

red-y smart pressure controller product information



Electronic pressure controller  
with integrated flow measurement

**vögtlin**   
instruments

## Pressure and flow in a single device: Electronic pressure controller for gases with integrated flow measurement

The new electronic red-y smart pressure controllers combine the reliable technology our of thermal mass flow controllers with electronic pressure control.

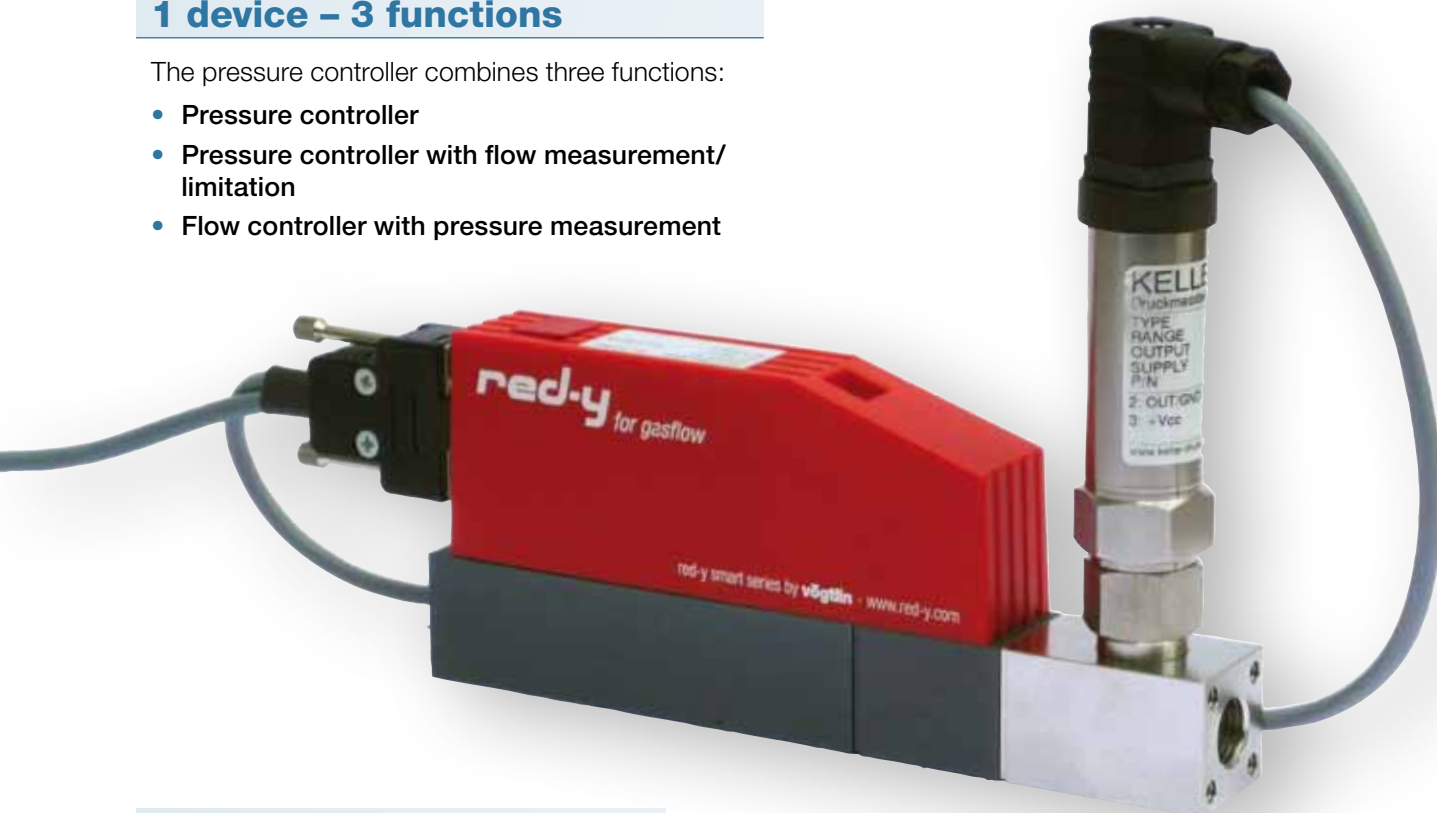
The devices automatically control a predefined process pressure and at the same time measure and/or limit the flow rate.

On-the-fly switching between pressure control and flow control offers maximum flexibility.

### 1 device – 3 functions

The pressure controller combines three functions:

- Pressure controller
- Pressure controller with flow measurement/ limitation
- Flow controller with pressure measurement



### Instrument versions

- Integrated pressure control  
Accuracy:  $\pm 0.5\%$  of full scale
- Integrated back pressure control  
Accuracy:  $\pm 0.5\%$  of full scale
- Pressure control with external pressure transmitters
- Pressure controller with gas mixer function

### It's a red-y smart

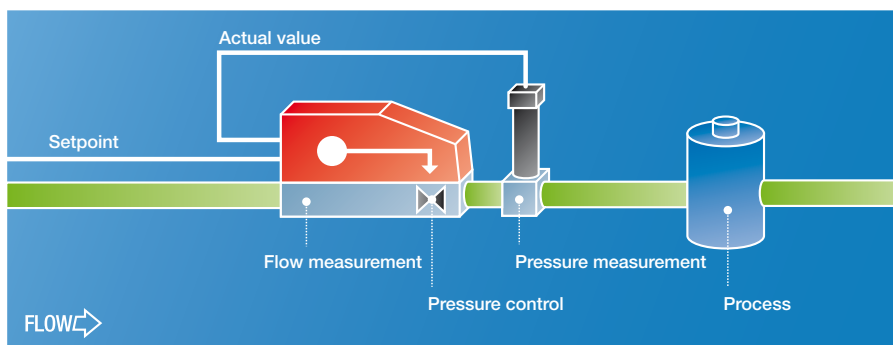
The pressure controllers combine the innovative equipment design of the red-y smart series with the development competence of Vögtlin Instruments AG.

High-quality components ensure long and trouble-free operation.



## Pressure control

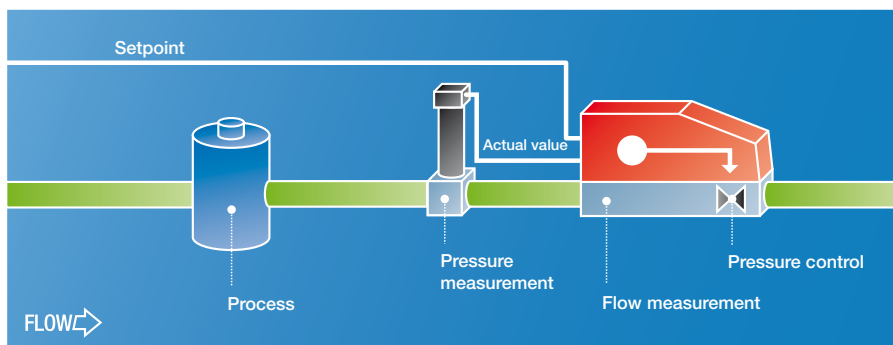
In this application the electronic pressure controller regulates a digitally specified set pressure value. The flow rate depends on the process consumption. Maximum flow limitation enables pressure control of stable gas mixtures, for example.



**Application example:**  
Pressure control of a pressure vessel containing a stable gas mixture for laser gas or welding applications.

## Back pressure control

In this configuration the effect of the control valve is reversed. The process generates a certain pressure, which must be readjusted.



**Application example:**  
Overpressure control of a sterile chamber. The flow rate is used as a leakage indicator.

## Wide range of accessories – ready for operation

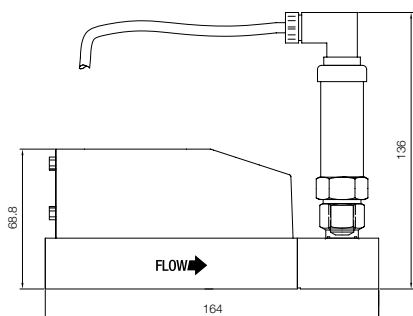
### Connection cables, power supplies, software «get red-y»

Optimal range of cables and power supply units for fast integration of the pressure controllers. With the free software «get red-y» you can easily define functions and parameters.

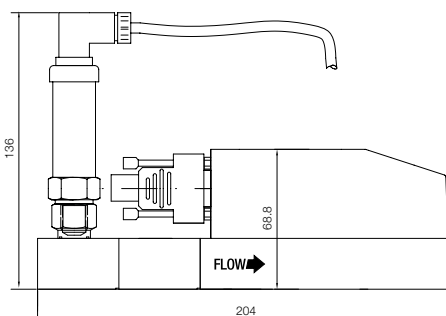
### Fittings, filters

All flow meters and controllers are available with fittings and filters.

## Dimensions G1/4" \*



red-y smart pressure controller GSP



red-y smart back pressure controller GSB

\*Dimensions G1/2" on request

## Technical Data «red-y smart pressure controller»

### Instrument types



**red-y smart pressure controller GSP**  
Electronic pressure controller



**red-y smart back pressure controller GSB**  
Electronic back pressure controller

Pressure controller with **external transmitter** and **customer-specific solutions** on request

### Instrument versions flow

«**Standard**» – The economic solution

Accuracy:  $\pm 1.0\%$  of full scale

Turndown ratio: 1 : 50

«**Hi-Performance**» – With highest accuracy and turndown ratio

Accuracy:  $\pm 0.3\%$  of full scale +  $\pm 0.5\%$  of reading

Turndown ratio: 1 : 100

for GSM < 200 l/min / GSC < 150 l/min (air)

### Instrument versions pressure

**Pressure control**

Accuracy:  $\pm 0.5\%$  of full scale

**Back pressure control**

Accuracy:  $\pm 0.5\%$  of full scale

**Differential pressure controller according to customer specifications**

### Measuring ranges flow (Air)

**Full scale freely selectable**

Type	Measuring range (Air)	Connection
pressure controller GSP	GSX-A from 0 ... 25 ml/min to 0 ... 600 ml/min	G $\frac{1}{4}$ "
back pressure controller GSB	GSX-B from 0 ... 600 ml/min to 0 ... 6000 ml/min	G $\frac{1}{4}$ "
	GSX-C from 0 ... 6 l/min to 0 ... 60 l/min	G $\frac{1}{4}$ "
	GSX-D from 0 ... 60 l/min to 0 ... 450 l/min	G $\frac{1}{2}$ "
	Other ranges on request	

### Measuring ranges pressure

**Full scale gauge pressure** 0.5 bar g, 1 bar g, 2 bar g, 5 bar g, 10 bar g

**Full scale absolute pressure** 1.2 bar a, 2 bar a, 5 bar a, 10 bar a

### Performance data

**Media (real gas calibration)** Air, O<sub>2</sub>, N<sub>2</sub>, He, Ar, CO<sub>2</sub>, H<sub>2</sub>, CH<sub>4</sub>, C<sub>3</sub>H<sub>8</sub>  
Other gases and gas mixtures on request

**Response time** 50 ms

**Repeatability**  $\pm 0.2\%$  of full scale

**Longterm stability** < 1% of measured value / year

**Power supply** 24 Vdc (18 – 30 Vdc), 15 Vdc on request

**Current consumption** max. 250mA

**Temperature (environment/gas)** 0 – 50°C

**Materials** Anodized aluminium, optional stainless steel electropolished

**Seals** FKM, optional EPDM

**Pressure sensitivity** < 0.2% / bar of reading (typical N<sub>2</sub>)

**Temperature sensitivity** < 0.025% FS measuring range type / °C

### Integration

**Output signals**

*analog*  
(for actual value flow only) 0..20 mA, 4..20 mA, 0..5 V, 1..5 V, 0..10 V, 2..10 V

*digital*  
(for pressure and flow) RS-485; Modbus RTU (Slave); Lab View-VI's available  
Option: ProfiBus DP-V0, DP-V1

**Process connection** G $\frac{1}{4}$ " female less than 60 l/min, G $\frac{1}{2}$ " female less than 450 l/min

**Inlet section** None required

**Electrical connection** Sub D plug, 9 pole

**Mounting orientation** Any orientation (horizontal only above 5 bar)

### Safety

**Test pressure** 16 bar a

**Leak rate** < 1 x 10<sup>-6</sup> mbar l/s He

**Environmental protection** IP-50

**EMC** EN 61326-1

## Type code «red-y smart pressure controller»

<b>Instrument type</b>	red-y smart series (Gas)	G	S						
<b>Function</b>	Pressure controller			P					
	Back pressure controller			B					
	With external pressure transmitter			K					
<b>Full scale of measuring range (Air)</b>	25 mln/min (G¼", 25 x 25mm)				A	1			
	50 mln/min				A	2			
	100 mln/min				A	3			
	200 mln/min				A	4			
	500 mln/min				A	5			
	Customer-specific (Divider A, up to 600mln/min)				A	9			
	500 mln/min (G¼", 25 x 25mm)				B	2			
	1000 mln/min				B	3			
	2000 mln/min				B	4			
	5000 mln/min				B	5			
	Customer-specific (Divider B, up to 6'000mln/min)				B	9			
	5 ln/min (G¼", 25 x 25mm)				C	2			
	10 ln/min				C	3			
	20 ln/min				C	4			
	50 ln/min				C	5			
	Customer-specific (Divider C, up to 60 ln/min)				C	9			
	50 ln/min (G½", 35 x 35mm)				D	2			
	100 ln/min				D	3			
	200 ln/min				D	4			
	450 ln/min				D	5			
	Customer-specific (Divider D, up to 450ln/min)				D	9			
<b>Instruments version</b>	Standard (±1.0% full scale, 1 : 50)						S		
	Hi-Performance (±0.3% full scale, ±0.5% reading, 1 : 100)						T		
	Customer-specific / OEM						K		
<b>Materials (Body, seals)</b>	Aluminium, FKM**						A		
	Aluminium, EPDM						B		
	Stainless steel, FKM						S		
	Stainless steel, EPDM						T		
	Customer-specific / OEM						K		
<b>Analog signals (Output)</b>	Current 4..20 mA**							B	
	Current 0..20 mA							C	
	Voltage 0..5 V							D	
	Voltage 1..5 V							E	
	Voltage 0..10 V							F	
	Voltage 2..10 V							G	
	Customer-specific / OEM							K	
<b>Full scale of pressure range</b>	Gauge pressure 0.5 bar g							Q	
	Gauge pressure 1 bar g							R	
	Gauge pressure 2 bar g							S	
	Gauge pressure 5 bar g							T	
	Gauge pressure 10 bar g							U	
	Absolute pressure 1.2 bar a							V	
	Absolute pressure 2 bar a							W	
	Absolute pressure 5 bar a							X	
	Absolute pressure 10 bar a							Y	
	Customer-specific / OEM							K	
<b>Control valve (integrated)</b>	Nozzle 0.1 mm							2	1
<i>defined by manufacturer</i>	Nozzle 0.2 mm							2	2
	Nozzle 0.5 mm							2	3
	Nozzle 1.2 mm							2	6
	Nozzle 4.5 mm							1	2
	Nozzle 8.0 mm							1	3
	Valve not defined							8	8
	Valve mounted							9	5
	Customer-specific / OEM							9	9
	No valve							0	0
<b>Type code</b>		G	S	-				-	

\*\*Standard