Characteristics to VDI 3292			Pressures quoted as gauge Pressure
System			Diaphragm-pressure regulating valve pilot operated with Piezo 2000 and pneumatic and electronic feedback
Type			**PRE-.**
Mounting			Flange
Port size			NW 2 pilot pressure regulating valve G1/8 Single valve
Installation			In any position
Weight (mass)		kg	0,145 pilot pressure regulating valve 0,180 Single valve
Flow direction			On: from 1 to 2 Out: from 2 to 3
Medium an ambient temperatures	ϑ_{min} ϑ_{max}	°C °C	0 +50 When using below freezing point (°C) it is necessary to consult us
Medium			dried or filtered air (5µ)
Lubrication			non or only little oil mist lubrification (max. 30mg/m³)
Pneumatic Characteristics			
Nominal pressure	p_n	bar	6
Inlet pressure range	p_{1min} p_{1max}	bar bar	1,5 10
Outlet pressure range	p_{2min} p_{2max}	bar bar	0 8
Nominal flow	Q_N	l/min	115 (b = 0,132, c = 29,9 l/min bar)
Hysteresis*	Δp_2	%	<0,2
Repeatability*	Δp_2	%	<0,2
Sensitivity*	Δp_2	%	<0,2
Linearity*	Δp_2	%	<0,5
Electrical Characteristic			
Nominal voltage	U_N	V DC	24 = ± 10 %
Nominal power	P_N	W	0,25
Redidual ripple		%	10
Current consumption**	I_{Bmax}	mA	10
Set value input	W		0 to 10V(1 V / 1 bar)** 4- 20 mA***
Input resistance	R_E	kΩ Ω	200 0-10 V Version 550 4-20 mA Version
Electrical protection		IP	IP52 to DIN 45322
Connection			3-pole Plug M8

* see explanation on page 2
** 0-10 V Version
*** no additional power supply necessary (two wire technology)

For table of contents see 5.00.001E

A1P513E00FX20X

piezo 2000 technologie

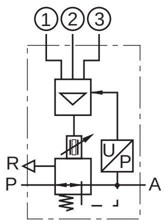
Pressure Regulating Valve

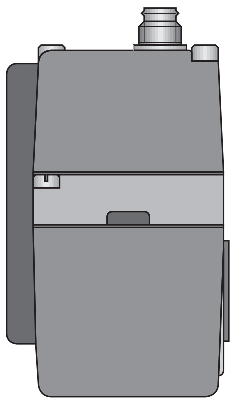
G1/8, NW2

Electronically controlled (proportional pressure regulating valve with Piezo 2000)

airfit tecno

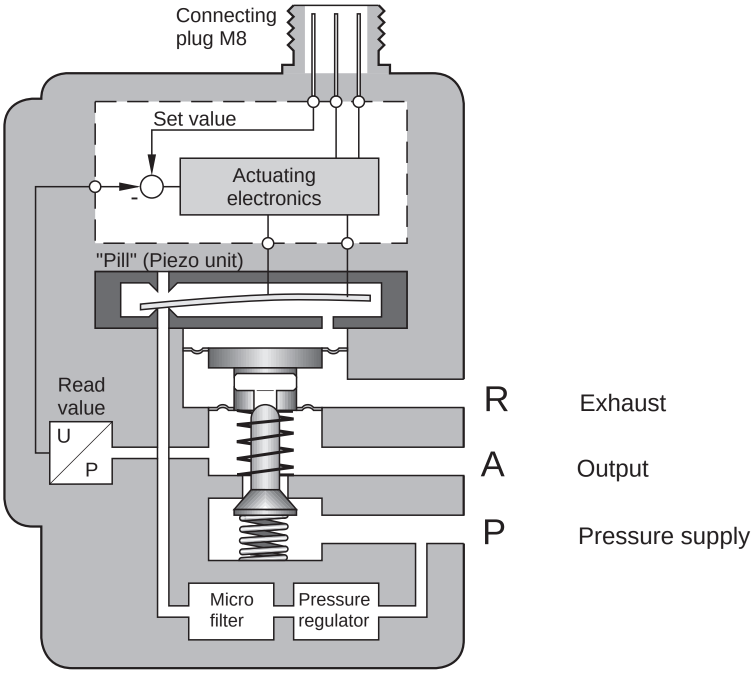
PRE-.





Electronically controlled pressure regulating valve with actual value feed-back. The unit is highly adaptable to prevailing operating conditions. Remote controlled.

HOERBIGER ORIGA



How it Works

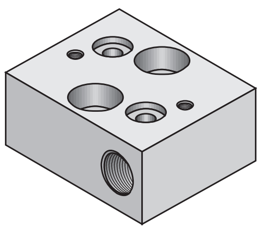
The actuating element in the **tecno** is not a solenoid system, as in conven-tional proportional pressure regulating valves, but the so-called pill – an encapsu-lated Piezo-ceramic element based on the jet-and- baffle principle.

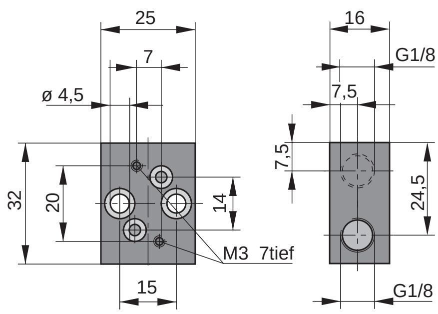
The pill makes use of the Piezo effect: the Piezo-ceramic element bends when a voltage is applied to it.

A built-in electronic control system applies variable voltage to the element, producing variable bending and therefore variable pressure on the diaphragm in the pilot chamber. Diaphragm movement is transferred to the main valve by a plunger acting against a spring.

The pressure thus produced at the valve outlet is compared via a sensor with the preset value and if necessary corrected by the electronic control system.

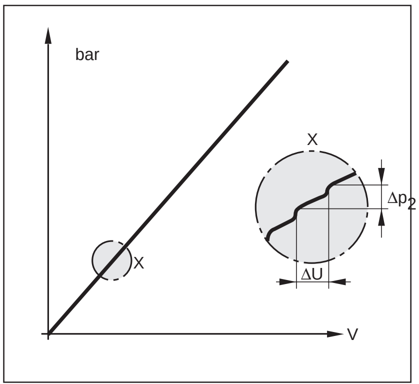
Accessories – Base Plate G1/8





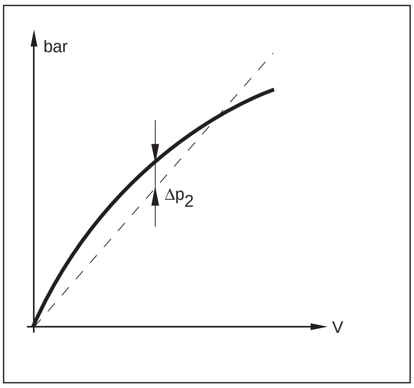
Sensitivity

The smallest change in the electronic input signal which leads to a change in actual output pressure is referred to as sensitivity and this is expressed as a percentage of maximum output pressure. Sensitivity of the **tecno** valve is below 0.1%, which allows output pressure to be set very precisely.

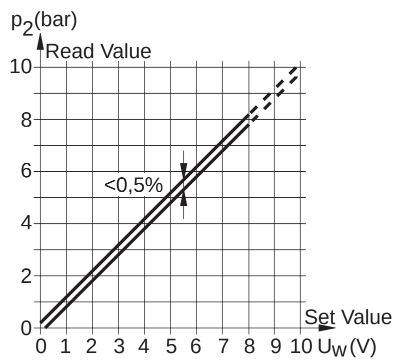


Linearity

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, and is below for the **tecno** valve.

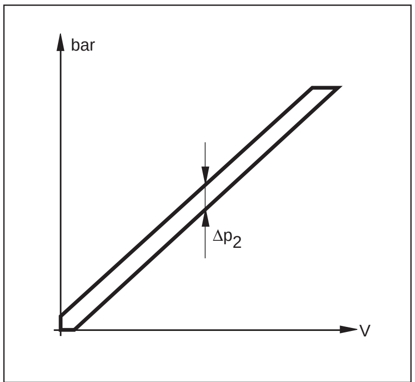


Output Pressure as Function of Input Pressure



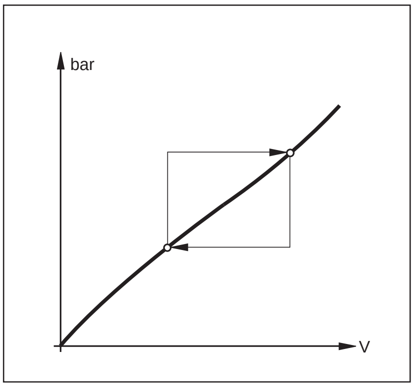
Hysteresis

The same electronic signal generates slightly different actual output pressures, depending on whether the previous signal was higher or lower. This differences, known as hysteresis, is caused by friction and temporary deformation of elastic components. The hysteresis of the elctronically operated pressure regulating valve **AIRFIT tecno** from HOERBIGER is below 0.05 bar.

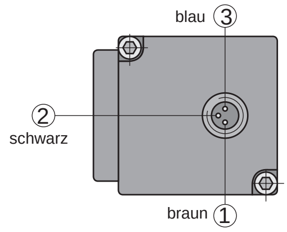


Repeatability

Control components, for a given set value, usually produce repeated actual values which differ less from each other than from the abolute set value, because the relatively large linearity deviation is excluded. Repeatability is improved if hysteresis is minimised.



Connection Diagram

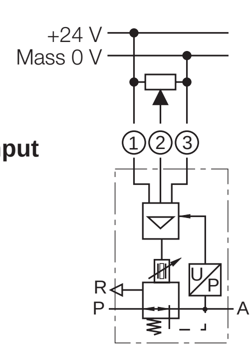


Voltage input 0-10 V
Type PRE–U
1 = Power supply 24 V DC / 10 mA
2 = Set value 0-10 V 1 V / 1 bar
3 = Ground 0 V

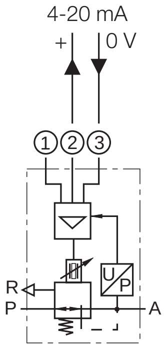
Current input 4-20 mA
Type PRE–I
(two wire technology)
1 = –
2 = Set value 4-20 mA, Current input +
3 = Ground 0 V

Examples of Connections

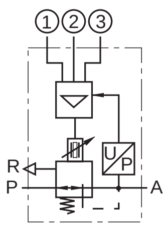
Voltage Input
0-10 V



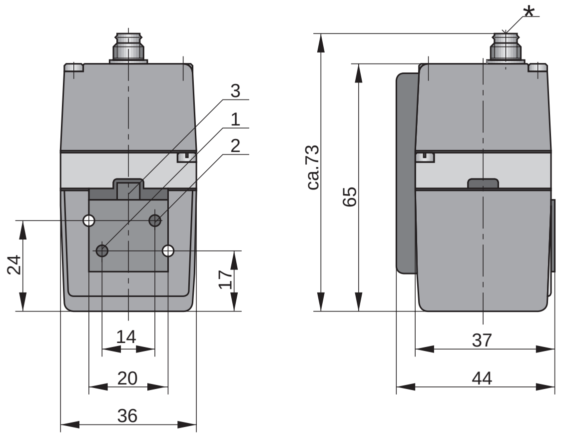
Current Input
4-20 mA



Internal Construction

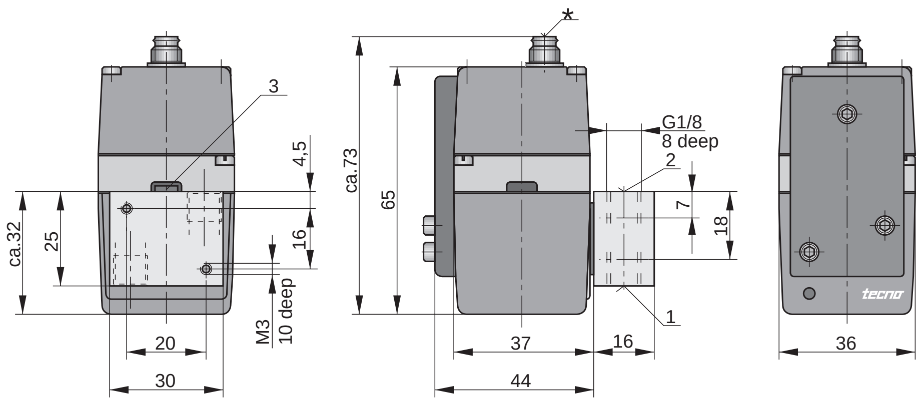


Dimensions (mm)
Type: PRE-U (without Base Plate)



* Connection for 3-pole Plug M8

Dimensions (mm)
Type: PRE-I (with Base Plate)



* Connection for 3-pole Plug M8

Order Instructions

Version	Order Instructions Type	Order No.
. **Voltage Input 0-10 V** Proportional pressure regulating valve without base plate , without plug (Flange)	**PRE-U**	**PS11110-A**
Current Input 4-20 mA base plate , without plug (Flange) Proportional pressure regulating valve without	**PRE-I**	**PS11111-A**
Accessories		
Base Plate G1/8		**PS11112-A-01**
Cable Set with straight plug		**KC3104**
Cable Set with bended plug		**KC3106**

Further informations: Please contact
HOERBIGER-ORIGA GMBH, Dießener Str. 8, D-86956 Schongau, Phone (08861) 2301-0, Fax (08861) 2301-10