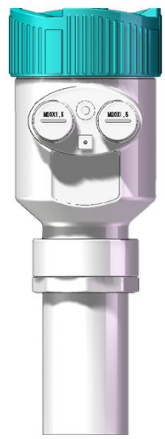
PHILEMON™

CATALOG

ULTRASONIC LEVEL METER



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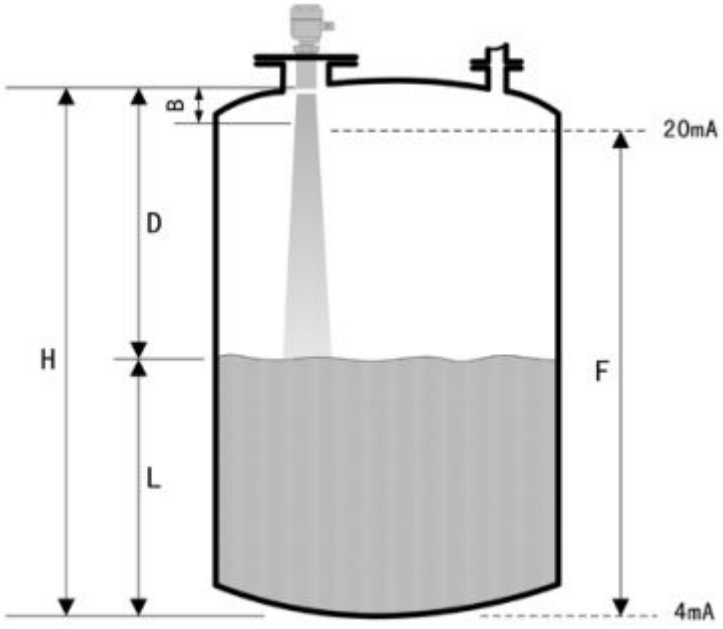
❖ Features

- Integrated design, installed conveniently;
- Protected in the excessive voltage and current;
- Protected in the thunder and lightning;
- The big show window of LCD is easy to debug and observe;
- Over-voltage over-current protection, lightning protection;
- Advanced since the clamp type terminal, to ensure that wiring never loose;
- Intellectual signal treatment technology, guarantee that the instrument meets various kinds of operating occasion;
- All plastic probe, acid and alkali resistant, adapt to bad environment;

❖ Principle

The sensor of the meter pulses in the direction of the product surface. There, they are reflected back and received by the sensor.The meter measures the time t between pulse transmission and reception. The meter uses the time t (and the velocity of sound) to calculate the distance D between the sensor membrane and the product surface:
D = c •t/2. As the device knows the empty distance H from a user entry, it can calculate the level as follows: L= H – D.

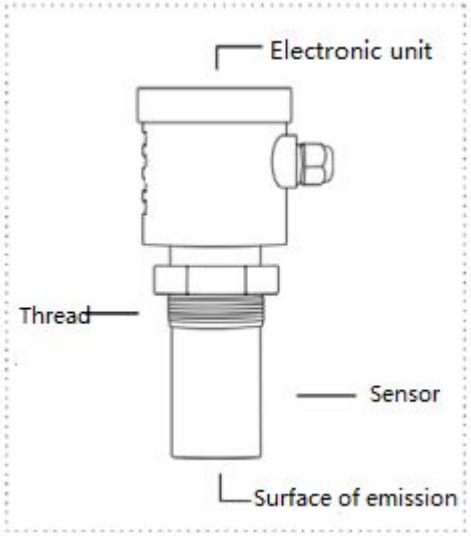


B:Blanking distance D:distance value L:level value
H: installation height F:level span

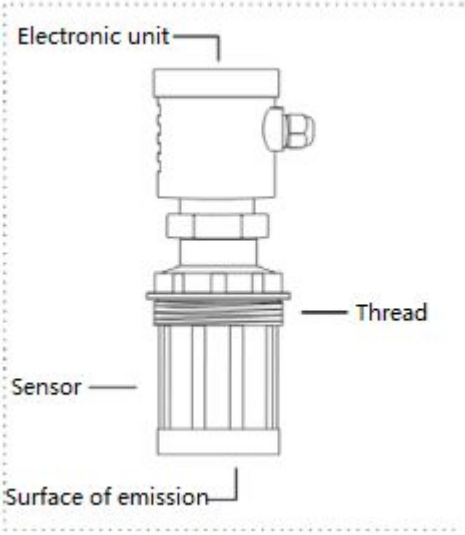
The ultrasonic velocity in gas is influenced by the gas temperature,So the level meter need to detect the gas temperature at work. So the material level meter need to detect the gas temperature at work,compensation for sound velocity.

Blanking distance: Span F may not extend into the blanking distance B. Level echo from the blanking distance cannot be evaluated due to the transient characteristics of the sensor.

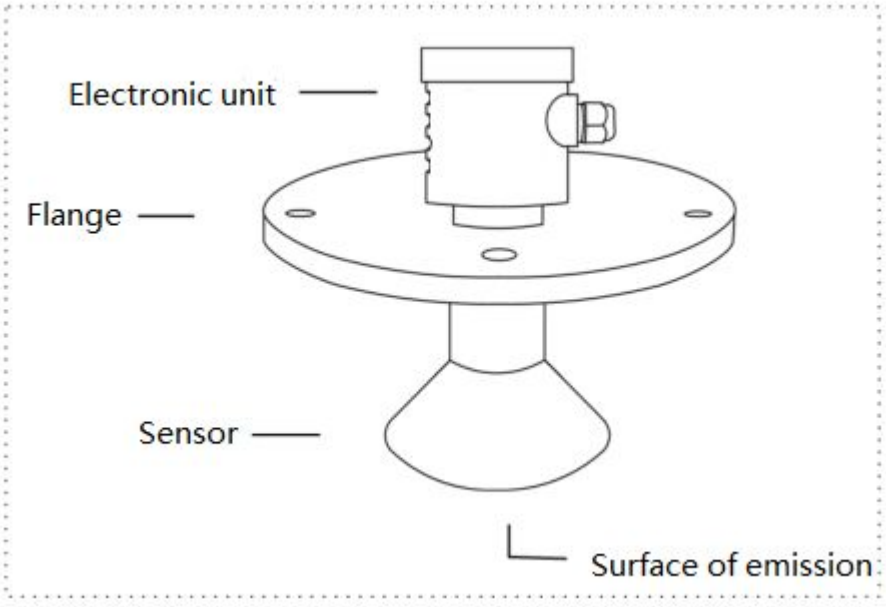
❖ Structure



Level meter of 4m,6m,8m type

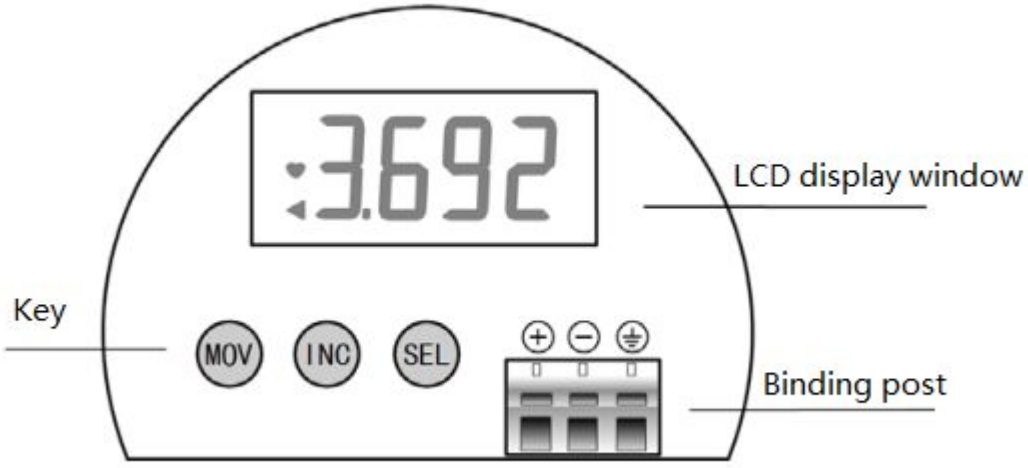


Level meter of 12m,20m,30m type



Level meter of 20m,30m Horn type

❖ The Electronic Unit Panel Layout

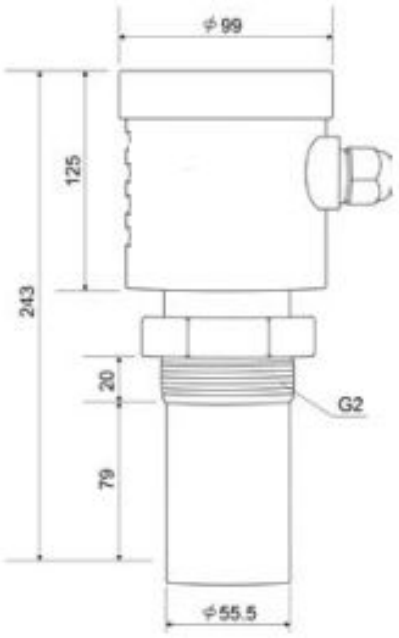


❖ Product Introduction

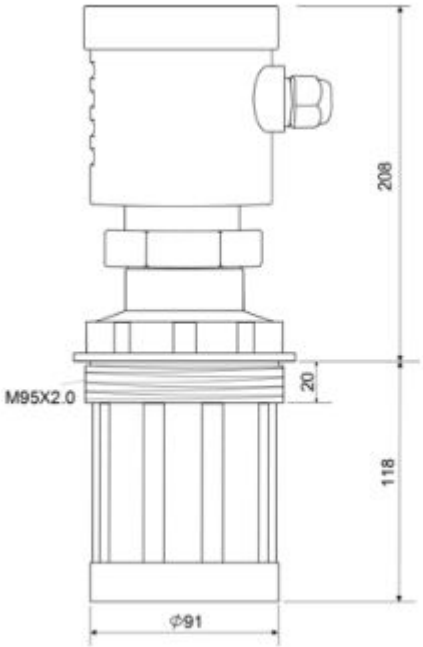
Model / Parameters	QTLM4	QTLM6	QTLM8	QTLM12	QTLM20	QTLM30
Application	Industrial Level Measurement					
Measuring Range	liquid:0.2-4 m	liquid:0.25-6 m	liquid:0.3-8 m	liquid:0.5-12 m	liquid:0.8-20 m	liquid:1.2-30 m
Blank distance	0.20m	0.25m	0.30m	0.50m	0.80m	1.2m
Process Connection	G2 Thread			M95X2.0Thread		
Energy Transducer Material	ABS,PVC,PTFE					
Temperature	-40~ 75 Deg C (LCD：-20ºC~ +70ºC)					
Temperature compensation	The whole range with automatic compensation					
Process Pressure	±0.1MPa					
Precision	0.2% of actual range					
Signal output	4-20mA(Option: RS485/HART/Alarm)					
Power Supply	DC20V~32 ≥30mA					
Display Resolution Ratio	1mm					
Mode of Indication	4 Digit LCD					
Cable Diameter	Ø 6-12mm					
Single Wire Diameter	Ø 0.5-1.78mm					
Cable Entry/Seal	M20/PG13.5					
Beam Angle	8º(3db)					
Measurement Cycle	1.5 second					

❖ Dimension

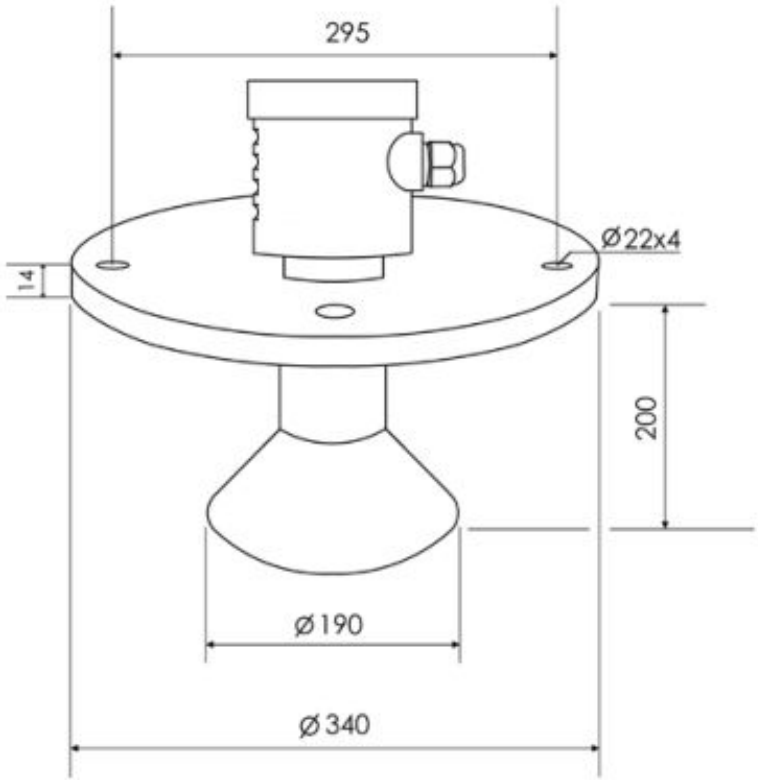
- **QTLM4,QTLM6,QTLM8 Type**



- **QTLM12 Type**



- **QTLM20,QTLM30 Type**



❖ Model Selection

- **QTLM4 Model Selection**

License
P Standard Type(Non ex-proof) I Intrinsically safe (Exia IIB T6 Ga)
Energy Transducer Material/Process Temperature/Protection Grade
A ABS/(-40-75)℃/IP67 B PVC/(-40-75)℃/IP67 C PTFE/(-40-75)℃/IP67
Process Connection/Material
G Thread D Flange /PP
Electronic Unit
2 4~20mA/24V DC Two Wire

3 4 20mA/24V DC /HART Two Wire
4 4-20mA/24VDC/RS485 Modbus Four Wire
5 4-20mA/24VDC/Alarm Output Four Wire
Shell / Protection Grade
L Aluminum / IP67
Cable Entry
M M20*1.5
1/2 NPT
Programmer/Display
A With Display

● QTLM6 Model Selection

License
P Standard Type(Non ex-proof)
I Intrinsically safe (Exia IIB T6 Ga)
Energy Transducer Material/Process Temperature/Protection Grade
A ABS/(-40-75)℃/IP67
B PVC/(-40-75)℃/IP67
C PTFE/(-40-75)℃/IP67
Process Connection/Material
G Thread
D Flange /PP
Electronic Unit
2 4~20mA/24V DC Two Wire
3 4 20mA/24V DC /HART Two Wire
4 4-20mA/24VDC/RS485 Modbus Four Wire
5 4-20mA/24VDC/Alarm Output Four Wire
Shell / Protection Grade
L Aluminum / IP67
Cable Entry
M M20*1.5
1/2 NPT
Programmer/Display
A With Display

● QTLM8 Model Selection

License
P Standard Type(Non ex-proof) I Intrinsically safe (Exia IIB T6 Ga)
Energy Transducer Material/Process Temperature/Protection Grade
A ABS/(-40-75)℃/IP67 B PVC/(-40-75)℃/IP67 C PTFE/(-40-75)℃/IP67
Process Connection/Material
G Thread D Flange /PP
Electronic Unit
2 4~20mA/24V DC Two Wire 3 4 20mA/24V DC /HART Two Wire 4 4-20mA/24VDC/RS485 Modbus Four Wire 5 4-20mA/24VDC/Alarm Output Four Wire
Shell / Protection Grade
L Aluminum / IP67
Cable Entry
M M20*1.5 1/2 NPT
Programmer/Display
A With Display

● QTLM12 Model Selection

License
P Standard Type(Non ex-proof) I Intrinsically safe (Exia IIB T6 Ga)
Energy Transducer Material/Process Temperature/Protection Grade
A ABS/(-40-75)℃/IP67 B PVC/(-40-75)℃/IP67 C PTFE/(-40-75)℃/IP67

Process Connection/Material
G Thread
D Flange /PP
Electronic Unit
2 4~20mA/24V DC Two Wire
3 4 20mA/24V DC /HART Two Wire
4 4-20mA/24VDC/RS485 Modbus Four Wire
5 4-20mA/24VDC/Alarm Output Four Wire
Shell / Protection Grade
L Aluminum / IP67
Cable Entry
M M20*1.5
1/2 NPT
Programmer/Display
A With Display

- **QTLM20 Model Selection**

License
P Standard Type(Non ex-proof)
I Intrinsically safe (Exia IIB T6 Ga)
Energy Transducer Material/Process Temperature/Protection Grade
A ABS/(-40-75)℃/IP67
B PVC/(-40-75)℃/IP67
C PTFE/(-40-75)℃/IP67
Process Connection/Material
G Thread
D Flange /PP
Electronic Unit
2 4~20mA/24V DC Two Wire
3 4 20mA/24V DC /HART Two Wire
4 4-20mA/24VDC/RS485 Modbus Four Wire
5 4-20mA/24VDC/Alarm Output Four Wire
Shell / Protection Grade
L Aluminum / IP67
Cable Entry
M M20*1.5

1/2 NPT
Programmer/Display
A With Display

● QTLM30 Model Selection

License
P Standard Type(Non ex-proof) I Intrinsically safe (Exia IIB T6 Ga)
Energy Transducer Material/Process Temperature/Protection Grade
A ABS/(-40-75)℃/IP67 B PVC/(-40-75)℃/IP67 C PTFE/(-40-75)℃/IP67
Process Connection/Material
G Thread D Flange /PP
Electronic Unit
2 4~20mA/24V DC Two Wire 3 4 20mA/24V DC /HART Two Wire 4 4-20mA/24VDC/RS485 Modbus Four Wire 5 4-20mA/24VDC/Alarm Output Four Wire
Shell / Protection Grade
L Aluminum / IP67
Cable Entry
M M20*1.5
Programmer/Display
A With Display