北京格乐普高新技术有限公司
BEIJING GALLOP HIGH&NEW TECH. CO.,LTD.

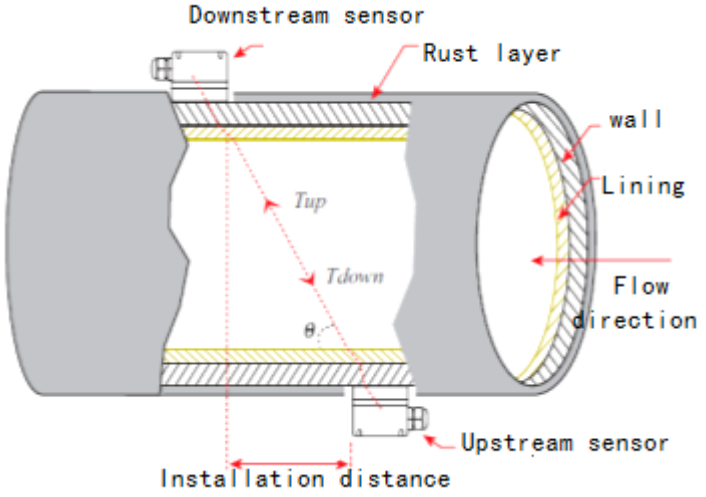
GLP-TDS-100 Clamp on Type Ultrasonic Flow Meter

Working principle:

GLP - TDS - 100 series ultrasonic flow meter/ultrasonic calorimeter/ultrasonic water meter took advantage of the low voltage, pulse jet lag principle, using of detection technology of high precision and super stable double balance differential signal launch and difference receive patent digital ， measuring the sonic transmission time of downstream and upstream and according to calculate the velocity of jet lag. Product has good stability, small zero drift, high measurement precision, wide range than, strong anti-interference characteristics.

The flow of the liquid will make travel time produce small changes when ultrasonic beam propagation in the liquid, the travel time is proportional to the liquid flow rate, the change of zero flow, the two sensors is identical to that of the time required to transmit and receive sound waves (the only one technology of actual measurement of zero flow); when Medium flow, the flow direction of sound wave transmission time is greater than the downstream direction of the sound wave transmission time. Its relations conform to the following expressions:

$$V=\frac{MD}{\sin 2\theta}\times\frac{\Delta T}{Tup\bullet Tdown}$$



V……flow rate

θ ……the angle of Sound velocity and liquid flow direction

M……the number of Beam in the liquid line

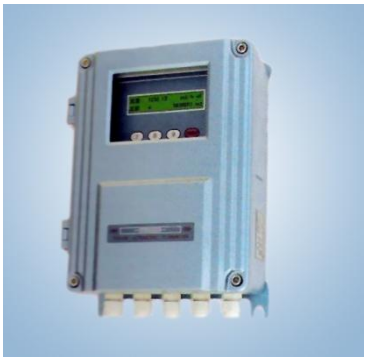
D……Pipe diameter

Tup……the time of Beam in the downstream

Tdown……the time of Beam in the countercurrent

1、GLP-TDS-100F1 wall mounted（standard）ultrasonic flow meter

- Display: English or Chinese (changeable)
- Compact structure, strong, international advanced die-casting aluminum chassis
- Weight:2.5Kg
- With heat display function(optional)



- Voltage : AC220V、DC24V (optional)

2、GLP-TDS-100F2 wall mounted（explosion-proof type ）ultrasonic flow meter

- Display: English or Chinese (changeable)
- Compact structure, strong, international advanced die-casting aluminum chassis
- Weight:7Kg
- Explosion proof : d Ⅱ BT4
- With heat display function(optional)
- Voltage : AC220V、DC24V (optional)

3、GLP-TDS-100F3　Fixed plate type ultrasonic flow meter

- Display: English or Chinese (changeable)
- Conform to the national standard of the chassis （Plane frame size 80×160mm）
- Weight: 2Kg
- With heat display function(optional)
- Voltage : AC220V、DC24V (optional)

4、GLP-TDS-100Y　Integrated type ultrasonic flow meter

- Display: English or Chinese (changeable)
- Magnetic type buttons window operations
- With heat display function(optional)
- Data is not lost without electricity for 100000 hours
- Voltage : AC220V、DC24V (optional)

Healthy type（DN25~DN100）

π pipe type（DN15~DN40）

Standard pipe type（DN50~DN1000）

Sensor types:

1, clamp on type sensor

Standard S1 small sensors

（magnetic）

- Pipe: DN15~DN100
- Liquid temperature : 0~160℃

Standard M1 middle sensors

（magnetic）

- Pipe : DN50~DN700
- Liquid temperature :0~160℃

Standard L1 large sensors

(magnetic)

- Pipe :DN300~DN6000
- Liquid temperature : 0~160℃

2. insertion type sensors

Standard insertion B type

(vertically insertion)

Insertion C type

(Slanting insertion)

Extended inserting type B

(cement works)

Insertion type sensor is an installation of digging hole on the pipeline to be tested using special tools in online punching without shutdown and contact with the sensor and measured medium so as to realize the flow measurement directly, the sensor has solved the problem of measurement signal attenuation when outer bound type sensor in measuring scale thick line to receive the signal for a long time, it has characteristics of not stopped production installation, maintenance free, has nothing to do with the pipe diameter, pressure loss, etc.

It can be directly welded installation when the pipe material is carbon steel or stainless steel, and it should be equipped with the factory production of special pipe hoop for not directly welded pipe of cast iron, cement, glass fiber reinforced plastic, PVC pipe and cement pipe, in order to prevent leaking, user should provide accurate measured pipe diameter or circumference when place an order.

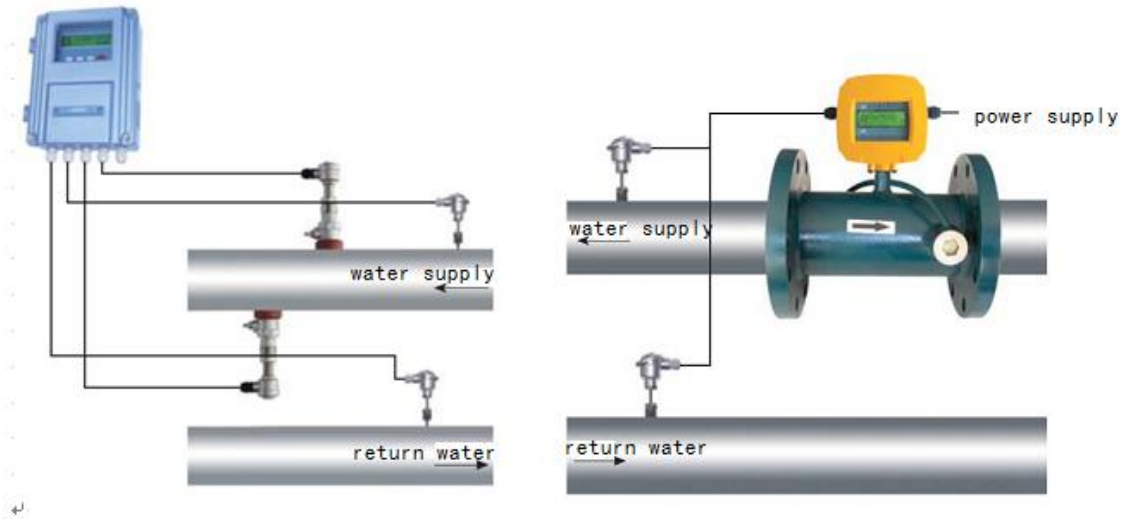
Pipe: more than DN80mm

Temperature：-40~160℃

Pressure grade：1.6MPa（the pressure when installation <0.8MPa）

3, standard pipe sensors

Four 、ultrasonic heat meter



Split type ultrasonic heat meter **integrated ultrasonic heat meter**

Five、Basic technical parameters:

1、Host

- Accuracy better than 1%, the repeatability of 0.5%
- measurement cycle：500 ms（2 times per second, 128 groups of data per cycle）
- backlit LCD and display instantaneous flow and cumulative amount at the same time, the instantaneous heat and accumulative total quantity of heat, velocity, time and other data
- output : 4~20mA or 0~20mA，impedance : 0~1K，accuracy: 0.1%
- It can measure the heat or changeable from flow rate to heat.
- It can record before 512 days and 128 month in automatically, also the positive/negative/net cumulative flow in the first 10 years.
- It can record before 30 times calls and interruption time flow rate automatically, also can fill quantity by manual and automatically, reducing the loss of user traffic, also can be read through the Modbus protocol.
- It can program batch (quantitative) controller, fault self-diagnosis function.
- It can implement software upgrade by transmitted via E-mail to the code file.
- Communication protocol；Modbus protocol、M-Bus protocol、FuJI and compatible with the domestic similar products of other manufacturers communication protocol.
- Signal input：three road 4 ~ 20 ma analog input, accuracy 0.1%, it can input pressure, liquid level, temperature signal; Two way three-wire system PT100 platinum resistance, it can display instantaneous and accumulation of heat
- Output：one road insolated RS485 output, one road 4~20mA or 0~20mA output、one way isolation OCT(pulse width between 6 ~ 1000 ms programmable, 200 ms) by default, a relay output

2. Special cable

- SEYV75-2 block type ， can be extended to 500 meters in single, at the same time, pay attention not to parallel with high voltage cable and avoid the frequency converter AFAP.

3. Pipe

- Pipe material：steel, stainless steel, cast iron, cement pipe, PVC, aluminum, copper, glass fiber reinforced plastic all quality of pipes, the lining is allowed.
- Pipe Diameter ： 15mm~6000mm
- Straight pipe：the sensor installation points best satisfy the 10 D upstream, downstream 5 D, pump discharge from 30 D (D stand for the pipe diameter)

4. Medium

- Type：it can support ultrasonic single homogeneous liquid , such as tap water, sea water, industrial sewage, various oil, acid alkali, alcohol, beer.
- Temperature：0℃~160℃
- Turbidity：≤10000ppm，and bubble content is small
- Flow rate ： 0~±64m/s
- Flow directions：Both positive and reverse measurement and measurement net flows.

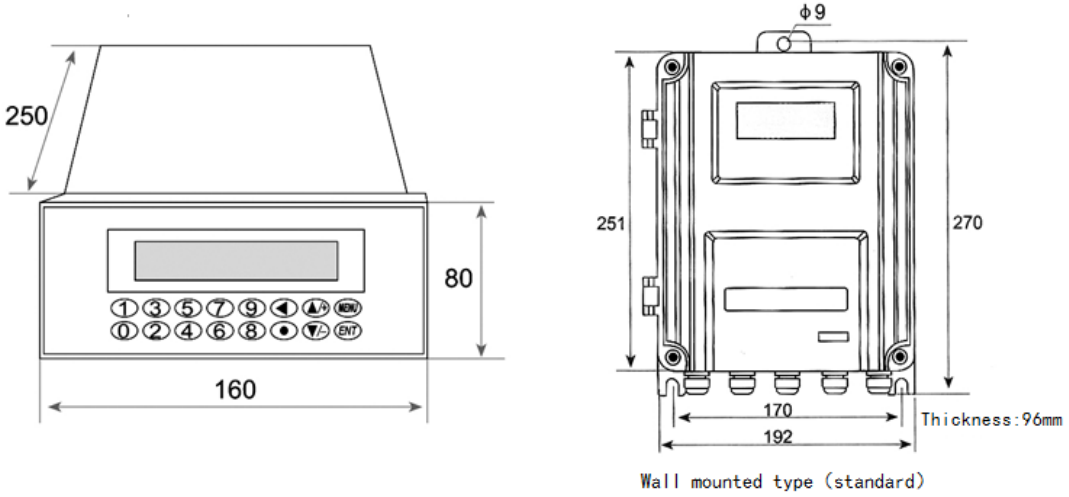
5. Working temperature

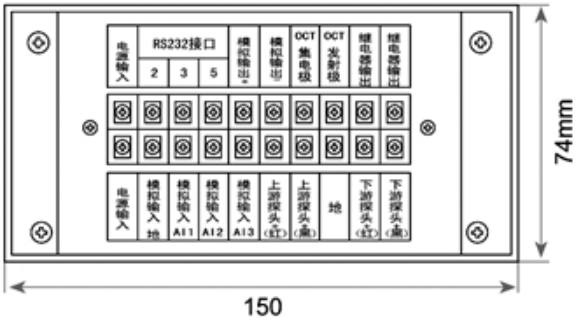
- Host temperature：-30℃~80℃
- Sensor temperature：-40℃~160℃
- Host anti-corrosion grade：IP65
- Host humidity：85%RH
- Sensor humidity：it can work in immersion situation，depth of water≤3m，protection：IP68

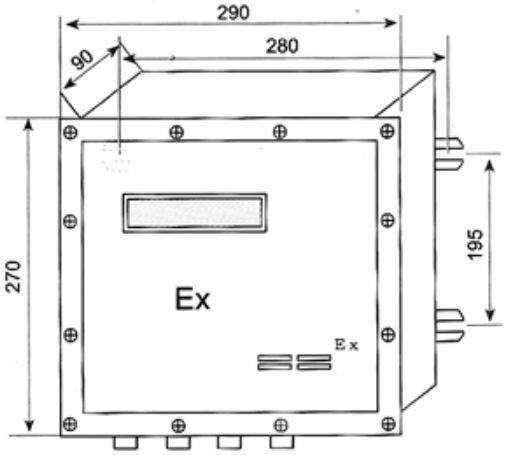
6. Power

- AC85~264V or DC8~36V or AC7~30V

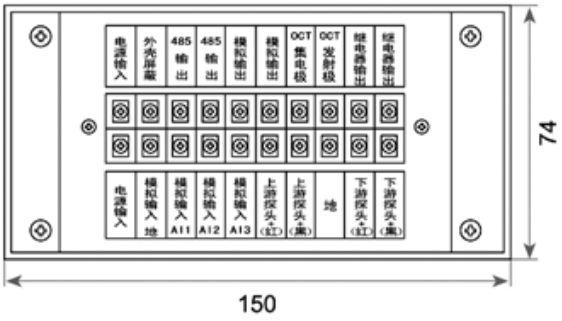
Six. size

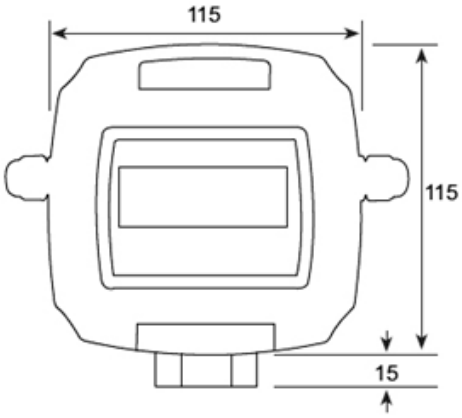






Clamp on type (anti-explosion)↵





Thickness: 100mm

Mounted plate type

Integrated type

Seven、Selection table：

GLP-TDS-100	Ultrasonic flow meter					
Host type	F1	Split type wall mounting type				
	F2	Split type explosion proof wall mounting type				
	F3	Split type plate type				
	Y	Integrated type (with local operation)				
Voltage	A	AC				
	B	Battery				
	D	DC				
Sensor type	B1	Clamp on standard S1 small type				
	B2	Clamp on standard M1 middle type				
	B3	Clamp on standard L1 large type				
	B4	Clamp on high temperature S1H small type				
	B5	Clamp on high temperature M1H middle type				
	C	Insertion type				
	G	Pipe type				
Diameter		DN(mm)				
Pipe material	0	Carbon steel	3	glass fiber reinforced plastics		
	1	Stainless steel	4	PVC		
	2	Cast iron	5	Cement (insertion)		
Pressure		MPa				
Output signal	N	Without output				
	A	4~20mA output				
	F	Frequency output(please note up and down of frequency and range)				
	R	Pulse output				
	T	OCT output				
	4	RS485 output				
Single cable length	Meter (Pipe type’s cable into four core is single, the others for double core two root)					

Example：GLP-TDS-100F1AB2-300-2-1.6-4-100(bound rate 9600， without checking)

Explanation：standard clamp on type ultrasonic flow meter，power 220V，standard M1 type sensor, pipe DN300, cast iron material of pipe ,pressure 1.6MPa,RS485 output（bound rate 9600，without checking）,cable 100m×2

GLP-TDS-100H Handheld Ultrasonic Flow Meter

I、Overview ：

GLP - TDS – 100H handheld ultrasonic flow meter is suitable for various industrial locale measurement of liquid flow in the online calibration and checking. With high measuring accuracy, good consistency, battery power supply, simple operation, easy to carry, etc, , it is a true sense of the portable ultrasonic flow meter of the minimum volume and light weight .

II、Sensor Type ：

Standard S1 small type sensor (Magnetic)

- Pipe: DN15~DN100
- Liquid temperature : 0~160℃

Standard M1 middle type sensor (Magnetic)

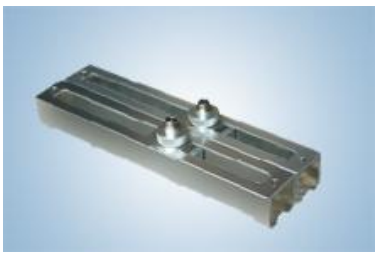
- Pipe: DN50~DN700
- Liquid temperature : 0~160℃

Standard L1 large type sensor (Magnetic)

- Pipe: DN300~DN6000
- Liquid temperature : 0~160℃

Standard S1Z small stents sensor (Magnetic)

- Pipe: DN15~DN100mm
- Liquid temperature : 0~70℃



Standard M1Z middle stents sensor (Magnetic)

- Pipe: DN50~DN700mm
- Liquid temperature : 0~70℃

III: Basic Technical Parameters

1、Installation ways

- Clamp on type, it is simple and convenient for operation.

2、medium

- Single and stable liquid of water, sea water, industrial sewage, alcohol, various oil ,

3、**Medium turbidity**

- ≤10000ppm bubble content is small

4、pipe material

- It suitable for uniform quality of pipeline of carbon steel, stainless steel, cast iron, copper, PVC, aluminum, glass fiber reinforced plastic, and the lining is allowed.

5、flow rate range

- 0~±30m/s

6、accuracy

- Better than ±1%

7、**repetitively**

- Better than ±0.2%

8、voltage

- It has nickel hydride rechargeable circuit inside, nickel hydride rechargeable battery can work more than 10 hours continuously.

9、weight

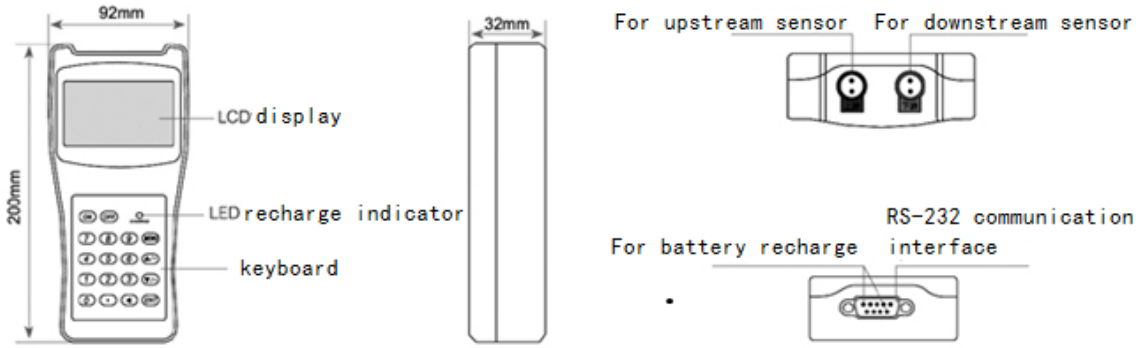
- 538 G

10、others

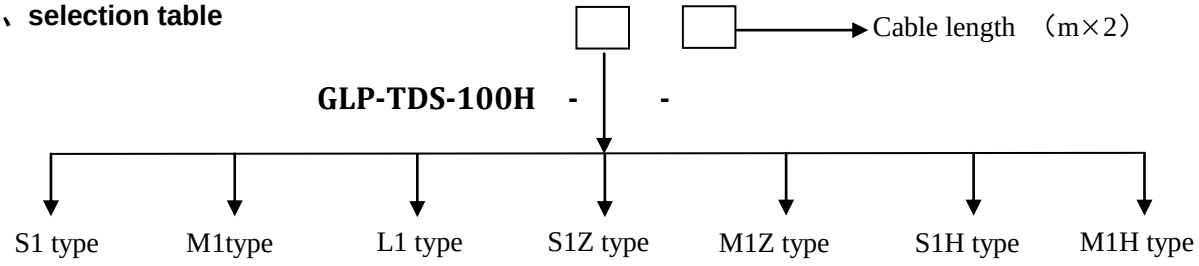
- 4 行 it can display instantaneous flow rate, flow velocity, accumulated flow, signal state, etc at the same time
- It has data recorder inside , it can record the date, the cumulative flow, signal status, working hours, etc

- standard RS232 data interface for networked detection or export record data
- OCTL output Positive and negative, the static accumulation of pulse signal and the frequency signal（1-9999KHZ）

IV: SIZE



V、selection table



（it can choose many pieces of sensors ）

Sample：GLP-TDS-100H-M1+S1+L1-5

Explanation：Handheld flow meter equip small and middle and large sensor, the cable length is 5m x2,

VI、basic configuration：

Host signal cable 5m×2 standard M1Zmiddle stents Aluminum alloy protection case

GLP-TDS-100P portable ultrasonic flow meter

I: characteristics

- Display：Chinese or English
- Non-contact to measure the flow rate and small volume and easy to carry.
- It has Nickel hydride rechargeable batteries inside and can work more than 20 hours.
- Flexible user interface, easy to use.
- Intelligent printing function, in order to guarantee the traffic data completely.

II: Sensor type：

Standard S1 small sensor (Magnetic)

- Pipe: DN15~DN100
- Liquid temperature: 0~160℃

Standard M1 middle sensor (Magnetic)

- Pipe: DN50~DN700
- Liquid temperature:0~160℃

Standard L1 large sensor (Magnetic)

- Pipe: DN300~DN6000
- Liquid temperature:0~160℃

III： Basic Technical Parameters

1、Host

- 2×20 dot-matrix backlit LCD display，working temperature（-20~60℃）
- Printer output: it choose EPSON24 column character miniature stylus printer.
- 4×4+2 touch keyboard.
- Data interface of RS-232，Modbus protocol and FUJI extended protocol, it can compatible with the domestic similar communication protocol from other manufacturers.

2、Pipe material：It suitable for uniform quality of pipeline of carbon steel, stainless steel, cast

iron, copper, PVC, aluminum, glass fiber reinforced plastic, and the lining is allowed.

3、Medium： It suitable for various oil can sound conduction liquid of Tap water, sea water, industrial wastewater, acid alkali liquor etc.

4、Flow rate range： 0~±30m/s

5、Accuracy： better than ±1%, Is only one ultrasonic flow meter reach to this precision .

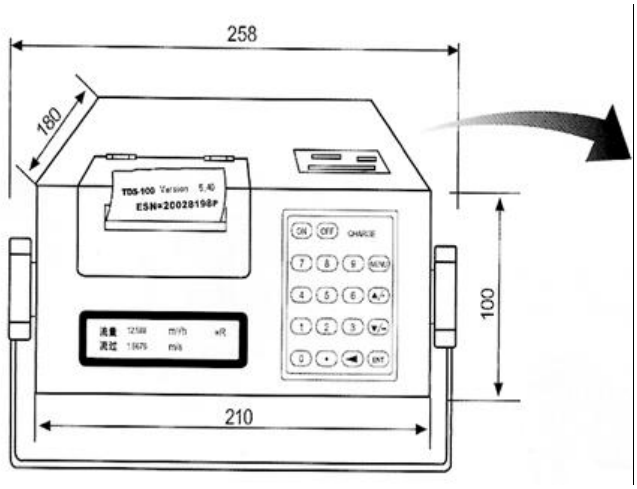
6、Voltage： The Nickel hydride rechargeable batteries can work more than 24 hours or AC220V.

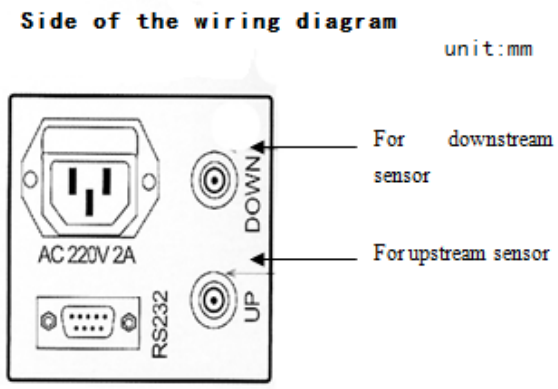
7、Rechargeable： Adopts intelligent charging method, it can access AC220V directly, it will automatic stop when enough and show a green light.

8、Installation way： Clamp on type

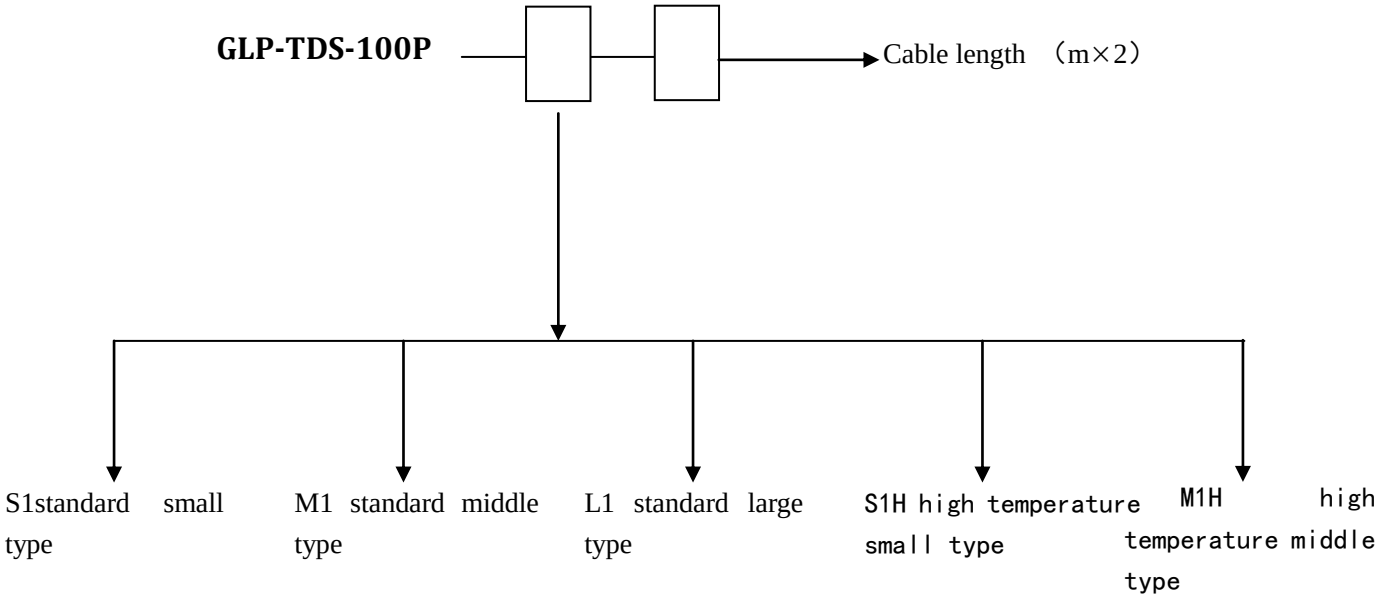
9、Measurement period： 500ms (2 times per second, 128 groups of data per cycle)

IV: Size





Ⅴ、Selection table：



(It can choose many pieces of sensor)

Example：GLP-TDS-100P-M1+S1+L1-5

Explanation：portable ultrasonic flow meter equip the standard middle type sensor and small and large type sensors , cable length 5m×2