

PAL/C High Accuracy Type Ultrasonic Level Meter



PROCESSION
PROCESS+AUTOMATION



Introduction

PAL/C Ultrasonic level meter is a good choice for high accuracy, non contact continuous level measurement of a wide variety applications such as liquid, slurry and solid. With various output signals support to connect with user control system conveniently.



Application



Features

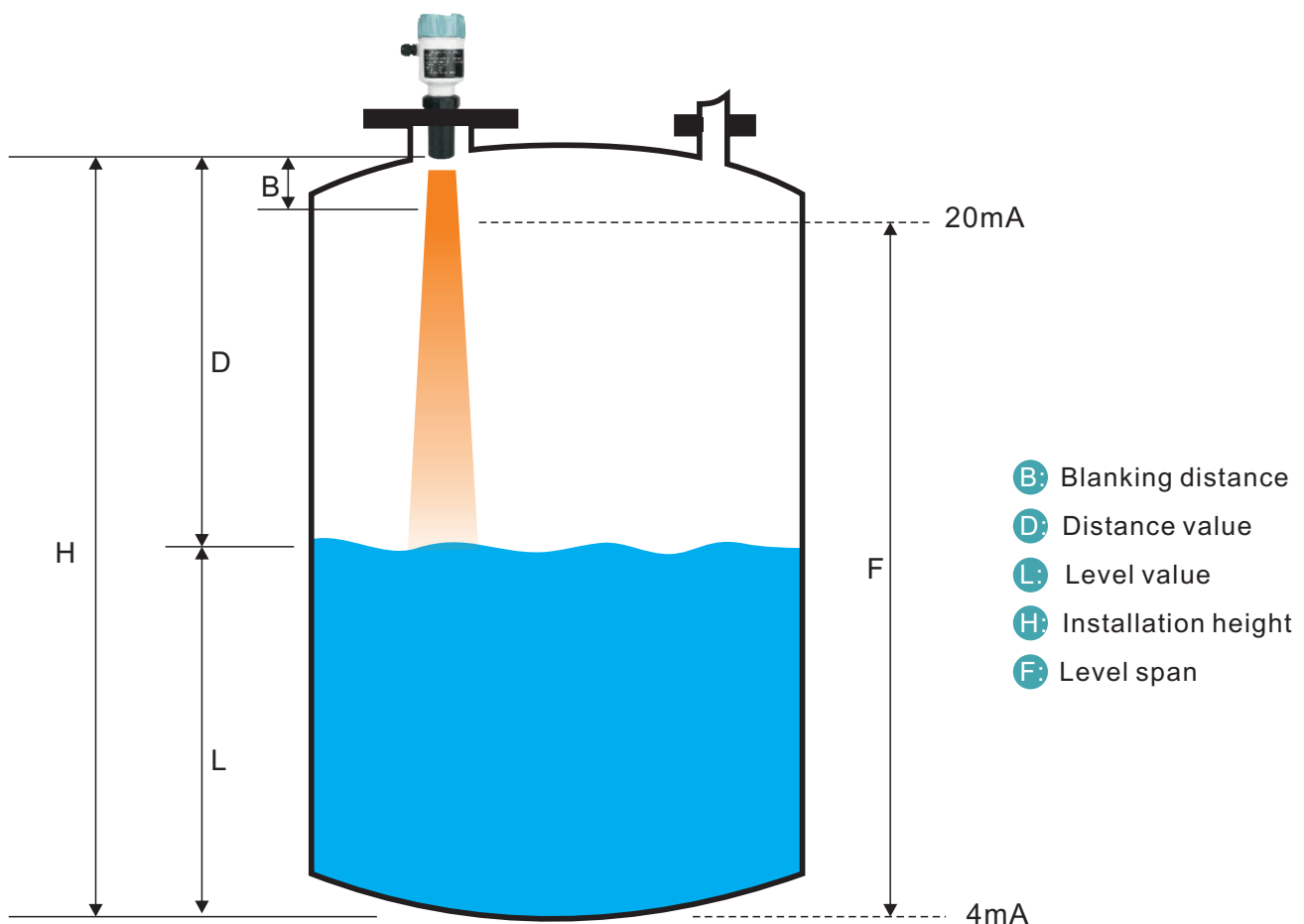
- Patented intelligent echo processing technology to ensure accuracy and stability.
- Patented ultrasonic probe sound-transmitting structure, small dead zone.
- High-sensitivity, built-in full-range automatic temperature compensation.
- High accuracy $\pm 0.2\%$.
- Protected in the excessive voltage and current, thunder and lightning.
- Acid and alkali resistant, adapt to bad environment.
- Support HART function and OEM service.



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:

$D = c \cdot t/2$. As the device knows the empty distance H from a user entry, it can calculate the level as follows:
 $L = H - D$.



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.



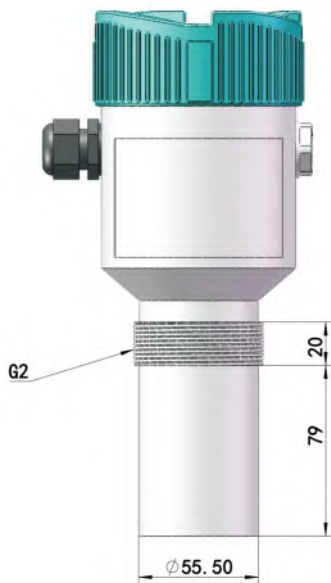
Specification

Model Parameters	PAL/C-4	PAL/C-6	PAL/C-8	PAL/C-12	PAL/C-20	PAL/C-30
Measuring Range (Liquid)	4 m	6 m	8 m	12 m	20 m	30 m
Measuring Range (Solid)			3m	4m	10m	15m
Display Resolution Ratio	1mm	1mm	1mm	1cm	1cm	1cm
Blank Distance	0.20m	0.25m	0.30m	0.50m	0.80m	1.2m
Process Connection	G2 Thread			M95X2.0 Thread		
Transducer Material	ABS,PVC (standard) PTFE (optional)					
Temperature	-40°C~ 75°C (LCD: -20°C~ +70°C)					
Temperature Compensation	The whole range with automatic compensation					
Process Pressure	≤ ±0.1MPa					
Accuracy	±0.2% of actual range					
Signal Output	4-20mA (Option: HART)					
Output Load	0-500Ω					
Power Supply	DC20V~32V ≥30mA					
Display Resolution	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	8°(3db) (4m, 6m, 8m, 10m, 12m type)					
	5°(3db) (20m, 30m type)					
Measurement Cycle	1.5 second (adjustable)					
Protection Grade	IP67					
Installation	Support thread/Flange/Bracket installation					

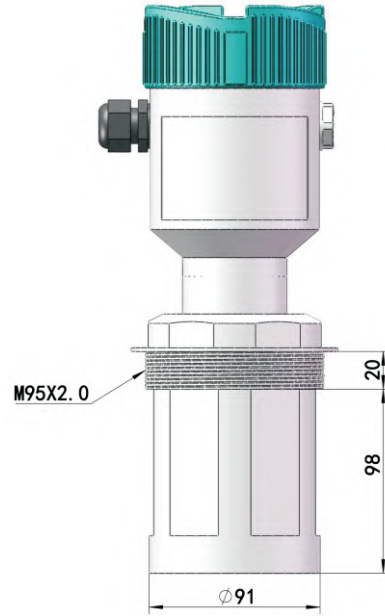


Dimension

● ABS/PVC Transducer Model

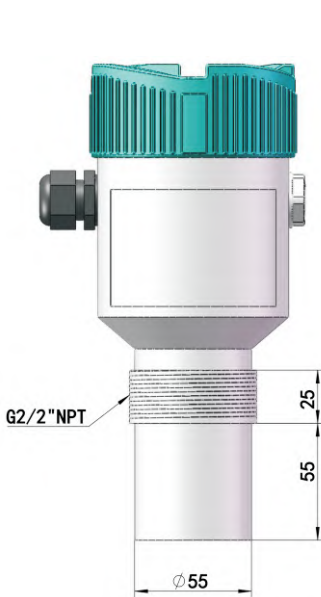


4m, 6m, 8m, 12m standard type

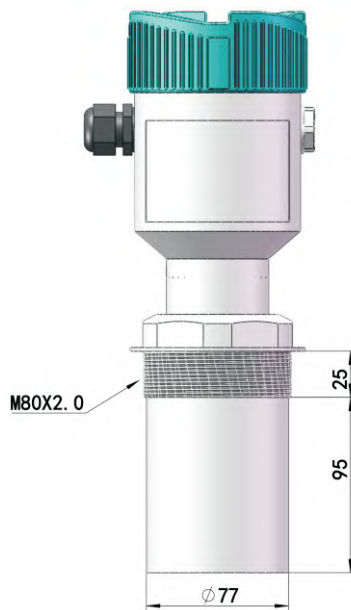


20m, 30m standard type

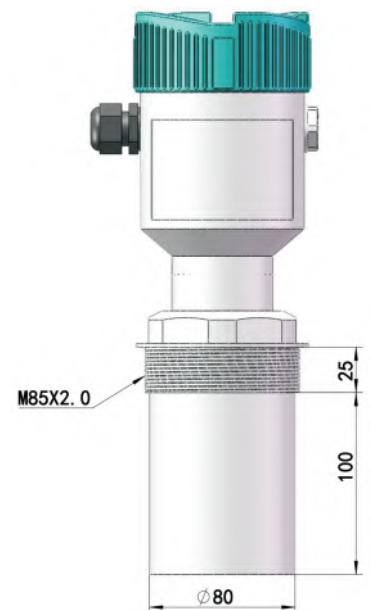
● PTFE/PVDF Transducer Model



4m, 6m, 8m, 12m type



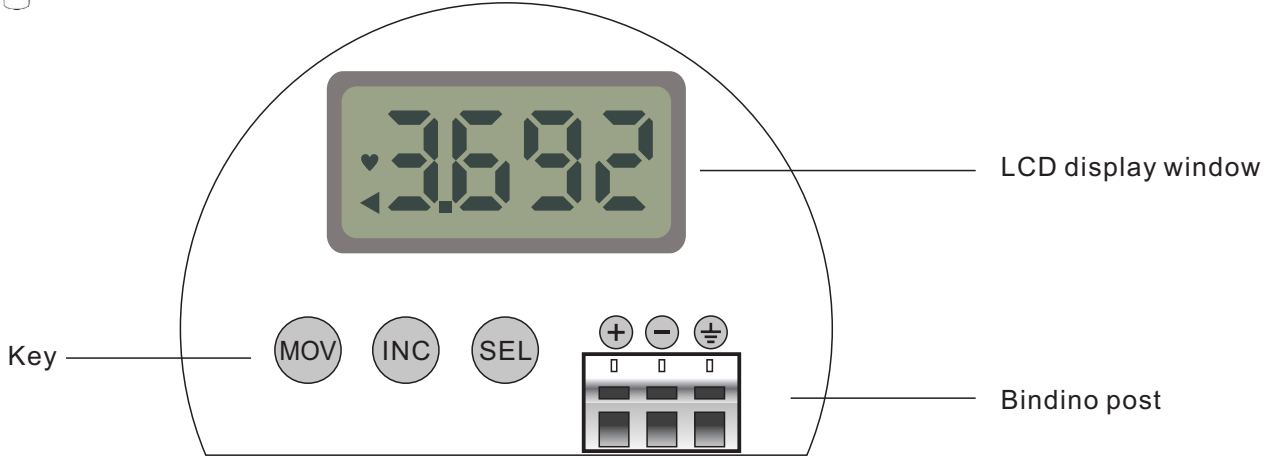
20m type



30m type



The Electronic Unit Panel Layout



Model Selection

PAL/C	Specification	Code					
Range	4m	4					
	6m	6					
	8m	8					
	12m	12					
	20m	20					
	30m	30					
Ex-proof	Without		N				
	With		W				
Transucer	ABS			A			
	PVC			P			
	PTFE			T			
Process Connection	Thread				G		
	Flange				D		
	Others				O		
Output	4-20mA					M	
	4-20mA+HART					H	
	Others					O	
Cable Entry	M20*1.5						M
	1/2"NPT						N



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