





WARNING — USER RESPONSIBILITY

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- This document and other information from Parker-Hannifin Corporation, its subsidiaries and authorized distributors provide product or system options for further investigation by users having technical expertise.
- The user, through its own analysis and testing, is solely responsible for making the final selection of the system and components and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application, follow applicable industry standards, and follow the information concerning the product in the current product catalog and in any other materials provided from Parker or its subsidiaries or authorized distributors.
- To the extent that Parker or its subsidiaries or authorized distributors provide component or system options based upon data or specifications provided by the user, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the components or systems.

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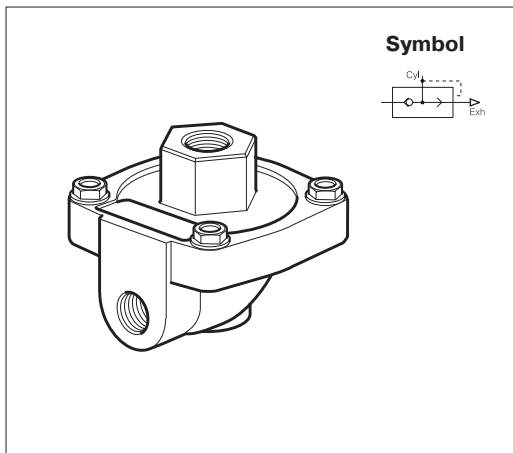
- Increases piston speeds, super sensitive diaphragm
- Extremely low operating differential
- Virtually stiction free
- May be used as differential shuttle valve
- High temperature option



Operating 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):	Fluorocarbon

Standard version

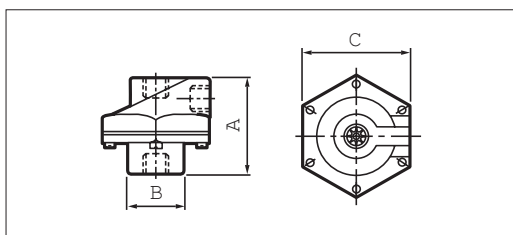


Port Size	Cv Rating	Weight kg	Order Code
G1/4	2,3	0,20	P4Q-BA12
G3/8	3,6	0,18	P4Q-BA13
G1/2	6,6	0,50	P4Q-CA14
G3/4	7,3	0,44	P4Q-CA16

High temperature version

Port Size	Cv Rating	Weight kg	Order Code
G1/4	2,3	0,20	-
G3/8	3,6	0,18	P4Q-BV13
G1/2	6,6	0,50	P4Q-CV14
G3/4	7,3	0,44	P4Q-CV16

Dimensions (mm)



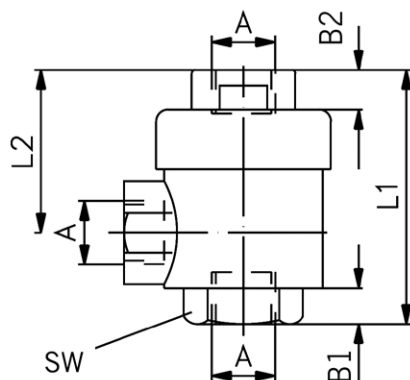
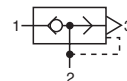
Port Size	A	B	C
G1/4	52	25	62
G3/8	52	25	62
G1/2	73	38	86
G3/4	73	38	86

Characteristics

Pressures quoted as gauge pressure

Characteristics	Symbol	Unit	Description				
General features							
Type			Poppet valve				
Mounting			Directly in tubing				
Tube connection			Thread				
Port size			G1/8	G1/4	G3/8	G1/2	G3/4
Gewicht (Masse)		kg	0.086	0.147	0.150	0.314	0.450
Installation			In any position				
Ambient- and Medium temperature range	T _{min} T _{max}	°C °C	-18 +70	Note: When using below freezing point (0 °C) it is necessary to consult us			
Material							
– Housing			Brass nickel-plated				
– Membrane			Synthetic material				
Medium			Filtered compressed air				
Lubrication			Oil mist lubrication compatible with Buna N				
Pneumatische characteristics							
Nominal pressure	p _n	bar	6				
Operating pressure range	p _{min}	bar	0.3				
	p _{max}	bar	10				
Nominal flow 1 2	Q _N	l/min	680	1200	2300	3400	3200
Nominal flow 2 3	Q _N	l/min	1100	2100	4900	6100	8750

Dimensions (mm)

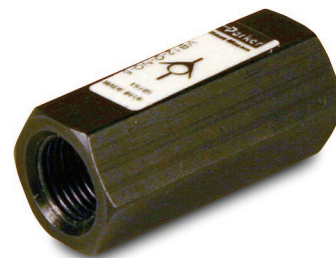


Dimensions (mm) and order instructions

Type	A	B1	B2	L1	L2	SW	Order Code
SV-06-2	G1/8	6.5	6.5	42.0	27	15	PD39152
SV-08-2	G1/4	9.5	9.0	53.0	35	19	PD39153
SV-10-2	G3/8	9.5	9.5	55.5	36	21	PD39154
SV-15-2	G1/2	13.5	13.0	72.0	43	26	PD39155
SV-20-2	G3/4	18.0	18.0	88.0	55	32	PD39156



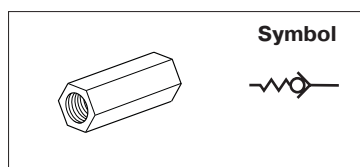
- Aluminium bodies
- Long life
- Low opening pressure
- Full flow in one direction only



Operating information

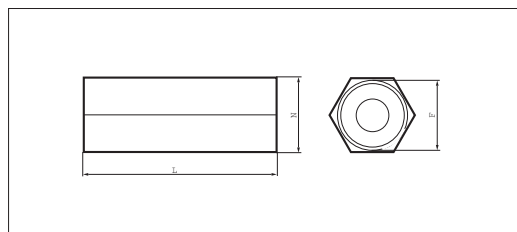
Operating pressure:	0,1 to 10 bar
Operating temperature:	-20°C to +70°C
Body material:	Anodised aluminium
Seal material:	Nitrile

VB - Aluminium



Port size	Weight kg	Order Code
G1/8	0,01	VB12-Q-NQ-5
G1/4	0,01	VB22-Q-NQ-5
G1/2	0,05	VB42-Q-NQ-5

Dimensions (mm)



Order Code	F	L	N
VB12-Q-NQ-5	G1/8	31	14
VB22-Q-NQ-5	G1/4	40	17
VB42-Q-NQ-5	G1/2	59	27

Non return Valves

RV9 series check valves are designed for continuous flow (not suitable for pulsating flow).

Suitable for:

- 100% oxygen
- natural gas
- vacuum

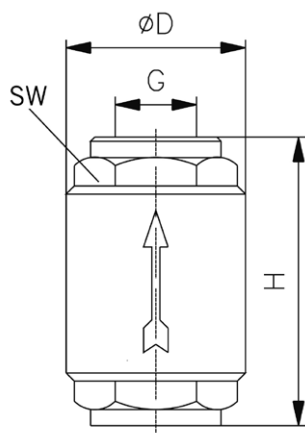


Characteristics

Pressures quoted as gauge pressure

Characteristics	Symbol	Unit	Description					
General features								
Type			Spring loaded check valve					
Mounting			Directly in tubing					
Tube connection			Thread					
Port size			G3/8	G1/2	G3/4	G1	G11/4	G11/2
Weight (mass)	kg		0.18	0.19	0.27	0.49	0.74	0.98
Installation			In any position					
Ambient- and Medium temperature range	T _{min} T _{max}	°C °C	-20 +110 air		0 +90° water		-20 +60 gas	
			Note: When using below freezing point (0°C) it is necessary to consult us					
Medium			Filtered compressed air, cold and warm water, various oils					
Lubrication			Oil mist lubrication compatible with Buna N					
Material			Housing: brass Valve head: stainless steel Seal: synthetic rubber					
Pneumatic characteristics								
Operating pressure range at +20°C	p _{max}	bar	25	25	25	25	18	18
Flow direction			In one direction					

Dimensions (mm) and order instructions



Type *	G	ØD	H	SW	Order Code
RV9-10	G3/8	34.5	54	23	PD 36114
RV9-15	G1/2	34.5	57	27	PD 36335
RV9-20	G3/4	41.5	64	33	PD 36336
RV9-25	G1	48.0	75	40	PD 36337
RV9-32	G1 1/4	60.5	82	50	PD 36338
RV9-40	G1 1/2	71.0	93	55	PD 36339

* other sizes on request

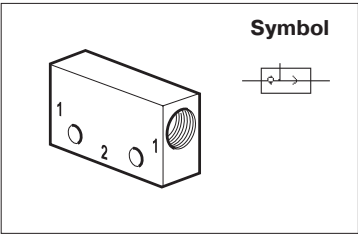


- Allows two separate signals to be applied to the air pilot
- 0,6 bar differential, Viton seals as standard



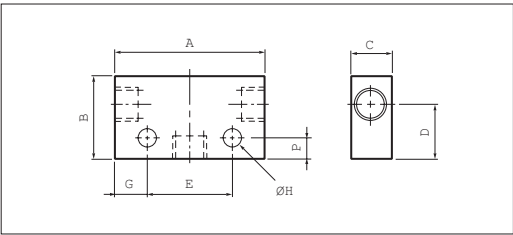
Operating information

Operating pressure:	1,3 to 17 bar
Flow:	See table below
Operating temperature:	- 10°C to +60°C
Body material M5 and G1/8:	Aluminium
Body material G1/4	Zinc
Shuttle ball material:	Plastic



Port Size	Qmax input at 6 bar, l/min	Weight kg	Order Code
G1/8	509	0,100	B43005B
G1/4	1076	0,172	B53005A

Dimensions (mm)



Port Size	A	B	C	D	E	F	G	H
G1/8	44,0	24	15	16,0	25	6	9,5	4,5
G1/4	52,0	30	22	20,5	35	10	8,5	5,5

- 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



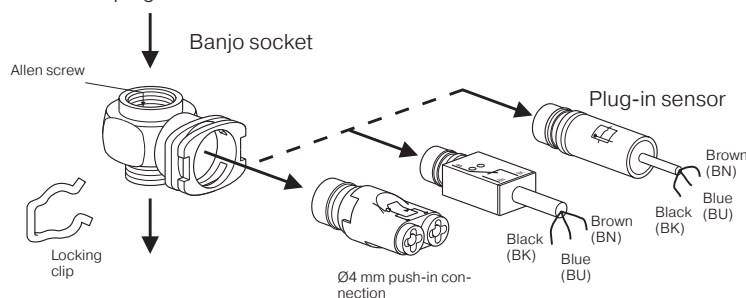
Operating information

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

Dimensions and piloting pressures next page

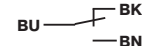
Assembly

All back pressure sensors are a combination of two distinct parts: a banjo socket + a plug-in sensor.



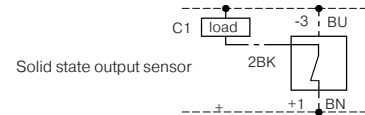
Connection

Output signal connection

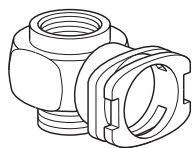


Pneumatic output sensor: Ø4 mm push-in

Electric output sensor

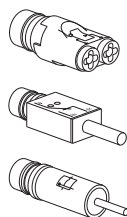


Banjo Sockets



Thread Size for Cylinder Port	Female Thread	Tool Required	Weight Kg	Order Code
M5	M5	8mm flat spanner	0,04	PWS-B155
G1/8	G1/8	5mm Allen key	0,04	PWS-B188
G1/4	G1/4	8mm Allen key	0,05	PWS-B199
G3/8	G3/8	10mm Allen key	0,07	PWS-B133
G1/2	G1/2	12mm Allen key	0,11	PWS-B122

Plug-in Sensors



Sensing function	Output function	Output Connection	Output characteristics	Weight kg	Order Code
Exhaust back pressure decay	Pneumatic	Push-in Ø4mm	NO valve flow rate at 6 bar 90 l/mn	0,09	PWS-P111
	Electrical ~Ve = 3A	3 wires 0,5mm ² length 2m	CO contact 12 to 230V ~ / 10VA* 12 to 48 VDC/5W*	0,08	PWS-M1012
	Solid state	3 wires 0,1mm ² length 2m	PNP type NC 10/30VDC** 75 mA, NO	0,07	PWS-E101
				0,07	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

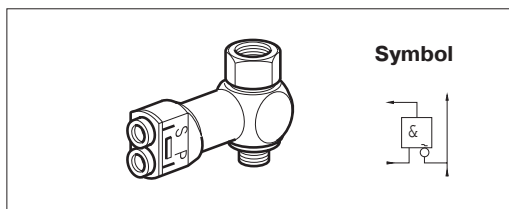


Operating information

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

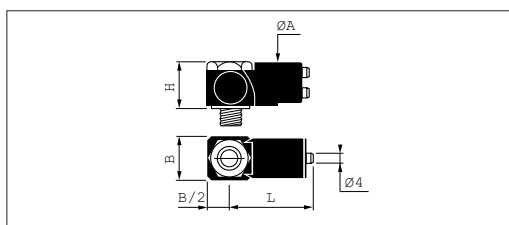
Plug-in & Monoblock back pressure sensors	Pilot	Depilot
	operating pressure	operating pressure
PWS-P111 PWS-M1012 PWS-E101 & E111 PWS-C	6bar	6bar
	4,4	0,4
	1,5	0,6
	1,5	0,6
	1,6 ±0,2	0,3

Back Pressure Sensor for Cylinder Mounting



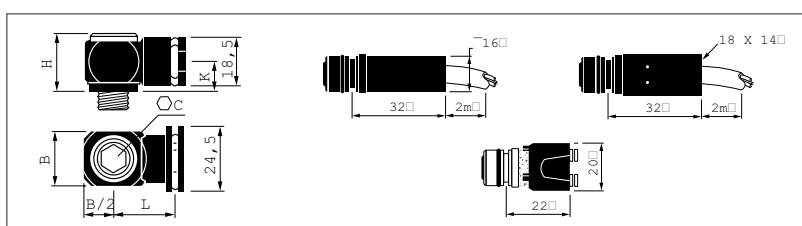
Thread Cylinder Port	Thread Supply Port	Bore Ømm	Weight kg	Order Code
M5	M5	2	0,10	PWS-C5145
G1/8	G1/8	5	0,11	PWS-C5148
G1/4	G1/4	7	0,10	PWS-C5149
G3/8	G3/8	10	0,17	PWS-C5143
G1/2	G1/2	14	0,15	PWS-C5142

Back Pressure Sensors - Mono block - Dimensions (mm)



Order Code	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 - Dimensions (mm)



Order Code	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

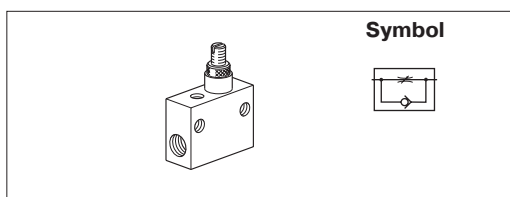
- Integral mounting holes
- Screw driver adjustable
- Panel mounting option



Operating information

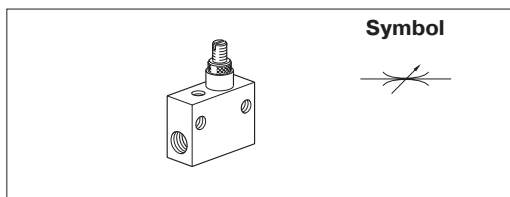
Working pressure	Max 10 bar
Working temperature	-20 °C to +70 °C

Flow Control Valves with By-pass



Thread	Number of turns	Qmax input at 6 bar, l/min	Weight kg	Order Code
G1/8	13	72	0,03	VQB12-Q-0X-5*
G1/8	13	240	0,03	VQB12-Q-0-5
G1/4	13	1320	0,07	VQB22-Q-0-5
G1/2	13	3600	0,27	VQB42-Q-0-5

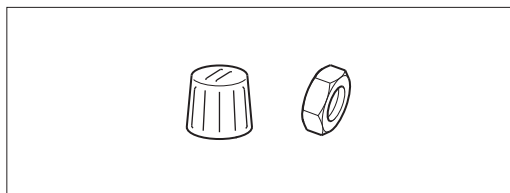
Flow Control Valves with By-directional Control



Thread	Number of turns	Qmax input at 6 bar, l/min	Weight kg	Order Code
G1/8	13	72	0,03	VQB12-0X-5*
G1/8	13	240	0,03	VQB12-0-5
G1/4	13	1320	0,07	VQB22-0-5
G1/2	13	3600	0,26	VQB42-0-5

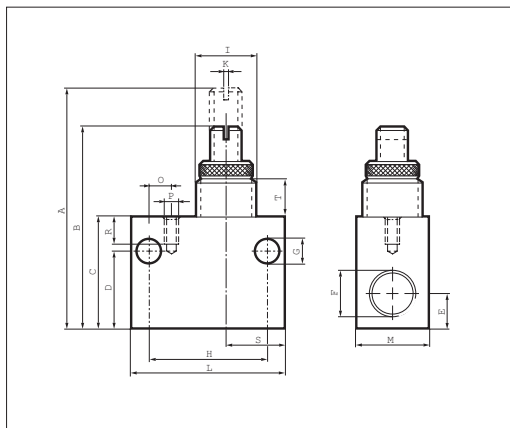
* Extra fine adjustment

Knob and nut for Panel Mounting



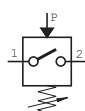
To Suit	Weight kg	Order Code
VQB12	0,008	9128177212
VQB22	0,014	9128177222
VQB42	0,037	9128177242

Flow Control Valves - Dimensions (mm)

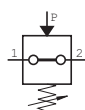


Order Code	A	B	C	D	E	F	G	H	I
VQB12-(Q)-0-5	49	42	22	15	6,5	G1/8	5,8	24	M12x1
VQB12-(Q)-0-5	49	42	22	15	6,5	G1/8	5,8	24	M12x1
VQB22-(Q)-0-5	64	53	30	21	8,5	G1/4	7,0	32	M16x1
VQB42-(Q)-0-5	99	85	50	36	16,5	G1/2	7,0	50	M24x1,5

Order Code	K	L	M	O	P	R	S	T
VQB12-(Q)-0-5	1,2	32	15	-	-	-	13,5	8,8
VQB12-(Q)-0-5	1,2	32	15	-	-	-	13,5	8,8
VQB22-(Q)-0-5	1,2	42	20	6,0	M4	7	16,0	10,0
VQB42-(Q)-0-5	1,8	62	30	19,5	M4	7	20,5	15,2



Make contact



Break contact

Switching function:

Make contact

– closes the circuit when the set pressure is reached

Break contact

– interrupts the circuit when the set pressure is reached

Characteristics

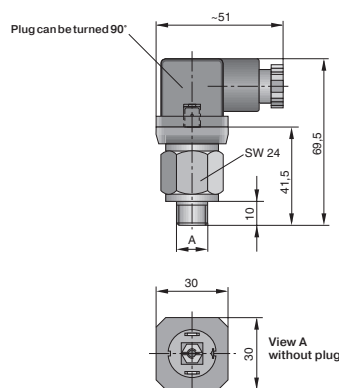
Pressures quoted as gauge pressure

Characteristics	Symbol	Unit	Description
Type			Break contact or make contact – see table at the bottom
Setting range	$p_{min/max}$	bar	See table at the bottom
Safety pressure relief	p_{max}	bar	300
Port size			G1/8, G1/4
Weight (mass)		kg	0.090
Material			
– Housing			Passivated steel
– Diaphragm			Buna N
Medium and ambient temperature range	T_{max}	°C	+100
Switch back difference		%	Max. 5 – 15
Voltage	U	V	Max. 48
Current	I	A	0.5
Electrical connection			Plug contacts, plug
Degree of protection		IP	65 with plug
Switching frequency		s/min	Max. 200

Order instructions

Type	Port size A	Function	Setting range [bar]	Order Code
PR / 0.1-1 NC ST 1/4 48	G1/4	Break contact	0.1-1	KL3439
PR / 0.1-1 NO ST 1/4 48	G1/4	Make contact	0.1-1	KL3440
PR / 1-10 NC ST 1/8 48	G1/8	Break contact	1-10	KL3437
PR / 1-10 NC ST 1/4 48	G1/4	Break contact	1-10	KL3436
PR / 1-10 NO ST 1/8 48	G1/8	Make contact	1-10	KL3438
PR / 1-10 NO ST 1/4 48	G1/4	Make contact	1-10	KL3435

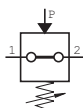
Dimensions (mm)



Pressure Switches



Make contact



Break contact

Switching function:

Make contact

– closes the circuit when the set pressure is reached

Break contact

– interrupts the circuit when the set pressure is reached

Characteristics

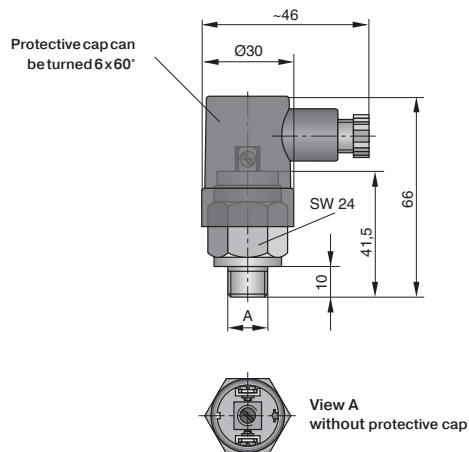
Pressures quoted as gauge pressure

Characteristics	Symbol	Unit	Description
Type			Break contact oder Make contact – see table at the bottom
Setting range	$p_{min/max}$	bar	See table at the bottom
Safety pressure relief	p_{max}	bar	300
Port size			G1/8, G1/4
Weight (mass)		kg	0.075
Material			
– Housing			Passivated steel
– Diaphragm			Buna N
Mediums- und Ambient temperature range	T_{max}	°C	+100
Switch back difference		%	Max. 5 – 15
Voltage	U	V	Max. 48
Current	I	A	0.5
Electrical connection			Flat pin plug, protective cap
Degree of protection		IP	65 with protective cap
Switching frequency		s/min	200

Order instructions

Type	Port size A	Function	Setting range [bar]	Order Code
PR / 0.2-1 NO SR 1/4 48	G1/4	Make contact	0.2-1	KL3445
PR / 0.1-1 NC SR 1/4 48	G1/4	Break contact	0.1-1	KL3454
PR / 0.1-1 NO SR 1/4 48	G1/4	Make contact	0.1-1	KL3455
PR / 1-10 NC SR 1/8 48	G1/8	Break contact	1-10	KL3452
PR / 1-10 NC SR 1/4 48	G1/4	Break contact	1-10	KL3451
PR / 1-10 NO SR 1/8 48	G1/8	Make contact	1-10	KL3453
PR / 1-10 NO SR 1/4 48	G1/4	Make contact	1-10	KL3450

Dimensions (mm)



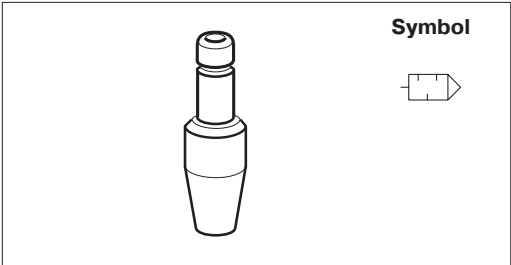
- Sintered metal
- All metal versions for heavy duty applications
- Versions with push-in connections
- High noise level reduction
- Low back pressure generation



Operating and additional information

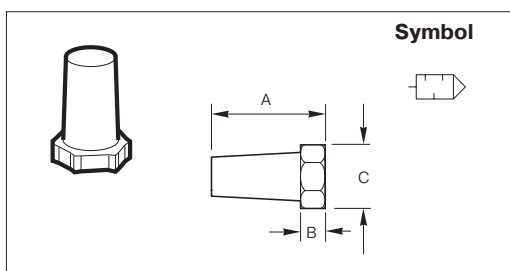
Plastic	Working temperature:	-10°C to +80°C	
	Efficiency	92%	
Metal	Working temperature:	-10°C to +74°C	Working pressure up to 17 bar

Push-in Series



Port mm	Height on Push-in	Weight g	Order Code
4	20,0	0,040	PXC-X14
6	35,5	0,025	PZC-S1006

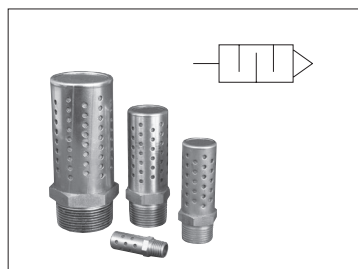
Sintered Bronze Series



Port mm	A	Ø B	A/F C	Weight g	Order Code
G1/8	15	8	13	0,060	9721900404

Stainless Steel Mufflers Series

Corrosion resistant mufflers for harsh environments

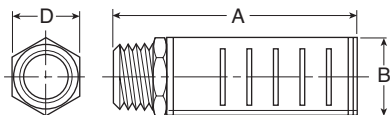


Port Size	Construction	Threads	Dimensions In. (mm)		Order Code
			Width	Lenght	
1/4	Stainless Steel	Male. NPT	0.56 (14.2)	1.75 (44.5)	5500A2004
1/2	Stainless Steel	Male. NPT	0.87 (22.1)	2.75 (69.7)	5500A4004
1	Stainless Steel	Male. NPT	1.31 (33.3)	3.87 (98.3)	5500A6004
2	Nickel plated	Male. NPT	2.37 (60.2)	5.50 (139.7)	5500A9004*

* Nickel plated

ES Series - Silencer

The silencer is designed to give superior performance in noise control with a minimum effect on air efficiency. "Trimline" design allows location in the tightest places without extra plumbing and fittings. Fits directly into the exhaust port of more than 90% of present commercial valves. Slotted body permits rapid discharge of air without undesirable back pressure. Unique nylon screen element resists dirt buildup or clogging.



Operating information

Operating pressure: 250 psig (Air) max.

Operating temperature:* 0°F to 300°F

* Ambient temperatures below freezing require moisture-free air. Ambient temperatures below freezing and above 180° require lubricants especially selected for suitability at these temperatures. Pneumatic valves should be used with filtered and lubricated air.

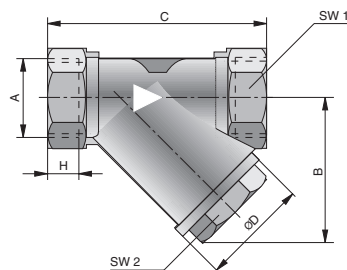
Pipe Thread	Flow scfm @ 100 psig inlet	Dimensions			Order Codes NPTF	BSPT (R)
		A	B	D		
1/8"	115	1.85	0.81	0.63	ES12MC	ESB12MC
1/4"	129	1.85	0.81	0.63	ES25MC	ESB25MC
3/8"	219	3.31	1.26	1.00	ES37MC	ESB37MC
1/2"	549	3.31	1.26	1.00	ES50MC	ESB50MC
3/4"	893	4.56	2.01	1.62	ES75MC	ESB75MC
1"	1,013	4.56	2.01	1.62	ES100MC	ESB100MC
1-1/4"	1,486	5.69	2.88	-	ES125MC	ESB125MC
1-1/2"	1,580	5.69	2.88	-	ES150MC	ESB150MC

Dimensions in mm

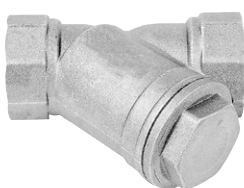
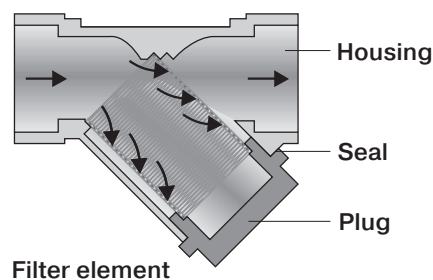
Characteristics			Pressures quoted as gauge pressure						
Characteristics	Symbol	Unit	Description						
General features									
Type			Filter element for solid particles						
Port size			G1/4	G3/8	G1/2	G1	G11/4	G11/2	G2
Weight (mass)		kg	0.170	0.155	0.165	0.460	0.690	1.010	1.535
Pore size		µm	45						
Installation			horizontal, sieve facing dows						
Medium and ambient temperature	T _{min} T _{max}	°C °C	0 +150						
Material			Brass (Filter element: sinter bronze)						
Pneumatic characteristics									
Operating pressure range	p _{min} p _{max}	bar bar	−1 +16						
Nominal flow ¹⁾	Q _N	l/min	1700	3700	7500	on request	on request	on request	on request
Recommended flow ¹⁾	Q	l/min	783	1320	2570	on request	on request	on request	on request

¹⁾ at 6 bar and Δp = 0,2 bar

Dimensions in mm



Operating principle:
When air flows through the filter element, any large particles are retained. The pore size for the sinter-bronze filter element is 45 µm



Strainers for tubings

Dimension (mm)

Di- men- sion	Port size (A)								
	G1/8	G1/4	G3/8	G1/2	G3/4	G1	G1 1/4	G1 1/2	G2
A	8	8	10	15	20	25	32	40	50
B	40	40	40	40	50	60	68	75	90
C	55	55	55	58	70	90	96	106	126
H	10.0	10.0	10.3	10.5	12.0	17.0	17.5	17.5	20
SW 1	21	21	21	25	31	38	49	55	68
SW 2	20	20	20	20	27	32	35	38	46

Order instructions

Port size	Strainers with sinter bronze filter element		Spare parts Sinter element (45 µm)	
	Type	Order Code	Type	Order Code
G1/4	SFS-1/4	KL 2001	SFSE-1/4	KL 2015
G3/8	SFS-3/8	KL 2002	SFSE-3/8	KL 2015
G1/2	SFS-1/2	KL 2003	SFSE-1/2	KL 2015
G3/4	SFS-3/4	KL 2004	SFSE-3/4	KL 2016
G1	SFS-1	KL 2005	SFSE-1	KL 2017
G1.1/4	SFS-1 1/4	KL 2006	SFSE-1 1/4	KL 2018
G1.1/2	SFS-1 1/2	KL 2007	SFSE-1 1/2	KL 2019
G2	SFS-2	KL 2008	SFSE-2	KL 2020

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