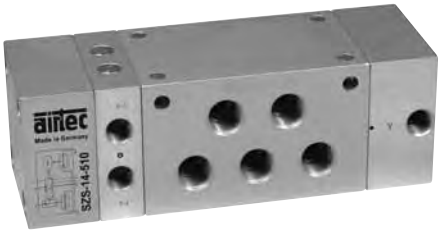
Series VZ
Time delay valve,
3/2-way,
M 5 (10/32 UNF),
160 Nl/min (0.163 Cv)
G 1/8, 600 Nl/min (0.610 Cv)
7.020

Series SZ
Two-hand control block,
3/2- and 5/2-way,
G 1/8, 280 Nl/min (0.285 Cv)
G 1/4, 1300 Nl/min (1.321 Cv)
7.040



Series SZS
Two-hand control block
with self-locking connection,
5/2-way, G 1/4,
1300 Nl/min (1.321 Cv)
7.060

Series SU
Signal interrupter,
3/2-way,
M 5 (10/32 UNF),
160 Nl/min (0.163 Cv) 7.080

Series AN
AND-valves,
M 5 (10/32 UNF),
160 Nl/min (0.163 Cv)
G 1/8, 280 Nl/min (0.285 Cv)
7.100

Series OR
OR-valves,
M 5 (10/32 UNF),
160 Nl/min (0.163 Cv)
G 1/8, 280 Nl/min (0.285 Cv)
7.100

Series DR
Flow control valves,
M 5 (10/32 UNF) – G 1/2,
5 Nl/min (0.005 Cv) –
1400 Nl/min (1.423 Cv)
7.140

Series SE
Quick exhaust valves,
G 1/8, 600 Nl/min (0.610 Cv)
G 1/4, 2400 Nl/min (2.440 Cv)
G 1/2, 5600 Nl/min (5.691 Cv)
7.160

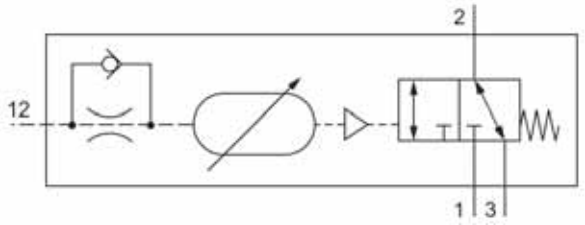
18-HVS-PE-505
Pressure switches,
0 – 10 bar (0 – 145 psi),
2 adjustable outputs
7.180

Series PE
Pressure switch
G 1/8 – G 1/4 7.181

Time delay valve
3/2-way, M5 (10/32 UNF) – G 1/8,
160 Nl/min – 600 Nl/min (0.163 Cv – 0.610 Cv)

Technical data for series

VZ



Design and function

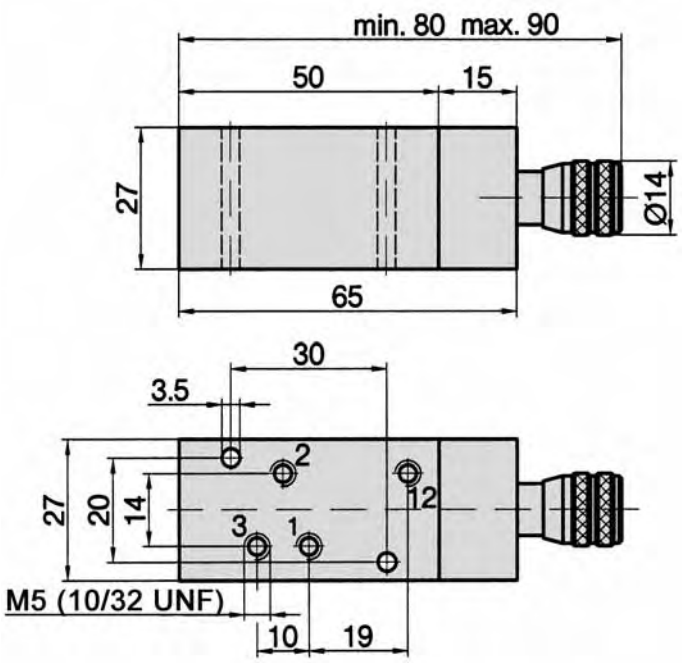
This valve may be used either normally open or normally closed.
Normally closed: pressure inlet port 1 (P).
Normally open: pressure inlet port 3 (R).
A signal arriving at 12 (Z) switches the flow of the valve from 1 (P) to 2 (A) and closes port 3 (R) after the set time has expired.
Instead of supplying main pressure to either port 1 or 3, the branched signal line can be connected to 1 or 3. The signal line to port 1 or 3 must not be longer than the signal line to port 12.

Order number	VZ-25-310	VZ-18-310
Connection	M5 (10/32 UNF)	G 1/8
Nominal size	3.2 mm	6 mm
Nominal flow	160 Nl/min (0.163 Cv)	600 Nl/min (0.610 Cv)
Working pressure range	3 … 10 bar (43.5 … 145 psi)	
Pilot pressure range	equivalent to working pressure	
Time range	0.25 … 5 s	0.5 … 10 s or 1 … 20 s
Temperature range	– 10 °C … + 70 °C (+ 14 °F … + 158 °F)	
Materials	Body: Al (anodized), Seals: NBR and POM, Inner parts: Al, stainless steel, brass	
Weight	0.135 kg (0.297 lb.)	0.36 kg (0.79 lb.)

Dimensions for series

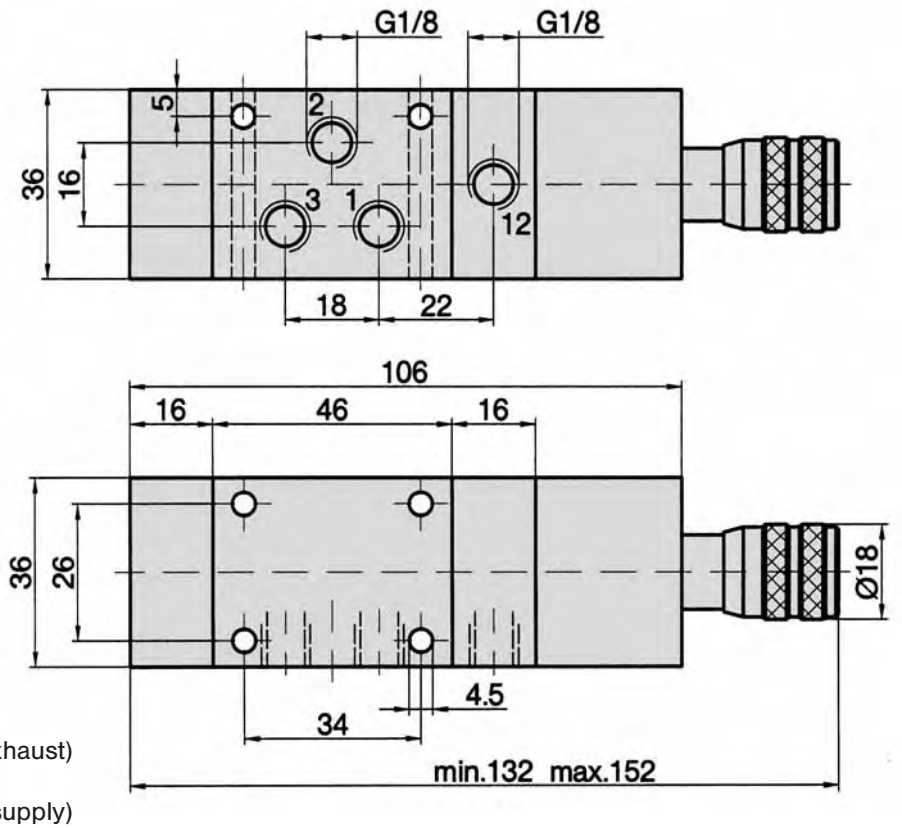
VZ

VZ-25-310



1 = pressure supply (exhaust)
2 = outlet
3 = exhaust (pressure supply)
12 = signal port

VZ-18-310

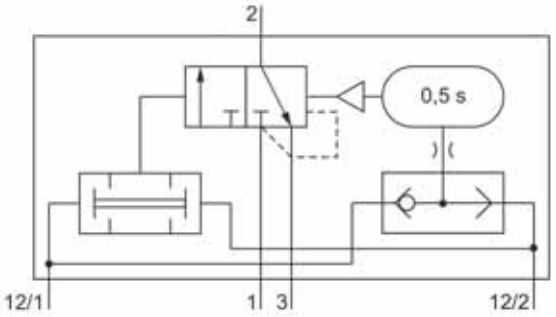


1 = pressure supply (exhaust)
2 = outlet
3 = exhaust (pressure supply)
12 = signal port

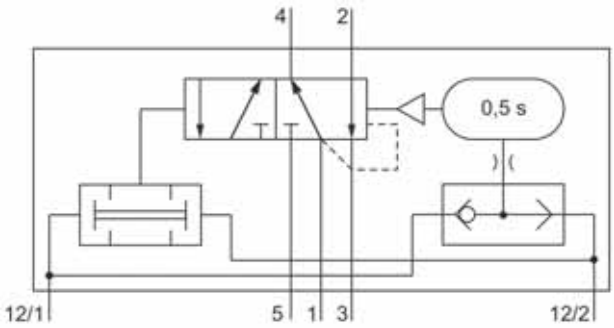
Two-hand control block
3/2- and 5/2-way, G 1/8 – G 1/4,
280 Nl/min – 1300 Nl/min (0.285 Cv – 1.321 Cv)

Technical data for series

SZ



SZ-18-310



SZ-14-510

Design and function

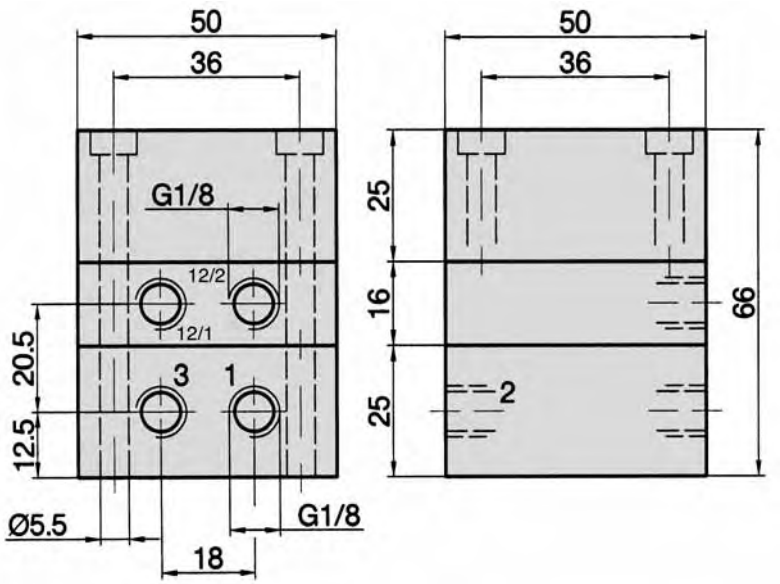
The valve operates after two input signals at 12 arrive within 0.5 s. The valve is actuated as long as the signals continue.
If the input signals do not arrive within 0.5 s, the valve does not operate. Both signals must be reset before the valve switches back on.

Order number	SZ-18-310	SZ-14-510
Function	3/2-way	5/2-way
Connection	G 1/8	G 1/4
Nominal size	4 mm	8 mm
Nominal flow	280 Nl/min (0.285 Cv)	1300 Nl/min (1.321 Cv)
Working pressure range	3 … 10 bar (44 … 145 psi)	
Pilot pressure range	equivalent to working pressure	
Temperature range	– 10 °C … + 70 °C (+ 14 °F … + 158 °F)	
Materials	Body: Al (anodized), Seals: NBR and POM, Inner parts: Al, stainless steel, brass	
Weight	0.36 kg (0.79 lb.)	0.825 kg (1.815 lbs.)

Dimensions for series

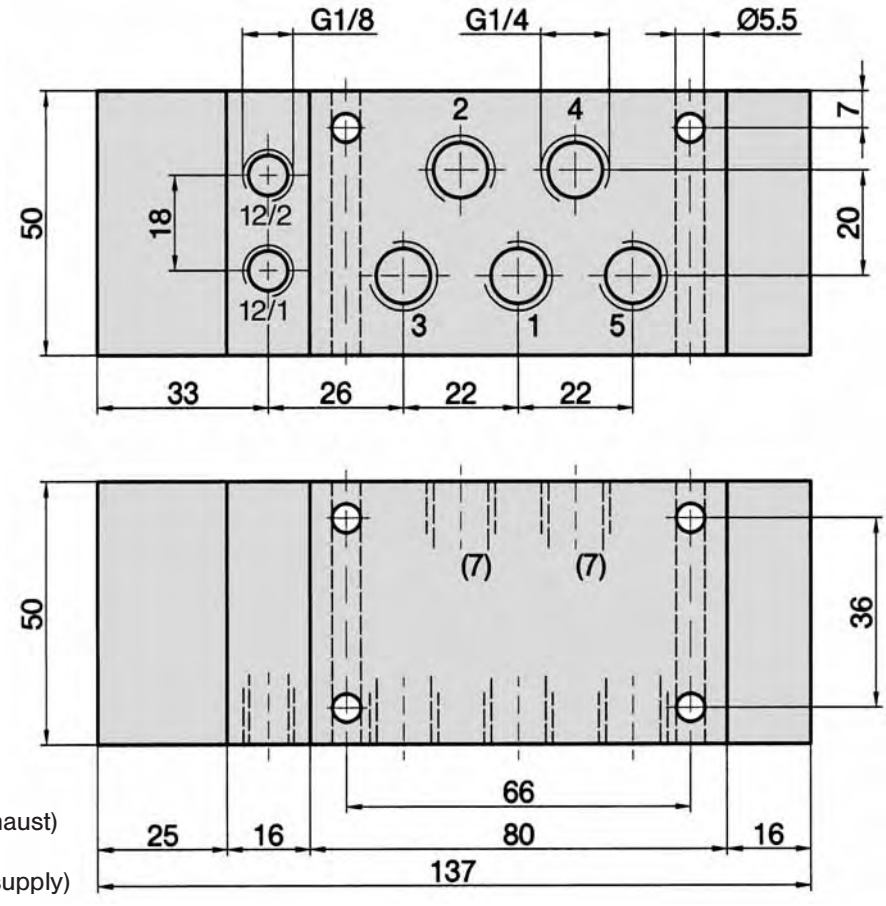
SZ

SZ-18-310



1 (P) = pressure supply (exhaust)
2 (A) = outlet
3 (R) = exhaust (pressure supply)
12 (Z) = signal port

SZ-14-510

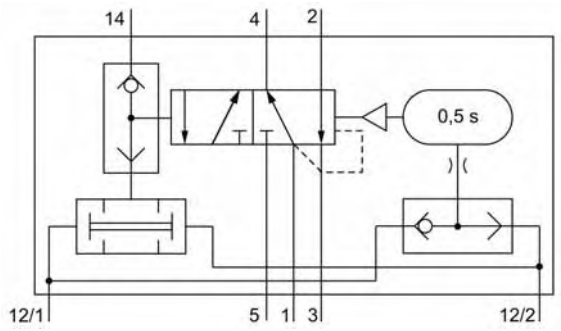


1 (P) = pressure supply (exhaust)
2 (A), 4 (B) = outlets
3 (R), 5 (S) = exhausts (pressure supply)
12 (Z) = signal port
(7) = Outlets 2 and 4 are in the front and the rear of the valve. The rear outlet is plugged at the factory.

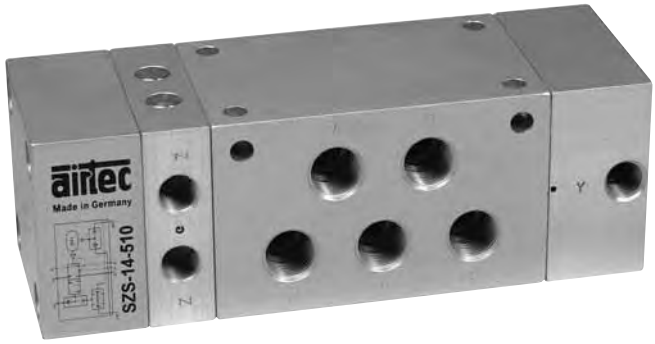
Two-hand control block with self-locking connection 5/2-way, G 1/4, 1300 Nl/min (1.321 Cv)

Technical data for series

SZS



SZS-14-510



Design and function

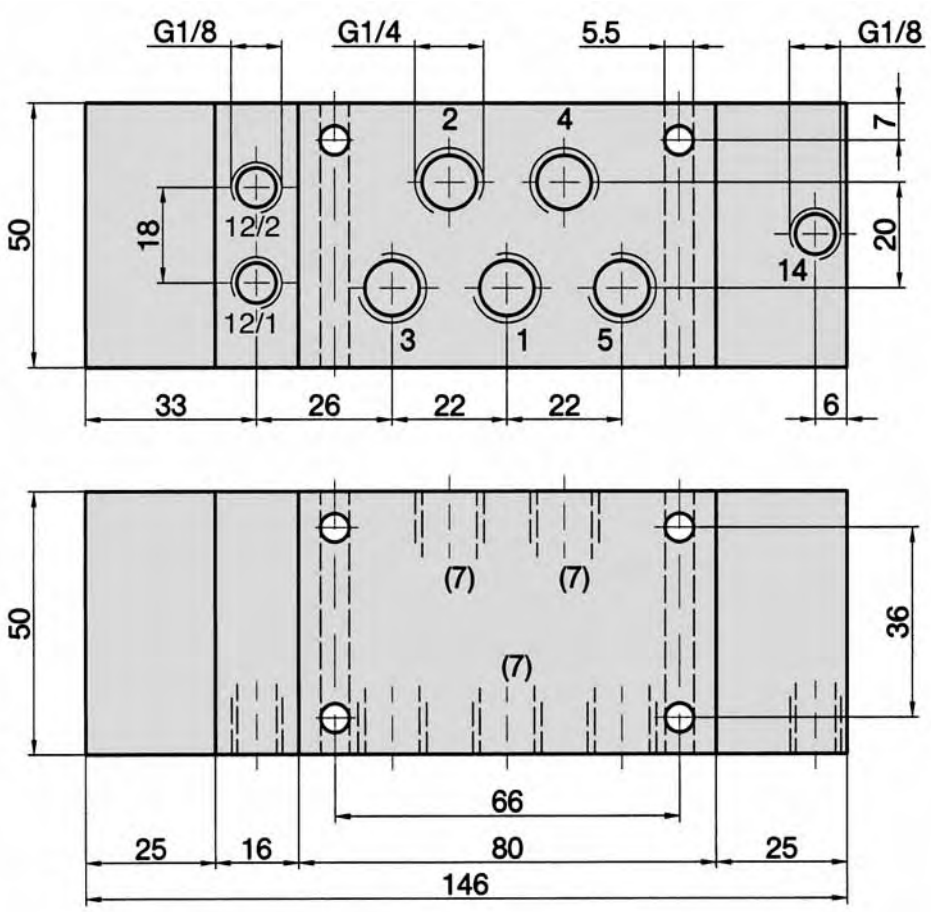
This two-hand control block has the same function as series SZ (see page 7.040). In addition, it has a self-locking device. A signal to 14 actuates the two-hand control block as a standard 5/2-valve. When the signal at 14 ends, the valve resets.

Order number	SZS-14-510
Function	5/2-way
Connection	G 1/4
Nominal size	8 mm
Nominal flow	1300 Nl/min (1.321 Cv)
Working pressure range	3 … 10 bar (44 … 145 psi)
Pilot pressure range	equivalent to working pressure
Temperature range	– 10 °C … + 70 °C (+ 14 °F … + 158 °F)
Materials	Body: Al (anodized), Seals: NBR and POM, Inner parts: Al, stainless steel, brass
Weight	0.885 kg (1.947 lbs.)

Dimensions for series

SZS

SZS-14-510

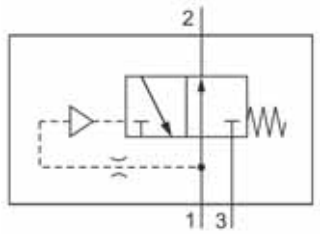


1 (P) = pressure supply (exhaust)
2 (A), 4 (B) = outlets
3 (R), 5 (S) = exhausts (pressure supply)
12 (Z) = signal port
14 (Y) = self-locking connection
(7) = Outlets 2 and 4 are in the front and the rear of the valve. The rear outlet is plugged at the factory.

Signal interrupter 3/2-way, M 5 (10/32 UNF), 160 Nl/min (0.163 Cv)

Technical data for series

SU



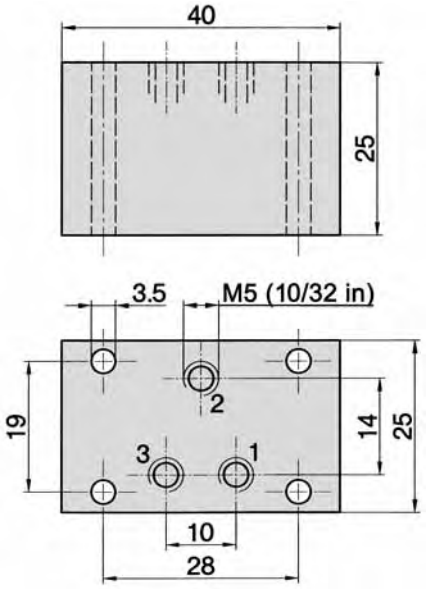
Design and function

3/2-way one-shot valve. It converts a continuous pneumatic signal into a 0.3 s pulse.

Order number	SU-25-310
Connection	M 5 (10/32 UNF)
Nominal size	3.2 mm
Nominal flow	160 Nl/min (0.163 Cv)
Working pressure range	3 … 10 bar (44 … 145 psi)
Duration of pulse	0.3 s
Reset time	0.1 s
Temperature range	– 10 °C … + 70 °C (+ 14 °F … + 158 °F)
Materials	Body: Al (anodized), Seals: NBR and POM, Inner parts: Al, stainless steel, brass
Weight	0.063 kg (0.139 lb.)

SU-25-310

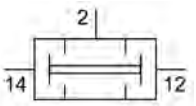
Dimensions for series



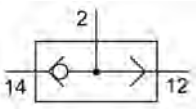
1 = signal input
2 = signal output
3 = exhaust

Technical data for series

AN, OR



AN - Valve



OR - Valve

Design and function AN

Output signal at port 1 is present if both inlets 12 and 14 are pressurized.
If the pressure is different (min. 0.2 bar 0.014 psi), the lower pressure is switched to 2.

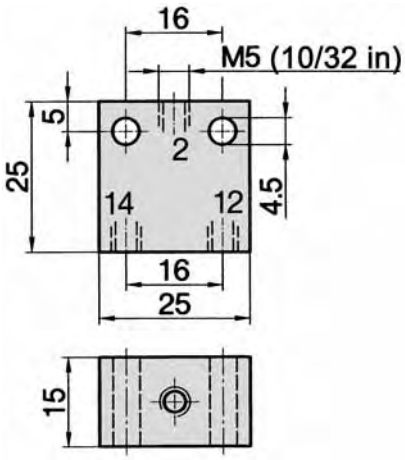
Design and function OR

Output signal is present if one inlet is pressurized. The higher input signal (min. difference 0.2 bar 0.014 psi) is dominant.

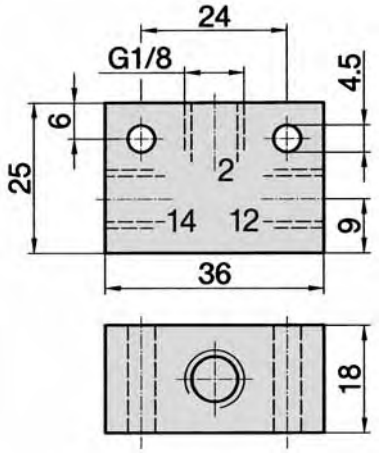
Order number	AN-25	OR-25	AN-18	OR-18
Connection	M 5 (10/32 UNF)		G 1/8	
Nominal size	3.2 mm		4 mm	
Nominal flow	160 Nl/min (0.163 Cv)		280 Nl/min (0.285 Cv)	
Working pressure range	– 0.95 … 10 bar (– 14 … 145 psi) (min. difference 0.2 bar 0.014 psi)			
Temperature range	– 10 °C … + 70 °C (+ 14 °F … + 158 °F)			
Materials	Body: Al (anodized), Seals: NBR, Inner parts: brass			
Weight	0.026 kg (0.057 lb.)		0.038 kg (0.084 lb.)	

Dimensions for series

AN-25, OR-25



AN-18, OR-18

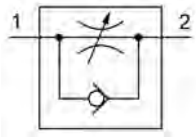


⊦ 14 (Y) = signal inlet
= signal outlet

Flow control valves
M5 (10/32 UNF) – G 1/2
5 Nl/min – 1400 Nl/min (0.005 Cv – 1.423 Cv)

Technical data for series

DR



Design and function

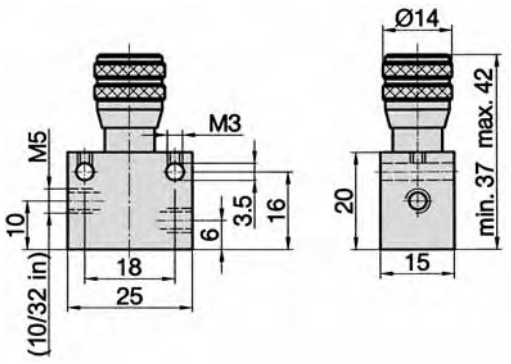
This valve is used for the speed control of a pneumatic cylinder. The adjusting knop controls the flow rate in one direction and permits fine adjustment.

Order number	DR-25	DR-18	DR-14	DR-10
Connection	M5 (10/32 UNF)	G 1/8	G 1/4	G 1/2
Nominal size controlled flow direction	0.5 … 1.5 mm	0.5 … 2 mm	1 … 5 mm	1 … 7 mm
Nominal size free flow direction	2.5 mm	4.5 mm	7.5 mm	11 mm
Nominal flow controlled flow direction	5 … 40 Nl/min (0.005 … 0.041 Cv)	5 … 90 Nl/min (0.005 … 0.091 Cv)	50 … 600 Nl/min (0.051 … 0.610 Cv)	50 … 600 Nl/min (0.051 … 0.610 Cv)
Nominal flow free flow direction	120 Nl/min (0.122 Cv)	480 Nl/min (0.488 Cv)	1300 Nl/min (1.321 Cv)	1400 Nl/min (1.423 Cv)
Working pressure range	0.5 … 10 bar (7 … 145 psi)			2 … 10 bar (29 … 145 psi)
Temperature range	– 10 °C … + 70 °C (+ 14 °F … + 158 °F)			
Materials	Body: Al (anodized), Inner parts: brass, Seals: NBR and PU			Body: Al (anodized) and brass, Inner parts: brass, stainless steel, Seals: NBR
Weight	0.034 kg (0.075 lb.)	0.040 kg (0.088 lb.)	0.098 kg (0.216 lb.)	0.215 kg (0.473 lb.)

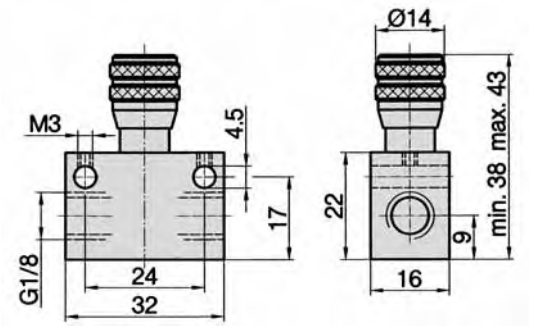
Dimensions for series

DR

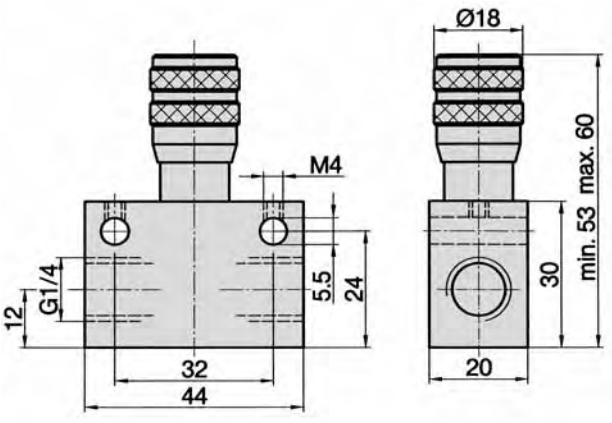
DR-25



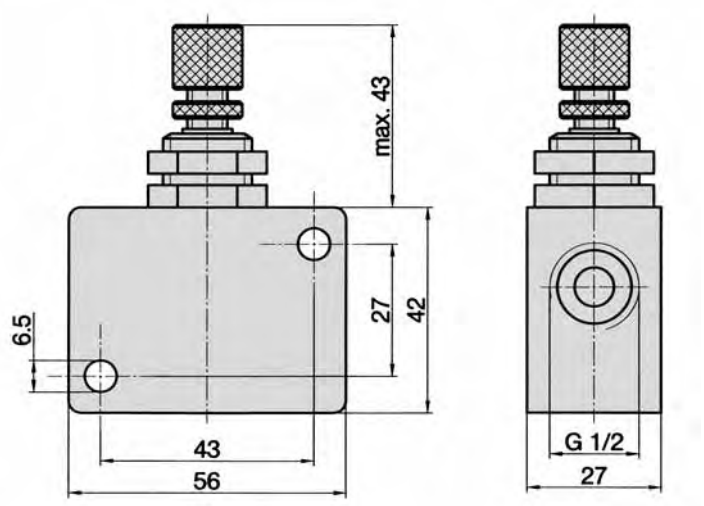
DR-18



DR-14



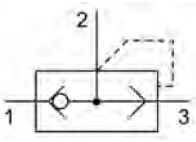
DR-10



Quick exhaust valves
G 1/8 – G 1/2
600 Nl/min – 5600 Nl/min (0.610 Cv – 5.691 Cv)

Technical data for series

SE



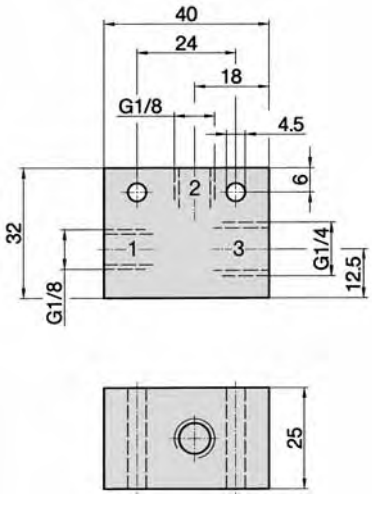
Design and function

A quick exhaust valve is used to increase the speed of a pneumatic cylinder. The flow from the control valve to the cylinder ports is unrestricted. If valve port 1 is de-pressurized, air is exhausted from 2 to 3.

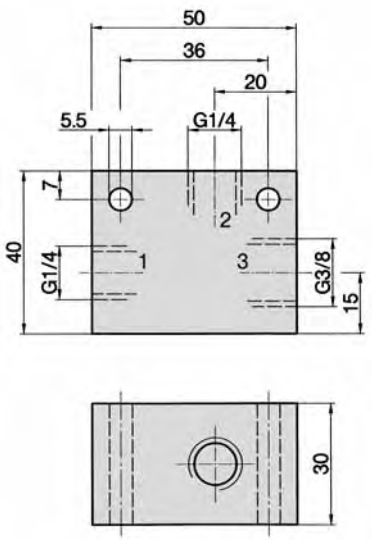
Order number	SE-18	SE-14	SE-12
Connection	G 1/8, G 1/4 at R	G 1/4, G 3/8 at R	G 1/2, G 3/4 at R
Nominal size P – A	5 mm	7 mm	12 mm
Nominal size A – R	8 mm	10 mm	16 mm
Nominal flow P – A	600 Nl/min (0.610 Cv)	1200 Nl/min (1.219 Cv)	2800 Nl/min (2.846 Cv)
Nominal flow A – R	1200 Nl/min (1.219 Cv)	2400 Nl/min (2.439 Cv)	5600 Nl/min (5.691 Cv)
Working pressure range	0.5 … 10 bar (7 … 145 psi)		
Temperature range	– 10 °C … + 70 °C (+ 14 °F … + 158 °F)		
Materials	Body: Al (anodized), Seals: NBR		
Weight	0.07 kg (0.15 lb.)	0.125 kg (0.275 lb.)	0.31 kg (0.68 lb.)

Dimensions for series

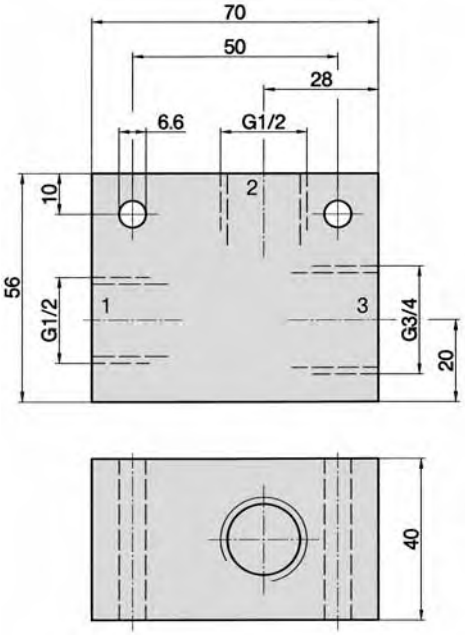
SE-18



SE-14



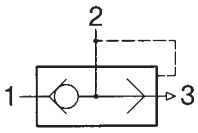
SE-12

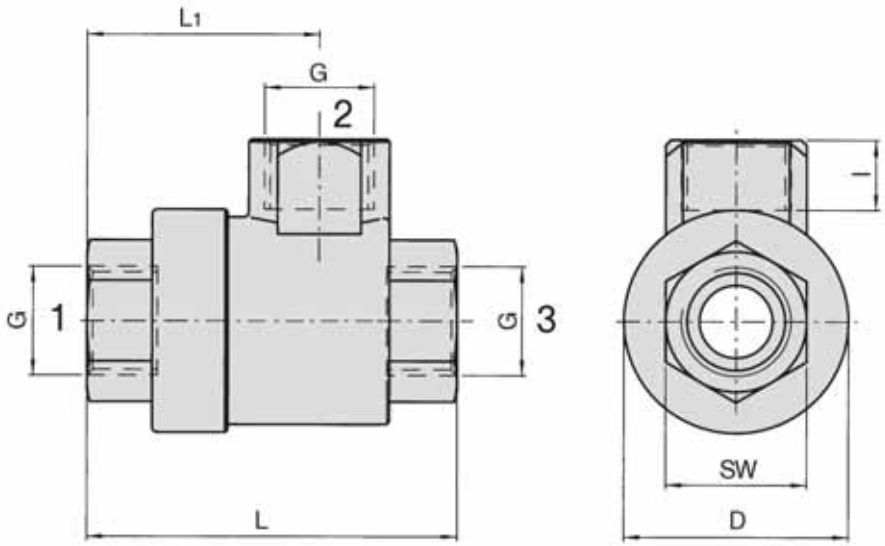


1 (P) = inlet from valve
2 (A) = outlet to cylinder
3 (R) = exhaust

Technical data for series

SE-18-1





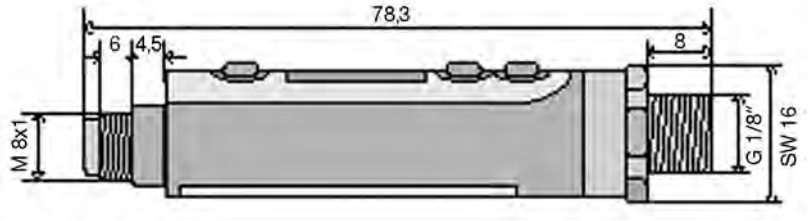
Order number	SE-18-1	SE-14-1	SE-38-1	SE-12-1
Flow rate	only in the exhaust			
	up to max. 100 Nl/min (0.102 Cv)	up to max. 200 Nl/min (0.203 Cv)	up to max. 300 Nl/min (0.305 Cv)	up to max. 800 Nl/min (0.813 Cv)
G	G 1/8	G 1/4	G 3/8	G 1/2
D	28.5	33	33	47
SW	14	17	21	26
L	42	54	55	72.5
L1	27	35	35	43
l	6	10.5	11	12
Nominal size	6	9	12	14
Operating pressure	0.2 to 10 bar (2.9 … 145 psi)			
Opening pressure	min. 0.3 bar (4.350 psi)			
Temperature	– 18 °C … + 70 °C (0 °F … 158 °F)			
Materials	Body: brass, nickel-plated Seal: PA Diaphragm: PU			
Medium	filtered/lubricated or filtered/non-lubricated air			
Weight	0.098 kg (0.216 lb.)	0.161 kg (0.355 lb.)	0.151 kg (0.333 lb.)	0.337 kg (0.743 lb.)

Electronic pressure switch

Technical data for series

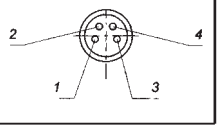
18-HVS-PE-505

Dimensions

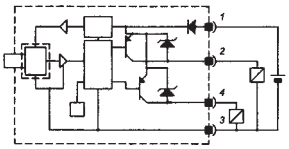


Connection allocation

Connections	PIN connection
Supply +	1
Supply –	3
Adjustable output 1	4
Adjustable output 2	2



Connection circuit diagram



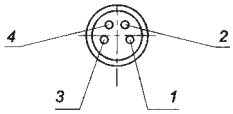
Design and function

These calibrated and temperature-compensated sensors deliver extremely accurate measurements. There are two programmable switchpoints ready to be processed.
The switching points and the hystereses are adjustable.
The “adjustable output” functions are distinguished by a red and a green LED.
The sensors are user friendly and can be easily re-configured for special applications.

Order number	18-HVS-PE-505
Nominal pressure	0 … 10 bar (0 … 145 psi)
Over pressure safety	16 bar (232 psi)
Measuring medium	Dry, oil-free air, non-aggressive gases
Connection (measuring medium)	G 1/8″ AG and M5 (10/32 UNF) IG
Working temperature	0 °C … + 50 °C (32 °F … 122 °F)
Storage temperature	– 20 °C … + 85 °C (– 4 °F … + 185 °F)
Electrical connection	4-pin round plug M8 x 1
Operating voltage	10.8 to 30 VDC, reverse polarity protection
Display/error code	via 7-segments
Display accuracy	± 1 %
Reaction time	≤ 2.5 ms
Repetitive accuracy	± 0.2 % of measuring range
Switching frequency	200 Hz
Switch output	2 digital PNP N/O contact or N/C contact, max. switching current 125 mA
Hysteresis	adjustable as the difference in bar to the fixed trigger level
Degree of protection	IP 65
Intrinsic current consumption	< 55 mA in programming mode and power-up ≤ 35 mA in normal operation
Material	Body: ABS-PC; connection (measuring medium): brass, nickel-plated
Weight	approx. 25 g (0.0055 lb.)
Assembly position	Any; display freely rotatable 360°
EMV	Complies with EN 50081-1/50082-2

Connection cables for all vacuum and pressure switches

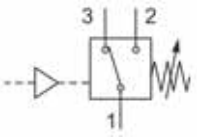
Order number	
28-HV-102	Cable length 2 m, cable socket M 8x1, straight 4-pin
28-HV-105	Cable length 5 m, cable socket M 8x1, straight 4-pin
28-HV-112	Cable length 2 m, cable socket M 8x1, angled 4-pin
28-HV-115	Cable length 5 m, cable socket M 8x1, angled 4-pin



1 = brown
2 = white
3 = blue
4 = black

Technical data for series

PE-18, PE-14



PE-18-01-40

PE-14-01-40

PE-14-02

Design and function

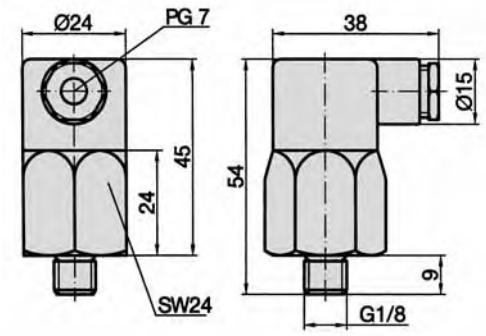
Adjustable diaphragm pressure switch for a pressure range from 1 to 10 bar (14.5 to 145 PSI).
Other types are available on request.

Order number	PE-18-01-40	PE-14-01-40	PE-14-02
Size	G 1/8 male	G 1/4 male	G 1/4 female
Pre-adjustment	4 bar at rising pressure		not available
Over pressure safety	300 bar (4350 psi)	100 bar (1450 psi)	
Materials	Steel (zinc-plated), NBR		
Repeatabity	5 % … 10 %	2 % … 5 %	
Switching frequency	200 / min.		
Hysteresis	5 %	20 %	20 % … 30 %
Contact function	NO	Change-over contact	
Voltage	10 V … 250 V		
Max. current	2 A	6 A	2 A
Temperature range	– 20 °C … + 100 °C (– 4 °F … + 212 °F)	– 20 °C … + 80 °C (– 4 °F … + 176 °F)	– 20 °C … + 100 °C (– 4 °F … + 212 °F)
Degree of protection	IP 55	IP 65	IP 55
Weight	0.09 kg (0.198 lb.)	0.12 kg (0.264 lb.)	0.38 kg (0.838 lb.)

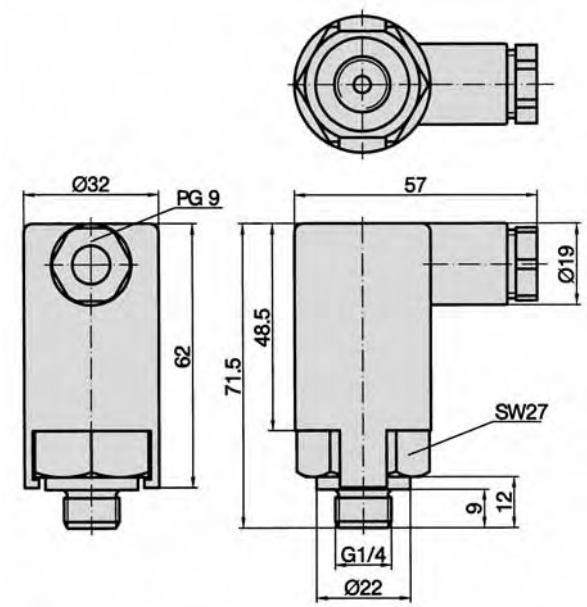
Dimensions for series

PE-18, PE-14

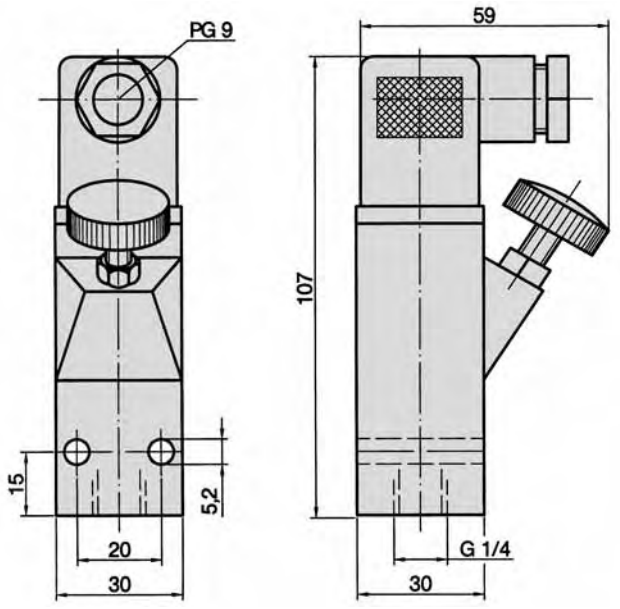
PE-18-01-40



PE-14-01-40

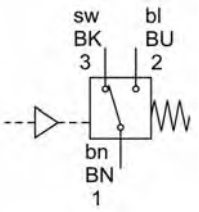


PE-14-02



Technical data for series

PE-25



Design and function

To be used for the transformation of a pneumatic input signal into an electrical output signal.
Length of electrical cable: 1 m

Order number	PE-25
Size	M 5 (10/32 UNF) female
Switch-on pressure	2 bar (29 psi)
Switch-off pressure	1 bar (14.5 psi)
Max. pressure	12 bar (174 psi)
Electrical capacity	6 A (24 V=), 4 A (48 V=), 0.5 A (110 V=), 6 A (220 V≈)
Degree of protection	IP 65 according to EN 60529
Materials	Body: Al and PA with glas fibre
Weight	0.100 kg (0.220 lb.)

Dimensions for series