

Liquid & Solid Smart Level Sensor

祥润
仪表 | INNOVATIONS ENABLE FUTURE
智创未来

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 Industrial sensor

 Hygienic sensor

 Explosion Proof



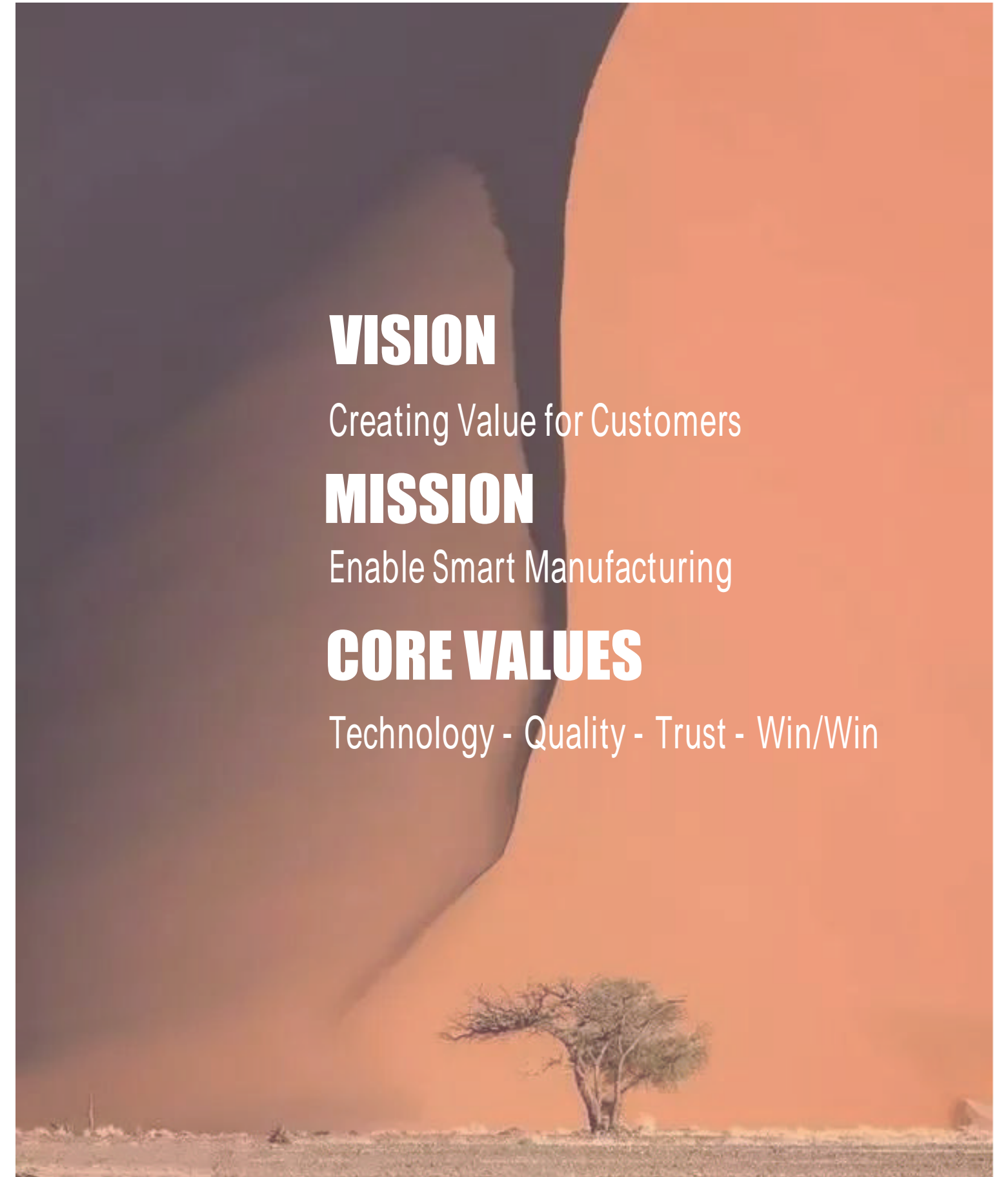
CREATING CUSTOMER VALUE IS OUR TOP PRIORITY

Our mission is to provide our customers the best appropriate devices and technical solutions.

Jining Xiangrun Instrument Co., Ltd. develops products through continuous research through professional engineers and advance technology; and years of experience from field applications. We manufacture a variety of high quality sensors and provide professional services for customers in the field of industrial automation.

We focus on creating value for customers by emphasizing practical solution for the specific needs of each customer.

We are your trusted sensor products and service provider to help you gain competitiveness in the market place.



VISION

Creating Value for Customers

MISSION

Enable Smart Manufacturing

CORE VALUES

Technology - Quality - Trust - Win/Win

Smart Liquid & Solid Sensor



Advantages

- Wide applications: Detect Solid/Liquid and Paste
- High reliability: Not affected by foam but can detect foam
- Adhesive: Able to detect adhesive and conductive paste/slurry
- Compact design : Suitable for tight space installations
- Material : PEEK/Stainless steel for hygienic industrial applications.
- Ahesive : Not affected by adhesive media of maximum viscosity of 50000cp
- Easy to use: Portable device able to check process variable values
- Temperature range: standard model 115°C/ high temp model 150°C/ liquid contact side 200°C

General Industrial Series

Hygienic Industrial Series

Explosion-proof Series



Industry application

Beverages, milk yogurt, beer fermentation and sterilization treatment, solid-liquid environmental treatment, cosmetics, food sauces, lithium battery injection, precision engineering, chemicals, etc.

Highlight

Media separation and phase separation detection

For some specific processes, the material will have different levels of phases, which may need to be identified (such as the oil phase floating on the water surface) or may need to be ignored (such as the foam layer)



Level detection of tanks/vessels and pipelines

Generally, storage tanks, buffer tanks and filling pipelines are equipped with level sensor to detect the level of the material. The extremely short response time of the sensor enables precise and reliable control



Media contamination detection

Media contamination is not only a food safety issue, it is also economically important to be able to remove it from the entire process as early as possible. For example, residual cleaning agents in liquid foods can be reliably detected long before subsequent processing.



Protection of pipeline pumps

Pump applications are ubiquitous in industrial production, and pump idling is a serious process problem, as it can lead to misalignment or damage to equipment. However, even with viscous media or media prone to crystallization, this condition can still be detected by our sensor.



PWM output for sensors for all applications

Can detect a variety of different media
Using Pulse Width Modulation (PWM) technology, users can detect different media in the same production line or processing tank in order to separate out the final product (such as various flavored soy sauce, beer, etc.). The detection uses an analog time signal, which facilitates continuous measurement. In addition, the time signal can be changed according to the DK value (dielectric constant) of the medium. So it is convenient to carry out continuous measurement and can also change different output signals according to the DK value (dielectric constant) of the medium.

Unique Features of Smart Level Sensors

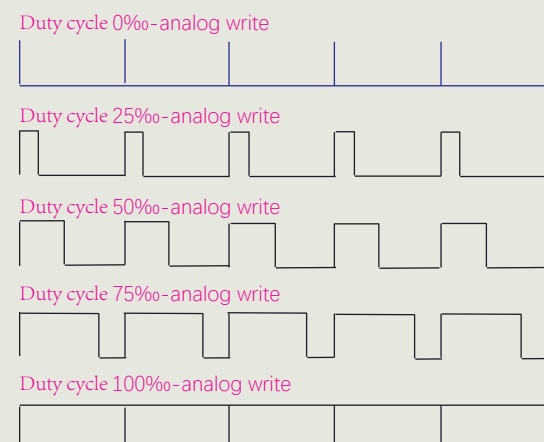
Allows triggering under conditions of multiple media (e.g. stirred vessels)

Ability to detect changes in the DK value of the medium (e.g. to measure the purity of the lubricating oil)

Features of Smart liquid level sensor

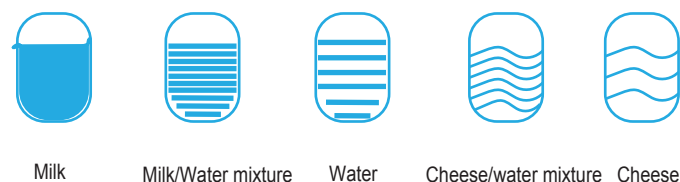
Identify the specific medium that is flowing in the pipeline (eg milk, water, CIP fluid, etc.)

Take action if the medium is contaminated with another medium (e.g. oil is contaminated with water)

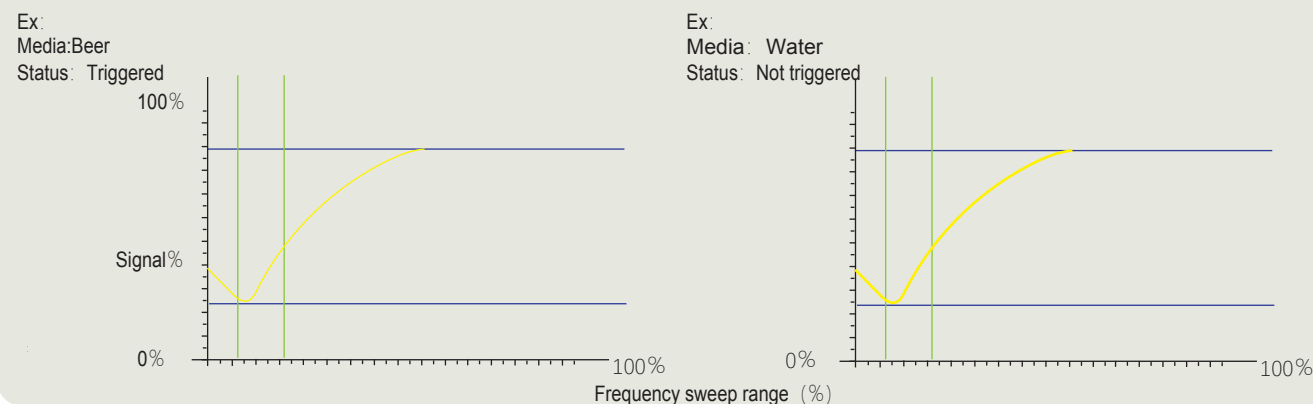


Application example

In dairy production plants water is often used to separate two different products in a pipeline. The PWM technology continuously measures the DK value, ensuring that only product mixed with water is discharged into the waste water system, and no undiluted qualified milk product is wasted. This reduces the amount of waste to a minimum.



Distinguish two very similar media



At some point, the DK value of the two media may be the same, so how to separate it? Setting two separate switch points doesn't help (two blue lines)

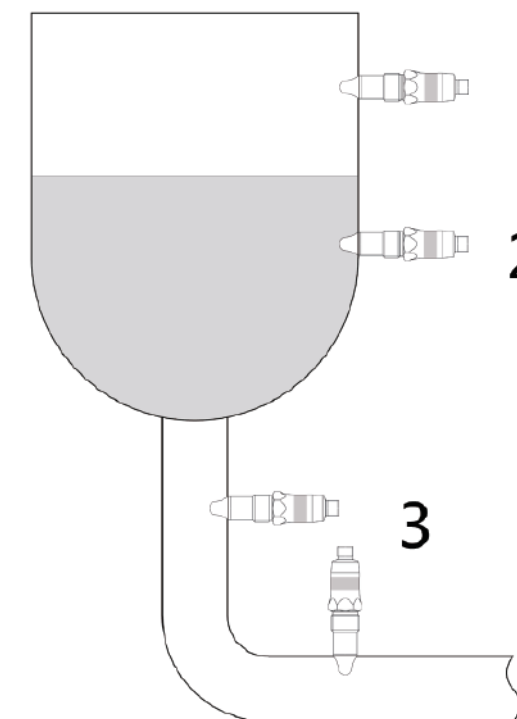
Smart level sensors are the perfect solution, utilizing frequency scanning technology and its ability to analyze signal strength, with different signal transitions for different media. Therefore, even if the DK value of two related media is the same, the sensor still only detects the specific media

Operation specification

Process connection	ID	Work Environment (long-term) Temp. < 50°C	Work pressure (Long-term)	Max work temp. (1hr) Temp.<50°C	Work Pressure (1hr max temp.)
G 1/2 Standard thread type	0	-40~115 °C	-0.1~ 10MPa	135°C	-0.1~ 10MPa
G 1/2 Thread reverse installation type	1	-40~115 °C	-0.1~ 10MPa	135°C	-0.1~ 10MPa
G1/2 Thread with cooling neck type	2	-40~150 °C	-0.1~ 10MPa	135°C	-0.1~ 10MPa

Can be installed anywhere in a pipe or tank
Use a torque wrench to install the sensor at the desire measurement point

- Material level upper limit
- Material level lower limit
- Dry-run protection



Technical parameter

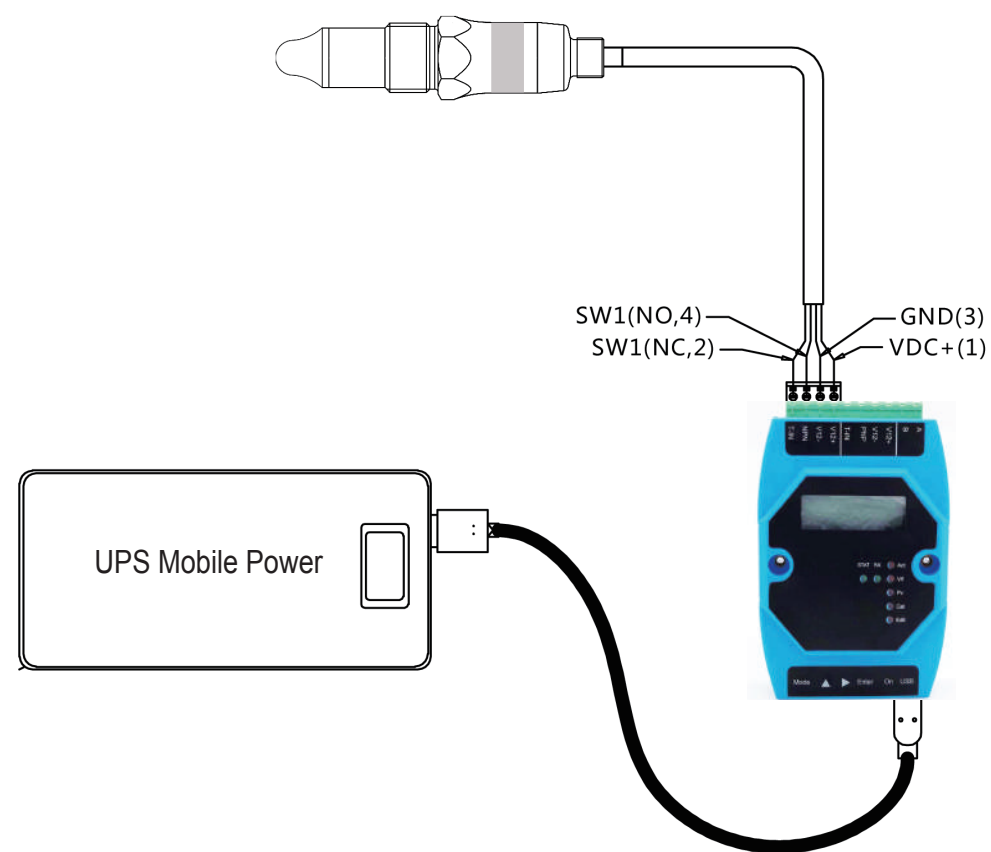
General description			
Measurement principle:	Sweep frequency	Size:	Refer to dimension diagram
Return difference measurement	±1mm	Material	Stainless steel
Media property	DC ≥ 1.5	Electrical connection	
Response time	0.2s	Connection method	4x0.5mm ² Cable wire M12 4 pin connector
Damping time	0~5s (Can be adjusted)	Power supply	
Repeatability	±1mm	Voltage range	12~30VDC
Process conditions		Start time	<1s
Process temp. (Standard process connection)	-40~115 °C	Supply current (No load)	8mA (Typical value) 40mA(Max. value)
Process pressure (Standard process connection)	-0.1~ 10MPa	Reverse polarity protection	Yes
Other connections Process conditons	Refer to Operation conditions table	Media strength	500VAC
Process connection types		Default factory setting	
Types	Refer to dimension diagram	Damping time	0s
Installation location:	Top, buttom, side	Alarm point parameters AL1	250 (low dielectric constant) 550 (Water-based media) 720 (Conductive paste) P1000 ≠AL1 Alarm triggered
Wetted materials	PEEK 304 or 316L	Measurement value PV	0~1000 , After calibration: 100 : Probe in air 900 : Probe in water
Wetted Surface Roughness	Ra< 0.8 μm	Return difference alarm	25
Environment conditions		Protection function	Parameters cannot be modified before being unlocked
Protection level	IP67	Certification	
Humidity	<98% RH , there is condensation	EMI irradiation	GB/T 24338.4 -2009
Environment temp.	Cable outlet type: -25~70 °C M12 Connector type: -40~85 °C	EMC immunity	GB/T 24338.4 -2009
Storage temp.	Cable outlet type: -25~70 °C M12 Connector type: -40~85 °C	Explosion-proof certification	Ex ia IIC T6 Ga Ex iaD 20 IP65 T80°
Output signal		Hygienic certification	FDA, AAA
Output type	NPN PNP		
Output logic (NPN, PNP type)	● NO(Normally turn on) ● NC (Normally turn off)		
Output voltage drop (Typical value)	PNP:1.5 ±0.5V , Rload=10k NPN:1.5 ±0.5V , Rload=10k		
Output current	20mA (Max. Value)		
Leakage current	<100uA		
Output short circuit protection	Yes		

Model name components: Ex.: XR50P-0D00-6LNM/G0

Model name	Model name	Output Type	Software Type	Alarm Setting	Health-care Cert.	E-Proof Cert.	Process Material	Sealing ring	Electrical Connection	Process connection
Model name	XR50									
NPN		N								
PNP		P								
Relay (External Module)		R								
One-way alarm			0							
Dual independent alarm (NO+NC)			1							
Dual independent alarm (NO+NO)			2							
PWM pulse width modulation			4							
Default (water)				D						
User specified				C						
No healthcare certificaion					0					
FDA/AAA					1					
No explosion proof certification						0				
Intrinsically safe explosion-proof						1				
Explosion-proof in dusty places						2				
Titanium alloy							T1			
316L stainless steel							6L			
No gasket								N		
Specified material gasket								C		
M12A 4-pin header (plastic)									M	
M12A 4-pin header (metal)									L	
Wire four-core cable outlet 1 meter									W	
G0-G1/2 Thread+Standard probe										GO
RG-reverse installation G1/2 thread + standard probe										RG
G1-G1/2 thread + cooling neck + standard probe										G1
H0-Hygienic type G1/2 thread + standard probe										HO
H1-G1/2 thread + 150mm deep probe										H150
H2-G1/2 thread + 250mm deep probe										H250

KOMM700 Portable Operator

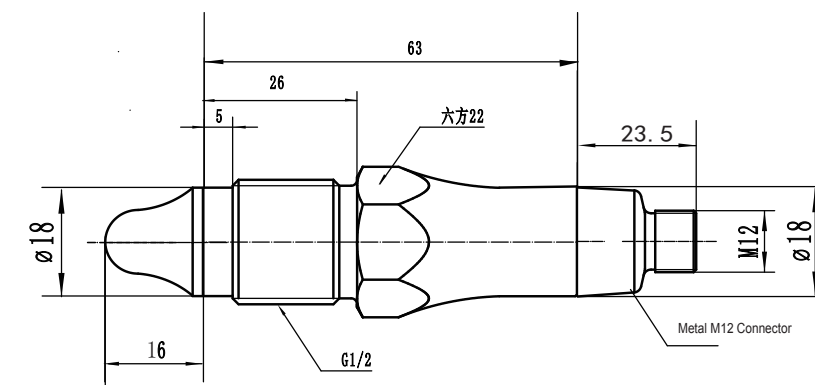
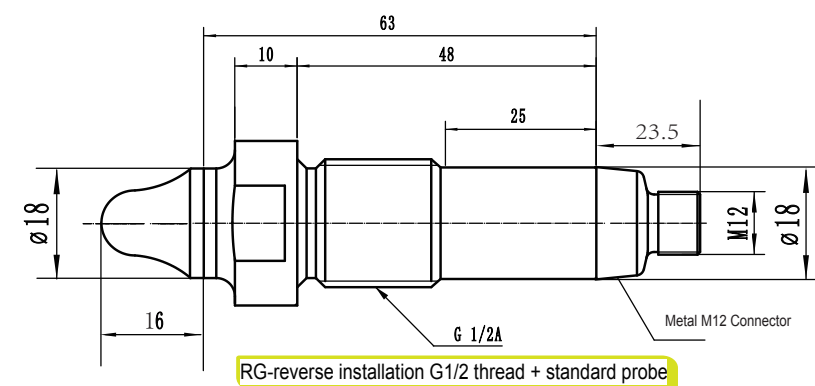
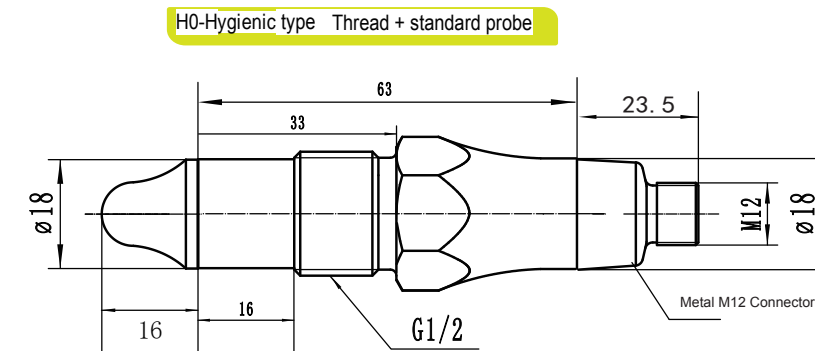
Use a portable programmer to check, configure, backup and restore XR series sensor data parameters, and can also be used to modify threshold parameters and functions on the sensor installation site



Recommended Alarm Thresholds for Common Media Specs: Air 0

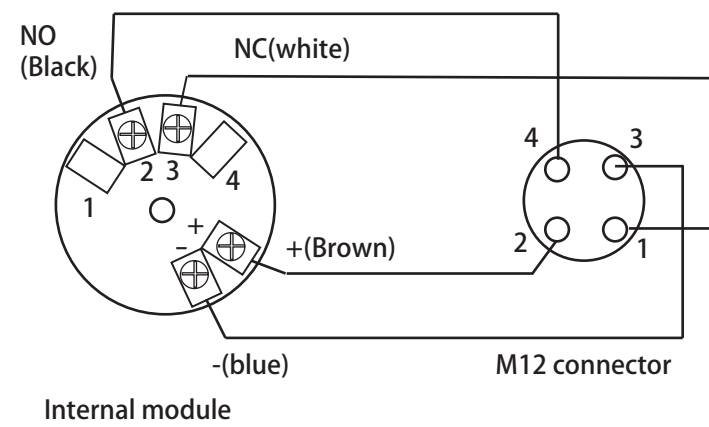
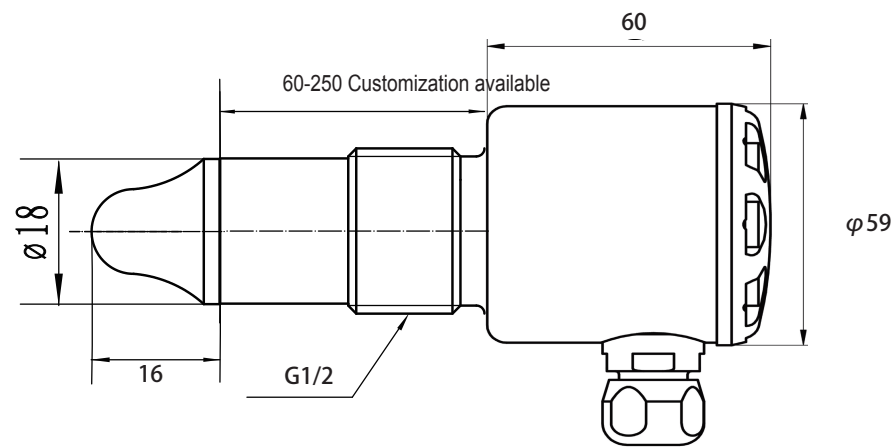
Media	Example	Recommended alarm thresholds
Water based solution	Faucet water Acid, alkali solution	550 (Default factory setting)
Foam	Beer foam	350
Viscous conductive medium	Flour paste	720
Grease	Edible oil, lubricating oil	250
Low water solids particles	Dried tea leaves	180
High water solid particles	Rice, wheat	250

XR05 Series



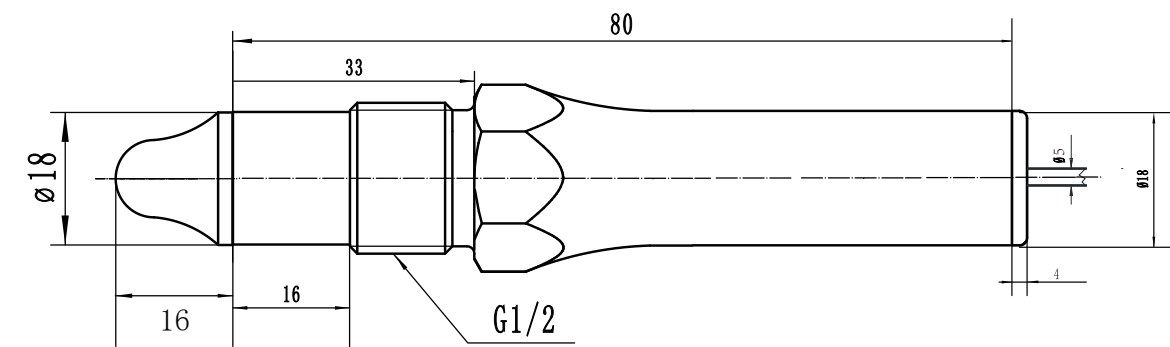
For more product dimensions, see the next page

XR06 Series



XR07 Series (Cable Version)

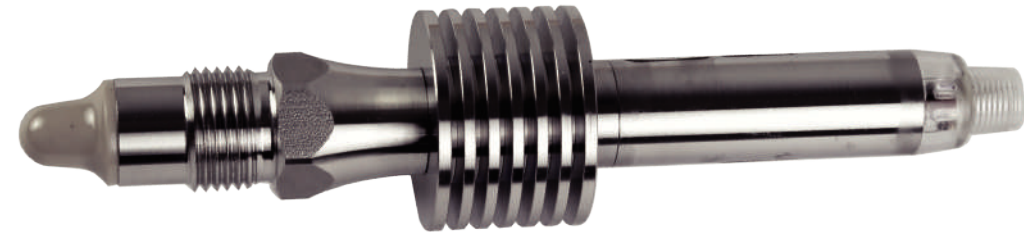
Standard Probe



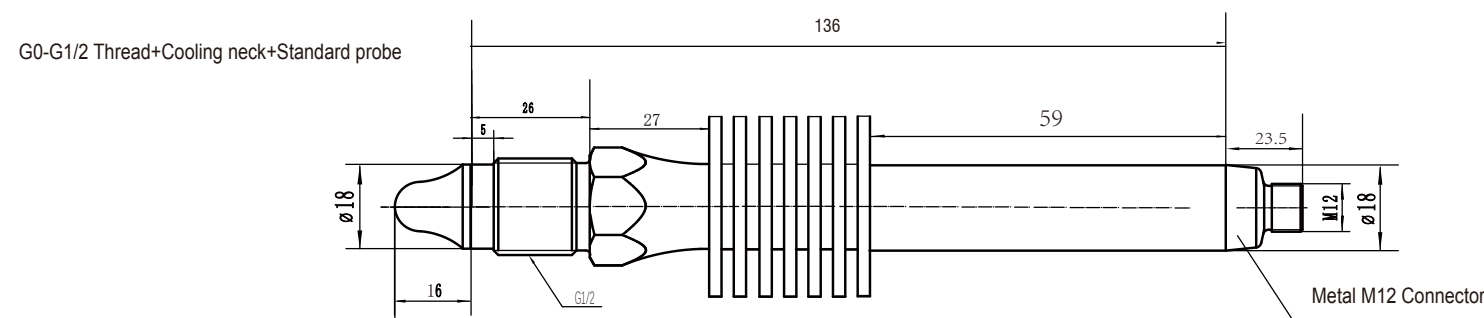
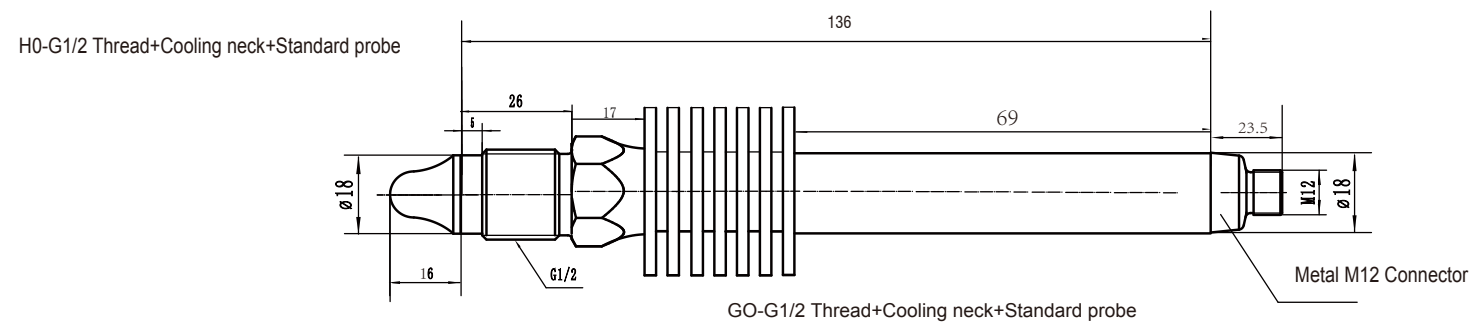
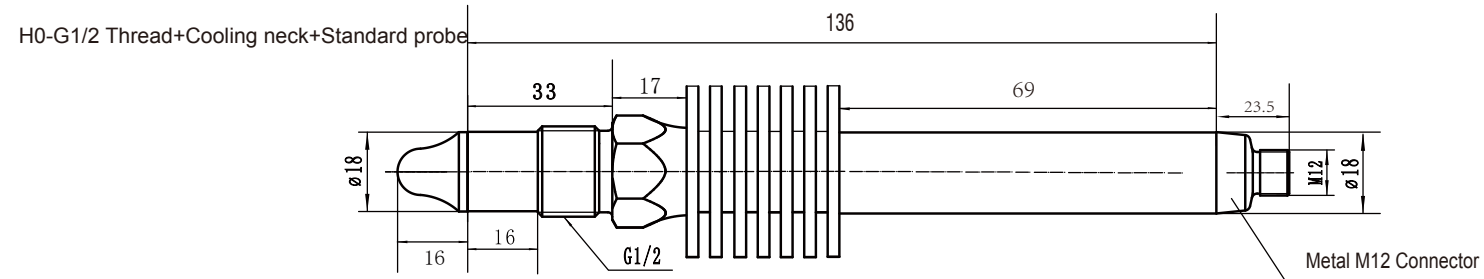
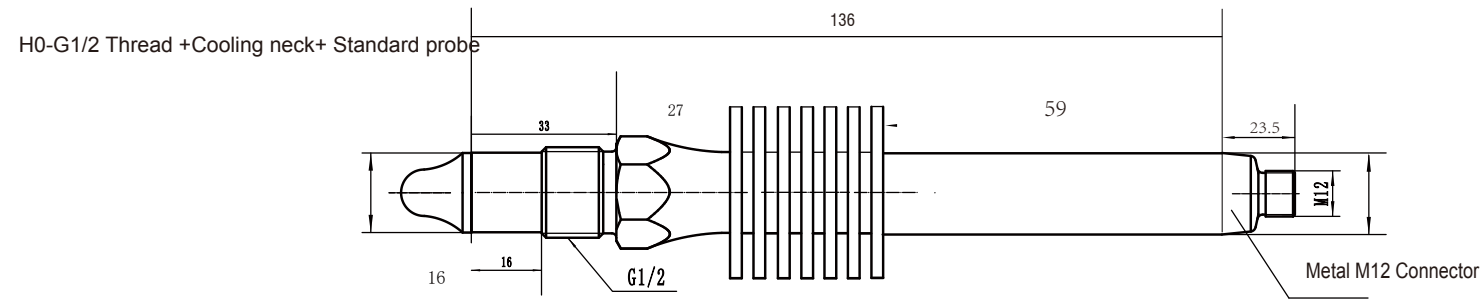
XR07 Cable version G1/2 Thread+ Standard probe

Cooling neck+Standard probes are resistant to high temperatures up to 150°C and 200°C

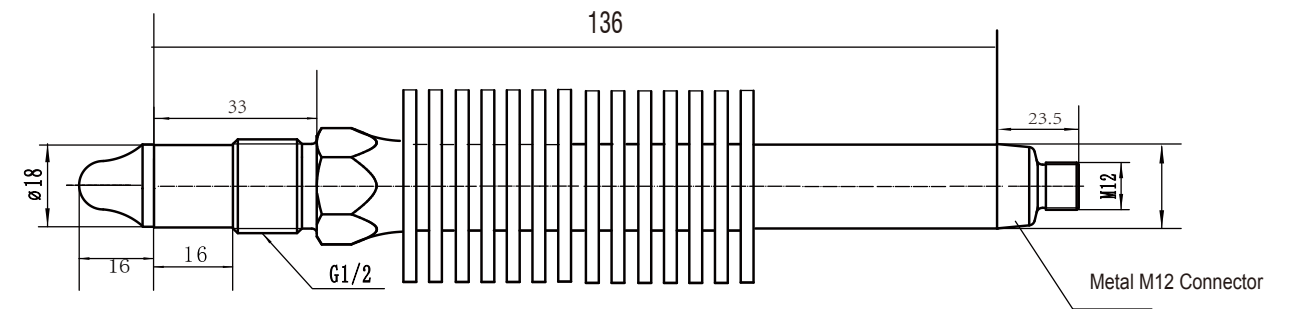
Resistant to temperature up to 235°C
Double cooling necks+ Standard probe



Drawings



Drawing



H0-G1/2 Thread+ Double cooling necks+ Standard probe

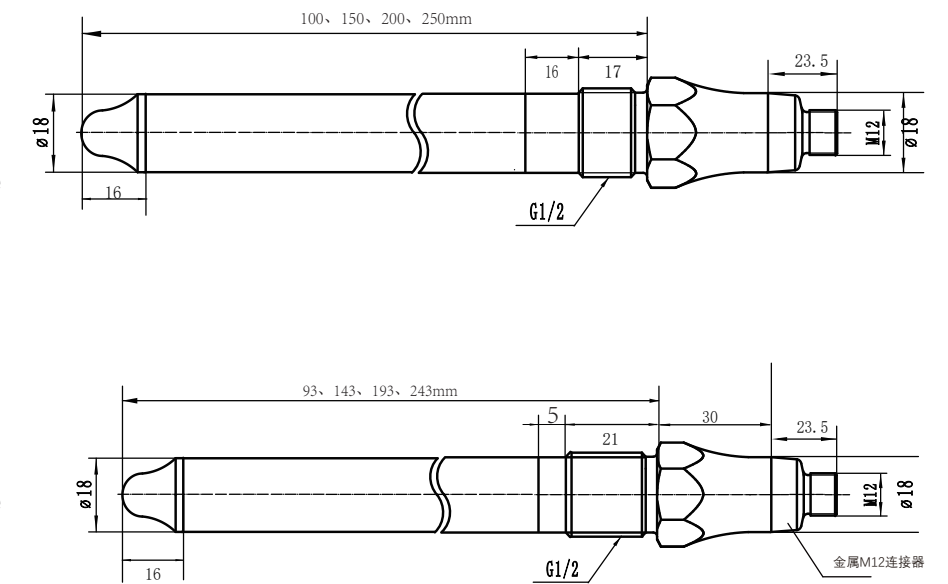


Extended probe 100-250mm

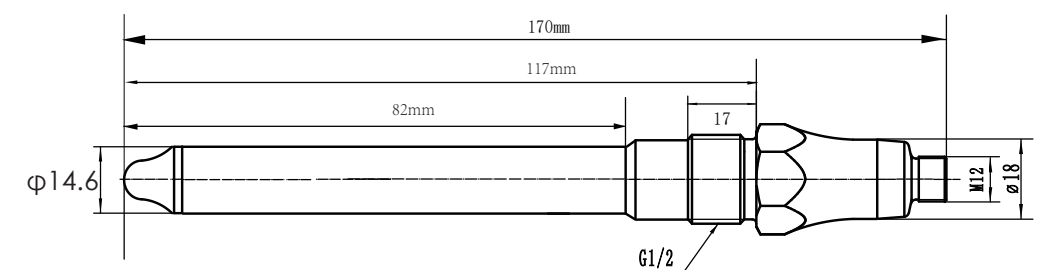


Drawings (Tolerance ± 1)

- H1-G1/2 Thread+Insert deep 100mm Probe
- H1-G1/2 Thread+Insert deep 150mm Probe
- H1-G1/2 Thread+ Insert deep 200mm Probe
- H1-G1/2 Thread+Insert deep 250mm Probe
- H1-G1/2 Thread+ Insert deep 93mm Probe
- H1-G1/2 Thread+Insert deep 143mm Probe
- H1-G1/2 Thread+Insert deep 193mm probe
- H1-G1/2 Thread+ Insert deep 242mm Probe



Reducer $\phi 14.6$ mm-G1/2 Thread+Insert deep 166mm Probe



Non-standard customization

