red-y smart series product information

Thermal Mass Flow Meters and Controllers for Gases

vögtlin massflow

Reliable and accurate:
Thermal Mass Flow Meters and Controllers

Reliable technology and industry standard 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 ± 0.3% of full scale + ±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 as standard

Operating status indication

The instruments offer a built-in LED status indication

Safe & fast control

The controller uses a tightly sealed control valve with a leak rate of less than 1x10^{-6}mbar l/s He. Response times of approx. 150 msec for very fast set point control

Options

Built-in display
Display includes: Flow rate, totalizer, unit of measure & set point control (controller only)

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

Profibus
The instruments are available with Profibus interface:
DP-V0 & DP-V1 protocols

“get red-y” software

Efficient device management with the free “get red-y” software:

- **View flow rate & temperature**
- **Change set points**
- **Select measured gas**
- **Visualization of measured data**
- **Adjusting control parameter**

Optional modules “get red-y” software:

- **Datalogging**
- **Gasmixing**
- **Adjustment/Calibration**

3-year warranty*

High-quality components ensure long and trouble-free operation

*does not apply to calibration, options and accessories

Certified System SWISS TS ISO 9001

High-quality technology offers maximum value for any application

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

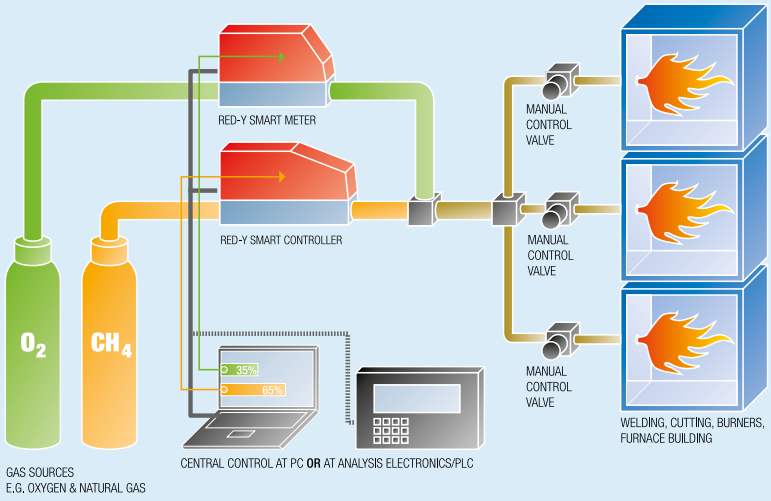
▲ ***High-tech in a very compact design***
The flow meters and controllers use advanced MEMS technology

- **Standard interfaces ensure easy 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 NIST standard**
- **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 at our headquarters in Switzerland**

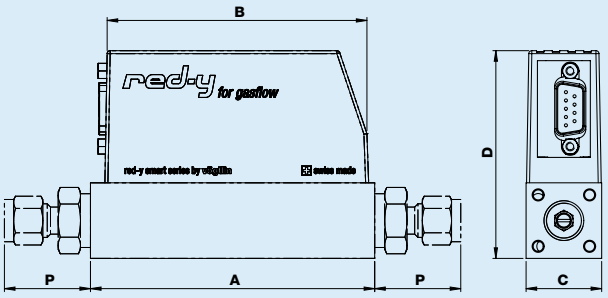
Flexibility in mixing processes and consumption measurement

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.



Dimensions “red-y smart series”



	Length (inch)				Length of fitting
Type/Body	**A**	**B**	**C**	**D**	**P**
GSM/¼" (MFM)	3.7	3.43	0.98	2.72	We offer a range of different inlet/outlet fittings. See document **329-2092_en_ fittings.pdf** for types and dimensions
GSM/½" (MFM)	5.7	3.43	1.38	3.11	
GSC/¼" (MFC)	4.88	4.61	0.98	2.72	
GSC/½" (MFC)	6.69	4.61	1.38	3.11	
GSC/½" (MFC) double valve	7.34	5	1.38	3.15	

Our specialists will be happy to advise: **800-850-6110** or **www.vogtlinusa.com**

Technical Data “red-y smart series”

Instrument types

smart meter GSM
Thermal mass flow meter

smart controller GSC
Thermal mass flow controller

OEM version
For customer-specific requirements

Instrument versions

“Standard” The economic solution	Accuracy: ± 1.0% of full scale* Turndown ratio: 1 : 50
“Hi-Performance” With highest accuracy and turndown ratio (available for GSM < 200 SLPM / GSC < 150 SLPM (air))	Accuracy: ± 0.3% of full scale + ± 0.5% of reading* Turndown ratio: 1 : 100 *An additional error of ±0.25% may apply for analogue signals

Measuring ranges

(Air/Full scale freely selectable)	Type/Body	Measuring range (air)	
red-y smart meter GSM Meter	GSM/¼" GSM/½"	from 0 ... 27 SCCM from 0 ... 65 SLPM	to 0 ... 64 SLPM to 0 ... 480 SLPM
red-y smart controller GSC Controller	GSC/¼" GSC/½"	from 0 ... 27 SCCM from 0 ... 65 SLPM	to 0 ... 64 SLPM to 0 ... 480 SLPM

Performance data

Media (real gas calibration)	Air, O2, N2, He, Ar, CO2, H2, CH4, C3H8 (other gases and gas mixtures on request)
Response time	Meter: 50 ms; Controller: 150 ms
Repeatability	± 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. 100 mA; Controller: max. 250 mA
Operation pressure	3 - 160 psia (0.2 - 11 bara)/GSC with valve type 4.5 and 8: max. 120 psia (8 bara)
Temperature (environment/gas)	32 - 122°F (0 – 50°C)
Body Materials	Anodized aluminum, optional stainless steel electropolished
Seals	FKM, NBR, optional EPDM
Pressure sensitivity	<0.014%/psi (<0.2%/bar) of reading (typical N2)
Temperature sensitivity	<0.012% FS measuring range type per 1°F (<0.025% per 1°C)
Warm-up time	< 1 sec. for full accuracy

Integration & Installation

Output signals analog	0-20 mA, 4-20 mA, 0-5 V, 1-5 V, 0-10 V, 2-10 V
Output signals digital	RS-485; Modbus RTU (Slave); LabView-VIs available / option: Profibus DP-V0, DP-V1
Process connection	G¼" (BSPP* female) up to 64 SLPM, G½" (BSPP* female) up to 480 SLPM *British Standard Pipe Parallel
Inlet section	None required
Electrical connection	Sub D plug, 9 pole
Mounting orientation	Any orientation (horizontal only above 73 psi / 5 bar)

Safety

Test pressure	240 psia (16 bara)
Leak rate	< 1 x 10^{-6} mbar l/s He
Environmental protection	IP50 (conforms to NEMA 1)
EMC	EN 61326-1

Type code “red-y smart series”

Instrument type	red-y smart series (Gas)	G S
Function	Meter	M
	Controller	C
Full scale of measuring range (air)	Divider A, up to 640 SCCM, ¼" Body	A 9
	Divider B, up to 6,400 SCCM, ¼" Body	B 9
	Divider C, up to 64 SLPM, ¼" Body	C 9
	Divider D, up to 480 SLPM, ½" Body	D 9
Instruments version	Standard (±1.0% full scale, 1 : 50)	S
	Hi-Performance (±0.3% full scale, ±0.5% reading, 1 : 100)	T
	Customer-specific / OEM	K
Materials (body, seals)	Aluminum, FKM**	A
	Aluminum, EPDM	B
	Stainless steel, FKM	S
	Stainless steel, EPDM	T
	Customer-specific / OEM	K
Analog signals (output)	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
Analog signals (input)	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
	Not defined	N
	Customer-specific / OEM	K
Control valve (integrated) defined by manufacturer	Type 0.1	2 1
	Type 0.2	2 2
	Type 0.5	2 3
	Type 1.2	2 6
	Type 4.5	1 2
	Type 8.0	1 3
	Valve not defined	8 8
	Valve mounted	9 5
	Customer-specific / OEM	9 9
	No valve	0 0
Type code		G S – –

**Standard

Available types of fittings (additional fittings on request)

Compression			Push-in for Polytube			VCO® & VCR® Alternatives		
Type	**Body Size**	**max. flow (SLPM)**	**Type**	**Body Size**	**max. flow (SLPM)**	**Type**	**Body Size**	**max. flow (SLPM)**
1/8" SS	¼"	5	1/4" Brass	¼"	50	1/4" SS	¼"	50
1/4" SS	¼"	50	6mm Brass	¼"	50	1/2" SS	½"	480
1/4" Brass	¼"	50	8mm Brass	¼"	64			
6 mm SS	¼"	50	3/8" Brass	½"	300			
8 mm SS	¼"	50	1/2" Brass	½"	480			
3/8" SS	½"	300	12mm Brass	½"	480			
3/8" Brass	½"	300						
1/2" SS	½"	480						
1/2" Brass	½"	480						
8 mm SS	½"	300						
12 mm SS	½"	480						

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M.A. Selmon Company, Inc
4 Oxford Rd.
Milford, CT 06460
(203) 377-3525
http://www.maselmon.com/

Vogtlin Massflow USA
8809 Industrial Drive | Franksville, WI 53126
Phone 800-850-6110 | Fax: 262-884-9810
info@vogtlinusa.com | www.vogtlinusa.com

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