COMPANY PROFILE

Shanghai Kayuan Electronic Technology Co., Ltd. is an enterprise specializing in the production and R & D of industrial fluid sensors and controllers. Its main products include switches and sensors for flow, pressure, temperature, and liquid level.

In 2008, our assembly plant was established in Shanghai, China, to produce the PAKU series of products. We adopt advanced technology and manufacturing processes across the board. With our professional design and production technology, comprehensive product lines, excellent quality, and sales network services, we can not only provide users with timely and professional technical support but also offer high - quality one - stop services.

The company has set up various departments such as the purchasing department, R & D department, quality management department, finance department, sales department, after - sales department, general office, laboratory, archive room, calibration workshop, production workshop, inspection area, storage area, shipping area, and a tea break room, aiming to provide products of excellent quality and sincere services.

We adhere to the customer - centric concept of creating value for customers. According to the industry needs of customers, we continuously update technology and optimize services, aiming to become a leader in the field of process automation.

PAKU products are now widely used in different industries, including automation complete sets of equipment, petroleum equipment, chemical equipment, power equipment, welding equipment, steel equipment, metallurgical equipment, automobiles, and water treatment. We have served many customers at home and abroad, and our products are sold to countries such as Canada, the United States, Brazil, Indonesia, Vietnam, Thailand, and Russia.

In the increasingly competitive global market in the future, PAKU will, as always, serve a wide range of domestic and foreign customers with excellent quality, reasonable and competitive prices, on - time delivery, and perfect after - sales service. We welcome extensive cooperation with OEM and ODM customers.

Qualification certificate

统一社会信用代码
91310120MA1HM5E74Y

营业执照

（副 本）

证照编号：260000002019111010119

名　　称　上海卡垣电子科技有限公司
类　　型　有限责任公司（自然人独资）
法定代表人　袁礼茂
经营范围　从事电子科技、自动化设备科技领域内的技术开发，技术咨询，技术服务，技术转让，电子设备、仪器仪表、传感器、自动化设备加工（限分支机构经营），电子产品、工业产品设计，电子产品、仪器仪表、传感器、电线电缆、自动化设备批发，零售。【依法须经批准的项目，经相关部门批准后方可开展经营活动】

注册资本　人民币500.0000万元整
成立日期　2017年03月07日
营业期限　2017年03月07日 至 2037年03月06日
住　　所　上海市奉贤区海湾旅游区奉炮公路141弄49号1幢103室

登记机关　上海市奉贤区市场监督管理局

2019 年 11 月 01 日

国家企业信用信息公示系统网址：http://www.gsxt.gov.cn　市场主体应当于每年1月1日至6月30日通过国家企业信用信息公示系统报送公示年度报告。　国家市场监督管理总局监制

高新技术企业

证书

企业名称：上海卡垣电子科技有限公司　　证书编号：GR202231000683
发证时间：2022 年 11 月 15 日　　有 效 期：三年
批准机关：

上海市科学技术委员会　上海市财政局　国家税务总局上海市税务局

Qualification certificate

Ex Certificate

Patent Certificate

CE Marking

ISO 9001

PAKU German Registration Certificate

SIL

Principle characteristics

SN51

The SN51 series turbine flow sensor is a precision flow measurementinstrument designed for measuring low-viscosity media such as water, diesel, and gasoline.
When paired with corresponding flow accumulation instruments, it canmeasure liquid flow rates and total volumes.
It is widely used in calculation and control systems across industries including petroleum, chemical, metallurgy, and scientific research. The sensor is available in standard, high-precision, and wear-resistant(hard alloy) configurations.
The amplifier comes in standard and explosion-proof types, and thesensor can also be used with on-site flow accumulation instruments(powered by lithium batteries with a 1-year battery replacement cycle).

Principle characteristics

SN51B

The SN51B series electronic turbine flow sensor is also a smart flowswitch. It is a compact flow sensor with advantages such as small sizeand easy setting. It has a built - in intelligent circuit, allowing users toset the upper and lower limit alarm values of the flow rate arbitrarily.
It can remotely monitor the real - time flow status, and all parameterscan be set on - site at will. The turbine measures the medium, and afterthe flow passes through the sensor's intelligent circuit for processing, it can be programmed freely.
It is suitable for measuring low - viscosity media, such as water, diesel, and gasoline. — On the basis of the traditional turbine flowmeter, it adds the function of upper and lower limit alarms.

Principle characteristics

SN5C SN52B

The electronic turbine flow sensor is also an intelligent flowswitch. It is a compact flow sensor with advantages such assmall size and easy setting. It has a built - in intelligent circuit, allowing users to set the upper and lower limit alarm values of the flow rate arbitrarily. It can remotely monitor the real - time flow status, and all parameters can be set on - site at will. The turbine measures the medium. After the flow passes through the sensor's intelligent circuit for processing, it can be programmed arbitrarily.
—Protection level: IP65
—Switchable between NPN/PNP
—Suitable for measuring low - viscosity media such as water, diesel, and gasoline.
—It adds the upper and lower limit alarm function on the basis of
—the traditional turbine flowmeter.

Principle characteristics

SN-51E

The SN-51E series explosion-proof electronic turbine flow sensor is also an intelligent flow switch. This compact flow sensor features a small size and easy setup. Equipped with a built-in intelligent circuit, it allows users to freely set upper and lower limit alarm values for flow rates and enables remote monitoring of real-time flow conditions. All parameters can be configured on-site, while its turbine measurement mechanism processes medium flow data through the sensor's intelligent circuit for programmable adjustments.
—Applicable media: Suitable for low-viscosity fluids such as water, diesel, and gasoline.
—Enhanced functionality: Adds upper/lower limit alarm capabilities to traditional turbine flow meters.
—This design combines the reliability of turbine measurement with modern intelligent control, achieving integrated monitoring and safet alerts for industrial fluid systems.

Principle characteristics

SN51C

The SN51 series turbine flow sensor is a precision flow measurementinstrument designed for measuring low-viscosity media such as water, diesel, and gasoline.
When paired with corresponding flow accumulation instruments, it canmeasure liquid flow rates and total volumes.
It is widely used in calculation and control systems across industries including petroleum, chemical, metallurgy, and scientific research. The sensor is available in standard, high-precision, and wear-resistant(hard alloy) configurations.
The amplifier comes in standard and explosion-proof types, and thesensor can also be used with on-site flow accumulation instruments(powered by lithium batteries with a 1-year battery replacement cycle).

SN51D

SN50D

Principle characteristics

SN52D

The electronic turbine flow sensor is also an intelligent flow switch. It is a compact flow sensor with advantages such as small size and easy setting. It has a built - in intelligent circuit, allowing users to set the upper and lower limit alarm values of the flow rate arbitrarily. It can remotely monitor the real - time flow status, and all parameters can be set on - site at will. The turbine measures the medium. After the flow passes through the sensor's intelligent circuit for processing, it can be programmed arbitrarily.
—Protection level: IP65
—Switchable between NPN/PNP
—Suitable for measuring low - viscosity media such as water, diesel, and gasoline.
—It adds the upper and lower limit alarm function on the basis of the traditional turbine flowmeter.

SN54D

SN52H

Principle characteristics

SN54 SN55A

The SN54 gear flow sensor features dual oval gears that operate internally, calculating medium volume through high-precision gear displacement to achieve measurement of minute fluid media. It is a novel positive displacement flow sensor designed for precise continuous or intermittent measurement of liquid flow rate or instantaneous flow in pipelines.

— Dual analog switch outputs
— PNP/NPN optional configurations
— High-precision monitoring
— Accurate quantitative metering
— Immunity to medium pulsation effects
— Optional stainless steel or aluminum housing
— Digital signal control and transmission

Principle characteristics

SN54B SN55B

The gear flow sensor operates with dual circular gears internally, achieving precise measurement of micro-flow fluids through high- precision gear volume calculation. As a novel volumetric flow sensor, it is designed for continuous or intermittent monitoring of liquid flow rates (including instantaneous flow) in pipelines with exceptional accuracy.

— Dual outputs: Pulse signal and 4-20mA analog signal
— High-pressure resistance: 1.0–45 MPa713
— Temperature adaptability: -40°C to 150°C13
— Viscous media compatibility: Suitable for various viscous fluids (e.g., oils, resins)
— Precision performance: High accuracy (±0.5% R typical) and repeatability
— Wide range ratio: 1:100 span adjustment capability
— Broad measurement scope: From 0.005 L/min to industrial-scale flows
— Robust construction: Corrosion and contamination resistance (acid/alkali compatible)

Principle characteristics

SN54E

The explosion-proof gear flow sensor utilizes dual circular gears for operation, achieving micro fluid medium measurement through high- precision volumetric calculation of media flow. As a new type of volumetric flow sensor, it is designed for precise continuous or intermittent measurement of liquid flow rate or instantaneous flow within pipelines.

— Pulse/4-20mA analog signal options available
— High-pressure resistance (1.0–45 MPa)
— Wide temperature tolerance (-40°C to 150°C)
— Compatibility with various viscous media
— High accuracy and repeatability
— Broad turndown ratio (1:100)
— Extensive measurement range
— Strong corrosion and contamination resistance (acid/alkali)

Principle characteristics

SN560

1. PN500 Series Compact Diffused Silicon Pressure Transmitter Key Features: Broad range of options, compact structure, robust performance in harsh environments, high reliability. Measurement Range: 0...1000 BAR (supports gauge pressure and absolute pressure).
2. SN51B Series Electronic Turbine Flow Sensor Characteristics: Compact intelligent flow switch with volume小巧 (miniaturized design), easy setup, and built-in smart circuitry. Turbine flow measurement with programmable signal processing. Suitable Media: Water, diesel, gasoline, hydraulic oil. Innovation: Adds alarm functions to traditional turbine flow meters.
3. T450 Series Temperature SensorCore Component: PT100 probe (resistance varies with temperature). Output: Linear analog signal via internal circuitry. Accessories: Optional field-mounted or panel-mounted display/controllers.
4. P.Q.T Connector for Fluid Measurement Purpose: Measures pressure, flow, and temperature in:
5. Custom High-Pressure Variant Specification: Withstands 400 BAR pressure.

Principle characteristics

SN53

The SN53 series of intelligent vortex flowmeters are based on the Karman vortex street principle to measure the flow of steam, gas, and viscous liquids. As a novel flowmeter with internationally advanced technology, it possesses unique advantages that cannot be simultaneously achieved by other flowmeters. It is poised to dominate future flow instrumentation and represents the ideal replacement for orifice plate flowmeters.

The intelligent vortex flow transmitter is a new type of stress-based vortex flow transmitter. It can output voltage pulse frequency signals or standard 4-20mA signals, facilitating integration with control systems.

This product is widely applicable in industries such as petroleum, chemicals, metallurgy, power, pharmaceuticals, textiles, and municipal utilities. It is particularly suitable for measurement and control in water supply, gas distribution pipelines, and natural gas stations.

Principle characteristics

SN52

The SN52 series electromagnetic flowmeter is a major type of flow instrument. It consists of two parts: a sensor and a converter. Operating based on Faraday's law of electromagnetic induction, it is used to measure conductive liquids or two - phase media. Generally, the conductivity of the measured medium should be greater than 5μS/CM (the conductivity of tap water is approximately 100 - 500μS/CM).

It can measure various media such as acid, alkali, salt solutions, pulp, and mineral slurry. However, the medium should not contain a large amount of ferromagnetic substances or a large number of bubbles. It is widely used in fluid measurement in industrial sectors such as petroleum, chemical, metallurgy, light textile, paper - making, environmental protection, andfood, as well as in fields like municipal management and water conservancy construction.

Setting range: 1...150CM/S (for water). There are no flow - blocking components in the measuring tube, no pressure loss, and it has relatively low requirements for straight pipe sections. The sensor can be equipped with a grounding electrode to ensure good grounding of the instrument.

It has the function of both forward and reverse flow measurement.

Principle characteristics

SN53B SN53C

The SN53B series intelligent vortex flow and temperature sensor is based onthe Karman vortex street principle.

The Karman vortex street is a phenomenon observed and studied in 1911 by the American - Hungarian scientist von Karman: when a fluid flows around a non - streamlined object, a pair of anti - symmetric vortices with opposite rotation directions are alternately arranged on the left and right sides of the object's wake.

The generation of these vortices is periodic and alternately changing. The change frequency is proportional to the fluid velocity, which is the Karman vortex street phenomenon. The specific relationship is SR = FD/V. The vortex flowmeter utilizes this property of the phenomenon.

It is a flowmeter that determines the fluid velocity or flow rate by measuring the shedding frequency of the eddies. It has advantages such as small size and simple setting. It has a built - in intelligent circuit, allowing users toarbitrarily set the upper and lower limits of flow rate alarm values.

It can remotely monitor the real - time flow status, and all parameters can be set on - site at will.

Principle characteristics

SN50A

The SN50A series thermal gas mass flow meters are instruments that measure flow based on the principle of heat conduction. This device employs a constant temperature difference method to achieve precise measurement of gas mass flow. It features compact size, high digitalization, easy installation, and accurate measurement. Dual Platinum Resistance Sensors The sensor unit consists of two reference-grade platinum resistance temperature sensors. A bridge circuit design allows one sensor to measure flow temperature, while the other maintains a constant temperature difference above the fluid temperature, enabling measurements under high temperature and high-pressure conditions.

—True Mass Flow Measurement Directly measures gas mass flow without requiring temperature or pressure compensation, ensuring convenience and accuracy.
—Outputs gas mass flow or standard volume flow.
—Broad Range Capability Supports flow rates from 0.5 to 100 m/s, making it suitable for gas leak detection applications.
—Fully digital circuitry ensures precise measurement and simplified maintenance.
—Supports RS-485 or HART communication protocols for factory automation and integration.
Excellent shock resistance and long lifespan due to the absence of moving or pressure-sensing components, which eliminates vibration interference with measurement accuracy.

Flow meter series

Principle characteristics

SN60A

A metal tube float flowmeter is a widely used variable-area flow measurement instrument in industrial automation process control. It features compact size, broad detection range, and user-friendly operation. This device can measure the flow of liquids, gases, and steam, particularly excelling in applications requiring measurement of low flow velocity and small flow rates.
Over the years, the metal tube float flowmeter has gained extensive adoption across industries such as petrochemical, steel, power, metallurgy, light industry, food processing, pharmaceuticals, and water treatment due to its superior performance, reliability, and favorable performance-to-price ratio.

Principle characteristics

SN53F

This flowmeter is specifically designed to measure the flow of various liquids in pipelines, enabling real-time flow monitoring during production processes. It outputs digital signals, analog signals, and integrates into production processes for measurement and control.
PNP/NPN selectable - Switchable input/output configurations for compatibility with different control systems.
Non-invasive installation - Clamps externally on the pipe without requiring pipeline modifications.
User-friendly operation - Menu-guided installation and measurement with noprofessional expertise required.
Zero downtime installation - No moving parts, no pressure loss, and supports installation without production interruptions Target Industries
Semiconductor manufacturing, food processing, pharmaceuticals, beverageproduction, detergent manufacturing, textile dyeing, chemical products, andrelated industries.

Electronic flow switch series

Principle characteristics

SN10B SN12B

Based on the thermal principle, the sealed probe contains two resistors. One of them is heated and serves as the detection resistor, while the other is unheated and acts as the reference resistor. When the medium flows, the heat on the heating resistor is carried away, which changes the resistance value. The difference between the two resistors is used as the basis for judging the flow rate.
This device has no moving parts, requires no maintenance, and is easy to install. One model can meet the requirements of various pipe diameters. The switching value is continuously adjustable, and it has extremely low pressure loss. It features a compact structure and an LED that displays the flow trend and switching status. Most of its components are imported, which improves the product's stability.
It is a dual - purpose device for both gas and liquid. It can give an alarm at low flow rates and can be used in pneumatic and hydraulic systems. It can be used for detecting the interruption of flow in circulating water, cutting fluid, and lubricating oil, as well as protecting pumps from idling.

Principle characteristics

SN11 SN10 SN13 SN12 SN11B

Principle characteristics

SN10C

Based on the thermal principle, the sealed probe contains two resistors. One is heated to serve as the sensing resistor, while the other remains unheated as the reference resistor. When the medium flows, heat from the heated resistor is carried away, altering its resistance value. The difference between the two resistors is used as the basis for determining the flow rate. Additionally, the SN10C integrates a PT100 probe or a temperature switch. The PT100's resistance varies with changes in medium temperature, or activates the switch when the temperature reaches a preset value.
—No moving parts and maintenance-free design.
—Easy installation with a single model compatible for various pipe diameters.
—Continuously adjustable switch point for customized flow thresholds.
—Extremely low pressure loss and compact structure.
—LED display for real-time flow trend monitoring and switch status indication.
—Optional temperature signal output with a cabinet-mounted control panel for integrated system management.

Principle characteristics

SN510

The SN510 series pointer-type flow switch is primarily used for liquid flow monitoring and switch output in pipelines. With its robust structure and stable performance, it is widely applied in the cooling and lubrication systems of generators, motors, rolling mills, compressors, conveyors, and other machinery. When the flow exceeds or falls below the preset switch point, it outputs a control signal. This preset switch point can be set at any position within the measurement range. After installation, the switch point can also be conveniently adjusted.
—Aerodynamic Structural Design: Streamlined and durable construction.
—Magnetic Coupling Measurement System: Ensures precise and reliable operation.
—Arbitrary Installation Orientation: Supports vertical or horizontal installation.
—Material Flexibility: Multiple material options available.
—Broad Measurement Range: Capable of handling diverse flow conditions.

Mechanical flow switch series

Principle characteristics

SN21 SN21B

The piston-type flow switch contains a magnetic piston supported by a precision spring inside. When fluid flows, the piston is pushed backward, triggering the external microswitch or reed switch.
—All-metal internal structure
—Optional pointer-type flow switch
—High reliability and repeatability
—Complete isolation between mechanical and electronic components
—High pressure resistance
—Normally open output configuration

Principle characteristics

SN32 SN32B

Online installation, mechanical flow switch, designed for liquid or gas media.
Durable housing options: Available in plastic, aluminum, or stainless steel
Minimal pressure loss and excellent repeatability
Anti-contamination capability with complete isolation between mechanical and electronic components
Cost-effective solution for small flow applications
Adjustable scale for switch settings, eliminating on-site calibration
LED display for switch status and magnetic bead panel indication of flow rate
Versatility: Suitable for both liquid and gas applications, widely used in industrial automation, mechanical equipment, air compression systems, refrigeration, and HVAC

Principle characteristics

SN31B SN31C SN31

Online installation, mechanical flow switch, designed for liquid or gas media.
Durable housing options: Available in plastic, aluminum, or stainless steel
Minimal pressure loss and excellent repeatability
Anti-contamination capability with complete isolation between mechanical and electronic components
Cost-effective solution for small flow applications
Adjustable scale for switch settings, eliminating on-site calibration
LED display for switch status
Versatility: Suitable for both liquid and gas applications, widely used in industrial automation, mechanical equipment, air compression systems, refrigeration, and HVAC

Principle characteristics

SN41 SN-41B SN42 SN-42B

Mechanical flow switch with a spring-supported paddle that mechanically activates the microswitch when the flow reaches the preset value. Features include:
SPDT output with minimal pressure loss Complete isolation between mechanical and electronic components Wide flow range and convenient adjustment of setpoints
Standard configuration includes a set of 5 paddles for flexible on-site combination Suitable for various pipe types
High reliability, excellent repeatability, and strong contamination resistance

Pressure transmitter series

Principle characteristics

PN300

Based on ceramic capacitor technology, when the pressure applied to the ceramic capacitor increases, the capacitance value increases, and the capacitance value is directly proportional to the pressure value. It has a strong overload capacity and good stability, with an annual deviation of 0.1% of the full scale. It also has strong anti - interference ability, extremely high accuracy and repeatability, reaching Class 0.25 and 0.5. The ceramic measurement interface has good corrosion resistance.
The flush - diaphragm type can be used for viscous media. The zero point and full scale can be adjusted on - site. It is equipped with an LED display. It is a dual - purpose type for both gas and liquid, and can be used in hydraulic and pneumatic systems. It is suitable for the following industries: steel industry, mechanical equipment, air compression industry, refrigeration and air - conditioning, lifting and traditional series.

Principle characteristics

PN30C

The PN30C series monocrystalline silicon pressure transmitter adopts a fully isolated circuit technology design, which isolates the power supply and sensor signals to enhance the overall stability and interference resistance of the device. It demonstrates exceptional resistance to strong interference signals of various frequencies generated by equipment such as variable frequency drives (VFDs) and electric motors in industrial environments. Notably, its high-frequency interference resistance surpasses that of similar products both domestically and internationally.
The PN30C series also features a parameter backup and recovery function. If parameters are mistakenly modified or damaged, users can restore the original settings online using three dedicated buttons. Additionally, the series incorporates a coding potentiometer, enabling zero-pressure adjustment without opening the transmitter cover—simply rotate the potentiometer externally on the instrument housing. This design significantly improves on-site operational flexibility and efficiency.
All button functions of the smart transmitter can be controlled via communicationsoft-ware or handheld programmers produced by our company

Principle characteristics

PN30D

The PN30D series employs a high-performance pressure-sensing chip combined with advanced circuit processing and temperature compensation technology to convert pressure changes into linear current or voltage signals. The product features HART communication, RS485 communication, and an automatic disconnection function, enabling users to remotely transmit, read, display, and input all operational and supple-mentary information of the transmitter using handheld terminals or fieldbus systems. It is capable of measuring gauge pressure, vacuum pressure, and absolute pressure.
—Dedicated integrated circuit (IC) and surface-mount technology (SMT) for enhanced reliability.
—Stainless steel 316L isolated diaphragm structure for corrosion resistance and durabil-ity.
—Reverse polarity protection and current-limiting safeguards to prevent damage.
—Laser-trimmed temperature compensation with adjustable zero-point calibration.
—Vibration-resistant, shock-resistant, and immune to radio frequency electromagnetic interference
(RFI/EMI).

Principle characteristics

SN501

The anti-corrosion pressure transmitter utilizes a ceramic piezoresistive chip and high-polymer, high-density materials resistant to strong acids and alkalis, along with corrosion-resistant cables.
Application:This corrosion-resistant pressure transmitter is primarily used in industries with highly corrosive media such as strong acids and alkalis, including water disinfection (e.g., chlorine treatment), chemical plants, battery equipment, as well as in sectors requiring hygienic and precise pressure measurement and control, such as food sanitation and medical fields.

Pressure transmitter series

Principle characteristics

Rugged Impact-Resistant Diffused Silicon Pressure Transmitter Broad Application Range: Compact design, suitable for harsh environments, high reliability. Broad Range: 0...1000 BAR, suitable for measuring gauge pressure and absolute pressure. Applications: Mechanical equipment, hydraulic/pneumatic systems, locomotives, pressure control systems.
—Overload Range: 1.5x full scale
—Accuracy: ±0.25%, ±0.5%
—Linearity: ±0.2%
—Repeatability: ⩽±0.1% FS
—Electrical Protection: Overload/reverse polarity protection

PN500 PN50B

PN50C PN50D PN50E PN502

Principle characteristics

PN530 Piezoelectric Integrated Vibration Transmitter The PN530 piezoelectric integrated vibration transmitter incorporates a piezoelectric element to sense vibration acceleration. Through a high-precision integrated circuit, it converts the root mean square (RMS) value of acceleration or the integrated velocity RMS value into a corresponding 4–20 mA current output within the calibrated range, facilitating remote monitoring and control. It is particularly suitable for integration with Distributed Control Systems (DCS), Programmable Logic Controllers (PLC), and data acquisition systems. automation, mechanical equipment, air compression systems, refrigeration, and HVAC
—Two-Wire Loop Design Simplifies installation and maintenance while reducing costs.
—Fault-Tolerant Technology Supports arbitrary polarity connection of the two-wire loop, enhancing system reliability.
—Fault-Tolerant TechnologySupports arbitrary polarity connection of the two-wire loop, enhancing system reliability.
—Piezoelectric Core with Integrated Structure

PN530

Principle characteristics

The main functions of the PN53E pressure measurement, control and transmission products include one - way current output, two - way relay switch output, and on - site display function. It adopts the SMT process and integrated design concept, and can provide constant - voltage excitation and constant - current excitation for sensors, being adaptable to diffused silicon, ceramic, and strain - type pressure sensors.
It is equipped with a built - in microprocessor. Through three - button programming, adjustable settings of zero point, full - scale range, decimal point, display rate, control point, and current can be achieved without any potentiometer adjustment.
The whole machine is adaptable to industrial - grade temperature environments and has strong anti - interference ability.
—It uses 0.4 high - brightness digital tubes for display.
—It operates in a fully intelligent mode, supporting user self - calibration and non - linear correction of display values.
—It has extremely low temperature drift and is suitable for use in industrial environments from - 40 to 85 degrees Celsius.
—It features very flexible switch point settings, with automatic recognition of control direction and automatic insertion of hysteresis values.
—Its performance indicators far exceed those of similar products, and it has excellent anti -interference characteristics.

PN53E

Differential pressure transmitter series

Principle characteristics

The PN51 series diffused silicon differential pressure transmitter consists of a dual-isolated differential pressure sensor and an integrated amplification circuit, featuring high stability and excellent dynamic measurement performance. It is equipped with a high-performance microprocessor to calibrate and compensate for sensor nonlinearity and temperature drift, enabling precise digital data transmission, on-site device diagnostics, and remote bidirectional communication. This transmitter is suitable for measuring and controlling liquids and gases. It offers multiple range options to meet diverse user requirements and is widely applied in various fields such as metallurgy, machinery, petrochemicals, chemical industry, power plants, light industry, food processing, environmental protection, national defense, and scientific research
When process pressure is applied to the sensor, it generates a voltage signal proportional to the pressure. This voltage signal is converted into a 4–20 mA standard signal through the amplification circuit. The power supply protection circuit provides excitation for the sensor, which incorporates a precision temperature compensation circuit to ensure stable performance across varying temperatures.

PN51

Principle characteristics

Online installation, mechanical flow switch, designed for liquid or gas media.
Durable housing options: Available in plastic, aluminum, or stainless steel
Minimal pressure loss and excellent repeatability
Anti-contamination capability with complete isolation between mechanical and electronic components
Cost-effective solution for small flow applications
Adjustable scale for switch settings, eliminating on-site calibration
LED display for switch status and magnetic bead panel indication of flow rate
Versatility: Suitable for both liquid and gas applications, widely used in industrial automation, mechanical equipment, air compression systems, refrigeration, and HVAC

PN51C

Principle characteristics

Online installation, mechanical flow switch, designed for liquid or gas media.
Durable housing options: Available in plastic, aluminum, or stainless steel
Minimal pressure loss and excellent repeatability
Anti-contamination capability with complete isolation between mechanical and electronic components
Cost-effective solution for small flow applications
Adjustable scale for switch settings, eliminating on-site calibration
LED display for switch status
Versatility: Suitable for both liquid and gas applications, widely used in industrial automation, mechanical equipment, air compression systems, refrigeration, and HVAC

PN51D

Differential pressure transmitter series

Principle characteristics

PN53

The PN53 series micro - differential pressure transmitters use thermal micro - pressure cores. They utilize the micro - flow paths integrated in the sensor chips to detect air pressure by measuring changes in the flow rate of hot air.
The PN53 features a strong overload capacity, high resistance to electromagnetic interference, a wide measurement range, and multiple signal outputs. It is widely used for the detection of air or neutral gases, such as in HVAC systems, process control, environmental control, clean rooms, or other systems that require micro - differential pressure detection.
The measurement range can be as low as ±25 PA. The overload pressure can reach up to 2 BAR. The accuracy can be up to 0.5% F.S, with strong stability and good repeatability.
It is easy to install and is not sensitive to the installation position.
It has strong anti - interference ability, and an isolated output is optional.

Principle characteristics

PN55

FND Display: Excellent visual effect
Analog Output: 4-20mA, 1~5V, 0-5V, 0-10V
Transistor Output: Supports NPN and PNP types
Dedicated Panel Design: Fixed appearance (48mm×48mm)
Multi-functional MENU Configuration: Flexible settings
User-friendly Operation: Easy to use
RS485 Communication: MODBUS RTU protocol support

Pressure(Liquid level)transmitter series

Principle characteristics

PN52

The PN52 Intelligent Pressure Transmitter is a field-mounted smart pressure instrument featuring HART communication capability, based on micro-displacement capacitive sensor technology. All key raw materials and components are imported, ensuring advanced design principles, a complete range of specifications, and ease of installation and use.
This device can be queried, configured, or calibrated remotely via a handheld communicator or HART protocol-compatible host system in the control room or at the field location. Depending on the application, it supports pressure, flow, or level measurement.
High accuracy and excellent stability
Multi-input compatibility: Suitable for differential pressure, gauge pressure, orabsolute pressure
Compact, lightweight, and robust design with vibration resistance
Externally adjustable range and zero point

Principle characteristics

PN52B

When the pressure (liquid level) transmitter uses a capacitive pressure core, the isolation diaphragms on the high - and low - pressure sides and the filling fluid transfer the process pressure to the filling fluid. Then, the filling fluid transfers the pressure to the sensing diaphragm at the center of the sensor.
The sensing diaphragm is a tensioned elastic element, and its displacement changes with the applied pressure (for a gauge pressure transmitter, the atmospheric pressure acts on the low - pressure side of the sensing diaphragm in the same way). For an absolute pressure transmitter, a reference pressure S is always maintained on the low - pressure side. The maximum displacement of the sensing diaphragm is 0.1 mm, and the displacement is proportional to the pressure.
The capacitive plates on both sides detect the position of the sensing diaphragm. The difference in capacitance between the sensing diaphragm and the capacitiveplates is converted into a corresponding current or a digital HART output signal.

PN52C

PN52D

Pressure(Liquid level)transmitter series

Principle characteristics

PN65 PN65A

The electronic pressure sensor uses a high-precision diffused silicon core, ensuring the sensor's high precision and durability. It comes with on-site display, where an LED digital display shows the on-site pressure or the setting menu.
Measurement Range: The maximum measurement range is from -1 to 600 BAR. The digital LED displays the pressure value and the switch status.
Menu Settings: You can set the switch points, the starting and ending points of the analog output, as well as the output, storage, and display functions through the menu. All settings do not need to be completed on-site.
Reliability and Compatibility: It has high reliability, and its output can be directlyused for PLC.
Connector Design: It is equipped with an M12 locking connector, which is easy to connect and disconnect and has a high protection level.
Pressure Measurement: It can measure both positive and negative pressures. Since it has both switch output and analog output, this sensor can be used as both a pressure switch and a pressure transmitter.

Principle characteristics

PN65C

The PN65C series intelligent pressure controller is an integrated intelligent digital pressure control product that combines pressure measurement, display, output, and control. This product features a fully electronic structure with an isolated diaphragm oil-filled piezoresistive pressure sensor at the front end. It undergoes high-precision analog-to-digital conversion and microprocessor processing to enable on-site display, while outputting one analog signal and four switching signals.
This intelligent digital pressure controller offers flexible usage, simple operation, easy calibration, and reliable safety. It is widely applied in industries such as hydroelectric power, municipal water supply, petroleum, chemical, machinery, and hydraulics for on-site measurement, display, and control of fluid medium pressure.

Principle characteristics

PN-65D

The PN-65D employs a diffused silicon sensor for pressure measurement. After signal processing by the post-processing circuitry, it converts the signal into standard industrial electrical signals for output and display.
Featuring an all-metal housing design and high-brightness LED digital display, this series is suitable for various industrial applications. The dual-button design and menu interface enhance operational convenience, while multiple connection methods fully accommodate specific installation requirements

Principle characteristics

PN65E PN80E

The electronic pressure sensor uses a ceramic piezoresistive chip and a high - polymer, high - density material resistant to strong acids and alkalis, along with an anti - corrosion cable. It comes with an on - site display, where an LED digital display shows the on - site pressure or the setting menu.
The maximum measurement range is from - 1 to 600 BAR. The digital LED displays the pressure value and the switch status. The menu allows you to set the switch point, the start and end points of the analog output, the output function, the storage function, and the display function. All settings do not need to be completed on - site.
It features high reliability, and its output can be directly used for PLC. It is equipped with an M12 locking connector, which is easy to disassemble and assemble and has a high protection level. It can measure both positive and negative pressures.
Since it has both switching output and analog output, this sensor can be used either as a pressure switch or as a pressure transmitter. It can be directly installed on the hydraulic pipeline through a pressure pipe joint (M20*1.5, other sizes of joints can be specified when placing an order). In critical applications (such as severe vibration or shock), the pressure pipe joint can be mechanically decoupled through a micro - hose.
Note: When the measuring range is less than 100 KPA, it must be installed vertically.

Digital display intelligent pressure switch

Principle characteristics

PN70 PN80 PN80A PN80C

The electronic pressure sensor uses a high-precision diffused silicon core, ensuring its high precision and durability. It comes with an on-site display, where an LED digital display shows the on-site pressure or the setting menu.
The maximum measurement range is -1...600 BAR. The digital LED displays the pressure value and the switch status. Through the menu, you can set the switch points, the start and end points of the analog output, as well as the output function, storage function, and display function. All settings don't need to be completed on- site.
It features high reliability, and its output can be directly used for PLC. It is equipped with an M12 locking connector, which is easy to connect and disconnect and has ahigh protection level. It can measure both positive and negative pressures.
Since it has both switch output and analog output, this sensor can be used either as a pressure switch or as a pressure transmitter.

Principle characteristics

PN80D

The PN80D utilizes a diffusion silicon sensor for pressure measurement. The signal is processed by a post-processing circuit and converted into standard industrial electrical signals for output and display6. Featuring an all-metal enclosure design and a high-brightness LED digital display, this series is suitable for various industrial applications6.
The dual-button design and menu interface enhance user-friendliness, while multiple connection methods accommodate diverse installation requirements6. Additionally, the 330-degree rotatable display head ensures optimal viewing angles across different installation orientations

Principle characteristics

PN-533

The PN-533 uses a diffused silicon sensor for pressure measurement. After signal processing by the post-processing circuit, the signal is converted into a standard industrial electrical signal for output and display.
The all-metal housing design, combined with a high-brightness LED digital display, enables this product series to be applied in various industrial environments. The dual-button design and menu system enhance user convenience, while multiple connection options fully meet specific installation requirements

Principle characteristics

PN800

The PN800 series intelligent pressure switch adopts a high-precision diffusion silicon sensor core, ensuring high precision and durability. It features a maximum measurement range of -1...600 bar, with menu-driven configuration for setting switch activation start/end points, output functions, and storage parameters, eliminating the need for on-site adjustments.

The design offers high reliability with outputs directly compatible with PLC systems. It is equipped with M12 locking connectors for easy installation/removal and high IP protection rating, capable of measuring both positive and negative pressure.

Principle characteristics

PN10

The pressure switch utilizes a diaphragm (for low pressure) or piston (for high pressure) as the sensing element, suitable for detecting gas or liquid pressure. When the pressure reaches the set value, the moving component triggers a spring- supported micro switch. It supports panel mounting and can measure neutral gases, air, lubricating oil, engine oil, and other media.

—Maximum pressure resistance: Up to 250 BAR
—Adjustable range: 6–40 BAR to 40–250 BAR
—Housing material: Steel
—Contact capacity: 250 VAC, 3A
—Compact design with a small footprint
—Dual-purpose: Suitable for both gas and liquid media
—Output type: SPDT (Single Pole Double Throw) with normally open (NO) and normally closed (NC) contacts
—This design combines robust construction with precise pressure sensing, making it ideal for industrial applications requiring reliable pressure monitoring and control

Principle characteristics

PN10C

The pressure switch utilizes diaphragm (low-pressure) or piston (high-pressure) sensing elements for detecting gas or liquid pressure. When the pressure reaches the setpoint, the actuating mechanism triggers a spring-supported microswitch. It supports panel-mounted installation and can measure neutral gases, air, lubricating oils, engine oils, and other media.

—Hysteresis: ±10% of set value
—Error: ±2% of set value
—Pressure Rating: 900 BAR
—Sealing Material: Nitrile rubber + PTFE

Principle characteristics

PN10D

Pressure switches utilize diaphragm (for low-pressure) or piston (for high-pressure) sensing elements, suitable for detecting pressure in gases or liquids. When pressure reaches the setpoint, actuating components trigger a spring-supported microswitch. Features include:

—Compatible with neutral gases, air, lubricating oils, engine oils, and other media
—Maximum pressure rating: 80 BAR
—High repeatability
—High contact capacity: 250 VAC, 0.6 A
—Compact design with a small footprint
—Gas and liquid compatible
SPDT output (NO + NC)

Mechanical pressure switch series

Principle characteristics

PN11

The built-in piston is connected to a precision spring. When pressure changes, the spring's extension/contraction adjusts accordingly. Once the pressure reaches the set value, it triggers a preset mechanical mechanism and emits a switch signal. These compact pressure switches are designed for OEM applications and serve as ideal choices for engineering machinery, marine valve remote control systems, and other applications requiring high-pressure resistant equipment. With a range of 0.3- 100 BAR (set points are customizable; piston-type set points can exceed 200 BAR), their exceptionally high volume-pressure range ratio can be factory-set or field- adjustable.

—Piston operation and mechanical linkage (as described in piston-engine components)
—Spring force dynamics and pressure coupling principles
—OEM design adaptability for industrial systems
—Pressure calibration terminology and range specifications

Principle characteristics

PN20

The built-in piston is connected to a precision spring. When the pressure changes, the spring's expansion and contraction change accordingly. When the pressure reaches the set value, it will trigger a preset mechanical structure and send out a switch signal.

It features a compact structure and uses a standard solenoid valve plug, making wiring extremely convenient. It has a wide measurement range (0 - 400 BAR) and high overload capacity (up to 1230 BAR). It offers high repeatability, with normally open or normally closed contacts. The contacts are gold-plated and have a large contact capacity. It can be used for measuring the pressure of water, oil, and gas.

Piston: A steel piston with NBR sealing.
Wiring method: Terminal wiring.
Medium temperature: -20...85°C (-40...160°C optional).

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Mechanical pressure switch series

Principle characteristics

PN400 PN40D

The controller adopts diaphragm-type, bellows, piston, and Bourdon tube pressure-sensing elements. The standard model can be used in environments with gases, liquids, or vapors corrosive to the sensing elements to achieve automatic pressure control.

The explosion-proof model, marked with Ex db II T6 Gb certification, is suitable for automatic pressure control in Group IIA, IIB, IIC explosive gas mixtures (T1- T6 temperature classes) environments containing gases, liquids, or vapors non-corrosive to the sensing elements923.Adjustable setting range: -0.1~40 MPa Working pressure: 1.5 times the rated pressure range

Principle characteristics

PN41

The controller employs sensing elements such as membrane, bellows, piston, and spring tube, with the standard type suitable for automatic pressure control in environments involving non-corrosive gases, liquids, or steam that do not corrode the sensing elements.

The explosion-proof model features the Ex db IIC T6 Gb certification, enabling automatic pressure control in hazardous locations with IIA, IIB, or IIC class explosive gas mixtures (temperature groups T1 to T6) where non-corrosive gases, liquids, or steam are present.The setpoint adjustment range of the controller is -0.1 to 40 MPa, and the operating pressure can reach 1.5 times the measurement range.

Temperature sensor

Principle characteristics

T300 T310

This device incorporates a PT100 probe. The resistance value of PT100 varies with temperature1012. The T300 model offers multiple wiring configurations including two-wire, three-wire, and four-wire specifications12.

Easy Installation: Simple setup process with multiple measurement ranges available Probe Options: Various probe specifications to choose from Robust Construction: Full stainless steel housing with compact and durable structure710 Field-mounted instruments Cabinet-mounted control panels Application Flexibility: Suitable for both gas and liquid media systems including:

Water supply systems
Hydraulic/pneumatic systems89
Cooling/heating systems
HVAC systems

Principle characteristics

T450 T45B

The device includes a PT100 probe, where the resistance of the PT100 varies with temperature changes. The internal circuit of the T45B converts this resistance value into a linear analog output. Features include:

Easy installation with multiple range options and various probe specifications available

Full stainless steel housing with a compact and robust structure Optional configurations: on-site instruments and cabinet-mounted control panels SN10C gas-liquid dual-use type, applicable for water supply systems, hydraulic/pneumatic systems, cooling systems, heating systems, and air conditioning systems

Principle characteristics

T451

The T451 is a temperature transmitter specifically designed for the food and hygiene industries. It utilizes a high-precision PT100 RTD (Resistance Temperature Detector) for temperature measurement. The detected signal is processed by a back-end circuit and converted into a standardized electrical signal output. Its housing design features a fully stainless steel structure, ensuring no contamination to the measured medium or environment. The specialized sanitary clamp connection method facilitates easy cleaning and sterilization without dead corners.

Optional ConfigurationsHART protocol output is available as an option. A display screen can be optionally added based on user requirements.

—Applications
—Food industry
—Pharmaceutical industry
—Industrial equipment
—Water treatment
—Hydraulic lubrication

Principle characteristics

T550 T55D

This is a temperature transmitter with a wide measurement range, utilizing thermocouples or PT100 platinum resistance thermometers for temperature measurement. The signal is processed by a rear circuit and converted into a standard industrial electrical signal output. The full-metal housing design enables the product series to be applied in various industrial environments. Optional HART output is available. The rotatable electronic head allows users to adjust the cable outlet direction according to requirements.

—Current consumption: Matches the output signal current (4...20 mA)
—Accuracy: ⩽ ±0.2% of the range
—Sensor: PT100 Class A (PT1000 available upon request)

Digital display intelligent temperature switch

Principle characteristics

T850 Series Temperature Measurement System Specifications The system employs high-precision sensors for temperature measurement. Signals are processed by the rear circuitry and converted into standard industrial electrical signals for output and display. Robust Construction
Full metal casing design High-brightness LED digital display Operational Convenience Dual-button interface with menu navigation Economical model with 4-digit LED display Adaptive Design
PNP/NPN programmable output options
Rotatable display head (330° adjustable viewing angle)
Multiple connection configurations for diverse installation requirements
Industrial Applications
Suitable for harsh industrial environments
Modular design ensures compatibility with standard automation systems

T850 T870 T85D

Principle characteristics

The T85C Series Intelligent Temperature Controller is an intelligent digital temperature measurement and control product that integrates temperature measurement, display, output, and control. Featuring a fully electronic structure, it employs an isolated diaphragm oil-filled piezoresistive temperature sensor at the front end. Through high-precision A/D conversion and microprocessor-based processing, it achieves on-site display while outputting one analog signal and four switch signals.
This intelligent digital temperature controller offers flexible usage, simple operation, easy debugging, and high safety and reliability. It is widely applied in industries such as hydropower, water supply, petroleum, chemical processing, machinery, and hydraulics for on-site temperature measurement, display, and control of fluid media.

T85C

Principle characteristics

The T860D utilizes a high-precision sensor for temperature measurement. The signals are processed by the rear processing circuit and converted into standard industrial electrical signals for output and display. Featuring an all-metal housing design and a high-brightness LED digital display, this product series is suitable for various industrial environments36.
Dual-button design and menu-driven interface for enhanced user convenience. Multiple connection methods to accommodate diverse installation requirements36.
Load RA: ⩽0.5KΩ
Linearity: ⩽0.5% of full scale
Protection rating: IP6736. This design combines structural durability with precise measurement capabilities, making it adaptable to demanding industrial applications.

T86D

Principle characteristics

The temperature and humidity transmitter adopts a high-precision digital chip, capable of measuring temperature and humidity and outputting standard industrial signals through the transmitter.
Compact size, high accuracy, stable performanceSupports analog signals and RS485/232 outputs
Excellent cost-performance ratio, suitable for various operating environments Low temperature drift, fast response speed Reverse polarity and overvoltage protection

T100D F11

Temperature switch

Principle characteristics

The T300 integrates a PT100 probe, whose resistance varies with temperature. It offers several specifications including two-wire, three-wire, and four-wire configurations.
Simple Installation: Multiple measurement ranges and probe specifications available. Durable Design: Full stainless steel housing with a compact and robust structure. Optional Accessories: Supports field-mounted instruments or cabinet-mounted control panels
Versatile Applications: Suitable for both gas and liquid media, widely used in water supply systems, hydraulic/pneumatic systems, cooling/heating systems, air conditioning, and automation engineering

T100

Principle characteristics

The T200 series operates based on the bimetallic strip principle. When the temperature reaches the set value, one end of the coiled bimetallic strip in a ring-shaped bend expands due to heat, triggering the internal mechanism and activating the switch operation. The portion of the T200 in contact with the medium is made of brass material, with available thread interfaces including G1/4, G3/8, and M22×1.5.
Its temperature range spans from 30°C to 120°C. The T200S temperature switch series meets diverse temperature control requirements in hydraulic, lubrication, and transmission systems, designed to detect whether temperatures exceed the upper or lower limits.

T200

Principle characteristics

LF500

The LF500 series integrated temperature and level sensor contains a PT100 probe, where the resistance of the PT100 varies with temperature, and the internal circuitry converts its value into a linear analog output. Additionally, a magnetic induction technology sensor is used for level measurement, and the signal is processed by the rear processing circuitry and converted into standard industrial electrical signals. It achieves dual analog outputs for temperature and level.
Current-type analog output: ⩽±0.5% of range
Load RA: ⩽0.5 kΩ
Pressure resistance: 50 BAR
Protection rating: IP67

Principle characteristics

LF600 LF601 LF602

Liquid level measurement is conducted using a magnetic induction technology sensor. The signal is processed by the rear circuit, converted into standard industrial electrical signals for output and display. The float is installed inside a sealed non-magnetic stainless steel tube containing reed switches. Inside the float, a ring-shaped magnetic ring is embedded. As the liquid level rises or falls, the float moves accordingly, triggering or releasing the reed switches within the stainless steel tube to generate switch signals.
—Fully metallic housing design
—Equipped with high-brightness LED digital display, enabling application across various industrial environments
—Dual-button design with user-friendly menu interface for enhanced operational convenience
—Multiple connection options to accommodate diverse installation requirements 330° rotatable display head ensuring optimal viewing angles under different installation configurations

Principle characteristics

LF60A

The compact static pressure level transmitter uses an isolated diffused silicon pressure sensor. The level pressure will change the value of the stress measurement element, thus changing the measurement signal. After being processed by the integrated circuit, this signal is converted into an industrial
—standard electrical signal for output.
—It features an all - metal housing design.
—It is suitable for non - crystalline media.
—With a high - brightness LED digital display, this series of products can be used in various industrial applications.
—The double - key design and user - friendly menu make the product more convenient to use.
—Multiple connection methods can fully meet various specific installationrequirements.
—The display head that can rotate 330° ensures the best viewing angle under different installation methods.

Principle characteristics

LF60C LF60D

High-precision sensors are used for temperature measurement. After the signals are processed by the rear processing circuit, they are converted into standard industrial electrical signals for output and display. The float ball consists of a reed switch installed inside a sealed non-magnetic stainless-steel tube, and a ring- shaped magnetic ring is installed in the float ball. As the liquid level rises or falls, the float ball moves accordingly, thereby triggering or releasing the magnetic reed switch inside the stainless-steel tube to send out switch signals.
Featuring an all-metal housing design.
Adopting high-brightness LED digital displays, this series of products can be used in various industrial applications.
The double-button design and user-friendly menu make the products more convenient to use.
Multiple connection methods can fully meet various specific installation requirements.
The display head that can rotate 330° ensures the best viewing angle under different installation methods.

Principle characteristics

LF60E LF60G

High-precision sensors are used for temperature measurement. The signal is processed by the rear circuitry and converted into a standard industrial electrical signal for output and display. Float Structure: The float is housed within a sealed, non-magnetic stainless steel tube containing a reed switch. Inside the float is an annular magnetic ring. As the liquid level rises or falls, the float moves, activating or releasing the reed switches within the stainless steel tube to generate switch signals.
Full Metal Housing Design: Equipped with high-brightness LED digital displays, enabling use in diverse industrial environments.
Dual-Button Design: User-friendly menu navigation simplifies operation.
Versatile Connectivity: Supports multiple connection methods to accommodate specific installation requirements.
Dual Display & Control Panel: Simultaneously monitors and displays temperature and liquid level.
Customizable Settings:Adjustable switch alarm points within the measurement range.
Independent analog output for precise control.

Principle characteristics

LF700

The LF700 series displacement sensors calculate the exact position of the magnetic field intersection point based on the time when the strain pulse signal generated by the intersection of two different magnetic fields is detected. One of the magnetic fields comes from the pulse excitation generated by the electronic components in the sensor's electronic compartment. The magnetic field produced by this excitation pulse travels along the waveguide wire made of high magnetostrictive material inside the sensor's measuring rod at the speed of light from the end of the electronic compartment towards the tail end. When it intersects with the moving permanent magnetic field (the permanent magnet is generally installed on the moving plate whose position needs to be detected), due to the magnetostrictive effect, a mechanical strain pulse is generated at the intersection point on the waveguide wire. This pulse travels back to the electronic compartment end through the waveguide wire at the speed of sound and is detected by the detection circuit in the electronic compartment.

Principle characteristics

LF710

The magnetic float ball triggers the reed switches in the detection rod as the liquid level changes, causing the total resistance of the sensor to vary. This signal is converted by the transmitter into a standard 4-20 mA output.
The LF710 series is cost-effective with a long lifespan, suitable for level limit monitoring or continuous monitoring.
It can be combined with monitoring instruments to achieve upper/lower limit alarms or continuous control, and is applicable for liquid level measurement with density ⩾0.75 g/cm^3.

Liquid level sensor

Principle characteristics

LF701

The magnetostrictive level transmitter operates based on the magnetostrictive principle, featuring no mechanical moving parts. This eliminates friction and wear, ensuring the entire converter remains sealed within a tube and non-contact with the measured medium. Consequently, the sensor operates reliably with a long service life.
Utilizing a waveguide pulse system, the magnetostrictive level transmitter determines displacement by measuring the time interval between the initial and termination pulses. This method achieves exceptional measurement accuracy, with a resolution surpassing 0.01% of full scale (F.S.)—a precision rarely attainable with other sensor technologies.
The device is typically installed through existing tank openings on the tank top, making it particularly suitable for underground storage tanks and operational tanks. Installation can be performed without interrupting normal production processes.
The magnetostrictive level transmitter employs standard output signals, enabling seamless signal processing with microcomputers. This facilitates networked operations, significantly enhancing the automation level of measurement systems.

Principle characteristics

LF70A

The LF70A series liquid level transmitters adopt imported sensor pressure - sensitive elements and use computer laser resistance adjustment for temperature compensation. They feature an integrated junction box design.
These transmitters come with dedicated wiring terminals and a digital display, which makes installation, calibration, and maintenance convenient. This series of products is suitable for various enterprises and institutions in industries such as petroleum, water conservancy, chemical engineering, metallurgy, electric power, light industry, scientific research, and environmental protection. It can measure the liquid level height and is applicable to all - weather environments in various occasions and all kinds of corrosive fluids.
Multiple range options.
Digital pressure display.
Easy zero - point and range adjustment.
Reverse polarity protection and current - limiting protection.
Resistance to lightning strikes and impacts.
Intrinsically safe and explosion - proof.

Level(liquid)switch

Principle characteristics

LF650

The LF650 series ultrasonic level (material) sensor is installed at the top of a container. Under the control of an electronic unit, the transducer emits an ultrasonic pulse toward the measured object. The sound wave reflects off the object's surface, and a portion of the reflected echo is received by the transducer, which converts it into an electrical signal. The time interval between the emission and reception of the ultrasonic wave is proportional to the distance between the transducer and the measured object. The electronic unit detects this event and calculates the measured distance using the known speed of sound. By performing a subtraction operation, the level (material) value is determined.
Real-Time Automation: Provides continuous, real-time level data.
Compatibility: Connects via 4-20 mA signals to display meters or various DCS systems.
High Precision: Industrial-grade accuracy of ±0.25%.
Interference Resistance: Immune to various interference waves.
Non-Contact Design: Does not come into direct contact with liquids, minimizing failure rates.

Principle characteristics

LF1000

The LF1000 series level (liquid) switch products are structurally divided into a main electrode and a compensation electrode. A set of RF frequency signals is applied between the main electrode and the compensation electrode, enabling excellent anti-adhesion and anti-scaling properties. This makes it a novel material/liquid level measurement product that can replace traditional capacitive level switches.
Detects various materials, including fly ash, granular materials, powders, liquids, and viscous media.
Operates under extreme conditions: withstands temperatures up to 800°C and pressures up to 5 MPa.
Suitable for corrosive environments and high-impact conditions.
The sensor probe automatically calibrates for scaling during measurement.
Eliminates the need for regular cleaning, reducing false measurements and erroneous signals.
High-capacity output contacts ensure stable switching.
Status indication via LED lights and adjustable delay settings mitigate false alarms caused by medium fluctuations.

Principle characteristics

LFP

The RF capacitive level meter operates based on the principle that changes in material/liquid level cause corresponding variations in capacitance. The measuring probe and the tank wall (conductive material) form a capacitor. When the probe is in air, this equivalent capacitor exhibits a relatively low measurable capacitance (CA). As the container is filled with material and the probe becomes gradually covered by the medium, the equivalent capacitance between the probe and the tank wall progressively increases. When the container is fully loaded, the probe is entirely coated by the medium, allowing the maximum measurable capacitance (CB) to be detected. The capacitance difference (ΔC) between CA and CB constitutes the measurement range. (It is recommended to use within a range of ΔC = 25 to 2000 pF).
Capacitance level measurement relies on detecting changes in the relative surface area of electrodes caused by material level variations, which directly affects capacitance values . The fundamental calculation formula for capacitance variation is $\Delta C = (0.885 \cdot \varepsilon \cdot \Delta S)/d$, where ΔS represents the area covered by the medium .
This method demonstrates high reliability in extreme conditions like high temperature, strong corrosion, and high pressure due to its non-contact measurement principle

Principle characteristics

LF100D

The LF100D Series Miniature Capacitive Level Switch detects material levels by measuring the capacitance between the sensing rod and the container wall, using the measured substance as the dielectric medium. When the sensing rod is covered by material, the capacitance gradually increases. Once it reaches the circuit's matching threshold preset in the switch, the circuit generates high frequency resonance, converting this resonant signal into a switching action.
The capacitance calculation formula is:
$C = (0.0884 \times K \cdot A) / TD$
where:
K = Dielectric constant of the material
A = Contact area between the sensing rod and material
TD = Thickness of the insulation layer

Liquid level sensor

Principle characteristics

LF100

The LF100 Series Tuning Fork Material Level Limit Switch is a universal device designed for both solid and liquid level detection. The fork is excited into vibration by a piezoelectric crystal. When immersed in liquid or solid material, the fork's vibration frequency changes. This frequency variation is detected by electronic circuits and converted into a switch signal. Key features include:
Immunity to Interference: Unaffected by medium's electrical parameters, turbulence, agitation, bubbles, or external vibrations .
Maintenance-Free Design: Contains no moving parts, eliminating the need for maintenance or adjustment .
Versatile Applications:
Hydraulic/lubrication systems
Pump protection
Cooling systems
Pulp industry
Density Independence: Operates reliably regardless of medium density or electrical characteristics .

Principle characteristics

LF100B

The LF100B series fork-type level limit switch is a versatile device for detecting liquid or solid level limits. The fork is vibrated by piezoelectric crystals, and when submerged in liquid or solid material, the vibration frequency changes. This frequency shift is detected by electronic circuits, which are unaffected by the electrical properties of the medium, turbulence, agitation, bubbles, or external vibrations. With no moving parts, the switch requires no maintenance or adjustments, making it an ideal choice for complex operating conditions.
Self-Diagnostic Function
The fork incorporates a self-diagnostic feature to address two critical issues:
Mitigating Vibration Absorption: Overcomes the "absorption of vibration (S N 1 0 C phenomenon)" caused by mounting the fork on tank walls.
Preventing Interference: Shields against noise interference to avoid false triggering.
Density-Based Calibration
The factory default setting uses water density (1 g/cm^3) as the reference for state switching.

Principle characteristics

LF100C

The insertion-type density meter (concentration meter) adopts an insertion-type installation and is widely applicable for detecting the density of media in pipelines, open tank containers, and closed tank containers. The density of the fluid directly depends on the vibration frequency received by the tuning fork of the sensor inserted into the medium. The sensor is equipped with a built-in temperature sensor for temperature compensation.
Scope of application: The insertion-type density meter (concentration meter) can perform real time online density detection. It can be used in the process control of products with density as a basic parameter or in quality control with solid percentage or concentration percentage as a reference. Typical industries include the petrochemical industry, brewing industry, food industry, pharmaceutical industry, and mineral processing (such as clay, carbonates, silicates, etc.).

Liquid level switch

Principle characteristics

LF01

Structure & Principle
A reed switch is encapsulated in a sealed non-magnetic stainless steel tube. The float contains a ring-shaped magnet. As the liquid level rises or falls, the float moves vertically to actuate or release the reed switch inside the tube, generating switch signals.
Installable at the top or bottom
Compact and robust structure
Reliable performance with high repeatability
Long service life and high-temperature resistance
Suitable for liquid level measurement with density ⩾0.75 g/cm^3
Specifications
Maximum pressure: 5 BAR
Contact type: Reed switch contacts
Technical descriptions of reed switch mechanisms in liquid level sensors Density requirements and installation methods from industrial specifications

LF02 LF03 LF04

Principle characteristics

LF20D LF200 LF21

A reed switch is installed inside a sealed non-magnetic stainless steel tube, with an annular magnetic ring embedded in the float.
As the liquid level rises or falls, the float moves accordingly, triggering or releasing the reed switch within the stainless steel tube to emit switch signals.
This design features a long service life and high-temperature resistance.
It can be installed at the top or bottom of the container, offering a compact and robust structure, reliable performance, good repeatability, and adaptability to high-temperature environments.
It is suitable for liquid level measurement with stainless steel floats (density⩾0.75g/cm^3) and NBR floats (density <0.75g/cm^3).

Principle characteristics

LF80A

The LF80A electronic liquid level switch detects water levels through its built-in electronic probe. Signals processed by the chip output a high-level voltage (24V or 5V, PNP type) when water is detected, and 0V when no water is present 17. These high/low level signals are read by PLCs or other control circuits to activate electrical appliances such as water pumps. As the liquid level changes, the linkage rod connected to the float ball adjusts accordingly, controlling the switch's on/off state .
This electronic liquid level switch features fully customizable on-site parameter configuration, supporting dual switch alarm points for real-time monitoring of liquid level conditions .
Operational principles of electronic liquid level switches .
Integration with control systems and parameter customization .
Mechanical linkage mechanisms in liquid level detection

Principle characteristics

LF210

When the liquid level rises or falls, it drives the stainless steel magnetic float ball to move up and down, which triggers the reed switch in the detection rod to emit a signal.
The LF210 series is cost-effective with a long service life, suitable for limit monitoring or continuous monitoring of liquid levels.
The switch-output type provides multi-float multi-point monitoring, enabling upper/lower limit alarms or continuous control.
It is designed for liquid level measurement with a density of ⩾0.75g/cm³.

Principle characteristics

LF21D LF22

Working Principle & Features
Ferromagnetic reed switch sensor. The float guide rod is equipped with an annular magnetic ring. As the liquid level rises/falls, the float moves vertically, thereby triggering or releasing the magnetically actuated reed switch encapsulated in the stainless steel tube to generate switching signals.
Structural Advantages
Supports top/bottom installation
Compact and robust structure
High reliability & repeatability
Extended service life
High temperature resistance
Application Specifications
Medium temperature range: -10°C to 130°C
Medium density requirement: ⩾0.75g/cm³

Principle characteristics

LF110

This series is a novel electrical signaling control device for liquid level height, primarily designed for automatic control or alarm functions in tank liquid levels and liquid source motors. Key features include:
Compact structure
Sensitive control
Simple installation
Customizable dimensions according to specific requirements

Principle characteristics

LF800

The LF800 series magnetic flap level gauge consists of a main body, a flap box (composed of small magnetic flaps in red and white), a float, flange covers, etc. It is used for measuring the liquid level in various liquid containers. It can be applied in scenarios such as high - temperature, explosion - proof, anti - corrosion, and food and beverage industries, providing local or remote level display and control.
The LF800 series magnetic flap level gauge features high - level sealing and leakage prevention. It can measure the liquid level safely and reliably under conditions of high temperature, high pressure, high viscosity, and strong corrosion. The whole - process measurement has no blind spots, with a prominent display and intuitive readings. It also has a large measurement range. When equipped with a level alarm and control switch, it can achieve upper and lower limit alarms and control of the liquid level or interface. When equipped with a level transmitter, it can convert the level and interface signals into a standard two - wire 4 - 20MADC signal, enabling long - distance detection, indication, recording, and control.

Principle characteristics

LF900

The cable float level controller is designed based on the principles of gravity and buoyancy. It mainly consists of a floating body, a large-capacity micro switch installed inside the floating body, a driving mechanism that can turn the switch on or off, and a three-core cable connected to the switch. When the float rises or falls with the liquid level under the action of buoyancy and reaches a certainangle with the horizontal, the driving mechanism inside the float drives the large- capacity micro switch, thereby outputting an "ON" or "OFF" signal for alarm prompts or remote control.
It is integrally molded by plastic injection using imported patented technology (PP), or sealed with a compression nut and silicone (SUS).
It can be used in conjunction with various water pumps and is widely applied in the automatic control of water supply and drainage, as well as the liquid level of corrosive and suspended - matter - containing liquids.

Ultrasonic sensor

Principle characteristics

Ultrasonic sensors mainly consist of a transmitting part, a receiving part, a control part, and a power supply.
The transmitting part is composed of a transmitter and a transducer. The transducer can convert the energy generated when the piezoelectric wafer vibrates under voltage excitation into ultrasonic waves, and the transmitter emits the generated ultrasonic waves.
The receiving part consists of a transducer and an amplifier circuit. The transducer receives the reflected ultrasonic waves. As mechanical vibrations occur when receiving ultrasonic waves, the transducer can convert mechanical energy into electrical energy, and then the amplifier circuit amplifies the generated electrical signal.
The control part is responsible for controlling the entire working system. First, it controls the transmitter to emit ultrasonic waves. Then it controls the receiver, determines whether the received ultrasonic waves are those emitted by itself, and finally identifies the magnitude of the received ultrasonic waves.

LF91A

LF91B

LF91C

Centrifugal filter

Principle characteristics

Centrifugal separation devices are currently the most popular filtration devices. This filtration technology is inspired by the principle of cyclone separation, and then this device is developed.
The centrifugal separation device is a technological product that separates liquids and solids using the principle of centrifugation. It can filter dirty cutting fluids, achieving a better filtration effect than products with similar functions. Moreover, it has no consumables and requires no maintenance. It is currently the most cost - effective product on the market.
The device is exquisitely designed and produced by molds. Its interior is polished to achieve the best separation effect. When pressurized at 0.3 MPA, it can filter out 99% of iron filings larger than 10 μm. It can also handle magnetic debris, non - magnetic grinding powder, aluminum chips, etc.

AS