

Perfection in fluids.

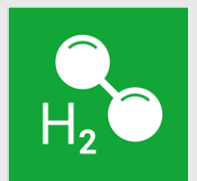
The right *flow*  
by German engineering.



# RPD Reference gas meter

The **gold** standard for low flow measurement

Brochure EPE-183530



Hydrogen approved!



# RPD Reference gas meter

The gold standard for low flow measurement

EPE-183530



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## The gold standard for low flow measurement

Continuous & pulsation free  
Low flow reference measurement - also with H<sub>2</sub>  
Mobile measuring box

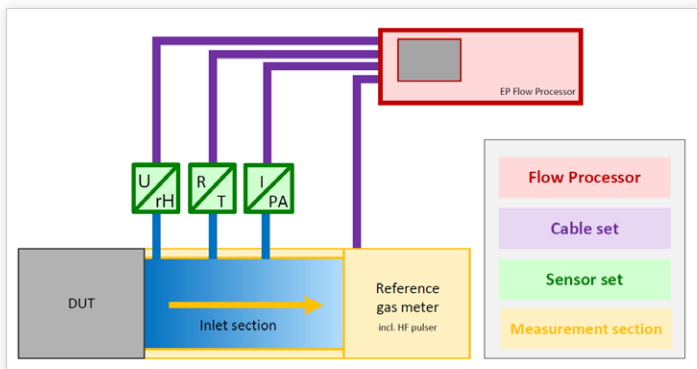
### Description

The rotary positive displacement (RPD) reference gas meters GM16 meet the highest demands on reliable and accurate reference gas flow measurement down to 0.01 m<sup>3</sup>/h. Working according to the positive displacement principle, two counter-rotating impellers are displacing a fixed volume from the inlet to the outlet of the meter with each full revolution. Due to their special, patent-pending impeller design pulsation free operation is realized. They reach an excellent measurement accuracy of 0.5 % MV + 0.005 % EV. Both versions - with 1 or 2 HF pulser - are suited for operating pressures up to 6 bar gauge pressure.

The new generation of reference gas meters is not only suitable for air, but also for hydrogen, natural gas and other non-flammable and non-aggressive gases. As the flow measurement is continuous, absolutely pulsation free and highly accurate, this RPD reference meters are the gold standard for low flow reference measurement.

### Technical scheme

#### RPD Reference gas meter



### Features & Benefits

- ✓ Reference measurement for low flow rates - down to 0.01 m<sup>3</sup>/h - capable with H<sub>2</sub>
- ✓ Continuous and absolutely pulsation free - due to special impeller design
- ✓ Gauge pressure operation - up to 6 bar gauge pressure
- ✓ Excellent measurement accuracy - 0.5 % MV + 0.005 % EV
- ✓ Robust and compact design - ideally suited for mobile systems
- ✓ Mobile measuring box for data acquisition - measurement data display via Android app

### Applications

- ✓ Industrial applications
- ✓ Calibration & transfer standards
- ✓ Measurement sections for test benches
- ✓ Flow measurement of hydrogen, e.g. for measuring consumption on fuel cells
- ✓ Flow measurement of the hydrogen output of electrolyzers
- ✓ Calibration of household gas meters G1.6-G10



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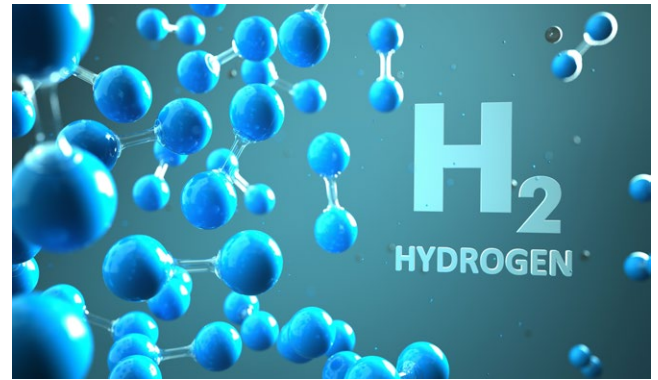
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## Low flow reference measurement - also with H<sub>2</sub>

Hydrogen is traded as the clean energy carrier of the future and research offensives such as the German hydrogen strategy help to advance developments in this area quickly. Due to the very low density and chemical reactivity, existing measuring devices are not always suitable for determining the flow of hydrogen.

The RPD reference gas meters have been tested for resistance and tightness for hydrogen. In addition, the PTB in Braunschweig carried out the first measurements (in the range from 0.08 to 10 m<sup>3</sup>/h), which showed excellent reproducibility. Corresponding correction polynomials for flow measurement with hydrogen can be provided on request.

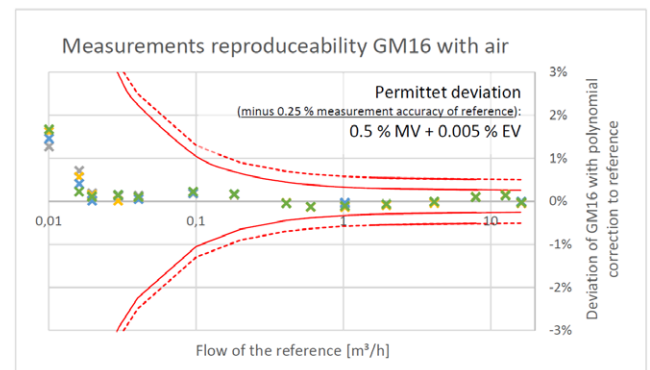


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## Pulse value

The pulse value indicates how many pulses per volume unit (here m<sup>3</sup>) are generated by the gas meter. The higher the pulse value, the more signals are generated even at low flow rates and allow a valid evaluation of the signal.

The GM16 is available in two versions - with one and with two HF pulse generators. For applications with higher demands on the pulse value, the GM16 with 2 HF pulse generators can generate 25 pulses/min at a flow rate of 0.01 m<sup>3</sup>/h.



## Variable application possibilities

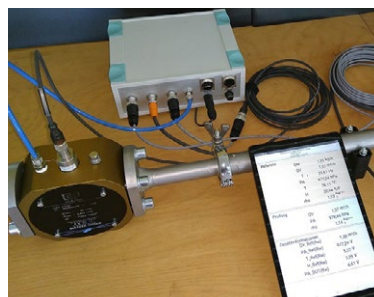
All conceivable options are available for the measurement data acquisition and evaluation of the RPD reference gas meters - from the integration of the bare gas meters into your existing system to a complete mobile system.

Our measuring boxes contain the necessary sensors for pressure and temperature in order to be able to calculate a volume or mass flow from the frequency signals of the

gas meters. The measurement data can be displayed either using a PC or an Android app (PC or Android device not included in the scope of delivery). With the mobile measuring box, gas meters, sensors and measuring boxes are built into a practical case for use on site.



1 Integration of the gas meter into a test bench



1 Gas meter with measuring box and display via Android app



1 Mobile measuring box with integrated gas meter for use on site



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# RPD Reference gas meter

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## Technical specifications & ordering information

### Technical data

	GM16, 1 HF	GM16, 2 HF
Q <sub>min</sub>	0.01 m <sup>3</sup> /h*	0.01 m <sup>3</sup> /h*
Q <sub>max</sub>	16 m <sup>3</sup> /h	16 m <sup>3</sup> /h
Measurement range	> 1:1000	> 1:1000
Measurement accuracy (@atmosph. cond., air)	0.5 % MV + 0.005 % EV**	0.5 % MV + 0.005 % EV**
Pulse value	77,000 imp/m <sup>3</sup>	153,000 imp/m <sup>3</sup>
HF pulser	1 piece	2 pieces
Media	Air, nitrogen, natural gas, helium, hydrogen and other non-flammable and non-aggressive gases	Air, nitrogen, natural gas, helium, hydrogen and other non-flammable and non-aggressive gases
Interface	DIN flange DN20 PN10	DIN flange DN20 PN10
Installation length	130 mm	130 mm
Operating pressure	up to 6 bar gauge pressure	up to 6 bar gauge pressure

\* Depending on operating conditions and measurement time

\*\* MV = from the measured value, EV = from the end value



The gas meters are factory-calibrated with air at 5 points under atmospheric conditions. Do you have other calibration requirements (e.g. DAkkS, additional measuring points, real gas calibration with other media, higher pressures, ...)? Present your requirements to us and request a non-binding offer!

### Ordering information

Item No.	Description
<b>Gas meter</b>	
185028	RPD reference gas meter GM16, 1 HF, 0.01...16 m <sup>3</sup> /h, H <sub>2</sub> capable
184561	RPD reference gas meter GM16, 2 HF, 0.01...16 m <sup>3</sup> /h, H <sub>2</sub> capable
<b>Accessories</b>	
172022	Inlet section / outlet section, 5d
172023	Mounting set for inlet and outlet section
153709	Inline filter DN32 *
185421	Inline filter, stainless steel **
<b>Measurement data acquisition and evaluation</b>	
181671	Measuring box for gas meter without DUT data acquisition
181854	Measuring box for gas meter with DUT data acquisition
<b>Mobile measuring box</b>	
185035	Mobile measuring box with integrated gas meter GM16, 1 HF and measuring box with DUT data acquisition

\* not suited for hydrogen \*\* suited for hydrogen



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