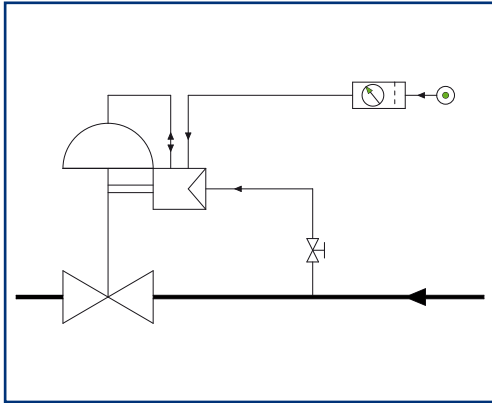


Controllers and Instrumentation



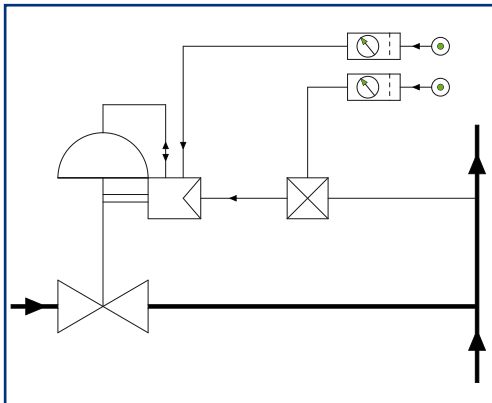
The optimal solution for every task



Local pneumatic control circuits

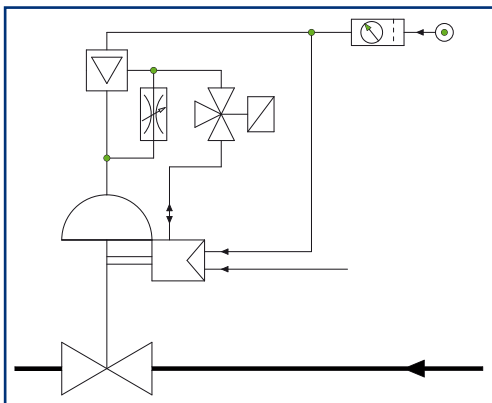
Inexpensive local control circuits are often used for simple control tasks such as those related to pressure, differential pressure or temperature. They comprise a valve, pneumatic actuator and a pneumatic measuring element that determines the measurement variable, evaluates the control deviation, and integrates an I or D component in addition to the P-response to form the signal used to control the actuator.

Von Rohr offers a line of pneumatic controllers that meets basic to advanced requirements. Be it P-controllers with a fixed setpoint value and direct actuator control or for ultra-precise control, PID or two-point controllers, available with external setpoint value configuration and support for displaying setpoint/actual values, and actuating pressure, as well as manual-automatic transition with actuator control via pneumatic positioner type SRP (see von Rohr brochure on the SRP positioner) von Rohr's product offering has the device you're looking for to meet your control needs.



Instrumentation accessories

Functions in addition to the ones used for actuating and controlling are often required to ensure that valves are used effectively in plants. Regardless of whether the application calls for limit position signalling via inductive or mechanical switches, safety-relevant and redundant valve deactivation (if needed) via solenoid and blocking valves, longer actuating times or conditioning of instrument air – von Rohr Armaturen can always provide an appropriate, proven solution.



Minimized actuating time

Control valves with large, pneumatic actuators typically have actuating times in excess of 30 seconds. Such responses are too slow for many applications, however. Special applications involving turbine bypass stations or anti-surge control valves on compressors, for example require actuating times of 2 seconds or less to prevent damage to machines and plants.

Von Rohr Armaturen has the know-how it takes to master these challenges too. Integration of boosters, throttle and solenoid valves, and filter-reduction stations in the assembly process allows us to offer actuation control circuits that are robust, free of vibrations and extremely fast for demanding situations.

Type 902 pressure controller



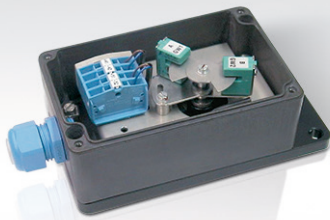
The type 902 pressure controller is a compact measuring element controller that measures pressure and differential pressure and is mounted directly on a pneumatic actuator. The pressure to be controlled generates a force via the measuring system (bellows or diaphragm). This force is then compared to the force of an adjustable spring and used to create the actuating pressure by way of a nozzle/flapper system. A return facility from the drive spindle balances control. The "Roboter" pressure controller can be used to regulate the flow of gas, steam, or fluid pressure in industrial plants.

Type 910 temperature controller



The type 910 temperature controller is an extremely robust measuring element controller for controlling temperature. It is installed directly at the measuring point and generates the actuating pressure required for the actuator via an expansion stick and a nozzle/flapper system. A calibrated scale enables the setpoint value to be configured. The pneumatic actuator with valve can also be located further away from the measuring point. The type 910 temperature controller is used to regulate the temperature of central refrigerant circuits, among other applications.

Type 827S signal box



The type 827S signal box is suitable for signalling intermediate or limit positions. It is mounted at the actuator bracket acc. to NAMUR and taps the valve stroke using the patented, zerobacklash ARCAPLUG® position feedback. Up to three inductive slot initiators are actuated by adjustable switch discs to indicate the current position of the valve.

Solenoid and blocking valves



Solenoid valves can be used to actuate on-off valves or implement safety-relevant deactivation for control valves. Pneumatic blocking valves allow the actuating pressure of the actuator to be blocked when the supply air pressure drops below a set threshold value so that the valve remains in its current position.

Proximity switches

Intermediate or limit positions can be detected by external inductive proximity sensors mounted to the NAMUR rib of the actuator bracket. A contact plate on the actuator spindle triggers the sensor signal.

Mechanical switches

Mechanical switches with dry contacts can also be attached to von Rohr actuators for signalling intermediate or limit positions. The roller-type or plunger switches are mounted to the actuator bracket acc. to NAMUR standards and triggered by a contact plate.

Type 920 and 921 measuring element controllers



The measuring element controllers for pressure (type 920) and temperature (type 921) are easy-to-use, highly-precise pneumatic uniform controllers that can be mounted in a cabinet or on a wall. They can function as P, PI, PD, PID, or two-state controllers, with configurable parameters, depending on the type of control needed. The devices indicate setpoint/actual values and the actuating pressure, allow the setpoint value to be changed and provide for a smooth transition from manual to automatic mode.

Type 931 pressure transmitter (1:1)



The type 931 pressure transmitter (1:1) can convert the pressure exerted by liquid, highly viscous, or aggressive media into a pneumatic, air signal and transmit this to a pneumatic measuring element controller, for example. The pressure transmitter has a very simple, robust design and requires no maintenance. It is used in any application that requires the pressure of aggressive, very hot, or highly viscous media as well as media containing solids to be measured.

Filter-reducing stations



For providing supply air with the required pressure and quality filter-reducing stations are used. Von Rohr Armaturen offers a wide range of materials, temperature ranges and filter porosities for your specific application.

Accessories for optimizing actuating times



Actuating times of up to 30 seconds are typical for large pneumatic actuators during normal control operation with positioners or on-off operation. Such responses are too slow for many applications, however, because the valves must open and close much more quickly to prevent damage to the plant and high follow-up costs.

The experts at von Rohr Armaturen can provide you with boosters, throttle valves, quick-bleed valves, and appropriately dimensioned filter reduction stations to ensure consistent, vibration-free closed-loop control or on-off operation actuation times down to 2 seconds, also for large actuators and high levels of valve friction.

Throttle and throttle check valves

Throttle valves are installed in the control-air line to increase the actuating time of pneumatic actuators. Throttle check valves can be used if the actuating time must differ for each direction.

Controllers and Instrumentation



Features	Your benefit
Time-tested, classic pressure and temperature controllers with pneumatic output	<ul style="list-style-type: none"> ● Long service life ● Simple, robust design ● No external signal cables required ● Low life-cycle costs
Wide range of instrumentation accessories	<ul style="list-style-type: none"> ● Optimal adaptation to a specific application
Accessories with all common degrees of protection (including SIL classification)	<ul style="list-style-type: none"> ● Can be integrated in any plant concept
Broad temperature range	<ul style="list-style-type: none"> ● Also suitable for applications in tropical or arctic environments
Actuating times of 2 seconds, even for large actuators	<ul style="list-style-type: none"> ● Special applications possible, e.g. for turbine bypass stations and anti-surge control valves on compressors
Safety-relevant deactivation via solenoid valve	<ul style="list-style-type: none"> ● Integration with different safety concepts possible
Blocking in the event of an auxiliary power failure	<ul style="list-style-type: none"> ● Easy shut-down of plants when damage occurs

Controllers and Instrumentation

Pneumatic Controllers	
Supply air pressure	1.4 bar
Set pressure	0.2...1 bar
Type 902 pressure controller "Roboter"	Measuring range -1.0...-0.01 bar to 1.5...80 bar
Type 910 temperature controller	Measuring range 0...100°C to 150...250°C
Type 920 measuring element controller for pressure	Measuring range -1...1 bar to 0...650 bar
Type 921 measuring element controller for temperature	Measuring range -40...50°C to 200...600°C
Type 931 pressure transmitter (1:1)	Measuring range 0...4 bar

Instrumentation Accessories	
Type 827S signal box	up to 3 slot initiators: SC3.5-N0-B-BU / SJ3.5-SN / SB3.5-E2
Ignition protection	none
External proximity switches	up to 2 inductive proximity sensors: NJ5-18GK-N / NJ5-18GK-SN / NJ5-18GM50-E2
Ignition protection	none / flameproof
External mechanical switches	ENM2-SU1Z Ex / GC-UV1Z-AH / 07-2511-3330/04
Switching capacity	up to 400 V, 10 A AC / 250 V, 0.5 A DC, depending on type
Ignition protection	none / flameproof
Solenoid valves	G $\frac{1}{4}$ / G $\frac{1}{2}$ / $\frac{1}{4}$ " NPT / $\frac{1}{2}$ " NPT
Type	2/2-, 3/2-, 5/2- or 5/3-way valves
Rated voltage	24 V, 50 Hz / 230 V, 50 Hz / 24 V DC
Ignition protection	none / flameproof / encapsulated / intrinsically safe
Blocking valves	G $\frac{1}{4}$
Type	2/2-, 3/2- or 4/2-way valves
Filter-reduction stations	G $\frac{1}{4}$ / G $\frac{1}{2}$ / $\frac{1}{4}$ " NPT / $\frac{1}{2}$ " NPT
Supply pressure range	up to 31 bar, depending on type
Downstream pressure adjustment range	0...6 bar to 0.3...10 bar, depending on type
Filter porosity	5...40 μ m, depending on type
Quick-bleed valves / boosters / throttle valves	G $\frac{1}{4}$ / G $\frac{1}{2}$ / G $\frac{3}{4}$ / G1 / $\frac{1}{4}$ " NPT / $\frac{1}{2}$ " NPT / $\frac{3}{4}$ " NPT / 1" NPT