ULTRASONIC
WATER METER (Bulk water meter)
## NWM UL-BW-PLUS

INTRODUCTION

UL-BW-PLUS is the cast iron ultrasonic bulk meter with advanced sensors for precise and reliable measurement to commercial and industrial application. The meter combined with high-tech IoT technology for both superior hydraulic performance and instant alarm to realize smart water management.

WORKING PRINCIPLES

The sound wave that flows in the direction of the stream moves faster than the one that flows against the stream.

The transit times Tab (Transit time of ultrasonic) waves from sensor A to measured continuously. The time difference (Tba - Tab) is directly proportional to the mean flow velocity (Vm) of the liquid. The flow rate is a result of the velocity multiplied by the cross section area of the flow tube size.

EVERY DROP OF WATER WILL CREATE THE VALUE OF LIFE.
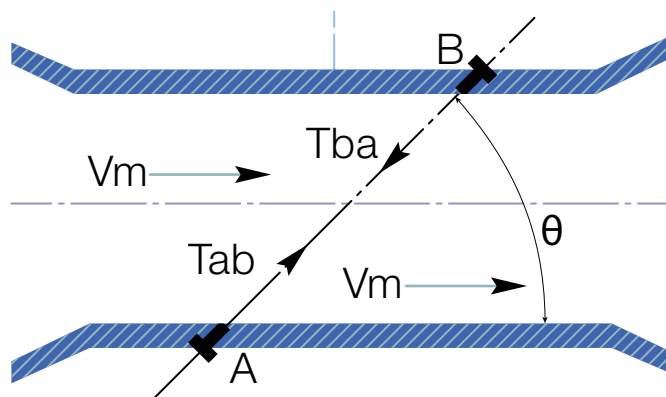
FEATURES

Non-moving parts

Non-moving parts permit reliable performance,long service life and low pressure loss;

High accuracy

High accuracy, unaffected by sand, suspended solids or air pockets;

Long battery life

≥10years; possible to keep the external battery bag for easy to exchange;

Communication

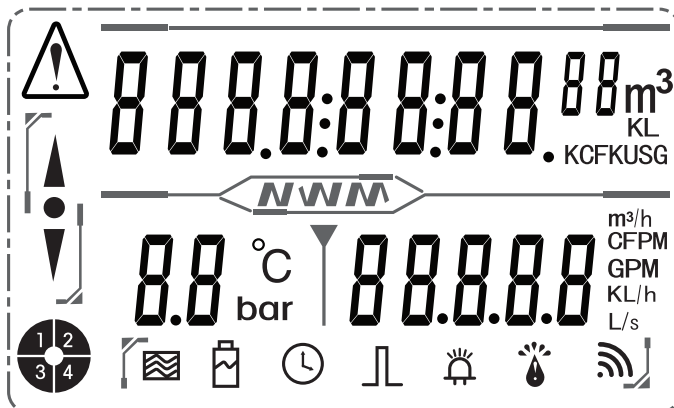AMR ready for wireless, or RS485, M-BUS, LoraWan and other wired communication modes;

**Rectifying device**

With rectifying device

MENU OPERATION

▶ LCD content

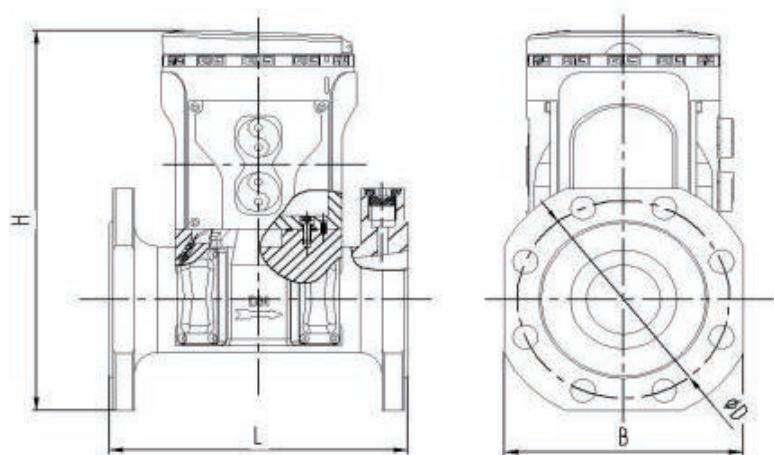| Symbol	Meaning	Symbol	Meaning
m³	Cumulative flow	▲	Positive flow
m³/h	Instantaneous flow	●	
℃	Temperature display	▼	Reverse flow
bar	Pressure unit	〰	Sensor information
1234	Vocal cues	⚠	Water shortage
🔋	Low battery	🕐	Time symbol
⊓	Pulse	💡	Infrared symbol
💧	Tube burst	📶	Communication

▶ Menu operation

Block the light at the photosensitive switch at the lower left corner of the panel for 1 second, and the display menu can be switched; When switching to the time interface, block the light for 5 seconds, users can enter the verification menu from the user menu, and long press in the current menu to exit the verification interface and return to the user interface.

User interface

1S

1S

…

Verification interface

PR-O 5S

1S

PR-O 5S

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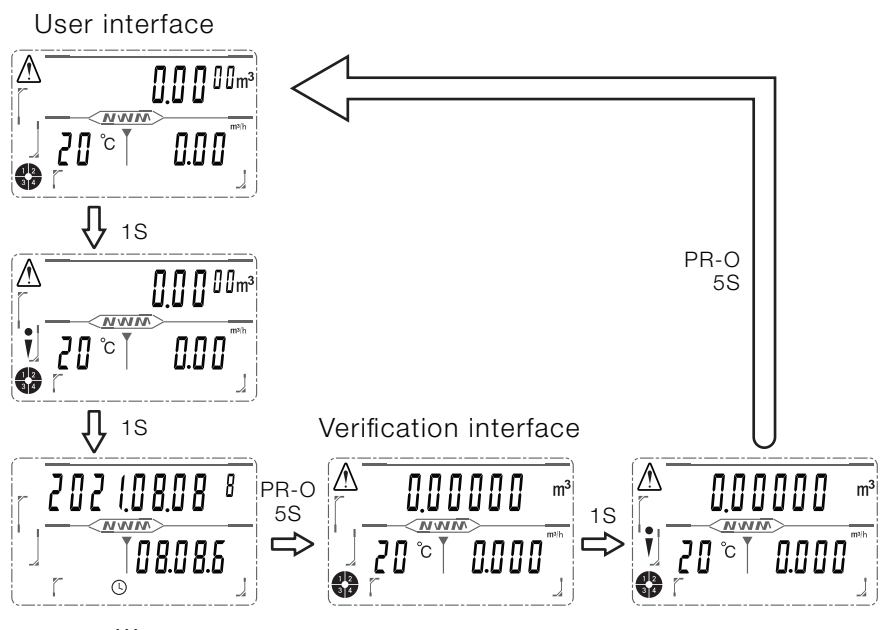
SPECIFICATIONS

▶ Dimension

The Flange Standard under ISO 7005-2:1998(E) PN10/16 as:

Size	Dn50	Dn65	Dn80	Dn100	Dn125	Dn150	Dn200	Dn250	Dn300
L	200	200	225	250	250	300	350	450	500
H	275	295	310	335	350	385	445	488	533
B	160	170	180	200	250	260	320	380	430
D	165	185	200	220	250	300	340	395	445
D_1	125	145	160	180	210	240	295	350	400
nXM	4×M16	4×M16	8×M16	8×M16	8×M16	8×M20	8×M20	12×M20	12×M20

▶ Metrology

DN	mm	50	65	80	100	125	150	200	250	300
R	Q_3/Q_1	250	250	250	250	250	250	250	250	250
Q_4	m³/h	50	50	78.75	125	200	312.5	500	787.5	1250
Q_3	m³/h	40	40	63	100	160	250	400	630	1000
Q_2	l/h	256	256	403.2	640	1024	1600	2560	4032	6400
Q_1	l/h	160	160	630	400	640	1000	1600	2520	4000
Max. reading	m³	99 999.999								
Min. reading	m³	0.00001								

(For different Q_3 and R, please contact with manufacture).

▶ Main Technical Data

|			
Max. pressure	1.6MPa	Installation Position	Any position
Max. temperature	T30、T50	Climate and EMC Class	O / E2
Protective class	IP68	Accuracy class	I / II
Communication port	RE-485, M-Bus, NB-IoT, LoraWan, GPRS...		

▶ Max Permission Error

FOR CLASS I

From Q_1 inclusive up to but excluding Q_2 is ± 1%; From Q_2 inclusive up to and including Q_4 is ± 3%;

FOR CLASS II

From Q_1 inclusive up to but excluding Q_2 is ± 2%; From Q_2 inclusive up to and including Q_4 is ± 5%;
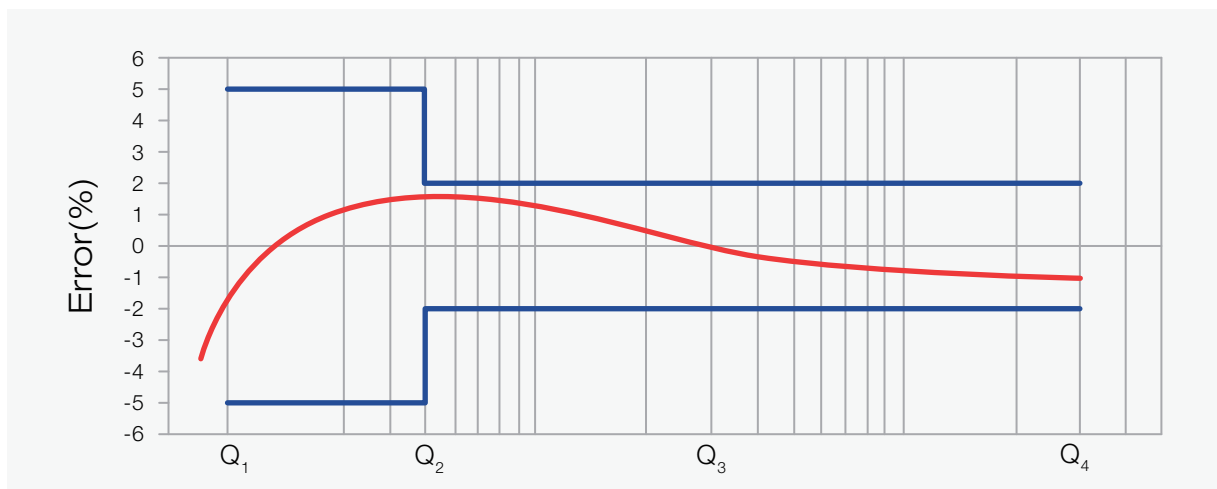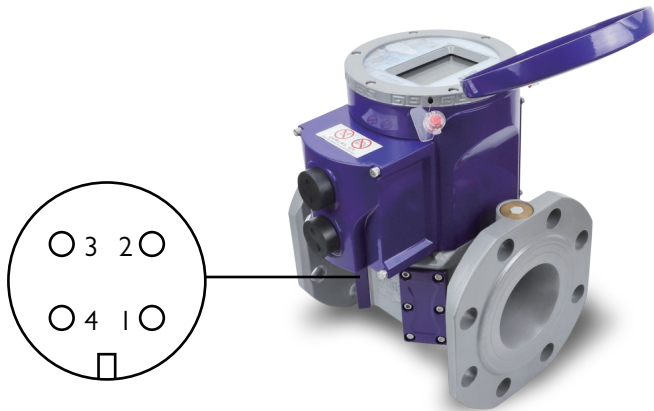

INSTALLATION

Recommand to install the UL-BW water meter at U10D5 (Straight pipe before the water meter at 10D, after the water meter at 5D);

Recommand to install the same size of the filter before the water meter;

Only for Horizontal installation;

OUTPUT

1. VCC (DC5~12V) – RED (POWER +)
2. NC;
3. Pulse Signal Output (DC 0~5V) - YELLOW
4. GND – BLUE (POWER -)

DATA COMMUNICATION

Integrated

Built-in remote transmission

(NB-IoT/GPRS/4G/RS-485/M-Bus/LoraWan)

Separated

Data monitoring and remote transmission

(RS-485/M-Bus + NB-IoT/GPRS/4G)

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