



red-y industrial series product information

Thermal Mass Flow Meters and Controllers for Gases with IP67 & Ex Protection

High accuracy for heavy duties:

Mass Flow Meters & Controllers with IP67 & Ex Protection

Reliable technology and industry standard interfaces for rough environments:
Our tried and tested thermal mass flow meters and controllers for gases now available as IP67 / NEMA 6 version.

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 & controllers make use of the latest CMOS technology and have a digital (Modbus RTU) and analog interface as standard

IP67 / NEMA 6 protection



The instruments offer IP67 / NEMA 6 protection against solid particles and water

ATEX certification



red-y industrial devices come along with ATEX certification (Category 3 / Zone 2 & 22)

Multiple connections



The industrial series are available with different connection types: Cable gland with compression fitting or optional M12 plug on top

Options



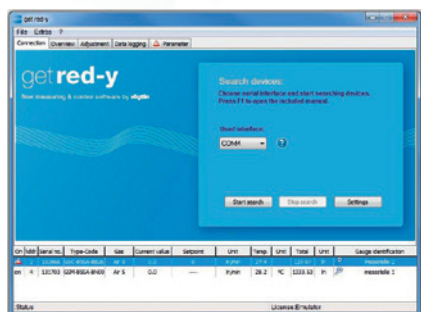
Multigas device

A device 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



Setup tool «get red-y»

Efficient device setup with the free «get red-y» software:

- » **Service tool for remote maintenance**
- » **Switch gas type**
- » **Switch measurement units**
- » **Adjust control parameters**

3-year warranty*



High-quality components ensure long and trouble-free operation

*does not apply to calibration, options and accessories

Available connections «red-y industrial series»

Cable gland (standard)



Cable gland with optional Profibus



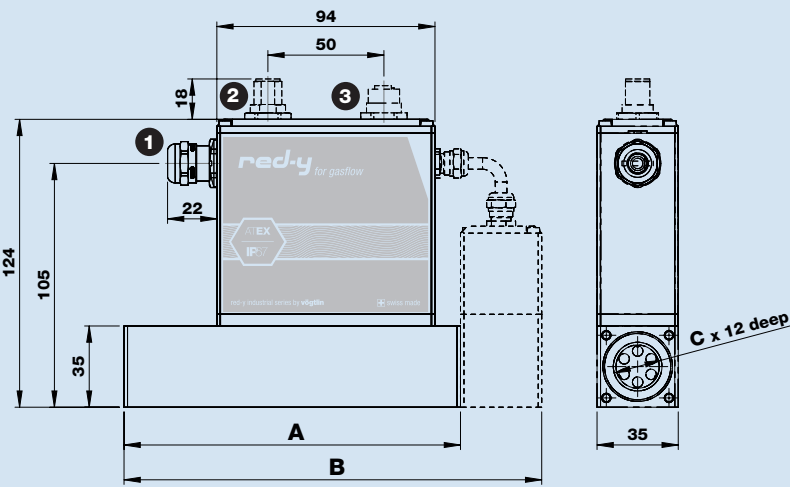
M12 plug (option)



M12 plug with optional Profibus



Dimensions «red-y industrial series»



Type	Length (mm)		Process Connection
	A	B	C
GIM-A GIM-B GIM-C	94	–	G1/4"
GIM-D	145	–	G1/2"
GIC-A GIC-B GIC-C	–	134	G1/4"
GIC-D	–	180	G1/2"
GIC-D (double valve)	–	198	G1/2"

Electrical Connection

- 1 Cable gland / cable diameter 6-8mm
- 2 M12 connector A-Coding 8pol male
- 3 M12 connector B-Coding 5pol female

Technical Data «red-y industrial series»

Instrument types



industrial meter GIM
Thermal mass flow meter



industrial controller GIC
Thermal mass flow controller



industrial controller GIE
Thermal mass flow controller with external valve

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
(available for GIM < 200 l/min /
GIC < 150 l/min (air))

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

Turndown ratio: 1 : 100

*An additional error of $\pm 0.25\%$ may apply for analogue signals

Measuring ranges

(Air/Full scale freely selectable)	Type	Measuring range (air)		Process Connection
red-y industrial meter GIM Meter	GIM-A	from 0 ... 25 ml/min	to 0 ... 600 ml/min	G $\frac{1}{4}$ "
	GIM-B	from 0 ... 600 ml/min	to 0 ... 6000 ml/min	G $\frac{1}{4}$ "
	GIM-C	from 0 ... 6 l/min	to 0 ... 60 l/min	G $\frac{1}{4}$ "
	GIM-D	from 0 ... 60 l/min	to 0 ... 450 l/min	G $\frac{1}{2}$ "
red-y industrial controller GIC controller	GIC-A	from 0 ... 25 ml/min	to 0 ... 600 ml/min	G $\frac{1}{4}$ "
	GIC-B	from 0 ... 600 ml/min	to 0 ... 6000 ml/min	G $\frac{1}{4}$ "
	GIC-C	from 0 ... 6 l/min	to 0 ... 60 l/min	G $\frac{1}{4}$ "
	GIC-D	from 0 ... 60 l/min	to 0 ... 450 l/min	G $\frac{1}{2}$ "

Performance data

Media (real gas calibration) Air, O₂*, N₂*, He, Ar, CO₂, H₂, CH₄, C₃H₈ (other gases and gas mixtures on request)
*O₂ & N₂ are calibrated with air

Response time Meter: 50 ms; Controller: 150 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. 100 mA; Controller: max. 250 mA (except GIE)

Operation pressure 0.2 – 11 bara (GIC with valve type 4.5 and 8 max. 8 bar a)

Temperature (environment/gas) 0 – 50°C

Pressure sensitivity Less than 0.2% RD per bar (typical N₂)

Temperature sensitivity Less than 0.025% FS per °C (typical N₂)

Warm-up time < 1 sec. for full accuracy

Materials

Body Stainless steel 316L (see operating instructions for wetted parts)

Electronic Housing Aluminum

Seals EPDM (FDA), optional FKM

Integration

In- / Output signals analog 0..20 mA, 4..20 mA, 0.5 V, 1..5 V, 0..10 V, 2..10 V

In- / Output signals digital RS-485; Modbus RTU 2 wire (Slave); Lab View-VIs available / Option: Profibus DP-V0, DP-V1

Process connection G $\frac{1}{4}$ " (BSPP* female) up to 60 l/min, G $\frac{1}{2}$ " (BSPP* female) up to 450 l/min
*British Standard Pipe Parallel

Inlet section None required

Electrical connection Cable gland with compression fitting / Option: M12 plug (DIN-standard)
(both connection IP67 protected)


Mounting orientation All orientations are possible. We recommend horizontal mounting.
Please contact the manufacturer for further information.



Safety

Test pressure 16 bara

Leak rate < 1 x 10⁻⁶ mbar l/s He

Environmental protection IP67 (conforms to NEMA 6)

EMC  EN 61326-1

ATEX Certification  II 3G nA IIC T4 Gc (Category 3/Zone 2)  II 3D Ex tc IIIC T100°C Dc (Category 3/Zone 22)

Type code «red-y industrial series»

Instrument type	red-y industrial series (Gas)	G I									
Function	Meter									M	
	Controller									C	
	Controller with external valve									E	
Full scale of measuring range (air) defined by manufacturer	Customer-specific (Divider A, up to 600 mln/min)									A	X
	Customer-specific (Divider B, up to 6000 mln/min)									B	X
	Customer-specific (Divider C, up to 60 ln/min)									C	X
	Customer-specific (Divider D, up to 450 ln/min)									D	X
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
Connection/Materials (body, seals)	Cable gland/Stainless steel/EPDM (FDA)**										S
	M12 plug/Stainless steel/EPDM (FDA)										T
	Cable gland/Stainless steel/FKM										U
	M12 plug/Stainless steel/FKM										V
	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
Control valve (integrated) defined by manufacturer	Customer-specific/OEM										K
	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 mounted										9 5
	Customer-specific/OEM										9 9
	No valve										0 0
Type code		G	I			-				-	

**standard

Worldwide Headquarters



USA

Vogtlin Massflow USA
AW-Lake Company
8809 Industrial Drive
Franksville, WI 53126, USA

Phone +1 800-850-6110

info@vogtlinusa.com
www.vogtlinusa.com

EUROPE (Global HQ)

Vögtlin Instruments AG
Langenhagstrasse 1
4147 Aesch BL, Switzerland

Phone +41 61 756 63 00
Fax +41 61 756 63 01

info@voegtlin.com
www.voegtlin.com

ASIA

Vogtlin (Beijing) Co., Ltd.
Rm. 906, Block C, Ruipu Office Bldg,
No. 15, HongJunYingNan Road,
Chaoyang District, Beijing 100012, China

Phone +86 10 849 29567

info@voegtlin.cn
www.voegtlin.cn

Find your local Vögtlin sales partner on our website:
www.voegtlin.com



Vögtlin Instruments AG – flow technology
Langenhagstrasse 1 | 4147 Aesch (Switzerland)
Phone +41 (0)61 756 63 00 | Fax +41 (0)61 756 63 01
www.voegtlin.com | info@voegtlin.com

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