FRID SENSOR

Wireless Measurement

FD60
FD60 Wireless Pressure Transmitter

Range: 0kPa~10kPa~ 100MPa
Power: Battery powered
Accuracy: ±0.5%F.S; ±1%F.S
Output: NB-LOT;Zigbee;LoRa;4G
Drift: 0.2%F.S/year
Feature: Widely used in petrochemical, food, storage tanks etc. For relatively harsh, it has comparison Obvious advantage,IP65.
Medium: Gas、liquid、steam、etc.

FD68
FDWB68 Wireless Temperature Transmitter

Range: -200℃~600℃
Power: Battery powered
Accuracy: ±0.5%F.S; ±1%F.S
Output: NB-LOT;Zigbee;LoRa; 4G
Drift: 0.5%F.S/year
Feature: Easy to use, has various output forms for petrochemical, food, medical and pharmaceutical, metallurgy etc.
Medium: Gas、liquid、steam、etc.

FD66
FD66 Wireless Liquid Level Transmitter

Range: 0m~1m~20m
Power: Battery powered
Accuracy: ±0.5%F.S; ±1%F.S
Output: NB-LOT;Zigbee;LoRa;4G
Drift: 0.3%F.S/year
Feature: IP68 protection level, suitable for petrochemical Industrial, power plant, urban water supply, hydrological
Medium: liquid

FRID SENSOR Control System

Vacuum Control System

1. vacuum pumps, vacuum units, and non-standard vacuum equipment.
2. Provide control solution.
3. Provide LNG, CNG cryogenic equipment, and fully automatic Mobile production line control system.

Sewage treatment, environmental protection equipment

1. High-density sedimentation tank, ozone oxidation and BAF equipment .
2. Domestic water purification, wastewater treatment.
3. Environmental and gas equipment electric control systems.

Automation Control System In Pharmaceutical Field

1. Design non-standard automation system.
2. Collect and upload data from the chemical and pharmaceutical field to the central control system, Cloud monitoring.

DCS Automatic Control System

1. control cabinets, consoles, industrial computers, sensors, Composition of communication module and instrument.
2. Realize automatic through PLC and touch screen or industrial control.
3. PLC remote monitoring.
4. Real-time data query.

Explosion-proof control system, alarm system

1. DIIBT4, DICT4 explosion-proof control cabinet, positive pressure cabinet, Operation column.
2. Explosion-proof cabin with online integrated control system.
3. On-site gas control and alarm system.

Pump room control system

The automated pumping station (DATA86) is suitable for remote monitoring and management of the boosting pumping station in the water supply system of Qiancheng City, and the pumping station is unattended.

website:www.frdsensor.com
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About us

Shandong Friend Control System Co., Ltd. is a national high-tech enterprise specializing in instrument development, manufacturing and industrial control system services; We have experience in the design, development and production of process industry field instruments such as pressure, differential pressure and temperature, and provide industrial automation application scenario solutions; the product application range is wide, and can be used in petrochemical, heating, water, pharmaceutical, fire protection, new energy and other fields.

The company obtained the high accuracy 0.05% pressure transmitter design and manufacturing qualification certificate; the company focuses on the research and development and sealing and testing of high-precision Monocrystalline silicon pressure sensors, bring in leading domestic and international testing equipment, and builds clean workshops and high-precision Monocrystalline silicon pressure sensors sealing and testing production lines, which can reach an annual output of 200,000 pressure sensors and transmitter instruments; sensor temperature compensation and aging processes realize dark light factories, unattended automatic operation, to ensure efficient production and product quality.

With the business philosophy of innovation, pragmatism and dedication, we are committed to serving the global industrial automation instrument field, and aim to become a leader in the sensing and control industry.

FIRD SENSOR

Pressure Measurement

FD3051S TG/TA
FD3051S Monocrystalline Silicon Pressure Transmitter

Range：0kPa~200Pa-- 40MPa
Power：12V~32VDC
Accuracy：0.075%F.S; 0.1%F.S
Output：4mA~20mA+HART; RS485
Drift：0.1%F.S/year
Feature：High precision, high stability, 100:1 turndown ratio, superior performance,overpressure
Medium：Gas、liquid、steam、etc.

FD3051S DP/DR
FD3051S Monocrystalline Silicon Differential Pressure Transmitter

Range：0kPa~200Pa-- 3MPa
Power：12V~32VDC
Accuracy：±0.075%F.S; ±0.1%F.S
Output：4mA~20mA+HART; RS485
Drift：0.1%F.S/year
Feature：High precision, high stability, 100:1 turndown ratio, superior performance, High static pressure
Medium：Gas、liquid、steam、etc.

FD3051S LG/LA
FD3051S Monocrystalline Silicon Single Flange Transmitter

Range：0kPa~6kPa-- 10MPa
Power：12V~32VDC
Accuracy：±0.25%F.S; ±0.5%F.S
Output：4mA~20mA+HART; RS485
Diaphragm：316L; Hastelloy; Tantalum; fluorine-coated, gold-plated, etc.
Feature：Easy installation, corrosion resistance, wide range, suitable for open container
Medium：Gas、liquid、steam、etc.

FD3051S LT
FD3051S Monocrystalline Silicon Single Flange Transmitter

Range：0kPa~6kPa-- 10MPa
Power：12V~32VDC
Accuracy：±0.25%F.S; ±0.5%F.S
Output：4mA~20mA+HART; RS485
Diaphragm：316L; Hastelloy; Tantalum; fluorine-coated, gold-plated, etc.
Feature：Easy installation, corrosion resistance, wide range, suitable for open container
Medium：Gas、liquid、steam、etc.

FD80F
FD80F Sanitary Pressure Transmitter

Range：0kPa~10kPa-- 3MPa
Power：16V~28VDC
Accuracy：±0.25%F.S; ±0.5%F.S
Output：4mA~20mA; 1V~5VDC, RS485
Drift：0.2%F.S/year
Feature：Easy to install, small size, easy to clean, and good in temperature resistance.
Medium：Gas、liquid、steam、etc.

FD80B
FD80B Universal Pressure Transmitter

Range：0kPa~10kPa-- 100MPa
Power：16V~28VDC
Accuracy：±0.25%F.S; ±0.5%F.S
Output：4mA~20mA; RS485,other
Drift：0.2%F.S/year
Feature：Widely used in process control, hydraulic equipment, chemical industry etc.Obvious for harsh environment, IP65.
Medium：Gas、liquid、steam、etc.

FD80A
FD80A Compact Pressure Transmitter

Range：0kPa~10kPa-- 100MPa
Power：16V~28VDC
Accuracy：±0.25%F.S; ±0.5%F.S
Output：4mA~20mA; RS485 and other signals
Drift：0.2%F.S/year
Feature：Easy to install, small size, widely used, for industrial field environment In harsher conditions, IP65, IP68.
Medium：Gas、liquid、steam、etc.

FD80Y
FD80Y Pressure Gauge

Range：-0.1MPa~0~100MPa
Power：60mm、100mm、150mm
Accuracy：1.6grade, 2.5grade
Type：Standard, Stainless steel, Anti-vibration, anti-corrosion
Temperature：-40~70℃
Process link：M20x1.5, M10x1, etc. can be customized flange or thread
Case：Carbon steel sprayed、SS304、SS316

FD820C
FD820C Embedded Micro Differential Pressure Transmitter

Range：0Pa~100Pa-- 2.5kPa
Power：16V~32VDC
Accuracy：±0.5%F.S; ±1%F.S
Output：4mA~20mA; RS485 and other signals
Drift：0.5%F.S/year
Feature：Suitable for medical treatment, smoke and dust detection, clean workshop, and negative pressure ambulance.
Medium：Gas (clean, dry)

FIRD SENSOR

Temperature Measurement

FDWB
FDWB Compact Temperature Transmitter

Range：-40℃~200℃
Power：16V~28VDC
Accuracy：±0.5%F.S; ±1%F.S
Output：4mA~20mA; RS485 and other
Drift：0.5%F.S/year
Feature：Easy to use, variety of output forms, narrow installation space.
Medium：Gas、liquid、steam、etc.

FDWZ
FDWZ Thermal Resistance

Sensor：PT100;PT1000;Cu50
Accuracy：Alevel;Blevel
Process：Fixed, movable thread;flange
Feature：Easy to use, various output forms, site field installation
Medium：Gas、liquid、steam、etc.

FDWR
FDWR Thermocouple

Sensor：K-type couple, S-type couple, B-type couple, etc.
Accuracy：Blevel
Process：Fixed, movable thread; flange
Feature：Easy to use, various output forms, site field installation
Medium：Gas、liquid、steam、etc.

FDWB
FDWB Integrated Temperature Transmitter

Sensor：PT100, K, S, B Type
Power：16V~28VDC
Accuracy：±0.5%F.S;±1%F.S
Output：4mA~20mA; RS485 and other signals
Drift：0.5%F.S/year
Feature：Easy to use,various output forms, site field installation
Medium：Gas、liquid、steam、etc.

FDWB
FDWB Clamp Sanitary Temperature Transmitter

Sensor：PT100, Cu50/100
Power：16V~28VDC
Diameter：8mm, 10mm, 12mm
Probe：50mm~500mm
Wiring：Waterproof, explosion-proof
Process：50.5mm, 63.5mm
Material：316L stainless steel
Feature:High precisionHigh strength,-good compression resistance; easy to install, meet 3-A sanitary standards.

FDWS
FDBWS Temperature Switch

Range：-200℃~600℃
Power：24VDC, 220VAC
Accuracy：±0.5%F.S; ±1%F.S
Output：4mA~20mA+Switch, RS485+Switch
Drift：0.5%F.S/year
Feature：Easy to use, various output forms, site field installation
Medium：Gas、liquid、steam、etc.

FDWB-SY
FDWB- SY Outdoor Temperature Transmitter

Range：-50℃~50℃
Power：16V~28VDC
Accuracy：±0.5%F.S; ±1%F.S
Output：4mA~20mA, 1V~5VDC; RS485
Feature：Easy to use, various output forms, outdoor temperature measurement
Medium：Ambient air

FDX
FDX Digital Display Controller

Input：Universal input
Power：24VDC; 220VAC
Output：4-20mA, switch value, RS485, Power feed：24VDC(Optional multiple feed)
Accuracy：0.2%F.S
Feature：Various sizes, simple operation, suitable for signal acquisition and observation in industrial field

FDWSS
FDWSS Bimental Thermometer

Case：60mm、100mm、150mm
Head form：axial, radial, universal type
Installation：no fixed, movable thread, fixed thread, fixed flange
Structure：core-pulling type, anti-corrosion type, shock-proof type, explosion-proof type
Function：Remote transmission, electric contact, controller

FIRD SENSOR

Level Measurement

FD86E/F
FD86E/F Submersible Level Transmitter

Range：0m~1m-- 200m
Power：16V~28VDC
Accuracy：±0.25%F.S; ±0.5%F.S
Output: 4mA~20mA; 1V~5VDC, RS485 and other signals
Drift：0.3%F.S/year
Feature：IP68 level, suitable for Petrochemical, power plants, urban water supply, hydrology
Medium：liquid

FD86G
FD86G Armoured Submersible Level Transmitter

Range：0m~1m-- 10m
Power：16V~28VDC
Accuracy：±0.25%F.S; ±0.5%F.S
Output：4mA~20mA; 1V~5VDC, RS485 and other signals
Drift：0.3%F.S/year
Feature：Metal or PTFE material,for corrosive liquid in the industrial field
Medium：liquid

FD86T
FD86T Gas- Pressure Liquid Level Transmitter

Range：0m~1m-- 10m
Power：16V~28VDC
Accuracy：±0.25%F.S; ±0.5%F.S
Output：4mA~20mA; 1V~5VDC, RS485 and other signals
Drift：0.3%F.S/year
Feature：Metal or PTFE material, for high temperature and corrosive medium
Medium：liquid

FD3051LT
FD3051 LT Single Flange Liquid Level Transmitter

Range：0m~0.6m-- 50m
Power：12V~32VDC
Accuracy：±0.25%F.S; ±0.5%F.S
Output：4mA~20mA+HART; RS485
Diaphragm：316L; Hastelloy; Tantalum; fluorine-coated, gold-plated, etc.
Feature：Convenient installation, corrosion resistance, wide temperature range, suitable for open containers
Medium：liquid

FD3051LD
FD3051 LD Remote Flange Level Transmitter

Range：0m~0.6m-- 10m
Power：12V~32VDC
Accuracy：±0.25%F.S; ±0.5%F.S
Output：4mA~20mA+HART; RS485
Diaphragm：316L; Hastelloy; Tantalum; fluorine-coated, gold-plated, etc.
Feature：Convenient installation, corrosion resistance, wide temperature range, suitable for close containers
Medium：liquid

FD3051LF
FD3051 LF Remote Clamp Level Transmitter

Range：0m~0.6m-- 10m
Power：12V~32VDC
Accuracy：±0.25%F.S; ±0.5%F.S
Output：4mA~20mA+HART; RS485
Diaphragm：316L; Hastelloy; Tantalum; fluorine-coated, gold-plated, etc.
Feature：Convenient installation, corrosion resistance, wide temperature range, suitable for close containers
Medium：liquid

FD86R
FD86R Radar Level Gauge

Range：0m~5m-- 70m
Power：18V~28VDC
Accuracy：±3mm; ±5mm
Output：4mA~20mA; RS485
Feature：26GHz High frequency, low power, suitable for water level, storage tank and other industrial sites
Medium：liquid、solid

FD86-N
FD 86- N Ultrasonic Liquid Level Transmitter

Range：0m~5m-- 15m
Power：18V~28VDC
Accuracy：±1mm; ±5mm
Output：4mA~20mA; RS485; Switch
Feature：almost unlimited and can be widely used for liquid or solid materials
Medium：liquid、solid

FD86-UHZ
FD86- UHZ Magnetic Level Gauge

Range：0m~0.3m-- 15m
Power：18V~28VDC
Accuracy：±10mm
Output：4mA~20mA; Switch
Feature：Liquid level for power, petroleum, chemical, metallurgy, environmental protection, shipbuilding, construction, food and other industries.
Medium：liquid

FIRD SENSOR

Flow Measurement

FD7051
FD7051 MultiVariable Flow Transmitter

Principle：Multi-parameter full compensation flow
Power：12V~32VDC
Accuracy：±0.5%F.S
Output：4mA~20mA+HART
Feature：It can be equipped with all differential pressure throttling devices such as orifice, V cone, bar type, etc.

FDL99
FDL99 Nozzle Flowmeter

Pressure：PN 1.0~32MPa
Pipe diameter：50~1000mm
Pressure taking: pressure taking in angle joint ring chamber, in diameter
Nozzle form: long neck nozzle, ISA1932 nozzle
Material：Carbon steel, stainless steel, alloy steel

FDL95
FDL95 Orifice Plate Flowmeter

DN：DN25~DN1600
Type：Standard orifice; balanced orifice
Pressure taking: corner connection; annular chamber, diameter pressure
Feature：Widely used in petroleum, chemical industry, steel, metallurgy, water supply and drainage, water conservancy irrigation, and water treatment.
Medium：Gas、liquid、steam

FDL90
FDL90 Electromagnetic Flowmeter

DN：DN10~DN3000
Power：24VDC; 220VAC; Battery powered
Accuracy：±0.2%F.S; ±0.5%F.S;
Output：4mA~20mA; pulse; RS485
Feature：Widely used in petroleum, chemical industry, steel, metallurgy, water supply and drainage etc.
Medium：Conductive liquid

FDL94
FDL94 Turbine Flowmeter

DN：DN4~DN300
Power：12VDC; 24VDC; Battery powered
Accuracy：±0.2%F.S; ±0.5%F.S;
Output：4mA~20mA; pulse; RS485
Feature：Widely used in petroleum, chemical industry, textile, metallurgy
Production of gold, food, paper, pharmacy, and energy
Medium：liquid

FDL93
FDL93 Vortex Flowmeter

DN：DN25~DN3000
Power：12VDC; 24VDC; Battery powered
Accuracy：±1%F.S; ±1.5%F.S;
Output：4mA~20mA; pulse; RS485
Feature：Widely used in Petroleum, chemical, textile, metallurgy, food,Paper-making, pharmaceutical, energy
Medium：Gas、liquid、steam

FDL91
FDL91 Metal Float Flowmeter

DN：DN15~DN150
Power：12VDC; 24VDC; Battery powered
Accuracy：±1%F.S; ±1.5%F.S;
Output：4mA~20mA; pulse; RS485
Feature：Widely used in petroleum, chemical industry, steel, Metallurgy, water supply and drainage etc
Medium：Gas、liquid、steam

FDL91
FDL91 Sanitary Metal Rotor Flowmeter

DN：DN15~DN200
Range：1m³/h-200m³/h（water）
0.03m³/h-3000m³/h（air）
Accuracy：Standard 1.5 grade, special 1.0 grade
Pressure Level：Up to 6.4MPa
Feature：Used in oil field, chemical industry, oil refining, metallurgy

FDL98
FD L98 Ultrasonic Flowmeter

DN：DN15~DN3000
Power：24VDC; 220VAC; Battery powered
Accuracy：±0.5%F.S; ±1%F.S;
Output：4mA~20mA; pulse; RS485; Switch
Feature：Widely used in petroleum, chemical industry, steel, etc.
Medium：Guided wave single uniform liquid