Virtec
Instruments Inc.

M-Bus

LXC SERIES

ULTRASONIC WATER METER

SMART ULTRASONIC ELECTRONICFLOW METER-WATER-LXC-15D-40D

OVERVIEW

LXC-Series Smart ultrasonic Electronic Flow Meter- Water is developed based on the principle of ultrasonic transit-time measurement technology. In other words, by using a state-of-the-art signal processing to determine the travel time difference between the ultrasonic waves, which results in highly accurate velocity measurement. It uses micro-power technology. A battery can be used for more than eight years and used model is ER26500.

- Meter Measure the minimum flow rate of 0.01 m³/hr very accurately and according to the international standard OIML R49/MID. At the same time, the instrument has the characteristics of small size, high stability and strong anti-interference ability.
- Ultrasound flow measurement technology is used to achieve multi-angle installation that doesn't affect the meter accuracy, nor the system pressure loss.
- Mainly used for Water flow measurement for multiple applications of residential quarters.

IMPLEMENTATION STANDARD

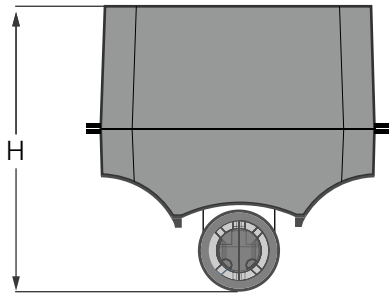
ISO4064: 2014/OIML: R49-2013/MID

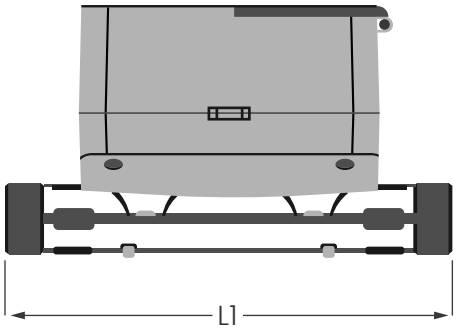
GB/T778.1-2007: Measurement of Flow in Closed Full Pipelines, Cold Electronic Flow Meter- Water for Drinking, Treated water, chilled water.

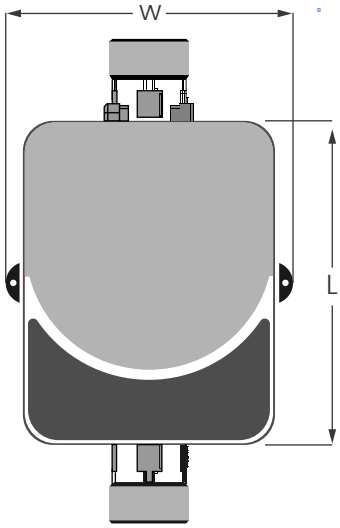
India application verification is based on NABL certified LABS.

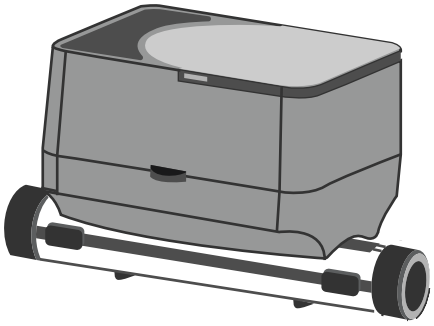
	DN15	DN20	DN25	DN32	DN40
Range & Capacity- R250					
Q3 (Qmax/permanent)	2.500m3/h	4.000m3/h	6.300m3/h	10.00m3/h	16.00m3/h
Q4 (Qoverload)	3.125m3/h	5.000m3/h	7.875m3/h	12.50m3/h	20.00m3/h
Q2 (Qtransitional)	0.016m3/h	0.025m3/h	0.040m3/h	0.016m3/h	0.016m3/h
Q1 (Qmin)	0.010m3/h	0.016m3/h	0.025m3/h	0.010m3/h	0.010m3/h
Start Flow rate	0.002m3/h	0.002m3/h	0.003m3/h	0.005m3/h	0.005m3/h
Dynamic Range	R250				
Range & Capacity-	R400				
Q3 (Qmax/permanent)	2.500m3/h	4.000m3/h	6.300m3/h	10.00m3/h	16.00m3/h
Q4 (Qoverload)	3.125m3/h	5.000m3/h	7.875m3/h	12.50m3/h	20.00m3/h
Q2 (Qtransitional)	0.010m3/h	0.016m3/h	0.025m3/h	0.040m3/h	0.064m3/h
Q1 (Qmin)	0.006m3/h	0.010m3/h	0.016m3/h	0.025m3/h	0.040m3/h
Start Flow rate	0.002m3/h	0.002m3/h	0.003m3/h	0.005m3/h	0.005m3/h
Dynamic Range	R 400				
standard	ISO4064: 2014 / OIML: R49 - 2013				
Measured medium	Water, Homogeneous liquid, and filled with measured pipes				
Battery	3.6V, Li-battery ER26500 (Default)/ER34615				
Battery Life	≥8years				
Consumption	<0.2m W				
Pressure loss	DN15-DN20: ΔP40 DN25-dn40 : ΔP63				
EMC	E1				
Environmental Classification	Class B				
Protection Class	IP65				
Medium Temperature	T50				
Storage Temperature	-25 ~ 55°C				
Map	PN16				
Accuracy	±5% in range $Q_1 \le Q \le Q_2$				
	±2 % in range $Q_2 \le Q \le Q_4$				
Head Loss	0.4 bar @Q3				
Climatic and mechaical environmental grades	B				
Key-press	Magnetic Induction Key				
Display	LCD 8 digit + prompt				
Menu Contents	Instrantaneous flow (m3/h), cumulative flow (m3), screen detection, table address, cumulative working time (h), date 8(year month day) caliber, softaware version				
Display range	Total flow: $0m^3$ ~+ $9999.9999m^3$				
Communication					
M-Bus	EN1434/CJ188				

OUTLINE DIMENSION





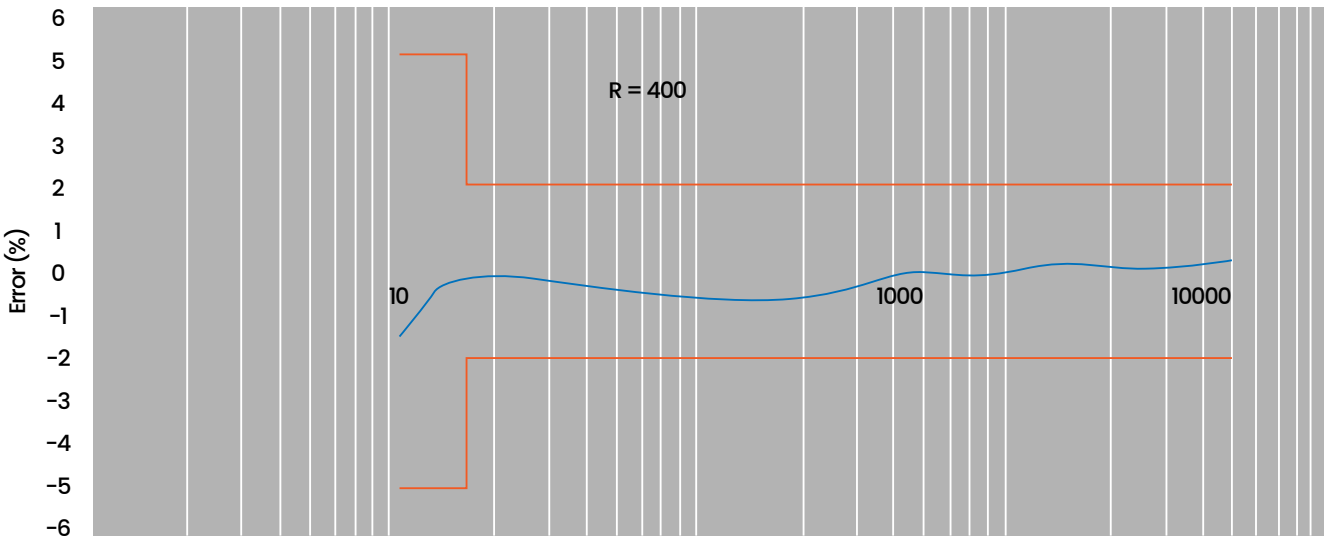




DIMENSIONS

Diameter(mm)	DN15	DN20	DN25	DN32	DN40
Thread	G¾B	G1B	G1¼B	G1½B	G2B
L (mm)	116.5	116.5	116.5	116.5	116.5
L1 (mm)	165	195	225	180	200
H (mm)	96.5	96.5	107	110	115
W (mm)	97	97	97	97	97

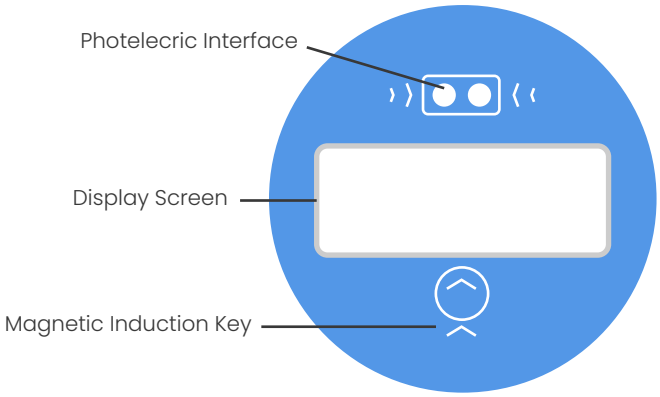
ACCURACY CURVE

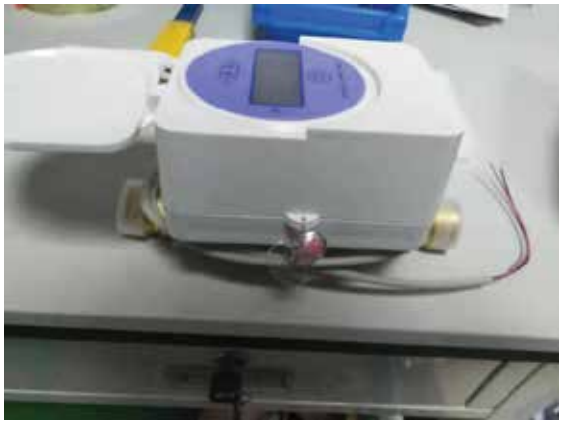


CALCULATOR:

Receive signals from flow sensors and temperature sensors for flow calculation, storage, display systems, data transmission, etc.

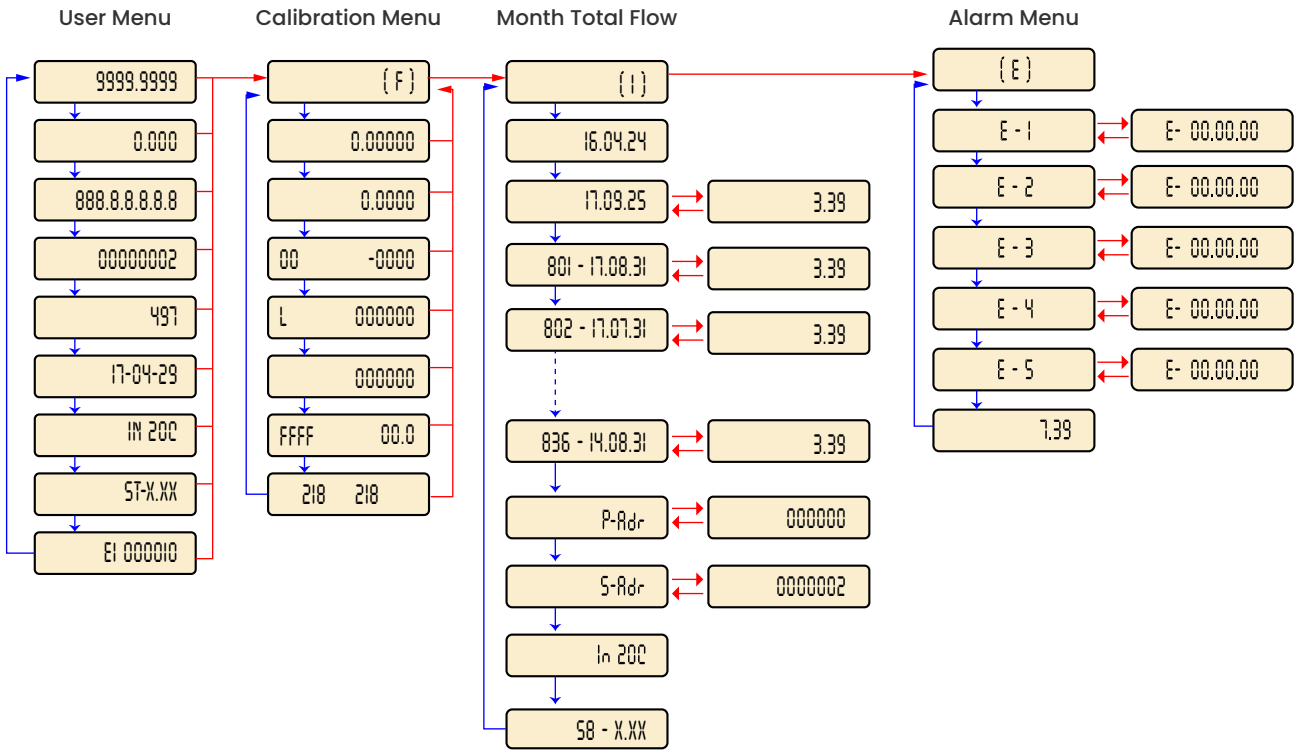
STICKER





LED MENU

User can use magnetic rods to switch between display screens, view the relevant data measured by the instrument. The meter displays the data in a round robin menu structure. Among the parameters displayed: Instantaneous flow (m^3/h), cumulative flow (m^3), screen detection, table address, cumulative working time (h), date (year/month/day), caliber, software version...etc. As shown in the picture below



Note: The LCD display can be customized according to customer's requirem

SMART METER READING AND CONTROLLING MANAGEMENT SYSTEM

1. Real -time reading
2. manual/Automatic Reading
3. Charge Settlement Management
4. Subscriber Management System
5. Error management
6. Operating Authorization
7. Abnormal data diagnosis
8 Data back up and resotore...

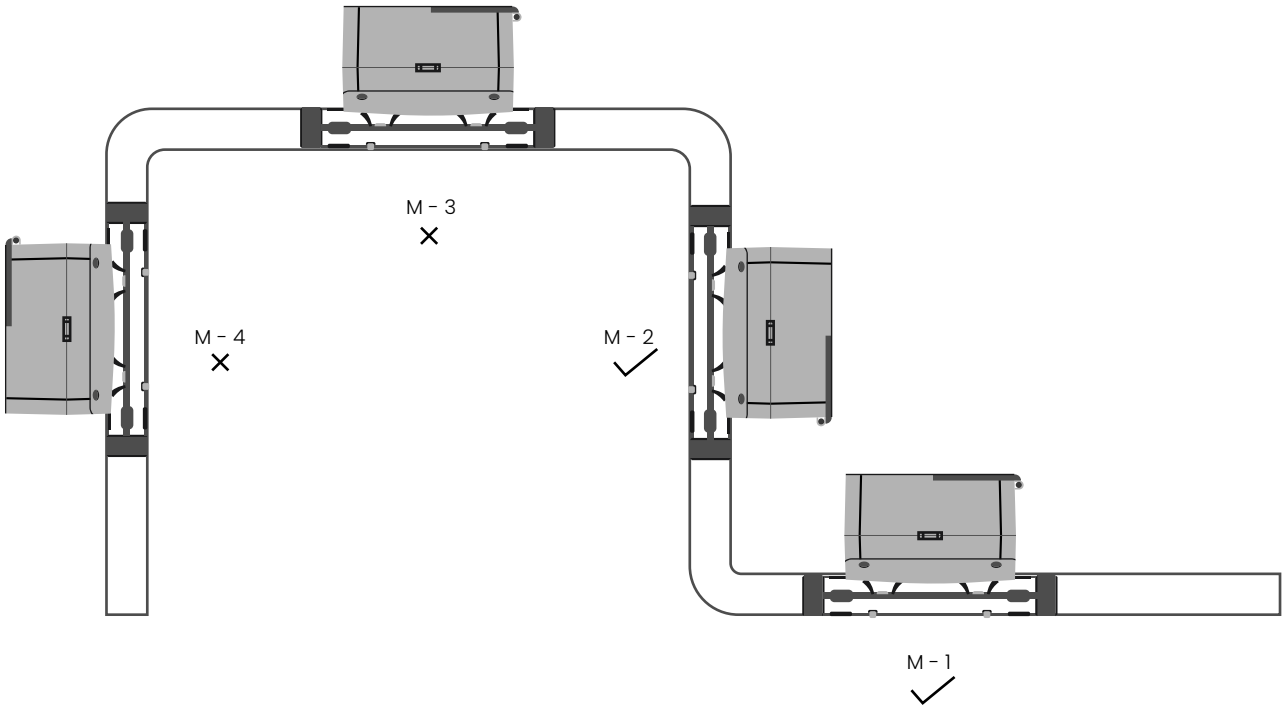
INSTALLATION AND CONNECTION

1. Installation and Connection Requirements:

Installation should be strictly in accordance to the site professional engineering design, and alteration without engineers permission should be strictly prohibited.

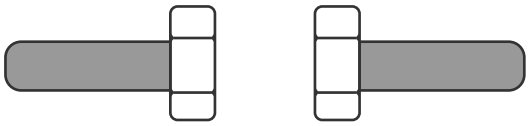
2. Instrument Installation Position:

- Installed in vertical pipeline for upward (or oblique upward) flow of liquid, followed by horizontal pipeline, try to avoid downward flow of liquid. (or oblique downward) flowing pipes to prevent liquid from running with the gravity and create air pockets.
- Installation position should not be selected at the highest point of pipeline direction to prevent abnormal measurement due to bubble accumulation in pipeline

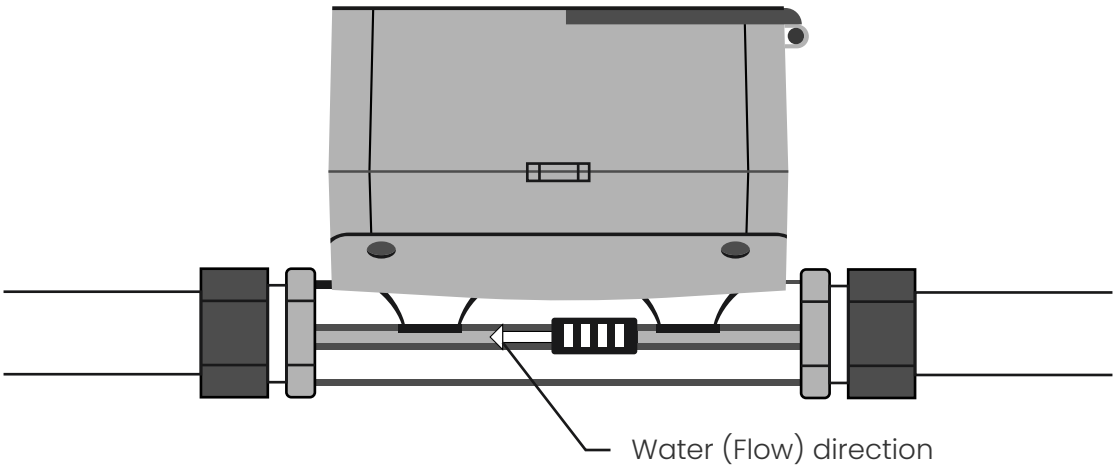


3. Installation method

Cut off the installation instrument of the water supply pipeline and set aside the location of the installation instrument as shown in the figur



- Concentric alignment of instrument,
- Pipeline and tightening of pipeline blade and instrument thread with the appropriate wrench
- Instrument installation completed.



VERIFICATION FUNCTION

He calibration method of this instrument follows the Verification Regulation of JJG 162-2009 Cold Electronic Flow Meter- Water.

TROUBLESHOOTING

a) **The water meter shown as :**
   It means that the battery is not enough, and the battery should be replaced as soon as possible.

b) **The water meter is reading negative:**
   Check whether the flow direction is reversed. If not, please contact us immediately.

c) **Abnormal or random beating of cold-water meter data:**
   Installation position is incorrect and installed at lower water level. The front and rear straight section is too short, the bend is too big, and the diameter of the pipe before the table is large.

d) **Water meter has flow and no temperature:**
   Please do not dismantle it manually and contact us immediately.

TRANSPORTATION AND STORAGE

1. The Electronic Flow Meter-Watershould be stored in the original package, the ambient temperature is 5-40C, and the air is free of corrosive gases.
2. when the Electronic Flow Meter-Water is stored on the shelf, the stacking height of the boxes should not be more than 5 boxes.

Virtec Instruments inc.
"Flow And Energy Measurement"

Model: LXC-50H-500H

Ultrasonic Water Meter

Feature:

- Cable interface options:
  (1) M-BUS (2) RS-485 (Modbus) (3) Pulse output
  (4) LoRaWAN (5)Sigfox
- Size: DN50 to DN500mm, (2" – 20") • Accuracy: R160
- Frequency: LoRa/ LoRaWAN 865MHz, 902MHz, 868MHz, 915MHz and Others

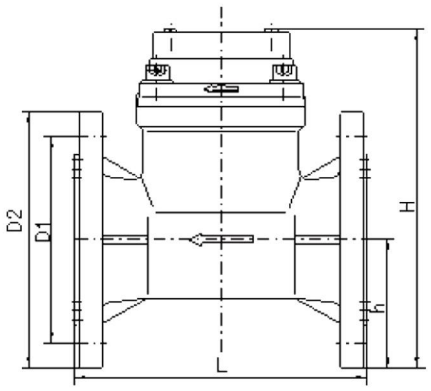
Main Technical Data:

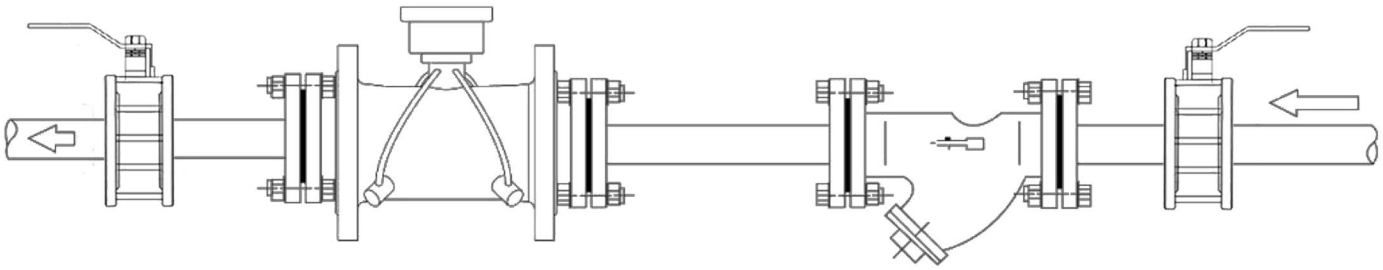
Diameter	Permanent Q3（m³/h）	Transitional Q2（m³/h）	Minimum Q1（m³/h）	Overload Q4（m³/h）
DN50	25	0.25	0.15625	31.25
DN65	40	0.4	0.25	50
DN80	63	0.63	0.39375	78.75
DN100	100	1	0.625	125
DN125	160	1.6	1	200
DN150	250	2.5	1.5625	312.5
DN200	400	4	2.5	500
DN250	630	6.3	3.9375	787.5
DN300	1000	10	6.25	1250
DN350	1400	17.9	11.2	1750
DN400	1600	20.5	12.8	2000
DN450	2000	25.6	16	2500
DN500	2500	32	20	3125
Accuracy Class	Class 2			
Range Ratio	R160			
Pressure Loss	Δp40			
Maximum Working Pressure (MPa)	1.0			
Data Storage	Data storage for continual 48 months			
Power-off Protection	The data of accumulated flow and corresponding time will be saved once power failure takes place, and the meter works automatically as soon as the power restoration			
Remote Transmission	LoRaWAN, M-bus, RS485(Modbusprotocol), Pulse Output, Sigfox			
Power Supply	Lithium Battery Power Supply/M-BUS Remote Power Supply			
Protection Class	IP68			
Medium Temperature Range	0.1°C...30°C / 0.1°C...50°C / 0.1°C...90°C			
Ambient Temperature Range	-20°C...55°C			
Environment	E1, M1, B			
Flow Field Sensitivity	U10/D5			
Installation	Horizontal or Vertical			
Service Life	life Time≥10 years			

Model: LXC-50H-500H

Dimensions:

Nominal Diameter	L(mm)	H(mm)	W(mm)	Md	Bolt Hole Qty
DN50	200	220	170	M16	4
DN65	200	240	185	M16	4
DN80	225	255	250	M16	8
DN100	250	275	270	M16	8
DN125	250	305	300	M16	8
DN150	300	335	330	M20	8
DN200	350	395	380	M20	12
DN250	450	460	415	M24	12
DN300	500	510	470	M24	12
DN350	550	560	520	M24	16
DN400	600	590	580	M27	16
DN450	650	620	640	M27	20
DN500	650	650	705	M30	20





WORKING CONDITION:

Water temperature：≤50℃ for cold water meter

Water pressure: ≤16 Bar

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