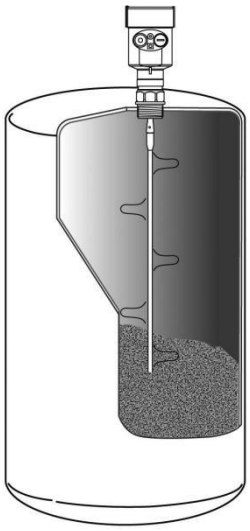
Product Manual

Guided Wave Radar Level Transmitter

Guided Wave Radar Level Meter

1、Measurement Principle



Principle：

High-frequency microwave pulses issued by the guided wave radar propagate along detection components (steel cable or steel rod), met the media to be measured, since the dielectric constant of the mutation, cause reflections, a portion of the pulse energy is reflected back. Transmit pulse and the reflected pulse is proportional to the distance and the time interval measured media.

Features：

As a result of advanced microprocessor and unique choDiscovery echo processing technology, guided wave radar level meter can be used in a variety of complex conditions.

Because of the type of process connections and detection components, making 70X Series Guided Wave Radar Level Meter is suitable for a variety of complex conditions and applications. Such as: high temperature, high pressure and low dielectric constant media.

Pulsed work, guided wave radar level instruments transmit power is very low, can be installed in a variety of metals, non-metallic container, no harm to humans and the environment.

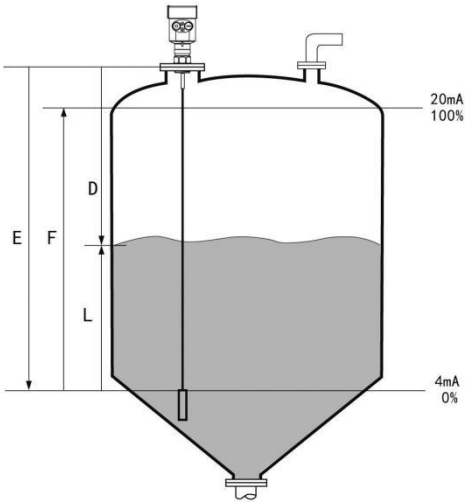
Explanation：

Guided Wave Radar is a time travel to the principle of measuring instruments, radar run at the speed of light, the running time can be converted into a level signal by electronic components. When the pulse reaches the surface of the material, the pulse is reflected back

and is received by the receiving container inside the instrument, the distance the signal is converted to level signals.

Reflected pulse signal along the cable or rod probe type transmit to the instrument electronic circuit parts, the microprocessor processes the signal, identify the microwave pulse echo generated in the material surface. Correct identification of the echo signal are completed the implementation by the pulse software， D, the distance from the material surface and the pulse travel time T is proportional:

D=C×T/2
Where C is the speed of light
Because the empty distance E is known, the level L is:
L=E-D

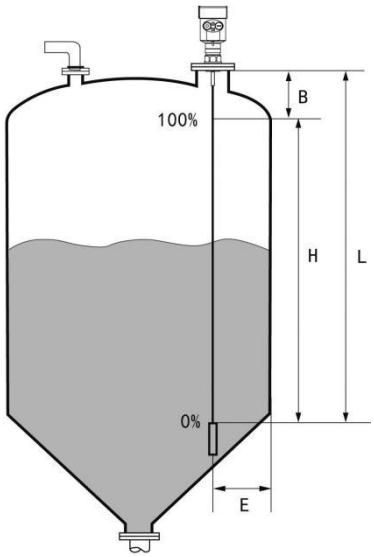


By entering the empty height of E (= zero), full tank height F (= hundred) and the application to set some parameters, application parameters will automatically adapt the instrument to measure the environment, corresponding to the 4-20mA output.

Measuring range：

Explanation：

H--- Measuring
range L---Empty
distance
B---The top of the blind
E---The minimum distance from the probe to the tank wall

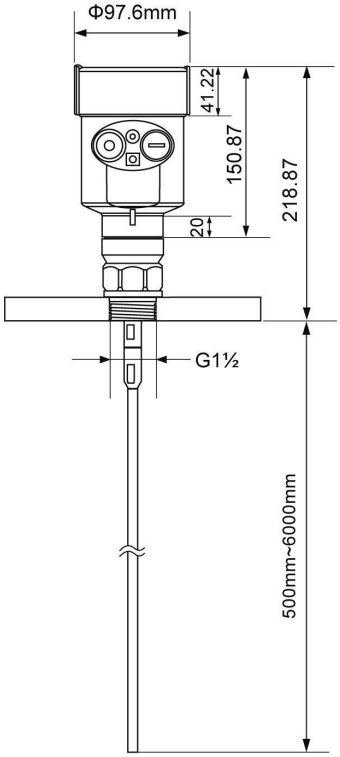


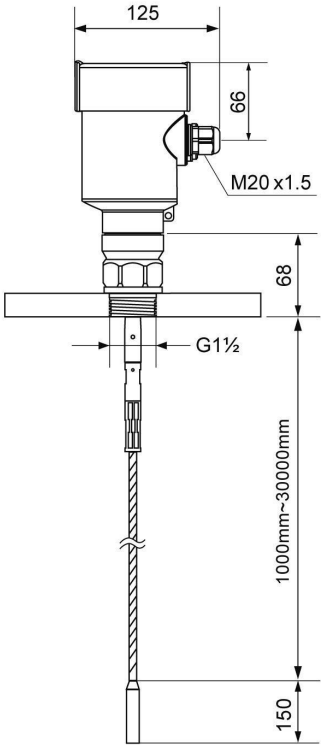
--Blind spot is the minimum distance between the top of the highest material surface materials and measurement reference point.
--The bottom of the blind refers to a distance near the very bottom of the cable can not be accurately measured.
--Between the top and bottom of the blind is blind effective measure distances.

Note:
In order to ensure the accuracy of level measurement, the material should be located between the top and bottom of the blind the blind.

2、Product Introduction

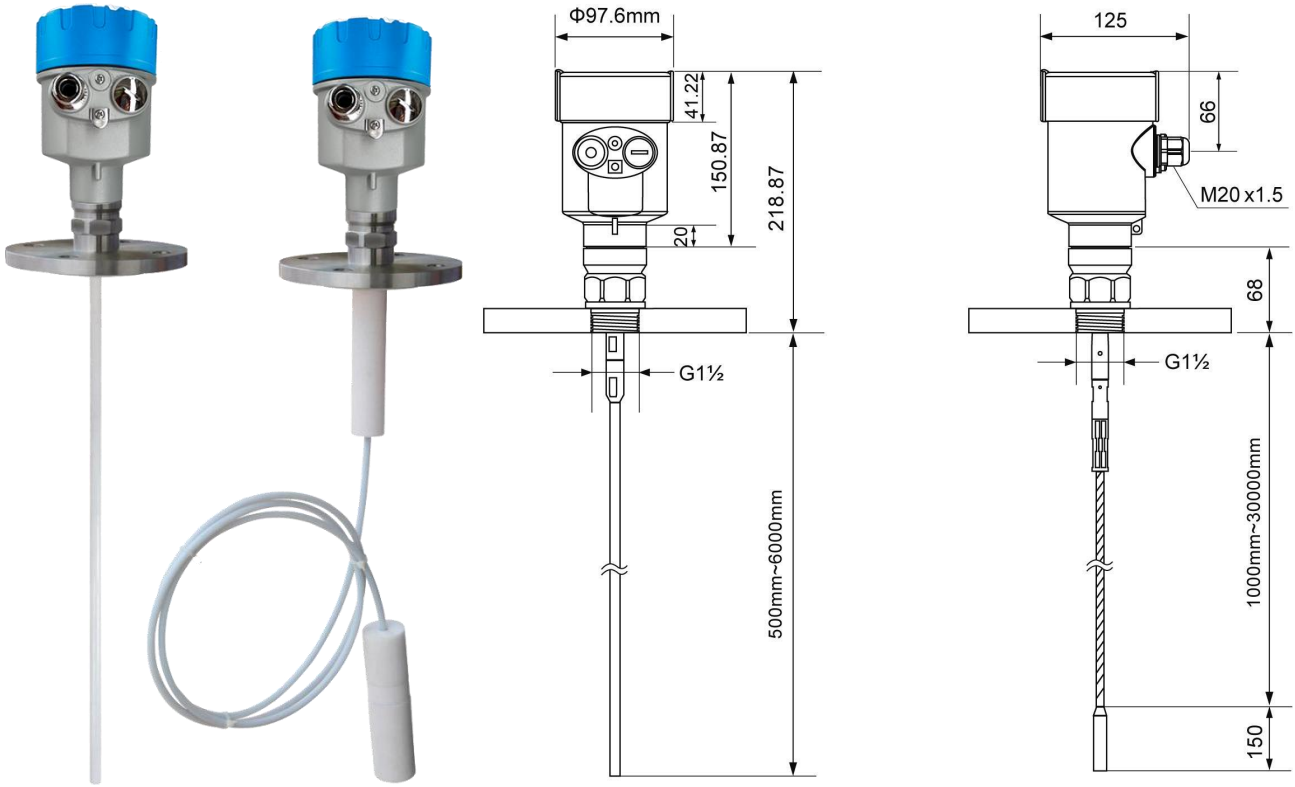
- **701**





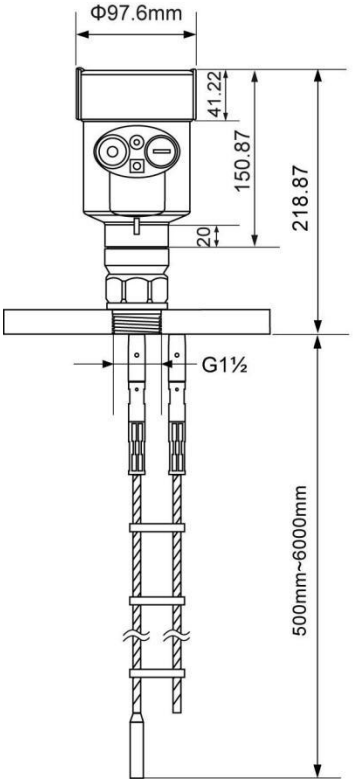
Suitable for Medium:	Liquid, solid powder
Application:	Liquid and solid powder measure, complicated process conditions
Explosion-proof Grade:	Exia IIC T6 Ga/Exd IIC T6 Gb
Measuring Range:	30m
Antenna:	Single cable or single rod antenna
Accuracy:	±10mm
Process Temperature:	（-40～250）℃
Process pressure:	（-0.1～4）MPa
Signal output:	（4～20）mA/HART
The Scene Display:	Four LCD/Can be programmed
Power Source:	Two-wire (DC24V), Four-wire（DC24V/AC220V）
Shell:	Aluminum /Plastic
Connection:	Flange (optional) / Thread
Frequency:	500MHz-1.8GHz

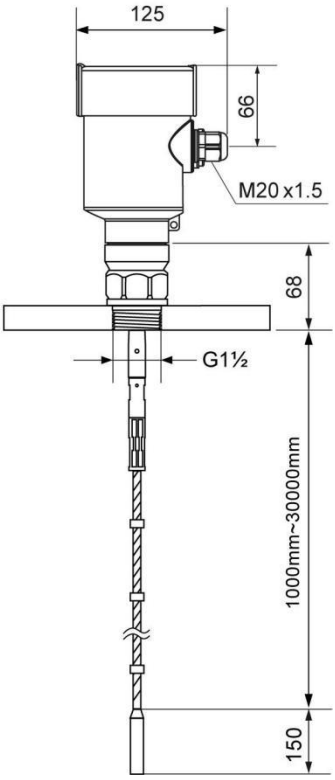
- **702**



Suitable for Medium:	Liquid, especially corrosive liquids
Application:	Acids, bases or other corrosive media
Explosion-proof Grade:	Exia IIC T6 Ga/Exd IIC T6 Gb
Measuring Range:	20m
Antenna:	Full PTFE sealing cable type or rod antenna
Accuracy:	±10mm
Process Temperature:	（-40～200）℃
Process pressure:	（-0.1～0.3）MPa
Signal output:	（4～20）mA/HART
The Scene Display:	Four LCD/Can be programmed
Power Source:	Two-wire (DC24V), Four-wire（DC24V/AC220V）
Shell:	Aluminum /Plastic
Connection:	Flange (optional) / Thread
Frequency:	500MHz-1.8GHz

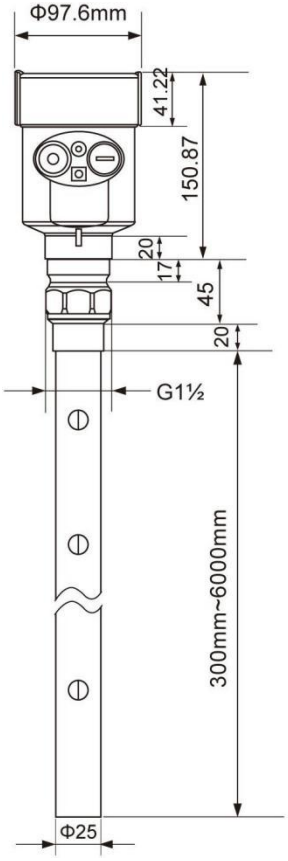
- **703**

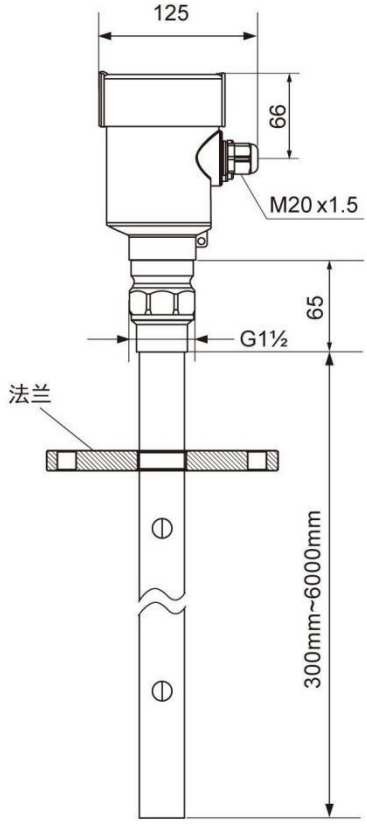




Suitable for Medium:	Solid powder
Application:	Cement silo powder measure; Ash powder measure
Explosion-proof Grade:	Exia IIC T6 Ga/Exd IIC T6 Gb
Measuring Range:	30m
Antenna:	Full PTFE sealing cable type or rod antenna
Accuracy:	±10mm
Process Temperature:	（-40～150）℃
Process pressure:	（-0.1～4）MPa
Signal output:	（4～20）mA/HART
The Scene Display:	Four LCD/Can be programmed
Power Source:	Two-wire (DC24V), Four-wire（DC24V/AC220V）
Shell:	Aluminum /Plastic
Connection:	Flange (optional) / Thread
Frequency:	500MHz-1.8GHz

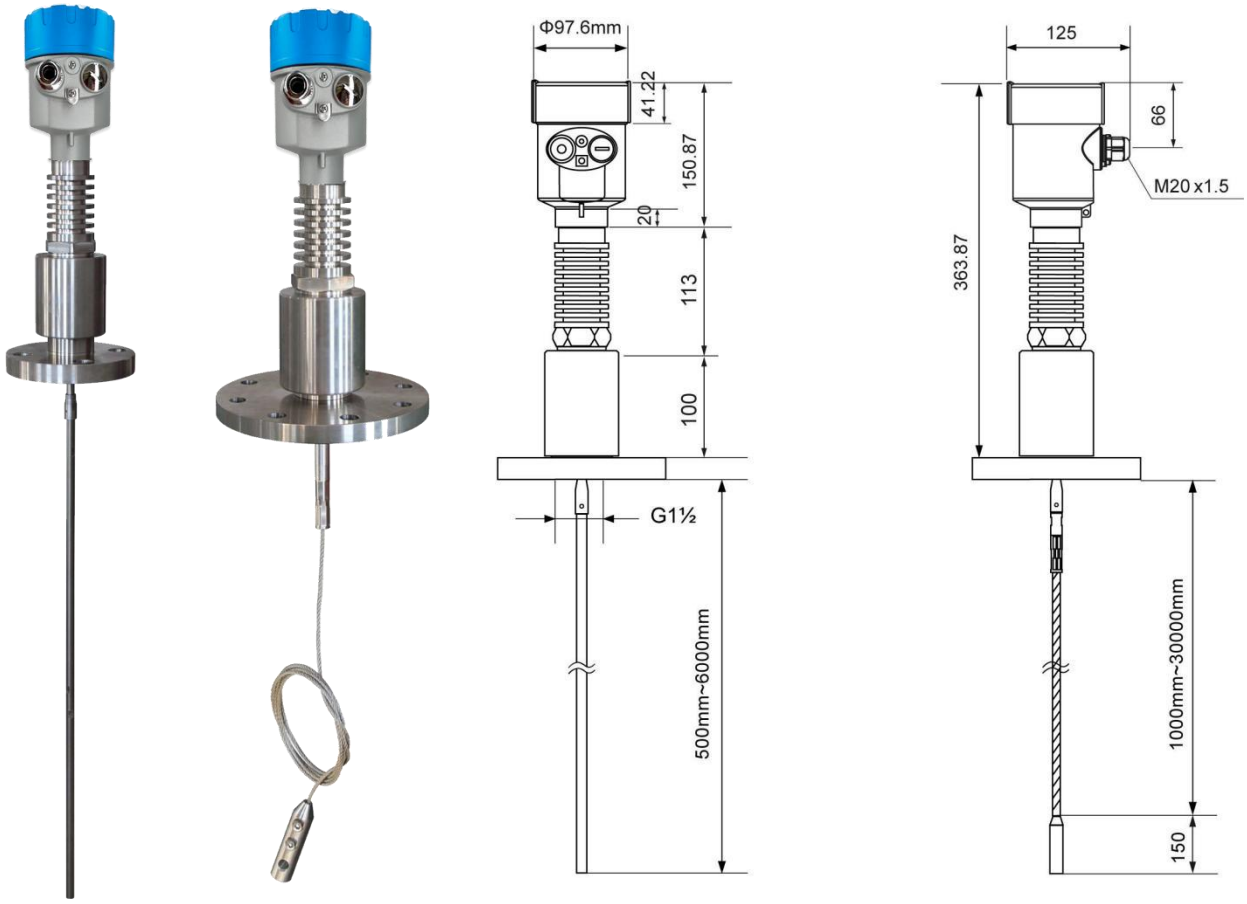
- **704**





Suitable for Medium:	Liquids, particularly low dielectric constant liquid
Application:	Measuring No ion water, deoxygenated water and other liquids
Explosion-proof Grade:	Exia IIC T6 Ga/Exd IIC T6 Gb
Measuring Range:	6m
Antenna:	Coaxial tube type antenna
Accuracy:	±50mm
Process Temperature:	（-40～250）℃
Process pressure:	（-0.1～4）MPa
Signal output:	（4～20）mA/HART
The Scene Display:	Four LCD/Can be programmed
Power Source:	Two-wire (DC24V), Four-wire（DC24V/AC220V）
Shell:	Aluminum /Plastic
Connection:	Flange (optional) / Thread
Frequency:	500MHz-1.8GHz

- **705**



Suitable for Medium:	Liquids, especially high temperature and pressure environment of liquid
Application:	Sealed cans, greater pressure liquid measurement
Explosion-proof Grade:	Exia IIC T6 Ga/Exd IIC T6 Gb
Measuring Range:	15m
Antenna:	Single cable or single rod antenna
Accuracy:	±10mm
Process Temperature:	（-200～400）℃
Process pressure:	（-0.1～40）MPa
Signal output:	（4～20）mA/HART
The Scene Display:	Four LCD/Can be programmed
Power Source:	Two-wire (DC24V), Four-wire（DC24V/AC220V）
Shell:	Aluminum /Plastic
Connection:	Flange (optional) / Thread
Frequency:	500MHz-1.8GHz

Model selection:

1. Sructure				
R-Rod type			C-Cable type	
2. Type				
1	2	3	4	5
701	702	703	704	705
3. Connection size				
T	F	C	X	
Thread	Flange	Tri-Clamp	Customization	
4. Body material				
P1-304	P2-316L	F-PTFE	X-Customization	
5. Operating temperature				
V-(-40~+130℃)	K-(-40~+250℃)	X-Customization		
6. Signal/power				
D1	D2	D3		
4~20mA 24VDC (2 wires)	4~20mA 220VAC (4 wires)	4~20mA 24VDC (4 wires)		
7. Communication				
H-HART	M-RS485/Modbus (4 wires)			
8. Housing				
L -Aluminum / IP67				
9. Electric interface				
M	N	X		
M20*1.5	1/2”NPT	Customization		
10. Explosion proof				
N	i	e		
N/A	Exia II CT6Ga	Exd II CT6Gb		
HKD-RD- 1 2 - 3 4 5 6 7 8 9 10				

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INDUSTRIAL MEASUREMENT
& CONTROL INSTRUMENTS

Chengdu JSH New Material CO., LTD.

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Email : info@instrava.com

Whatsapp

Wechat

Manufacturer 1 : Zigong City, Sichuan Province, China

Manufacturer 2 : Chengdu City, Sichuan Province, China