NEW
red-y compact:
Battery, Power supply, Alarm & **4-20mA/ Pulse Module**

red-y compact series product information

Digital Mass Flow Meters and Regulators for Gases

vögtlin instruments

Independent digital convenience:
Thermal Mass Flow Meters & Regulators for Gases

The *red-y compact series* mass flow meters and regulators are characterized by powerful technology, intelligent functions and innovative design.
This latest generation offers a new level of ease of use: compact design with battery power and touch display for great flexibility. Select one of the other smart add-on modules.

Touch Display

The touch display offers intuitive navigation. The many variables that make the unit flexible are easily accessible. Automatic display orientation thanks to position sensor

Integrated Manual Valve

Needle valve with 15 turns for precise flow adjustment

High Accuracy & Dynamics

The devices offer high accuracy & a wide dynamic range:

Accuracy up to ±1% of full scale

Turndown ratio up to 1 : 100

(depending on application/measuring range)

Independent Operation

The flow meters can be powered internal with a standard AA battery or Micro-USB power supply. Optional 24 VDC power supply available

Modular Extensions

4 expansion modules:

- Battery
- Power supply
- Alarm
- Analog/pulse out

Totalizer

In addition to the actual flow, the total consumption is displayed. Ideal for gas consumption measurements

1 Device – Multiple Gases

One measuring device can be used for up to 3 different gases or gas mixtures. Long term stability, no drift

Password Protection

To avoid unauthorised change of settings, the menu of the new red-y compact can be locked with a password

3-Year Warranty*

High-quality components ensure long and trouble-free operation

*does not apply to calibration, battery, options and accessories

VA-meters vs. Mass flow meters

VA-meters are extremely sensitive to pressure and temperature changes. 1 bar change in pressure can generate an error of 50% in your measurement. Our mass flow meters are not sensitive to temperature + pressure and ensure repeatability. The electronic alarm module offers many options over a single VA-meter alarm. Optional 4-20 mA out + pulse output.

swiss safety center ISO 9001 certified system

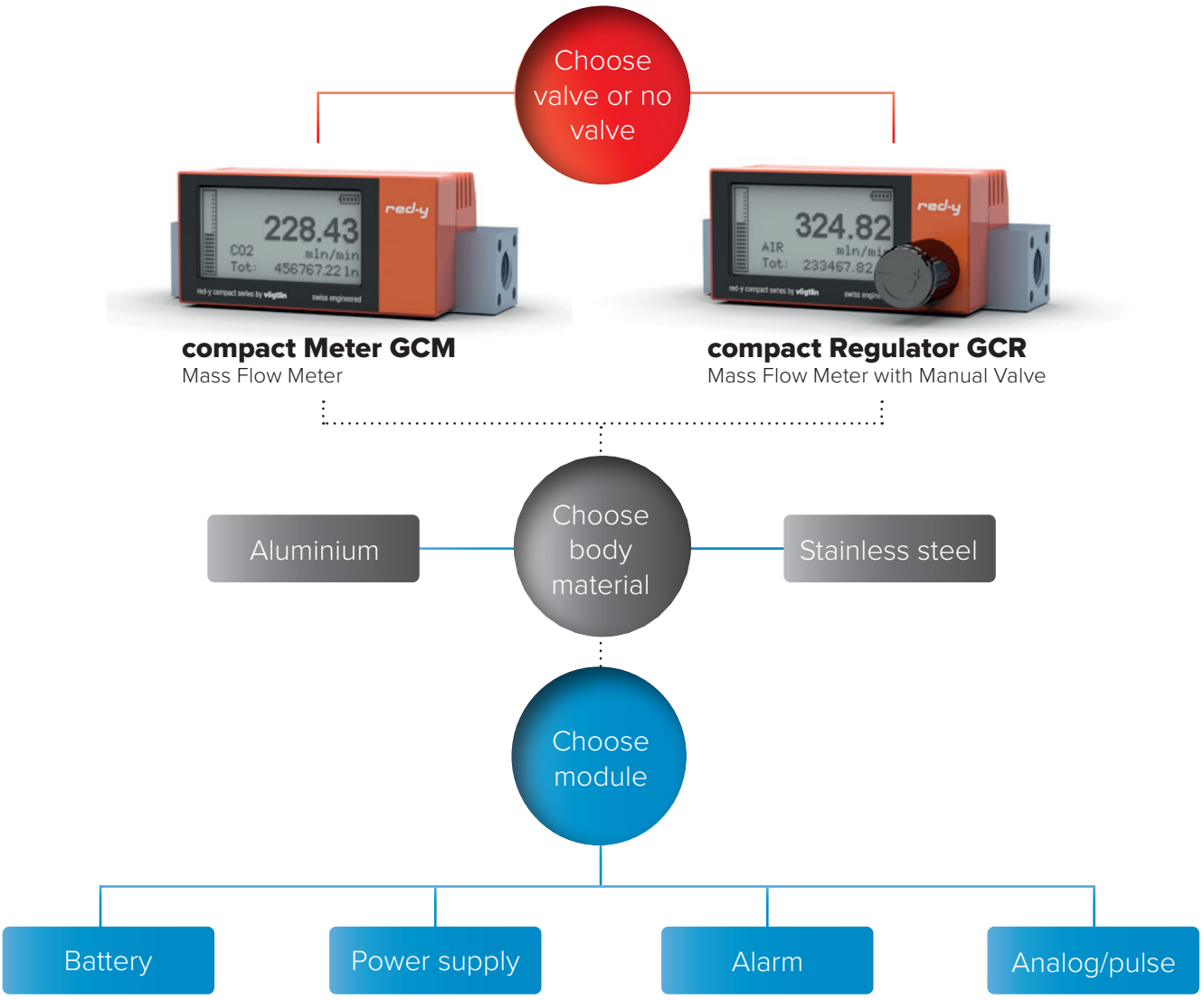
Accuracy, Flexibility, Reliability and Portability

Through the use of **high-precision MEMS technology** (CMOS sensors), the thermal flow meters from Vögtlin Instruments GmbH set the standard in terms of long term stability, response time and measuring accuracy:

- **The device is compact, can operate in any position and do not need any warm-up time**
- **The build-in touch display with a simple navigation offers lots of settings**
- **The devices measure real mass flow, independent of changes in pressure and temperature**
- **Build-in accurate totalizer for consumption measurements**
- **A high-precision alternative to variable area flow meters**
- **High quality: All flow meters are produced and calibrated at our European production center in Germany**

How to select a *compact*?

Select the **function**, **material specifications** and the **module** for your application.



All modules are interchangeable and can be retrofitted, but only one module can be use at a time.

This selection shows the basics only, other items that need to be selected are the flow rate, elastomers, accuracy and turndown, valve size and valve options.
We recommend you submit your request though this webpage.

The compact provides 4 modules as selectable options

Battery module (default)

The battery module is the default for the compact. With this module the compact can autonomously run on a single standard AA battery. This creates an unique portable gas flow meter or regulator.
The unit also has a micro-USB connector that can be used as an alternative power supply and which can also be used to update the firmware free of charge (see website for more information).

Power supply module

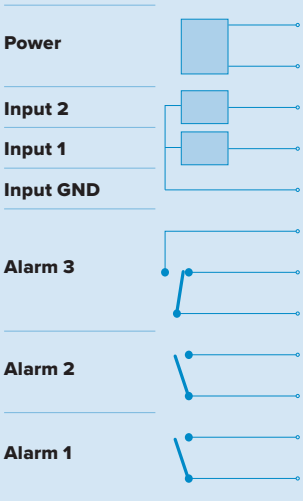
With the power supply module the compact can be powered from an external 15...30 VDC power source. The module comes with either a 2 or 5 meter cable with fly leads. This module can also be supplied with a wall plug power supply.
This unit converts 100-250 VAC into 24 VDC power for the unit. This AC powered module comes with a 1.5 meter cable and you can select a plug for EU, US, GB, AU or CN. Maximum current is 25 mA at 24 VDC power.

Alarm module

The alarm module option provides:

- 3 alarm contacts (relays up to 1 amp, 30 VDC)
- 2 optical isolated input channels (reset alarm)
- Every alarm contact separately configurable as:
  - High flow alarm
  - Low flow alarm
  - Window flow alarm
  - Totalizer alarm
- Hysteresis, delay and alarm duration time adjustable
- Built-in 15...30 VDC power supply, polyfuse protected
- 2 or 5 meter fly lead cable included (loose ends)
- All variables adjustable locally through touch screen

Pin assignements



Color	Assignement
red	PWR+
black	PWR-
white	IN2
brown	IN1
green	IN.GND
yellow	OUT3.NO
grey	OUT3.NC
pink	OUT3.COM
blue	OUT2.A
violet	OUT2.B
grey-pink	OUT1.A
red-blue	OUT1.B

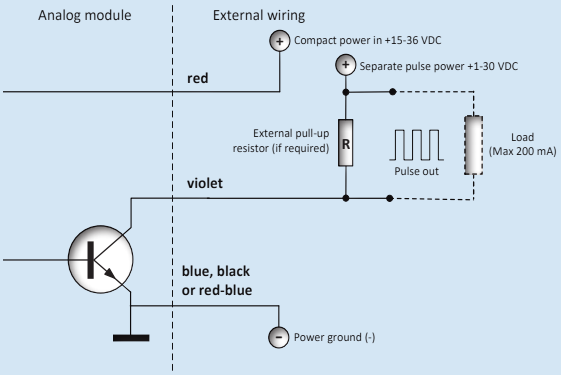
Specifications

Power input	
Voltage supply range	15...30 VDC
Maximum current	Maximum current 50 mA at 24 VDC power
Protection input	Polyfuse (trip current > 500mA) and reverse polarity protected
Switch ratings switch 1 + 2 (SPST hard contact)	
Maximum rating	30 VDC/0.5 A
Switch ratings switch 3 (DPST hard contact)	
Maximum rating	30 VDC/1 A
Inputs 1 + 2 (Opto-couplers)	
Voltage range (polarity sensitive)	5...30 VDC (@ 5 mA maximum)
Min. recommended pulse width	100 msec (sample interval: 20 msec)

Analog/pulse module

The analog/pulse module provides:

- One active 4-20 mA output (adjustable 0-22 mA)
  - Maximum load 1000 ohm @ 24 VDC power
  - Full customer configurable
- Open collector pulse output
  - Frequency up to 25 Hz
  - Voltage pulse: 1...30 VDC



15...36 VDC power supply to **compact**, polyfuse protected

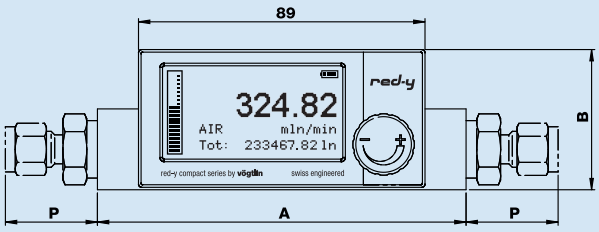
Pin assignements

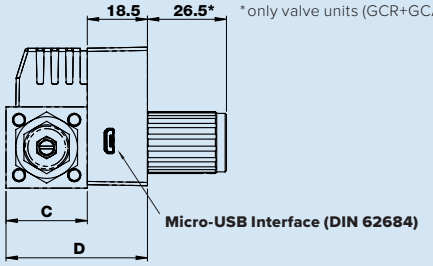
		Color	Assignment
Power		red	PWR+
		black	PWR-
Pulse out		blue	PULSE OUT-
		violet	PULSE OUT+
Analog out		grey-pink	mA OUT-
		red-blue	mA OUT+

Specifications

Power input	
Voltage supply range	15...30 VDC
Current	50 mA (with 20mA out @230 Ω) and a power supply of 24 VDC
Analog output:	
Current output	4-20 mA (0-22 mA adjustable). Active signal, load independent
Maximum load	1000Ω @ 24 VDC
Uncertainty	Maximum 0.25% of the full scale of the instrument's uncertainty
Protection	Polyfuse 150 mA trip current
Pulse output:	
Type output	Open collector
Possible voltage pulse supply	1-30 VDC
Pulse	frequency (Maximum 25 Hz). Pulse length adjustable (minimum 20 msec)
Protection	Polyfuse, 200 mA trip current
Settings interface	
Configuration of module	**compact** integrated touch screen

Dimensions red-y compact series





*only valve units (GCR+GCA+GCY)

		Length (mm)				Length of fitting
Type	**Body size**	**A**	**B**	**C**	**D**	**P**
GCM GCR GCS GCA GCY GCZ	G¼" G¼" G¼" G¼" G¼" G¼"	114	44	25	44	We offer a range of different inlet/outlet fittings.
GCM GCS GCY	G½" G½" G½"	160	54	35	54	
GCR GCA GCZ	G½" G½" G½"	207	54	35	54	

Technical data red-y compact series

Instrument types

compact meter GCM
Mass Flow Meter

compact regulator GCR
Mass Flow Meter with manual Valve

compact G½" (GCM or GCR versions)
For 1/2" size with manual valve, the valve is flange mounted

Measuring ranges

(full scale freely selectable)	Type	Measuring range (air)		Process connection
	GC**X**-A	from 0 ... 5 mln/min*	to 0 ... 600 mln/min	G¼"
	GC**X**-B	from 0 ... 600 mln/min	to 0 ... 6000 mln/min	G¼"
	GC**X**-C	from 0 ... 6 ln/min	to 0 ... 60 ln/min	G¼"
	GC**X**-D	from 0 ... 60 ln/min	to 0 ... 450 ln/min	G½"

*regulator 0 to 25 mln/min

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
Accuracy (air & equivalents)	Eco: ± 2.0% of full scale; ranges > 200 ln/min ± 3.0% of full scale Eco plus: ± 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	Eco: 1 : 50 Eco plus and special: 1 : 100 (not available below 0-10 mln/min)
Response time	Max. 300 msec (depending on filter settings)
Flow update by sensor	40 msec (battery mode 500 msec)
Display update	240 msec (battery mode 500 msec)
Repeatability	± 0.5% of full scale
Longterm stability	0.1 % of full scale per year, if clean gas is used
Power supply Meter GCM & Regulator GCR	Standard AA battery (lifetime depending on operation) or Micro-USB power supply (DIN 62684) Option: External power 15...30 VDC
Operation pressure	0.2 – 11 bar a
Temperature (environment/gas)	0 – 50°C
Materials	Anodized aluminium, optional stainless steel electropolished
Seals	FKM, optional EPDM (FDA)
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	Touch display (128x64 px) with automatic position adjustment (position sensor) Backlighted only with external power supply (Micro-USB or 24 VDC)
Process connection	G¼" (BSPP* female) up to 60 ln/min, G½" (BSPP* female) up to 450 ln/min *British Standard Pipe Parallel
Inlet section	No requirements
Mounting orientation	Any position, consult manufacturer above 5 bar or vertical mounting

Safety

Test pressure	16 bar a
Leak rate (external)	< 1 x 10^{-6} mbar l/s He
Environmental protection	IP-50
EMC	EN 61326-1

Options

Panel mounting kit

Flanged vacuum fittings

Various inlet and outlet fittings

Type code red-y compact series

Instrument type	red-y compact series	G C
Function	Meter	M
	Meter with manual valve (regulator)	R
	Meter with Alarm module	S
	Meter with manual valve (regulator) and alarm module	A
	Meter with analog module	Y
	Meter with manual valve (regulator) and analog module	Z
Full scale of measuring range (air)	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	Eco (±2% of FS above 200 ln/min: ±3% of FS, 1:50)	E
	Special (±1% of FS, 1:100)	S
	Eco plus / 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 (Micro-USB always available)	Battery supply (AA battery)	B
	External supply 15...30 VDC	F
	Customer-specific / OEM	K
Material valve (regulator)	Nickel-plated brass	A
	Stainless steel (303 / 1.4305)	S
	Customer-specific / OEM	K
	No valve	N
Orifice size of manual valve	NS 1.0L (for very low flows, high dynamics)	0 5
	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 6.5	6 5
	Customer-specific / OEM	9 9
	No valve	0 0
Type code		G C – –

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