

red-y smart series product information



Thermal Mass Flow Meters and Controllers for Gases

Reliable and accurate: Thermal Mass Flow Meters and Controllers

Reliable technology and standardized interfaces make the red-y smart series thermal mass flow meters and controllers particularly suitable for measurement and control in gas delivery systems and plant engineering applications.

Accurate measurement

The devices offer high accuracy and a wide dynamic range:

- » **2 instrument versions:**
«Standard» and «Hi-Performance»
- » **Accuracy up to $\pm 0.3\%$ of full scale
+ $\pm 0.5\%$ of reading**
- » **Turndown ratio 1 : 100**

Extended turndown ratio on request

Analog & digital: 2 in 1



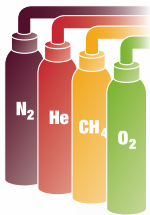
The flow meters and controllers make use of the latest CMOS technology and have a digital (Modbus RTU) and analog interface

Operating status indication



The instruments offer an inbuilt LED status indication

Multigas



One meter or controller can be used for up to 10 different gases or gas mixtures



3-year warranty

High-quality components ensure long and trouble-free operation

Measuring & controlling with a click



Free software «get red-y»:

- » View flow rate & temperature
- » Change setpoints
- » Select measured gas
- » Graphical display of measured data
- » Adjusting control parameters
- » «Plug & measure» with our cable accessories

Optional functions:

- » Datalogging
- » Gasmixer



Safe & fast control



The controller uses a tightly sealed control valve with leak rate less than 1×10^{-6} mbar l/s He. The fast control response of approx. 300 ms significantly reduces the setting time



High-quality technology offers maximal value for any application

Through the application of **high-precision MEMS technology** (CMOS sensors), the thermal flow meters and controllers from Vögtlin Instruments AG set new standards in terms of response characteristics and measuring accuracy, and are characterized by maximum convenience:



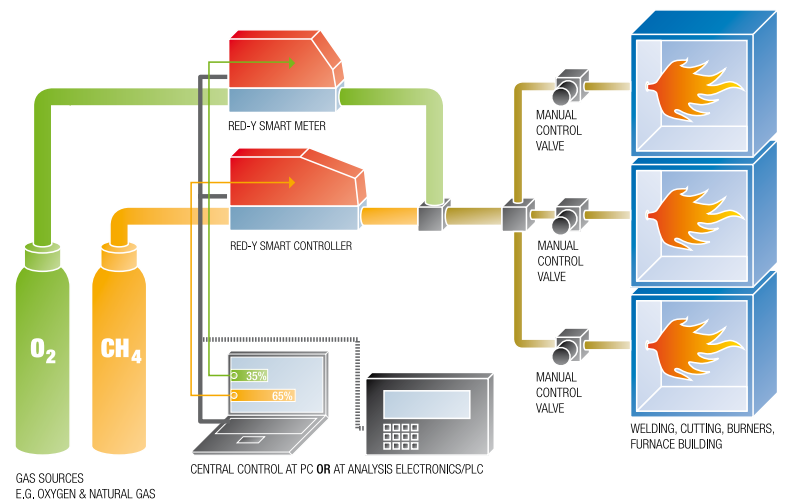
▲ **High-tech in a very compact design**
The flow meters and controllers use advanced MEMS technology

- » Standardized signals enable simple connection to control systems
- » Measurements are insensitive to pressure and temperature changes
- » All devices are calibrated with real gas. This ensures high accuracy and reproducibility. The calibration is traceable to the METAS standard (Federal Office of Metrology, Switzerland)
- » Meters and controllers are easy to service and maintain
- » The devices have minimal pressure drop
- » A full range of accessories is available: Cables, fittings, etc.
- » «Plug & control» with the free software «get red-y»: Simple access via any PC (no additional electronic equipment required)
- » High quality: All flow meters are manufactured and calibrated at our headquarters in Aesch, Switzerland

Flexibility in mixing processes and consumption measurement

Devices with high measuring accuracy and stable control characteristics are important for ensuring precise and consistent quality of gas mixtures.

The thermal mass flow meters and controllers from Vögtlin offer unbeatable technological performance and cost-effectiveness.



Wide range of accessories – immediately ready for operation



Connection cables, power supplies

Optimal range of cables and power supply units for fast integration of flow meters and controllers:

- » Cables for communication with PC (USB)
- » Cables for multiple device control with PC
- » Cables for analog communication
- » Power supply (24 Vdc)

Fittings, filters

All flow meters and controllers are available with fittings and filters. Contact our sales department for more information.

Technical Data «red-y smart series»

Instrument types							
	smart meter GSM <i>Thermal mass flow meter</i>		smart controller GSC <i>Thermal mass flow controller</i>		OEM version <i>For customer-specific requirements</i>		
Instrument versions	«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 lN/min / GSC < 150 lN/min (air) <i>*An additional error of $\pm 0.25\%$ may apply for analogue signals</i>						
Measuring ranges (Air)	Full scale freely selectable	Type	Measuring range (Air)			Connection	
	red-y smart meter GSM Meter	GSM-A GSM-B GSM-C GSM-D	from 0 ... 25 mlN/min to 0 ... 600 mlN/min from 0 ... 600 mlN/min to 0 ... 6000 mlN/min from 0 ... 6 lN/min to 0 ... 60 lN/min from 0 ... 60 lN/min to 0 ... 450 lN/min			G¼" G¼" G¼" G½"	
	red-y smart controller GSC Controller	GSC-A GSC-B GSC-C GSC-D	from 0 ... 25 mlN/min to 0 ... 600 mlN/min from 0 ... 600 mlN/min to 0 ... 6000 mlN/min from 0 ... 6 lN/min to 0 ... 60 lN/min from 0 ... 60 lN/min to 0 ... 450 lN/min			G¼" G¼" G¼" G½"	
Performance data	Media (real gas calibration)		Air, O ₂ , N ₂ , He, Ar, CO ₂ , H ₂ , CH ₄ , C ₃ H ₈ 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		Meter: max. 100mA; Controller: max. 250mA				
	Operation pressure		0.2 – 11 bar a				
	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 ₂)				
	Temperature sensitivity		< 0.025% FS measuring range type / °C				
Integration	Output signals						
	<i>analog</i>		0..20 mA, 4..20 mA, 0..5 V, 1..5 V, 0..10 V, 2..10 V				
	<i>digital</i>		RS-485; Modbus RTU (Slave); Lab View-VI's available Optional: ProfiBus DP-V0, DP-V1				
	Process connection		G¼" female less than 60 lN/min, G½" female less than 450 lN/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 ⁻⁶ mbar l/s He				
	Environmental protection		IP-50				
	EMC		EN 61326-1				
Dimensions	Dimensions in mm		A	B	C	D	
			GSM G¼"	94	87	25	69
			GSM G½"	145	87	35	79
			GSC G¼"	124	117	25	69
			GSC G½"	170	117	35	79

