Pressure Control System
CoM4.PressureControl

Version: 01/07/2025

The CoM4.PressureControl pressure control system was developed for the quick and precise control and regulation of relative and absolute pressures.

- Pressure control system for control pressures up to 20 bar
- Control accuracy up to 0.1 mbar (depending on the actual pressure control range)
- Measurement and control using analog relative pressure sensors
- Operation via touch display
- Controller as a measuring and control system

Technical Description

CoM4.PressureControl is a high-precision pressure control system designed for the rapid and dynamic adjustment of relative and absolute pressures. It utilizes analog relative pressure sensors with extremely short response times and optimized signal processing. The measurement system performs autonomous testing procedures, precisely regulates pressure, and can transmit the measurement results digitally or, if desired, analog. The CoM4.SYS controller manages the entire testing and regulation process.
Thanks to its modularity—both in its mechanical design and sensor technology, as well as in its highly configurable software—the measurement system can be perfectly adapted to various testing tasks.

Configurable testing programs allow for quick and easy switching between different settings to meet diverse measurement requirements.

Functional Scope

- Continuous measurement and control
- Higher-level control (PLC operation)
- Automatic range switching between sensors, if available
- Test pressure up to 20 bar, input pressure up to 30 bar
- Pressure ramps, filters, and asymptotic approach to the setpoint optionally available

Additionally, all sensor signals supplied to the measurement system can be linearized and displayed in various physical units. For larger adjustment ranges, multiple cascaded control valves can be used. The control accuracy depends on the measurement range.
Furthermore, it is possible to connect additional measurement systems for flow or leakage measurement to the control unit, enabling coordinated testing procedures with high temporal efficiency and precision.

Pressure Control System
CoM4.PressureControl

Version: 01/07/2025

Specifications

Measurement Range	Up to 20 bar rel. or 21 bar abs.
Accuracy (Air)	20 bar: Stability < 1 mbar 5 bar: Stability < 0.1 mbar 50 mbar: Stability < 0.008 mbar
Environmental Conditions	Pressure: Atmospheric Temperature: -10 .. +50 °C Humidity: 0 .. 100 %, non-condensing
Media Compatibility	Clean, dry, non-condensing, non-corrosive gases and air. The measuring medium must meet the requirements of ISO 8573-1. In addition to a 5 µ filter, an oil/ water separator in the compressed air supply is absolutely necessary.
Overload Limit	Double the measuring range end value of the pressure sensors, at most the specified pressure rating of the piping
Display	Graphical User Interface on 4“ display
Enclosure Dimensions (WxHxD)	3 U: 450 x 150 x 316 mm 4 U: 450 x 190 x 316 mm 6 U: 450 x 280 x 316 mm
Protection Class	IP 20 to IP 54, higher on request
Process Connections	Hose connections, Standard DIN threads and flanges, others on request
Operating Conditions	Input Pressure: 0 .. 30 bar abs Input Temperature.: -10 .. +40 °C Humidity: 0 .. 100 %, non-condensing
Electrical Connections	IEC connector, round connector (type Lumberg)
Interfaces	Ethernet, USB 2.0 (Type A), RS-232, 9-Pol. D-SUB, 8 opt.el DI/DO

Specifications

Power Supply	90..260 VAC (power supply), 50/60 Hz, max. 80 W
Approvals	The measuring device complies with the European standard EN 61010-1 (Safety requirements for electrical equipment for measurement, control, and laboratory use) and the provisions of the "Machinery Directive - 89/392"

Special Features

Mounting Options

Control Device: the CoM4.SYS controller is ready for connection in a stable 19" rack housing with 3U, 4U or 6U. Sensors are also available as separate components.

Measurement Sections:

The system can be optimized for either minimal control times or maximum stability. The calibration data for determining sensor values and flow rates is stored in the measurement/control unit. All sensors are delivered calibrated and can be DAkkS-certified upon request.

Measuring Media

Usable media: The substance database supports the use of air and more than 12 gases.

Operation

The operation and result display are carried out via a 4-inch touch display or the provided browser software, including a y/t graph. The measurement values are recorded at up to 100 Hz and transmitted via the Ethernet interface. Available functions include, among others:

- Temporal representation of measurements
- Measurement results
- System diagnosis/system information
- Settings with parameter settings
- Data logging

Order Data

The system can be customized in special cases to meet specific requirements. Please provide us with the following information for design and quotation purposes:

- Pressure control / measurement range(s)
- Type(s) of gas
- expected volume of unit under test
- Operating conditions (pressure and temperature)
- Control requirements
- Measurement and control accuracy
- Environmental conditions
- Enclosure requirements
- Power supply
- Data acquisition requirements
- Other specific requirements