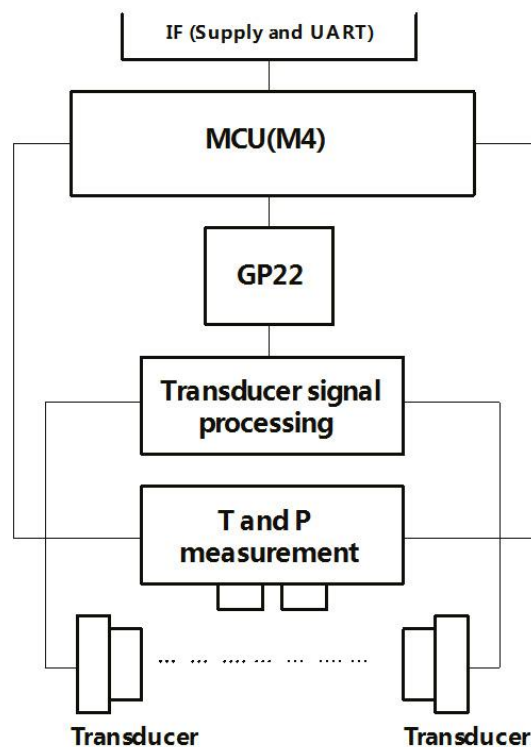


# Ultrasonic Gas Metering Module

Version: 2018-9-30

## 1. Block diagram



## 2. Measurement features

**Flow range:** for residential meter, G1.6 to G4.0  
for industry and commercial meter, G6 to G25

**Accuracy class:** 1.5

**T range:** -15°C to 45°C

**P range:** 60kPa to 150kPa

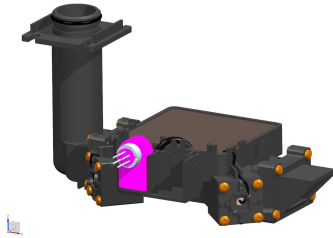
**Output data:** Temperature  
(optional) Pressure<sup>①</sup>  
Operating flow  
(optional) (T compensation) Standard flow<sup>②</sup>  
(optional) (T and P compensation) Standard flow<sup>①</sup>

**Measurement R:** 250 @ residential; 350 @ industrial & commercial

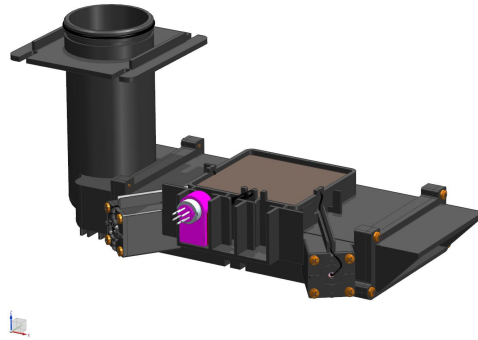
Built-in measurement model, different types of gas meter can be modelled or calibrated or verified by iESLab Ultrasonic Gas-Meter Test Bench<sup>⑤</sup>.

Built-in Gas adaptive mechanism<sup>③</sup>.

## 3. Installation



Residential module



Industry and Commercial module

**Installation points:** Make sure that all the gas flows through the measuring tube of the module, and correct the gas flows go through the inlet and outlet appropriately.

**Interface leads:** Four-core shielded cable, Core 4\*0.15mm<sup>2</sup>, Outer diameter 4.5mm, length 200mm

Power positive line (red)

Power Ground line (black)

UART TX line (yellow)

UART RX line (green)

## 4. Electrical and communication interface

**Power supply:** Regulated power supply, 3.4 ~ 5.5 V / 20mA peak current.  
Higher voltage is recommended.

**Communication Interface:** 3.3 V UART  
Baud rate 2400bps, even parity, data bit 8, stop bit 1.

**Communication instruction<sup>④</sup>:** Set sampling rate (4Hz, 2Hz, 1Hz or 0.5Hz)  
Select the output data item  
(Optional) Define standard temperature<sup>②</sup>  
(Optional) Define standard pressure<sup>①</sup>  
Other information read, settings and so on

**Power consumption:** < 50 uA @ 4 Hz sampling rate

## 5. Ordering information

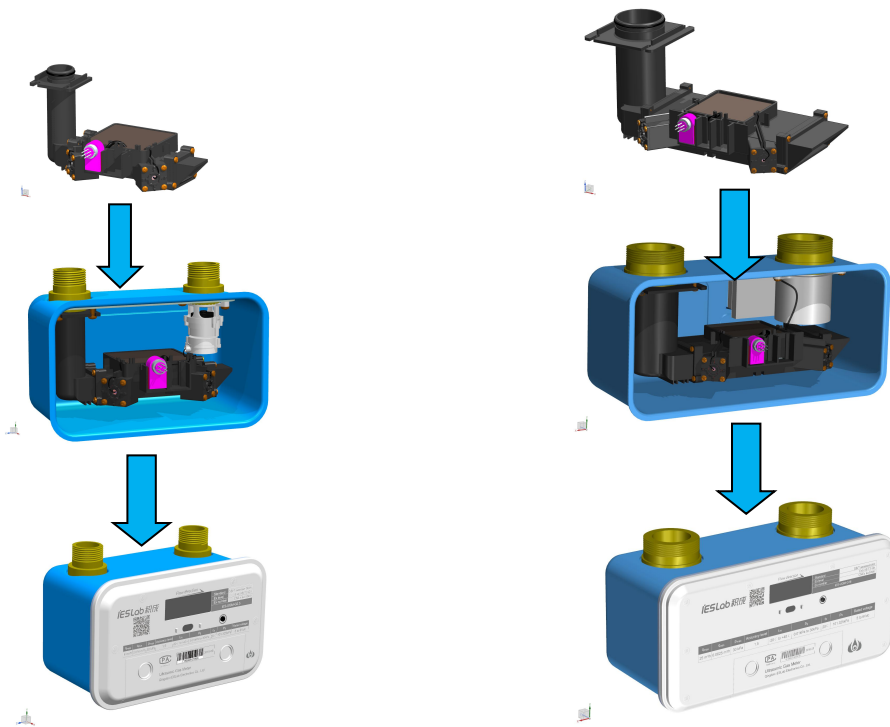
Model	Order number	Marking Information
Residential module	IA-UGM-1	IA-UGM-1-YYYYMMDD-SSSSS
Industry and Commercial module	IA-UGM-2	IA-UGM-2-YYYYMMDD-SSSSS

YYYY = Year, MM = Month, DD = Day, SSSSS = product Serial number that day

Example, IA-UGM-1-20171205-123456

## Remarks

- ① If you choose to output "pressure-related data item", please contact iESLab for details.  
If you choose to output "Temperature and Pressure Compensated Standard Flow", you need to define the "Standard Temperature" and "Standard Pressure".
- ② If "(only) T Compensated Standard Flow" is selected, "standard temperature" needs to be defined.
- ③ About "Gas adaptive mechanism", please contact iESLab for details.
- ④ For an exhaustive set of communication instructions, please contact iESLab.
- ⑤ Sample Applications as below.



- ⑥ Ultrasonic Gas-Meter Test Bench as below

