ELECTRONICALLY CONTROLLED PRESSURE REGULATING VALVE (PROPORTIONAL PRESSURE REGULATING VALVE) SERIES

airfit control

HOERBIGER

ORIGA

Description	Abb.	Port size	Recommended flow (l/min)*	**Type**	Data Sheet No.
airfit tecno Proportional pressure valve 0-10 V		G1/8	115 (Nominal flow)	**PRE-U**	5.96.002E
airfit tecno Proportional pressure valve 4-20 mA			G1/8	115 (Nominal flow)	**PRE-I** 5.96.002E
airfit control Proportional pressure valve 0-10 V normally closed normally open		G1/4 G3/8	550 (2200*) 850 (2500*)	**SRE-U-1/4** **SRE-U-3/8**	5.96.004E
airfit control Proportional pressure valve 4-20 mA		G1/4 G3/8	550 (2200*) 850 (2500*)	**SRE-I-1/4** **SRE-I-3/8**	5.96.004E
airfit control Proportional pressure valve 0-20 mA		G1/4 G3/8	550 (2200*) 850 (2500*)	**SRE-I-1/4** **SRE-I-3/8**	5.96.004E
airfit control Proportional pressure valve 0-10 V normally closed normally open		G3/8 G1/2	850 (4500*) 1900 (6000*)	**CRE-U-3/8** **CRE-U-1/2**	5.96.005E
airfit control Proportional pressure valve 4-20 mA		G3/8 G1/2	850 (4500*) 1900 (6000*)	**CRE-I-3/8** **CRE-I-1/2**	5.96.005E
airfit control Proportional pressure valve 0-20 mA		G3/8 G1/2	850 (4500*) 1900 (6000*)	**CRE-I-3/8** **CRE-I-1/2**	5.96.005E

* Max. flow at p_1 =10 bar to p_2 = 6:3 bar, Δp = 1 bar

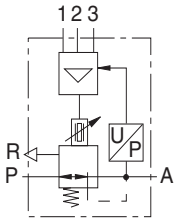
Pressure Regulating Valve

G1/8, NW 2.5

Electronically controlled (proportional pressure regulating valve with piezo pilot)

airfit tecno

PRE-.



Versions

- Voltage controlled (Type PRE-U)
- Current controlled (Type PRE-I)
- 3 pressure ranges
- Option: actual value output
- Option: EMV-mass

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

Characteristics to VDI 3292			Pressures quoted as gauge pressures		
System			3 way proportional pressure regulator with PIEZO pilot control and pneumatic and electronic feedback.		
Flow direction			In: from 1 to 2 Out: from 2 to 3		
Reaction to power failure			Port 2 vents to 0 bar		
Mounting			Flange		
Port size			NW 2.5 without base plate G1/8 with base plate		
Installation			In any position		
Weight (mass)		kg	0.160 without base plate 0.215 with base plate		
Medium and ambient temperature range	T_{min} T_{max}	°C °C	0 +50		
Storage temperature	T_{min} T_{max}	°C °C	-30 +60		
Medium			Filtered, dry, lubricated [1] or oil-free compressed air		
Filtration		µm	30; recommended: 5		
Electrical protection		IP	30 to DIN EN 60529		
Materials Housing Internal parts Seals			Anodized aluminium, plastic Aluminium, brass, plastic NBR		
Pneumatic Characteristics					
Version			**0-8 bar**	**0-2 bar**	**0-200 mbar**
Pressure range, inlet	$p_{1\ min}$ $p_{1\ max}$	bar bar	1.5 10	1.5 6	1.5 2.5
Pressure range, outlet	$p_{2\ min}$ $p_{2\ max}$	bar bar	0 [2] 8	0 2	0 0.2
Nominal flow rate	Q_N	l/min	200		
Maximum flow rate [3]	Q_N	l/min	350		
Hysteresis [5]	Δp_2	%	< 0.2	< 0.2	< 0.5
Repeatability	Δp_2	%	< 0.2	< 0.2	< 0.5
Responsiveness [5]	Δp_2	%	< 0.1	< 0.1	< 0.5
Linearity [4] [5]	$\Delta p_{2\ max}$	%	< 0.5	< 0.5	< 2
Own air consumption [6]		Nl/min	≤ 0.6	≤ 0.5	≤ 0.4
Electrical Characteristics see page 2					

[1] oil-free air is recommended.
If the system must have lubricated air, sparing lubrication (max. 30 mg/m3) is recommended.
[2] other pressure ranges on request.
[3] at p_1=10 bar and p_2=6.3 bar, Δp=1 bar.
[4] at ambient temperature 20 °C.
[5] relative to p_{2max}.
[6] at p_1 max.

HOERBIGER ORIGA

Continuation of Characteristics			Pressures quoted as gauge pressures
Electrical Characteristics, General			
Connector			3-pin connector M8 [7 or to DIN 43650-1 C
Electromagnetic Compatibility (EMC) [8]			
Resistance to interference			EN 61000-6-2
Interference emissions			EN 50 081-1
Electrical Characteristics for Type PRE-U			
Nominal voltage	U_N	V DC	24 ±10 %
Nominal power max.	P_N	W	0.4
Residual ripple max.		%	10
Current consumption	I_{Bmax}	mA	15
Set value input	W	V	0-10
Version 0 - 8 bar			0 V → 0 bar, 8 V → 8 bar
Version 0 - 2 bar			0 V → 0 bar, 10 V → 2 bar
Version 0 - 0.2 bar			0 V → 0 bar, 10 V → 0.2 bar
Input resistance	R_E	kΩ	61.5
Electrical Characteristics for Type PRE-I			
Power supply [9	I_B	mA	4
Power supply [9	W	mA	4...20
Max. voltage at input [10]	U_{Wmax}	V	12.5
Version 0 - 8 bar			4 mA → 0 bar, 20 mA → 8 bar
Version 0 - 2 bar			4 mA → 0 bar, 20 mA → 2 bar
Version 0 - 0.2 bar			4 mA → 0 bar, 20 mA → 0.2 bar
Input resistance	R_E	Ω	≤ 550
Actual value output [11]			
Output voltage	U_X	V	0 bar → 1.25 V $p_{2\ max}$ → 6.25 V
Output current max.	I_X max	mA	1
Internal protective resistance	R_I	Ω	1000

[7] depending on version, see Order No.'s, Page 6.
[8] To comply with the specification, shielded connecting cables must be used
[9] 2-wire technology, i.e. power supply and set value via the same cable.
[10] higher voltage will damage the valve.
[11] optional, see Order No.'s, page 6.

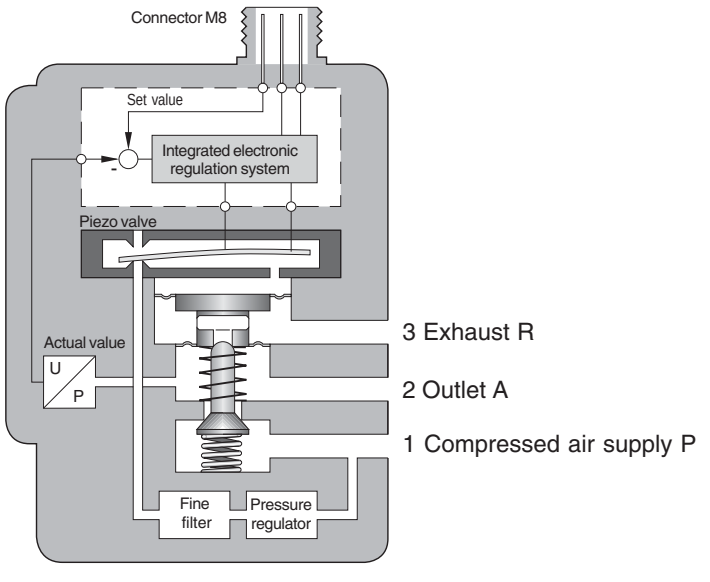
How it Works

The actuating element in the **tecno valve** is not a solenoid system, as in conventional proportional pressure regulating valves, but a piezo valve – an encapsulated Piezo-ceramic element based on the jet-and- baffle principle.

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

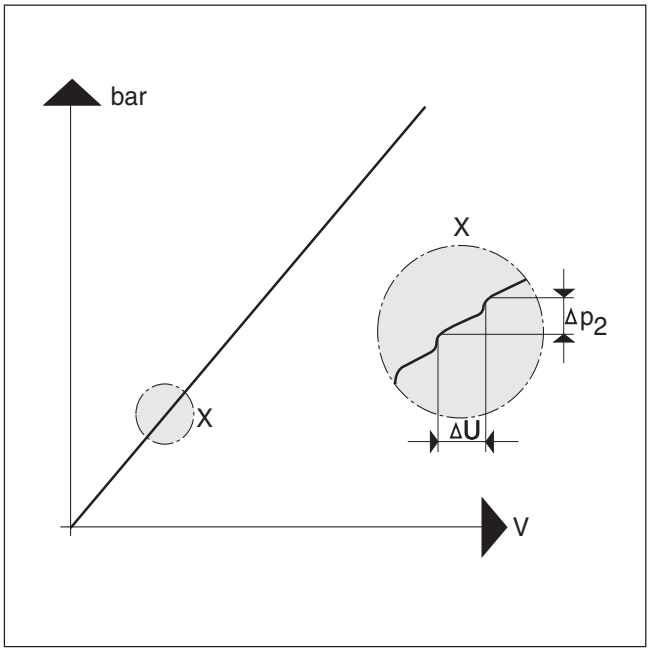
A built-in electronic control system applies variable voltage to the element, producing variable bending and therefore variable pressure on the diaphragm in the pilot chamber. Diaphragm movement is transferred to the main valve by a plunger acting against a spring.

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.



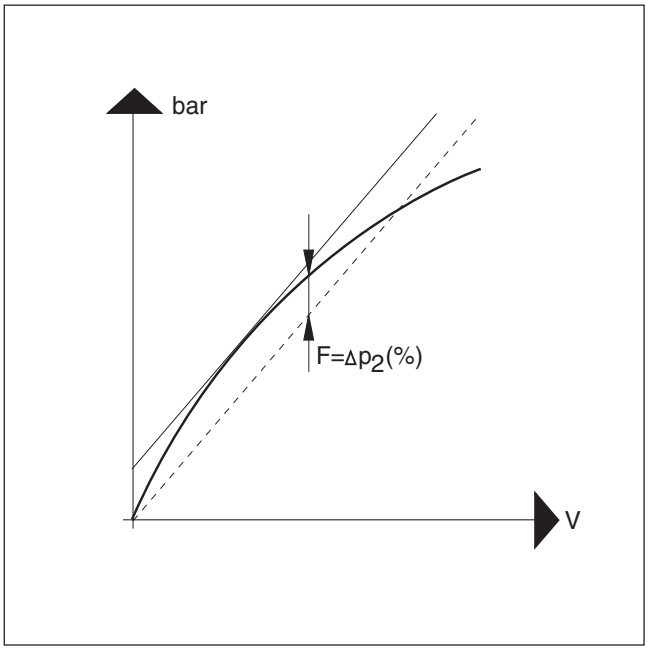
Sensitivity

The smallest change in the electronic input signal which 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.



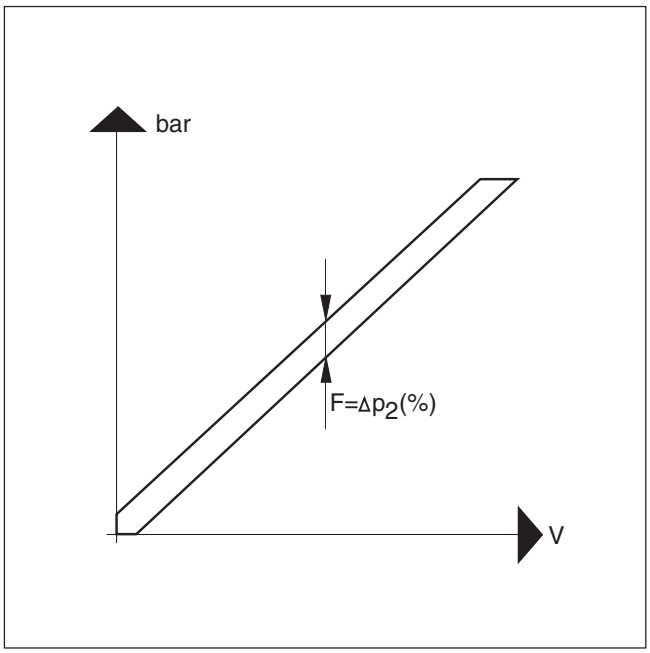
Linearity

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.



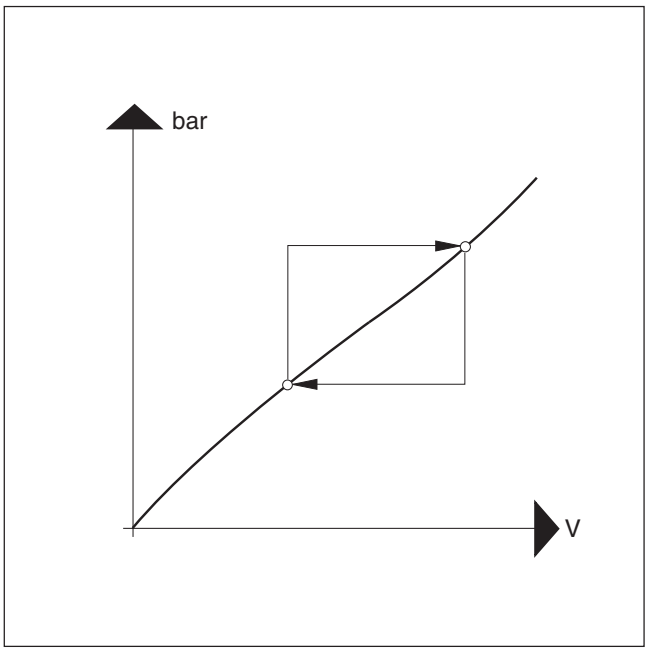
Hysteresis

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 HOERBIGER is between < 0.2 % and < 0.5 % of the output pressure.

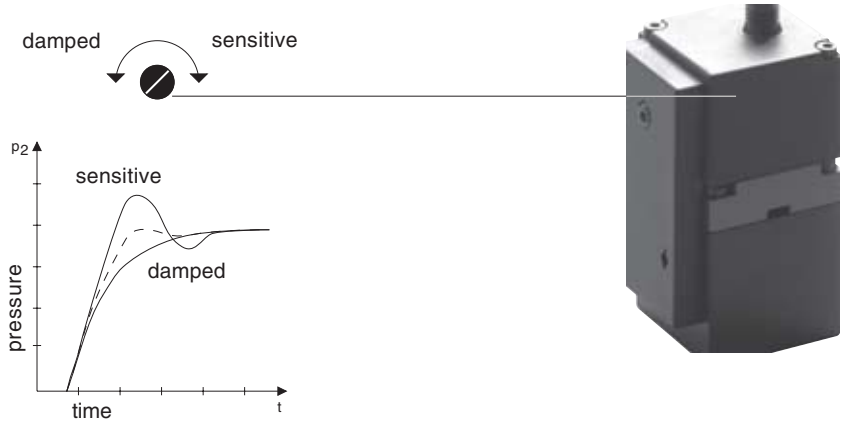


Repeatability

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

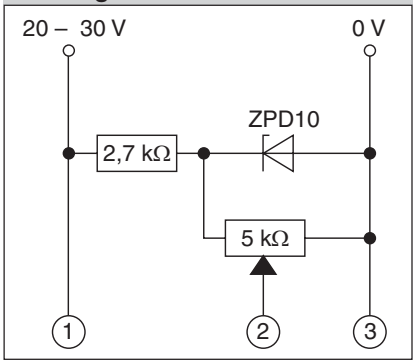


Adjustment



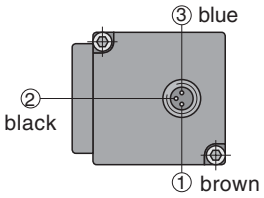
The regulation amplification of the electronic regulation system is designed for universal use of the valve and is preset at the factory for a minimum volume of ca. 5 ml.
If required the regulation amplification can be adjusted for higher sensitivity (with larger volume) - see diagram. However if the setting is too sensitive the outlet pressure can tend towards instability.

Examples of Connections – Voltage controlled 0-10 V



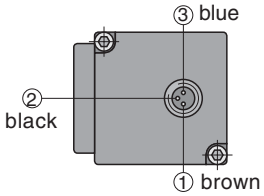
Connection Diagram for 3-pole plug

Connections Diagram No. 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

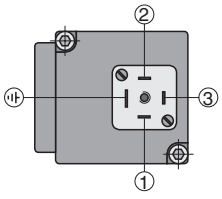
Connections Diagram No. 2



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

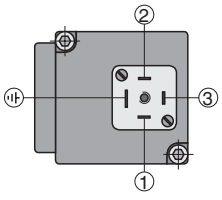
Connection Diagram for plug to 43650-1C

Connections Diagram No. 3



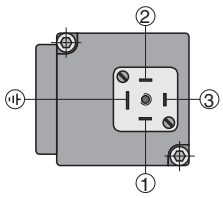
Voltage-controlled 0-10 V, Type PRE-U with actual value output
1 = power supply 24 V DC
2 = set value 0-10 V
3 = actual value output 1.25 V (0 bar output), – 6.25 V (p_{max} output)
⏚ GND set value and power supply

Connections Diagram No. 4



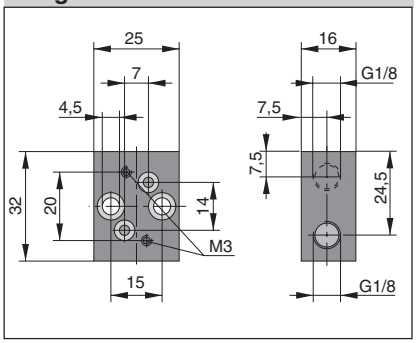
Voltage-controlled 0-10 V, Type PRE-U with EMC mass
1 = power supply 24 V DC
2 = set value 0-10 V
3 = GND set value and power supply
⏚ EMC mass

Connections Diagram No. 5

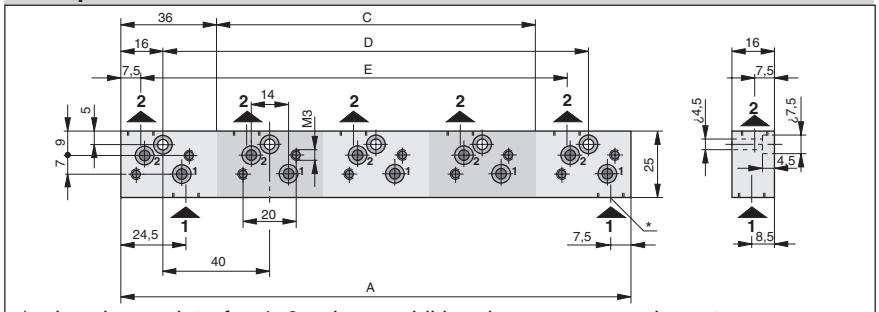


Current-controlled 4-20 mA, Type PRE-I with EMC mass
1 = free
2 = set value 4-20 mA, +
3 = set value GND
⏚ EMC mass

Dimensions (mm)
Single Base Plate G1/8



Dimensions (mm)
Multiple Base Plate G1/8

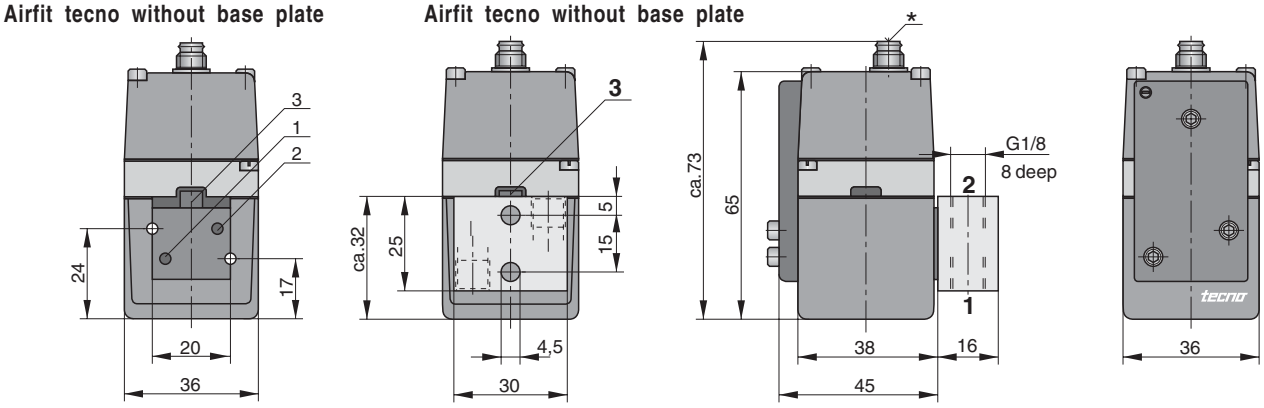


* when base plate for 4..6 valves: additional pressure supply port

Table of dimensions (mm) and Weight (mass)
Multiple Base Plate G1/8

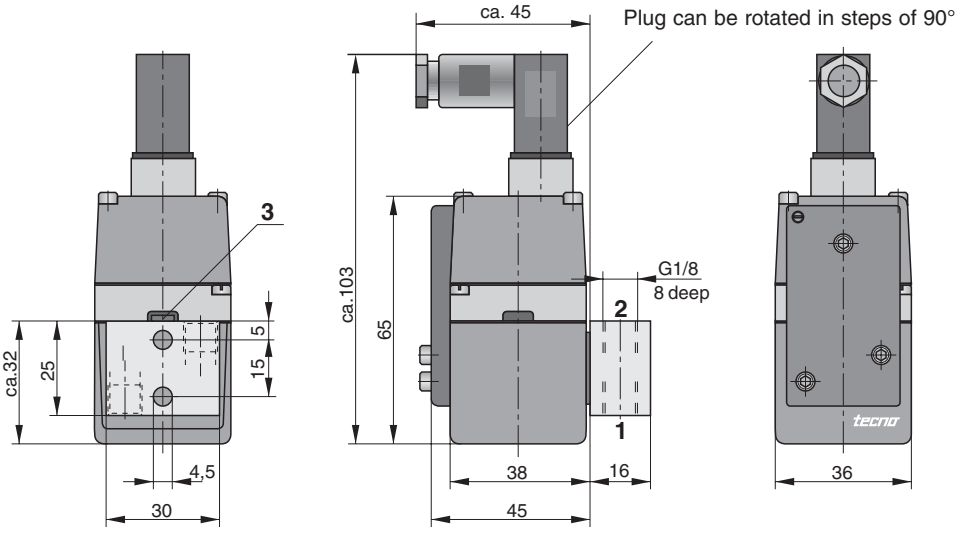
Number of valves	Dimensions (mm) A	C	D	E	Port size 1	2	Weight (mass) (kg)
2	72	0	40	40	1 x G1/8	G1/8	0.07
3	112	40	80	80	1 x G1/8	G1/8	0.11
4	152	80	120	120	2 x G1/8	G1/8	0.15
5	192	120	160	160	2 x G1/8	G1/8	0.19
6	232	160	200	200	2 x G1/8	G1/8	0.23

Dimensional Diagram No.1 (dimensions in mm)
Version with 3-pole connector and base plate



* Connection for 3-pole Plug M8 (KC3104, KC3106)

Dimensional Diagram No.2 (dimensions in mm)
Version with plug to DIN 43650-1C and base plate



Data Sheet No. 5.96.002E-5

Order Instructions

Version	Elec. Conn. Diagram No.	Dimensional Diagram No.	Order Instructions Type	Order No.
Sets, complete, (0-8 bar) consisting of				
Prop.-pressure regulating valve, 0-8 V Base plate G1/8, cable set straight (2m)	1	1	**PRE-U-01**	**PS11140-B-01**
Prop.-pressure regulating valve, 0-8 V Base plate G1/8, cable set bended (2m)	1	1	**PRE-U-01**	**PS11150-B-01**
Prop.-pressure regulating valve, 4-20 mA 2 Base plate G1/8, cable set straight (2m)	1		**PRE-I-01**	**PS11141-B-01**
Prop.-pressure regulating valve, 4-20 mA 2 Base plate G1/8, cable set bended (2m)	1		**PRE-I-01**	**PS11151-B-01**

Prop.-pressure regulating valve NW 2.5 (without accessories)				
Prop.-pressure regulating valve, 0-8 V, 0-8 bar	1	1	**PRE-U**	**PS11110-B**
Prop.-pressure regulating valve, 4-20 mA, 0-8 bar	2	1	**PRE-I**	**PS11111-B**
Prop.-pressure regulating valve, 0-10 V, 0-2 bar	1	1	**PRE-U**	**PS11130-B-20**
Prop.-pressure regulating valve, 4-20 mA, 0-2 bar	2	1	**PRE-I**	**PS11139-B-20**
Prop.-pressure regulating valve, 0-10 V, 0-200 mbar	1	1	**PRE-U**	**PS11130-B-02**
Prop.-pressure regulating valve, 4-20 mA, 0-200 mbar	2	1	**PRE-I**	**PS11139-A-02**

Prop.-pressure regulating valve NW 2.5 with actual value output and plug to DIN 43650-1C (single units without accessories) *				
Prop.-pressure regulating valve, 0-8 V, 0-8 bar, Actual value output 1.25 V (0 bar) – 6.25 V (8 bar)	3	2	**PRE-U**	**PS11113-B**
Prop.-pressure regulating valve, 0-10 V, 0-2 bar, Actual value output 1.25 V (0 bar) - 6.25 V (2 bar)	3	2	**PRE-U**	**PS11162-B-20**
Prop.-pressure regulating valve, 0 -10 V, 0-0.2 bar, Actual value output 1.25 V (0 bar) - 6.25 V (0,2 bar)	3	2	**PRE-U**	**PS11162-B-02**

Prop.-pressure regulating valve NW 2.5 with EMV-mass and plug to DIN 43650-1C (single units without accessories) *				
Prop.-pressure regulating valve, 0-8 V, 0-8 bar	4	2	**PRE-U**	**PS11164-B**
Prop.-pressure regulating valve, 0-10 V, 0 -2 bar	4	2	**PRE-U**	**PS11165-B-20**
Prop.-pressure regulating valve, 0-10 V, 0-0.2 bar	4	2	**PRE-U**	**PS11165-B-02**
Prop.-pressure regulating valve, 4-20 mA, 0-8 bar	5	2	**PRE-I**	**PS11168-B**
Prop.-pressure regulating valve, 4-20 mA, 0-2 bar	5	2	**PRE-I**	**PS11169-B-20**
Prop.-pressure regulating valve, 4-20 mA, 0-0.2 bar	5	2	**PRE-I**	**PS11169-B-02**

* Corresponding connector included

Accessories	
Single base plate G1/8	**PS11112-A-01**
Multiple base plate G1/8, for 2 valves	**PS11112-A-02**
Multiple base plate G1/8, for 4 valves	**PS11112-A-04**
Multiple base plate G1/8, for 6 valves	**PS11112-A-06**
Cover plate, complete	**PS11160-A**
Cable set straight (5 m)	**KC3104**
Cable set bended (5 m)	**KC3106**

Characteristics to VDI 3292			Pressures quoted as gauge pressures	
System			Piston-type pressure regulating valve, pilot operated, with pneumatic and electric feedback	
Type			**SRE-1/4**	**SRE-3/8**
Port size			**G1/4**	**G3/8**
Installation			In any position	
Weight (mass)		kg	0.6	
Medium and ambient temperature	T_{min} T_{max}	°C °C	0 +50	
Medium			Filtered, lubricated or oil-free compressed air	
Lubrication			Not required	
Pneumatic Characteristics				
Nominal pressure	p_n	bar	6.3	
Inlet pressure range [1]	p_{1min} p_{1max}	bar bar	0 10	
Outlet pressure range	p_{2min} p_{2max}	bar bar	0 10	
Nominal flow [2]	Q_N	l/min m³/h	**2200** **132**	**2500** **150**
Recommended flow [3]	Q	l/min m³/h	**550** **33**	**850** **51**
Hysteresis [4]	p_{2max}	%	<1	
Repeatability [4]	p_{2max}	%	<0.5	
Sensitivity [4]	p_{2max}	%	<0.5	
Linearity [4]	p_{2max}	%	<1	
Electrical Characteristics				
Nominal voltage	U_N	V DC	24 V = ± 10 %	
Residual ripple		%	10	
Power consumption	I_{Bmax}	A	0.15	
Set value input	U_W I	V mA	0 – 10 0 – 20, 4 – 20	
Input resistance	R_E	k	200	
Actual value output	U_X	V	0 – 10	
Output current	I_{Amax}	mA	20	
Electrical protection		IP	IP65 to DIN 40050, EN 60529	

[1] $p_1 \geq p_2 + 10\ \% \ p_2$
[2] at p_1 = 10 bar to p_2 = 6,3 bar
[3] at 6.3 bar and 25 m/s
[4] see explanation on page 3

For table of contents see 5.96.001E

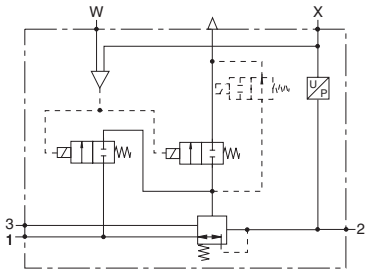
Pressure Regulating Valve

G1/4–G3/8

Electronically controlled (proportional pressure regulating valve)

airfit control

SRE-..



Special solutions (e.g. temperature, pressure, medium ...) on request

- Electronically controlled pressure regulating valve
- Remote controlled
- Control- and operating pressure from 0 bar
- Airfit design
- Direct coupling with airfit swing units
- No air consumption

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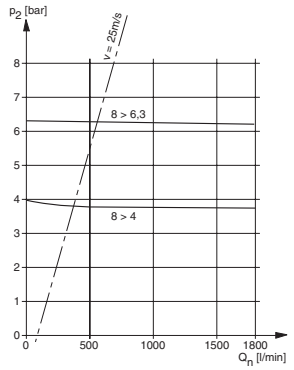
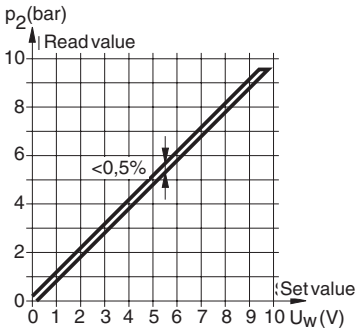
Flow Characteristics Type: SRE-1/4

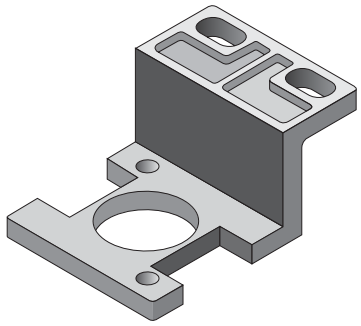


Output Pressure as Function of Input Voltage



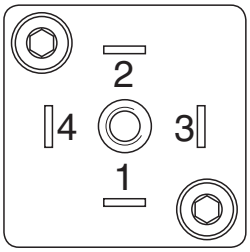
Accessories

Mounting kit



Order no.: PL 16965

Connection Diagram



Pin 1: Power supply
Plus +24 V DC ± 10%
0,15 A
Residual ripple 10%

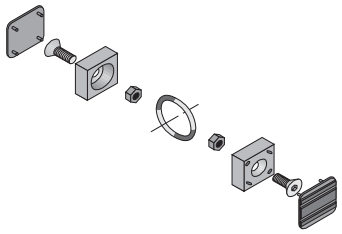
Pin 2: Power supply 0 V
Reference and mass capacity for set- and actual value

Pin 3: Set value input
Positive set value voltage (0-20 mA, 4-20 mA), 0 – 10 V

Pin 4: Analog actual value output. 0 – 10 V for units with 10 bar output pressure.
This output has a max. capacity of 20 mA. The signal voltage is compared to the reference capacity (pin 2)

Accessories

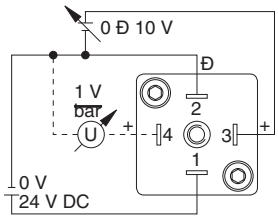
Coupling kit



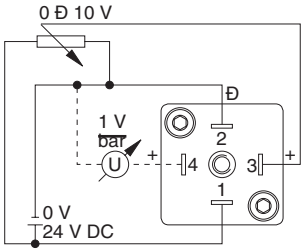
Order No.: PL 16959

Control Options

Analog voltage

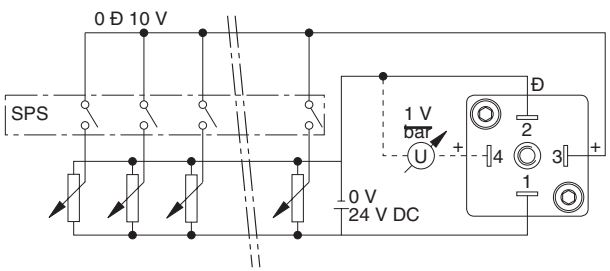


with a single potentiometer



The resistance of the potentiometer should range between 500 ý and 100 ký.

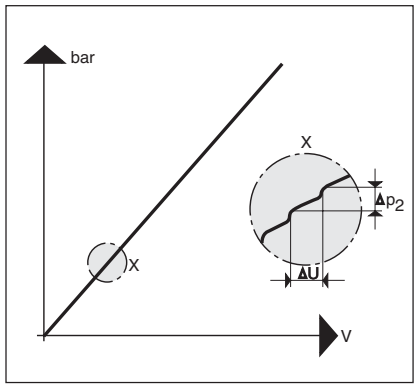
PLC in connection with several potentiometers



The total resistance of the potentiometer series should not be less than 500 ý.

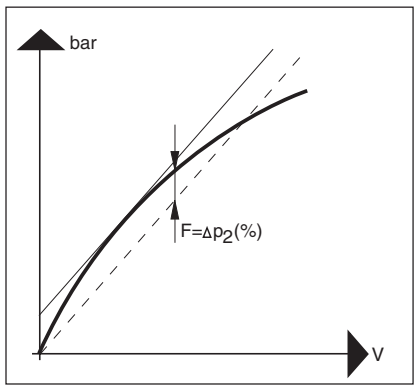
Sensitivity

The smallest deviation from set output pressure 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 XRE II valve is below 0.5%, which allows output pressure to be set very precisely.



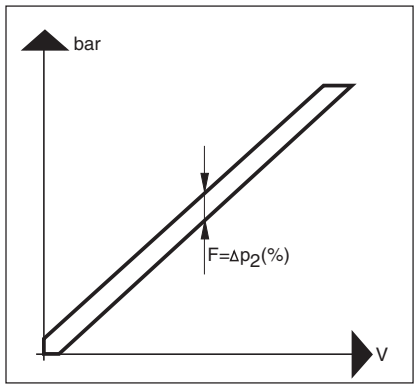
Linearity

The ideal curve showing output pressure in relation to electronic signal would be a straight (linear) line (see dotted line), to predict exactly which pressure can be expected at a given voltage. The deviation can be calculated from the maximal deviation from the straight line, in relation to the highest possible pressure.



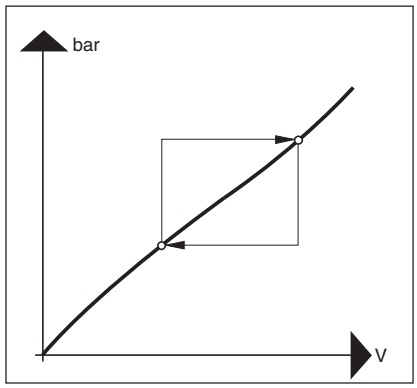
Hysteresis

The same set output pressure generates slightly different actual output pressures, depending on whether the previous setting was higher or lower. This difference, known as hysteresis, is caused by friction and temporary deformation of elastic components. The hysteresis of the SRE valve is below 0.1 bar.



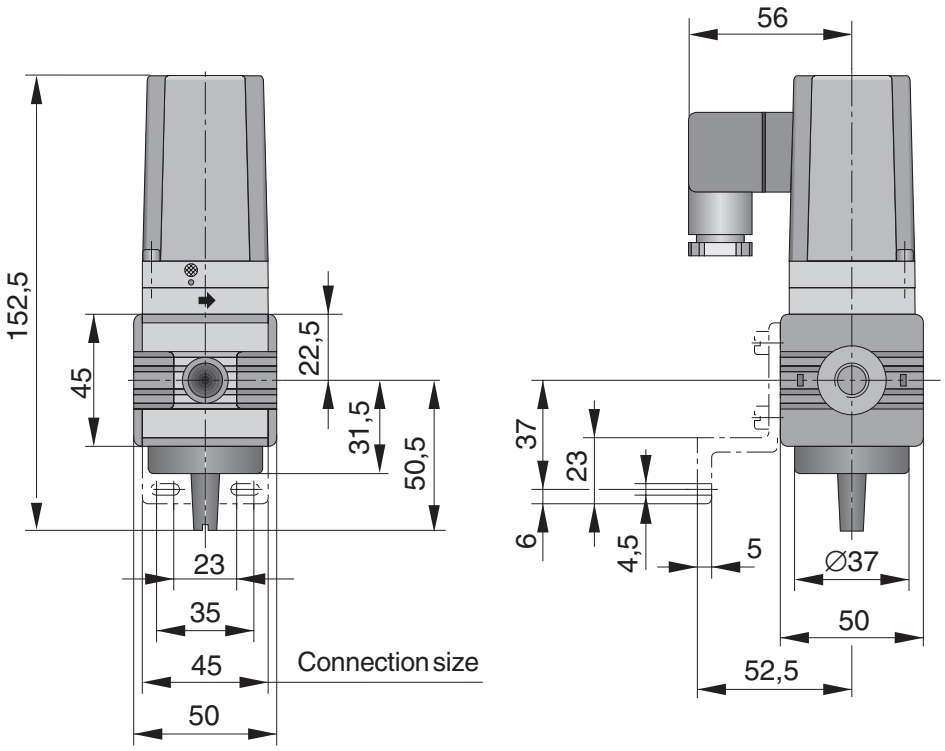
Repeatability

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.



Dimensions (mm)

Type: SRE-1/4



Order Instructions

Basic model for control 0– 10 V, NG (normally closed)			
Port size	max. output pressure (bar)	**Type**	**Order No.**
G1/4	10	**SRE-U-1/4 NG**	**PB 59849-000**
G3/8	10	**SRE-U-3/8 NG**	**PB 59949-000**
Version for control 4 – 20 mA, NG (normally closed)			
G1/4	10	**SRE-I-1/4 NG**	**PB 59849-002**
G3/8	10	**SRE-I-3/8 NG**	**PB 59949-002**
Version for control 0 – 20 mA, NG (normally closed)			
G1/4	10	**SRE-I-1/4 NG**	**PB 59849-001**
G3/8	10	**SRE-I-3/8 NG**	**PB 59949-001**
Version for control 0– 10 V, NO (normally open)			
G1/4	10	**SRE-U-1/4 NO**	**PB 59849-010**
G3/8	10	**SRE-U-3/8 NO**	**PB 59949-010**
Version for control 4 – 20 mA, NO (normally open)			
G1/4	10	**SRE-U-1/4 NO**	**PB 59849-012**
G3/8	10	**SRE-U-3/8 NO**	**PB 59949-012**
Version for control 0 – 20 mA, NO (normally open)			
G1/4	10	**SRE-U-1/4 NO**	**PB 59849-011**
G3/8	10	**SRE-U-3/8 NO**	**PB 59949-011**
For the version with NPTF thread, complete the Order No. as follows: PB ...49-... → PB ...49-N...			
Accessories			
Mounting kit			**PL 16965**

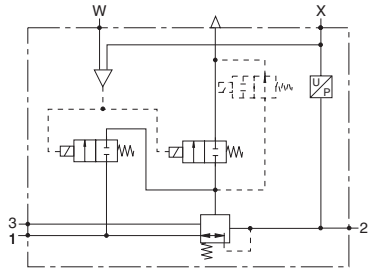
Pressure Regulating Valve

G3/8-G1/2

Electronically controlled
(proportional pressure regulating valve)

airfit control

CRE



Special solutions
(e.g. temperature, pressure, medium ...) on request

- Electronically controlled pressure regulating valve
- remote controlled
- Control- and operating pressure from 0 bar
- Airfit design
- Version with NPTF-thread
- no air consumption

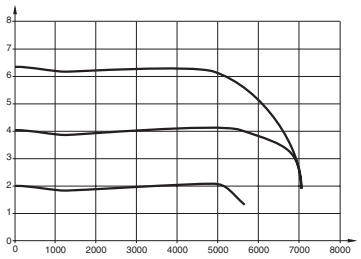
Characteristics to VDI 3292			Pressures quoted as gauge pressures	
System			Piston-type pressure regulating valve, pilot operated, with pneumatic and electric feedback	
Type			**CRE-3/8**	**CRE-1/2**
Port size			**G3/8**	**G1/2**
Installation			In any position	
Weight (mass)		kg	0.95	
Medium and ambient temperature	T_{min} T_{max}	°C °C	0 +50	
Medium			Filtered, lubricated or oil-free compressed air	
Lubrication			Not required	
Pneumatic Characteristics				
Nominal pressure	p_n	bar	6.3	
Inlet pressure range[1)]	p_{1min} p_{1max}	bar bar	0 16	
Outlet pressure range	p_{2min} p_{2max}	bar bar	0 10	
Nominal flow[2)]	Q_N	l/min m^3/h	**4500** **270**	**6000** **360**
Recommended flow[3)]	Q	l/min m^3/h	**850** **51**	**1900** **114**
Hysteresis[4)]	p_{2max}	%	<1	
Repeatability[4)]	p_{2max}	%	<0.5	
Sensitivity[4)]	p_{2max}	%	<0.5	
Linearity[4)]	p_{2max}	%	<1	
Electrical Characteristics				
Nominal voltage	U_N	V DC	24 V = ± 10 %	
Residual ripple		%	10	
Power consumption	I_{Bmax}	A	0.15	
Set value input	U_W I	V mA	0 – 10 (1V =1bar) 0 – 20, 4 – 20	
Input resistance	R_E	k	200	
Actual value output	U_X	V	0 – 10	
Output current	I_{Amax}	mA	20	
Electrical protection		IP	IP 65 acc. DIN 40050, EN 60529	

1) p1 ≥ p2 + 10 % p2
2) at p_1 = 10 bar to p_2 = 6.3 bar
3) at 6.3 bar and 25 m/s
4) see explanation on page 3

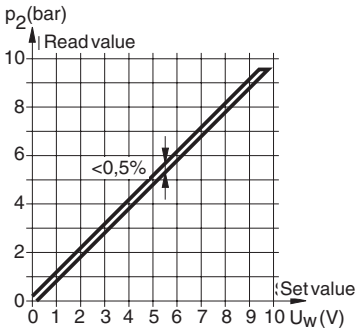
For table of contents see 5.96.001E

HOERBIGER ORIGA

Flow Characteristics Type: CRE-1/2



Output Pressure as Function of Input Voltage

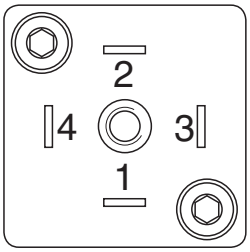


Accessories

Mounting kit

Order no.: PL 17518

Connection Diagram



Pin 1: Power supply
Plus +24 V DC ± 10%
0,15 A
Residual ripple 10%

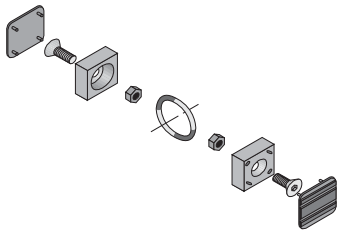
Pin 2: Power supply 0 V
Reference and mass capacity for set- and actual value

Pin 3: Set value input
Positive set value voltage of 0 – 10 V

Pin 4: Analog actual value output. 0 – 10 V for units with 10 bar output pressure.
This output has a max. capacity of 20 mA. The signal voltage is compared to the reference capacity (pin 2)

Accessories

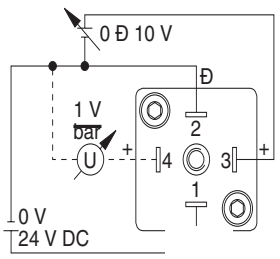
Coupling kit



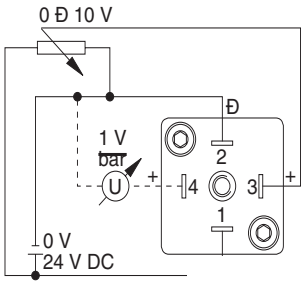
Order No.: PL 17608

Control Options

Analog voltage

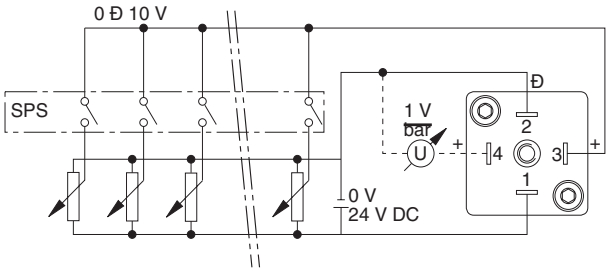


with a single potentiometer



The resistance of the potentiometer should range between 500 ý and 100 ký.

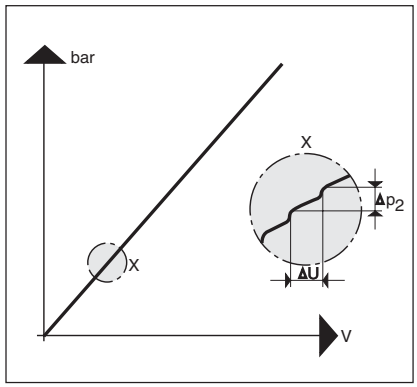
PLC in connection with several potentiometers



The total resistance of the potentiometer series should not be less than 500 ý.

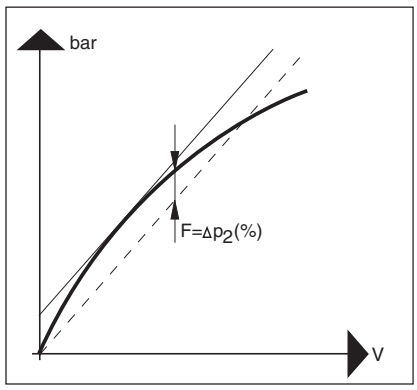
Sensitivity

The smallest deviation from set output pressure 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 CRE valve is below 0.5%, 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 (linear) line (see dotted line), to predict exactly which pressure can be expected at a given voltage. The deviation can be calculated from the maximal deviation from the straight line, in relation to the highest possible pressure.



Hysteresis

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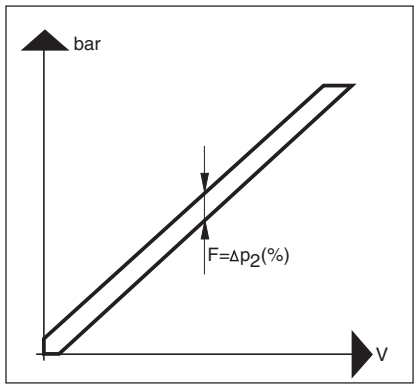
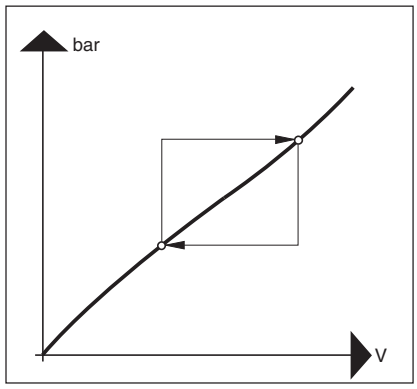


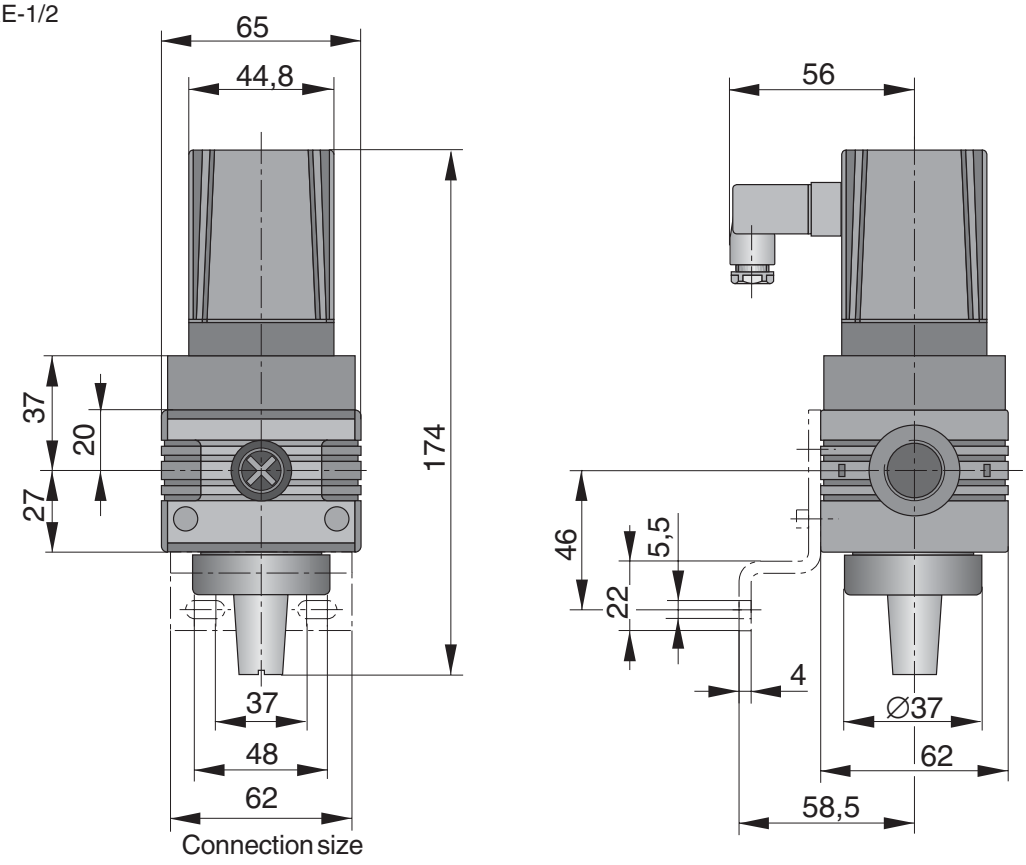
Repeatability

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.



Dimensions (mm)

Type: CRE-1/2



Order Instructions

Basic model for control 0– 10 V, NG (normally closed)			
Port size	max. output pressure (bar)	**Type**	**Order No.**
G3/8	10	**CRE-U-3/8 NG**	**PB 60149-000**
G1/2	10	**CRE-U-1/2 NG**	**PB 60249-000**
Version for control 4 – 20 mA, NG (normally closed)			
G3/8	10	**CRE-I-3/8 NG**	**PB 60149-002**
G1/2	10	**CRE-I-1/2 NG**	**PB 60249-002**
Version for control 0 – 20 mA, NG (normally closed)			
G3/8	10	**CRE-I-3/8 NG**	**PB 60149-001**
G1/2	10	**CRE-I-1/2 NG**	**PB 60249-001**
Version for control 0– 10 V, NO (normally open)			
G3/8	10	**CRE-U-3/8 NO**	**PB 60149-010**
G1/2	10	**CRE-U-1/2 NO**	**PB 60249-010**
Version for control 4 – 20 mA, NO (normally open)			
G3/8	10	**CRE-U-3/8 NO**	**PB 60149-012**
G1/2	10	**CRE-U-1/2 NO**	**PB 60249-010**
Version for control 0 – 20 mA, NO (normally open)			
G3/8	10	**CRE-U-3/8 NO**	**PB 60149-011**
G1/2	10	**CRE-U-1/2 NO**	**PB 60249-010**
Accessories			
Mounting kit			**PL 17518**
Coupling kit			**PL 17608**