element	**J**
5µ element	G

Pressure range	
0 - 4.1 bar	B
0 - 8.5 bar	**C**
0 - 17 bar	D

Options	
Relieving	**Blank**
Non-Relieving	K
Auto Float Drain	R
Low Temp.*	L

Material	
Stainless steel	**SS**

Note: Bold options are most popular

* Manual drain without sight gauge only

Port size	Series	Description	Order code	Max bar	Height mm	Width mm	Depth mm
G1/2	**PB11**	BSPP - Standard knob - Manual drain	**PB11G04DJCSS**	20.7	218	64	60
G1/2	**PB11**	BSPP - Standard knob - Auto drain	**PB11G04DJCRSS**	12.0	218	64	60
G1/2	**PB11**	NPT - Standard knob - Manual drain	**PB11-04DJCSS**	20.7	218	64	60
G1/2	**PB11**	NPT - Standard knob - Auto drain	**PB11-04DJCRSS**	12.0	218	64	60
G1/2	**PB12**	BSPP - Tee handle - Manual drain	**PB12G04DJCSS**	20.7	246	64	60
G1/2	**PB12**	BSPP - Tee handle - Auto drain	**PB12G04DJCRSS**	12.0	246	64	60
G1/2	**PB12**	NPT - Tee handle - Manual drain	**PB12-04DJCSS**	20.7	246	64	60
G1/2	**PB12**	NPT - Tee handle - Auto drain	**PB12-04DJCRSS**	12.0	246	64	60

§ 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.

Specifications

Bowl capacity		118 cm^3
Filter rating		40 micron
Gauge port		G1/4
Operation		Flourocarbon diaphragm
Port threads		G1/2
Operating temperature	PB11 (Metal bowl D or W)	-18°C to 66°C
	PB12 (Metal bowl D)	-18°C to 82°C
	PB12 (Metal bowl W)	-18°C to 66°C
	Auto Float Drain	0°C to 66°C
Option "L" minimum operating temperature		-40°C
Max supply pressure	PB11 (Metal bowl D or W)	0 to 20.7 bar
	PB12 (Metal bowl D)	0 to 20.7 bar
	PB12 (Metal bowl W)	0 to 20.7 bar
	Auto Float Drain	0 to 12 bar
Sump capacity		50 cm^3
Weight		1090 g

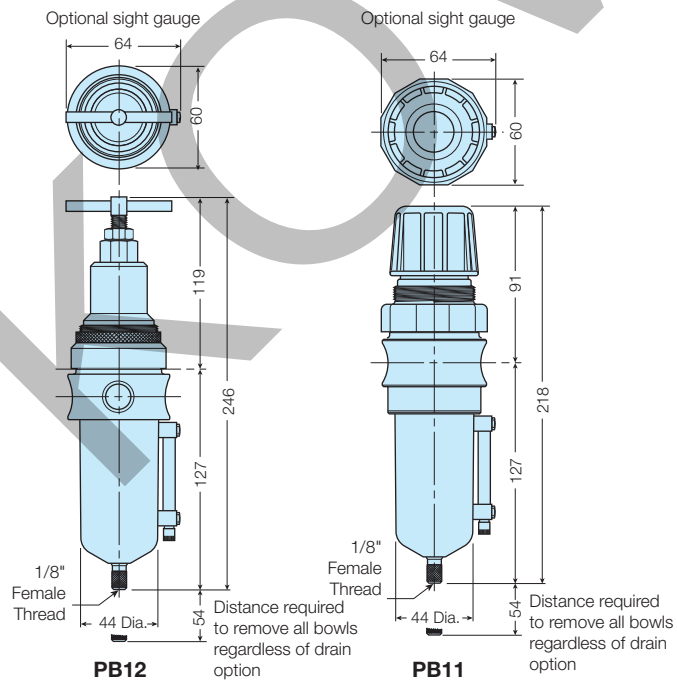
Note: Air must be dry enough to avoid ice formation at temperatures below 2°C.

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.

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	Flourocarbon
Sight gauge	Isoplast

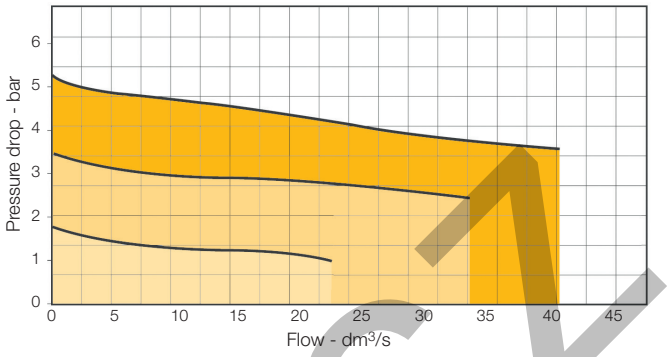
Dimensions (mm)



Note: 44mm dia. hole required for panel mounting.

Flow Charts

Flow Characteristics - 1/2 Inch Ports
6.9 bar Primary Pressure

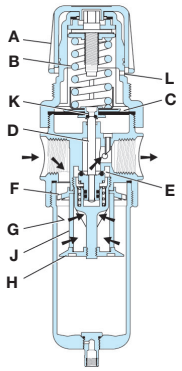


CAUTION:
REGULATOR PRESSURE ADJUSTMENT –
The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, 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.

Accessories

Filter Element Kits	Particulate (40 micron)	**EKF10Y**
	Particulate (5 micron)	**EKF10VY**
Gauge - 0 to 10 bar	BSPP	**M1/4G40S-10**
	NPT	**K4520N14160SS**
Drain Kits	Automatic Float Drain	**SA10MDSS**
Manual Twist Drain	Small (Old)	**SA600Y7-1SS**
	Large (New)	**SAP05481**
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**

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 type filter/regulators only.)