

# Proportional Controller

Type: PR / P3

Technical Data Sheet



## Application

For stepless capacity control of air screw compressors: Suction control valves, bypass valves, bleed valves and pneumatic actuated engine speed controllers can be governed by the signal of the proportional controller.

Other applications:

Positive acting proportional controllers can also be used as a relief valve or a signal pressure limiter.

## Function

The pressure at the controller inlet E is transformed directly to a pneumatic signal at outlet A.

Controllers PRP/P3P are positive acting. Within the control range (see diagram 1) an increasing pressure at inlet E results in a proportionally increasing signal at outlet A.

Controllers PRN/P3N are negative acting. Within the control range (see diagram 2) an increasing pressure at inlet E results in a proportionally decreasing signal at outlet A.

## Installation

Inlet E is connected to the discharge pressure of the compressor after the oil separation. To ensure reliable functionality, the minimum inner diameter of the air supply line (see details) has to be considered accordingly.

Outlet A is connected to the signal pressure line for governing suction control valves, bleed valves, venting valves, servo cylinders, and other control devices.

Outlet nozzle (AD): Air consumed by control devices is vented via the outlet nozzle.

Proportional controllers must have an outlet nozzle, which is either integrated in the controller itself or has to be part of the signal pressure line.

## Maintenance

For maintenance follow the recommendation and instruction of the compressor manufacturer.

## Operation

Set point (see diagram 1 and 2):

The set point is adjusted by turning the hand wheel/ adjustment screw

- to a higher pressure: clockwise
- to a lower pressure: counterclockwise

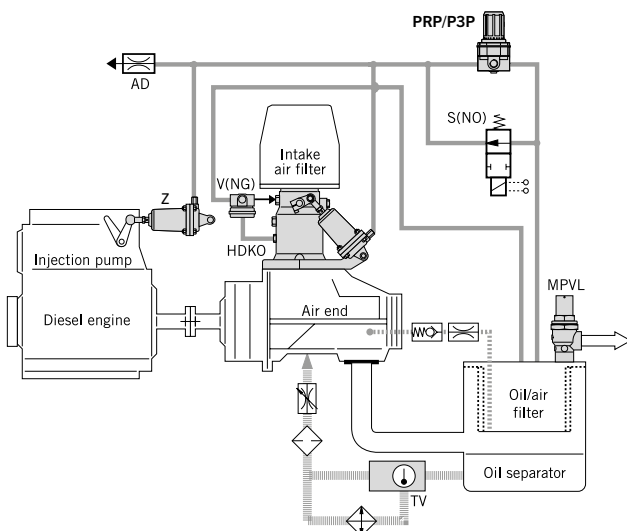
Control range (see diagram 1 and 2):

- Increase: install an outlet nozzle with larger diameter
- Decrease: install an outlet nozzle with smaller diameter

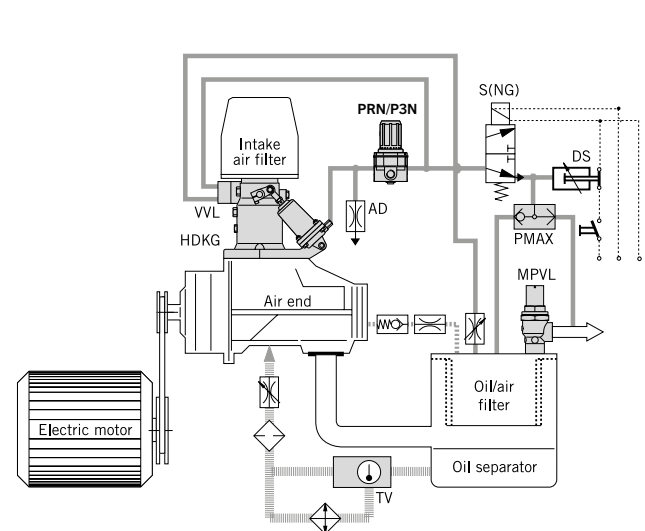


**Attention! Never attempt to disassemble a valve whilst under pressure!**

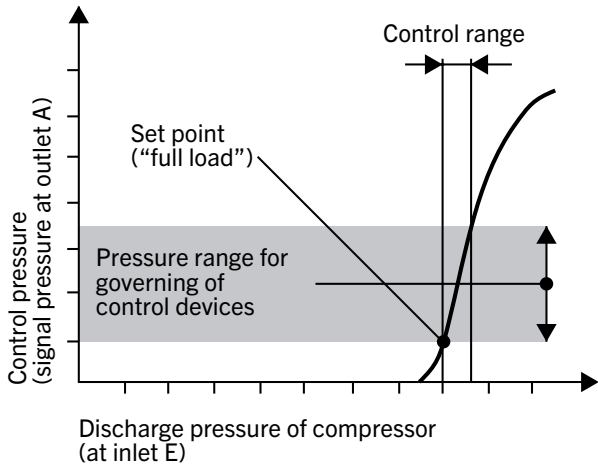
## Proportional Controller positive acting



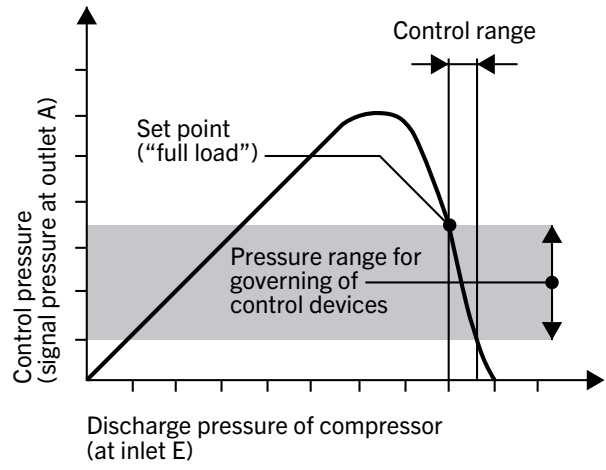
## Proportional Controller negative acting



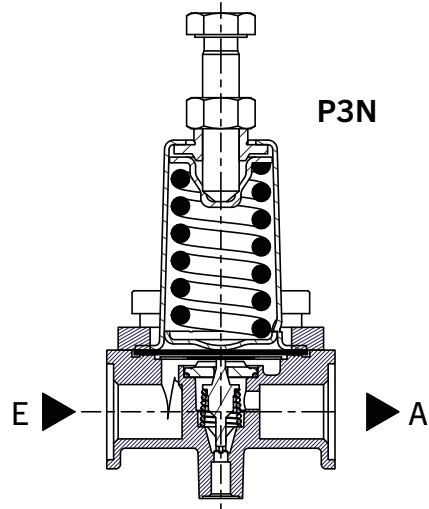
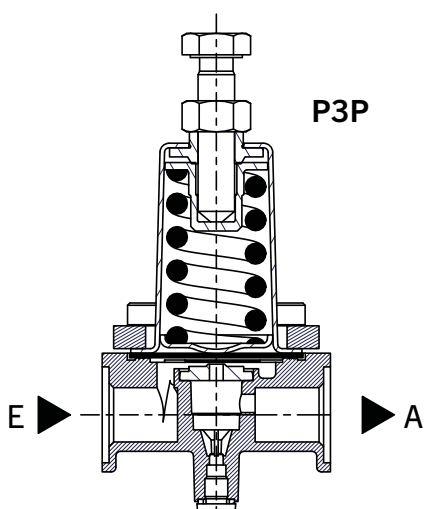
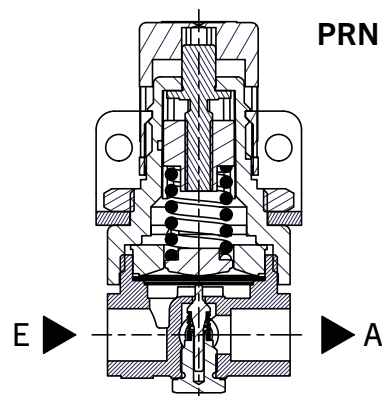
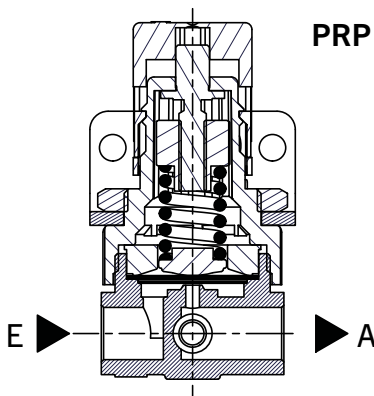
**Diagram 1: Positive acting controller**



**Diagram 2: Negative acting controller**



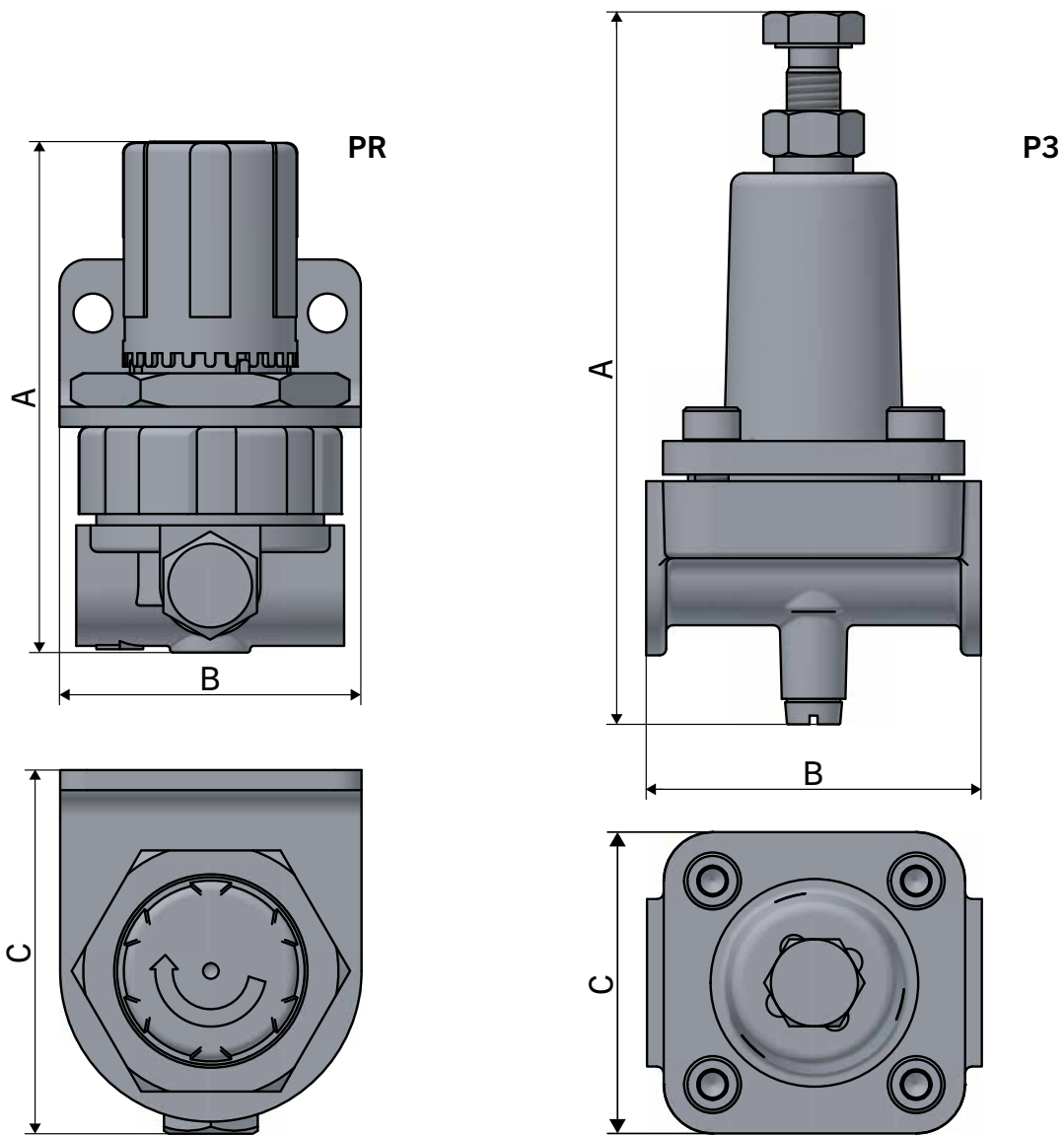
**Section views**



## Technical details

Controller type		PRP	PRN	P3P	P3N
Nominal diameter	mm	3 or 5	3	1 or 3	3
Max. working pressure	barg psig	16 232	16 232	28 406	28 406
Temperature range	°C °F	-20 to +120 -4 to +248			
Minimum inner diameter of air supply line	mm inch	4 or 6 0.16 or 0.24	4 0.16	4 or 5 0.16 or 0.20	5 0.20
Connections		Inlet E: G1/4 Outlet A: G1/4, additional ports upon request			
Set point	barg psig	5 to 13 72 to 190	5 to 13 72 to 190	2 to 25 29 to 363	2 to 25 29 to 363
Control range	% of set pressure	5 to 20	5 to 20	3 to 20	3 to 20
Reproducibility	%	±2			
Dimensions		Refer to component drawing			
Installation		Possible in all directions			
Medium		Pressurized air (oily), filtered. Recommended compressed air quality according to DIN ISO 8573-1, class 5. Compressor oil compatible with HOERBIGER reference oil list.			
Materials		Brass, aluminum alloy, steel, NBR/FKM, temperature and oil resistant polymer			
Weight	kg	0.22	0.25	0.32	0.35

## Dimensions



Controller type		PR	P3
A	mm	80	112
	inch	3.1	4.4
B	mm	42	50
	inch	1.7	2.0
C	mm	57	45
	inch	2.2	1.8

Note: Other dimensions and optional ports upon request.



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