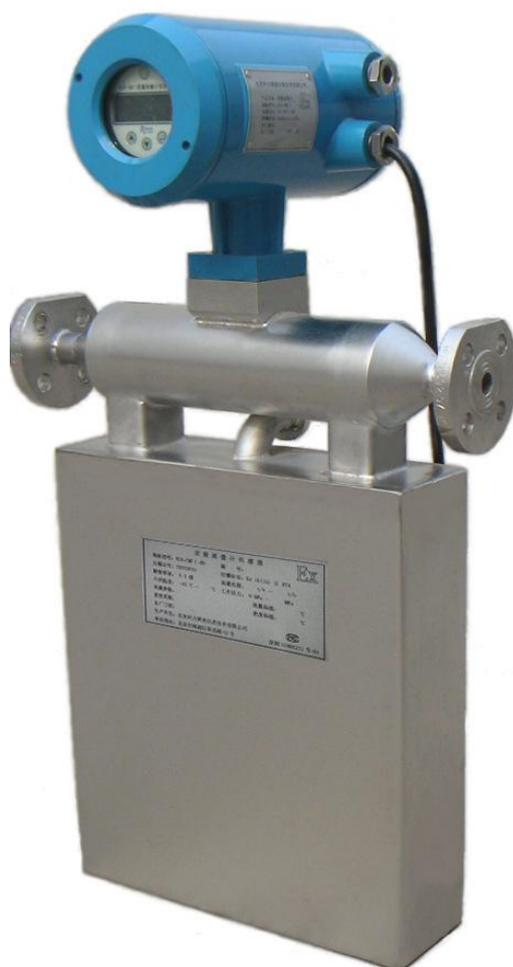# Zero InstrumentChina
Catalog of Industry Meters

Dalian Zero Instrument Technology Co., Ltd China

Zero Instrument Company Introduction

Dalian Zero Instrument Technology Co., Ltd China has been always engaged in souring and supplying the right products for our customers. With much experience on export business for instruments and industry products, we fully understand our clients needs. To meet and exceed customer expectations , Zero Instrument 100% try our best to make it right.

The our cooperation manufacturers have R&D and industry products development. Each product go with ISO standard and have the flexible manufacturing capabilities. We insist on giving the high quality, reliable products, reasonable price and industry solutions for our customers. Your visit China factory are warmly welcome and feel free to contact with us regarding anything. We'd like to help and wishing all well.

The brands we are dealing with, China, ABB, Siemens, Emerson, GE, E+H, Krohne, Yokogawa, Honeywell ,Invensys , Yamatake ,Bitobar, Alstom, etc.

The types of products provided by Zero Instrument are, Ultrasonic flow meter, Electromagnetic flow meter, Target flow meter, Mass flow meter, Variable area flow meter Vortex flow meter, Turbine flow meter, Oval gear flow meter Radar level meter, Ultrasonic level meter, Solid flow meters, Pressure and temperature transmitter , Valves(Gate valves, Butterfly valves, ball valves) and Oil analysis equipment, etc.

Your OEM service, brand marking and Model number are acceptable. Zero Instrument also have the experience of International Tenders, we two parts could work together ,get the tenders and serve the end user.

Please give us your inquiry ,we will provide the high standards quality, good delivering and highest level service. Let's shake hands and work together.

Company Values and Corporate culture : Honesty, Fast, Openness, Trust, Respect, Gratefulness, Modesty, Courage and Responsibility.

Handheld ultrasonic flow meter ZERO100HU series

Features:

◆ Accuracy can reach ±1%

◆ Four rows of characters display instantaneous flow rate, flow velocity, the cumulative flow, signal state, etc

◆ Built-in data recorder, can record dates, cumulative flow, signal condition, working time, etc

◆ OCT output positive, negative, cumulative net pulse signal and the frequency signal (1-9999Hz optional)

◆ RS232 interface is used to glue network detection or export recorded data

◆ Suitable for all variable sizes of pipes' flow metering

◆ The velocity measuring range 0.01 ~ + 32 m/s

◆ Suitable for measuring water, sea water, sewage, alcohol, such as various oil evenly, single, stable liquid

◆ Suitable for steel, stainless steel, cast iron, PVC, FRP, etc. uniform and compact of pipeline

◆ Upstream of straight pipe section should satisfy 10D, downstream 5D, 30D to the pump outlet (D refers to the pipe diameter)

◆ Built-in Ni-MH rechargeable battery can work continuously more than 10 hours

◆ Small size (220×92×32mm), portable weight (538g)

Optional sensors:

Ⅰ.Standard small stents sensor (magnetic)

◇ Applicable caliber   DN15-100mm

◇ Fluid temperature ≤110℃

◇ Overall dimension 200×25×25mm

◇ Handle length 100mm

Ⅱ. Standard medium stents sensor (magnetic)

◇ Applicable caliber   DN50-700mm

◇ Fluid temperature ≤110℃

◇ Overall dimension 280×40×40 (2Ps)

Ⅲ. Standard large sensor

◇ Applicable caliber   DN300-600mm

◇ Fluid temperature ≤110℃

◇ Overall dimension 80×70×55mm

Ⅳ. Standard large sensor (magnetic)

◇ Applicable caliber   DN50-700mm

◇ Fluid temperature ≤110℃

◇ Overall dimension 60×45×45mm

Standard configurations

◆ Aluminum alloy protection case (470×380×110mm)

◆ The host

◆ Standard medium sensor

◆ Signal cable 5m×2 (10m×2 optional)

Portable ultrasonic flowmeter

ZERO100PU series

Features:

◆ Chinese or English characters optional

◆ Accuracy can reach ±1%

◆ Non-contact testing, small size, easy to carry

◆ Suitable for all variable sizes of pipes' flow metering

◆ Built-in Ni-MH rechargeable battery, can work continuously more than 20 hours

◆ Built-in intelligent printer (EPSON), achieving instant or timing print.

◆ Standard signal interface RS232

◆ Main working ambient temperature -20℃～60℃

Performance parameters:

◇ The velocity measuring range

◇ Suitable for measuring evenly, single, stable liquid as water, sea water, sewage, Soda acid liquid, alcohol, various oil

◇ Suitable for steel, stainless steel, cast iron, copper, PVC, aluminum, FRP, etc. uniform and compact of pipeline

◇ Sensors mounted points should satisfy upstream 10D, downstream 5D, 30D to the pump outlet (D refers to the pipe diameter)

◇ Power consumption 2W

◇ Working power AC220V (optional) or Built-in Ni-MH rechargeable battery

◇ Charging adopts intelligent charging way, accessing AC220V, showing light green after full.

Quality 2.5kg

◇ Equipped with one-piece aluminum alloy protective case, is applicable for terrible field environment

Optional sensors:

Ⅰ. **Standard small size sensor (magnetic)**

◇ Applicable caliber   DN15-100mm

◇ Fluid temperature ≤110℃

◇ Overall dimension 45×30×30mm

◇ Quality 75g

Ⅱ.**Standard medium sensor (magnetic)**

◇ Applicable caliber   DN50-700mm

◇ Fluid temperature ≤110℃

◇ Overall dimension 60×45×45mm

◇ Quality 250g

Ⅲ. **Standard large sensor**

◇ Applicable caliber: DN300-6000mm

◇ Fluid temperature: ≤110℃

◇ Overall dimension: 80×70×55mm

◇ Quality 528g

Standard configurations:

◆ Aluminum alloy protection case (420×300×136mm)

◆ The host

◆ Standard medium sensor

◆ Signal cable 5m×2

Three

Fixed ultrasonic flowmeter ZERO100FU series

Features:

◆ Bidirectional measurement, can measure positive, negative, net cumulative flow

◆ Automatic memorize the light cumulative flow of previous 64days, previous 64 months and previous 5 years

◆ Automatic memorize the working situation of previous 64 days

◆ Automatic memorize power-off period and flow, can proceed manual

or automatic detection beyond previous 64 times to decrease flow loss.

Programmable batch (quantitative) controller

◆ Equipped GPRS/GSM module, can proceed remote control

Technical parameters:

◇ Chinese or English display optional

◇ Low voltage, much pulse ultrasonic time difference principle

◇ Accuracy better than ±1%, repeatability better than ±0.5%

◇ The velocity range 0.01 ~ + 32 m/s

◇ Working temperature of host -30℃～80℃

◇ Power supply AC220V, DC8～36 or AC7～30V

◇ Protection grade IP65

◇ Explosion-proof grade EXdllBT$

◇ Power consumption 2W

◇ Quality 2.5-7kg

◇ SEYV75-2 type Special shielded cable (500m max.)

Signal output:

◆ 4-20mA or 0-20mA (accuracy ±1%)

◆ RS-232 (RS485 optional)

◆ Relay can output nearly 20 kinds of signal sources

◆ OCT output frequency signals of cumulative flow or heat

◆ pulse signal or instantaneous flow rate (1～9999Hz optional)

◆ Buzzer can alert depends on the set

Signal input:

◆ can input 5 analog current signal AI1…

…AI5 (such as temperature, pressure, liquid

level)

Optional sensors:

◆ **Out clamp sensors (Liquid temperature ≤110℃)**

Ⅰ.Standard small sensor (magnetic)

◇ Applicable caliber DN15-100mm

Ⅱ. Standard medium sensor(magnetic)

◇ Applicable caliber DN50-700mm

◇ Overall dimension 45×30×30mm

◇ Quality 75g

◇ Overall dimension 60×45×45mm

◇ Quality 250g

Ⅲ. Standard large sensor

Applicable caliber DN300-6000mm

Overall dimension 80×70×55mm

Quality 528g

◆ **Insertion sensors (Die casting, high temperature ceramic sensors applicable -40℃-160℃, material 316L stainless steel)**

Ⅰ.Insertion X type (straight insert)

◇ Length 186mm

◇ Installation space ≥550mm

Ⅱ．Insertion Y type (inclined insert)

◇ Length 228mm

◇ Installation space ≥360mm

Ⅲ. Insertion X type (straight insert for cement pipe)

◇ Length 330mm

◇ Installation space ≥700mm

◆ **Standard π style pipe section sensor (DN10-40mm)**　　　　　　　　　　　　Nominal pressure: 2.5MPa

DN (mm)	Length (mm)	Flange size (mm)			Sealed face		Thickness of flange
		D	D1	N-Φ	D2	f	
10	300	90	60	4-14	41	2	14
15	320	95	65	4-14	46	2	14
20	360	105	75	4-14	56	2	16
25	390	115	85	4-14	65	3	16
32	450	140	100	4-18	76	3	18
40	500	150	110	4-18	84	3	18

◆ **Standard pipe section sensor (DN50-1000mm, specific specification please refer to our sales)**

Technical parameters of sensors:

◆ Suitable for measuring various evenly, single, stable liquid as water, sea water, sewage, Soda acid liquid,alcohol, beer

◆ Suitable for uniform and compact pipelines as steel, stainless steel, cast iron, cement pipe, copper, PVC, aluminum, FRP, etc

◆ Fluid turbidity ≤10000ppm and bubble content low

◆ Protection grade IP68 (can work in water depth ≤3m)

◆ Applicable pressure

　　Out clamp type no influence

　　Insertion type ≤2.5MPa

　　Pipe Section type ≤2.5Mpa

◆ Sensors mounted points should satisfy upstream 10D, downstream 5D, 30D to the pump outlet (D refers to the pipe diameter).

Ultrasonic Thickness Gauge

measuring with ultrasonic wave, is applicable for measuring the thickness of any material in which ultrasonic wave can be transmitted and reflected back from the other face.

The gauge can provide quick and accurate measurement to various work pieces such as sheets of board and processing parts. Another important application of the gauge is to monitor various pipes and pressure vessels in production equipment, and monitor the thinning degree during using. It can be widely used in petroleum, chemical, metallurgy, shipping, aerospace, aviation and other fields.

1.2 Primary Theory

The primary theory of measuring thickness with ultrasonic wave is similar to that of measuring thickness with optical wave. The ultrasonic wave emitted from the probe reaches the object and transmits in it. When the ultrasonic wave reaches the bounding surface of the material, it is reflected back to the probe. The thickness of the material can be determined by accurately measuring the time of the ultrasonic wave transmitting in it

1.3 Measuring Principle

The digital ultrasonic thickness gauge determines the thickness of a part or structure by accurately measuring the time required for a short ultrasonic pulse generated by a transducer to travel through the thickness of the material,reflect form the back or inside surface, and be returned to the transducer.The measured two-way transit time is divided by two to account for the down-and-back travel path,and then multiplied by the velocity of sound in the material.
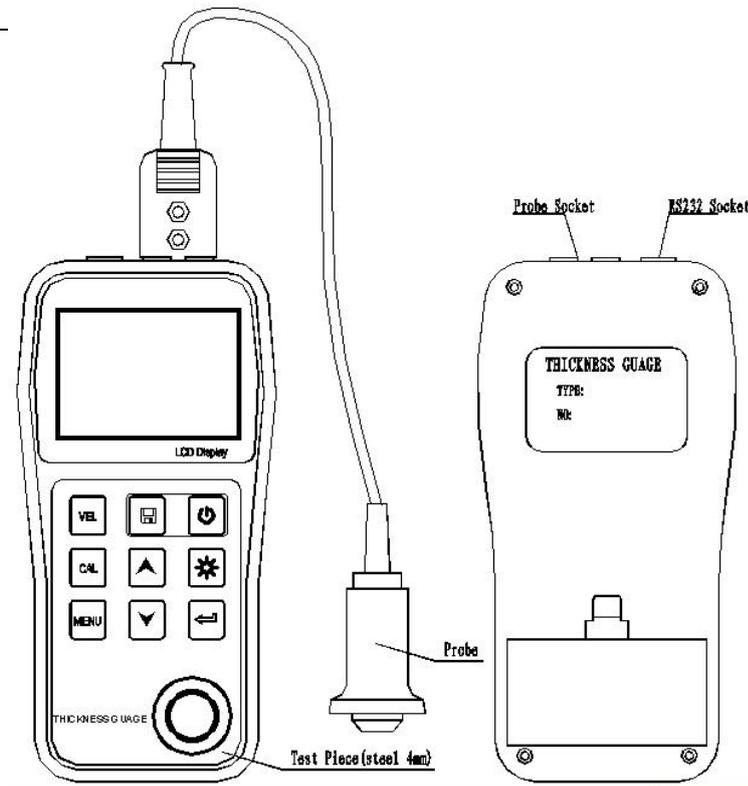
The result is expressed in the well-known relationship:

$$H = \frac{v \times t}{}$$

Where: H—Thickness of the test piece.

v----Sound Velocity in the material.

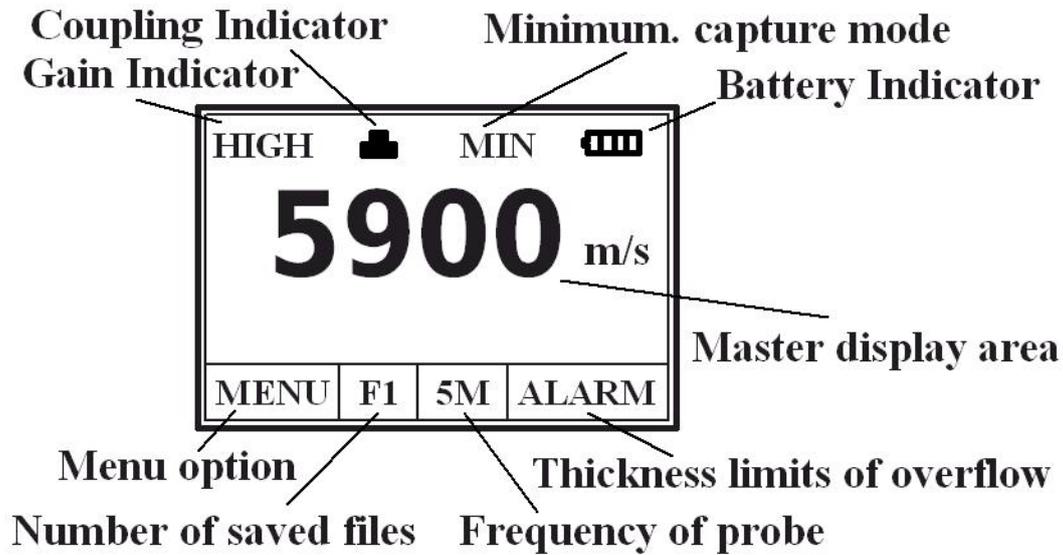t----The measured round trip transit time.

1.4 Appearance

1.5 Keyboard

⏻	Power ON/OFF	☼	LCD backlight on/off
VEL	sound velocity	💾	Save data / Browse data
CAL	Calibration standard block of 4.00mm		
MENU	Function selector		

Adjusting sound velocity and thickness; key for moving menu cursor

Adjusting sound velocity and thickness; key for moving menu cursor

2-point calibration; To be used together with function keys.

1.6 Display symbols

Coupling Indicator
Gain Indicator
Minimum. capture mode
Battery Indicator

HIGH   MIN   ▭

5900 m/s

Master display area

MENU F1 5M ALARM

Menu option
Number of saved files
Frequency of probe
Thickness limits of overflow

2 Product Specifications

2.1 Technology parameter

● **Display:**   128×64 LCD with LED backlight.

● **Measuring range:**   0.75mm~300.0mm (0.03inch~11.8 inch)

● **Sound Velocity Range:**   1000m/s~9999m/s (0.039~0.394in/μs

● **Display resolution:** 0.01mm or 0.1mm (lower than 100.0mm)

0.1mm (more than 99.99mm)

● **Accuracy:**   ±(0.5%Thickness +0.02)mm, depends on Materials and conditions

● **Units:**   Metric/Imperial unit seletable.

● Lower limit for steel pipes:

5MHz probe: Φ20mm×3.0mm (Φ0.8× 0.12 inch)

10MHz probe: Φ20mm×3.0mm (Φ0.6× 0.08 inch)

● **Power Source:**   2pcs 1.5V AA size, batteries.100 hours typical operating time(LED

backlight off).

- **Communication:**   RS232 serial port

- **Outline Dimensions:**   150mm×74mm×32mm

- **Weight:**   238 g

- Four measurements readings per second for single point measurement,

- Memory for up to 5 files(up to 100 values for each file) of stored values

2.2 Main Functions

1) Capable of performing measurements on a wide range of material, including metals,plastic,ceramics,composites,epoxies,glass and other ultrasonic wave well-conductive materials.

2) Transducer models are available for special application,including for coarse grain material and high temperature applications.

3) Probe-Zero function,Sound-Veloctiy-Calibration function.

4) Two-Point Calibration function.

5) Coupling status Indicator showing the coupling status.

6) Battery information indicates the rest capacity of the battery.

7) Auto sleep and auto power off function to conserve battery life.

8) Optional software to process the memory data on the PC.

9) Optional thermal mini-printer to print the measured data

Ultrasonic water meter ZERO100W series

Features:

◆ Total electric industrial water meter

◆ Adopts industry class electric components

◆ High accuracy, high reliability, no movable parts

◆ No parameters setting

◆ can be mounted on any angle

◆ can substitute any other water meters

Description of ZERO100W water meter:

◆ **Interface output**

◇ Standard configuration RS232, RS485

◇ 4-20MA,M-BUS,CDMA,GMS shot message optional

◆ **Display**

◇ 96 section ultra-low power consumption LCDS

◇ Can display positive, negative cumulative flow, instantaneous flow, velocity, cumulative working period, date, error code of working situation, battery level, signal strength of ultrasonic , quality of signal and liquid sound speed, etc

◆ **Power consumption**

◇ Measuring period 3s, average power consumption 0.55MW when caliber DN100mm

◇ Measuring period 1s, average power consumption 1.65MW when caliber DN100mm

◇ Automatic starts power-saving working mode when no flow, power consumption decreases to 30%

◆ **Power supply**

◇ Single 3.6V lithium battery can work for 6 years, battery optional can work more than 10 years, proper functioning when 3.6V

◇ 4-20MA cable power supply (2 line mode), can work without battery

◇ RS232 host fetches power to work, can work without battery

◇ RS485 needs additional 5V power supply when output, can work without battery

Technical parameters

◆ Measuring accuracy ±1%

◆ Measuring period 1-31s optional, default 3s

◆ Low initial flow, can measuring velocity 0.01m/s minimum

◆ No pressure loss and movable parts, 10 years' maintenance-free

◆ Measuring pipe section mould casting without linkage

◆ Section length designed according to normal meter dimension

◆ DN15-1000mm entire series variable caliber for option

◆ Overlooking, head-up and fission for display mode optional

◆ IP68 protection grade, proper functioning under water depth ≤2m

◆ Explosion-proof grade intrinsic safety type

◆ Ambient temperature -40℃～80℃ (LCD display -25℃～60℃)

◆ High temperature wearable ceramic sensor suitable for liquid temperature -40℃～160℃

◆ Magnetic operation handle, inner double buttons

◆ Recycled display positive, negative cumulative flow, instantaneous flow, velocity, etc

◆ Fault self-diagnosis graphical indicator

◆ Cumulative units 1,0.1,0.01,0.001m optional

◆ Communication baud rate 300, 1200, 2400, 4800, check bit available

◆ Automatic store each month cumulative flow and velocity of previous 24 months

◆ 8-bit positive, negative cumulative device, inner 64-bit calculation

◆ Other more programmable functions

Ultrasonic level meter ZERO100L series

Ⅰ.Basic type:

◇ Measuring range   0-4m (liquid), 0-8m(liquid),0- 3m(solid)

◇ Blind area   0.2mm / 0.3m

◇ Accuracy (in air)   0.2% of actual measuring range

◇ Display resolution   1mm

◇ Current output   4～20mA

◇ Output resolution   0.03% of actual measuring range

◇ Output load   0-600Ω

◇ Relay output   Upper and lower limits of control

◇ Replay specification   5A, 250VAC/30VDC

◇ Parameters set   3-bit inductive buttons

◇ Medium temperature   -45℃～95℃

◇ Pressure range   ±0.1MP

◇ Sound beam Angle   8°(3db)

◇ Measuring period   1s

◇ Shell material   ABS

◇ Sensors material   PVC

◇ Protection grade   IP68

◇ Installation   flange or support

◇ Power supply   DC 24V/AC220V

◇ Display   LCD/LED digital

◇ Ambient temperature   -45℃～75℃ / -25℃～60℃

Ⅱ. Extended type

◇ Measuring range   0-6m (liquid), 0-12m(liquid), 0- 6m(solid)

Twelve

◇ Blind area   0.22mm / 0.3m

◇ Accuracy (in air)   0.2% of actual measuring range

◇ Display resolution   1mm/1cm

◇ Current output   4-20mA

◇ Output resolution   0.03% of actual measuring range

◇ Output load   0-600Ω

◇ Relay output   Upper and lower limits of control

◇ Replay specification   5A, 250VAC/30VDC

◇ Parameters set   3-bit inductive buttons

◇ Medium temperature   -45℃～95℃

◇ Pressure range   ±0.3MP

◇ Sound beam Angle   5°(3db)

◇ Measuring period   1s

◇ Shell material   ABS

◇ Sensors material   PVC

◇ Protection grade   IP68

◇ Installation   flange or support

◇ Power supply   DC 24V/AC220V

◇ Display   LCD/LED digital

◇ Ambient   -45℃～75℃ / -25℃～60℃

Ⅲ. Large measuring range type

◇ Measuring range   0-20m (liquid), 0-10m(solid), 0-8m(liquid), 0- 3m(solid)

◇ Blind area   0.6mm / 0.8m

◇ Accuracy (in air)   0.2% of actual measuring range

◇ Display resolution   1cm

◇ Current output   4～20mA

◇ Output resolution   0.03% of actual measuring range

◇ Output load   0-600Ω

◇ Relay output   Upper and lower limits of control

◇ Replay specification   5A, 250VAC/30VDC

◇ Parameters set   3-bit inductive buttons

◇ Medium temperature   -45℃～95℃

◇ Pressure range   ±0.3MP

◇ Sound beam Angle   3°(3db)

◇ Measuring period   1s

◇ Shell material   ABS

◇ Sensors material   PVC

◇ Protection grade   IP68

◇ Installation   flange or support

◇ Power supply   DC24V/AC220V

◇ Display   LCD/LED digital

◇ Ambient temperature   -45℃～75℃ / -25℃～60℃

Electromagnetic flow meter ZERO100E series

Basic parameters and performance index:

◆ Pipe's inside diameter   3、6、10、15、20、25、32、40、50、65、80、100、125、150、200、250、300、350、400、450、500、600、700、800、900、1000、1200、1400、1600、1800、2000、2200、2400、2600、2800、3000 mm

◆ Sensitivity of sensor signal   under 1m/s

◆ Output   150μV ~200μV

◆ Resistance of sensor exciting coil   187mA exciting current：60 ~ 80Ω, 125mA

Exciting current：100 ~ 120Ω

◆ Load resistor   0~1.5kΩ (0~10mA), 0~750Ω (4~20mA)

◆Basic Errors   0.1%±10μA

◆ Digital frequency output

◆ Frequency output range   1～5000Hz

◆ Output electric isolate   Photoelectric isolate, Isolate voltage: > 1000VDC

◆ Frequency output drive   output by field-effect transistors, highest subjected voltage 36VDC, maximum of output current

250 m A

◆ Digital communication port and protocol   MODBUS interface   format of RTU, electric isolate 1000V

◆ HART interface   designed by standard of HART, if you choose our hand held unit, you can display the measure value on line,

and setting the parameters

◆ Measuring precision

Diameter (mm)	Range(m/s)	Accuracy
3 ～ 20	≤0.3	±0.25%FS
	0.3～1	±1.0R
	1～15	±0.5%R
25 ～600	0.1～0.3	±0.25%FS
	0.3～1	±0.5%R

	1～15	±0.3%R
700～3000	≤0.3	±0.25%FS
	0.3～1	±1.0%R
	1～15	±0.5%R
%FS：for relative ranges. %R：for relative value of measurement		

Target flow meter ZERO100TF series (Insertion type, ultra-low temperature and flange type optional)

Technical parameters:

◆ Diameter Φ15～Φ2000mm or bigger

◆ High and low temperature   -196℃～+450℃

◆ High pressure   0～42Mpa

◆ Measurement flow of liquid, gas, steam, ropy mediums or ambulatory

◆ mediums in low, normal or high temperature condition.

◆ Total quantity measurement accuracy is not less than 0.2%.

◆ High sensitivity, able to measure very low velocity below 0.8m/s.

◆ No movable part safe and reliable.

◆ Wide measure range bigger than 1:30.

◆ Good repeatability, generally 0.1～0.08% , fast to measure.

◆ Small pressure loss, only about 1/2△P of Standard Hole Board.

◆ Able to adopt hang weight method to test the flow meter.

◆ Measurement range can be changed by replacing target according to need.

◆ LCD display.

◆ 4-20mA, 0-10V, impulse, and RS485 outputs.

◆ Easy installation and maintain.

Main indexes:

Medium	Liquid, Gas ，Diesel and Oil				
Caliber	Pipe type 15~300mm		Clamp type 15~600mm		Plug type100~2000mm
Pressure	0.6~10MPa		0.6~42MPa		0.6~42MPa
Medium Temperature	-196℃~+450℃ (Confirming the temperature range before purchase)				
Precision	±0.2%	±0.5%	±1.0%	±1.5%	±2.5%

Range	1：3	1：5	1：10	1：10	1：10（Steam）
Compensation	Temperature compensation; Pressure compensation				
Repeatability	0.1%~0.08%				
Power Supply	3.6V lithium battery, 24V DC				
Output	LCD display, and 4~20mA, 0~10V, impulse or RS485 (Optional)				
Material of measure tube	Carbon Steel；304；316L; Being able to provide other according to user requests				
Explosion- Prevent Symbol	ExiallCT₄, ExiallBT₄				
Protection Rank	IP65；IP67				

Radar liquid level meter ZERO100RL series

Technical parameters:

ZERO100LR series of guided wave radar material level meter			
Types	**ZERO100RL1**	**ZERO100RL2**	**ZERO100RL3**
Application	Liquid, solid granules	Liquid, solid granules	Liquid
Measuring range	30 meters	6 meters	6 meters
Process connection	Screw, flange	Screw, flange	Screw, flange
Process temperature	-40-250℃	-40-250℃	-40-250℃
Process pressure	-1.0-40bar	-1.0-40bar	-1.0-40bar
Precision	±1mm	±1mm	±1mm
Frequency range	100MHZ-1.8GHZ	100MHZ-1.8GHZ	100MHZ-1.8GHZ
Anti-explosion/safety grade	EXiaIICT6/IP68	EXiaIICT6/IP68	EXiaIICT6/IP68
Signal output	4…20mA/HART(two phases)	4…20mA/HART(two phases)	4…20mA/HART(two phases)

Measuring range:

Description:

H----measuring range

L----distance of empty tank

B----blind area at the top

E----minimum distance between sensor and tank wall.

The blind area at the top refers to the minimum distance between material max. level and the measuring reference point.

The blind area at the bottom refers to the distance near the very bottom area of the cable that can not be measured precisely.

The distance between the blind area at the top and the blind area at the bottom is the effective measuring distance.

Attention:

Only when the material is between the blind area at the top and the blind area at the bottom, a reliable measurement of the material level inside the tank can be secured.
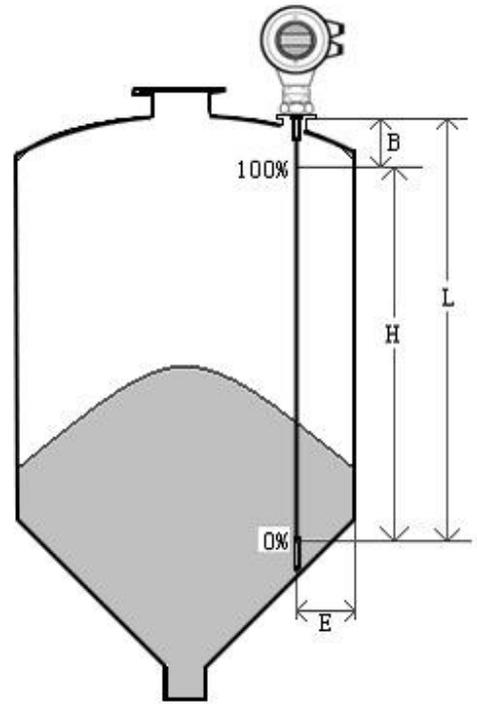
Mass flow meter ZERO100M

Technical Specifications:

Titles	Technical Specifications
Mass flow accuracy	±[0.2% +（zero stability /flow rate×100%）]
Mass flow repeatability	±(1/2) ×[0.2% +（zero stability /flow rate×100%）]
Density range	0.2 g/cm^3～3.5g/cm^3
Density accuracy	±0.002g/cm^3
Temperature range	-60℃～+200℃
Temperature accuracy	±1℃

Output of current loop	4mA～20mA
Output of frequency/pulse	0Hz～10kHz
Contactor capacity of a Batch Control relay	24V/0.1A
Contactor form	normal open

Specifications of ambient and power:

Titles	Specifications
Temperature range of fluid	-40℃～+200℃
Environmental temperature range	0℃～+40℃
Environmental humidity	≤90% RH, non condensation
Atmospheric pressure range	86kPa～106kPa
Power supply of transmitters	Essential safety Voltage: AC(220±10%)V,(50±5%)Hz Composite Voltage: DC (24±10%) V
Power consumed	＜15W

Specifications of measuring standards:

Specs	Line Sizes (mm)	Flow Range (t/h)	Calibration Range (t/h)	Max. Tube Pressure (MPa)	Zero Stability (t/hr)	Velocity Parameter (h m/t s)
DN1	1	0～0.04	0.004～0.04	30.0	0.000008	353.7
DN3	3	0～0.35	0.035～0.35	30.0	0.000067	39.3
DN6	6	0～0.7	0.07～0.7	30.0	0.00016	19.65
DN10	10	0～1.2	0.12～1.2	30.0	0.0002	4.912
DN15	15	0～6.4	0.64～6.4	4.0	0.0011	2.183
DN25	25	0～16	1.6～16	4.0	0.002	0.902
DN40	40	0～40	4～40	4.0	0.003	0.334
DN50	50	0～65	6.5～65	4.0	0.006	0.197
DN80	80	0～160	16～160	2.5	0.01	0.0873
DN100	100	0～250	25～250	2.5	0.015	0.0544
DN150	150	0～550	55～550	2.5	0.03	0.0239

Explosion-proof Identification Code :

Form of Explosion-proof	Identification Code
Essential safety	Exib[ib]IIBT4
Composite	Exdib[ib]IIBT4

Configurations of Products:

◆ **Classify of Products**

Products specs are divided to eleven based on nominal line sizes: DN1, DN3, DN6, DN10, DN15, DN25, DN40, DN50, DN80, DN100, DN150 (units: mm).

◆ **Configurations**

Ⅰ.Sensors (primary meter)

Ⅱ. Essential Safety Transmitter

Ⅲ. Composite Transmitter and Sensor
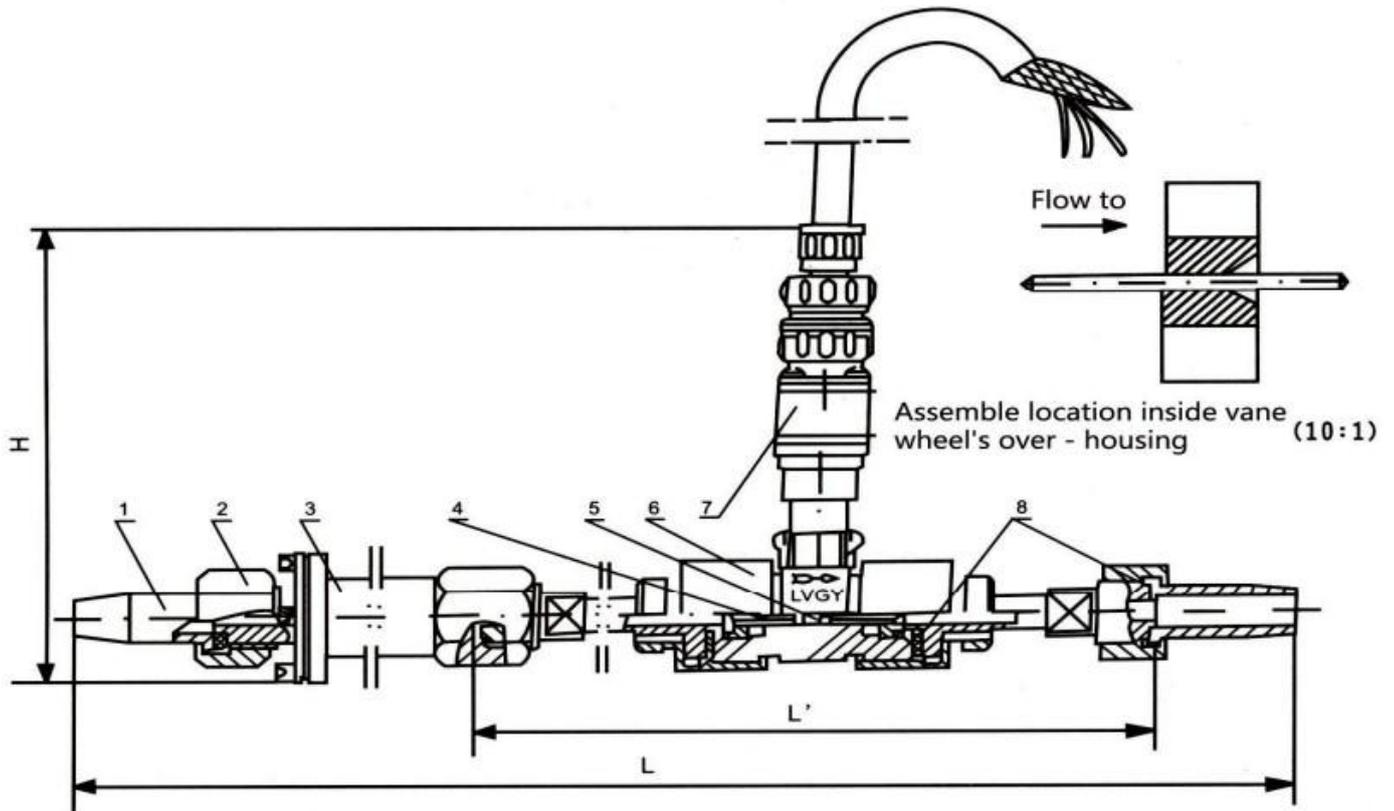

Turbine flow meter ZERO100TB series

Technical parameters

◆ Measuring medium liquid, gas, compressed air, etc

◆ Accuracy 0.5 ～1.5%

◆ Caliber DN25 ～ DN300

◆ Flow range 2.5 ～ 4000m³/h

◆ Power supply 24VDC

◆ Signal output 4 ～ 20 m A, pulse signal or control signal

◆ Connection type flange clamp-on, coupling, thread, etc

◆ Body material stainless steel, cast aluminium, aluminium alloy, etc

◆ Working temp. -20 ～ 80℃

◆ Working pressure ≤1.0 MPa

◆ Display LCD 8-bit accumulative flow and 4-bit instantaneous flow.

◆ Explode-proof grade ExdIIBT6 or ExiaIICT4

◆ Protection grade IP65

Installation structure

Assemble location inside vane wheel's over - housing (10:1)

Flow to

1 Socket and spigot joint 2 Wiring nut 3 Electric wave filter 4 Pioneer to machine 5 Vane's wheel
6 Shell 7 Preamplifier 8 Sealing washer

# Vortex flow meter ZERO100VX series

Technical parameters

◇ Measurable medium liquid air or gas steam, etc

◇ Display on site, 4-20mA current output

◇ Accuracy 0.5-1.5%

◇ Caliber DN15 ～ DN300

◇ Flow range 5 ～ 11000 m³/h

◇ Power supply 24VDC

◇ Medium temp. -40 ～ +250 ℃

◇ Connection type flange, wafer, etc

◇ Body material stainless steel, cast aluminium, aluminium alloy, etc

◇ Explode-proof ExdIIBT6 or ExiaIICT4 or No

◇ Protection grade IP65

◇ Optional function compensation

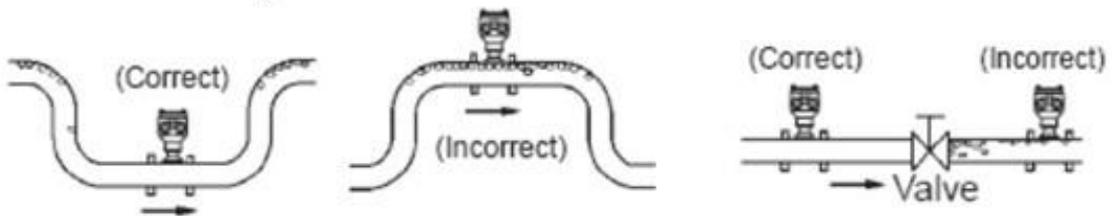**Measuring system**

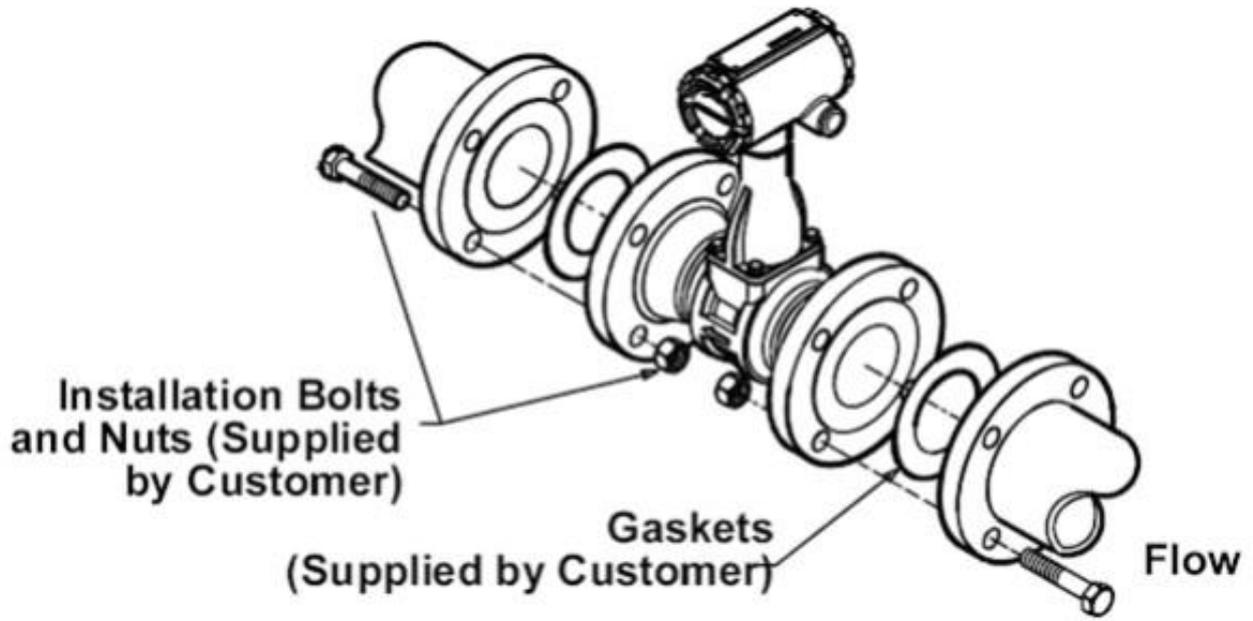| Application range	(1) Gas; (2) Liquid; (3) Steam
Measured value	
Primary measured value	Flow rate
Secondary measured value	Volume flow; (Pressure and Temperature is available foor model with compensation)

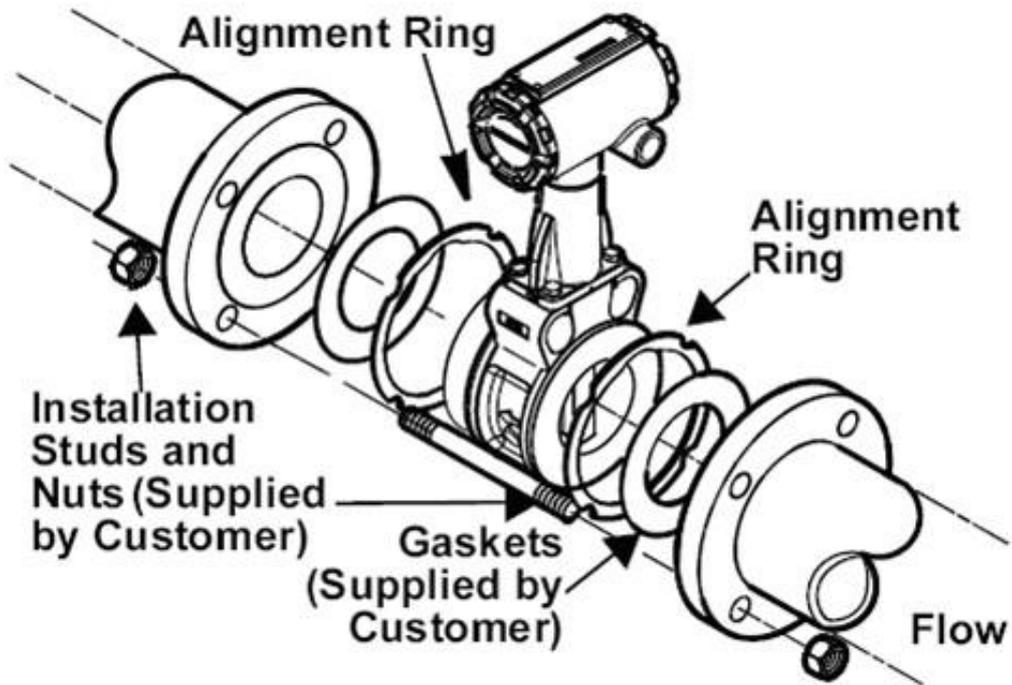## Installation cautions
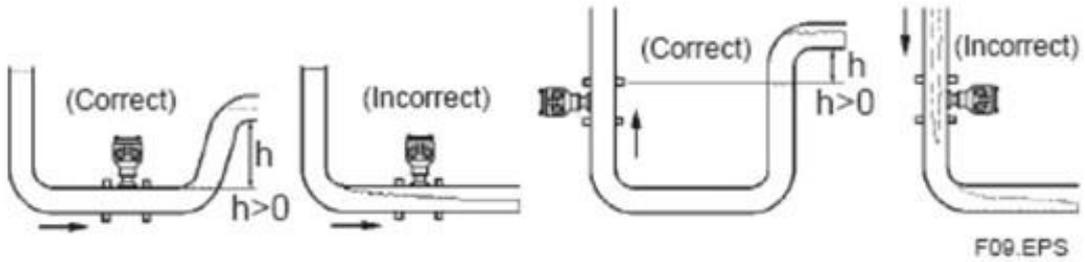
Mounting Positions

Avoiding Air Bubbles

Installation diagrams

Installation Bolts and Nuts (Supplied by Customer)

Gaskets (Supplied by Customer)

Flow

Flange-Style Flow Meter Installation

Alignment Ring

Alignment Ring

Installation Studs and Nuts (Supplied by Customer)

Gaskets (Supplied by Customer)

Flow

Wafer-Style Flow Meter Installation

Oval gear flow meter ZERO100OG series

Technical parameters

Inside nominal diameter （mm）	8～250
Accuracy	0.2%、0.5%
Pressure loss	0～1000Mpas＜80kpa
Working pressure	1.6、2.5、4.0、6.3、10、16、25、42MPa
Temperature range	-20℃～+300℃
Dielectric viscosity	0.1～1000Mpas
Environment condition	The temperature of -20 ℃ ~ +50 ℃ moisture ≤ 85%, pressure 86kpa ~ 106kpa
Connection flange	GB, the other can according to user specified flange standard

Anti-hazard classification	Intrinsic safety type LaⅡ CT4, explosion suppression dⅡ BT4

Flow range

Inside nominal diameter （mm）	Flow range m³/h	
	Accuracy class 0.5	Accuracy class 0.2
8	0.05～0.5	0.1～0.3
10	0.1～0.6	0.2～0.6
15	0.16～1.6	0.5～1.5
20	0.25～2.5	0.8～2.4
25	0.6～6.0	2～6
40	1.6～16	5～15
50	2.5～20	6～18
80	6～48	12～48
100	8～80	20～60
150	25～200	60～180
200	45～360	100～300
250	80～500	150～450

Oval gear flowmeter structure and working diagram
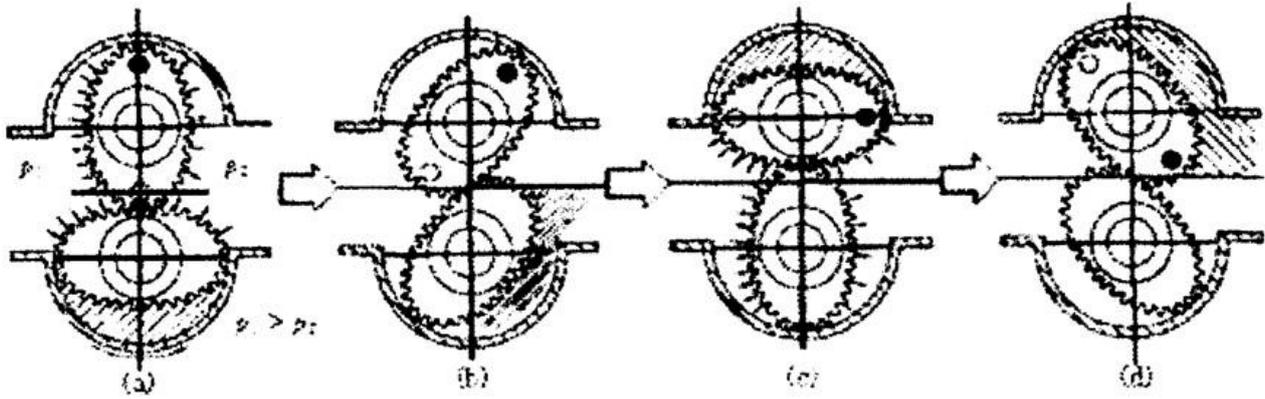
All Metal Float Flow meter(Variable area flow meter)

I Introduce

A float moves up in vertical measuring table according to fluid dynamics acting for float flow meter ZERO100VA.The float displacement is in proportion to flow rate between float and orifice.Local display is a pointer from .It is able to have standard signal with rotary angle for electric signal or pnumatic transmitter for pneumatic signal. So that it is used with unit-complsed meter.

Seriable ZERO100VA flowmeter have advanced characteristic,such as simple construction,easy maintains,Liner Scale and reliable operating.And it could measure flow rate for liquids and gases.

The flow meter with upper and lower limit alarms could use in the control system..

II.   functional

The series ZERO00VA flow meter consists essentially of three basic parts:

- ✧   the metering tube
- ✧   the tapered float
- ✧   the indicator.

The flow rate determines the position of the float,the meter float is in dynamic balance,when the difference between the weight of the float and the weight of the displaced fluid equals the upward pressure resulting from the fluid velocity through the meter .The annular area between the tapered float and the tube increases until the upward and downward forces are in dynamic balance.
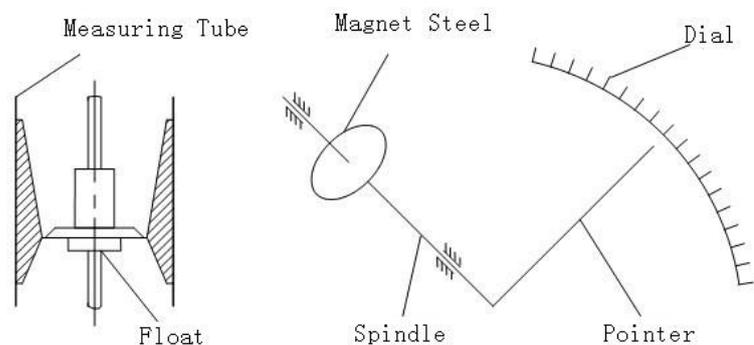
Since the position of the float in the metering tube can not be seen,an indicator is required,this indicator employs a magnetic coupling where a magnet follows the position of the float .The float encase   an AlNICO-transmitting magnet with two follower magnets arranged in parallel on the indicator shaft.

1. Special features

    ✧   Rugged all-metal design

    ✧   Easy stocking of parts thanks to modular concept

    ✧   Complete interchangeability of all components and assemblies

    ✧   Linear display

    ✧   Adjustable to any fluid through replaceable cam plate

    ✧   Shot-stroke design/parts do not project beyond the flanges,no matter what position the float is in

    ✧   Electrical or pneumatic remote data transmission system

    ✧   Limit switches can be installed

2.   Technical data

Metering range(100% values)	water (20℃)	6～15000 l/h
	Air (0.1013MPa 20℃)	0.05～4000 m³/h
Rangeability	10:1	
Accuracy class	1.5 (Special version 1.0)	
Operating data		
Max pressure	DN15～DN50 PN4.0MPa (Special version 25MPa)	
	DN80～DN100 PN1.6MPa (Special version 16MPa)	
Temperature of fluid	-80℃～+220℃	
Ambient temperature	Max 120℃(Max.60℃ if signal output is electrical)	
Viscosity of fluid	DN15： ≤5mPa.s(H15.1～H15.3)	
	≤30mPa.s(H15.4～H15.9)	
	DN25： ≤250mPa.s	
	DN50～DN150：≤300mPa.s	
Connection	Standard：Flange to DIN2501 or ANSI	
	Special Other standards on request	
Electric	M20×1.5、PG11、1/2" NPT	
Overall height	250㎜	
Protection category to DIN 40050	IP65	
Explosion Proof	ExiaIICT3～6	
	ExdIIBT4	

Reputation from Quality&Services is the lifeline of our corporation.

Dalian Zero Instrument Technology Co., Ltd China

Web: www.zeroinstrument.com

Add: Room 4605 No.9-1 Haifu Road Dalian Bonded Area Pilot Free Trade Zone Liaoning China 116011

Email: info@zeroinstrument.com

Cell/Wechat: +86 17640305359

Tel: +86-411-88586750

Fax: +86-411-88586751

QQ: 843541257