

TKWL-1100系列26GHz高频雷达物位计

TKWL-1100 Series 26GHz High-Frequency Radar Level Gauge

产品概述

Product Overview

TKWL-1100系列26GHz高频雷达物位计，输出4~20mA模拟信号，测量最大距离可达70m。天线被进一步优化处理，新型的快速的微处理器可以进行更高速率的信号分析处理，使得仪表可以用于：反应釜或固体料仓非常复杂的测量条件。

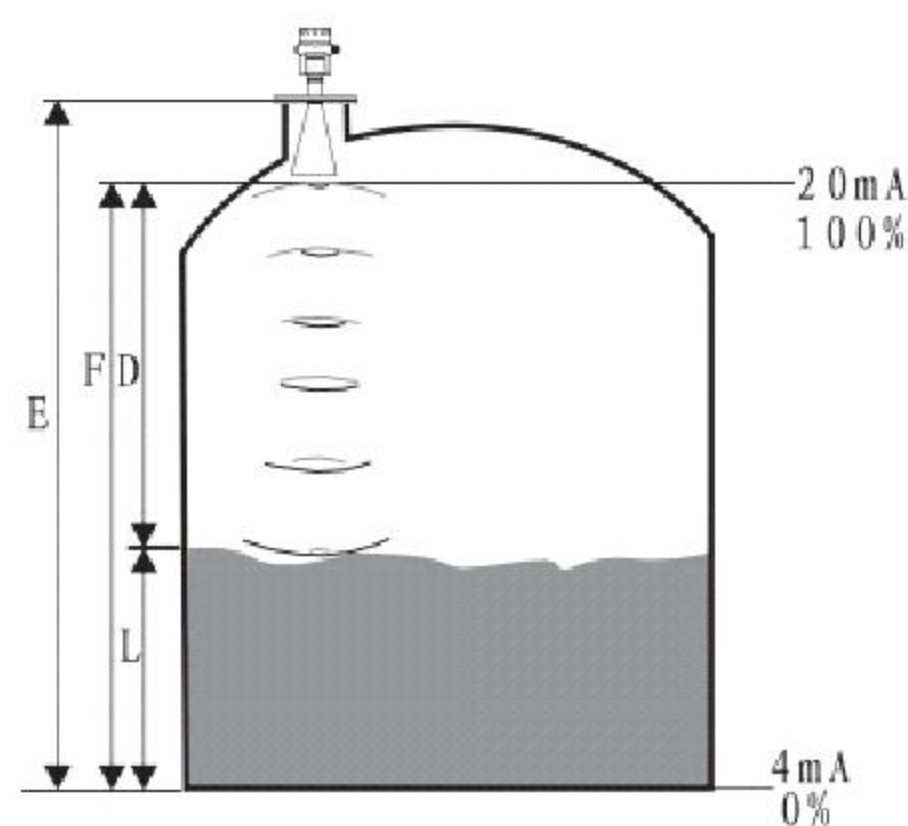
The TKWL-1100 series 26GHz high-frequency radar level gauge is designed to provide a 4-20mA analog output signal and can measure distances up to 70m. The antenna is optimized for improved performance, and the advanced microprocessor enables high-speed signal analysis, making the instrument suitable for measuring under complex conditions in reactors or solid material silos.

产品原理

Product Principle

雷达物位计天线发射极窄的微波脉冲，这个脉冲以光速在空间传播，遇到被测介质表面，其部分能量被反射回来，被同一天线接收。发射脉冲与接收脉冲的时间间隔与天线到被测介质表面的距离成正比。雷达物位计采用一种特殊的相关解调技术，可以准确识别发射脉冲与接收脉冲的时间间隔，从而进一步计算出天线到被测介质表面的距离。

The radar level gauge antenna emits narrow microwave pulses, which propagate at the speed of light in space. When these pulses encounter the surface of the measured medium, a portion of the energy is reflected back and received by the same antenna. The time interval between the transmitted and received pulses is directly proportional to the distance between the antenna and the surface of the measured medium. The radar level gauge uses a special correlation demodulation technique to accurately identify the time interval between the transmitted and received pulses, thereby further calculating the distance from the antenna to the surface of the measured medium.



产品特点

Product Features

雷达物位计采用了高达26GHz的发射频率，因而具有以下特点：

- 1、非接触式测量，无磨损，无污染；
- 2、天线尺寸小，便于安装；
- 3、波长短，对在倾斜的固体表面有更好的反射；
- 4、几乎不受大气中水蒸气、温度和压力变化影响；
- 5、严重粉尘环境仪表也能准确读取到真实物位回波；
- 6、高信噪比，即使在波动的情况下也能获得更优的性能。

The radar level gauge, operating at a frequency of up to 26GHz, exhibits the following characteristics:

- 1.Non-contact measurement, no wear and tear, no contamination.
- 2.Small antenna size, facilitating easy installation.
- 3.Short wavelength, providing better reflection on inclined solid surfaces.
- 4.Minimal influence from changes in atmospheric water vapor, temperature, and pressure.
- 5.Capable of accurately reading true level echoes even in severely dusty environments.
- 6.High signal-to-noise ratio, delivering superior performance even under fluctuating conditions.

产品信息

Product Information

 TKWL-1101	应用：液体 适合强腐蚀性液体 测量范围：0-10m 测量精度：±3mm 过程温度：-40~120℃ 过程压力：-0.1~0.3MPa 频率：26GHz 输出信号：4-20mA/HART/Modbus 电源：两线制 (DC24V) 四线制 (DC24V/AC220V) 现场显示：标配 过程连接：螺纹/法兰/支架 天线：棒式天线 防爆标志：ExdbIICT6 Gb ExialIICT6 Ga ExdbIIBT4 Gb Extb IIICT80℃ Db	Application: Suitable for measuring corrosive liquids Measurement Range: 0-10m Measurement Accuracy: ±3mm Process Temperature: -40~120℃ Process Pressure: -0.10.3MPa Frequency: 26GHz Output Signal: 4-20mA/HART/Modbus Power Supply: Two-wire (DC24V), Four-wire (DC24V/AC220V) Field Display: Included as standard Process Connection: Thread/Flange/Bracket Antenna: Rod antenna Explosion-proof Marking: ExdbIICT6 Gb ExialIICT6 Ga ExdbIIBT4 Gb Extb IIICT80℃ Db
 TKWL-1102	应用：液体 耐温、耐压、轻微腐蚀的液体 测量范围：0-70m 测量精度：±3mm 过程温度：-40~120℃/-40~250℃ 过程压力：-0.1~4.0MPa 频率：26GHz 输出信号：4-20mA/HART/Modbus 电源：两线制 (DC24V) 四线制 (DC24V/AC220V) 现场显示：标配 过程连接：法兰/支架 天线：喇叭天线 防爆标志：ExdbIICT6 Gb ExialIICT6 Ga ExdbIIBT4 Gb Extb IIICT80℃ Db	Application: Liquids, suitable for temperature-resistant, pressure-resistant, and mildly corrosive liquids Measurement Range: 0-70m Measurement Accuracy: ±3mm Process Temperature: -40~120℃/-40~250℃ Process Pressure: -0.1~4.0MPa Frequency: 26GHz Output Signal: 4-20mA/HART/Modbus Power Supply: Two-wire (DC24V) / Four-wire (DC24V/AC220V) Field Display: Included as standard Process Connection: Flange/Bracket Antenna: Horn antenna Explosion-proof Marking: ExdbIICT6 Gb ExialIICT6 Ga ExdbIIBT4 Gb Extb IIICT80℃ Db

 TKWL-1103	应用：液体 卫生型液体，强腐蚀性液体 测量范围：0-30m 测量精度：±3mm 过程温度：-40~120℃/-40~250℃ 过程压力：-0.1~4.0MPa 频率：26GHz 输出信号：4-20mA/HART/Modbus 电源：两线制 (DC24V) 四线制 (DC24V/AC220V) 现场显示：标配 过程连接：法兰 天线：平面天线 防爆标志：ExdbIICT6 Gb ExialICT6 Ga ExdbIIBT4 Gb Extb IIICT80℃ Db	Application: Liquids, suitable for sanitary fluids and highly corrosive liquids Measurement Range: 0-30m Measurement Accuracy: ±3mm Process Temperature: -40~120℃/-40~250℃ Process Pressure: -0.1~4.0MPa Frequency: 26GHz Output Signal: 4-20mA/HART/Modbus Power Supply: Two-wire (DC24V) / Four-wire (DC24V/AC220V) Field Display: Included as standard Process Connection: Flange Antenna: Planar antenna Explosion-proof Marking: ExdbIICT6 Gb ExialICT6 Ga ExdbIIBT4 Gb Extb IIICT80℃ Db
 TKWL-1105	应用：固体 强粉尘易结晶、结露场合 测量范围：0-70m 测量精度：±15mm 过程温度：-40~120℃/-40~250℃ 过程压力：-0.1~4.0MPa 频率：26GHz 输出信号：4-20mA/HART/Modbus 电源：两线制 (DC24V) 四线制 (DC24V/AC220V) 现场显示：标配 过程连接：法兰 天线：喇叭天线 防爆标志：ExdbIICT6 Gb ExialICT6 Ga ExdbIIBT4 Gb Extb IIICT80℃ Db	Application: Solids, suitable for environments with heavy dust, easy crystallization, and condensation Measurement Range: 0-70m Measurement Accuracy: ±15mm Process Temperature: -40~120℃/-40~250℃ Process Pressure: -0.1~4.0MPa Frequency: 26GHz Output Signal: 4-20mA/HART/Modbus Power Supply: Two-wire (DC24V) / Four-wire (DC24V/AC220V) Field Display: Included as standard Process Connection: Flange Antenna: Horn antenna Explosion-proof Marking: ExdbIICT6 Gb ExialICT6 Ga ExdbIIBT4 Gb Extb IIICT80℃ Db
 TKWL-1106	应用：固体 过程容器或强粉尘易结晶、结露场合 测量范围：0-70m 测量精度：±15mm 过程温度：-40~150℃ 过程压力：-0.1~4.0MPa 频率：26GHz 输出信号：4-20mA/HART/Modbus 电源：两线制 (DC24V) 四线制 (DC24V/AC220V) 现场显示：标配 过程连接：法兰 天线：抛物面天线 防爆标志：ExdbIICT6 Gb ExialICT6 Ga ExdbIIBT4 Gb Extb IIICT80℃ Db	Application: Solids, suitable for process vessels or environments with heavy dust, easy crystallization, and condensation Measurement Range: 0-70m Measurement Accuracy: ±15mm Process Temperature: -40~150℃ Process Pressure: -0.1~4.0MPa Frequency: 26GHz Output Signal: 4-20mA/HART/Modbus Power Supply: Two-wire (DC24V) / Four-wire (DC24V/AC220V) Field Display: Included as standard Process Connection: Flange Antenna: Parabolic antenna Explosion-proof Marking: ExdbIICT6 Gb ExialICT6 Ga ExdbIIBT4 Gb Extb IIICT80℃ Db

选型指南

Selection Handbook

TKWL-1101						
电气接口 Electrical Entry M20*1.5M 1/2NPTN 特殊定制X Customized						
外壳材质 Enclosure Material 铸铝L Aluminum 不锈钢Q Stainless Steel						
电子组件 Electronic Components 4-20mA/HART/24V DC 两线制A 4-20mA/HART/24V DC Two-wire 4-20mA/HART/24V DC 四线制B 4-20mA/HART/24V DC Four-wire 4-20mA/HART /220V AC四线制C 4-20mA/HART/220V AC Four-wire 特殊定制X Customized						
天线规格 Antenna Specifications 100mm1 200mm2 特殊定制X Customized						
安装方式 Installation Method G1-1/2螺纹A G1-1/2 Threaded DN50法兰B DN50 Flange						

DN65法兰	C	
DN65 Flange		
DN80法兰	D	
DN80 Flange		
DN100 法兰	E	
DN100 Flange		
DN125法兰	F	
DN125 Flange		
DN150法兰	G	
DN150 Flange		
其它	Z	
Other		
防爆形式		
Explosion Protection Type		
普通型		P
Ordinary Type		
防爆型		D
Explosion-proof Type		

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天线材质 Antenna Material		
304	1	
316L	2	
304衬四氟	3	
304 Stainless Steel lined with PTFE		
316L衬四氟	4	
316L Stainless Steel lined with PTFE		
特殊定制	X	
Customized		
过程连接 Process Connection		
DN50法兰		A
DN50 Flange		
DN80法兰		B
DN80 Flange		
DN100法兰		C
DN100 Flange		
DN150法兰		D
DN150 Flange		
其他 Other		Z
防爆形式 Explosion Protection Type		
普通型		P
Ordinary Type		
防爆型		D
Explosion-proof Type		

TKWL-1103						
电气接口 Electrical Entry M20*1.5 M 1/2NPT N 特殊定制 X Customized						
外壳材质 Shell Material 铸铝 L Aluminum 不锈钢 Q Stainless Steel						
电子组件 Electronic Components 4-20mA/HART/24V DC 两线制 A 4-20mA/HART/24V DC 2-wire 4-20mA/HART/24V DC 四线制 B 4-20mA/HART/24V DC 4-wire 4-20mA/HART /220V AC四线制 C 4-20mA/HART/220V AC 4-wire 特殊定制 X Special Customization						
密封温度 Sealing Temperature 普通密封-40-120℃ P Standard Seal -40-120℃ 高温密封-40-250℃带散热器 G High-Temperature Seal -40-250℃ with Heat Sink						
天线材料/过程连接 Antenna Material/Process Connection 不锈钢复合PTFE法兰 DN50 A Stainless Steel Composite PTFE Flange DN50 不锈钢复合PTFE法兰 DN65 B Stainless Steel Composite PTFE Flange DN65 不锈钢复合PTFE法兰 DN80 C Stainless Steel Composite PTFE Flange DN80 不锈钢复合PTFE法兰 DN100 D Stainless Steel Composite PTFE Flange DN100 不锈钢复合PTFE法兰 DN125 E Stainless Steel Composite PTFE Flange DN125 不锈钢复合PTFE法兰 DN150 F Stainless Steel Composite PTFE Flange DN150 其它 Z Others						

防爆形式	
Explosion Protection Type	
普通型	P
Ordinary Type	
防爆型	D
Explosion-proof Type	

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天线规格 Antenna Specifications		
喇叭天线φ44 Horn Antenna φ44	TA	
喇叭天线φ78 Horn Antenna φ78	TB	
喇叭天线φ96 Horn Antenna φ96	TC	
喇叭天线φ121 Horn Antenna φ121	TD	
特殊定制 Special Customization	TX	
安装方式 Installation Method		
DN80法兰 DN80 Flange		A
DN100法兰 DN100 Flange		B
DN125法兰 DN125 Flange		C
DN150法兰 DN150 Flange		D
其他 Other		Z
防爆形式 Explosion Protection Type		
普通型 Ordinary Type		P
防爆型 Explosion-proof Type		D

TKWL-1106						
电气接口 Electrical Entry M20*1.5 M 1/2NPT N 特殊定制 X Customized						
外壳材质 Shell Material 铸铝 L Aluminum 不锈钢 Q Stainless Steel						
电子单元 Electronic Unit 4-20mA/HART/24V DC 两线制 A 4-20mA/HART/24V DC Two-wire 4-20mA/HART/24V DC 四线制 B 4-20mA/HART/24V DC Four-wire 4-20mA/HART /220V AC四线制 C 4-20mA/HART/220V AC Four-wire 特殊定制 X Special Customization						
天线规格 Antenna Specifications 抛物面φ196mm TA Parabolic Antenna φ196mm 抛物面φ245mm TB Parabolic Antenna φ245mm 特殊定制 TX Special Customization						
安装方式 Installation Method DN200法兰 A DN200 Flange DN250法兰 B DN250 Flange 其他 Z Other						
防爆形式 Explosion Protection Type 普通型 P Ordinary Type 防爆型 D Explosion-proof Type						