

—• **COMATE** •—

**VFM60**

**VORTEX FLOW METER**

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**COMATE INTELLIGENT SENSOR**



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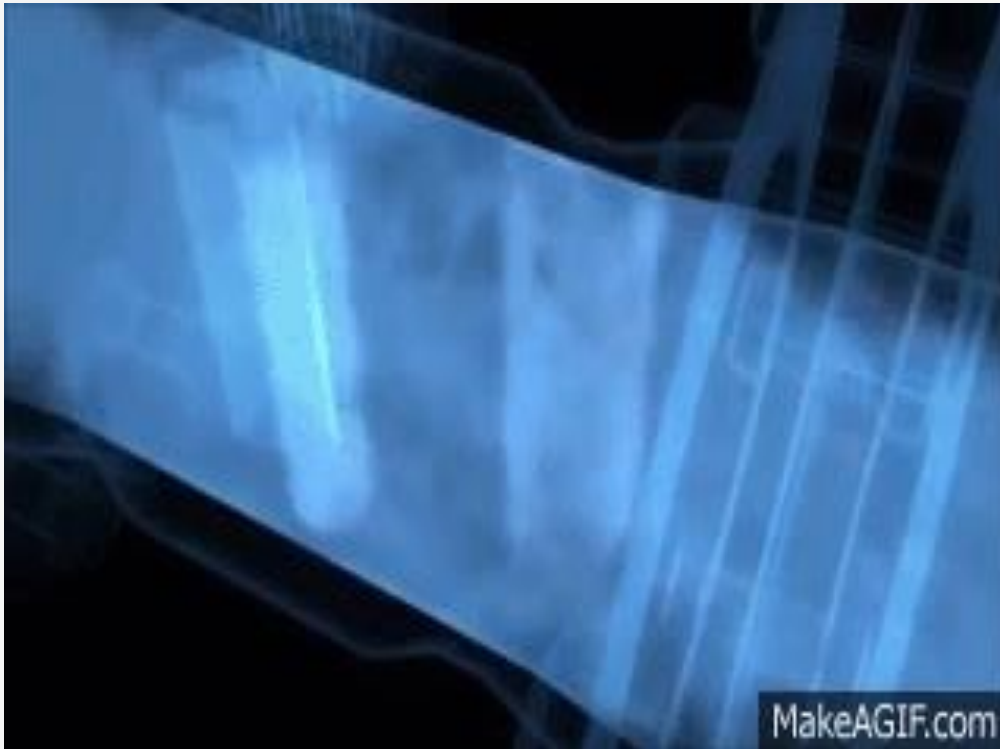
Users of vortex flow meter all around the world



## WORKING PRINCIPLE

How vortex flow meter measure the flow rate?  
What can it measure and why to choose  
vortex flow meter?





## How a vortex flow meter measure

Vortex flow meter measure the flow rate base on Von Karman Vortex Street principle.

When a shedder bar insert into a fluid, it will generate two series of vortexes after it. The number of the vortexes is related to the volume of the flow that pass through.

A pair of piezo sensors are located after the shedder bar, to count the quantity of the vortexes, therefore to know the flow that pass through

During the calibration of the vortex flow meter, a K factor will be fixed as the relation between the volume flow and the number of vortexes





## Steam

Both saturated steam and superheated steam

## Gas

Vortex flow meter can measure all type of gas fluid, including air, natural gas, CO<sub>2</sub>, O<sub>2</sub> .....

## Water

Vortex flow meter are suitable for measurement of low electric conductivity water, such as condensing water, DM water.....

## Other liquid

Vortex flow meter can be used for other low viscosity liquid such as cooling oil

# Advantages

## A *universal* technology

Vortex flow meter is a very universal technology due to its working principle. It is one of the several technology that can measure steam, air ,and liquid all of them, and can cover a wide temperature range and flow range

## A *durable* technology

Vortex flow meter has no moving part inside, and the K factor will remain stable if the shedder bar is not damaged ,thus it can deliver stable and accurate measurement in a quite long term with almost no maintenance.

## An *accurate* technology

Vortex flow meter can deliver an 1% of reading accuracy in a traditional 10:1 turn down. COMATE VFM60 vortex flow meter can do the same in a 35:1 range

## An *proven* technology

Vortex flow meter has been widely used in most industries ever since its birth in 1969 and has been committed as one of the most reliable flow measurement technology



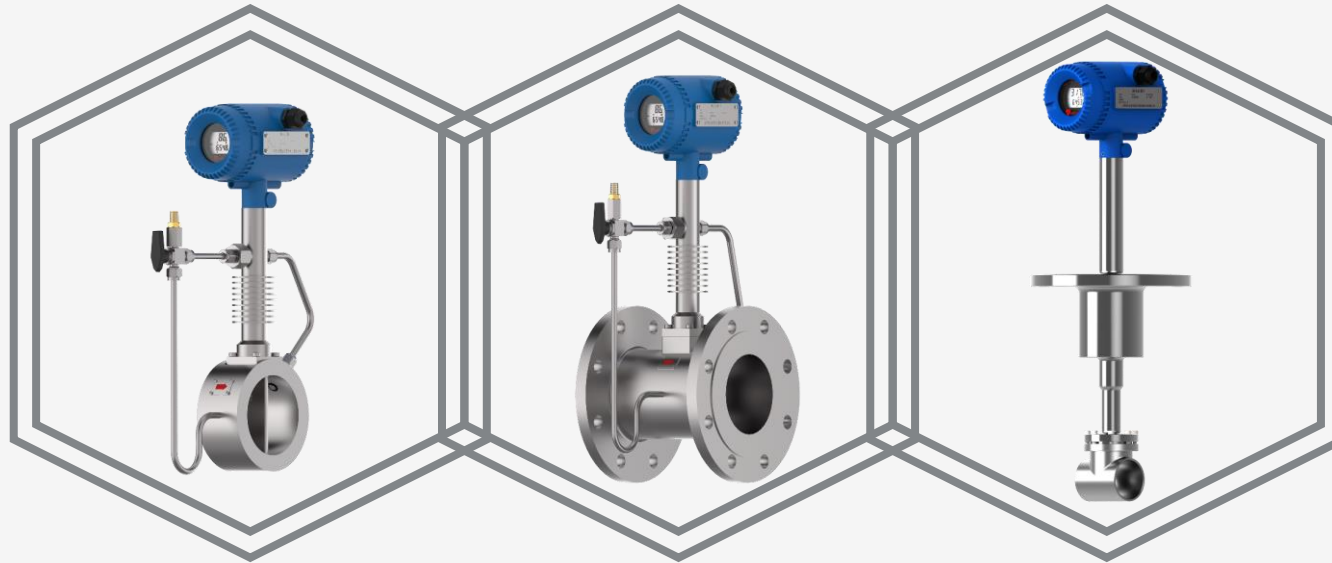


## COMATE VFM60 FAMILY

Get to understand a new generation of vortex flow meter technology, and aware of its



# Process connection



304ss / 316ss  
wet part for  
option

## WAFER

DN15~DN300  
(0.5" ~ 12" )

Up to 16 barG  
(232 psiG)

## FLANGED

DN15~DN300  
(0.5" ~ 12" )

Up to 16 barG  
(232 psiG)

ANSI, DIN, JIS

## INSERTION

DN300~DN1500  
(12" ~ 60" )

Up to 16 barG  
(232 psiG)



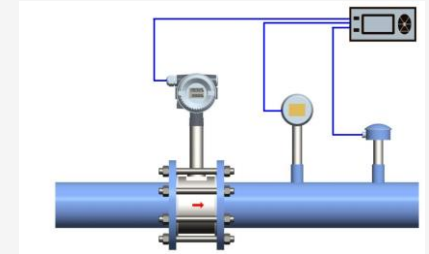
# Compensation



## MULTI-VARIABLE VERSION

With both temperature and pressure measurement, for density compensation. Calculate mass flow, standard flow according to the temperature and pressure value automatically

Suitable for steam and any type of gas

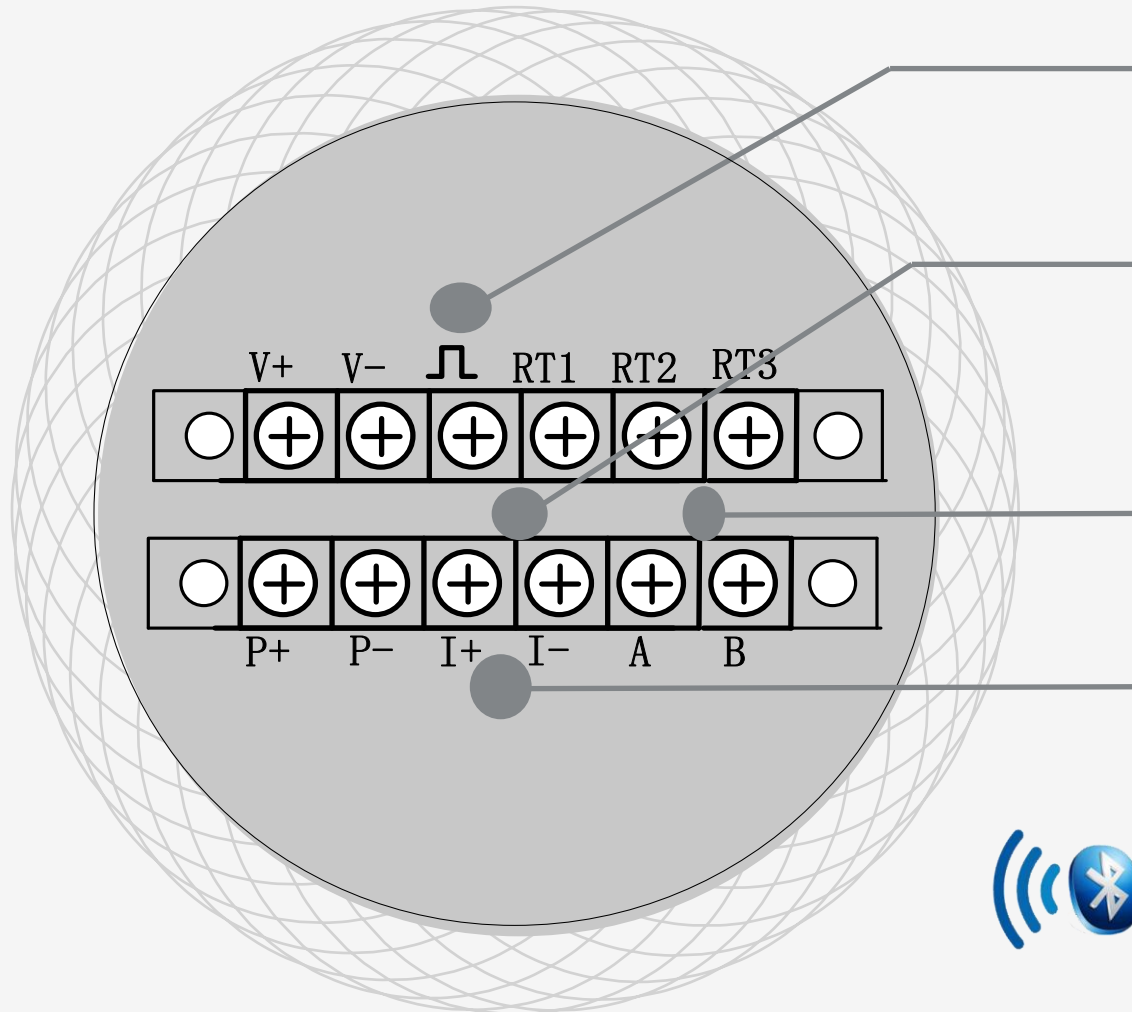


## STANDARD VERSION

Without temperature and pressure measurement, can measure actual flow.

Suitable for liquid fluid which need actual flow measurement

# Output and communication



Pulse

Analog output for actual flow.

4~20mA current

Analog output for mass flow or standard flow

Modbus@RS485

HART@4~20mA



Blue tooth

For operation on cellphone with COMATE APP.

## Measurement range for **steam**

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DN15~DN20 (0.5"~0.75"): 6~70 m/s  
DN25~DN32 (1"~1.25"): 4~70 m/s  
DN40~DN300 (1.5"~12"): 2~70 m/s

## Measurement range for **gas**

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DN15~DN20 (0.5"~0.75"): 6~60 m/s  
DN25~DN32 (1"~1.25"): 4~60 m/s  
DN40~DN300 (1.5"~12"): 2~60 m/s

## Measurement range for **liquid**

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DN15~DN300 (0.5"~12"): 0.3~7 m/s

## Temperature rating options

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Standard: -40 ~ 150 °C or -40 ~ 302 °F  
Medium: -40 ~ 250 °C or -40 ~ 482 °F  
High: -40 ~ 350 °C or -40 ~ 662 °F

## Power supply

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24VDC

## Pressure rating

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1.6MPa (232 psiG)  
2.5MPa (362 psiG)  
4.0MPa (580 psiG)  
6.3Mpa (913 psiG)

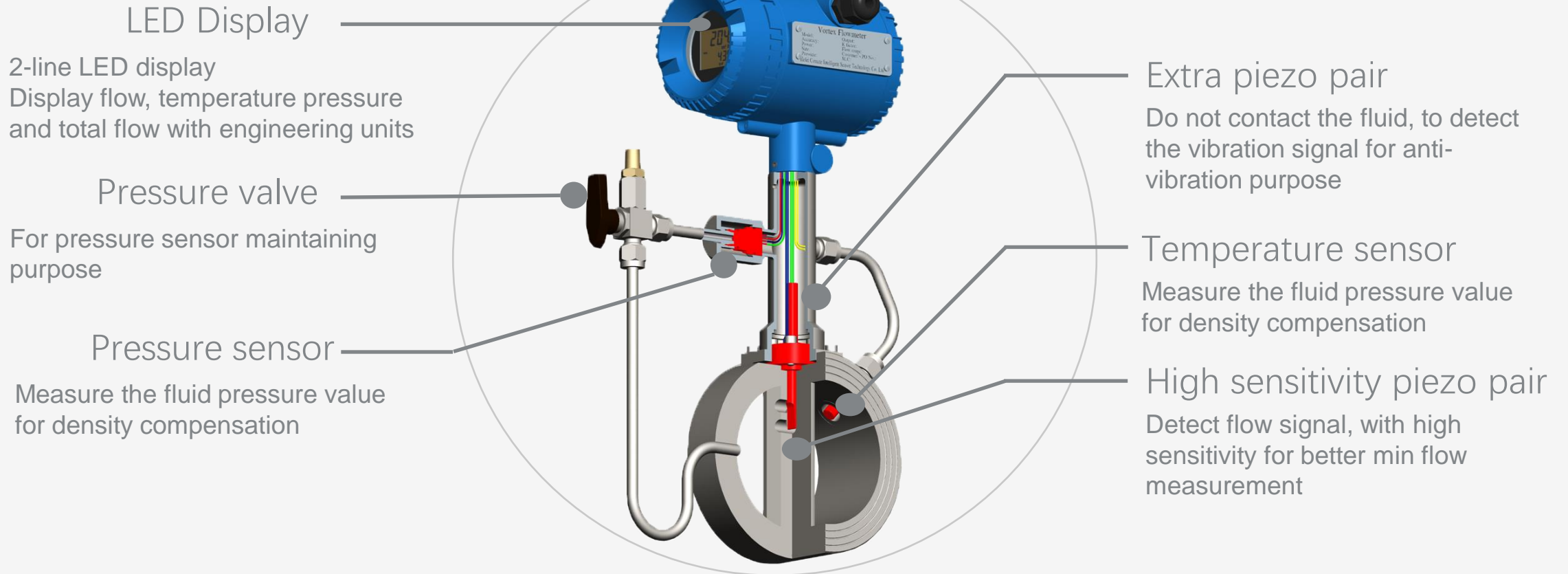


## SPECIAL FEATURES

The unique design of VFM60 vortex flow meter  
and the special features that it lead to

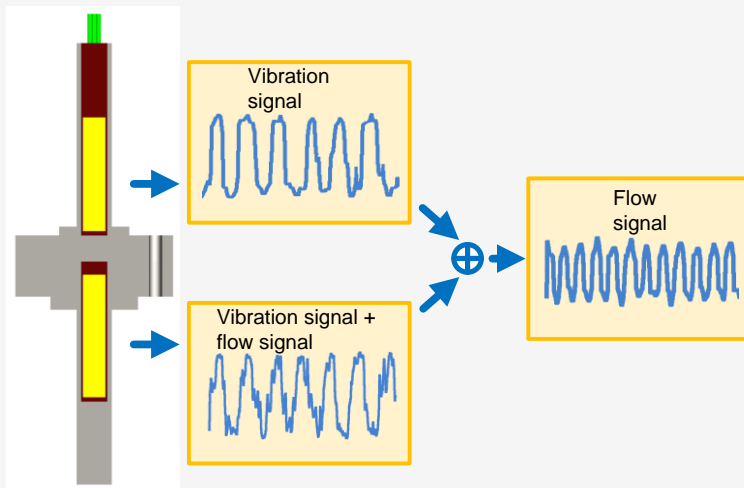


# Special design

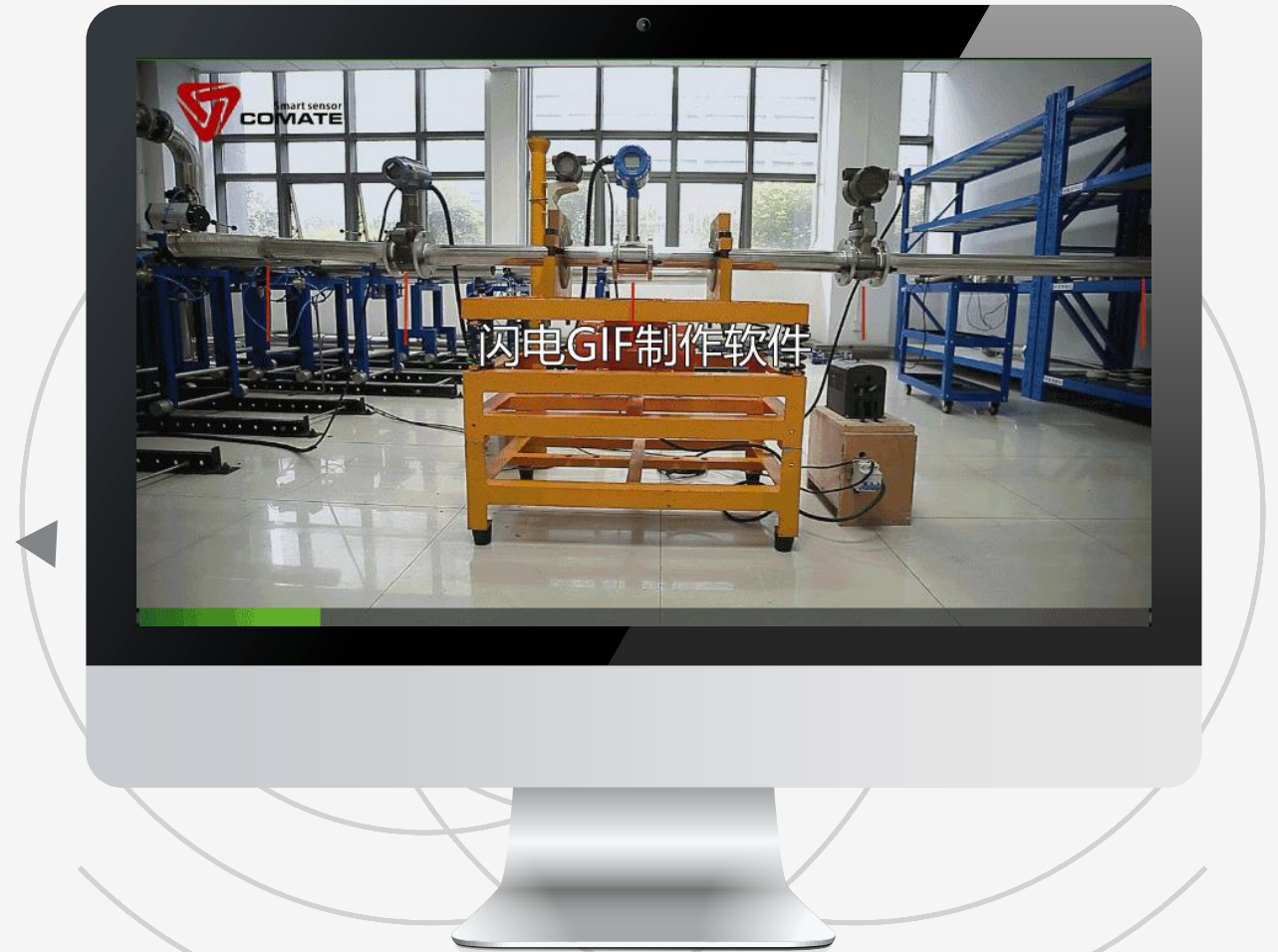


# Best anti-vibration and low flow measurement

Thanks to the dual sensor design and unique signal processing program, VFM60 vortex flow meter can perform a stable measurement under pipe vibration up to 0.5 G.



VFM60 also has the best low flow measurement down to 2m/s due the anti-vibration feature and high sensitivity, against traditional 6~10 m/s in the market



Search COMATE in youtube for the full video  
[https://www.youtube.com/watch?v=ncM\\_eMgknvU&feature=youtu.be](https://www.youtube.com/watch?v=ncM_eMgknvU&feature=youtu.be)

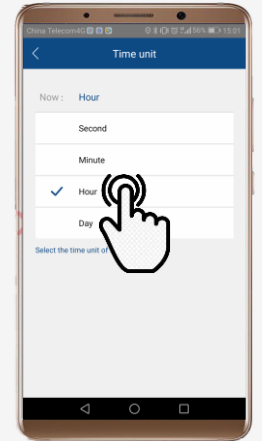
# Blue tooth operation



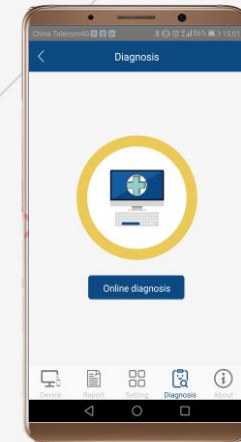
Easy reading



Easy setting



Remote diagnose



Blue tooth operation on cellphone, it just make it simpler and easier





## USERS

Over 2000 VFM60 series vortex flow meter are installed each year all around the world and well accepted by users from different industries





# Users all around the world



Haier



Nestlé

BEKO  
Dünya markası.

POSCO



FOXCONN®



Contact us to learn more



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**THE END**

Thank You

