

Cutting-edge technology is important, but optimum profitability means so much more.

Electronic pressure regulators from ORIGA are among the highest quality devices on the market. And have been for a long time.

New electronics guarantee their high technical qualities. They are smaller but higher in performance, enabling even shorter response times and a more compact design.

But cutting-edge technology isn't everything. It is much more important that the device is technologically suitable for your specific production application, and can therefore bring economic benefits. That's what we focus on at ORIGA.



Electronically controlled proportional pressure regulating valves

Series airfit control
G1/4 – G2

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			Diecast zinc				
– Housing			NBR				
– Standard sealings			NBR				
Port size			G1/4	G3/8	G3/8	G1/2	
Installation			In any position		In any position		
Weight (mass)		kg	0.6	0.6	0.95	0.95	
Medium and ambient temperatures	T_{min}	°C	0	0	0	0	
	T_{max}	°C	+50	+50	+50	+50	
Medium			Filtered, lubricated, or oil-free compressed air, inert gases				
Pneumatic characteristics							
Operating pressure range – inlet pressure ¹⁾	p_{1min}	bar	0	0	0	0	
	p_{1max}	bar	16	16	16	16	
Operating pressure range – outlet pressure	p_{2min}	bar	0	0	0	0	
	p_{2max}	bar	10	10	10	10	
Maximum flow ²⁾	Q_N	l/min	2200	2500	4500	6000	
		m ³ /h	132	150	270	360	
Hysteresis ³⁾	p_{2max}	%	< 1	< 1	< 1	< 1	
Repeatability ³⁾	p_{2max}	%	< 0.5	< 0.5	< 0.5	< 0.5	
Sensitivity ³⁾	p_{2max}	%	< 0.5	< 0.5	< 0.5	< 0.5	
Linearity ³⁾	p_{2max}	%	< 1	< 1	< 1	< 1	
Electrical characteristics							
Nominal voltage	U_N	V DC	24 V = ± 10%	24 V = ± 10%	24 V = ± 10%	24 V = ± 10%	
Residual ripple		%	10	10	10	10	
Power consumption	I_{Bmax}	A	0.15	0.15	0.15	0.15	
Set value input	U_W	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_E	kΩ	200	200	200	200	
Actual value output	U_x	V	0–10	0–10	0–10	0–10	
Output current	I_{Amax}	mA	20	20	20	20	
Degree of protection		IP	65 to DIN 40050, EN 60529		65 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⁾ see explanation on page 134

Electronically controlled proportional pressure regulating valves

Series airfit control
G1/4 – G2

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			
	G3/4	G1	G11/2	G2
	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 16	0 16	0 16	0 16
	0 10	0 10	0 10	0 10
	20000 1200	20000 1200	> 40000 > 2400	> 40000 > 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



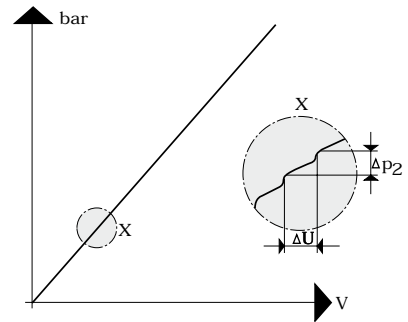
Electronically controlled proportional pressure regulating valves

Series airfit control
G1/4 – G2

Definitions

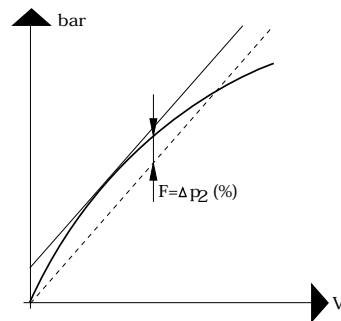
Sensitivity

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.



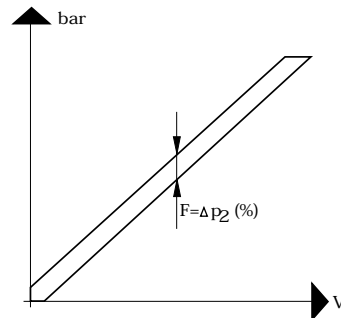
Linearity

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.



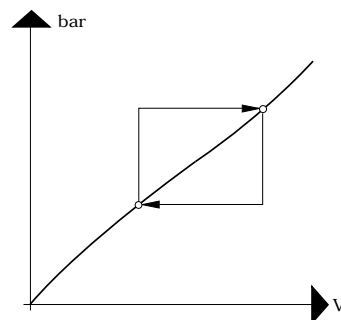
Hysteresis

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.

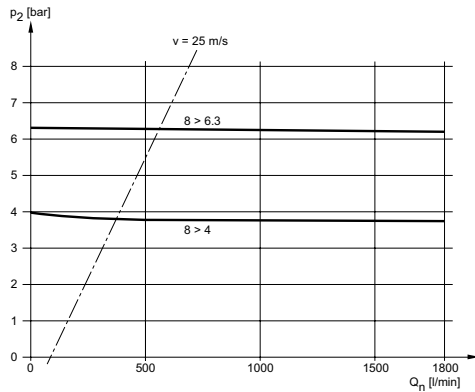


Repeatability

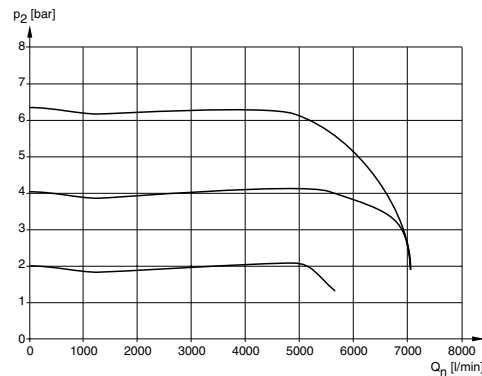
Control components for a given set value usually produce repeated actual values that differ less from each other than from the absolute set value, because the relatively large linearity deviation is excluded. Repeatability is improved if hysteresis is minimized.



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



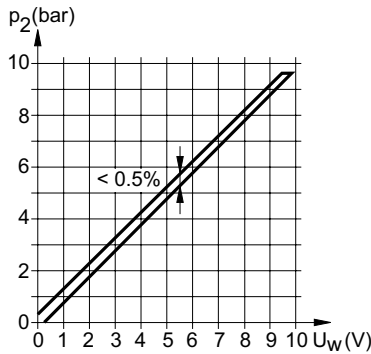
Type: CRE-1/2



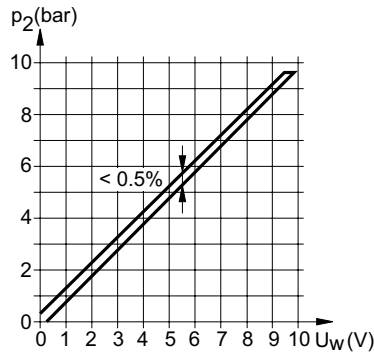
Electronically controlled proportional pressure regulating valves

*Series airfit control
 G1/4 – G2*

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

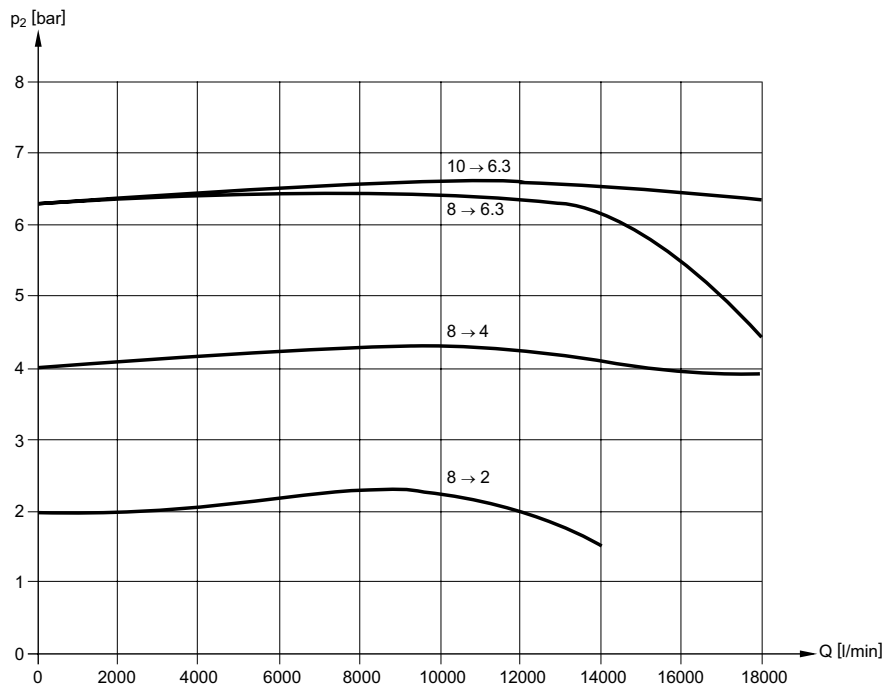


Output pressure as function of input voltage
Type: CRE-1/2



Flow characteristics

Type: A25RE-1

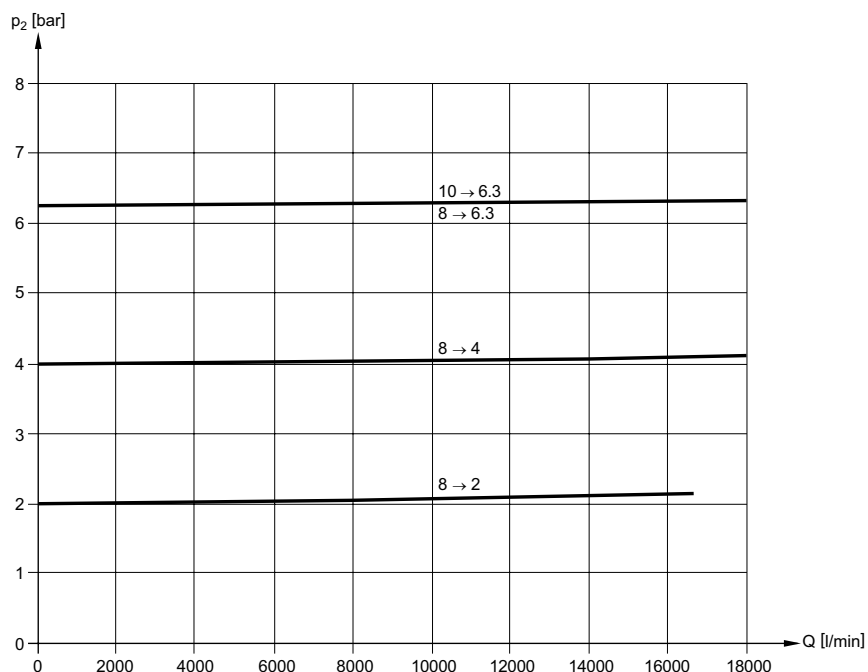


Electronically controlled proportional pressure regulating valves

Series airfit control
G1/4 – G2

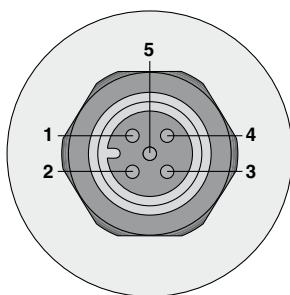
Flow characteristics

Type: A50RE-2



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

Connector M12x1



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 value and actual value

Pin 3:
Set value input
0–10 V

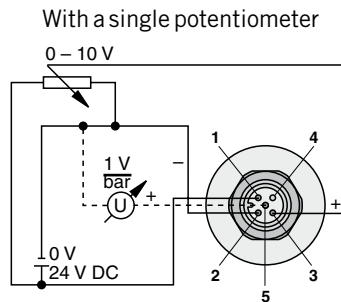
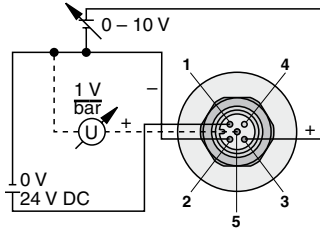
Pin 4:
0 V target signal
(connected on board
with pin 2 as standard)

Pin 5:
Analog actual value output
0–10 V
Tolerance ± 0.15 V

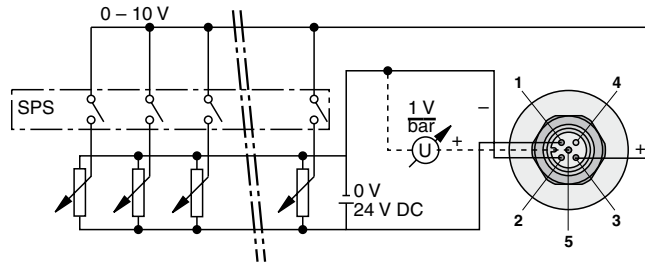


Control options – Type: SRE-..., CRE-...

Analog voltage



PLC in connection with several potentiometers



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

The resistance of the potentiometer should range between 500Ω and 100 kΩ

Electronically controlled proportional pressure regulating valves

Series airfit control G1/4 – G2

*Characteristics
Connection diagrams*

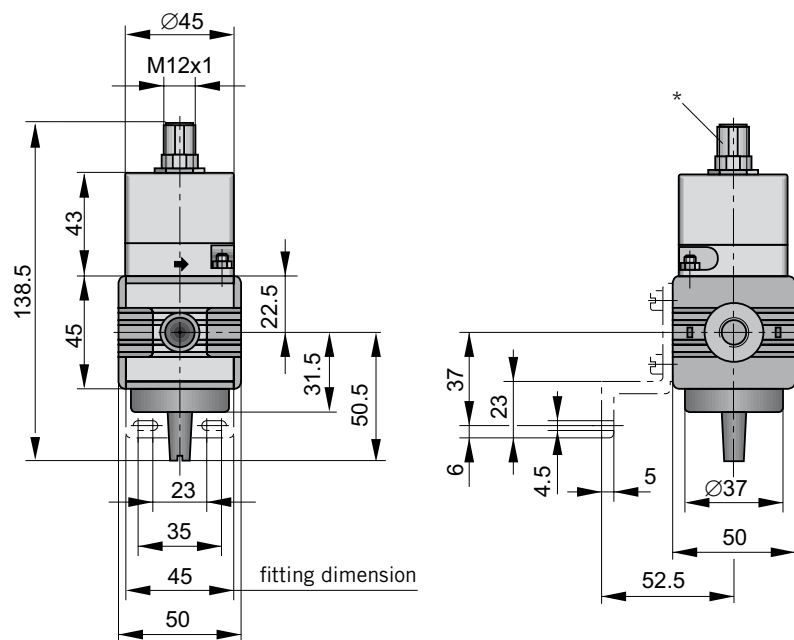


Electronically controlled proportional pressure regulating valves

Series airfit control
G1/4 – G2

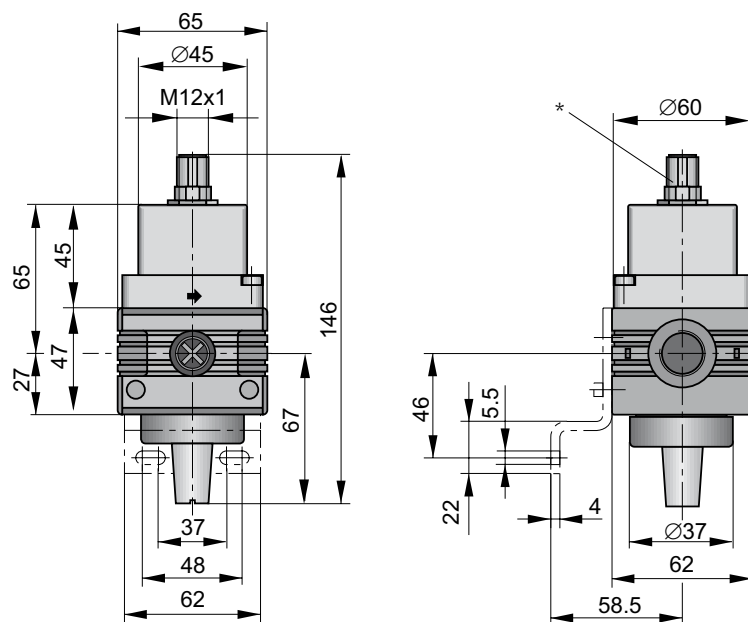
Dimensions

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



* Connection for 5-pin plug M12x1

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

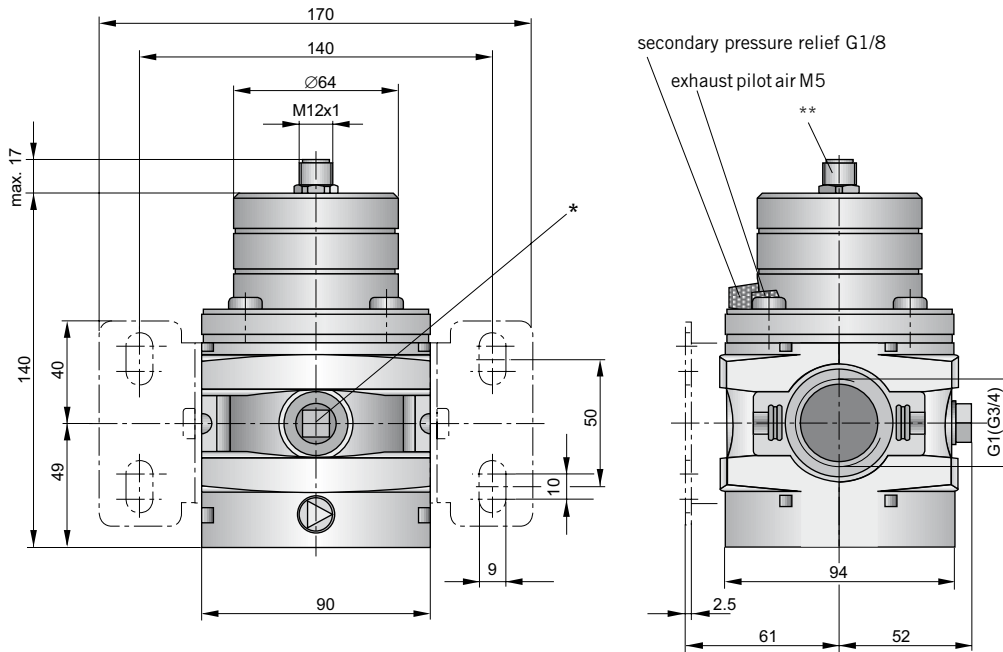


* Connection for 5-pin plug M12x1



Dimensions in mm

Type: A25RE-3/4, -1



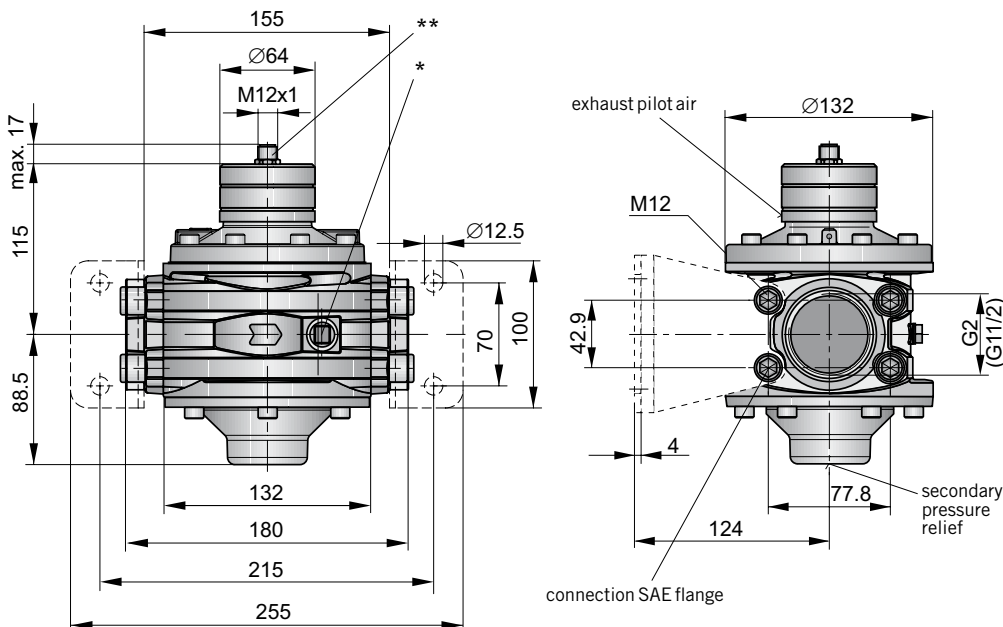
* Two opposite gauge ports G1/4, plug screw mounted
 ** Connection for 5-pin plug M12x1

Electronically controlled proportional pressure regulating valves

Series airfit control
 G1/4 – G2

Dimensions

Type: A50RE-11/2, -2



* Two opposite gauge ports G1/4, plug screw mounted
 ** Connection for 5-pin plug M12x1



Dimensions in mm

Electronically controlled proportional pressure regulating valves

Series airfit control
G1/4 – G2

Order instructions

airfit control G1/4, G3/8

Description	Max. outlet pressure (bar)	Symbol	Port size	Type	Order No.
Basic version for set value 0–10 V, NC (normally closed)	10		G1/4	SRE-U-1/4 NG ¹⁾	PB 59849-10000N-XXX
	10		G3/8	SRE-U-3/8 NG ¹⁾	PB 59949-10000N-XXX
Version for set value 4–20 mA, NC (normally closed)	10		G1/4	SRE-I-1/4 NG ¹⁾	PB 59849-10100N-XXX
	10		G3/8	SRE-I-3/8 NG ¹⁾	PB 59949-10100N-XXX
Version for set value 4–20 mA, NC (normally closed)	10		G1/4	SRE-I-1/4 NG ¹⁾	PB 59849-10200N-XXX
	10		G3/8	SRE-I-3/8 NG ¹⁾	PB 59949-10200N-XXX
Version for set value 0–10 V, NO (normally open)	10		G1/4	SRE-U-1/4 NO ²⁾	PB 59849-10010N-XXX
	10		G3/8	SRE-U-3/8 NO ²⁾	PB 59949-10010N-XXX
Version for set value 4–20 mA, NO (normally open)	10		G1/4	SRE-I-1/4 NO ²⁾	PB 59849-10110N-XXX
	10		G3/8	SRE-I-3/8 NO ²⁾	PB 59949-10110N-XXX
Version for set value 4–20 mA, NO (normally open)	10		G1/4	SRE-I-1/4 NO ²⁾	PB 59849-10210N-XXX
	10		G3/8	SRE-I-3/8 NO ²⁾	PB 59949-10210N-XXX

airfit control G3/4, G1

Description	Max. outlet pressure (bar)	Symbol	Port size	Type	Order No.	
Basic version for set value 0–10 V, NC (normally closed)	10		G3/4	A25RE-U-3/4-NG ¹⁾	PB 64349-10000N-XXX	
	10		G1	A25RE-U-1-NG ¹⁾	PB 64449-10000N-XXX	
Versions for set value 0–20 mA and 4–20 mA			G3/4, G1	On request	On request	
Versions for NO (normally open) functions			G3/4, G1	On request	On request	

¹⁾ NG: device keeps pressure when currentless

²⁾ NO: device keeps pressure when currentless



airfit control G3/8, G1/2

Description	Max. outlet pressure (bar)	Symbol	Port size	Type	Order No.
Basic version for set value 0–10 V, NC (normally closed)	10		G3/8	CRE-U-3/8 NG ¹⁾	PB 60149-10000N-XXX
	10		G1/2	CRE-U-1/2 NG ¹⁾	PB 60249-10000N-XXX
Version for set value 4–20 mA, NC (normally closed)	10		G3/8	CRE-I-3/8 NG ¹⁾	PB 60149-10100N-XXX
	10		G1/2	CRE-I-1/2 NG ¹⁾	PB 60249-10100N-XXX
Version for set value 4–20 mA, NC (normally closed)	10		G3/8	CRE-I-3/8 NG ¹⁾	PB 60149-10200N-XXX
	10		G1/2	CRE-I-1/2 NG ¹⁾	PB 60249-10200N-XXX
Version for set value 0–10 V, NO (normally open)	10		G3/8	CRE-U-3/8 NO ²⁾	PB 60149-10010N-XXX
	10		G1/2	CRE-U-1/2 NO ²⁾	PB 60249-10010N-XXX
Version for set value 4–20 mA, NO (normally open)	10		G3/8	CRE-I-3/8 NO ²⁾	PB 60149-10110N-XXX
	10		G1/2	CRE-I-1/2 NO ²⁾	PB 60249-10110N-XXX
Version for set value 4–20 mA, NO (normally open)	10		G3/8	CRE-I-3/8 NO ²⁾	PB 60149-10210N-XXX
	10		G1/2	CRE-I-1/2 NO ²⁾	PB 60249-10210N-XXX

airfit control G11/2, G2

Description	Max. outlet pressure (bar)	Symbol	Port size	Type	Order No.	
Basic version for set value 0–10 V, NC (normally closed)	10		G11/2	A50RE-U-11/2-NG ¹⁾	PB 60549-10000N-XXX	
	10		G2	A50RE-U-2-NG ¹⁾	PB 60649-10000N-XXX	
Versions for set value 0–20 mA and 4–20 mA			G11/2, G2	On request	On request	
Versions for NO (normally open) functions			G11/2, G2	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 G11/2 (kit)	airfit A50	A50RE	PL18660
Connection flange G2 (kit)	airfit A50	A50RE	PL18662



Electronically controlled proportional pressure regulating valves

Series airfit control
G1/4 – G2

Order instructions

Configurable electronically proportional pressure regulating valve airfit control

Order No.	PB	598	49	-	01	0	0	0	N	-	XXX	
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Series	
598	SRE-1/4
599	SRE-3/8
601	CRE-3/8
602	CRE-1/2
643	A25RE-3/4
644	A25RE-1
605	A50RE-11/2
606	A50RE-2

Outlet pressure range	
01	0–1 bar
02	0–2 bar
03	0–3 bar
04	0–4 bar
05	0–5 bar
06	0–6 bar
07	0–7 bar
08	0–8 bar
09	0–9 bar
10	0–10 bar
XX	Special pressure range

Set value input	
0	0–10 V
1	4–20 mA
2	0–20 mA
X	Special set value input

Version	
0	NC (normally closed)
1	NO (normally vented)

3-digit special number	
XXX	Standard design or as plain text e.g. special connector, special resistance, special setting areas, accessories fitted etc.

Attention	
N	NBR (Standard design)
V	Viton design (e.g. for oxygen)
X	Special material
S	NPT-thread at NBR version
U	NPT-thread at Viton version

Actual output	
0	0–10 V
1	0–1 V
2	0–2 V
3	0–3 V
4	0–4 V
5	0–5 V
6	0–6 V
7	0–7 V
8	0–8 V
9	0–9 V
A	4–20 mA
B	0–20 mA
X	Special actual output



Mounting kit
for Type: SRE-..



Order No. PL16965

Mounting kit
for Type: CRE-..



Order No. PL17518

Mounting kit
for Type: A25RE-..



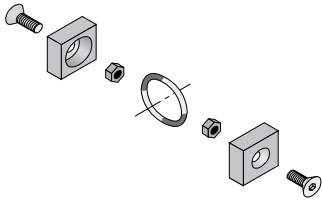
Order No. PL18988

Electronically controlled proportional pressure regulating valves

*Series airfit control
G1/4 – G2*

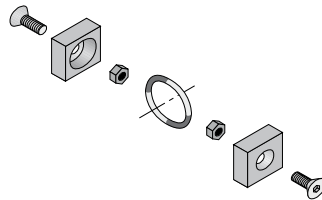
*Accessories
– Mounting kit
– Coupling kit*

Coupling kit
for Type: SRE-..



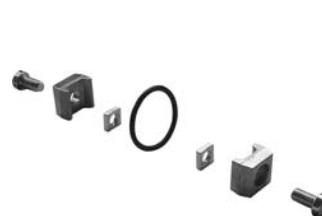
Order No. PL16959

Coupling kit
for Type: CRE-..



Order No. PL17608

Coupling kit
for Type: A25RE-..



Order No. PL18987

Mounting kit
for Type: A50RE-..



Order No. PL18672

Coupling kit
for Type: A50RE-..



Order No. PL18735