

## Overview

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## Electronically controlled proportional pressure regulating valves

*Series airfit control  
NPT 1/4 – 2*

*Series tecno basic  
NW 2.5, NPT 1/8*

*Series tecno plus  
NW 6, NPT 1/4*



# Electronically controlled proportional pressure regulating valves

Series airfit control  
NPT 1/4 – 2

## Characteristics

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



Pressures quoted as gauge pressure

Characteristics	Symbol	Unit	Description			
System			Piston-type pressure regulating valve, pilot operated, with pneumatic and electric feedback		Piston-type pressure regulating valve, pilot operated, with pneumatic and electric feedback	
Type			SRE-1/4	SRE-3/8	CRE-3/8	CRE-1/2
Material						
– Housing			Diecast zinc			
– Diaphragm			NBR			
– Standard sealings			NBR			
Port size			NPT 1/4	NPT 3/8	NPT 3/8	NPT 1/2
Installation			In any position		In any position	
Weight (mass)		kg	0.6	0.6	0.95	0.95
Medium and ambient temperatures	T <sub>min</sub> T <sub>max</sub>	°C °C	0 +50	0 +50	0 +50	0 +50
Medium			Filtered, lubricated, or oil-free compressed air, inert gases			
Pneumatic characteristics						
Operating pressure range – inlet pressure <sup>1)</sup>	p <sub>1min</sub>	bar	0	0	0	0
	p <sub>1max</sub>	bar	16	16	16	16
Operating pressure range – outlet pressure	p <sub>2min</sub>	bar	0	0	0	0
	p <sub>2max</sub>	bar	10	10	10	10
Maximum flow <sup>2)</sup>	Q <sub>N</sub>	l/min m <sup>3</sup> /h	2200	2500	4500	6000
			132	150	270	360
Hysteresis <sup>3)</sup>	p <sub>2max</sub>	%	< 1	< 1	< 1	< 1
Repeatability <sup>3)</sup>	p <sub>2max</sub>	%	< 0.5	< 0.5	< 0.5	< 0.5
Sensitivity <sup>3)</sup>	p <sub>2max</sub>	%	< 0.5	< 0.5	< 0.5	< 0.5
Linearity <sup>3)</sup>	p <sub>2 max</sub>	%	< 1	< 1	< 1	< 1
Electrical characteristics						
Nominal voltage	U <sub>N</sub>	V DC	24 V = ± 10%	24 V = ± 10%	24 V = ± 10%	24 V = ± 10%
Residual ripple		%	10	10	10	10
Power consumption	I <sub>Bmax</sub>	A	0.15	0.15	0.15	0.15
Set value input	U <sub>W</sub> I	V	0–10	0–10	0–10	0–10
		mA	0–20	0–20	0–20	0–20
		mA	4–20	4–20	4–20	4–20
Input resistance	R <sub>E</sub>	kΩ	200	200	200	200
Actual value output	U <sub>X</sub>	V	0–10	0–10	0–10	0–10
Output current	I <sub>Amax</sub>	mA	20	20	20	20
Degree of protection		IP	65 to DIN 40050, EN 60529		65 to DIN 40050, EN 60529	

- <sup>1)</sup>  $p_1 \geq p_2 + 10\% p_2$   
<sup>2)</sup> at  $p_1 = 10$  bar to  $p_2 = 6.3$  bar  
<sup>3)</sup> see explanation on page 122

## Electronically controlled proportional pressure regulating valves

*Series airfit control  
NPT 1/4 – 2*

*Characteristics*

Piston-type pressure regulating valve, pilot operated, with pneumatic and electric feedback		Diaphragm-type pressure regulating valve, pilot operated, with pneumatic and electric feedback		
	A25RE-3/4	A25RE-1	A50RE-11/2	A50RE-2
	Diecast aluminum			
	NBR			
	NBR			
	NPT 3/4	NPT 1	NPT 11/2	NPT 2
	In any position	In any position	In any position	In any position
	1.2	1.2	4.1	4.1
	0 +50	0 +50	0 +50	0 +50
	Filtered, lubricated, or oil-free compressed air, inert gases			
	0	0	0	0
	16	16	16	16
	0	0	0	0
	10	10	10	10
	20000	20000	> 40000	> 40000
	1200	1200	> 2400	> 2400
	< 1	< 1	< 1	< 1
	< 0.5	< 0.5	< 0.5	< 0.5
	< 0.5	< 0.5	< 0.5	< 0.5
	< 1	< 1	< 1	< 1
	24 V = ± 10%	24 V = ± 10%	24 V = ± 10%	24 V = ± 10%
	10	10	10	10
	0.15	0.15	0.15	0.15
	0–10 0–20 (on request) 4–20 (on request)	0–10 0–20 (on request) 4–20 (on request)	0–10 0–20 (on request) 4–20 (on request)	0–10 0–20 (on request) 4–20 (on request)
	243	243	243	243
	0–10	0–10	0–10	0–10
	10	10	10	10
	65 to DIN 40050, EN 60529	65 to DIN 40050, EN 60529	65 to DIN 40050, EN 60529	65 to DIN 40050, EN 60529



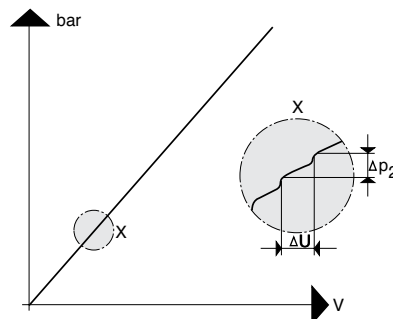
# Electronically controlled proportional pressure regulating valves

Series airfit control  
NPT 1/4 – 2

## Definitions

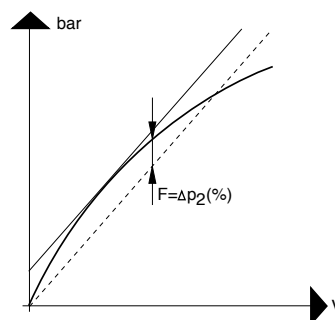
### Sensitivity

The smallest deviation from set output pressure that 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.



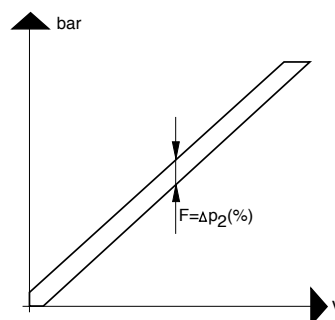
### Linearity

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.



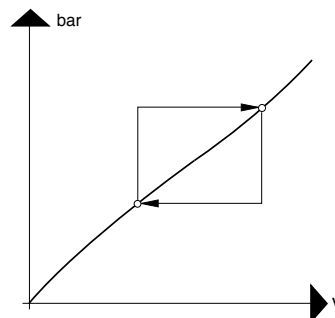
### Hysteresis

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.

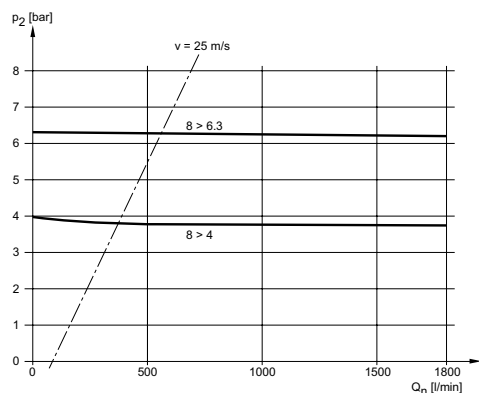


### Repeatability

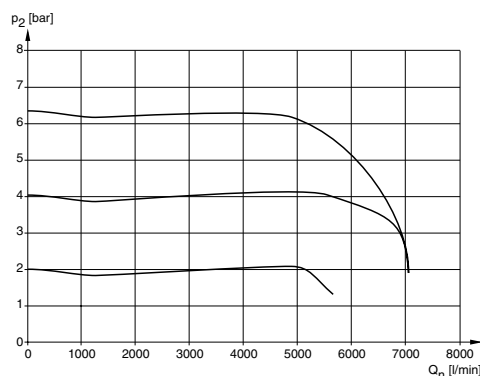
Control components for a given set value usually produce repeated actual values that differ less from each other than from the absolute set value, because the relatively large linearity deviation is excluded. Repeatability is improved if hysteresis is minimized.



**Output pressure as function of input voltage**  
Type: SRE-1/4



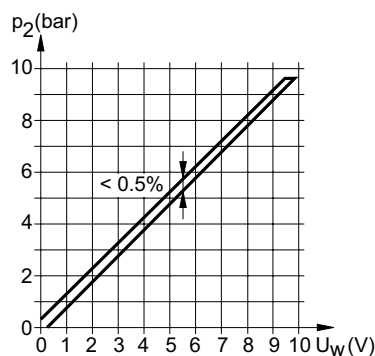
Type: CRE-1/2



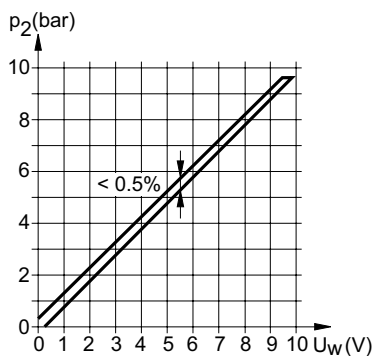
## Electronically controlled proportional pressure regulating valves

Series airfit control  
NPT 1/4 – 2

**Output pressure as function of input voltage**  
Type: SRE-1/4

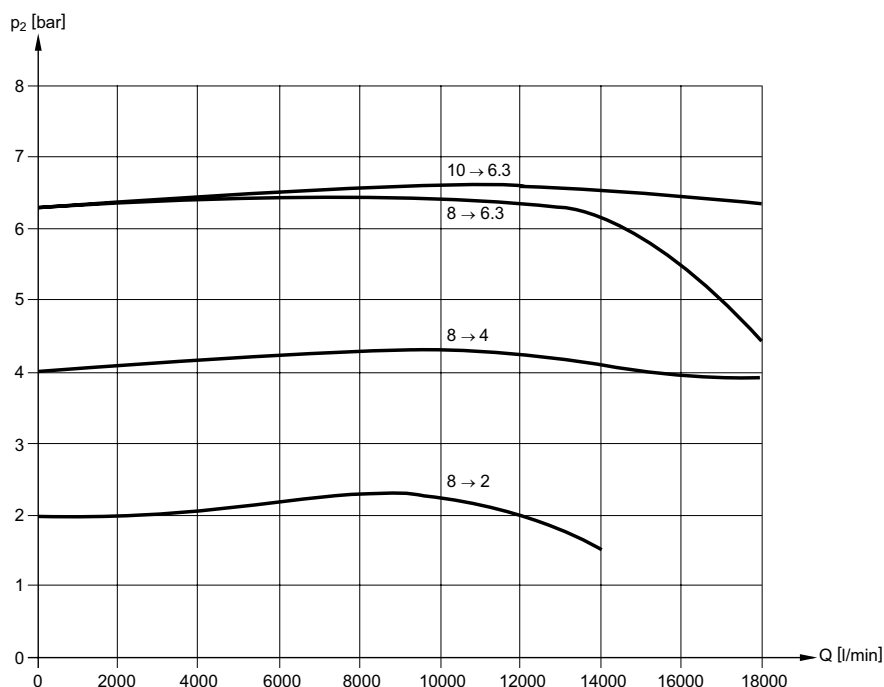


**Output pressure as function of input voltage**  
Type: CRE-1/2



Flow characteristics

Type: A25RE-1

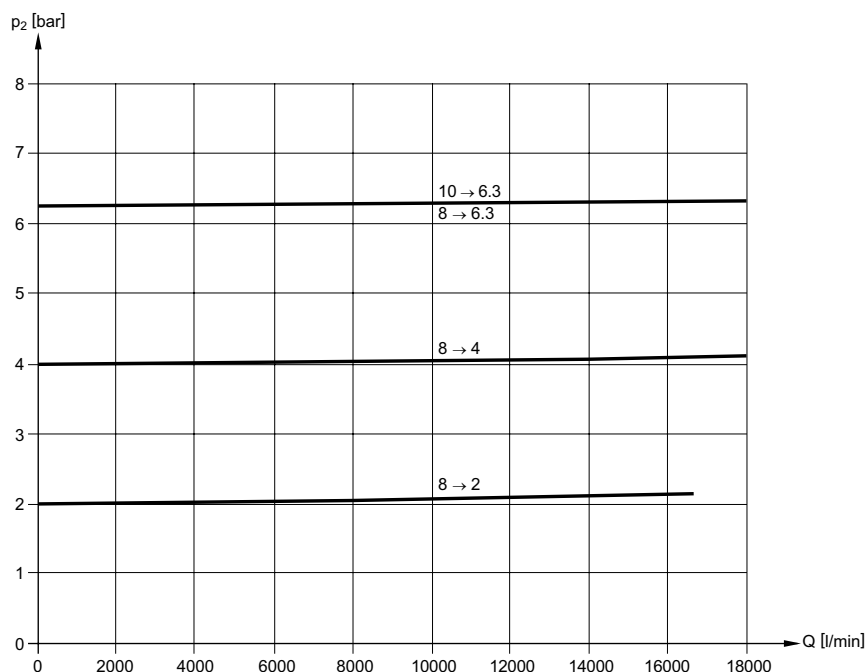


# Electronically controlled proportional pressure regulating valves

Series airfit control  
NPT 1/4 – 2

Flow characteristics

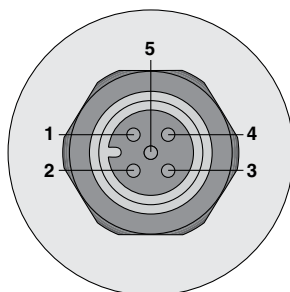
Type: A50RE-2



Connection diagram

Type: SRE-..., CRE-..., A25RE-..., A50-...

Connector M12x1



**Pin 1:**

Power supply  
Plus +24 V DC  $\pm 10\%$   
0.15 A  
Residual ripple 10%

**Pin 2:**

Power supply 0 V  
Reference and mass capacity  
for set value and actual value

**Pin 3:**

Set value input  
0–10 V

**Pin 4:**

0 V target signal  
(connected on board  
with pin 2 as standard)

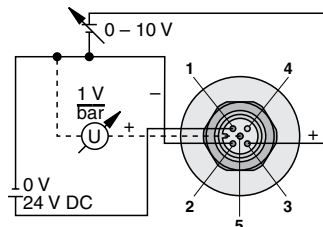
**Pin 5:**

Analog actual value output  
0–10 V  
Tolerance  $\pm 0.15$  V

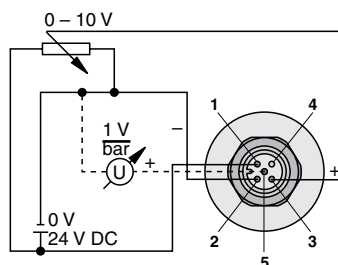


## Control options—Type: SRE-..., CRE-...

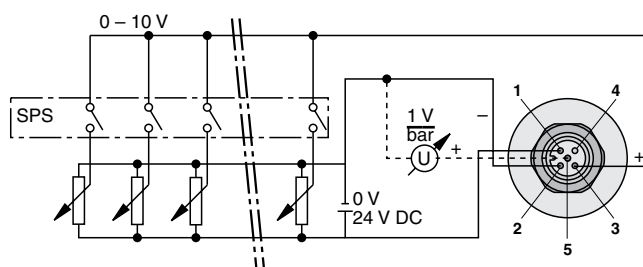
Analog voltage



With a single potentiometer



PLC in connection with several potentiometers



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

The resistance of the potentiometer should range between 500 W and 100 kW

## Electronically controlled proportional pressure regulating valves

*Series airfit control  
NPT 1/4 – 2*

*Characteristics  
Connection diagrams*

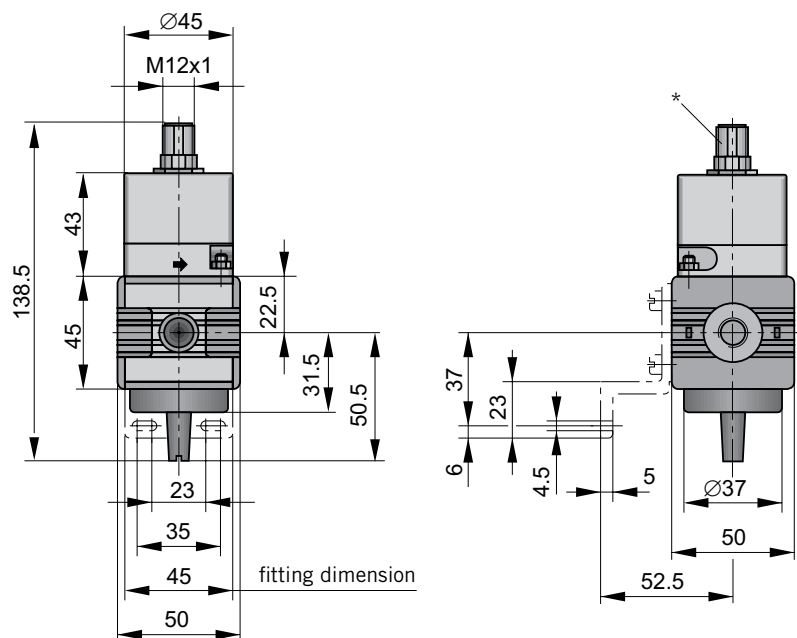


# Electronically controlled proportional pressure regulating valves

Series airfit control  
NPT 1/4 – 2

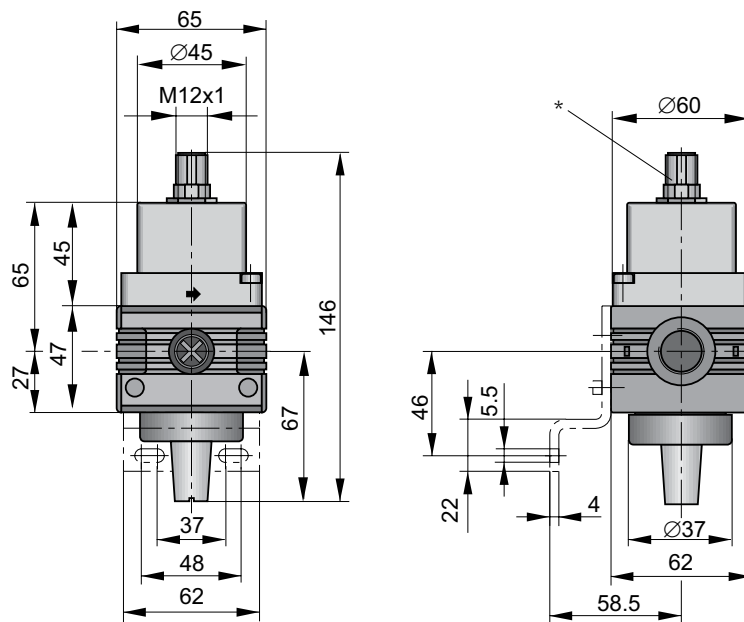
Dimensions

Type: SRE-1/4, -3/8



\* Connection for 5-pin plug M12x1

Type: CRE-3/8, -1/2



\* Connection for 5-pin plug M12x1

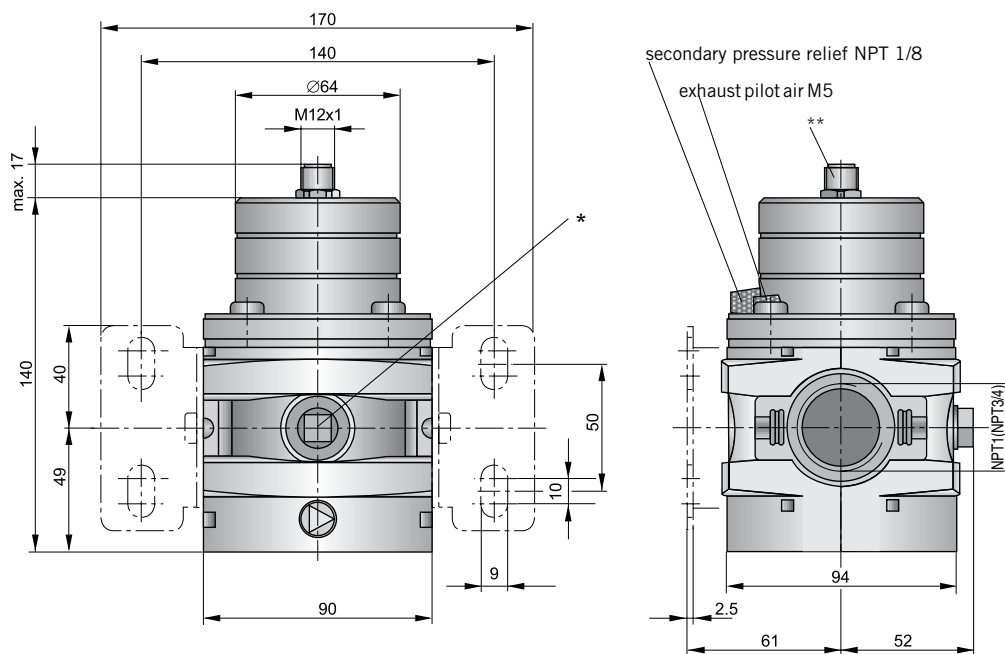


For order instructions see page 130, for characteristics see page 120–125,  
for accessories see page 131

Dimensions in mm



**Type: A25RE-3/4, -1**



\* Two opposite gauge ports NPT 1/4, plug screw mounted

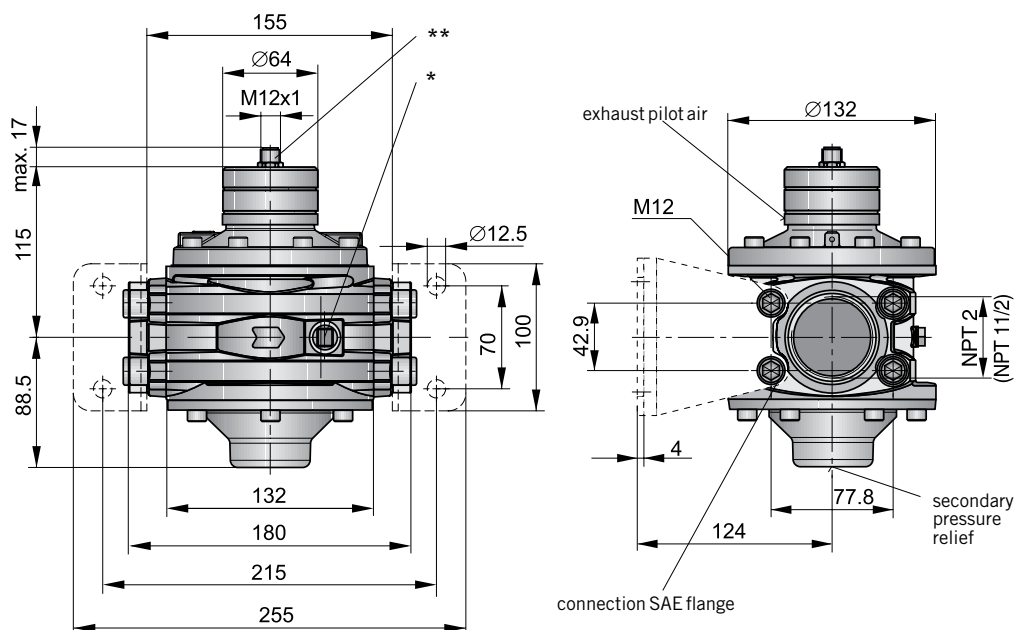
\*\* Connection for 5-pin plug M12x1

# **Electronically controlled proportional pressure regulating valves**

*Series airfit control  
NPT 1/4 – 2*

*Dimensions*

**Type: A50RE-11/2, -2**



\* Two opposite gauge ports NPT 1/4, plug screw mounted

\*\* Connection for 5-pin plug M12x1

For order instructions see page 130, for characteristics see page 120–125,  
for accessories see page 131

Dimensions in mm



# Electronically controlled proportional pressure regulating valves

Series airfit control  
NPT 1/4 – 2

Order instructions

## airfit control NPT 1/4, 3/8

Description	Max. outlet pressure (bar)	Symbol	Port size	Type	Order No.
Basic version for set value 0–10 V, NC (normally closed)	10		NPT 1/4	SRE-U-1/4 NG	PB 59849-10000N-XXX
	10		NPT 3/8	SRE-U-3/8 NG	PB 59949-10000N-XXX
Version for set value 4–20 mA, NC (normally closed)	10		NPT 1/4	SRE-I-1/4 NG	PB 59849-10100N-XXX
	10		NPT 3/8	SRE-I-3/8 NG	PB 59949-10100N-XXX
Version for set value 4–20 mA, NC (normally closed)	10		NPT 1/4	SRE-I-1/4 NG	PB 59849-10200N-XXX
	10		NPT 3/8	SRE-I-3/8 NG	PB 59949-10200N-XXX
Version for set value 0–10 V, NO (normally open)	10		NPT 1/4	SRE-U-1/4 NO	PB 59849-10010N-XXX
	10		NPT 3/8	SRE-U-3/8 NO	PB 59949-10010N-XXX
Version for set value 4–20 mA, NO (normally open)	10		NPT 1/4	SRE-I-1/4 NO	PB 59849-10110N-XXX
	10		NPT 3/8	SRE-I-3/8 NO	PB 59949-10110N-XXX
Version for set value 4–20 mA, NO (normally open)	10		NPT 1/4	SRE-I-1/4 NO	PB 59849-10210N-XXX
	10		NPT 3/8	SRE-I-3/8 NO	PB 59949-10210N-XXX

## airfit control NPT 3/4, 1

Description	Max. outlet pressure (bar)	Symbol	Port size	Type	Order No.
Basic version for set value 0–10 V, NC (normally closed)	10		NPT 3/4	A25RE-U-3/4-NG	PB 64349-10000N-XXX
	10		NPT 1	A25RE-U-1-NG	PB 64449-10000N-XXX
Versions for set value 0–20 mA and 4–20 mA			NPT 3/4, 1	On request	On request
Versions for NO (normally open) functions			NPT 3/4, 1	On request	On request



For configurable order code of proportional pressure regulating valves see page 130

### airfit control NPT 3/8, 1/2

Description	Max. outlet pressure (bar)	Symbol	Port size	Type	Order No.
Basic version for set value 0–10 V, NC (normally closed)	10		NPT 3/8	CRE-U-3/8 NG	PB 60149-10000N-XXX
	10		NPT 1/2	CRE-U-1/2 NG	PB 60249-10000N-XXX
Version for set value 4–20 mA, NC (normally closed)	10		NPT 3/8	CRE-I-3/8 NG	PB 60149-10100N-XXX
	10		NPT 1/2	CRE-I-1/2 NG	PB 60249-10100N-XXX
Version for set value 4–20 mA, NC (normally closed)	10		NPT 3/8	CRE-I-3/8 NG	PB 60149-10200N-XXX
	10		NPT 1/2	CRE-I-1/2 NG	PB 60249-10200N-XXX
Version for set value 0–10 V, NO (normally open)	10		NPT 3/8	CRE-U-3/8 NO	PB 60149-10010N-XXX
	10		NPT 1/2	CRE-U-1/2 NO	PB 60249-10010N-XXX
Version for set value 4–20 mA, NO (normally open)	10		NPT 3/8	CRE-I-3/8 NO	PB 60149-10110N-XXX
	10		NPT 1/2	CRE-I-1/2 NO	PB 60249-10110N-XXX
Version for set value 4–20 mA, NO (normally open)	10		NPT 3/8	CRE-I-3/8 NO	PB 60149-10210N-XXX
	10		NPT 1/2	CRE-I-1/2 NO	PB 60249-10210N-XXX

### airfit control NPT 11/2, 2

Description	Max. outlet pressure (bar)	Symbol	Port size	Type	Order No.
Basic version for set value 0–10 V, NC (normally closed)	10		NPT 11/2	A50RE-U-11/2-NG	PB 60549-10000N-XXX
	10		NPT 2	A50RE-U-2-NG	PB 60649-10000N-XXX
Versions for set value 0–20 mA and 4–20 mA			NPT 11/2, 2	On request	On request
Versions for NO (normally open) functions			NPT 11/2, 2	On request	On request

### Accessories

Description	For series	Type	Order No.
Mounting kit	airfit swing	SRE	PL16965
Coupling kit	airfit swing	SRE	PL16959
Mounting kit	airfit comfort	CRE	PL17518
Coupling kit	airfit comfort	CRE	PL17608
Mounting kit	airfit A25	A25RE	PL18988
Coupling kit	airfit A25	A25RE	PL16987
Mounting kit	airfit A50	A50RE	PL18672
Coupling kit	airfit A50	A50RE	PL18735
Connection flange NPT 11/2 (kit)	airfit A50	A50RE	PL18660
Connection flange NPT 2 (kit)	airfit A50	A50RE	PL18662

For configurable order code of proportional pressure regulating valves see page 130



