Datasheet

Radar Level Meter

SIN-RD70X

Sinomeasure

Committed to process automation solutions

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Datasheet

Radar level meter
SIN-RD70X

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..

Application

- Liquid,
- solid
- Powder
- complicated process conditions

Radar level meter RD701

Features

- complicated process conditions
- Measuring Range: 30m
- Frequency: 500MHz-1.8GHz
- 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

Application

- Liquid
- Corrosive liquids
- Acids, bases or other corrosive media

Radar level meter RD702

Features

- Measuring Range：20m
- Frequency: 500MHz-1.8GHz
- Antenna: Full PTFE sealing cable type or rod antenna
- Accuracy:±10mm
- Process Temperature:（-40～200）℃
- 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

Application

- Cement silo powder
- Ash powder

Radar level meter RD703

Features

- Measuring Range：30m
- Frequency: 500MHz-1.8GHz
- Antenna: Double cable type 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

Application

- particularly low dielectric constant liquid
- deionized water
- eoxygenated water and other liquids

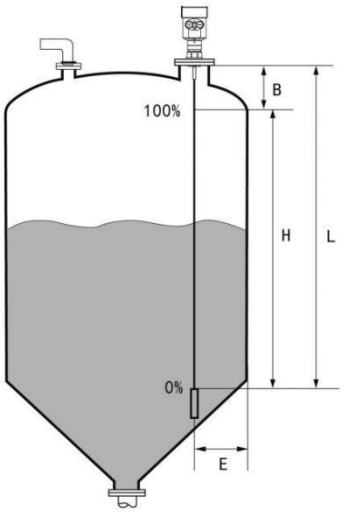
Radar level meter RD704

Features

- Measuring Range：6m
- Frequency: 500MHz-1.8GHz
- Antenna: Coaxial tube type antenna
- Accuracy:±5mm
- 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: Thread / Flange (optional)

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.



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.

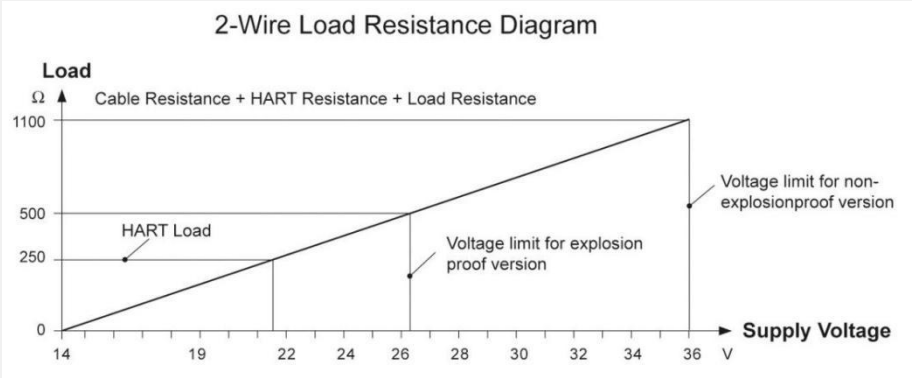
--Between the top and bottom of the blind is blind effective measure distances.

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.

➢

Parameters		
Probe material		
Rod	Stainless Steel 316L/PTFE	
Cable	Stainless Steel 316L/PTFE	
Coax	Stainless Steel 316L/PTFE	
Seal	Viton fluoroelastomer , Kalrez perfluoroelastomer	
Process Connection	Stainless Steel 316L/PTFE	
Shell	Stainless Steel 316L, Plastic，Aluminum，Alu-die casting, Powder Coated	
Seal ring between the shell and the shell	Silicone Rubber	
ViewPoint Window	Polycarbonate	
Ground Terminal	Stainless Steel 316L	
Power		
2-Wire		
The standard type	(16 ~ 26) V DC	
Intrinsically safe	(21.6 ~ 26.4) V DC	
Power dissipation	max 22.5mA / 1W	
Allowable ripple	<100Hz Uss<lV	(100～100K) Hz Uss<l0mV
4-wire		
Intrinsic Safe	(22.8～26.4)V DC，(198～242)V AC	
Power Consumption	max. 1VA，1W	
The cable parameters		
Cable entrance / plug	One cable entry of M20xl.5 (cable diameter of 5～9mm) One blind stopper M20xl.5	
Spring Connection Terminal	Applicable for cables with cross section of 2.5mm	
Output parameters		
The output signal	(4～20)mA/HART	
Resolution	1.6μA	
Failure mode	20.5mA；22mA；3.9mA, hold	
2-wire load resistance	See the diagram below	
4-wire load resistance	Max.500 ohm	
The integral time	(0 ~ 36) s, adjustable	

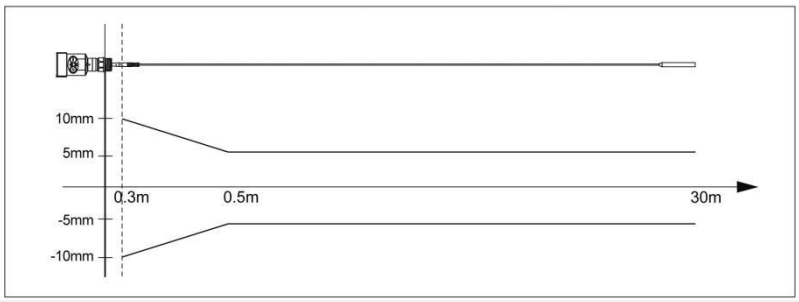


Technical data

Max Measurement Distance

701	30m/6m（Cable /Rod）
702	20m/6m（Cable /Rod）
703	30m/6m（Cable /Rod）
704	6 m
Measurement Interval	About 1sec (Depend on parameter settings)
Adjustment Time	About 1sec (Depend on parameter settings）
Resolution of Display	1mm
Accuracy	±10mm(See the accuracy illustration diagram below)

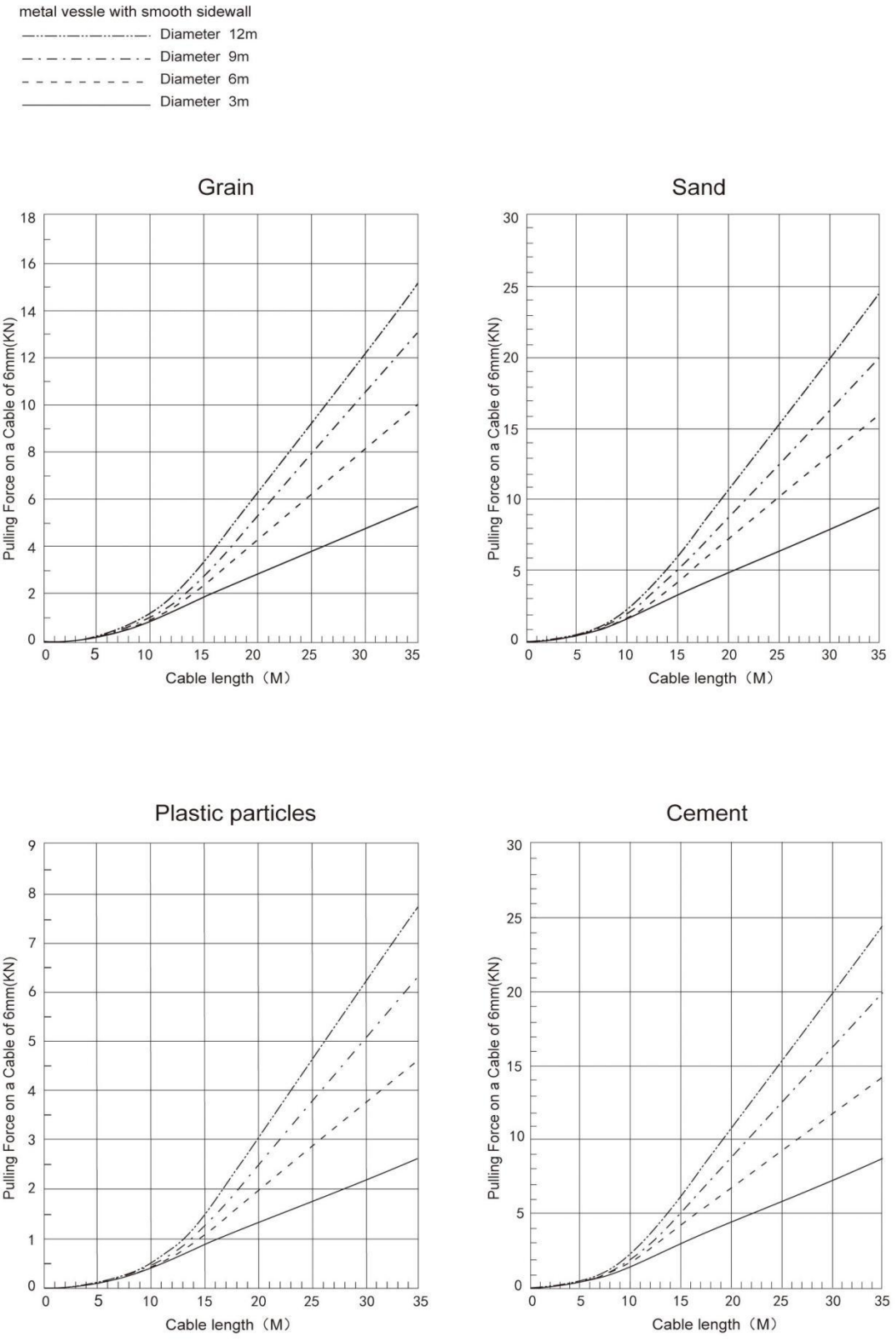
The accuracy illustration diagram



Temperature for Storage/ Transport Process Temperature (Probe)	(-40～80) ℃
701、704	(-40～250)℃
702	(-40～200)℃
703	(-40～150)℃

705	(-200～400)℃
Relative Humidity	＜95%
Pressure	Max. 4MPa
Vibration Proof	Mechanical vibration 10m/s² , (10～150)Hz
Max Pulling Force	See the illustrative diagram on pulling force

When measuring solid medium, the pulling force is determined by the diameter of vessle and medium level, some examples of pulling force generated by typical medium are shown on the diagrams below.



Company:_____Contact:_____
Address:_____ZIP code:_____
The Telephone:_____Fax:_____Mobile phone:_____
Email:_____Date:_____

Tank/Container Information
The Types of Tank：
☐Tank ☐Reaction Tank ☐Separation Tank ☐Marine Tank
The Tank Structure：
Material of Tank:_____Pressure:_____
Tank size：
Tank Height:_____m Diameter:_____
The top of the tank：
☐Vault ☐Flat ☐Open ☐Cone type
The bottom of the tank：
☐Cone bottom ☐Flat ☐Slope bottom ☐Arc bottom
Installation：
☐Top installation ☐Side installation
☐The bypass pipe mount ☐Guided wave pipe installation
Installation takes over the top of the tank（information）：
Height of take over:_____mm Diameter of take over:_____mm

Measurement of Medium
Media name: ☐Liquid ☐Solid ☐Mixed Media
Medium temperature：_____℃
Dielectric Constant：
Linked material: ☐Yes ☐No
Mixing: ☐Yes ☐No

Process Connection
Thread: ☐G1'A ☐1%"NPT
Flange: ☐Flange（DN= ） ☐Flange（ANSI= ）
Power supply：
☐24VDC Two wire system ☐24VDC Four wire system ☐220V AC Four wire system
Output: ☐4-20mA ☐HART
Display：☐Take the meter display program ☐ Without meter display program