

SUL801 ULTRASONIC LEVEL TRANSMITTER

OVERVIEW

SUL801 Ultrasonic level (distance) transmitter is specially designed for multi measuring points, small installation space, equipment matching and other application conditions. It integrates ultrasonic sensor, temperature sensor, ultrasonic servo circuit and transmission circuit. It adopts SMD chip components and self-developed ASC special chip, making the whole circuit very compact and simple; All the circuit boards are gilded, with internal electromagnetic shielding and software digital filter (industrial grade) leaving the factory for 48 hours, high and low temperature and electrical aging, so that they have high stability and long-term reliability. The shell is made of NLEPF synthetic material with strong texture and good acoustic characteristics. It has exquisite and beautiful appearance. It can be selected as waterproof, dust-proof, anti-corrosion type, or explosion-proof type, which can adapt to most working conditions. When the transmitter is fixed on the liquid tank, wall, moving arm or instrument shell, there is no need for tools such as gongs, screwdrivers, etc., as long as there is a round hole or screw hole, so that the installation is very fast and stable, and the maintenance and disassembly is very convenient! Product application: small space, low cost, liquid level, distance measurement; matching ultrasonic open channel flowmeter probe.



MAIN FEATURES

- Designed for application conditions such as multiple measuring points, small installation space.
- Using SMD chip components and self-developed ASC special chip, making the whole circuit very compact and simple.
- Internal electromagnetic shielding and software digital filtering (industrial grade) factory 48 hours high and low temperature and electrical aging, high stability and long-term reliability.
- The shell is made of NLEPF synthetic material with strong texture and good acoustic properties.

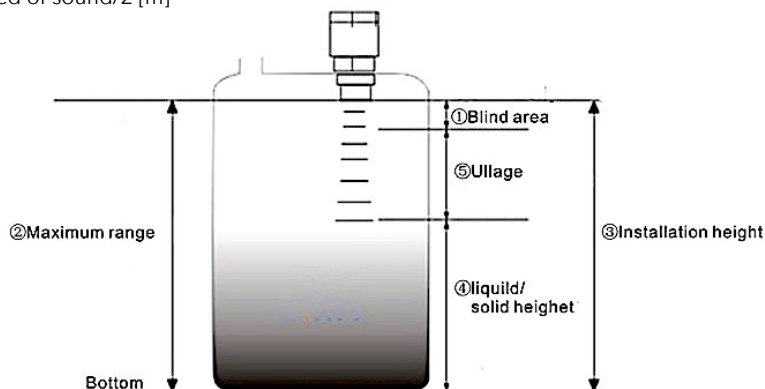
WORKING PRINCIPLE

The working principle of the ultrasonic level gauge is that the ultrasonic transducer (probe) sends out a high-frequency pulsed sound wave when it encounters the surface of the measured material (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 It is proportional to the distance from the sound wave to the surface of the object. The relationship between the sound wave transmission distance S, the sound speed C and the sound transmission time T can be expressed by the formula: $S=C \times T/2$.

Because the transmitted ultrasonic pulse has a certain width, the reflected wave in a small area close to the transducer overlaps the transmitted wave, which cannot be identified and its distance value cannot be measured. This area is called the measurement dead zone. The size of the blind zone is related to the model of the ultrasonic level meter.

The probe part emits ultrasonic waves, the ultrasonic waves will be reflected when encountering a medium with a large difference in density from the air, and the reflected waves will be received by the probe part. The distance from the probe to the liquid (object) surface is proportional to the time passed by the ultrasonic wave:

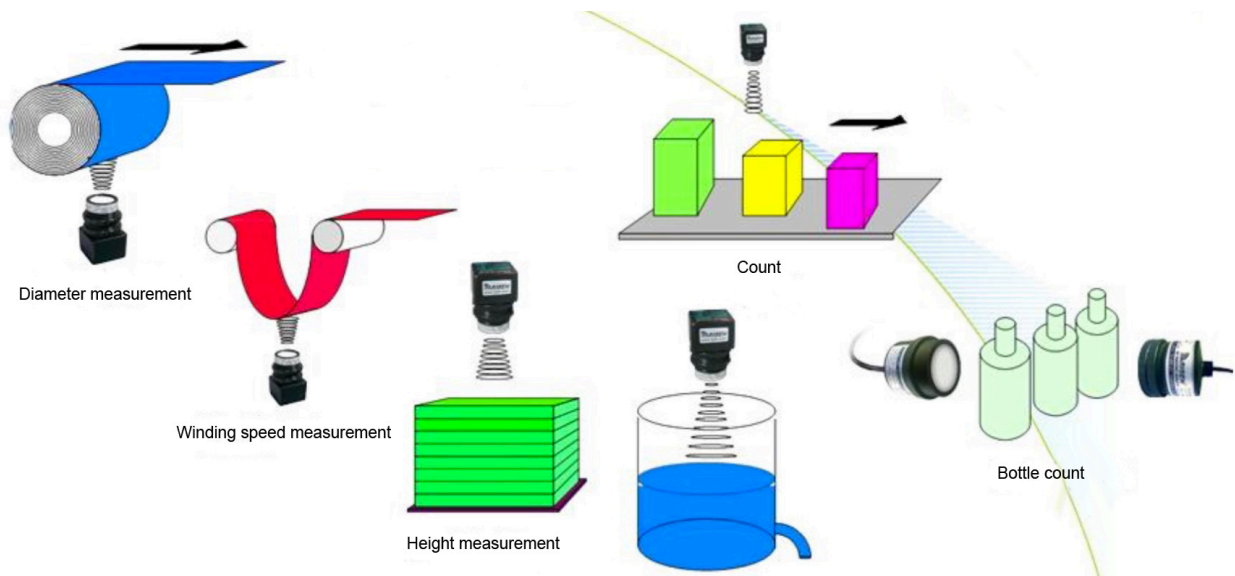
$$\text{distance [m]} = \text{time} \times \text{speed of sound} / 2 \text{ [m]}$$



SPECIFICATION

Items	SUL801A	SUL801BS	SUL801BC	SUL801C	SUL801D	SUL801E	SUL801H
Picture							
Drawing							
Max. Range	15m	15m	10m	2.5m	5m	20m	7m
Blind zone	≤ 300 ~ 800mm	0.6m	0.6m	0.25m	0.6m	≤0.3m/≤0.5m	≤ 300 ~ 350mm
Angle of beam	15°, 12°, 9°	10°	10°	7.5°	15°	15°, 12°, 9°	15°, 12°
Accuracy	± 0.5% F · S, or customized	≤1 %F.S	≤1 %F.S	≤1 %F.S.	≤1 %F.S	± 0.5% F · S	± 0.5% F · S, or customized
Working temperature	-10 ~ 50 ° C, or customized	-40~85°C	-40~85°C	-40~85°C	-40~85°C	-20-60°C	0 ~ 50 ° C or customized
Power supply	DC24V / 300mA, or customized	3.3-24 V	3.3-24 V	3.3-30 V	3.3-24V	DC11-28V	DC24V / 300mA, or customized
Protection level	IP65, or customized	IP68	IP68	IP68	IP68	IP65, or customized	IP65, or customized
Display	Without display						4 digit LED display
Entry cable	Waterproof joint, default 0.5 meter cable, support customized						
Signal output	4-20mA/0-10V, 0-3V, 0-5V/NPN/PNP/RS485						
Material	ABS/PVC /PVDF/PTFE						
Pressure	Default Atmospheric pressure						
Explosion-proof	Default non explosion proof, support customize intrinsically safe explosion-proof, explosion-proof mark Exiall AT3						
Application environment	Non corrosive environment	Large range can be used to measure distance on the car	Fully anti-corrosion acid and alkali resistant for harsh environments	Acid and alkali resistant	Acid and alkali resistant	Non corrosive environment, Large measuring range	Non corrosive environment, with digital display

APPLICATION



ORDER GUIDE

SUL	ultrasonic level meter				
	CODE	Model type			
	801A	Standard type			
	801BS	Standard IP68 type			
	801BC	Fully anti-corrosion acid and alkali resistant for harsh environments			
	801C	2.5M, Acid and alkali resistant			
	801D	5M, Acid and alkali resistant			
	801E	Non corrosive environment, Large measuring range			
	801H	Digital display type			
	CODE	Range			
	5	5 meter			
	15	15 meter			
	C	More range customized			
	CODE	Shell material			
	A	ABS			
	B	PVC			
	C	PTFE			
	M	More customized			
	CODE	Signal output			
	A	Analog output: 4-20mA, 0-20mA, 0-5V, 0-10V			
	D	Digital output: RS485/Modbus, HART (two-wire system)			
	R	Switch output: NPN/PNP			
	M	More customized			
SUL	801A	5	A	A	Order example