

Proportional Controller Typ PRP und PRN

Applications

For stepless (infinitely variable) capacity control of air compressors: Suction control valves, bypass valves, bleed valves and engine speed controllers are governed by the signal from the proportional controller.

Other applications:

Proportional controllers types PRP can also be used as a relief valve or a signal pressure limiter.

Operation

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

Controllers PRP are positive acting. Within the control band (see diagram) they give a proportionally rising signal at A on increasing pressure at E.

Controllers PRN are negativ acting. Within the control band (see diagram) they give a proportionally rising control signal at A on decreasing pressure at E.

⚠ Attention! Never attempt to disassemble a cylinder whilst under pressure!

Proportionalregler PRP

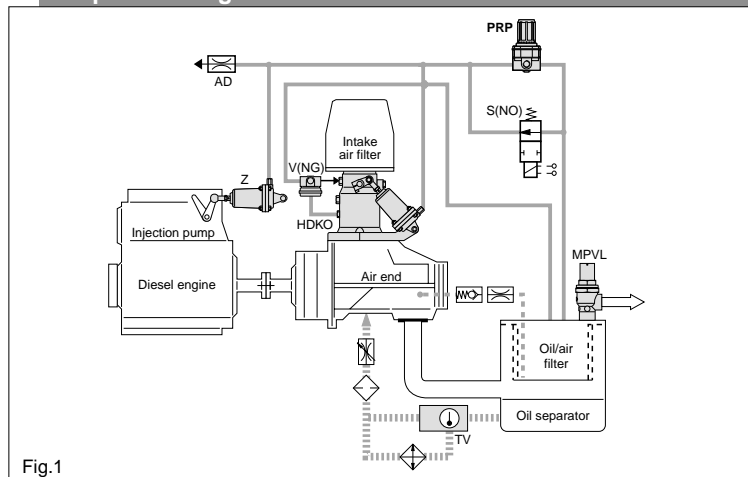


Fig.1

Proportionalregler PRN

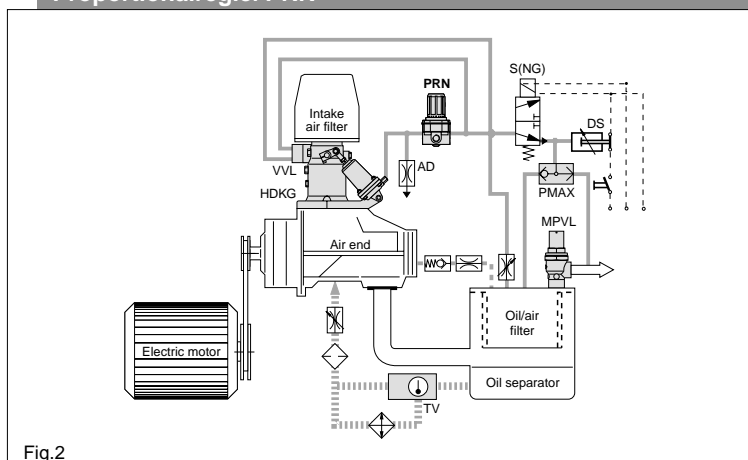


Fig.2



Installation

Inlet E is connected to the discharge pressure line of the compressor or to an air receiver via a signal pressure line. The pressure line is also the air supply line of the controller and has to be dimensioned accordingly (see Details).

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 with outlet nozzle in the housing (1) are available.

If a proportional controller without outlet nozzle in the housing is used, an outlet nozzle (AD) has to be installed in a T-fitting located in the signal pressure line.

Adjustment

Set point:

The set point is adjusted by turning the hand wheel (2)

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

Proportional band (control band):

- increase: install an outlet nozzle with larger diameter
- decrease: install an outlet nozzle with smaller diameter

Ordering details:

1. Ordering by type and article no.:

2. Order by specifying data:

- Set point (compressor discharge pressure),
- Proportional band (control band)
- Signal pressure range to govern actuators for compressor and engine speed
- Accessories: bracket or ring for panel installation
- Special execution (design, installation)

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Details

Controller type		PRP3E	PRP5E	PRN
Controller nozzle; DN	mm	3	5	3
Max. working pressure PS	bar (g)	16		
Air supply line minimum inner diameter	mm	4	6	4
Connections		inlet E: G 1/4, female thread outlet A (1-3): 1 x G 1/4, 2 x G 1/8, female thread		
Operating mode		positive acting (direct)		
Pressure range	bar (g)	5 to 13		
Temperature range	°C	operating temperature: +20 to +70 at start-up: -20 to +70 at emergency stop: up to +100		-20 to +120
Medium		oily pressurized air, filtered • recommended compressed air quality according to DIN ISO 8573-1, class 5 Reference oil: see www.hoerbigerkompresortechnik.de		
Proportional range	%	3 to 20 of pressure at inlet E,		5 to 20
Reproducibility,	%	±2		
Hysteresis				
Air consumption	l/min	minimum at full load maximum at compressor idling (quantity depends on outlet nozzle and the signal pressure at outlet A)		
Installation dimensions	mm	see Fig.3		
Installation		Pressure line mounting: standard execution Panel mounting: please order bracket (3) and ring (4)		
Installation position		optional		
Materials		brass, steel, perbunan, temperature and oil resistant polymer		
Weight	kg	standard: 0.21 for panel mounting: 0.25		0.22 0.26

Dimensions (mm) PRP/PRN

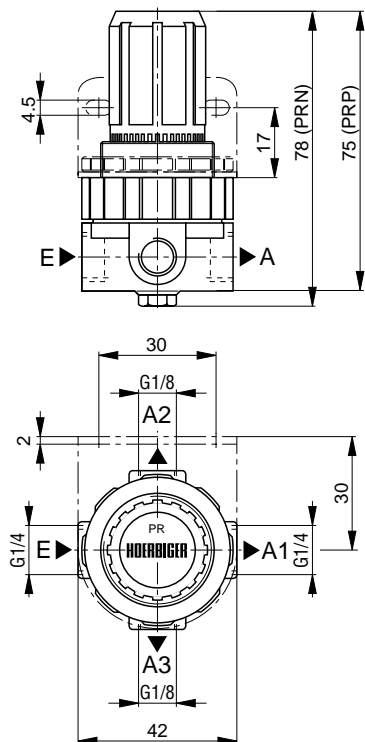


Fig.3

Diagram 1, control signal at outlet A (PRP)

(controller with positiv acting)

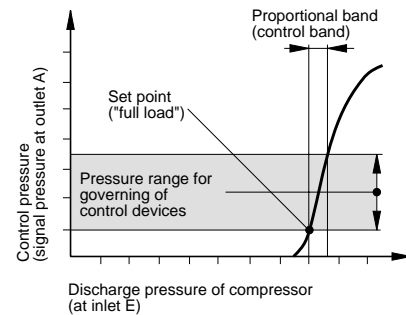
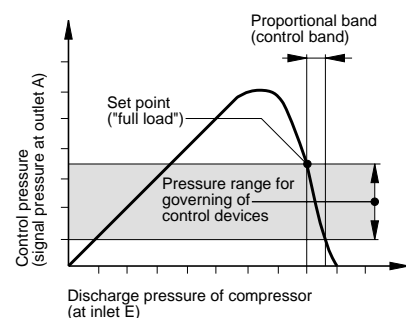
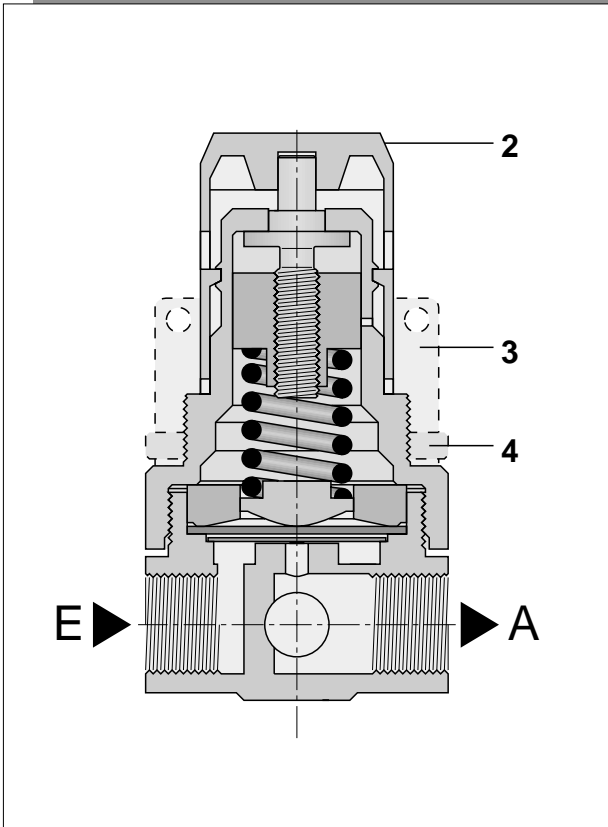


Diagram 2, control signal at outlet A (PRN)

(controller with negative acting)



Proportional Controller PRP



Proportional Controller PRN

