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red-y compact series product information

Battery Powered Thermal Mass Flow Meters for Gases

vögtlin instruments

Digital advantage:
Thermal Mass Flow Meters for Gases

The flow meters red-y compact series are characterized by powerful technology, intelligent functions, and innovative design.
The instruments offer a new level of ease of use: compact design with battery power, clear digital display and smart alarm functions.

Accurate measurement

The devices offer high accuracy and a wide dynamic range:

Accuracy ± 1 – 3% of full scale
(depending on application/measuring range)

Turndown ratio 1 : 50

CMOS sensor technology

The CMOS semiconductor chip is the centerpiece of the flow meter.
Analog-digital conversion takes place in the sensor

Portable operation

The flow meters can be powered with a battery or with a 24 Vdc power supply.
battery lifetime approx. 2 years

High-precision valve

In the versions with manual valves, high-precision needle valves are used. These valves allow fine adjustment of the flow rate

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3-year warranty*

High-quality components ensure long and trouble-free operation
*does not apply to calibration, options and accessories

Totalizer

In addition to the actual value, the total consumption can also be displayed. Ideal for gas consumption measurements

Pressure & temperature compensated

In contrast to variable area flow meters, thermal mass flow devices are insensitive to pressure and temperature changes

Instrument versions ‹red-y compact series›

Version	Display of reading	Trend display	Manual valve	Alarm functions	Totalizer	Battery power	24 Vdc supply
compact meter GCM	●	●			⊙	●	⊙
compact regulator GCR	●	●	●		⊙	●	⊙
compact switch GCS	●	●		●	⊙		●
compact all-in GCA	●	●	●	●	⊙		●

● Standard ⊙ Option

Certified System swissTS ISO 9001

Autonomy and precision for your 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:

▲ **Convenient variable area flow meter**
Many applications require a higher accuracy together with pressure and temperature compensation which cannot be realized with conventional variable area flow meters

- » **The devices are very compact, can be installed in any position, and are immediately ready for operation**
- » **The local LC-display offers direct reading**
- » **In addition to the actual value, the total consumption can be displayed. This creates transparency in supply systems**
- » **Intelligent alarm functions allow versatile application**
- » **The autonomous operation with battery makes the compact a high-precision alternative to variable area flow meters**
- » **High quality: All flow meters are produced and calibrated at our headquarters in Aesch, Switzerland**

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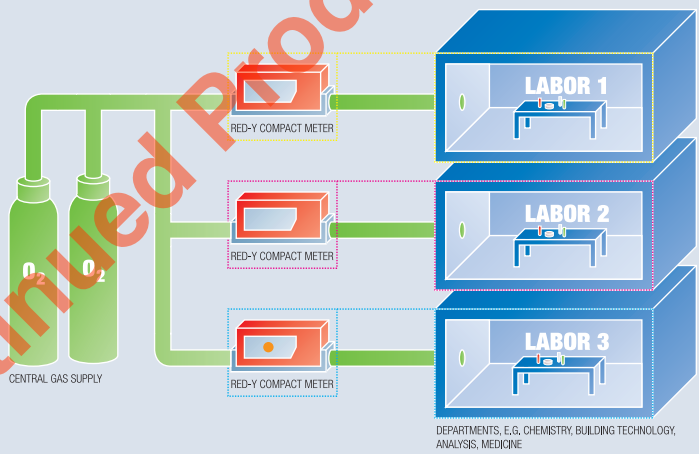
Gas consumption measurement increases safety & reduces costs

Consumption measurement for expensive gases increases resource awareness among consumers and reduces consumption.

Your costs are reduced, and you know exactly where, when and how much gas is used. Thermal mass flow meters can be installed simply in the gas pipe and be read immediately.



▲ **compact regulator GCR G½"**
The valve is mounted from a flow rate of 50 ln/min

Real gas calibration

The devices are calibrated with real gas. This guarantees high accuracy and reproducibility. The calibration is traceable to the METAS standard (Federal Office of Metrology, Switzerland).

Intelligent alarm functions

Versatile alarm functions extend the functionality of the flow meters.
For example, a limit value can be set for detecting leakages.
The configurable alarm delay allows limit values to be exceeded for a short time.

Our specialists will be happy to advise: +41 61 756 63 00 or **www.voegtlin.com**

Technical data ‹red-y compact series›

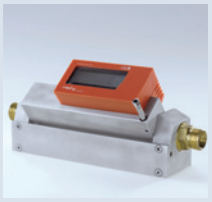
Instrument types

compact meter GCM
Mass flow meter

compact regulator GCR
Mass flow meter with manual valve

compact switch GCS
Mass flow meter with alarm functions

compact all-in GCA
Mass flow meter with manual valve & alarm functions



OEM version
For customer-specific requirements

Panel mounting kit
Panel mounting kits for IP-50 and IP-65 protection

Measuring ranges

(full scale freely selectable)	Type	Measuring range (air)		Connection
compact meter GC**M**	GC**X**-A	from 0 ... 50 mln/min	to 0 ... 600 mln/min	G¼"
compact regulator GC**R**	GC**X**-B	from 0 ... 600 mln/min	to 0 ... 6000 mln/min	G¼"
compact switch GC**S**	GC**X**-C	from 0 ... 6 ln/min	to 0 ... 60 ln/min	G¼"
compact all-in GC**A**	GC**X**-D	from 0 ... 60 ln/min	to 0 ... 450 ln/min	G½"

Performance data

Media (real gas calibration)	Air, O2, N2, He, Ar, CO2, H2, CH4, C3H8 (other gases and gas mixtures on request)
Accuracy (air & equivalents)	Eco: ± 2.0% of full scale; ranges > 200 ln/min ± 3.0% of full scale Special: ± 1.0% of full scale up to 50 ln/min
Turndown ratio	1 : 50
Response time	from 500 ms (depending on the application)
Repeatability	± 1% of full scale
Longterm stability	< 1% of measured value / year
Power supply Meter & Regulator	Lithium battery (lifetime about 2 years with constant flow) Option: External supply +12…30 Vdc or power supply device (current consumption max. 30 mA)
Power supply Switch & All-in	External supply +12…30 Vdc or power supply device (current consumption max. 30 mA)
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 N2)
Temperature sensitivity	< 0.025% FS measuring range type / °C
Warm-up time	< 1 sec. for full accuracy

Integration

Display	6-digit LCD in engineering units and bar graph
Process connection	G¼" female up to 60 ln/min, G½" female up to 450 ln/min
Inlet section	None required
Mounting orientation	Any orientation (horizontal only above 5 bar)
Connection cable	For external power supply: 2 m and 5 m with loose ends

Optional Flow Switch

Settings	*Function*: Min. or max. alarm *Threshold*: Adjustable between 0 and full scale, normally open or closed *Failsafe Condition*: User configurable *Alarm delay*: Adjustable 0 – 180 s *Alarm hysteresis*: Fully adjustable *Alarm suppression*: User configurable *Alarm reset*: Automatic or manual
Contact	Floating changeover contact (24 V, 1 A)

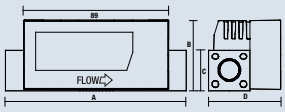
Safety

Test pressure	16 bar a
Leak rate	< 1 x 10^{-6} mbar l/s He
Environmental protection	IP-50, with panel mounting kit IP-65
EMC	EN 61326-1

Dimensions

Dimensions in mm	A	B	C	D
GCM, GCR, GCS, GCA G¼"	114	44	25	44*
GCM, GCS G½"	160	54	35	54
GCR, GCA G½"	207	54	35	80**

*Regulator knob (GCR, GCA): D+25mm **Valve mounted



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Type code ‹red-y compact series›

Instrument type	red-y compact series (Gas)	G C
Function	Meter	M
	Regulator – With manual valve	R
	Switch – With alarm	S
	All-In – With manual valve & alarm	A
Full scale of measuring range (Air)	100 mln/min (G¼", 25 x 25mm)	A 3
	200 mln/min	A 4
	500 mln/min	A 5
	Customer-specific (Divider A, up to 600mln/min)	A 9
	1'000 mln/min (G¼", 25 x 25mm)	B 3
	2'000 mln/min	B 4
	5'000 mln/min	B 5
	Customer-specific (Divider B, up to 6'000mln/min)	B 9
	10 ln/min (G¼", 25 x 25mm)	C 3
	20 ln/min	C 4
	50 ln/min	C 5
	Customer-specific (Divider C, up to 60 ln/min)	C 9
	100 ln/min (G½", 35 x 35mm)	D 3
	300 ln/min	D 4
	Customer-specific (Divider D, up to 450 ln/min)	D 9
Instruments version	Eco (±2.0% of FS / > 200 ln/min ±3.0% of FS, 1 : 50)	E
	Special (±1.0% of FS, 1 : 50)	S
	Customer-specific / OEM	K
Materials (Body, seals)	Aluminium, FKM**	A
	Aluminium, EPDM	B
	Stainless steel, FKM	S
	Stainless steel, EPDM	T
	Customer-specific / OEM	K
Supply/Totalizer	Battery Standard	B
	Battery Totalizer	P
	External supply 24 Vdc Standard	F
	External supply 24 Vdc Totalizer	T
	Customer-specific / OEM	K
Material valve (regulator, all-in)	Nickel-plated brass, FKM	A
	Nickel-plated brass, EPDM	B
	Stainless steel, FKM	S
	Stainless steel, EPDM	T
	Customer-specific / OEM	K
	No valve	N
Manual valve defined by manufacturer	NS 1.0	1 0
	NS 1.5	1 5
	NS 2.0	2 0
	NS 2.5	2 5
	NS 3.0	3 0
	NS 3.5	3 5
	NS 4.0	4 0
	NS 6.0	6 5
	Valve not defined	8 8
	Valve mounted	9 5
	Customer-specific / OEM	9 9
	No valve	0 0
Type code		G C – –

**Standard

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Do you have any questions about our products?
Give us a call:
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Or write us an e-mail:
info@voegtlin.com

You will find your local Vögtlin sales partner on the internet:
www.voegtlin.com

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