

AIRFIT CONTROL

Electronically controlled Pressure Regulating Valves



HOERBIGER
ORIGA

AIRFIT TECNO: SPEED, ACCURACY AND DYNAMICS IN A MINIATURE FORMAT

The *airfit tecno* proportional pressure regulator combines Piezo technology, precision engineering and electronics in a highly compact arrangement, resulting in outstanding regulation speed and accuracy. To illustrate the unit's fast response, less than 7 milliseconds are required from the command to change pressure until the changing pressure is registered at the outlet. The dynamic characteristics are outstanding: with small air volumes the *airfit tecno* achieves a limiting frequency of 43 Hz, i.e. 43 pressure changes per second.

Reduced to the Maximum

Despite its maximised performance capabilities, the minimised dimensions and weight of the *airfit tecno* are remarkable. The exclusive use of proportional components - instead of switching valves - contributes to an unusually long service life. For users who want to install the *airfit tecno* in their own control circuits the unit is also available in an OEM version, i.e. without the electronic regulation system.

airfit tecno



PARAMETERS TO VDI 3292

Mounting			Flange
Port size			NW 2 without base plate G1/8 with base plate
Installation			In any position
Weight (mass)		kg	0.145 without base plate 0.180 with base plate
Flow direction			On: from 1 to 2 Off: from 2 to 3
Medium and ambient temperature range	T_{min} T_{max}	°C °C	0 + 50
Medium			Dry, filtered air (5 µm)
Lubrication			None, or sparing oil mist lubrication (max. 30 mg/m ³)

PNEUMATIC PARAMETERS PRESSURES ARE GAUGE PRESSURES

Input pressure range	p_{1min} p_{1max}	bar	1.5 10		
Output pressure range	p_{2min} p_{2max}	bar	0** 8	0 2	0 0.2
Nominal flow rate	Q_n	l/min	210		
Max. flow rate*	Q_{max}	l/min	350		
Hysteresis	p_{2max}	%	< 0.2	< 0.2	< 0.5
Repeatability	p_{2max}	%	< 0.2	< 0.2	< 0.5
Responsiveness	p_{2max}	%	< 0.1	< 0.1	< 0.5
Linearity	p_{2max}	%	< 0.5	< 0.5	< 1

ELECTRICAL PARAMETERS

Nominal voltage	U_N	V DC	24 = ± 10 %		
Nominal power	P_N	W	0.25		
Residual ripple		%	10		
Power consumption***	I_{Bmax}	mA	10		
Set value input	W		Type: PRE-U	Type: PRE-I	
Version 0–8 bar			0 V ' 0 bar 8 V ' 8 bar	4 mA ' 0 bar 20 mA ' 8 bar	
Version 0–2 bar			0 V ' 0 bar 10 V ' 2 bar	4 mA ' 0 bar 20 mA ' 2 bar	
Version 0–0.2 bar			0 V ' 0 bar 10 V ' 0.2 bar	4 mA ' 0 bar 20 mA ' 0.2 bar	
Input resistance	R_E	kΩ Ω	61.5 with 0–10 V actuation 550 with 4–20 mA actuation		
Protection system		IP	IP52 to DIN 45322		
Connection			3-pin socket M8 or to DIN 43650-1 C		

* at $p_1 = 10$ bar and $p_2 = 6.3$ bar, $\Delta p = 1$ bar

** other pressure ranges on request

*** 0–10 V version

ORDER INSTRUCTIONS, TECNO

VERSION	TYPE	ORDER NO.
COMPLETE SETS (0-8 BAR) CONSISTING OF		
Prop. pressure regulator, 0–8 V, base plate G1/8, cable set straight (2 m)	PRE-U-01	PS11140-B-01
Prop. pressure regulator, 0–8 V, base plate G1/8, cable set angled (2 m)	PRE-U-01	PS11150-B-01
Prop. pressure regulator, 4–20 mA, base plate G1/8, cable set straight (2 m)	PRE-I-01	PS11141-B-01
Prop. pressure regulator, 4–20 mA, base plate G1/8, cable set angled (2 m)	PRE-I-01	PS11151-B-01

PROP. PRESSURE REGULATORS NW 2 (SINGLE UNITS WITHOUT ACCESSORIES)

Prop. pressure regulator, 0–8 V, 0–8 bar	PRE-U	PS11110-B
Prop. pressure regulator, 4–20 mA, 0–8 bar	PRE-I	PS11111-B
Prop. pressure regulator, 0–10 V, 0–2 bar	PRE-U	PS11130-B-20
Prop. pressure regulator, 4–20 mA, 0–2 bar	PRE-I	PS11139-B-20
Prop. pressure regulator, 0–10 V, 0–200 mbar	PRE-U	PS11130-B-02
Prop. pressure regulator, 4–20 mA, 0–200 mbar	PRE-I	PS11139-B-02

ACCESSORIES

Single base plate G1/8		PS11112-A-01
Manifold base plate, 2-fold	G1/8	PS11112-A-02
Manifold base plate, 4-fold	G1/8	PS11112-A-04
Manifold base plate, 6-fold	G1/8	PS11112-A-06
Blind plate complete		PS11160-A
Cable set straight (5 m)		KC3104
Cable set angled (5 m)		KC3106

PROP. PRESSURE REGULATORS NW 2, WITH ACTUAL VALUE OUTPUT AND SOCKET TO DIN 43650-1C (SINGLE UNITS WITHOUT ACCESSORIES) *

Prop. pressure regulator, 0–8 V, 0–8 bar, actual value output 1.25 V (0 bar)–6.25 V (8 bar)	PRE-U	PS11113-B
Prop. pressure regulator, 0–10 V, 0–2 bar, actual value output 1.25 V (0 bar)–6.25 V (2 bar)	PRE-U	PS11162-B-20
Prop. pressure regulator, 0–10 V, 0–0.2 bar, actual value output 1.25 V (0 bar)–6.25 V (0.2 bar)	PRE-U	PS11162-B-02

PROP. PRESSURE REGULATORS NW 2, WITH EMC MASS AND SOCKET TO DIN 43650-1C (SINGLE UNITS WITHOUT ACCESSORIES) *

Prop. pressure regulator, 0–8 V, 0–8 bar	PRE-U	PS11164-B
Prop. pressure regulator, 0–10 V, 0–2 bar	PRE-U	PS11165-B-20
Prop. pressure regulator, 0–10 V, 0–0.2 bar	PRE-U	PS11165-B-02
Prop. pressure regulator, 4–20 mA, 0–8 bar	PRE-I	PS11168-B
Prop. pressure regulator, 4–20 mA, 0–2 bar	PRE-I	PS11169-B-20
Prop. pressure regulator, 4–20 mA, 0–0.2 bar	PRE-I	PS11169-B-02

* cable KC3104 or KC3106 is not required

For detailed technical data please see Data Sheet 5.96.002



airfit tecno:
Proportional
Pressure Regulator
with Piezo Control

The Benefits

- Accurate regulation
- High dynamics
- Long service life
- Low power consumption
- Also available in an OEM version (without electronic regulation system) s. p. 14
- Manifold mounting options

Applications

- Pneumatic brakes
- Tension control in winding machines
- Ultrasonic welding
- Vacuum generation
- Metering technology
- Artificial respiration equipment (OEM version)

Technical Highlights

- Port size G1/8
- Responsiveness < 0.1 %
- Reaction time < 7 ms
- Limiting frequency 43 Hz
- Weight 0.18 kg
- Maximum flow rate 350 l/min
- Pressure ranges 0-8 bar
..... 0-2 bar
..... 0-200 mbar

airfit tecno without regulation system on request: e-mail: interface@hoerbiger-origa.com

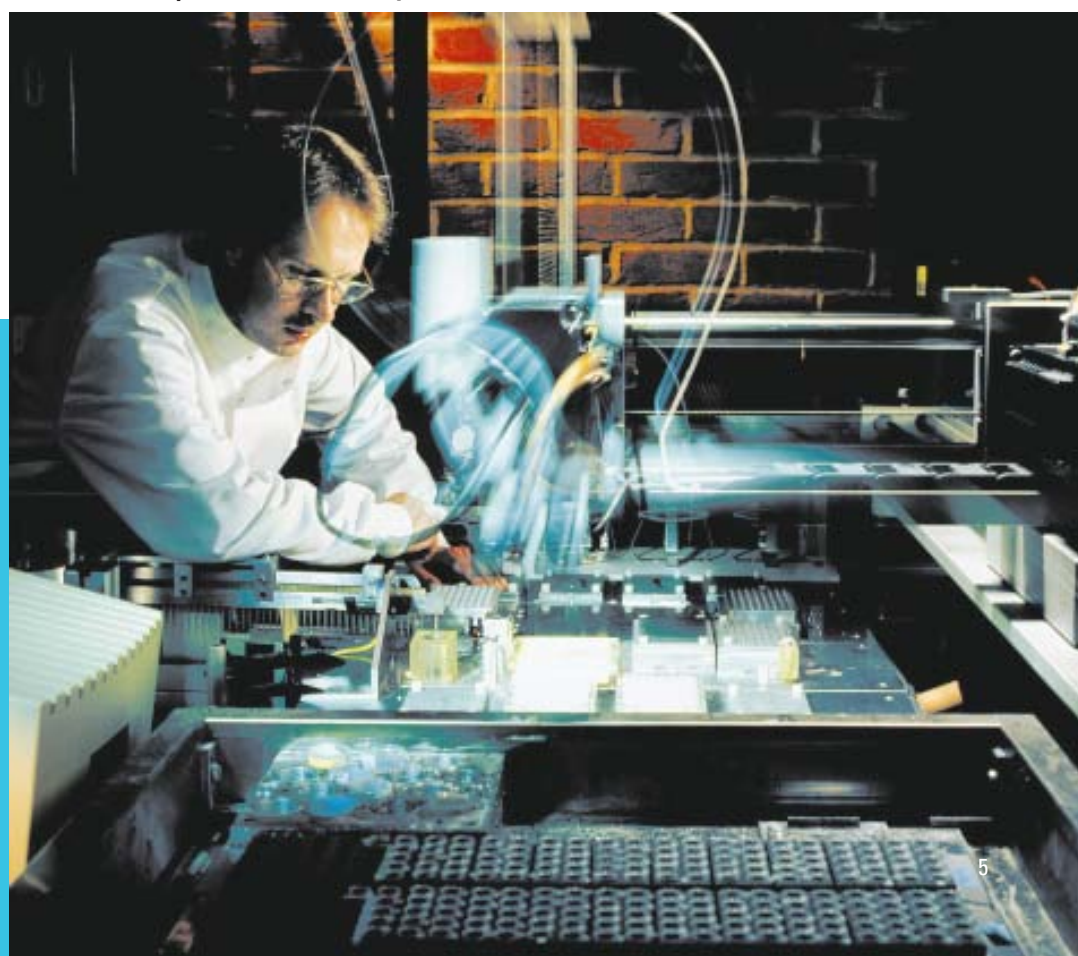
AIRFIT SRE AND CRE:
SUPERIOR MANAGEMENT OF LARGE, RAPID PRESSURE CHANGES

The *airfit SRE* and *CRE* electronically controlled pressure regulators were specially developed for applications where pressure must be accurately regulated despite large, rapid pressure changes. The interface function between electronics and pneumatics is provided by two poppet valves, which pressurise and vent the pilot chamber. This results in extremely low air consumption during the regulation process.

Perfect performance even at low pressures

For some applications, for example in testing and measurement technology, the *airfit SRE* and *CRE* have the decisive advantage of outstanding performance even at the lowest pressures. Under certain conditions the regulation range can even start at 0 bar. There is no stick-slip effect. Self-regulating seals provide an absolutely smooth regulation function and this leads to a significantly lengthened service life.

airfit tecno in the pharmaceutical industry

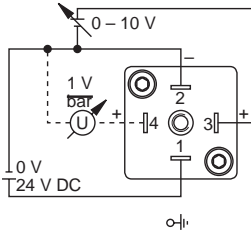


airfit SRE airfit CRE

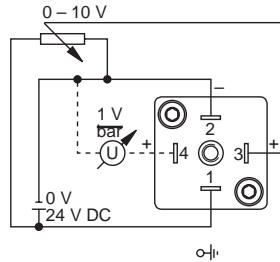


Control Possibilities

Analogue Voltage

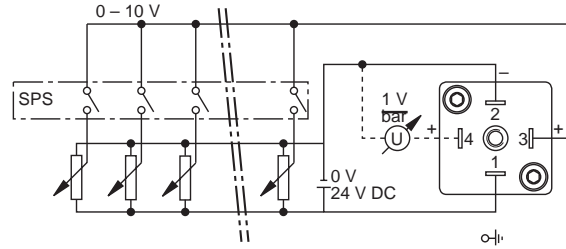


With Single Potentiometer



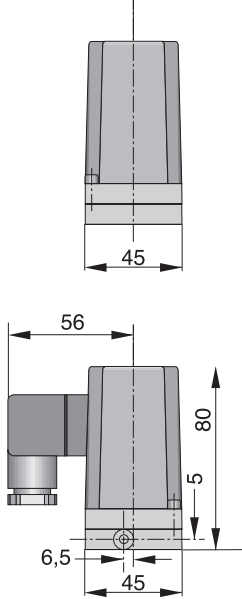
Resistance of potentiometer should be between 500 Ω and 100 kΩ

PLC Combined with Several Potentiometers

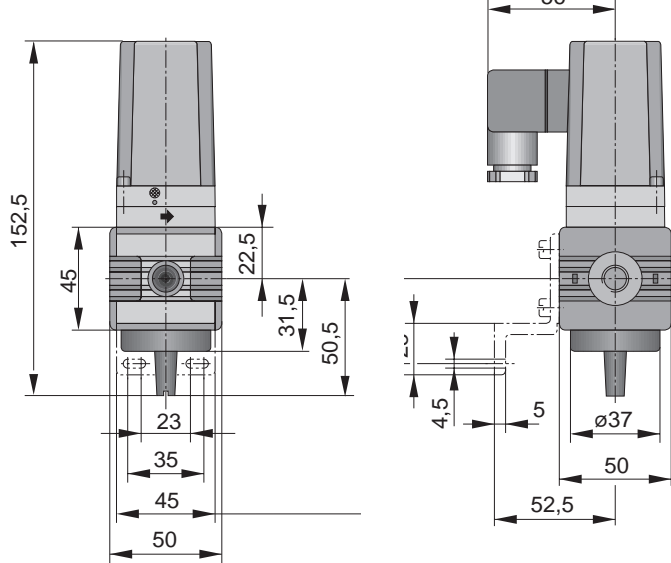


Total resistance of potentiometer series should be not less than 500 Ω

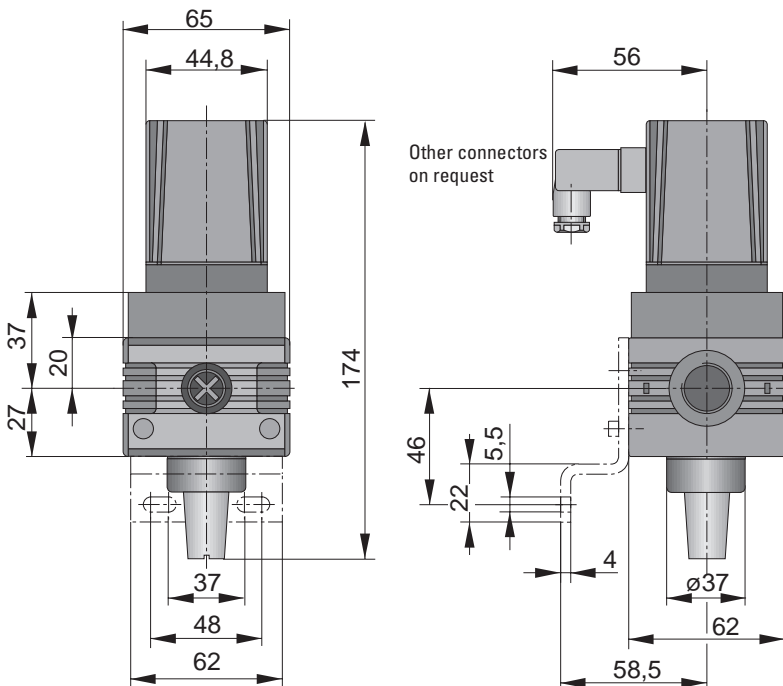
Dimensions (mm) Type: MRE-M5



Dimensions (mm) Type: SRE-1/4



Dimensions (mm) Type: CRE-1/2



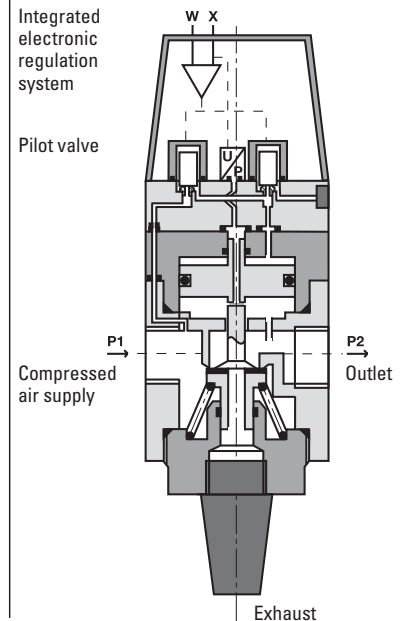
**Design and Function
Type SRE and CRE**

Two poppet valves convert electrical impulses into the pilot pressure. This positive pressurisation of the pilot chamber eliminates permanent air consumption. Air consumption during the regulation process is extremely low.

The main stage is a piston-type pressure regulator.

The self-regulating seal between the pilot chamber and the outlet p2 prevents the so-called stick-slip effect and thus lengthens the service life of the regulator.

The *airfit* SRE and CRE can be controlled by a PLC or a potentiometer, optionally with 0–10 V, 0–20 mA or 4–20 mA. A fast exhaust system is built into the *airfit* SRE and CRE.



PARAMETERS TO VDI 3292

			MRE	SRE		CRE	
Port size			M5	G1/4	G3/8	G3/8	G1/2
Installation			In any position				
Weight (mass)		kg	0.3	0.6	0.95		
Medium and ambient temperature range	T_{min} T_{max}	$^{\circ}C$ $^{\circ}C$	0 + 50				
Medium			Filtered, lubricated or unlubricated compressed air				
Lubrication			Not required				

PNEUMATIC PARAMETERS

PRESSURES ARE GAUGE PRESSURES

Nominal pressure	p_n	bar	6.3				
Inlet pressure range	p_{1min}	bar	0		0		
	p_{1max}	bar	10		16		
Outlet pressure range	p_{2min}	bar	0**				
	p_{2max}	bar	10				
Maximum flow rate*	Q_{max}	l/min	10	2200	2500	7000	7500
Hysteresis	p_{2max}	%	< 1				
Repeatability	p_{2max}	%	< 0.5				
Responsiveness	p_{2max}	%	< 0.5				
Linearity	p_{2max}	%	< 1				

ELECTRICAL PARAMETERS

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 Ω	200				
Actual value - output	U_x	V	0-10				
Output current	I_{Amax}	mA	20				
Protection system		IP	IP65 to DIN 40050, EN 60529				

* at $p_1 = 10$ bar and $p_2 = 6.3$ bar, $\Delta p = 1$ bar

** if $p_1 > 1.2$ bar

ORDER INSTRUCTIONS FOR MRE, SRE, CRE

BASIC VERSION FOR 0-10 V CONTROL, NG (NORMALLY CLOSED)

PORT SIZE	MAX. OUTPUT PRESSURE (BAR)	TYPE	ORDER NO.
M5	10	MRE-U-M5 NG	PB60349-000
G1/4	10	SRE-U-1/4 NG	PB59849-000
G3/8	10	SRE-U-3/8 NG	PB59949-000
G3/8	10	CRE-U-3/8 NG	PB60149-000
G1/2	10	CRE-U-1/2 NG	PB60249-000

VERSION FOR 4-20 mA CONTROL

M5	10	SRE-I-M5 NG	PB60349-002
G1/4	10	SRE-I-1/4 NG	PB59849-002
G3/8	10	SRE-I-3/8 NG	PB59949-002
G3/8	10	CRE-I-3/8 NG	PB60149-002
G1/2	10	CRE-I-1/2 NG	PB60249-002

VERSION FOR 0-20 mA CONTROL

M5	10	SRE-M5 NG	PB60349-001
G1/4	10	SRE-I-1/4 NG	PB59849-001
G3/8	10	SRE-I-3/8 NG	PB59949-001
G3/8	10	CRE-I-3/8 NG	PB60149-001
G1/2	10	CRE-I-1/2 NG	PB60249-001

VERSION FOR 0-10 V CONTROL, NO (NORMALLY OPEN)

M5	10	SRE-U-M5 NO	PB60349-010
G1/4	10	SRE-U-1/4 NO	PB59849-010
G3/8	10	SRE-U-3/8 NO	PB59949-010
G3/8	10	CRE-U-3/8 NO	PB60149-010
G1/2	10	CRE-U-1/2 NO	PB60249-010

ACCESSORIES

Mounting kit	SRE	PL16965
Mounting kit	CRE	PL17518
Coupling kit	SRE	PL16959
Coupling kit	CRE	PL17608
Adapter plate kit	G3/4 for CRE	PL17682

airfit SRE and CRE: Proportional Pressure Regulators with Poppet-Valve Pilot Control

The Benefits

- No permanent air consumption
- Accurate pressure regulation
- High dynamics
- High connection flexibility (electrical and pneumatic)
- High flow rates in both directions
- Long service life

Applications

- Welding robots
- Erosion machines
- Assembly/nut tightening operations
- Testing and measurement technology (liquids and gases)
- Conveyor belt positioning
- Grinding and polishing machines

Technical Highlights

	airfit SRE	airfit CRE
Port sizes	G1/4, G3/8	G3/8, G1/2
Maximum flow rate	2500 l/min	7500 l/min
Protective system	IP 65	IP 65
Responsiveness	< 0.5 %	< 0.5 %
Input pressures	0–10 bar	0–16 bar
Actual value output	standard	standard
Allocation	1 V Δ 1 bar	1 V Δ 1 bar

airfit SRE and CRE in the automotive industry



AIRFIT SRT AND CRT: THE COMBINATION OF POWER AND SPEED

The *airfit SRT* and *CRT* electronically controlled pressure regulators are especially recommended for applications that demand extremely fast pressure changes at high flow rates. The combination of *airfit tecno* as the pilot valve and *airfit SRE* or *CRE* as the pneumatic amplifier provides a unique solution for such a requirements profile.

airfit SRT *airfit CRT*



PARAMETERS TO VDI 3292

GENERAL			
System		Piston-type pressure regulator with Piezo pilot control, without electrical feedback	
Type		SRT	CRT
Port size		G1/4	G1/2
Installation		In any position	
Weight (mass)	kg	0.8	1.15
Medium and ambient temperature range	T_{min} T_{max}	°C °C	0 50
Medium		Dried and filtered air (5 μ), with or without sparing oil mist lubrication (max. 30 mg/m ³)	

PNEUMATIC PARAMETERS PRESSURES ARE GAUGE PRESSURES

Nominal pressure	p_n	bar	6.3
Inlet pressure range	p_{1min} p_{1max}	bar bar	1.5 10
Outlet pressure range	p_{2min} p_{2max}	bar bar	0 8
Maximum flow rate*	Q_{max}	l/min	2000 7500
Hysteresis	p_{2max}	%	< 5 < 15
Repeatability	p_{2max}	%	< 1 < 2
Responsiveness	p_{2max}	%	< 5 < 15
Linearity	p_{2max}	%	< 1 < 2
Reaction time	t_1	ms	< 16 < 19

ELECTRICAL PARAMETERS

Nominal Voltage	U_N	V DC	24 V \pm 10 %
Nominal power rating	P_N	W	0.25
Set value input			0–8 V 4–20 mA
Input resistance	R_E	k Ω Ω	61.5 with 0–10 V control 550 with 4–20 mA control
Protection system			IP52 to DIN 45322
Connection			3-pin socket M8 or to DIN 43650-1C

DYNAMIC PARAMETERS

Pressure build-up from 0 to 6 bar at flow rate of 500 l/min	t	ms	< 100
Pressure build-up from 3 to 6 bar with a volume of 1.3 l	t	ms	< 50

* at $p_1 = 10$ bar and $p_2 = 6.3$ bar, $\Delta p = 1$ bar

For detailed technical data please see Data Sheet 5.96.006.

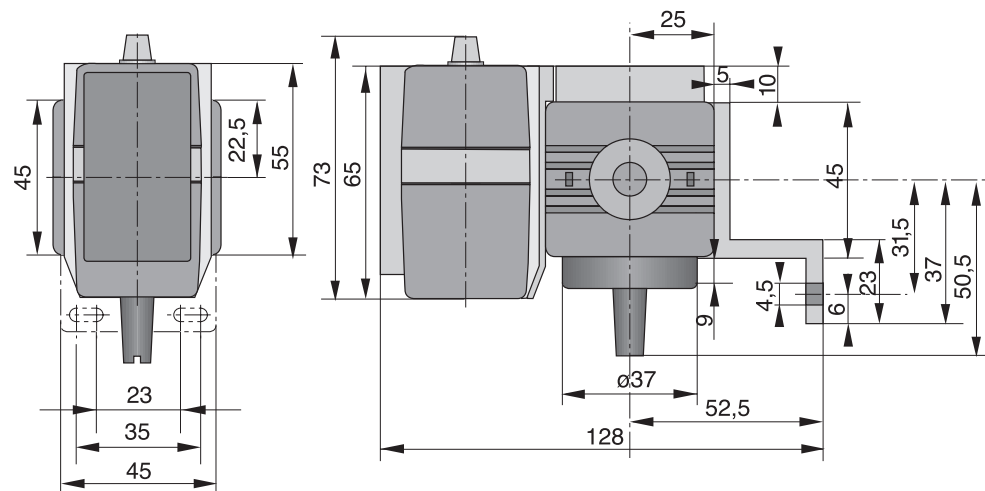
ORDER INSTRUCTIONS FOR SRT, CRT

VERSION	TYPE	ORDER NO.
PROP. PRESSURE REGULATOR G1/4		
Prop. pressure regulator, 0–8 V, 0–8 bar	SRT-U-1/4	PS11230-A
Prop. pressure regulator, 4–20 mA, 0–8 bar	SRT-I-1/4	PS11231-A
PROP. PRESSURE REGULATOR G1/2		
Prop. pressure regulator, 0–8 V, 0–8 bar	CRT-U-1/2	PS11240-A
Prop. pressure regulator, 4–20 mA, 0–8 bar	CRT-I-1/2	PS11241-A

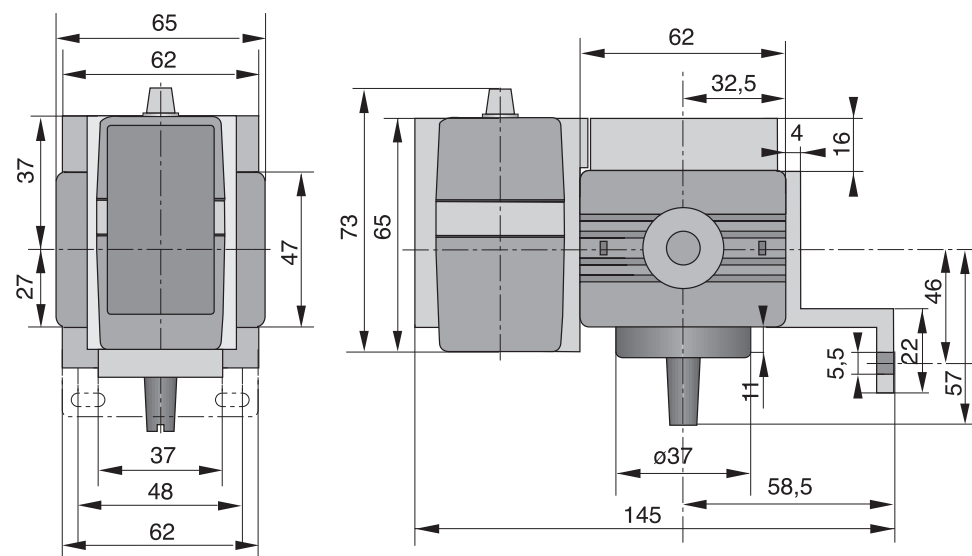
ACCESSORIES

Mounting kit	SRT-1/4	PL16965
Mounting kit	CRT-1/2	PL17518
Cable set straight (5 m)		KC3104
Cable set angled (5 m)		KC3106

Dimensions (mm) Type: SRT-1/4

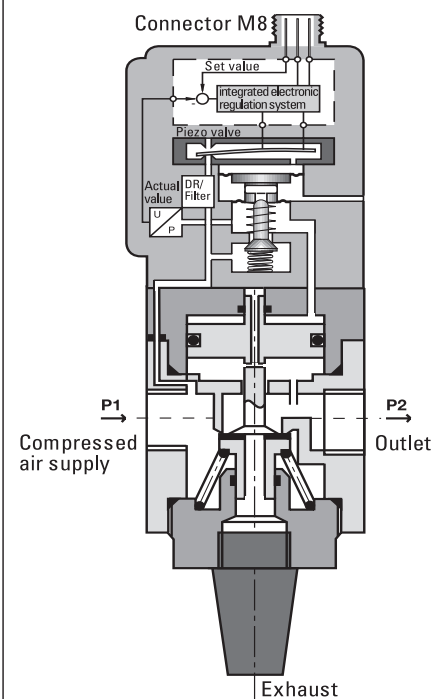


Dimensions (mm) Type: CTR-1/2



Design and Function Type *airfit* SRT and CRT

The *airfit tecno* is used as the pilot control in the *airfit SRT* and *CRT* pressure regulators and contributes significantly to the highly dynamic performance capabilities. The main stage uses the *airfit SRE* or *CRE* piston-type pressure regulator. The unit does not have a closed control circuit, i.e. there is no feedback of the output pressure signal.



airfit SRT and CRT: Pressure Regulators with Piezo Pilot Control and Piston-Type Regulator Main Stage

The Benefits

- Extremely fast pressure changes
- Long service life
- Low power consumption (0.25 W)

Applications

- Welding robots
- Paint spraying equipment

Technical Data

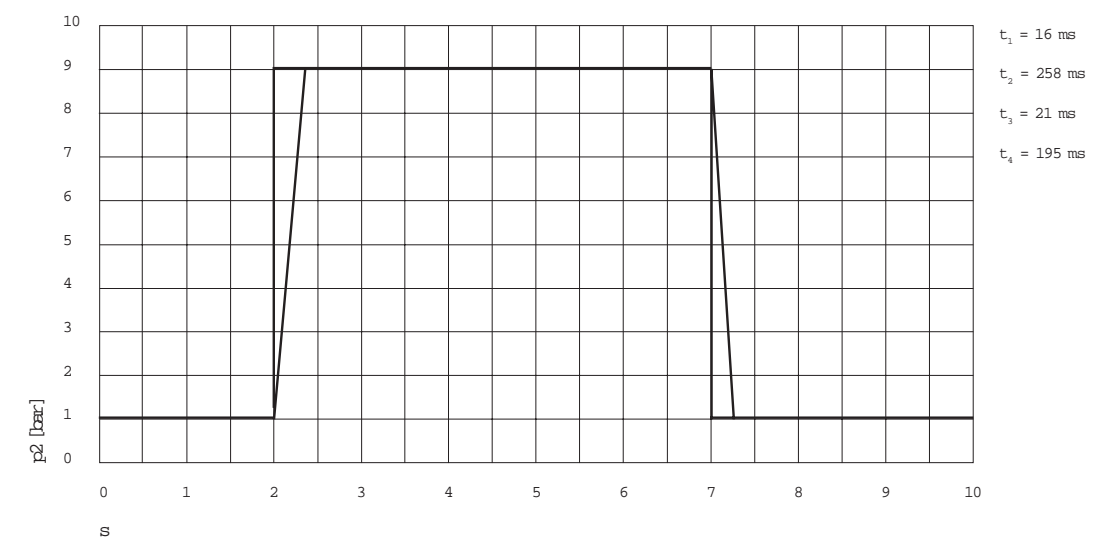
	airfit SRT	airfit CRT
Port sizes	G1/4	G1/2
Weight	0.8 kg	1.15 kg
Pressure range	0–8 bar	0–8 bar
Maximum flow rate	2200 l/min	7500 l/min
Responsiveness	< 5 %	< 15 %
Reaction time	< 15 ms	< 15 ms

airfit SRT and CRT in painting technology



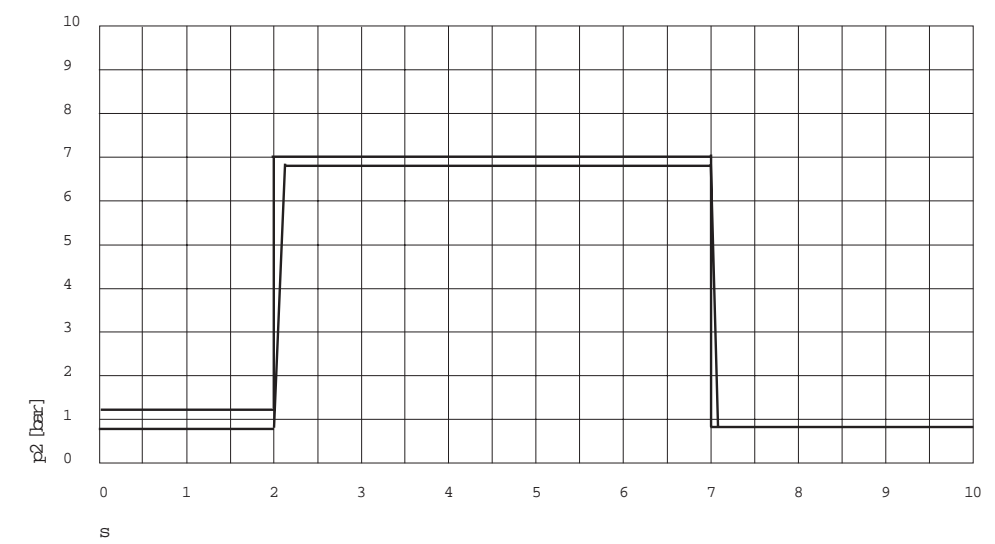
Sprungantwort SRE

Sprungantwort 10: 1-9-1



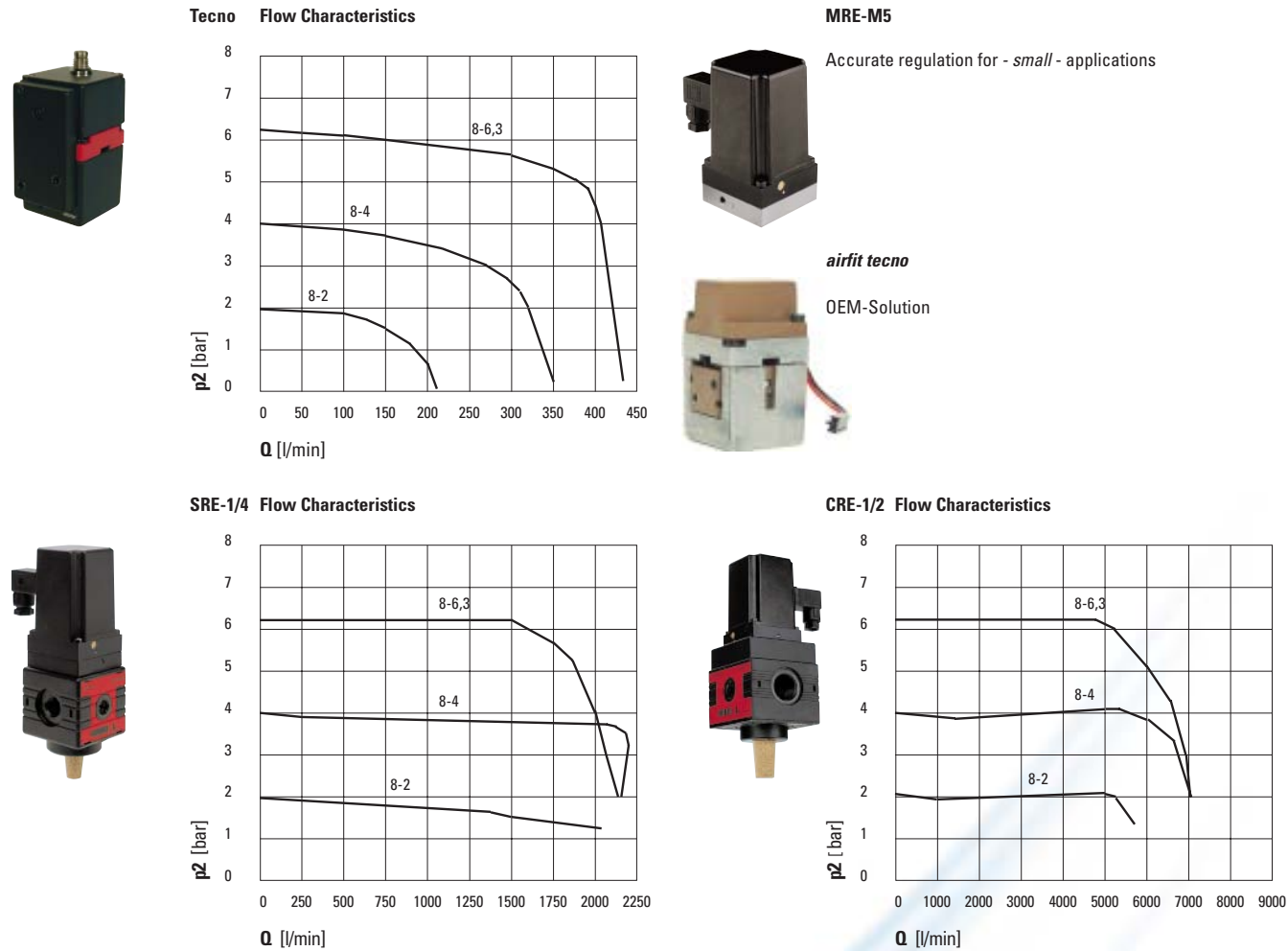
Sprungantwort Tecno, SRE und SRT 1/4-Booster

Sprungantwort 10: 1,29-7,05-0,75



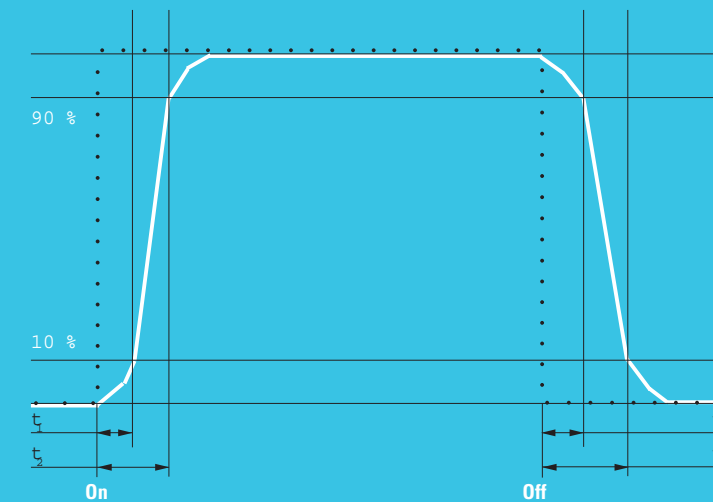
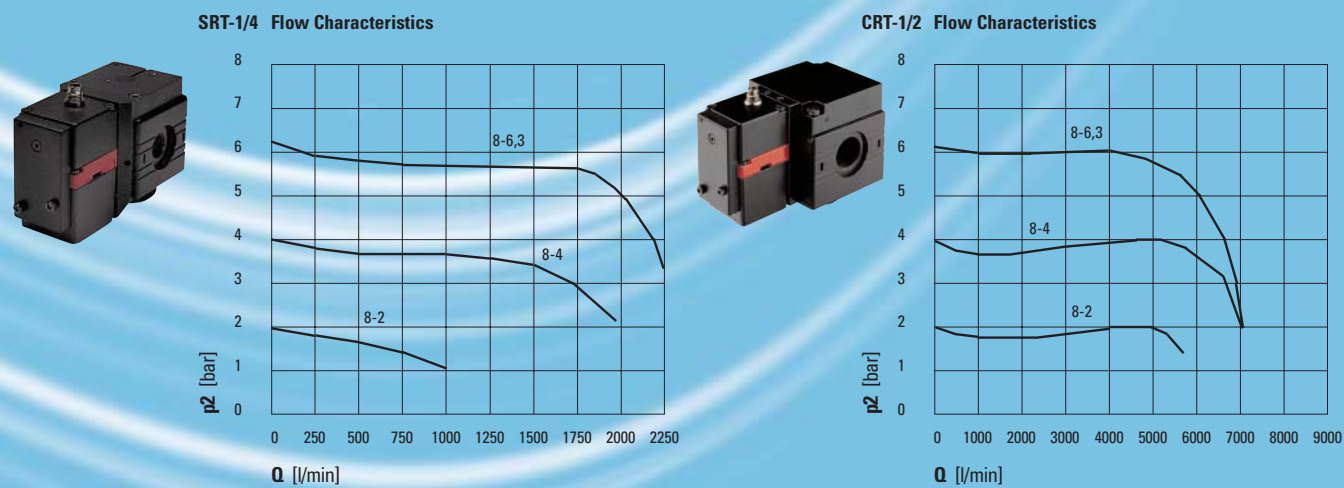
AIRFIT CONTROL: MAKING THE RIGHT CHOICE

With *airfit control*, HOERBIGER-ORIGA offers a pressure regulator programme that delivers the right solution for every application. This table will make it easier for you to select the optimum regulator for your specific application.



Type	UNITS WITH CLOSED LOOP						WITHOUT CLOSED LOOP	
	TECNO	MRE-M5	SRE-1/4	SRE-3/8	CRE-3/8	CRE-1/2	SRT-1/4	CRT-1/2
System	Diaphragm-type pressure regulator with Piezo pilot control	Pulsed 2/2 way electronic valves, electronically regulated	Piston-type pressure regulator with electromagnetic pilot control	Piston-type pressure regulator with electromagnetic pilot control	Piston-type pressure regulator with electromagnetic pilot control	Piston-type pressure regulator with electromagnetic pilot control	Piston-type pressure regulator with Tecno pilot control	Piston-type pressure regulator with Tecno pilot control
Port size	G1/8	M5	G1/4	G3/8	G3/8	G1/2	G1/4	G1/2
Inlet pressure	1.5–10 bar	0–10 bar	0–10 bar	0–10 bar	0–16 bar	0–16 bar	1.5–10 bar	1.5–10 bar
Outlet pressure	0–8 bar 0–2 bar 0–0.2 bar*	0–10 bar	0–10 bar	0–10 bar	0–10 bar	0–10 bar	0–8 bar	0–8 bar
Q_{max} [l/min]	350	10	2200	2500	7000	7500	2000	7500
Hysteresis	< 0.2 % (< 0.5 %)*	< 1 %	< 1 %	< 1 %	< 1 %	< 1 %	< 5 %	< 15 %
Repeatability	< 0.2 % (< 0.5 %)*	< 0.5 %	< 0.5 %	< 0.5 %	< 0.5 %	< 0.5 %	< 1 %	< 2 %
Responsiveness	< 0.1 % (< 0.5 %)*	< 0.5 %	< 0.5 %	< 0.5 %	< 0.5 %	< 0.5 %	< 5 %	< 15 %
Linearity	< 0.5 % (< 1 %)*	< 1 %	< 1 %	< 1 %	< 1 %	< 1 %	< 1 %	< 2 %
Set value input	0–10 V 4–20 mA	0–10 V 4–20 mA 0–20 mA	0–10 V 4–20 mA 0–20 mA	0–10 V 4–20 mA 0–20 mA	0–10 V 4–20 mA 0–20 mA	0–10 V 4–20 mA 0–20 mA	0–10 V 4–20 mA	0–10 V 4–20 mA
Actual value output	1.25–6.25 V (optional)	0–10 V	0–10 V	0–10 V	0–10 V	0–10 V	–	–
Reaction times [ms]**								
t ₁	7	11	26		39		16	19
t ₂	17	70	258		311		57	53
t ₃	6	16	21		35		16	18
t ₄	28	128	195		236		80	85

** Set value change from 10 % to 90 % and from 90 % to 10 % of maximum output size, no output volume (pressure sensor)



Change Response Diagram

AIRFIT CONTROL: INTELLIGENT PRESSURE REGULATION FOR SPECIFIC APPLICATIONS

airfit control:
in use

Proportional pressure regulators from the *airfit control* programme are used for a wide variety of applications, a selection of which are shown here. For further information on these or your particular application, don't hesitate to contact us.

Tension Regulation in Winding Machines

To ensure consistent high quality in winding processes, the correct speed and tension are critical. *airfit tecno* and *airfit SRE* are used here for the control of pneumatic brakes and dancer rollers.

Ultrasonic Welding

In ultrasonic welding machines it is important to apply the welding head with exactly defined force to ensure consistent quality. *airfit tecno* and *airfit SRE* control the pneumatic cylinder which applies this force.

Welding

Proportional regulators are used here to control the gripping force of the welding gun accurately, rapidly and according to the nature and thickness of the material.

Metering of Liquids

In the metering or mixing of sealants, adhesives or chemical compounds, proportional valves are used which are pneumatically pilot-controlled by *airfit tecno*. In this way the mixture ratio or metering can be set by the control system.

Vacuum Generation

Vacuum generation ejectors use an input pressure to generate a vacuum. The vacuum may be regulated by varying the input pressure. *airfit tecno* and *airfit SRE* provide optimum pressure regulation and thus improve the performance of the ejector.

Paint Spraying Equipment

airfit tecno and *airfit SRE* are used to regulate the speed of the turbine which is required to atomise the paint. They also control the air pressure at the sprayhead, which directs the paint spray. The fast pressure regulation at high flow rates greatly improves the quality and speed of the paint spraying operation.

Mills, Grinding and Polishing Machines

Accurate application pressure is essential here to achieve safe processing and high product quality. However, the pressure must be varied to suit the material, the type of operation and the particular tool. *airfit tecno* or *airfit SRE* satisfy these requirements completely.

Positioning

With pneumatic positioning axes two *airfit tecno* or *airfit SRE* units are used to precisely control the cylinder position by pressurising or venting the cylinder. The command signals for the pressure regulators come from analogue or digital linear measurement systems.

Auxiliary Air in Plastics Processing

The pre-moulds for plastic bottles and containers have to be heated before the final blow-moulding operation. *airfit tecno* is used to maintain a low positive pressure to ensure that the heated pre-mould keeps its optimum shape before further processing.

Artificial Respiration Equipment

Artificial respiration equipment demands accurate regulation of pressures and flow rates in a low range of pressures. The application is often ideally satisfied by the *airfit tecno OEM*, which can be completely integrated into the purpose-designed regulation systems. In mobile equipment its light weight and low power consumption are especially important.

Conveyor Belt Positioning

Precise positioning of conveyor belts and winding rollers is especially important over long distances. The regulation system receives signals from a belt edge position sensor. The *airfit tecno* or *airfit SRE* generates the pressure to drive the pneumatic cylinder connected to the guide roller.

Rolling

airfit control enables the pressure of the rollers to be varied, to achieve consistent quality in spite of different material thicknesses and other variable process influences.

WORTH KNOWING: THE FINE DISTINCTION BETWEEN CONTROL AND REGULATION

Basically there are two possible ways of maintaining the pressure in a pneumatic system at a certain level or generating a defined pressure profile - either a control system or a regulation system. The fine distinction can be seen in the accuracy and in the costs of the equipment.



Control for test equipment

The Control System – Open Circuit Control

In an open circuit control system the input signal (set value) is converted into the output value (actual value) in the control unit. There is no monitoring of the correctness of the output value and no guarantee that the set value and the actual value really agree. The effects of external disturbing influences on the system are not taken into account.

Controlled Pressure Regulators from HOERBIGER-ORIGA

In the *airfit control* programme, the *airfit tecno OEM* and *airfit SRT* and *CRT* operate as controlled systems.

Taking the function of the *airfit SRT* as an example: When a set value is defined via the input signal (e.g. 0–10 V), the pressure regulator sets the corresponding output pressure (e.g. 0–10 bar). This output pressure is not however monitored by the unit, i.e. there is no compensation for influences such as air usage or hysteresis of the regulator. Therefore, these units are designed primarily for integration into control systems which include monitoring of the output pressure.

The Regulation System – Closed Circuit Control

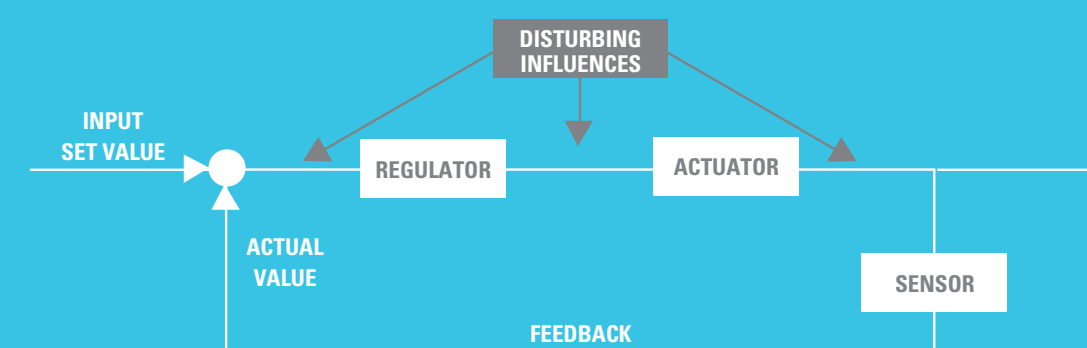
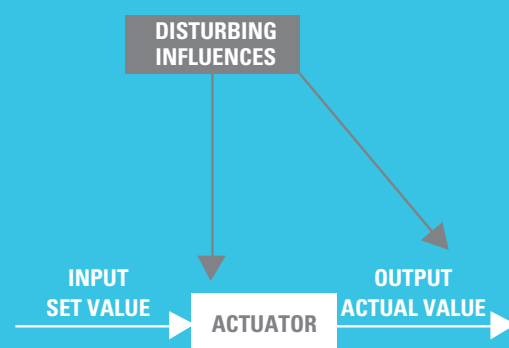
A regulation system is a closed circuit. The input signal (set value) is converted into the output value (actual value) - as in control systems - but this output value is continuously measured and compared with the input signal. If they are different, the regulation unit intervenes and adjusts the output value to correspond to the set value.

Regulated Pressure Regulators from HOERBIGER-ORIGA

The *airfit tecno*, *airfit SRE* and *CRE* are regulated systems. Taking the function of the *airfit SRE* as an example: When a set value is defined via the input signal (e.g. 0–10 V), the pressure regulator sets the corresponding output pressure (e.g. 0–10 bar). At the same time the integrated pressure sensor measures the actual pressure at the unit's outlet (actual value). If the electronic regulation system finds that the actual value has deviated from the set value, it immediately corrects the actual value. This process goes on continuously and ensures fast, accurate pressure regulation.



Regulation system in the paper industry



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The *airfit control* pressure regulators are flexible in terms of colour and imprint and may be supplied in your own company livery, thereby contributing significantly to your company profile.



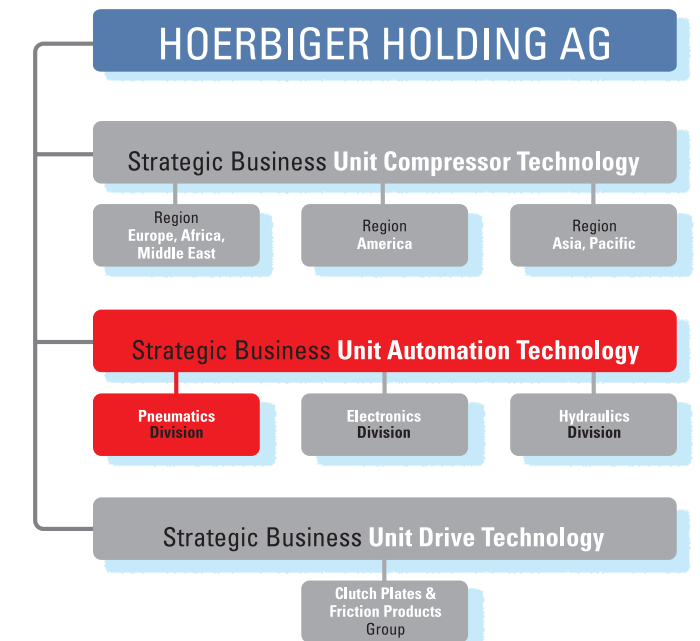
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