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TS19100201, EL-Press P-800 with separate valves and sensor

Product description
Hook-up

Special P-800 Process Pressure Controller (PPC) with separate Inlet and Relief valve.

Introduction

The pressure sensor and PID controller are used to control the pressure of the customer's process and to control the valves based on the measured value.

The two valves are configured as an inlet (IN) and an outlet valve (RELIEF). Opening the inlet valve increases the pressure in the process chamber (OUT), whilst opening the outlet valve decreases this pressure. By driving the valves with the output of the PID controller, an accurate constant pressure can be maintained.

Both valves are controlled by the single PID controller output.

Controlling states

The P-800 controller knows two controlling states, normal control and stable control.
Stable control will be reached when the measured value is within the hysteresis band's boundary of the setpoint. In this state both valves are closed and the PID controller acts as inactive. This band can be adjusted with the controller hysteresis parameter (FlowDDE 361, Propar 114/15).

The controller is **in Normal control** when the measured value is outside this band. When the controller hysteresis is set to 0.0, the controller will always be in the controlling state.

The hysteresis parameter needs to be set to a suitable value to avoid unintended controlling.
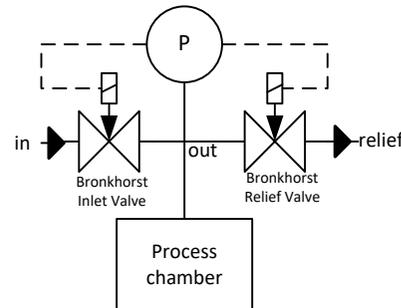
PID Output

The single PID output, the valve out value, is split between the two control valves.
The maximal valve value can be controlled with the Valve Maximum parameter, and is set to 185mA by default. This will show as 61.67% in FlowPlot. When both valves are closed (Stable control) the valve out value will show 50% of the valve maximum value.
Values from the 50% to the 100% point controls the inlet valve.
Values from the 50% to the 0% point controls the relief valve.

Summary:

Both valves are closed when:
(Setpoint – Hysteresis) < Measurement value < (Setpoint + Hysteresis)

The inlet valve will be controlled when:
Measured value < (Setpoint – Hysteresis)

The relief valve will be controlled when:
Measured value > (Setpoint + Hysteresis)

in ▷ — Bronkhorst Inlet Valve — out — Bronkhorst Relief Valve — ▷ relief — Process chamber — P

Special EL-press with separate valves

See coresponding hook-up for bus interface if present

Special cable (optional)
Pressure sensor

L=50 cm
L=50 cm

Bronkhorst control valve
Bronkhorst control valve
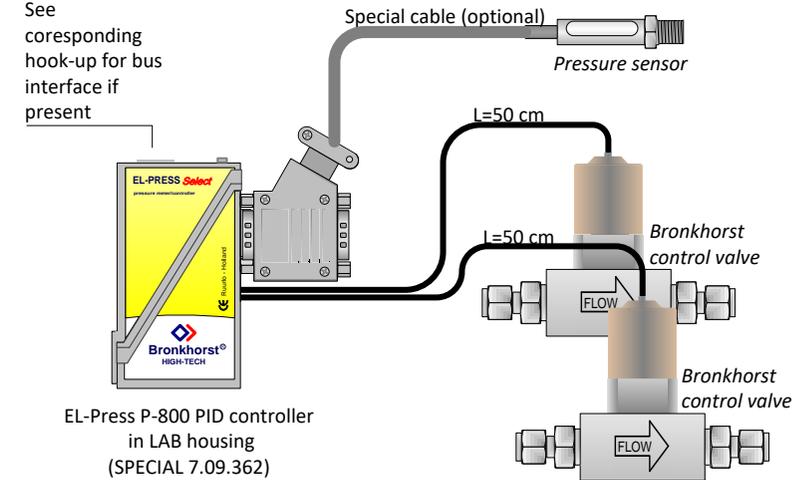
EL-Press P-800 PID controller in LAB housing (SPECIAL 7.09.362)

*Images are for illustrative purpose only. For product description and hook-up, see the corresponding product documentation.

Hook-up

9pin SubD male

pin	signal
1	TX-RS232/RS485-B
2	Analog output
3	Analog input
4	0V power
5	
6	RX-RS232/RS485-A
7	+Us
8	0V sense
9	Shield

SENSOR INPUT
RX-RS232/RS485-A
TX-RS232/RS485-B } RS232
0V power

Analog out 4..20mA
Analog in 4..20mA
Supply* 15..24Vdc