Electronically controlled proportional pressure regulating valves

with
PIEZO control

Series tecno basic
NPT 1/8, NW 2.5

Series tecno plus
NPT 1/4, NW 6

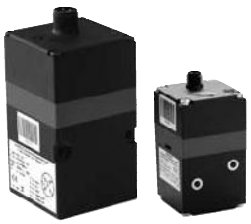
Characteristics

Pressures quoted as gauge pressure

Characteristics	Symbol	Unit	Description	
System			Piezo pilot controlled 3-way proportional pressure regulating valve, electronic closed loop control	
Type			tecno basic PRE-U, PRE-I	tecno basic PRE-U, PRE-I
Version [1]			0–8 bar	0–2 bar
Port size			NPT 1/8	NPT 1/8
Mounting			Flange [8]	Flange [8]
Nominal size	NW	mm	2.5	2.5
Installation			In any position	In any position
Weight (mass)		kg	0.101 without base plate 0.155 with base plate	0.101 without base plate 0.155 with base plate
Medium and ambient temperature range	T_{min} T_{max}	°C °C	0 +50	0 +50
Storage temperature	T_{min} T_{max}	°C °C	-20 +60	-20 +60
Medium			Filtered, dry, lubricated [(1] or oil-free compressed air 30µm (recommended 5 µm) dried to ISO8573-1, Kl. 3	
Lubrication			Oil-free or max. 30 mg/m³ mineral oil Type VG 32 to ISO 3448	
Flow direction			On: 1→2 Off: 2→3	On: 1→2 Off: 2→3
Material			Aluminum, brass, spring steel, plastic, elastomer	
Pneumatic characteristics				
Nominal pressure	p_n	bar	6.3	6.3
Pressure range, inlet	p_{1min} p_{1max}	bar bar	1.5 10	1.5 6
Pressure range, outlet[1]	p_{2min} p_{2max}	bar bar	0 8	0 2
Maximum flow rate [2]	Q_N	l/min m³/h	350 [2] 21	200 [2] 12
Hysteresis [4]	p_{2max}	%	< 0.2	< 0.2
Repeatability [4]	p_{2max}	%	< 0.2	< 0.2
Responsiveness [4]	p_{2max}	%	< 0.1	< 0.1
Linearität [4]	$p_{2\,max}$	%	≤ 0.6	≤ 0.5
Own air consumption [5]		Nl/min	< 0.5	< 0.5
Electrical characteristics – Type PRE-U				
Nominal voltage	U_N	V DC	24 ± 10%	24 ± 10%
Nominal power	P_N	W	0.4	0.4
Residual ripple	U_N	%	10	10
Current consumption	I_{Bmax}	A	15	15
Set value input	U_W	V	0–10	0–10
Input resistance	R_E	kW	66	66
Scale	W/p_2	V/bar	1	5

for further characteristics see page 135–136

1) Other pressure ranges on request.
2) At p_1= 10 bar and p_2= 6.3 bar, Dp=1 bar.
3) At ambient temperature 20°C.
4) Relative to p_{2max}.
5) At p_1 max.
6) 2-wire technology, i.e. power supply and set value via the same cable.
7) Higher voltage will damage the valve.
8) Flange plates with screw thread, see accessories.
9) Output is switching "ON" when output pressure is equivalent ± tolerances to set value, and "OFF" when the output pressure is outside this limit.
10) With connector and exhaust ported, booster (3) and pilot (y)
11) During connection with protected cable and plug. Screen only presented on main unit.
12) Plus taken output current of digital output pressure reached



Electronically controlled proportional pressure regulating valves

with PIEZO control

Series tecno basic NPT 1/8, NW 2.5

Series tecno plus NPT 1/4, NW 6

Characteristics

		Piezo pilot controlled 3-way proportional pressure regulating valve, electronic closed loop control		
	tecno basic PRE-U, PRE-I	tecno plus PRE-U, PRE-I	tecno plus PRE-U, PRE-I	tecno plus PRE-U, PRE-I
	0–0.2 bar	0–10 bar	0–6 bar	0–2 bar
	NPT 1/8	NPT 1/4	NPT 1/4	NPT 1/4
	Flange [8]	Flange [8]	Flange [8]	Flange [8]
	2.5	6	6	6
	In any position	In any position	In any position	In any position
	0.101 without base plate 0.155 with base plate	0.360 without base plate 0.430 with base plate	0.360 without base plate 0.430 with base plate	0.360 without base plate 0.430 with base plate
	0 +50	0 +50	0 +50	0 +50
	-20 +60	-20 +60	-20 +60	-20 +60
		Filtered, dry, lubricated [1] or oil-free compressed air 30µm (recommended 5 µm) dried to ISO8573-1, Kl. 3 other neutral gases on request		
		Oil-free or max. 30 mg/m³ mineral oil Type VG 32 to ISO 3448		
	On: 1 → 2 Off: 2 → 3	On: 1 → 2 Off: 2 → 3	On: 1 → 2 Off: 2 → 3	On: 1 → 2 Off: 2 → 3
		Aluminum, brass, spring steel, plastic, elastomer		
	6.3	6.3	6.3	6.3
	0 2.5	1.5 12	1.5 10	1.5 7
	0 0.2	0 10	0 6	0 2
	100 [2] 6	1600 [2]	1600 [2]	1100 [2]
	< 0.5	< 0.2	< 0.2	< 0.2
	< 0.5	< 0.2	< 0.2	< 0.2
	< 0.5	< 0.2	< 0.2	< 0.2
	≤ 0.5	≤ 0.5	≤ 0.5	≤ 0.5
	< 1.0	< 1.5	< 1.5	< 1.5
	24 ± 10%	24 ± 10%	24 ± 10%	24 ± 10%
	0.4	0.8	0.8	0.8
	10	10	10	10
	15	30	30	30
	0–10	10	10	10
	66	> 55	> 55	> 55
	50	1	1.667	5

Electronically controlled proportional pressure regulating valves

with PIEZO control

Series tecno basic NPT 1/8, NW 2.5

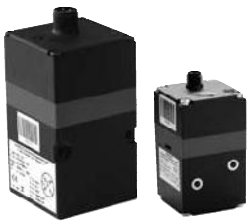
Series tecno plus NPT 1/4, NW 6

Characteristics

Pressures quoted as gauge pressure

Characteristics	Symbol	Unit	Description		
System			Piezo pilot controlled 3-way proportional pressure regulating valve, electronic closed loop control		
Type			tecno basic PRE-U, PRE-I	tecno basic PRE-U, PRE-I	
Electrical characteristics – Type PRE-I					
Power supply [6]	I_B	mA	4	4	
Set value input	W	mA	4–20	4–20	
Input resistance	R_E	kW	≤ 550	≤ 550	
Scale	W/p_2	V/bar	2	8	
Input voltage max. [7]	U_{Wmax}	V	12.5	12.5	
General electrical characteristics					
Actual value output			Optional	Optional	
Output voltage [13]	U_x	V	p_2 0 bar = 0 $p_{2\ max}$ = 10	p_2 0 bar = 0 $p_{2\ max}$ = 10	
Output current max.	I_{xmax}	mA	1 (short circuit proof)	1 (short circuit proof)	
Accuracy	p_{2max}	%	–	–	
Cable connector			3 PIN connector, M8 or 4 PIN connector, M8		
EMC (electromagnetic compatibility)			Shielded connecting cables must be used [11]		
Resistance to interferences			To EN 61000-6-2	To EN 61000-6-2	
Emissions			To EN 61000-6-4	To EN 61000-6-4	
Degree of protection		IP	30 DIN EN 60529	30 DIN EN 60529	
Reaction to power failure			Port 2 exhaust	Port 2 exhaust	
Digital output pressure reached [9]					
Output voltage	U_{Out}	VDC			
Output current	I_{Out}	mA			
Tolerance	p_{2max}	%			

[1] Other pressure ranges on request.
[2] At p_1= 10 bar and p_2= 6.3 bar, Dp=1 bar.
[3] At ambient temperature 20°C.
[4] Relative to p_{2max}.
[5] At p_1 max.
[6] 2-wire technology, i.e. power supply and set value via the same cable.
[7] Higher voltage will damage the valve.
[8] Flange plates with screw thread, see accessories.
[9] Output is switching "ON" when output pressure is equivalent ± tolerances to set value, and "OFF" when the output pressure is outside this limit.
[10] With connector and exhaust ported, booster (3) and pilot (y)
[11] During connection with protected cable and plug. Screen only presented on main unit.
[12] Plus taken output current of digital output pressure reached
[13] Only type PRE-U



Electronically controlled proportional pressure regulating valves

with PIEZO control

Series tecno basic NPT 1/8, NW 2.5

Series tecno plus NPT 1/4, NW 6

Characteristics

		Piezo pilot controlled 3-way proportional pressure regulating valve, electronic closed loop control		
	tecno basic PRE-U, PRE-I	tecno plus PRE-U, PRE-I	tecno plus PRE-U, PRE-I	tecno plus PRE-U, PRE-I
	4	–	–	–
	4–20	0 (4–20)	0 (4–20)	0 (4–20)
	≤ 550	500	500	500
	80	2	2667	8
	12.5			
	Optional	–	–	–
	p_2 0 bar = 0 $p_{2\ max}$ = 10	0–10	0–10	0–10
	1 (short circuit proof)	1 (short circuit proof)	1 (short circuit proof)	1 (short circuit proof)
	–	< 1	< 1	< 1
		5 PIN connector M12x1.5		
		Shielded connecting cables must be used		
	To EN 61000-6-2	To EN 61000-6-2	To EN 61000-6-2	To EN 61000-6-2
	To EN 61000-6-4	To EN 61000-6-4	To EN 61000-6-4	To EN 61000-6-4
	30 DIN EN 60529	65 [10] DIN EN 60529	65 [10] DIN EN 60529	65 [10] DIN EN 60529
	Port 2 exhaust	Port 2 exhaust	Port 2 exhaust	Port 2 exhaust
		OFF = 0 ON = UN – 0.7V		
		≤ 200 [12]		
		± 2		

Electronically controlled proportional pressure regulating valves

with
PIEZO control

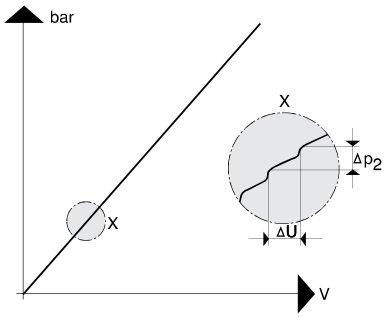
Series tecno basic
NPT 1/8, NW 2.5

Series tecno plus
NPT 1/4, NW 6

Characteristics

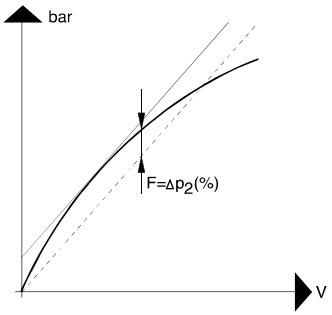
Sensitivity

The smallest change in the electronic input signal that leads to a change in actual output pressure is referred to as sensitivity. This is expressed as a percentage of maximum output pressure. For the tecno, this value is < 0.1% to < 0.5% depending on the version.



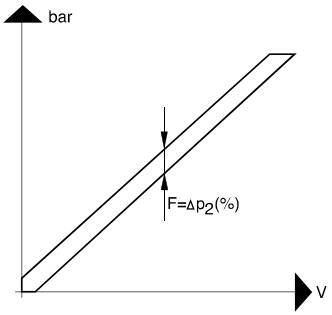
Linearity

The ideal curve showing output pressure in relation to electronic signal would be a straight line. Linearity is the maximum deviation from the straight line, expressed as a percentage of maximum output pressure.



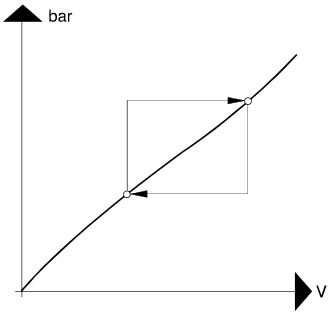
Hysteresis

The same electronic signal generates slightly different actual output pressures, depending on whether the previous signal was higher or lower. This difference, known as hysteresis, is caused by friction and temporary deformation of elastic components. The hysteresis of the electronically operated pressure regulating valve AIRFIT tecno from Parker ORIGA is between < 0.2% and < 0.5% of the output pressure.



Repeatability

Control components for a given set value usually produce repeated actual values that differ less from each other than from the absolute set value, because the relatively large linearity deviation is excluded.



Electronically controlled proportional pressure regulating valves

with PIEZO control

Series tecno basic
NPT 1/8, NW 2.5

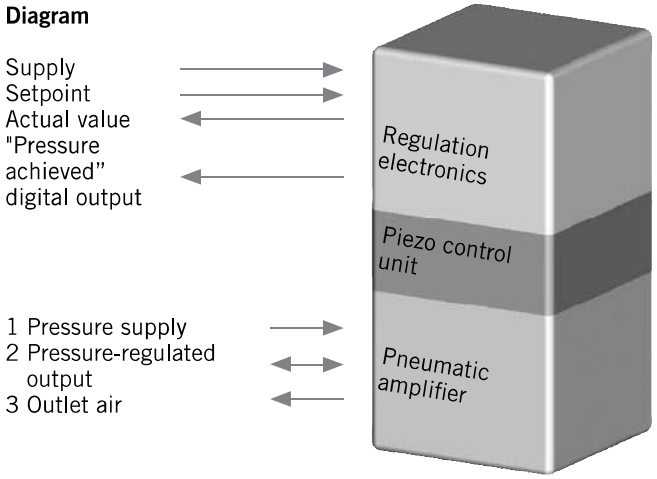
Series tecno plus
NPT 1/4, NW 6

Design and function

Design and Function

Proportional valves from the tecno series are piezo-controlled pressure regulating valves with electronic pressure regulation. They offer optimum dynamics at the lowest possible power consumption. The main valve ensures high aeration and ventilation output. The pressure sensor measures the current output pressure. An integrated electronic controller compares the sensor signal with the electrical setpoint and regulates the output pressure precisely to the predefined setpoint.

Diagram



Electronically controlled proportional pressure regulating valves

with
PIEZO control

Series tecno basic
NPT 1/8, NW 2.5

Characteristics

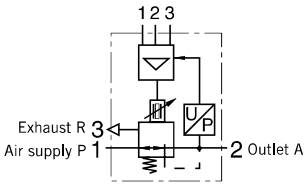
Connection diagrams

Versions:

– Voltage controlled (Type PRE-U)
– Current controlled (Type PRE-I)
– 3 pressure ranges
– With actual value output

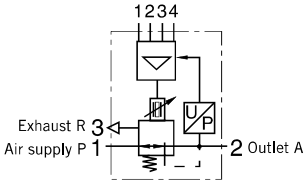
Electronically controlled pressure regulating valve with PIEZO pilot control and ACTUAL VALUE feedback. An integrated potentiometer ensures that the device can be set to best meet the requirements of any given application. Remote control possible.

Symbol
3 PIN version



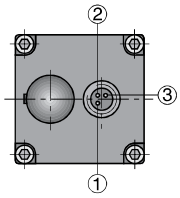
Color code
1 = blue
2 = black
3 = brown

Symbol
4 PIN version



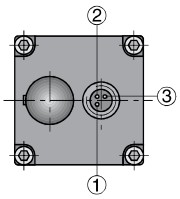
Color code
1 = blue
2 = white
3 = brown
4 = black

Connection diagram 1



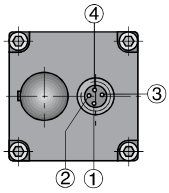
Voltage controlled 0-10 V, Type PRE-U
1 = power supply 24 V DC/15 mA
2 = set value 0–10 V
3 = GND set value and power supply

Connection diagram 2



Current controlled 4–20 mA, Type PRE-I (2-wire technology)
1, 2 = set value 4–20 mA, +
3 = set value GND

Connection diagram 3



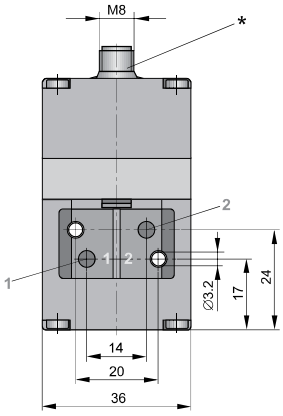
Voltage controlled 0–10 V, Type PRE-U with actual output
1 = power supply 24 V DC
2 = set value 0–10 V
3 = GND set value and power supply
4 = actual value output 0 10 V

For order instructions see page 141, for characteristics see page 132–138, for accessories see page 140, 141

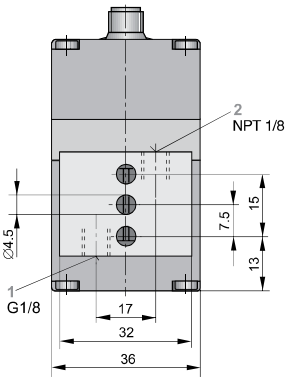
Dimensions in mm

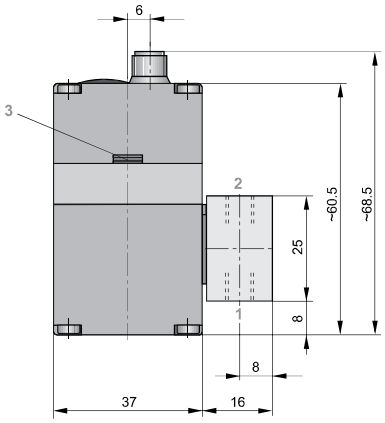
Dimensions

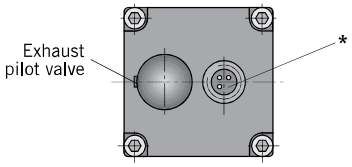
without base plate



with single base plate







* Connection for 3-pin plug M8 (KC3104, KC3106)
Connection for 4-pin plug M8 (KY000575, KY000576)

Electronically controlled proportional pressure regulating valves

with
PIEZO control

Series tecno basic
NPT 1/8, NW 2.5

Dimensions

Versions:

– Voltage controlled (Type PRE-U)
– Current controlled (Type PRE-I)
– 3 pressure ranges
– With actual value output

Electronically controlled pressure regulating valve with PIEZO pilot control and ACTUAL VALUE feedback. An integrated potentiometer ensures that the device can be set to best meet the requirements of any given application.
Remote control possible.

For order instructions see page 141, for characteristics see page 132–138,

Dimensions in mm

Electronically controlled proportional pressure regulating valves

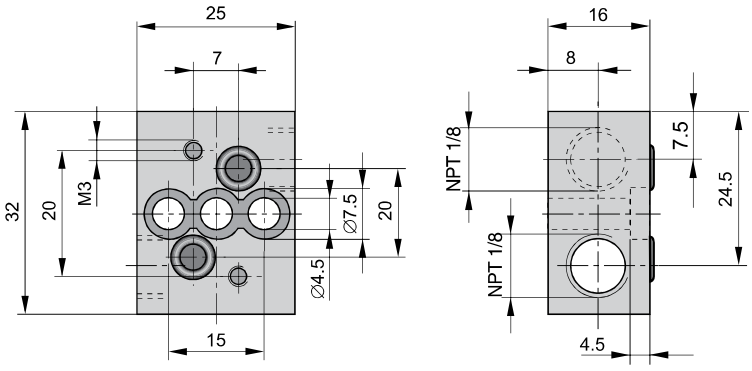
with
PIEZO control

Series tecno basic
NPT 1/8, NW 2.5

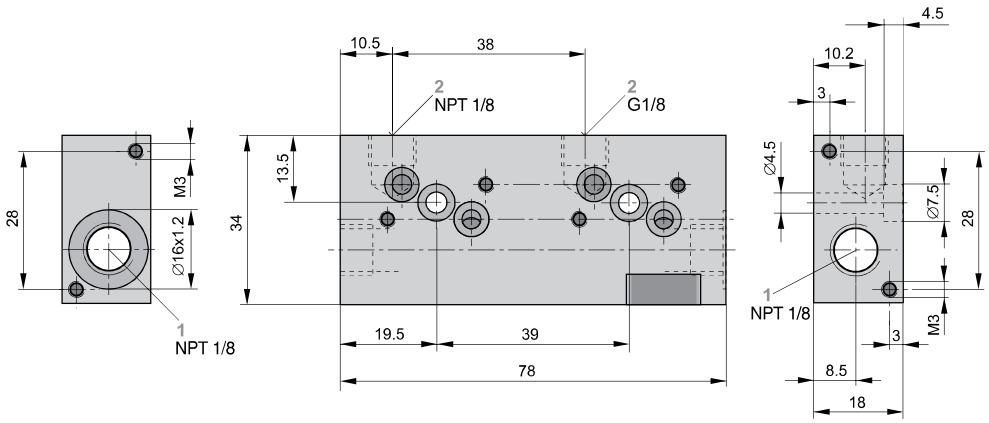
Base plates

Dimensions

Single base plate



2-fold base plate, for serial connection



For order instructions see page 141, for characteristics see page 132–138,
for accessories see page 140, 141

Dimensions in mm

Electronically controlled proportional pressure regulating valves

with PIEZO control

Series tecno basic NPT 1/8, NW 2.5

Order instructions

Configurable, electronically controlled proportional pressure regulating valve – tecno basic

Order No.	PS	1	2	0	0		-		-	0		

Version (set value type) with 3 PIN connector	
00	Voltage
01	Current 4–20 mA

Version with 4 PIN connector	
06	Voltage + actual value output

Pressure range	
002	0.2 bar
020	2 bar
080	8 bar

Type variation	
0	Standard

Flange	
0	Without flange
5	Sidewise NPT 1/8

Connection cable	
0	Without cable
1	Cable, straight 3 PIN
2	Cable, elbow 3 PIN
3	Cable, straight 4 PIN
4	Cable, elbow 4 PIN

Accessories

Description	Figure	Port size	Order No.
Single base plate		NPT 1/8	PS11112-A-01
2-fold base plate kit, complete, for serial connection		NPT 1/8	PS12407-A
Mounting kit for DIN rail mounting, 35 mm, EN 60715:2001			PS12368-A
Cover plate, complete			PS11160-A
Cable set, straight (5 m) 3 PIN version			KC3104
Cable set, elbow (5 m) 3 PIN version			KC3106
Cable set, straight (5 m) 4 PIN version			KY000575
Cable set, elbow (5 m) 4 PIN version			KY000576

Electronically controlled proportional pressure regulating valves

with
PIEZO control

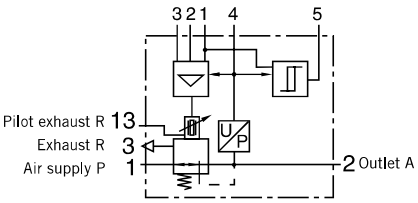
Series tecno plus
NPT 1/4, NW 6

Dimensions

Versions:

- Voltage controlled (Type PRE-U)
- Current controlled (Type PRE-I)
- 3 pressure ranges
- With actual value output
- With EMC mass

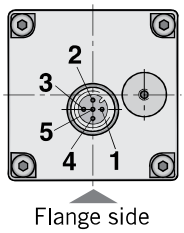
Symbol



Color code

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

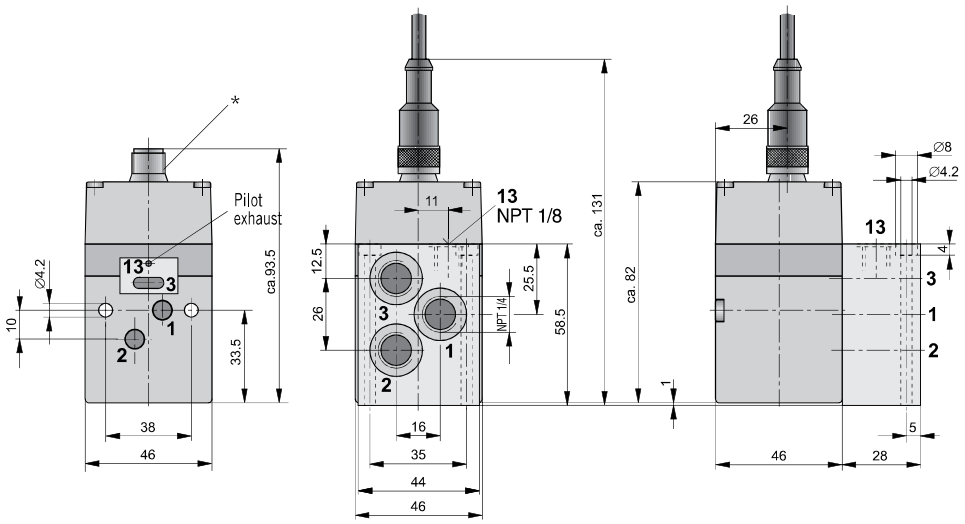
Connection diagram



1 = power supply 24 V DC
2 = set value input
3 = mass GND
4 = analog output 0–10 V
5 = digital output 0/24 V

Version with 5 PIN connector M12 x 1, straight

without base plate **with single base plate**



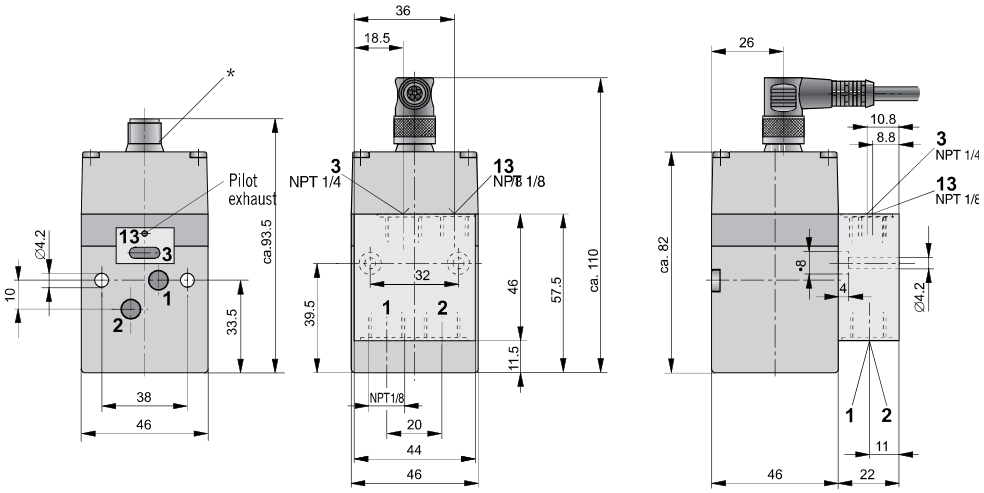
* Connection for 5-pin plug M12 x 1 (PS12315-A)

For order instructions see page 144, for characteristics see page 132–138,
for accessories see page 143, 144

Dimensions in mm

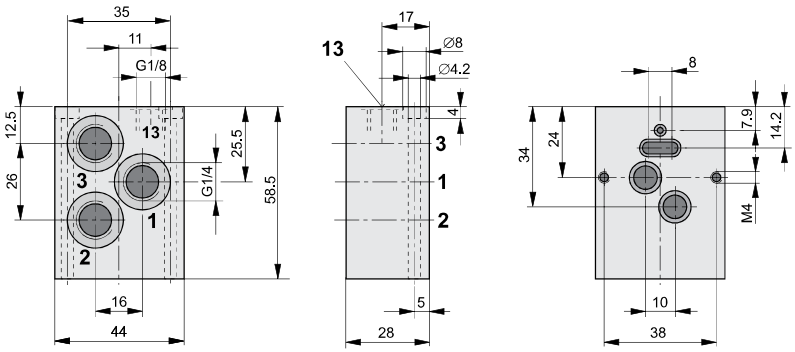
Version with 5 PIN connector M12 x 1, elbow

without base plate **with single base plate**

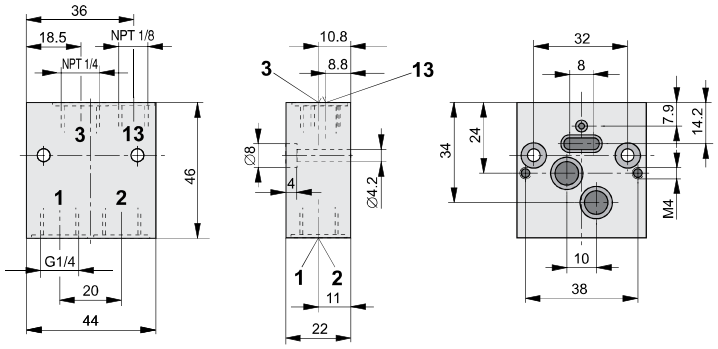


* Connection for 5-pole plug M12 x 1 (PS12316-A, PS12317-A)

Single base plate – Port size NPT 1/4, straight



Single base plate – Port size NPT 1/4, sidewise



For order instructions see page 144, for characteristics see page 132–138,
for accessories see page 143, 144

Dimensions in mm

Electronically controlled proportional pressure regulating valves

with
PIEZO control

Series tecno plus
NPT 1/4, NW 6

Dimensions

Versions:

- Voltage controlled (Type PRE-U)
- Current controlled (Type PRE-I)
- 3 pressure ranges
- With actual value output
- With EMC mass

Connection plates

Electronically controlled proportional pressure regulating valves

with PIEZO control

Series tecno plus NPT 1/4, NW 6

Order instructions

Configurable, electronically controlled proportional pressure regulating valve – tecno plus

Order No.	PS	1	2	0	1		-		-	0		

Version	
00	Voltage
01	Current 4–20 mA

Pressure range	
020	2 bar
060	6 bar
100	10 bar

Type variation	
0	Standard

Flange	
0	Without flange
1	Straight NPT 1/4
3	Sidewise NPT 1/4

Connection cable	
0	Without cable
1	Cable, straight
2	Cable, elbow

Accessories

Description	Figure	Port size	Order No.
Cable 5 m, connector M12 x 1, straight			PS12315-A
Cable 5 m, connector M12 x 1, elbow			PS12316-A
Cable 5 m, connector M12 x 1, elbow, with LED			PS12317-A
Single base plate, with through connections, straight		NPT 1/4	PS12300-A-01
Single base plate, with connections, sidewise		NPT 1/4	PS12301-A-01