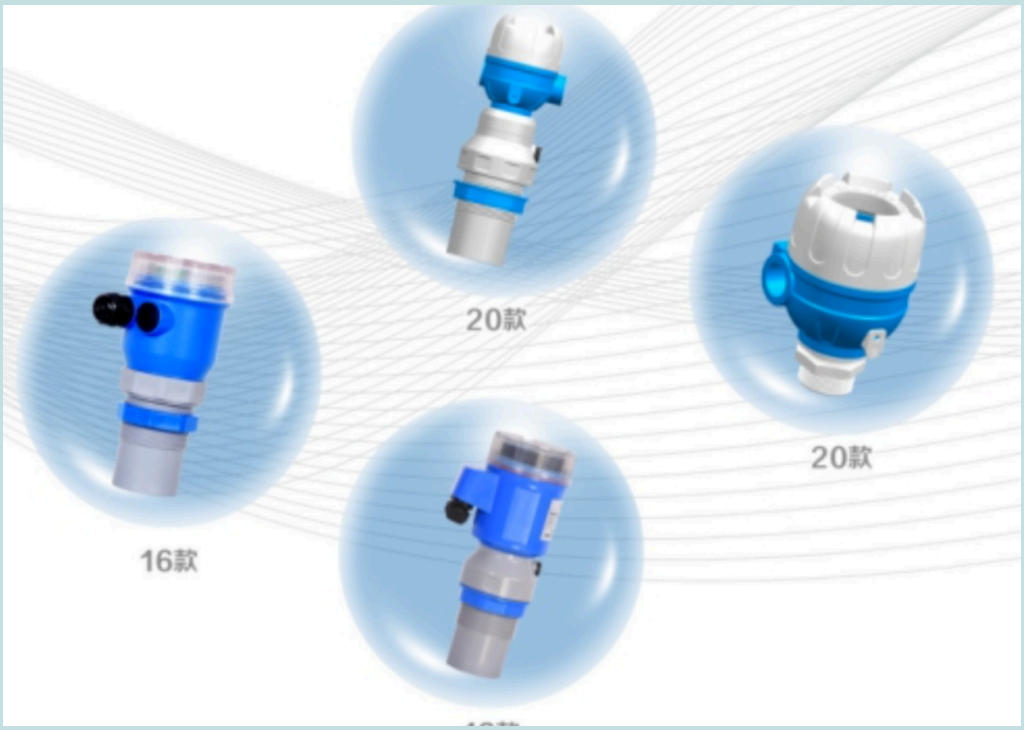
Ultrasonic Level Meter

SenTec

Sensing Technology Since 1998

Ultrasonic level gauges are digital level gauges controlled by a microprocessor. In the measurement, the ultrasonic pulse is sent by the sensor (transducer), the sound wave is received by the same sensor after being reflected by the liquid surface, converted into an electrical signal by the piezoelectric crystal, and the time between the emission and reception of the sound wave is calculated. Measure the distance to the surface of the liquid. Due to the non-contact measurement, the measured medium is almost unlimited, and it can be widely used for the height measurement of various liquid and solid materials.



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SUL805A High precision EX level meter

Main Features

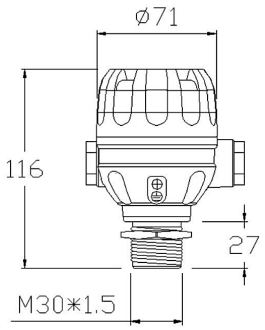
- Blind less than 6cm (China National Innovation high-tech product)
- Built-in ultrasonic ranging, pressure ranging
- Voltage DC3.7-32V
- Can measure material level, liquid level, volume, weight, etc.
- With digital filtering and echo identification
- Support custom sound speed (special substance measurement)

Principle Structure

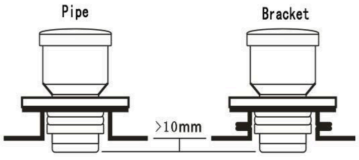
The working principle of the ultrasonic level gauge is that the ultrasonic transducer (probe) sends out a high-frequency pulse. The sound wave encounters the surface of the measured material level (material) and is reflected and folded back. The reflected echo is received by the transducer and converted into an electrical signal. The propagation time of the sound wave is proportional to the distance from the sound wave to the surface of the object. The relationship between the sound wave transmission distance S and the sound speed C and the sound transmission time T can be expressed by the formula: S=C×T/2.

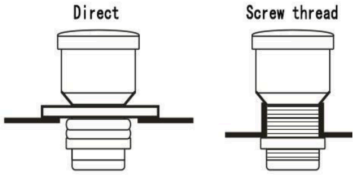
Dimension

Unit: mm



Installation example





Specification

Range	1m, 2m, 3m
Blind zone	<0.06-0.15m (different from range)
Measure Error	<±1mm, <±1.5mm (different from range)
Display	OLED self-luminous
Display resolution	1mm
Beam angle	<4° (1m), <6° (2m), <10° (3-15m), <18° (15-40m)
Temperature	automatic compensation
Signal output	Analog output: 4~20mA, 0~20mA, 0~5V, 0~10V Digital output: RS485/Modbus, HART (two-wire system) Switch output: three-way NPN
Power supply	DC12-24V, DC18-32V, 220VAC
Installation interface	M30×1.5, chuck
Material	cast aluminum, SS304
Protection level	IP65 (customizable)
Frequency	20 ~ 350KHz
Power consumption	<1.5W
Working environment	normal temperature, normal pressure
Explosion-proof grade	intrinsically safe explosion-proof EXiaIIBT4Ga, EXdIIBT6Gb

SUL805H Cast aluminum EX level meter

Main Features

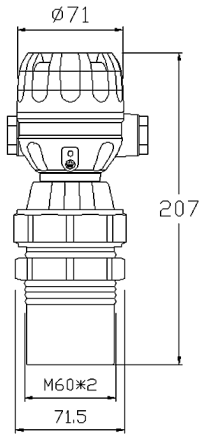
- Working temperature 110℃
- Built-in ultrasonic ranging, pressure ranging
- Anti-condensation function
- Can measure material level, liquid level, volume, weight, etc.
- With digital filtering and echo identification
- Support custom sound speed (special substance measurement)

Principle Structure

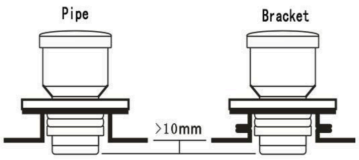
The working principle of the ultrasonic level gauge is that the ultrasonic transducer (probe) sends out a high-frequency pulse. The sound wave encounters the surface of the measured material level (material) and is reflected and folded back. The reflected echo is received by the transducer and converted into an electrical signal. The propagation time of the sound wave is proportional to the distance from the sound wave to the surface of the object. The relationship between the sound wave transmission distance S and the sound speed C and the sound transmission time T can be expressed by the formula: S=C×T/2.

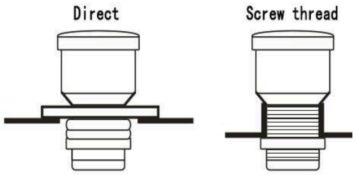
Dimension

Unit: mm



Installation example





Specification

Range	5, 8, 10, 12, 15, 20, 25, 30m
Blind zone	<0.4-1.8m(different for range)
Measure Error	±0.3%F.S (or customized)
Display	OLED self-luminous
Display resolution	1mm
Beam angle	<4° (1m), <6° (2m), <10° (3-15m), <18° (15-40m)
Temperature	automatic compensation
Signal output	Analog output: 4~20mA, 0~20mA, 0~5V, 0~10V Digital output: RS485/Modbus, HART (two-wire system) Switch output: three-way NPN, 2 relays
Power supply	DC12-24V, DC18-32V, 220VAC
Installation interface	M60X2 or ¢61MM/DN80 (Flange)
Material	Cast aluminum, ABS, PP, PVDF, PTFE, SS304
Protection level	IP65 (customizable)
Frequency	20 ~ 350KHz
Power consumption	<1.5W, <0.8W (two-wire system)
Working environment	normal temperature, normal pressure
Electrical interface	M20X1.5

SUL804A Universal ultrasonic level meter

Main Features

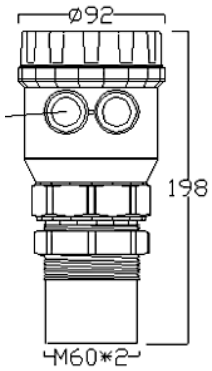
- Isolated 4-20mA output
- Can manually set fixed interference filter function
- Can measure material level, liquid level, volume, weight, etc.
- Digital filtering and echo identification functions
- Support custom sound speed (special substance measurement)
- Support two, three and four wire system

Principle Structure

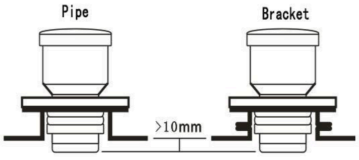
The working principle of the ultrasonic level gauge is that the ultrasonic transducer (probe) sends out a high-frequency pulse. The sound wave encounters the surface of the measured material level (material) and is reflected and folded back. The reflected echo is received by the transducer and converted into an electrical signal. The propagation time of the sound wave is proportional to the distance from the sound wave to the surface of the object. The relationship between the sound wave transmission distance S and the sound speed C and the sound transmission time T can be expressed by the formula: S=C×T/2.

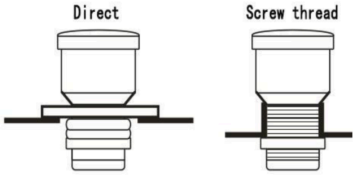
Dimension

Unit: mm



Installation example





Specification

Range	3m, 5m, 8m, 10m, 12m, 15m
Blind zone	<0.4-0.5m (depending on the range)
Measure Error	±0.2%F.S (or customized)
Display	OLED self-luminous
Display resolution	1mm
Beam angle	<4° (1m), <6° (2m), <10° (3-15m), <18° (15-40m)
Temperature	automatic compensation
Signal output	Analog output: 4~20mA, 0~20mA, 0~5V, 0~10V Digital output: RS485/Modbus, HART (two-wire system) Switch output: three-way NPN, 2 relays
Power supply	DC12-24V, DC18-32V, 220VAC
Installation interface	M60×2
Material	ABS, PP
Protection level	IP65 (customizable)
Frequency	20 ~ 350KHz
Power consumption	<1.5W, <0.8W (two-wire system)
Working environment	normal temperature, normal pressure
Electrical interface	M20*1.5

SUL804B High temperature level meter

Main Features

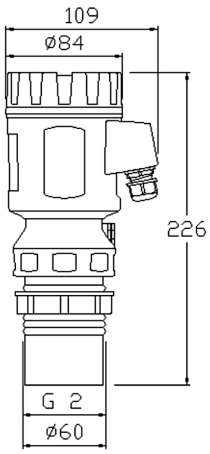
- Working temperature 110℃
- Anti-condensation function
- Can manually set fixed interference filter function
- Can measure material level, liquid level, volume, weight, etc.
- With digital filtering and echo identification
- Support custom sound speed (special substance measurement)

Principle Structure

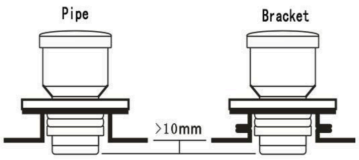
The working principle of the ultrasonic level gauge is that the ultrasonic transducer (probe) sends out a high-frequency pulse. The sound wave encounters the surface of the measured material level (material) and is reflected and folded back. The reflected echo is received by the transducer and converted into an electrical signal. The propagation time of the sound wave is proportional to the distance from the sound wave to the surface of the object. The relationship between the sound wave transmission distance S and the sound speed C and the sound transmission time T can be expressed by the formula: S=C×T/2.

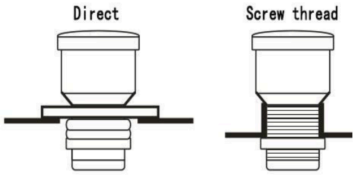
Dimension

Unit: mm



Installation example





Specification

Range	3m, 5m, 8m, 10m...40m
Blind zone	<0.25- 2m (depending on the range)
Measure Error	±0.3%F.S (or customized)
Display	OLED self-luminous
Display resolution	1mm
Beam angle	<4° (1m), <6° (2m), <10° (3-15m), <18° (15-40m)
Temperature	automatic compensation
Signal output	Analog output: 4~20mA, 0~20mA, 0~5V, 0~10V Digital output: RS485/Modbus, HART (two-wire system) Switch output: three-way NPN, 2 relays
Power supply	DC12-24V, DC18-32V, 220VAC
Installation interface	G1 1/2 (3m), G2 (3-15m), G3 1/2 (15-40m)
Material	ABS、PVDF、PTFE
Protection level	IP65 (customizable)
Frequency	20 ~ 350KHz
Power consumption	<1.5W, <0.8W (two-wire system)
Working environment	normal temperature, normal pressure
Electrical interface	M16X1.5-2

SUL804C Basic ultrasonic level meter

Main Features

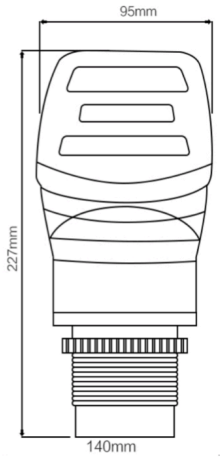
- Isolated 4-20mA output
- Can manually set fixed interference filter function
- Can measure material level, liquid level, volume, weight, etc.
- Digital filtering and echo identification functions
- Support custom sound speed (special substance measurement)
- Support two, three and four wire system

Principle Structure

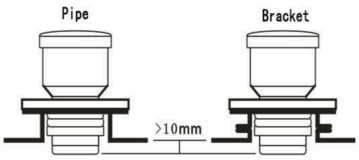
The working principle of the ultrasonic level gauge is that the ultrasonic transducer (probe) sends out a high-frequency pulse. The sound wave encounters the surface of the measured material level (material) and is reflected and folded back. The reflected echo is received by the transducer and converted into an electrical signal. The propagation time of the sound wave is proportional to the distance from the sound wave to the surface of the object. The relationship between the sound wave transmission distance S and the sound speed C and the sound transmission time T can be expressed by the formula: S=C×T/2.

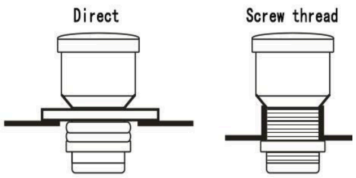
Dimension

Unit: mm



Installation example





Specification

Range	3m, 5m, 8m, 10m, 12m, 15m
Blind zone	<0.3-0.6m (depending on the range)
Measure Error	±0.5%F.S (or customized)
Display	LCD
Display resolution	1mm
Beam angle	<4° (1m), <6° (2m), <10° (3-15m), <18° (15-40m)
Signal output	Analog output: 4~20mA, 0~20mA, 0~5V, 0~10V Digital output: RS485/Modbus, Switch SPDT1 (SPDT2), relay output
Power supply	DC12-24V, DC18-32V, 220VAC
Installation interface	M59*2
Material	ABS (support customize PE/PP/PC/PTFE)
Protection level	IP65 (customizable)
Frequency	20 ~ 350KHz
Power consumption	<1.5W
Working environment	normal temperature, normal pressure
Electrical interface	M20*1.5