BATTERY POWERED DIGITAL MASS FLOW METERS FOR GASES



Independent digital convenience: Thermal Mass Flow Meters for Gases

The red-y compact 2 series mass flow meters 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 backlit touch display for great flexibility.

Digital comfort:

Touch Technologie

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

Independent Operation

The flow meters are powered with standard AA battery and Micro-USB power supply.

Optional 24 Vdc power supply available.

Modular Extensions

The instruments can be extended and retrofitted with different modules: battery module, power module and alarm module.

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)

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.

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







| Instrument versions (red | -y compact | 2 series | | | | | | | | |
|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------------------------------------|-----------|-----------------------|-----------------|--------------------|--------------------------------------------|------------------|----|
| StandardOption | n | | | | | | | Pov | ver Supp | ly |
| Version | Version Touch Display Auto display alignment (position sensor) tt meter GCM tt regulator GCR tt switch GCS Auto display alignment (position sensor) Choose between multiple hor screens Choose between multiple hor screens Choose between multiple hor screens Choose between multiple hor screens | | Choose between multiple home screens | Totalizer | Multigas (up to 3) | Manual valve | Alarm functions | Mirco-USB power supply (DIN62684) | 24 Vdc supply | |
| compact meter GCM | • | • | • | • | 0 | | | • | • | 0 |
| compact regulator GCR | • | • | • | • | 0 | • | | • | • | 0 |
| compact switch GCS | • | • | • | • | 0 | | • | • | | • |
| compact all-in GCA | • | • | • | • | 0 | • | • | • | | • |

The new red-y compact 2 series – Even more stunning features:

Wide Choice of Flow Units:

Choose between a large number of **standardized** and **normalized flow units** of the **Imperial**, **US customary** and **SI** measuring systems (with user adjustable reference conditions).

The units are selectable from the integrated menu both for the actual flow and the totalized flow.

Extended Alarm Functions:

The red-y compact 2 series provides 3 configurable alarms. The following triggers are available:

Low alarm, high alarm, window alarm and totalizer alarm

The alarms can be configured with different parameters: Normally open, normally closed, hysteresis, auto/manual/ remote reset, delay and alarm duration

Device Information & Notifications

Display of complete device information including all configuration settings. Alerts and notifications show up on the home screen.

Upgrade Device Features

New device features will be available and can be updated through the built-in USB interface. Stay informed on latest releases at

www.htk-hamburg.com

VA-Meters vs. Massflow Meters





Many applications require a **higher accuracy** together with **pressure and temperature compensation** which cannot be realized with conventional variable area 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 generate repeatability! The **electronic alarm module offers many options** over a single VA-meter alarm.







Autonomy, precision and comfort 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:

- The devices are very compact, can be installed in any position, and are immediately ready for operation
- The built-in touch display with an intuitive navigation offers various settings
- The devices measure real mass flow, independent of changes in pressure and temperature.

- This provides high accuracy and repeatability to the measuring results
- In addition to the actual value, the total consumption is displayed. This creates transparency in supply systems
- The autonomous operation with a standard AA battery makes the compact a high-precision alternative to variable area flow meters
- High quality: All flow meters are produced and calibrated at the headquarters in Aesch, Switzerland

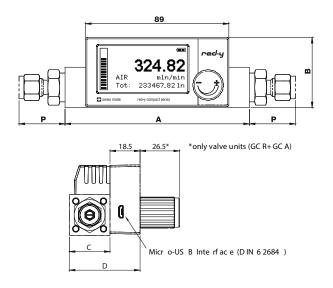
| Technical data | | | | | | | | | | | |
|------------------|-------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|--------------------------------------------------|--------------------|--|--|--|--|--|--|
| Instrument types | 284.38 84.7846 2002 84.7846 2002 2002 2002 | rady | | 524.82 | | | | | | | |
| | compact meter GCM Mass Flow Meter compact switch GCS Mass Flow Meter with Alarm Functions | compact all-in | er with manual Valve | compact G½" Versions The valve is flange mounted | | | | | | | |
| Measuring ranges | (full scale freely selectable) | Type | Measuring range (air) | | Process connection | | | | | | |
| | | GC X -A | from 0 50 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 | | G1⁄2" | | | | | | |
| Performance data | Media (real gas calibration) | Air, O_2^* , N_2^* , He, Ar, CO_2 , H_2 , CH_4 , C_3H_8 (other gases and gas mixtures on request) *O_2 & N_2 are calibrated with air | | | | | | | | | |
| | 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 | Eco: 1 : 50 | Sp | oecial: 1 : 100 | | | | | | | |
| | Response time | Max. 300 msec | (depending on filter setting | js) | | | | | | | |
| | Flow update by sensor | 40 msec (batter | ry mode 500 msec) | | | | | | | | |
| | Display update | 240 msec (batte | ery mode 500 msec) | | | | | | | | |
| | Repeatability | ± 0.5% of full s | cale | | | | | | | | |
| | Longterm stability | < 1% of measu | < 1% of measured value / year | | | | | | | | |
| | Power supply Meter GCM & Regulator GCR | Standard AA battery (lifetime in months depending on operation) or Micro-USB power supply (DIN 62684) Option: External power +830 Vdc (power consumption max. 120mA) | | | | | | | | | |
| | Power supply Switch GCS & All-in GCA | • | External power +830 Vdc (power consumption max. 300mA) or Micro-USB power supply (DIN 62684) | | | | | | | | |
| | Operation pressure | 0.2 – 11 bar a | | | | | | | | | |
| | Temperature (environment/gas) | 0 - 50°C | | | | | | | | | |
| | Materials | Anodized alumi | Anodized aluminium, optional stainless steel electropolished | | | | | | | | |
| | Seals | FKM, optional E | FKM, optional EPDM (FDA) | | | | | | | | |

Technical data continuing



| Technical data | (Continuation) | | | | | | | | |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|
| Performance data (Continuation) | Pressure sensitivity | $< 0.2\%$ / bar of reading (typical N_2) | | | | | | | |
| | 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) | | | | | | | |
| Safety | Process connection | G¼" (BSPP* female) up to 60 ln/min, G½" (BSPP* female) up to 450 ln/min *British Standard Pipe Parallel | | | | | | | |
| | Inlet section | None required | | | | | | | |
| | Mounting orientation | Any position (consult manufacturer above 5 bar or vertical mounting) / Display rotates 180° | | | | | | | |
| | Connection cable | For external power supply or alarm module: 2 m with fly leads | | | | | | | |
| Safety | Test pressure | 16 bar a | | | | | | | |
| | Leak rate | < 1 x 10 ⁻⁶ mbar l/s He | | | | | | | |
| | Environmental protection | IP-50 | | | | | | | |
| | EMC | EN 61326-1 | | | | | | | |
| Options | AB 324.82 AB 224.75 121 AB 24.85 121 AB 24.85 121 AB 25.85 121 AB | 324.82 mg | | | | | | | |
| | Panel Mounting Kit | Vacuum Fittings Various Inlet and Outlet Fittings | | | | | | | |

Dimensions <red-y compact 2 series>



| | Length (mm) | | | | | | | | | |
|------------|-------------|----------------|----|----------------|--|--|--|--|--|--|
| Typ / Body | Α | В | C | D | | | | | | |
| GCM G¼" | | | | | | | | | | |
| GCR G¼" | 114 | 44 | 25 | 44 | | | | | | |
| GCS G¼" | 114 | 44 | 25 | 44 | | | | | | |
| GCA G¼" | | | | | | | | | | |
| GCM G½" | 160 | 54 | 35 | 54 | | | | | | |
| GCS G½" | 100 | J 4 | ככ | J 4 | | | | | | |
| GCR G½" | 207 | 54 | 35 | 54 | | | | | | |
| GCA G½" | 207 | J 4 | 23 | J 4 | | | | | | |







| Instrument type | red-y compact 2 series (Gas) | G | С | | | | | | | | | |
|------------------------------------------|------------------------------------------------------|---|---|---|---|---|--------|---|---|-----------------------------------------|---|---|
| Function | Meter | Т | | М | | | | | | | | |
| | Regulator – With manual valve | | | R | | | | | | | | |
| | Switch – With alarm | | | S | | | | | | | | |
| | All-In – With manual valve & alarm | | | Α | | | | | | | | |
| Full scale of measuring range | Customer-specific (Divider A, up to 600 mln/min) | | | | Α | Х | | | | | | |
| (Air) defined by manufacturer | Customer-specific (Divider B, up to 6000 mln/min) | | П | | В | Х | | | | | | |
| ueillieu by manuracturei | Customer-specific (Divider C, up to 60 ln/min) | | | | C | Х | | | | | | |
| | Customer-specific (Divider D, up to 450 ln/min) | | | | D | Х | | | | | | |
| Instrument version | Eco (±2.0% of FS / > 200 ln/min ±3.0% of FS, 1 : 50) | | | | | | Е | | | | | |
| | Special (±1.0% of FS, 1 : 100 / up to 50ln/min Air) | | | | | | S | | | | | |
| | Customer-specific / OEM | | | | | | K | | | | | |
| —————————————————————————————————————— | Aluminium, FKM | | П | | | | \top | Α | | | | |
| (Body, seals) | Aluminium, EPDM | | | | | | | В | | | | |
| | Stainless steel, FKM | | П | П | | | | S | | | | |
| | Stainless steel, EPDM | | | | | | | Т | | | | |
| | Customer-specific / OEM | | П | П | | | | K | | | | |
| Supply | Battery supply | | | | | | | | В | | | |
| (Micro-USB always available) | External supply 24 Vdc, 2 m | | | | | | | | F | | | |
| | Customer-specific / OEM | | | | | | | | K | | | |
| Material valve | Nickel-plated brass | | П | П | | | | | | Α | | |
| (regulator, all-in) | Stainless steel | | | | | | | | | S | | |
| | Customer-specific / OEM | | | | | | | | | K | | |
| | No valve | | | | | | | | | N | | |
| Manual valve | NS 1.0 | | | | | | | | | | 1 | 0 |
| defined by manufacturer | NS 1.5 | | | | | | | | | F K A S K N 11 12 2 2 3 3 4 4 6 6 8 8 9 | 1 | 5 |
| | NS 2.0 | | | | | | | | | | 2 | 0 |
| | NS 2.5 | | | | | | | | | | 2 | 5 |
| | NS 3.0 | | | | | | | | | | 3 | (|
| | NS 3.5 | | | | | | | | | | 3 | 5 |
| | NS 4.0 | | | | | | | | | | 4 | (|
| | NS 6.0 | | | | | | | | | | 6 | 5 |
| | Valve not defined | | | | | | | | | | 8 | 8 |
| | Valve mounted | | | | | | | | | | 9 | 5 |
| | Customer-specific / OEM | | | | | | | | | | 9 | 9 |
| | No valve | | | | | | | | | | 0 | C |