

Company profile

Beijing Gallop Technology CO., LTD is a leader in producing ultrasonic level meter and radar level transmitter; our company has strong technical talent and accumulated rich experience. Our company will make every effort to provide the most valuable and advanced technology level measurement and control products for users.

Our products had be used in many fields , such as , iron and steel , chemical industry , making paper , electricity , environment protection , and water treatment ,and so on . also our products had exported in Korean , Mongolia , brazil , Pakistan ,India , Iran , south Africa and so on many countries.

Looking forward to the future, Gallop Company is never satisfied with the existing achievements, it will be more determined the strategic target of "based on China, towards the world". Our message "confidence, innovation, development, double win", it will make our company's development into a higher, bigger, faster, newer stage if our pulling up and down, work hard in the process of pursuit, and make up a automation system of enterprise development in order to a research and development, the market as the fundamental, service as the guidance, in the middle and lower reaches of the integration rapidly.

Certificate

QMS CERTIFICATE ISO9001:2008



The management system of
北京格莱普科技有限公司
BEIJING GALLOP TECHNOLOGY CO.,LTD
北京市海润里上地三街嘉泰大厦C座410
Room 410 Tower C, Jiahui Building, Shangdi 3th street
Haidian District, Beijing

Certificate Number
PR508920150558QMS
Date of Issue
28 May 2015

has been assessed and certified as meeting the managements of
ISO9001:2008

for the following activities
Design, production and sales of Radar level meter, ultrasonic level meter,
electromagnetic flowmeter, vortex flowmeter, turbine flowmeter,
ultrasonic flowmeter, metal tube flow meter, target flowmeter,
pressure transmitter, static pressure gauge transmitter,
temperature transmitter, PH meter, conductivity,
dissolved oxygen meter.

This certificate is valid from 28 May 2015 until 28 May 2016
and remains valid subject to satisfactory surveillance audits,
Re certification audit due before 30 April 2016
Issue 1. Certified with AS-GCTG since May 2015



Signature of Chamwei
Signed by Chamwei (Signature)
Date: 28 May 2015



AS-Certification (UK) Limited
AS-OCTO LIMITED
Address: ROOM 20 21st
HO KING COMMERCIAL CENTRE
2-18 RA VUE STREET HONGKONG
Tel: 00852-35907125
Website: www.as-qig.com
E-mail: admin@as-qig.com

质量管理体系认证证书

注册号: 12815Q21015R05

兹证明

北京格莱普科技有限公司

组织机构代码证代码: **77196187-0**

注册地址: 北京市海淀区上地五街 16 号 1 幢二层 215 室

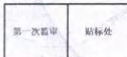
邮编: **100000**

质量管理体系符合

GB/T19001-2008 idt ISO9001: 2008

该体系认证所覆盖的范围

仪器仪表的销售



证书有效期内, 获证组织须每年至少接受一次监督审核, 并加贴合格标识, 证书方为有效。
本证书信息可在国家认证认可监督管理委员会官方网站: www.cnca.gov.cn 查询

初次获证日期: 2015 年 08 月 06 日

签发日期: 2015 年 08 月 06 日

有效期至: 2018 年 08 月 05 日



中标研国联(北京)认证中心

体系认证

北京市西城区阜成门内大街乙 22 号 4 号楼 702 室

QMS CERTIFICATE OF REGISTRATION

Registration No.: 12815Q21015R05

This is to certify that the Quality Management System of
BEIJING GALLOP TECHNOLOGY CO.,LTD.

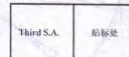
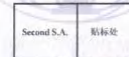
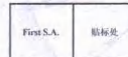
Organization code: 77196187-0

Registered Address: Room 215, 2/F, Building 1, No.16 Shangdi 5th Street, Haidian District, Beijing

100000 P.R.China

Has been audited to conform to the following Quality Management
System Standard:
GB/T19001-2008 idt ISO9001: 2008

For the whole process of
Sales of instrument and apparatus



The term of validity of the certificate, the certificate shall be at least once
a year the surveillance audit, With qualified logo, for the effective certificate.
The certificate information is available in the certification and Accreditation
Administration of the People's Republic of China's official website: www.cnca.gov.cn

DATE OF ISSUE: 08-06-2015

DATE OF SUPERVISION: 08-06-2015

VALID UNTIL: 08-05-2018



Management System
CNAO 0129 Q

Room 703, Building 1, No. 22 B, Fuchengmenwai Street,
Xicheng District, Beijing

CERTIFICATE



CERTIFICATE

Of Conformity
EU Council Directive 2014/30/EU
Electromagnetic Compatibility

Registration No.: AT011505620E

Report No.: R011505620E

Applicant : BEIJING GALLOP TECHNOLOGY CO., LTD.
Room 410, TowerC, Jiahua building, Shangdi 3th Street
Haidian district, Beijing

Product : Radar level meter

Identification : Model No. : GRD985, GRD981, GRD982, GRD983,
GRD984, GRD986, GRD801, GRD802,
GRD803, GRD804, GRD805, GRD601,
GRD602, GRD603, GRD604, GRD605,
GRD606

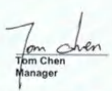
Trade Mark : N.A

Rating : DC 24V

Test Standards : EN 61326-1: 2013

The certificate of conformity is based on an evaluation of a sample of the above-mentioned product. Technical report and documentation are at the applicant's disposal. This is to certify that the tested sample is in conformity with all provisions of Annex II of Council Directive 2014/30/EU, in its latest amended version, referred to EMC Directive. The certificate does not imply assessment of the production and does not permit the use of Lab's logo. The applicant of the certificate is authorized to use this certificate in connection with EU declaration of conformity to Article 15 of the Directive.

Certified by

 
Tom Chen
Manager

May 25, 2015
Date

CE The CE Marking may only be used if all relevant and effective EU Directives are complied with CE

Shenzhen Anbotek Compliance Laboratory Limited
1/F, Building 1, SEC Industrial Park, No. 0409 Qianhai Road, Tel: (86)755-26066544
Nanshan District, Shenzhen, Guangdong, China Fax: (86)755-26014772
Http://www.anbotek.com Email: service@anbotek.com

CERTIFICATE



CERTIFICATE

Of Conformity
EU Council Directive 2014/30/EU
Electromagnetic Compatibility

Registration No.: AT011505619E

Report No.: R011505619E

Applicant : BEIJING GALLOP TECHNOLOGY CO., LTD.
Room 410, TowerC, Jiahua building, Shangdi 3th Street
Haidian district, Beijing

Product : ultrasonic level meter

Identification : Model No. : GLP-7, GLP-4, GLP-5, GLP-6

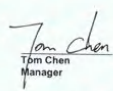
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Nanshan District, Shenzhen, Guangdong, China Fax: (86)755-26014772
Http://www.anbotek.com Email: service@anbotek.com



国家防爆

防爆电气设备 防爆合格证

编号: CNEx14.3532

制造单位	北京格莱普科技有限公司
产品名称	地址: 北京市海淀区上地五街16号1幢2层215室 雷达液位计
型号规格	GRD98X 24VDC
防爆标志	Ex d IIC T6 Gb
产品标准	Q/GLP 005-2014
总装图号	PW-GB-00

经对上述产品图样及技术文件的审查和样品检验, 确认符合下列标准:
GB3836.1-2010《爆炸性环境 第1部分: 设备 通用要求》
GB3836.2-2010《爆炸性环境 第2部分: 由隔爆外壳“d”保护的的设备》

记事 1. 该产品工作环境温度-20℃~+60℃。
2. 本证可代表产品:
GRD80X, 24VDC, Ex d IIC T6 Gb; GRD60X, 24VDC, Ex d IIC T6 Gb.

本证有效期 2014年12月31日至2019年12月30日

颁发日期 2014年12月31日

中心主任 



国家防爆电气产品质量监督检验中心

地址: 中国河南省南阳市仲景北路20号 邮政编码: 473006
电话: 0377-63258564 传真: 0377-63208175 Http://www.china-ex.com

注: 本证书仅对与认可文件和样品一致的产品有效。 登陆网站 输入数据 查询真伪
6324 8114 6364 8447 查询方式: www.china-ex.com



国家防爆

防爆电气设备 防爆合格证

编号: CNEx14.3531

制造单位	北京格莱普科技有限公司
产品名称	地址: 北京市海淀区上地五街16号1幢2层215室 超声波液位计
型号规格	GLP-7X 24VDC
防爆标志	Ex d IIC T6 Gb
产品标准	Q/GLP 007-2014
总装图号	PW-GBBT-00

经对上述产品图样及技术文件的审查和样品检验, 确认符合下列标准:
GB3836.1-2010《爆炸性环境 第1部分: 设备 通用要求》
GB3836.2-2010《爆炸性环境 第2部分: 由隔爆外壳“d”保护的的设备》

记事 该产品工作环境温度-20℃~+60℃。

本证有效期 2014年12月31日至2019年12月30日

颁发日期 2014年12月31日

中心主任 



国家防爆电气产品质量监督检验中心

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电话: 0377-63258564 传真: 0377-63208175 Http://www.china-ex.com

注: 本证书仅对与认可文件和样品一致的产品有效。 登陆网站 输入数据 查询真伪
5207 9052 4326 9938 查询方式: www.china-ex.com

Catalogue

26G RADAR LEVEL TRANSMITTER	1
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26G RADAR LEVEL TRANSMITTER

● GRD981



APPLICATION: Various corrosion fluid

RANGE: 20 m

PROCESS CONNECTION: Thread, Flange

TEMPERATURE: - 40 ~120 °C

PRESSURE: -0.1 ~ 0.3 MPa

ACCURACY: ±5mm

PROTECTION: IP67

FREQUENCY: 26 GHZ

EXPLOSION LEVEL: Exd II C T6 Gb

OUTPUT: 4 ~ 20 mA/HART (two lines/four lines)

RS485 / Modbus

● GRD982



APPLICATION: Heat resistance, pressure, slight corrosion fluid

RANGE: 30 m

PROCESS CONNECTION: Thread, Flange

TEMPERATURE: - 40 ~250 °C

PRESSURE: -0.1 ~ 4.0 MPa

ACCURACY: ±3 mm

PROTECTION: IP67

FREQUENCY: 26 GHZ

EXPLOSION LEVEL: Exd II C T6 Gb

OUTPUT: 4 ~ 20 mA/HART (two lines/four lines)

RS485 / Modbus

● **GRD983**



APPLICATION: solid material, strong dust, easy to crystallization,
condensation

RANGE: 70 m

PROCESS CONNECTION: universal flange

TEMPERATURE: - 40 ~250 °C

PRESSURE: -0.1 ~ 0.3 MPa

ACCURACY: ± 15 mm

PROTECTION: IP67

FREQUENCY: 26 GHZ

EXPLOSION LEVEL: Exd II C T6 Gb

OUTPUT: 4 ~ 20 mA/HART (two lines/four lines)

RS485 / Modbus

● **GRD985**



APPLICATION: Solid particles, powder

RANGE: liquid 30m , powder 20m , dust 15m

PROCESS CONNECTION: Thread, Flange

TEMPERATURE: - 40 ~250 °C

PRESSURE: -0.1 ~ 4.0 MPa (flat flange)

-0.1 ~ 0.3 MPa(universal flange)

ACCURACY: ±10 mm

PROTECTION: IP67

FREQUENCY: 26 GHZ

EXPLOSION LEVEL: Exd II C T6 Gb

OUTPUT: 4 ~ 20 mA/HART (two lines/four lines)

RS485 / Modbus

GUIDED WAVE RADAR LEVEL TRANSMITTER

● GRD801



MEDIUM: liquid, solid powder

APPLICATION: liquid and solid powder measurement and complex process conditions

EXPLOSION LEVEL: Exd II C T6 Gb

RANGE: Liquid 30m/solid 15m.

FREQUENCY: 500MHz-1.8GHz

ANTENNA: single cable or single rod antenna

ACCURACY: $\pm 3\text{mm}$

TEMPERATURE: $-40 \sim 250\text{ }^{\circ}\text{C}$

PRESSURE: $-0.1 \sim 4.0\text{ MPa}$

OUTPUT: (4-20) mA/HART

VOLTAGE: two wire (DC24V) /four wire (DC24V/AC220V)

PROCESS CONNECTION: thread/flange (optional)

● GRD802



MEDIUM: liquid, especially the corrosive liquid

APPLICATION: acid, alkali or other corrosive medium

EXPLOSION LEVEL: Exd II C T6 Gb

RANGE: rod 6m/cable 20m.

FREQUENCY: 500MHz-1.8GHz

ANTENNA : all four fluorine seal cable or rod antenna

ACCURACY: $\pm 10\text{mm}$

TEMPERATURE: $-40 \sim 150\text{ }^{\circ}\text{C}$

PRESSURE: $-0.1 \sim 1.6\text{ MPa}$

OUTPUT: (4-20) mA/HART

VOLTAGE: two wire (DC24V) /four wire (DC24V/AC220V)

PROCESS CONNECTION: thread/flange (optional)

● **GRD803**



MEDIUM: low dielectric liquid and solid

APPLICATION: cement silo powder level measurement; ash powder measurement

EXPLOSION LEVEL: Exd II C T6 Gb

RANGE: 30m

FREQUENCY: 500MHz-1.8GHz

ANTENNA : Double wire antenna

ACCURACY: $\pm 5\text{mm}$

TEMPERATURE: $-40 \sim 250\text{ }^{\circ}\text{C}$

PRESSURE: $-0.1 \sim 4\text{ MPa}$

OUTPUT: (4-20) mA/HART

VOLTAGE: two wire (DC24V) /four wire (DC24V/AC220V)

PROCESS CONNECTION: thread/flange (optional)

● **GRD804**



MEDIUM: liquid, especially liquid of low dielectric constant

APPLICATION: deionized water, deaerated water liquid measurement

EXPLOSION LEVEL: Exd II C T6 Gb

RANGE: 6m.

FREQUENCY: 500MHz-1.8GHz

ANTENNA : Concentric tube antenna

ACCURACY: $\pm 3\text{mm}$

TEMPERATURE: $-40 \sim 250\text{ }^{\circ}\text{C}$

PRESSURE: $-0.1 \sim 4\text{ MPa}$

OUTPUT: (4-20) mA/HART

VOLTAGE: two wire (DC24V) /four wire (DC24V/AC220V)

PROCESS CONNECTION: thread/flange (optional)

- **GRD805**



MEDIUM: liquid, especially in the environment of high temperature and high pressure liquid

APPLICATION: sealed tank, high pressure liquid measurement

EXPLOSION LEVEL: Exd II C T6 Gb

RANGE: 6m.

FREQUENCY: 500MHz-1.8GHz

ANTENNA : Single rod or cable antenna

ACCURACY: $\pm 10\text{mm}$

TEMPERATURE: - 40 ~400 °C

PRESSURE: -0.1 ~ 40 MPa

OUTPUT: (4-20) mA/HART

VOLTAGE: two wire (DC24V) /four wire (DC24V/AC220V)

PROCESS CONNECTION: thread/flange (optional)



80G RADAR LEVEL TRANSMITTE

GRD-80G-01



Usage: liquid, especially corrosive liquid

Measuring range: 0.1M ~ 15m

Process connection: G1-1 / 2A thread

Process temperature: - 40 ~ 120 °C

Accuracy: ± 2 mm

Explosion proof grade: E x d II C T 6 G b

Protection grade: IP67

Frequency Rate: 80GHz

Power supply: four wire 220VAC / two wire DC12 ~ 24V

Signal output: 4-20mA/ RS485 Mod bus/Hart

GRD-80G-02



Usage: suitable for measuring most liquid products

Measuring range: 0.1M ~ 15m

Process connection: G1-1 / 2A thread

Process temperature: - 40 ~ 120 °C

Accuracy: ± 2 mm

Explosion proof grade: ExdIICT6Gb

Protection grade: IP67

Frequency Rate: 80GHz

Power supply: four wire 220VAC / two wire DC12 ~ 24V

Signal output: 4-20mA/ RS485 Mod bus/Hart

GRD-80G-03



Usage: suitable for measuring most solid products

Measuring range: 0.3m ~ 120m

Process connection: G3-1 / 2 thread

Process temperature: - 40 ~ 120 °C

Antenna size: 78mm lens antenna

Accuracy: $\pm 2\text{mm}$

Protection grade: IP67

Frequency Rate: 80GHz

Power supply: four wire 220VAC / two wire DC12 ~ 24V

Explosion proof grade: ExdIICT6Gb

Signal output: 4-20mA/ RS485 Mod bus/Hart

GRD-80G-04



Usage: suitable for measuring most solid products

Measuring range: 0.3m ~ 120m

Process connection: G3-1 / 2 thread

Antenna size: 78mm lens antenna

Accuracy: $\pm 2\text{mm}$

Protection grade: IP67

Frequency Rate: 80GHz

Power supply: four wire 220VAC / two wire DC12 ~ 24V

Explosion proof grade: ExdIICT6Gb

Signal output: 4-20mA/ RS485 Mod bus/Hart

GRD-80G-05



Usage: liquid, especially corrosive liquid

Measurement range: 0.1M ~ 15m

Process connection: DN80 / DN100 PTFE flange

Process temperature: - 40 ~ 120 °C

Process pressure: - 0.1 ~ 0.3MPa

Accuracy: $\pm 2\text{mm}$

Protection grade: IP67

Frequency Rate: 80GHz

Power supply: four wire 220VAC / two wire DC12 ~ 24V

Signal output: 4-20mA/ RS485 Mod bus/Hart

GRD-80G-06



Usage: suitable for measuring most solid products

Measuring range: 0.3m ~ 120m

Process connection: DN80 / DN100 POM flange

Process temperature: - 40 ~ 120 °C

Process pressure: - 0.1 ~ 0.3MPa

Antenna size: 78mm lens antenna

Accuracy: $\pm 2\text{mm}$

Protection grade: IP67

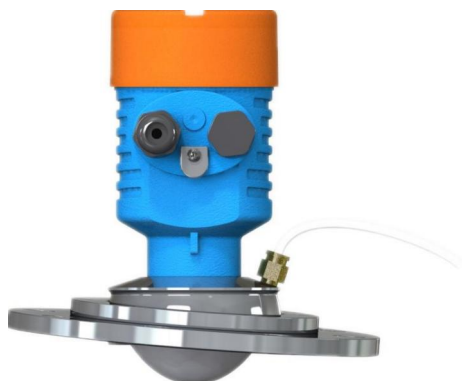
Frequency Rate: 80GHz

Power supply: four wire 220VAC / two wire DC12 ~ 24V

Explosion proof grade: ExdIICT6Gb

Signal output: 4-20mA/ RS485 Mod bus/Hart

GRD-80G-07



Usage: suitable for measuring most solid products

Measuring range: 0.3m ~ 120m

Process connection: Universal flange larger than 80mm

Process temperature: - 40 ~ 120 °C

Antenna size: 78mm lens antenna

Accuracy: $\pm 2\text{mm}$

Protection grade: IP67

Frequency Rate: 80GHz

Power supply: four wire 220VAC / two wire DC12 ~ 24V

Explosion proof grade: ExdIICT6Gb

Outside Shell: aluminum / stainless steel

Signal output: 4-20mA/ RS485 Mod bus/Hart

GRD-80G-08



Usage: suitable for measuring most solid products

Measuring range: 0.3m ~ 120m

Process connection: Flange larger than 80mm

Process temperature: - 40 ~ 200 °C

Antenna size: 78mm lens antenna

Accuracy: $\pm 2\text{mm}$

Protection grade: IP67

Frequency Rate: 80GHz

Power supply: four wire 220VAC / two wire DC12 ~ 24V

Explosion proof grade: ExdIICT6Gb

Outside Shell: aluminum / stainless steel

Signal output: 4-20mA/ RS485 Mod bus/Hart

ULTRASONIC LEVEL METER

- **GLP-7 Integrated type**



APPLICATION: liquid level measurement, especially for water treatment

RANGE: liquid 0.4-30m

PROCESS CONNECTION: thread M66x3

SHELL: PA6 GF30

TEMPERATURE: - 40 ~70 °C

PRESSURE: -0.2~1bar

ACCURACY: $\pm 0.5\%$ (full level)

PROTECTION: IP67

OUTPUT: two wire /4-20mA, two wires /4-20mA/HART/RS485

- **GLP-7 Anti-corrosion type**



APPLICATION: chemical industry wastewater, chemical raw material

RANGE: liquid 0.4-30m

PROCESS CONNECTION: thread M66x3

SHELL: PTFE

TEMPERATURE: - 40 ~70 °C

PRESSURE: -0.2~1bar

ACCURACY: $\pm 0.5\%$ (full level)

PROTECTION: IP67

OUTPUT: two wire /4-20mA, two wire /4-20mA/HART/RS485

- **GLP-7 Explosion proof type**



APPLICATION: For chemical, petroleum, iron and steel situation

RANGE: Liquid 0.4-30m

PROCESS CONNECTION: thread M66x3

SHELL: PA6 GF30

TEMPERATURE: - 40 ~70 °C

PRESSURE: -0.2~1bar

ACCURACY: $\pm 0.5\%$ (full level)

PROTECTION: IP67

EXPLOSION LEVEL: Exd IIC T6 Gb

OUTPUT: two wire /4-20mA, two wire /4-20mA/HART

- **GLP-7 Anti-corrosion and explosion proof type**



APPLICATION: For chemical, petroleum , iron and steel situation

RANGE: Liquid 0.4-30m

PROCESS CONNECTION: thread M66x3

SHELL: PA6 GF30

TEMPERATURE: - 40 ~70 °C

PRESSURE: -0.2~1bar

ACCURACY: $\pm 0.5\%$ (full level)

PROTECTION: IP67

EXPLOSION LEVEL: Exd IIC T6 Gb

OUTPUT: two wire /4-20mA, two wire /4-20mA/HART

SPLIT TYPE ULTRASONIC LEVEL METER

- **GLP-4 Ultrasonic level meter (Split type)**



VOLTAGE: AC220V /DC24V

RANGE: 0-30m

CONTROLLER: four relays

RESOLUTION: range <10m, 1mm; range>10m , 1cm

ENVIRONMENT TEMPERATURE: transmitter - 25 ~50 °C

SENSOR: - 25 ~80 °C

ACCURACY: $\pm 0.5\%$

DEAD ZONE: 0.4~1.0m

PROTECTION: Transmitter IP65/ probe IP67/IP68

OUTPUT: 4-20mA

- **GLP-6 Deviation of ultrasonic level meter**



VOLTAGE: AC220V /DC24V

RANGE: 0-30m

CONTROLLER: four relays

RESOLUTION: range <10m, 1mm; range>10m , 1cm

ENVIRONMENT TEMPERATURE: transmitter - 25 ~50 °C

SENSOR: - 25 ~80 °C

ACCURACY: $\pm 0.5\%$

DEAD ZONE: 0.4~1.0m

PROTECTION: Transmitter IP65/ probe IP67

OUTPUT: 4-20mA

- **GLP-5 Ultrasonic open channel flow meter**



VOLTAGE: AC220V /DC24V

RANGE: 0-2m

CONTROLLER: four relays

RESOLUTION: range <10m, 1mm; range>10m , 1cm

ENVIRONMENT TEMPERATURE: transmitter - 25 ~50 °C

SENSOR: - 25 ~80 °C

ACCURACY: $\pm 5\%$

DEAD ZONE: 0.4~1.0m

PROTECTION: Transmitter IP65/ probe IP67/IP68

OUTPUT: 4-20mA

EMF TYPE ELECTROMAGNETIC FLOW METER

I . Overview

EMF types Intelligent electromagnetic flow meter is developed by our company adopts the most advanced technology at home and abroad which all the intelligent electromagnetic flow meter, the entire Chinese electromagnetic transducer kernel and high-speed central processing unit. Computing speed very fast, high precision, reliable performance measurement. Converter circuit design USES the international advanced technology, the input impedance of 1015 ohms, common mode rejection ratio is better than 100 db, for outside interference and 60 hz / 50 hz interference suppression ability is better than 90 db, can measure the lower conductivity of the fluid flow. The sensor using non-uniform magnetic field technology and special magnetic circuit structure, magnetic field is stable and reliable, and greatly reduce the volume and repetition, it has the characteristics of small and lightweight in flow meter.



Integrated Type Electromagnetic Flow Meter

II . Features:

1. No moving parts, no flow components in pipe, almost no additional pressure loss when measure it, low requirement for straight pipe.
2. Measurement results not link with the velocity distribution, fluid pressure, temperature, density, viscosity and other physical parameters.
3. In the scene, it can modify range on-line according to user's actual needs.
4. High-definition backlit LCD liquid crystal display, it can make reading easier when the direct sunlight or in a dark room. All Chinese menu operation, easy to use, simple operation, easy to understand.
5. It has high reliability with SMD components and surface mount (SMT) circuit.
6. Derive the 16-bit embedded microcontroller processor, a fast calculation speed, high precision, programmable frequency low-frequency rectangular wave excitation; improve the stability of the flow measurement, low power consumption.
7. The whole processing of the digital quantity, strong anti-interference ability, reliable measurement, high accuracy, the flow measurement range of up to 150:1
8. Lower EMI switching power supply, using of the power supply voltage variation range is big, it is good resistance to EMI.
9. It has three integrators inside, reverse the cumulative amount respectively showed positive cumulative integrating quantity and difference, interior has not power off clocks, it can record 16 times power lost time (10 years).
10. With RS485 and RS232, Hart and Modbus digital communication signal output. (Optional)
11. Converter has the function of self-diagnosis alarm output, empty load detection alarm output, the output flow rate on the lower limit alarm, batch control, etc.



Split Type Electromagnetic Flow Meter



Insertion Type Electromagnetic Flow Meter

12. High voltage electromagnetic flow meter sensor adopts the technology of the PFA and mesh lining, high pressure resistance, resistance to negative pressure, special application of petroleum, chemical industry, etc.
13. The sensor adopts advanced processing technology; make the instrument has a good ability to resist negative pressure.
14. Derive hours record function, total hours for the unit to record the total flow rate, it is suitable for the measuring system. (Optional)

III. Principle:

Electromagnetic flow meter measurement principle is based on Faraday's law of electromagnetic induction. Flow meter measurement tube is a lining insulation of permeability alloys short tube. Two electrodes along diameter direction through the wall on the measuring tube. The electrode head and basic flush lining the inner surface. The bi-directional square wave pulse excitation coil excitation will be in a direction perpendicular to the axis measuring tube to produce a magnetic field of magnetic flux density of B work. At this point, if a certain electrical conductivity of the fluid flowing through the measuring tube, then it will cut magnetic induction electromotive force E.

Electromotive force E is proportional to the magnetic flux density B, sounding pipe diameter d, and v is the product of the average flow. Electromotive force E (traffic signal) by the detection electrode and through the cable to the converter. After Converter processed flow signal amplification, flow meter can display the fluid flow and output pulse, analog signals, such as current used for flow control and regulation.

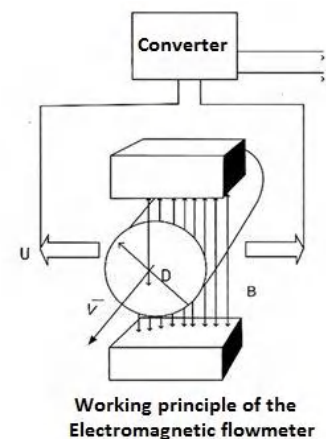
$$E = KBdv$$

Type: E -- as the electrode signal voltage (v)

B - Magnetic flux density (T)

D - Tube inner diameter measurement (m)

V - Average flow velocity (m/s)



Type K,D is constant, due to the exciting current is constant current, therefore, B is constant, by $E = KBdv$, volume flow rate Q is proportional to the voltage signal E, namely the volume velocity of the induction signal voltage E and Q into a linear relationship. Therefore, as long as the measured E can determine the flow Q, this is the basic working principle of electromagnetic flowmeter.

By $E = KBdv$ knowable, the medium of the flow temperature, density, pressure, conductivity, liquid-solid two-phase fluid parameters such as composition of liquid-solid ratio does not affect the measurement result. As for flow state should accord with axisymmetric flow (e.g., laminar or turbulent) will not affect the measurement result. So say electromagnetic flowmeter is a kind of volume flowmeter. For manufacturers and users, as long as the actual calibration with ordinary water can be measured after any other conductive fluid volume flow, without any correction. This is a prominent advantages of electromagnetic flowmeter, a don't have any other flowmeter. The measuring tube without activity and choke components, so almost no pressure loss, and have high reliability.

IV . Application

Due to electromagnetic flowmeter has its unique advantages, thus it is widely used in chemical fiber, food, papermaking, sugar-making, mining and metallurgy, water supply and drainage, environmental protection, water conservancy and hydropower, industrial area, such as steel, petroleum, pharmaceutical, used to measure all kinds of acid, alkali, salt solution, slurry, pulp, coal-water slurry, corn starch, fiber pulp, syrup, milk of lime, sewage, raw water cooling, water supply and drainage, salt water, hydrogen peroxide, and beer, all kinds of beverage, liquor, green liquid volume flow of conducting liquid medium, etc.

V. Main technical parameters

- 1, The series of nominal diameter DN (mm)
 - Flange type with PTFE lining: DN6~ DN1200
 - Pipe type with rubber lining: DN40 ~ DN3000
 - Insertion type: DN100 ~ DN3000, special custom DN32 ~ DN80
2. The structure form
 - Integrated type, Split type, Immersion type, Explosion type.
3. Sensor connection way
 - Flange type, Insertion type, Clamp on type, Healthy type, Diving type
4. Flow direction
 - Positive and reverse, net flows
 - Range rate: 150:1
 - Repeatability error: $\pm 0.1\%$ measurement value.
5. Accuracy grade
 - Flange type, Clamp on type, Healthy type: $\pm 0.5\%$, $\pm 0.2\%$ or $\pm 0.3\%$ (Optional)
 - Insertion type: velocity of 0.5 m/s or less, $\pm 1.5\%$; Full scale velocity of > 1 m/s, $\pm 1.0\%$
 - Diving type: $\pm 1.0\%$
6. Protection grade
 - IP65, IP67, IP68 (optional)
7. Medium temperature:
 - Neoprene/polyurethane rubber lining: $-40 \sim +70$ °C
 - PTFE / F46 lining: $-30 \sim +180$ °C
 - Insertion type: $-30 \sim +80$ °C
8. Working Pressure
 - Pipe type:
 - DN6~DN300 : ≤ 1.6 MPa DN350~DN1000 : ≤ 1.0 MPa DN1200~DN2200 : ≤ 0.6 MPa (special pressure can custom , highest pressure 42MPa)
 - Insertion: nominal pressure: 1.6 MPa
9. Electrode type:
 - Standard type , Scraper type, Replace type.
10. Electrode material
 - 316 l, Harts alloy B, Harts C alloy, titanium, tantalum, platinum - iridium, stainless steel coated with tungsten carbide
11. Lining material
 - (PTFE), Neoprene, (F46), Polyurethane rubber (wear)
12. Flow measurement range

The flow measurement range corresponds to the velocity range is 0.1 ~ 15 m/s

13. Conductivity range

Flow conductivity $\geq 5\mu\text{s/cm}$, most of the ingredients is water, its conductivity within 200 ~ 800 $\mu\text{s/cm}$, all can choose electromagnetic flow meter to measure the flow rate.

14. The output signal

a. Analog output

The bidirectional two road, all isolation 0 ~ 10 ma / 4 ~ 20 ma

Load resistance: 0 ~ 10 ma, 0 ~ 1.5 K Ω ; 4 ~ 20 ma, 0 to 750 Ω

b. Frequency output

Forward and reverse flow output, the maximum output frequency can be in 1 ~ 5000 hz inside. With photoelectric isolation bidirectional output transistor open collector. When external power is not more than 35 v, conducting collector current largest 50 ma.

c. Alarm output

Two way alarm output transistor open collector with photoelectric isolation. When external power is not more than 35 v, conducting collector maximum current of 250 ma.

alarm status: fluid atc, excitation of bolt, flow overrun.

d. Pulse output

Forward and reverse flow output, the output frequency limit of up to 5000 cp/S. Pulse equivalent to 0.0001 ~ 1.0 m3 / p. Pulse width is automatically set to 20 ms or square wave. With photoelectric isolation transistor open collector output. When external power is not more than 35 v, conducting collector current largest 50 mA.

15. Communication methods

RS232 or RS485 serial communication interface(Optional), HART communication protocol, FF field bus.

16. Power supply

220 V AC, 50 HZ

24 V DC

Batteries supply, with 2 ~ 5 section 19 AH battery, voltage is 3.6 V (battery replacement), the service life of more than five years. no 4 ~ 20 ma output, with RS485 communication or pulse output.

17. Straight pipe length

pipeline: general requirements: upstream $\geq 10D$, downstream $\geq 5D$;

Special cases can be done: upstream $\geq 5D$, downstream $\geq 2D$

insertion type: upstream $\geq 15D$, downstream $\geq 10D$

18. Explosion proof: EXdIIBT4

19. Environment temperature: -25°C~+60°C

20. Relative humidity: 5%~95%RH

21. Total power consumption

Less than 15 W

22. Product standards

JB/T9248-1999 electromagnetic flow meter

VI: Flow range

DN (mm)	10	15	20	25	32	40	50	65
Qmin(m ³ /h)	0.0283	0.0636	0.12	0.176	0.29	0.452	0.7	1.19
Qmax(m ³ /h)	4.24	9.54	16.96	26.5	43.42	67.85	106.0	179.0
DN (mm)	80	100	125	150	200	250	300	350
Qmin(m ³ /h)	1.8	2.28	4.41	6.36	11.3	17.6	25.4	34.6
Qmax(m ³ /h)	271.0	424.0	662.0	954.0	1690	2650	3810	5190
DN (mm)	400	450	500	550	600	700	800	900
Qmin(m ³ /h)	45.2	57.2	77.6	85.8	101.0	138.0	180.0	229.0
Qmax(m ³ /h)	6780	8570	10600	12800	15200	20700	27100	34300
DN (mm)	1000	1100	1200	1400	1600	1800	2000	2200
Qmin(m ³ /h)	282.0	342.0	407.0	554.1	732.7	916.0	1131.0	1368.4
Qmax(m ³ /h)	42400	51300	61000	83121	108566	137404	169635	205258

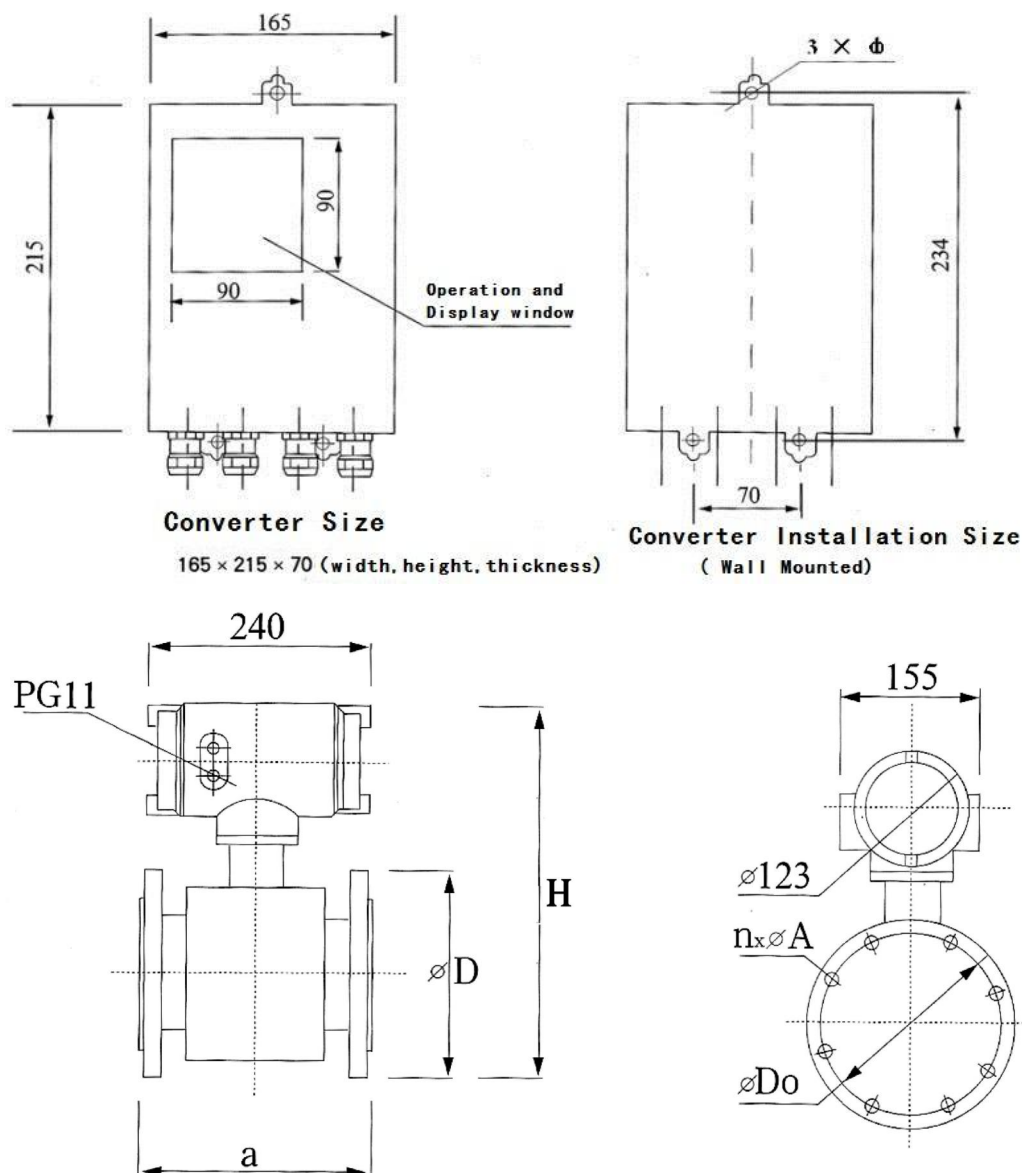
Mainly performance of Lining materials

Lining material	Mainly performance	Application
PTFE	1. It is the most stable chemical performance material in plastic, resist to boiling hydrochloric acid, sulfuric acid and aqua regia, strong alkali and a variety of organic solvents, not resist to corrosion of trifluoride chlorine, high velocity fluid corrosion of fluorine, oxygen, ozone. 2. The wear-resisting performance is poor.	Strong corrosive medium: strong acid, alkali
F46	1. Resistant to corrosive ability of PTFE just like PTFE. 2. It has ability to resist low wear and tear. 3. It has strong ability to resist negative pressure.	1、 just like PTFE 2、 Can be used for low wear and tear "medium
Neoprene	1.Excellent flexibility, high breaking strength, wear-resisting performance is good 2.Resistant to corrosion of general low concentration acid, alkali, salt medium, not resistant to corrosion of the oxidation resistance of medium .	Water, sewage, low wear and tear "mud and slurry
Polyurethane	1. Excellent abrasion resistance (equivalent to 10 times of the natural rubber). 2. It is poor in acid, alkaline. 3. It cannot be used in water mixed with organic solvent.	Neutral strong wear of slurry, coal slurry, slurry, etc

Electrode material decay resistance performance

Electrode Material	Decay Resistance
316L	Used for industrial water, water, sewage, weak corrosive medium, it is widely used in petroleum, chemical, urea, vinylon and other industries.
Stainless steel with Tungsten carbide	Used for the medium of no corrosion and strong up to wear and tear.

Hartz alloy B (HB)	It has good corrosion resistance of Below boiling point for all the concentration of hydrochloric acid, also resistant to corrosion of sulfuric acid, phosphoric acid, hydrofluoric acid, organic acids and other non oxidizing acid, alkali, oxidation of salt solution
Hartz alloy C (HC)	Resist corrosion of Oxidizing acid ,such as nitric acid and mixed acid or a combination of chromic acid and sulfuric acid medium. also resist corrosion of Oxidizing salt as Fe^{++} , Cu^{++} or contain other oxidants, Such as corrosion of a higher than normal temperature hypochlorite solution, sea water.
(Ti)	Resist corrosion of Sea water, all kinds of chloride and hypochlorite, oxidizing acid (including fuming nitric acid), organic acid, alkali, not resist corrosion of a pure resistance reducing acid such as sulfuric acid, hydrochloric acid. But if acid contains antioxidants (such as nitric acid, Fe^{++} , Cu^{++}), the corrosion is greatly reduced.
(Ta)	With excellent corrosion resistance, it is similar with glass, except hydrofluoric acid, fuming sulfuric acid, alkali, almost resist to corrosion of all the chemical can medium (including hydrochloric acid, sulfuric acid and aqua regia).
Platinum - iridium alloy	Almost Apply to all chemicals, but not apply to aqua regia and ammonium salt.



DN (mm)	a (mm)	D (mm)	Do (mm)	H (mm)	n×A (mm)
10	200	90	60	220	4×14
15	200	95	65	220	4×14
20	200	105	75	220	4×14
25	200	115	85	223	4×14
32	200	140	100	240	4×18
40	200	150	110	250	4×18
50	200	165	125	263	4×18
65	250	185	145	283	4×18
80	250	200	160	290	8×18
100	250	220	180	325.5	8×18
125	250	250	210	360	8×18
150	300	285	240	387.5	8×22
200	350	340	295	430	12×22
250	450	405	355	495	12×26
300	500	460	410	547	12×26
350	500	520	470	602	16×22
400	500	580	525	665	16×26
450	550	640	585	720	20×26
500	550	715	650	783	20×26
600	600	840	770	897	20×30
700	700	895	840	982	24×30
800	800	1015	950	1092	24×33
900	900	1115	1050	1192	28×33
1000	1000	1230	1160	1299	28×36
1200	1200	1405	1340	1488	32×33
1400	1400	1630	1560	1700	36×36
1600	1600	1830	1760	1924	40×36
1800	1600	2045	1970	2134	44×39
2000	2000	2265	2180	2344	48×42
2200	2200	2475	2390	2549	52×42
2400	2400	2685	2600	2754	56×42
2600	2600	2805	2810	2964	60×48
2800	2800	2905	3020	3169	64×48
3000	3000	3315	3220	3369	68×45

GLP-TDS-100 CLAMP ON TYPE ULTRASONIC FLOW METER

Working principle

GLP-TDS-100series 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:

$$V = \frac{MD}{\sin 2\theta} \times \frac{\Delta T}{T_{up} \bullet T_{down}}$$

V.....flow rate

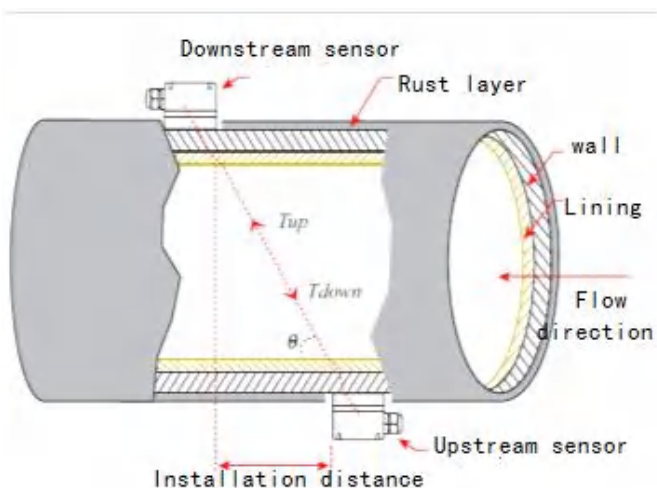
θ the angle of Sound velocity
and liquid flow direction

M.....the number of Beam in the
liquid line

D.....Pipe diameter

T_{up}the time of Beam in the
downstream

T_{down}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 : dIIBT4
- ◆ 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°C



Standard M1 middle sensors
(magnetic)

- ◆ Pipe : DN50~DN700
- ◆ Liquid temperature :0~160°C



Standard L1 large sensors
(magnetic)

- ◆ Pipe :DN300~DN6000
- ◆ Liquid temperature : 0~160°C

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

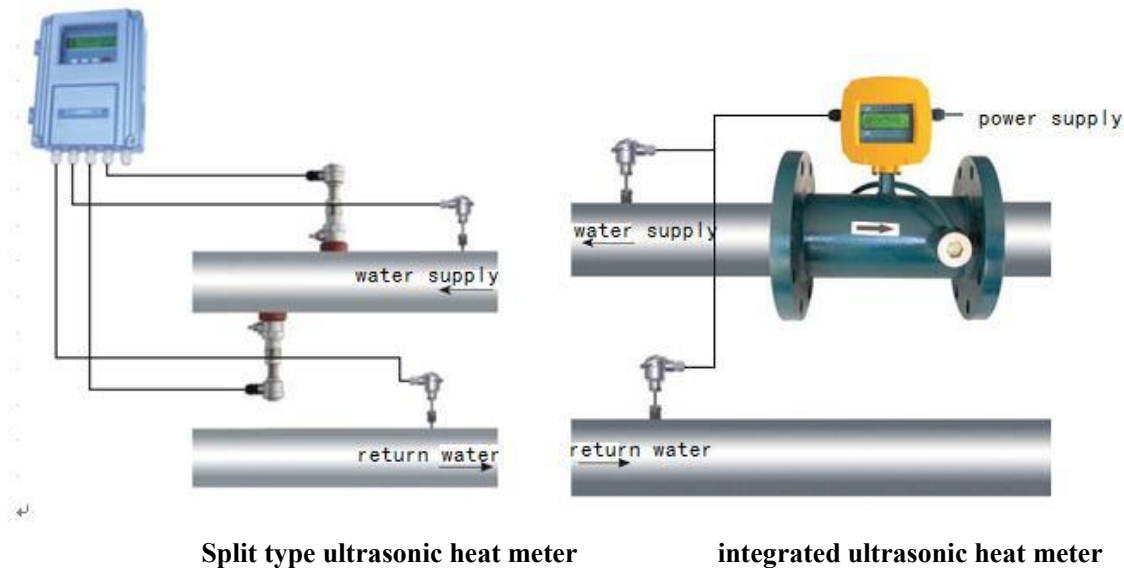
Temperature: -40~160°C

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

3. Standard pipe sensors



4. Ultrasonic heat meter



5. 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 insulated 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°C~160°C
- ◆ 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

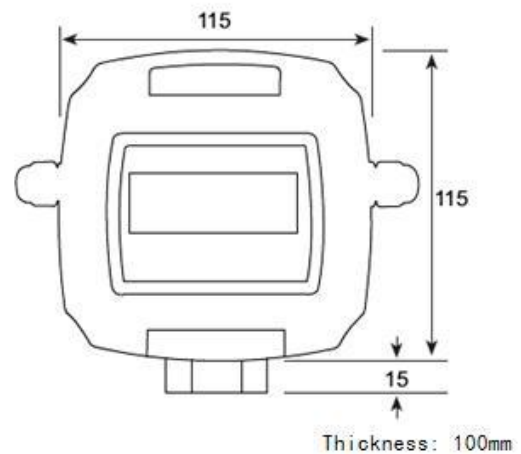
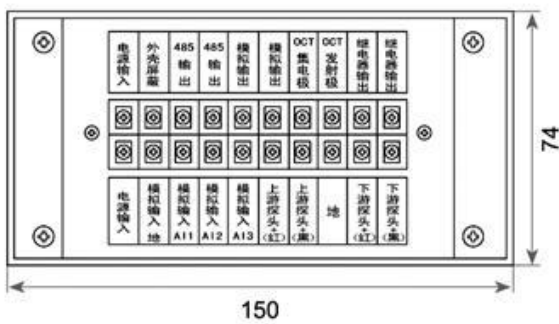
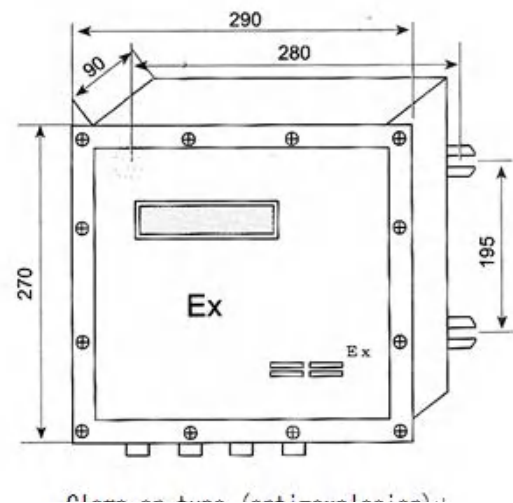
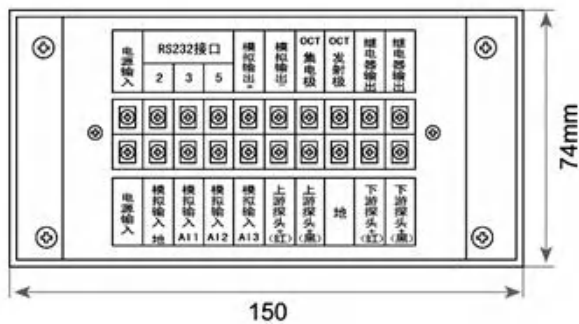
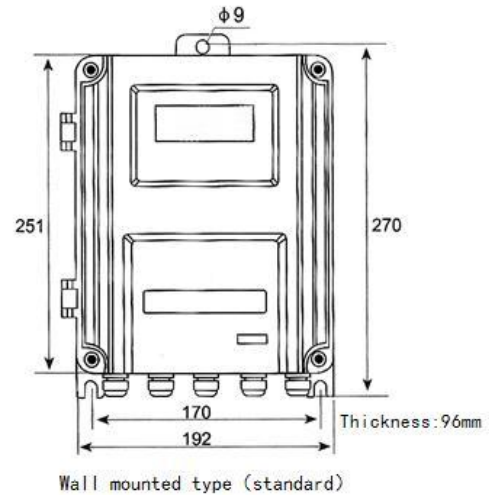
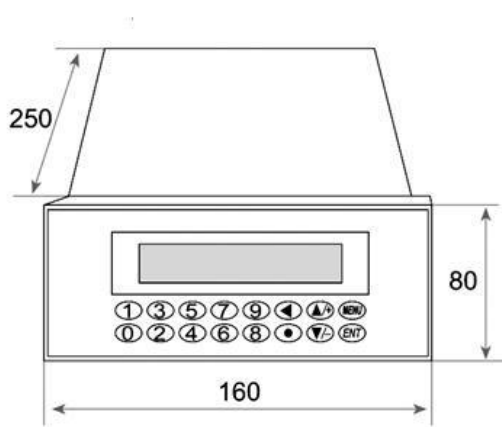
- ◆ Host temperature: -30°C~80°C
- ◆ Sensor temperature: -40°C~160°C
- ◆ Host anti-corrosion grade: IP65

- ◆ Host humidity: 85%RH
- ◆ Sensor humidity: it can work in immersion situation, depth of water $\leq$ 3m, protection: IP68

(6)Power

- ◆ AC85~264V or DC8~36V or AC7~30V

6.Size



Mounted plate type

Integrated type

7.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°C



Standard M1 middle type sensor
(Magnetic)

- ◆ Pipe: DN50~DN700
- ◆ Liquid temperature : 0~160°C



Standard L1 large type sensor
(Magnetic)

- ◆ Pipe: DN300~DN6000
- ◆ Liquid temperature : 0~160°C



Standard S1Z small stents sensor
(Magnetic)

- ◆ Pipe: DN15~DN100mm
- ◆ Liquid temperature : 0~70°C



Standard M1Z middle stents sensor
(Magnetic)

- ◆ Pipe: DN50~DN700mm
- ◆ Liquid temperature : 0~70°C

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

- ◆ ≤ 10000 ppm 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

- ◆ $0 \sim \pm 30$ m/s

6、 Accuracy

- ◆ Better than $\pm 1\%$

7、 Repetitively

- ◆ Better than $\pm 0.2\%$

8、 Voltage

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

9、 Weight

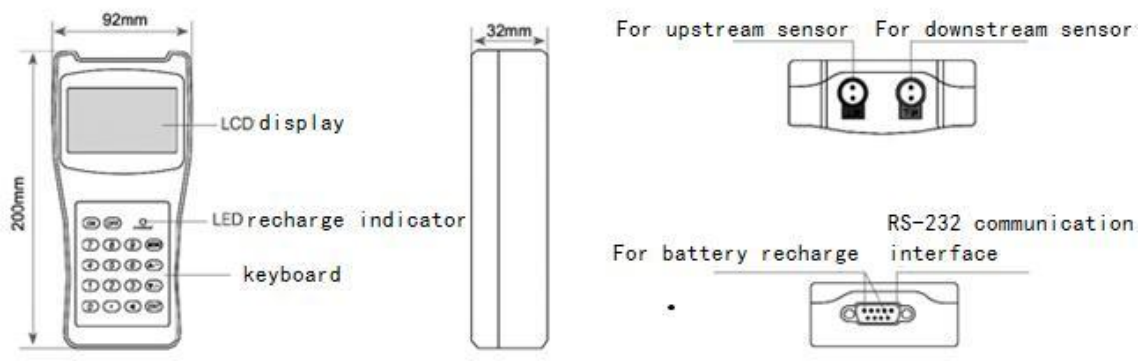
- ◆ 538 G

10、 Others

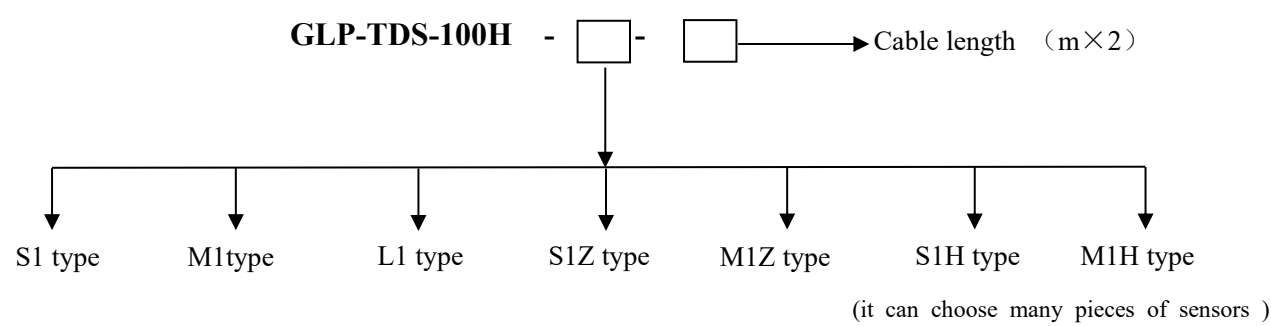
- ◆ It can display instantaneous flow rate, flow velocity, accumulated flow, signal state, etc at the same time
- ◆ It has data recorder inside , it can record the date, the cumulative flow, signal status, working hours, etc

- ◆ 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



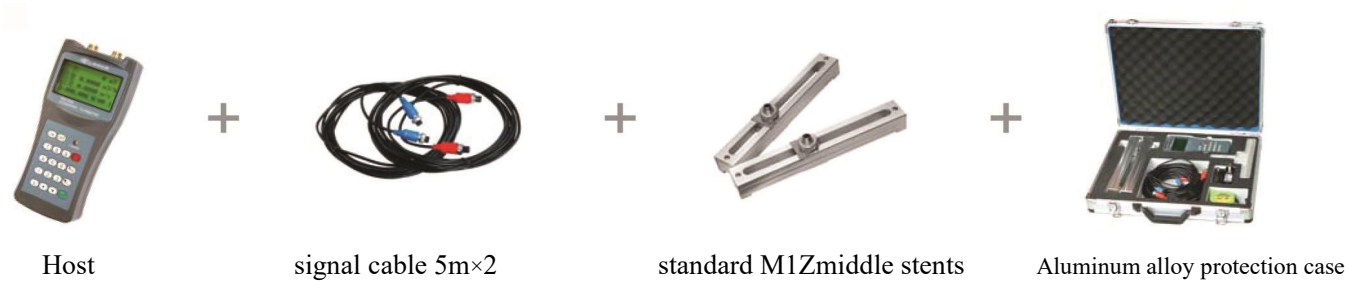
V、 Selection table



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



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°C



Standard M1 middle sensor
(Magnetic)

- ◆ Pipe: DN50~DN700
- ◆ Liquid temperature: 0~160°C



Standard L1 large sensor
(Magnetic)

- ◆ Pipe: DN300~DN6000
- ◆ Liquid temperature: 0~160°C

III、Basic Technical Parameters

1、Host

- ◆ 2×20 dot-matrix backlit LCD display, working temperature (-20~60°C)
- ◆ 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 .

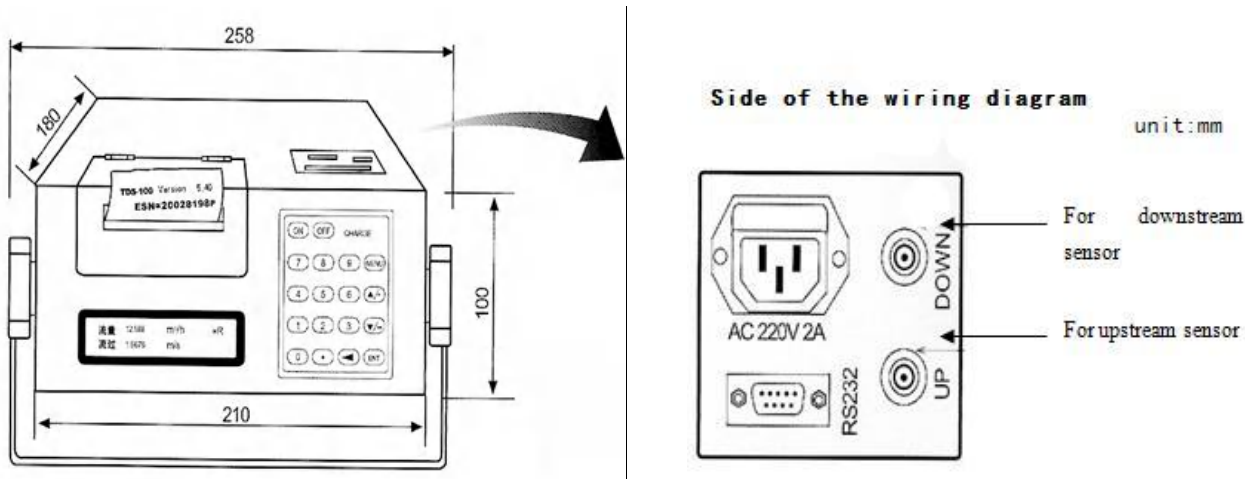
6、 Voltage: The Nickel hydride rechargeable batteries can work more than 24 hours or AC220V.

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

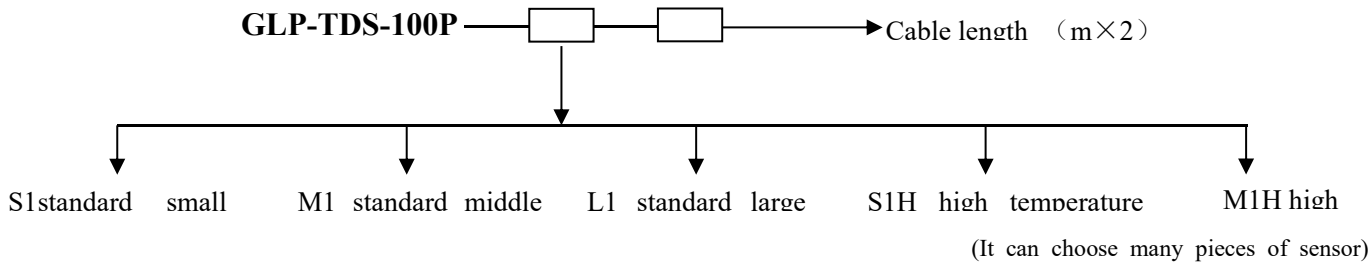
8、 Installation way: Clamp on type

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

IV、 Size



V、 Selection table



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

GLP2000 PRESSURE TRANSMITTER

I、Description:

GLP2000 diffusion silicon pressure transmitter, using two world advanced composite technology of silicon fine corrosion process and silicon wafer, it is a kind of a new type of transmitter isolation diaphragm with high quality. Be widely used in aerospace, automotive, compressor, central air conditioning, refrigeration equipment, water treatment, environmental purification, hydraulic pneumatic control engineering, steel, power plants, chemical fields.

II、Features:

- ◆ High precision, small volume, light weight.
- ◆ High temperature performance, full range of temperature compensation.
- ◆ Delicate structure: stainless steel laser welding dielectric isolation.
- ◆ Digital intelligent chip, advanced membrane separation technology.
- ◆ Reliable circuit and fast response.

III、Basic technical parameters:

- ◆ Standard range: 0~200MPa
- ◆ Output: 0~10V、4~20mA、1~5V
- ◆ Zero error: $<\pm 0.25\%FS$
- ◆ Long term stability: $<\pm 0.25\%FS/year$
- ◆ Working temperature: $-40^{\circ}C \sim 200^{\circ}C$
- ◆ Environment temperature: $-20^{\circ}C \sim 80^{\circ}C$
- ◆ Shell material: 304L&316L SS
- ◆ Voltage: 12~36VDC
- ◆ Protection: IP65、IP67



P51 Type

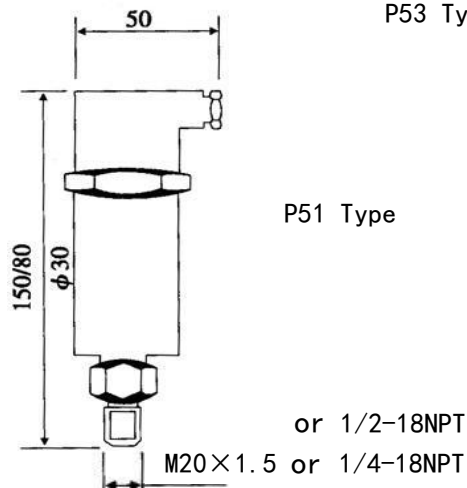
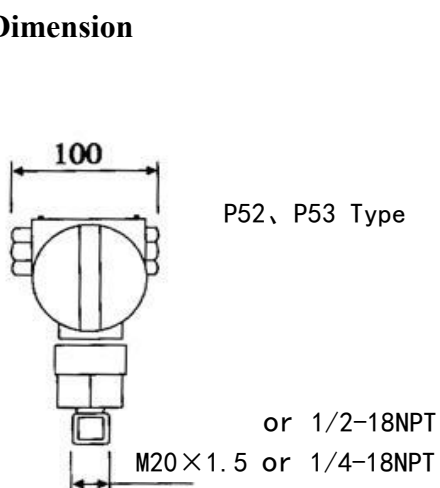


P52 Type



P53 Type

IV、Dimension



GLP2881 LIQUID LEVEL TRANSMITTER

I 、 Overview:

GLP2881 liquid level transmitter had developed by introduce advanced U.S. NoVa company diffusion silicon pressure sensor and IC Sensors circuit technology, and its application with two world advanced technology of the silicon fine corrosion process and silicon wafer composite, it is a high quality of static pressure type level measurement instrument and be widely used in petroleum, chemical industry, metallurgy, environmental protection, food, water, urban water supply, oil field industries such as level measurement.



Submersion Type Liquid Level Transmitter

GLP2881 liquid level transmitter with excellent quality, a variety of installation convenient for field installation process, special occasions can be specially designed. Meet some needs of the industrial automation in China and the industry of the measurement precision of liquid level instrumentation.

II、 Features:

- ◆ Have good stability, high precision and high performance/price.
- ◆ Solid structure, no moving parts, high reliability, long life service.
- ◆ It can be high precision measurement from water, oil, and to the larger paste viscosity and not be affected by foaming measured medium, deposition, the influence of the electric property without material fatigue wear, it is not sensitive to vibration and impact
- ◆ Wide range of temperature compensation
- ◆ It protects from power reverse polarity protection and overload current limit.



Guide rod Type Liquid Level Transmitter

III、 Principle

Using the principle of static pressure measurement, when the liquid level transmitter into the liquid to be tested in a certain depth, sensor to meet the pressure on liquid level for: $P = \rho \cdot g \cdot H + P_0$ type:

P: Pressure of the sensor meet liquid level l, unit: Pa

ρ : Liquid density unit: kg/m^3

g: The local acceleration of gravity unit: m/s^2

P0: Atmospheric pressure of liquid surface unit: Pa

H : The depth of the sensor in liquid or height of installation position to liquid surface
unit: m



Anti-corrosion Type Liquid Level Transmitter

At the same time, it can introduce surface of the liquid atmospheric pressure P0 into the sensor back

pressure cavity by gas leading cable, to offset the P0 sensor to meet the liquid surface, the measured pressure sensor for: $P = \rho \cdot g \cdot H$ (limit of the sensor at the bottom of the back pressure cavity with atmosphere is same)

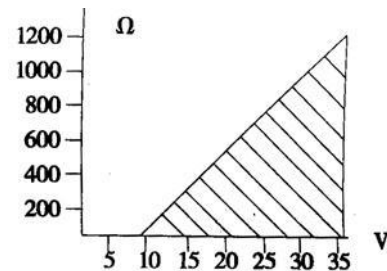
Obviously, it can get liquid depth H by measured pressure P , Pressure sensor sensing signal is amplified by circuit transformation and compensation in a standard signal output.

Note: this model is suitable for level measurement of open container

Air-tight container adopts GLP3351DP or GLP3351LT differential pressure for device or some other type of measurement.

IV、Basic technical parameters:

- ◆ Medium : immersion type: it is suitable for 316ss , nitrile rubber, PVC coexistence medium,
flange type : it can measure Strong corrosive medium.
- ◆ Measurement range : 0~1m to 0~600m
- ◆ Accuracy : 0.5%; 0.25%; 0.1%
- ◆ Working temperature: -20~+80°C(No crystallization medium)it can take pressure at the bottom of
using thread and flange type with isolator
- ◆ Storage temperature: -40~+125°C
- ◆ Zero temperature coefficient: $\pm 0.015\%$ range /°C
- ◆ Range temperature coefficient: $\pm 0.015\%$ range /°C
- ◆ Long term stability: $\pm 0.1\%$ range /year
- ◆ Voltage: 12-36VDC standard 24VDC
- ◆ Output : two wire 4~20mA DC、0~10V
- ◆ Load characteristic: see picture 1, standard 24VDC, Load resistance $\leq 600\Omega$
- ◆ Allow overload: 3 times as much as standard range
- ◆ Current limiting protection: Under the condition of overload, the power limit nominal of 26mA
- ◆ Protection: IP68 (P1、P3) IP65 (P2、P4)
- ◆ Explosion-proof grade: EXia II CT5



V、Structure and material :

- ◆ Transmitter box: Cast aluminum, 100×68×110, shell material: Epoxy resin coating.
- ◆ Probe : 1Cr18Ni9Ti, $\Phi 29 \times 150$, Anti-corrosion type $\Phi 44 \times 140$, The hole should be greater than probe diameter over 5mm.
- ◆ Gas leading cable : $\Phi 7 \setminus 6$ core polyurethane cables and anti-corrosion cable sheath is PTFE
- ◆ Weight (not contain gas leading cable): almost 0.6kg

GRD-900 RADAR FLOW METER

I 、 Product Description



Figure 1 Picture of Real Product

This product is mainly used for water measurement of open channel in irrigation area, and used as data terminal for remote measurement or detection. It is usually chosen in standard section for measurement. The flowmeter adopts high-precision radar sensor to measure water level and flow velocity, and uses the our company self-owned irrigation canal model to calculate flow, and takes the influence of the environment around the open canal into account for correction.

The flow measurement data is provided by modbus protocol or custom protocol through serial port.

The open channel flowmeter is mainly composed of radar current meter and radar water level meter. The working diagram is as follows:

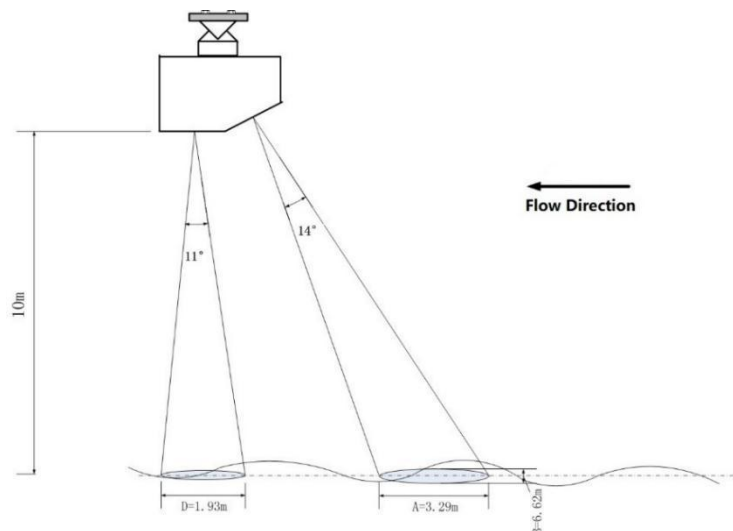


Figure 2 Picture of Flow measurement

II、 Product Features

√ Non-contact measurement, safety and low-loss, less maintenance, not affected by sediment

- √ All-weather, not affected by temperature, strong anti-interference ability
- √ Measurement operation and interval mode are combined to save energy and reduce consumption
- √ Multiple interfaces are provided to facilitate access to the platform system
- √ Multiple communication protocols for different users
- √ IP68 waterproof design, suitable for various outdoor environments
- √ Small and compact appearance, super cost-effective
- √ Simple installation, less civil works

III、Working Condition

Table 1 Working Condition of Flowmeter

Parameter	Description
Supply Voltage	DC 7 ~ 28V
Current(12V power supply)	About 280mA in normal operation, and less than 1mA in sleep mode.
Working temperature	-35℃ ~ 70℃

IV、Technical Specifications

Table 2 The list of Technical Specifications

Parameter	Description
Velocity Measurement Range	0.05 ~ 15m/s (Related to water flow)
Velocity Measurement Accuracy	±1%FS
Velocity Resolution	0.01m/s
Distance Ranging	0.4 ~ 40m
Distance Accuracy	±1cm
Distance Resolution	1mm
Antenna Style	Velocity of flow: 14° x 32° Water level: 11° x 11°

Interval Time	1 ~ 5000min
Waterproof Level	IP68
Transmitting Frequency	24.000 ~ 24.250GHz
Communication Interface	RS-232 / RS-485
Communication Protocols	MODBUS-RTU / Custom Protocol

V、Appearance Parameters

Table 3 Appearance Parameters

Parameter	Description
Flowmeter Dimensions(L*W*H)	220×120×83.8mm
Bracket Dimensions(L*W*H)	100×100×100mm

The structural dimensions of the flowmeter are shown in Figure 3 and 4, in mm.

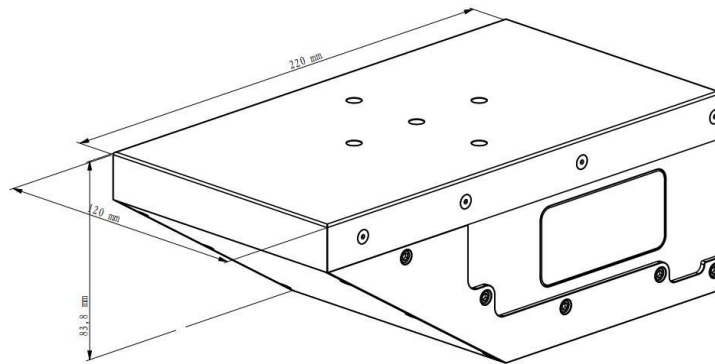


Figure 3 Dimension drawing of flowmeter shell

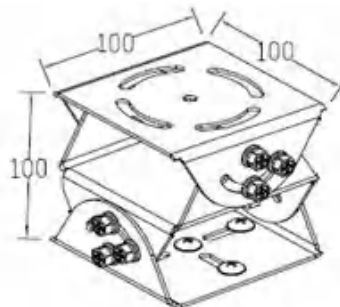


Figure 4 Dimension drawing of Bracket

GLP-LS5A DOPPLER ULTRASONIC OPEN CHANNEL FLOW METER



I 、 Product Description

The GLP-LS5A product has three functions: measuring average flow velocity, measuring water depth, measuring water temperature, and displaying cross-sectional flow.

The temperature probe is used for water temperature measurement. The temperature probe is not in contact with the water and is close to the top of the outer packaging material of the instrument. It needs to be placed at the bottom for a certain period of time to reflect the actual water temperature. The purpose of measuring the water temperature is to correct the speed of ultrasonic waves in the water and to correct the water level value measured by the pressure sensor.

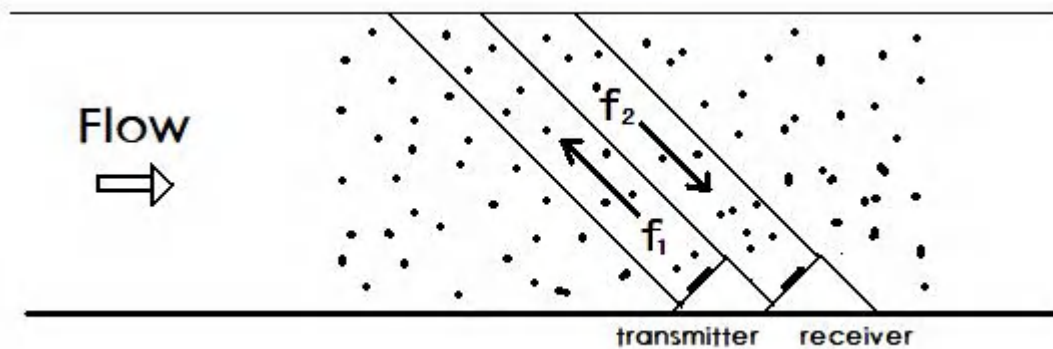
The water depth measurement uses an imported high-precision pressure sensor, placed at the bottom of the instrument, and the sensing part of the probe is in direct contact with the water.

The flow velocity measurement is obtained by the ultrasonic probe (transducer) transmitting and receiving the ultrasonic signal and corresponding calculation processing:

Through the measured average flow velocity, water level and section size, the section flow rate can be obtained.

Average flow velocity measurement: The flow velocity measurement is obtained by the ultrasonic probe (transducer) transmitting and receiving the ultrasonic signal and corresponding calculation processing: Transducer 1 transmits the ultrasonic signal with frequency f_1 , which is taken from underwater at a certain angle. Emitted to the water surface, after encountering suspended particles or bubbles in the water, the frequency shifts and reflects to the transducer 2 at the frequency of f_2 . This

is the Doppler, and the difference between f_2 and f_1 is the Doppler Frequency difference f_d . Suppose the fluid velocity is v , the ultrasonic sound velocity is c , and the Doppler frequency shift f_d is proportional to the fluid velocity v . There will be a large number of impurity particles and bubbles in the water. Each reflected particle corresponds to a Doppler frequency shift f_d . The flow velocity can be obtained by conversion. The average flow velocity of these large numbers of particles is also the average flow velocity of the fluid.



II、GLP-LS5A Technical Parameters

Flow rate:

- Range: 20mm/s~10000mm/s.
- Accuracy: $\pm 1\%$ of measured flow rate.
- Resolution: 1mm/s.

Temperature:

- Range: $0^{\circ}\text{C} \sim 60^{\circ}\text{C}$.
- Resolution: 0.2°C .

Water level Range: 0~10m.

Resolution: 1 mm.

Accuracy: $\pm 0.5\%$ of the measured water level.

Flow Accuracy: $\pm 2\%$ of measured flow.

Power supply: 12V DC or 220V AC.

Interface: Standard RS232, RS485, 4~20mA. Communication protocol: Modbus.

Data storage capacity: A record is collected every 10 minutes, which can store data for more than 6 months, and these data can not be lost for a long time even in the case of power failure.

Operating temperature: $0^{\circ}\text{C} \sim 65^{\circ}\text{C}$ water temperature.

Shell material: PC or PVC plastic.

Shell protection grade: IP68.

Reality: MTBF $\geq 25000\text{h}$.

Size: (230×90×37) mm (probe). (257×179×70) mm (terminal).

Cable: 20m (standard length of communication cable, can be extended to 1000 m).

III、Conditions

1) Water quality requirements:

For water bodies that contain certain tiny impurities or bubbles, it is not easy to have too many floating objects in the water.

① When there are too many floating objects in the water and the instrument is used, weeds or plastic bags may cover the probe and cause it to fail. In this case, the covering on the probe must be removed in time when the instrument is not working properly. When conditions permit, a trash rack can be set up upstream, but the distance between the trash rack and the instrument is not less than 5 times the hydraulic radius, so as to prevent water plants and other silting in front of the trash rack from causing unstable flow. At this time, the debris in front of the trash rack needs Clear regularly. (When there are too many sundries such as water and weeds that interfere with the instrument, you need to process the measurement results and remove the interference data, which can be implemented by software or manually; when the interference is serious, the processing of the interference data requires experienced professionals. .)

②When the water quality reaches Class II drinking water, select a place with bubbles (such as a water drop or a certain distance downstream of the gate) for measurement. When the flow state where there are bubbles is unstable and does not meet the flow state requirements for flow measurement and effective auxiliary flow stabilization measures (such as setting rectifier grids or steady flow cover plates) cannot be taken, only the stable flow section can be selected for measurement and the following are used Special means:

a. When the water is used for irrigation, place a certain amount of soil at the bottom of the canal at the upper reaches of the measurement site: when the flow velocity is low, it can be maintained for a long time; when the flow velocity becomes large, the soil clods will be washed clean, but at this time bubbles will be generated in the water body. Can meet the measurement requirements. Therefore, when the flow velocity increases and then decreases, a certain amount of soil blocks must be placed at the bottom of the upstream canal again.

b. Set up a water drop device at a certain position upstream of the measurement site to generate air bubbles (such as a water retaining grille, at this time, a certain head loss will occur, and when the flow velocity increases, turbulence may occur in a certain distance downstream.)

Selection of flow measurement section (flow status requirements):

The upstream of the flow measurement section requires a straight section with 10 times the hydraulic radius, and the downstream section with a straight section with 5 times the hydraulic radius, and the section shape is regular and stable to ensure uniform and stable water flow at the installation location.

If the installation position has a poor flow state or a short straight section, one way is to install a rectifier grid (or a steady flow cover) upstream to stabilize the flow state. At this time, it should be noted that when there are too many weeds in the water, it will block the rectifier grid and cause Play the opposite effect, and the solution is to remove it in time when weeds block the rectifier grid or install a trash rack upstream; the other way is to calibrate a correction factor or set up one instrument or one on the left and right banks at the same location. Install the instrument in the middle of the channel. The above two methods will affect the measurement accuracy of the instrument.

2) Application of sandy channels

The instrument is divided into three models: A, B, and C to adapt to water quality with different sand content:

Sand content	MODEL
6~25kg/m ³	A
3~6 kg/m ³	B
0~3 kg/m ³	C

IV、Instrument composition and component names

