TEKTROL

Technology Solutions

TEK-WAVE 4300C

Free Space Radar Level Transmitter

LEVEL

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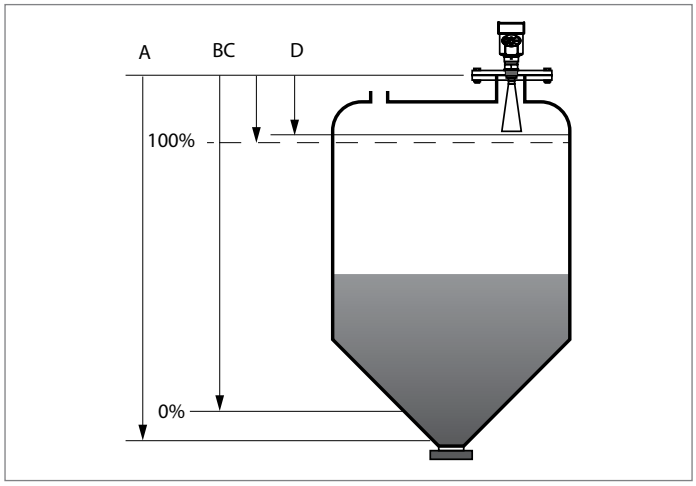
Introduction

Tek-Wave 4300C Free Space Radar Level Transmitter is 26GHz high frequency radar type level measuring instrument, which can measure up to 70 meters. The antenna is furthered optimized and the new fast microprocessor can carry out signal analysis and processing at a higher rate. Therefore Tek-Wave 4300C Free Space Radar Level Transmitter can be used for some complex measurement conditions such as reactor, solid bin, etc.

Working Principle

The Tek-Wave 4300C Radar Level antenna transmits a narrow microwave pulse, which is transmitted downward through the antenna. When the microwave contacts the surface of the medium the microwave pulse gets reflected and received by antenna again. This received signal is then transmitted to the electronic circuit and gets converted into the material level signal.



Where, A is Range Setting
B is Low Level Adjustment
C is High Level Adjustment
D is Blind Area Range

Fig 1: Tek-Wave 4300C Free Space Radar Level Transmitter

Benefits

- East to install as small size antenna.
- Non-contact radar without wear and pollution.
- Hardly affected by corrosion, foam and changes in water vapor including temperature and pressure in the atmosphere.
- Influence is minimal during serious dust environment.
- Shorter wavelength.
- Better reflection when inclined solid surface.
- Small Beam angle and energy concentrated.
- Enhance the echo ability and avoid interference.
- Smaller measurement blind area.
- High signal-to-noise ratio.
- Can achieve better performance even in the case of fluctuation.
- High frequency is the best choice for measuring solid and low dielectric constant medium.

Application

- Solid
- Strong Dew
- Dust
- Crystal
- Corrosive Liquids

Specifications

Accuracy	±3mm
Measuring Range	90ft (30m)
Microwave Frequency	26GHz
Maximum Pressure	Max. 580 psi (4Mpa)
Process Pressure	-14.50 to 580 psi (0.1 to 4 Mpa)
Operating Temperature	-40 to 212°F (-40 to 100°C)
Process Temperature	-40 to 482°F (-40 to 250°C)
Medium Temperature	-40 to 300°F (-40 to 150°C)
Shock Resistance	Mechanical vibration 32.80ft/s^2 (10m/s^2), 10 to 150 Hz
Process Connection	NPT or Flange
Electrical Connection	½" NPT (Two)
Terminal Block	18 to 22 AWG Wire
Protection Class	IP67
Output Signal	4 to 20mA with HART®, Optional Modbus RS485
Fault Signal	current output unchanged; 20.5ma; 22mA; 3.9mA
Integration time	0 to 50s adjustable
Power Supply	16 to 26 VDC
Power Consumption	Max 22.5mA/1w
Permissive Ripple	- <100Hz Uss<IV - (100 to 100K) Hz Uss<I0mV
Blind Area	Antenna end
Response Time	About 1 second (depending on parameter setting)
Display	LCD
Display Resolution	1mm
Approval	CE

Dimensional Drawings

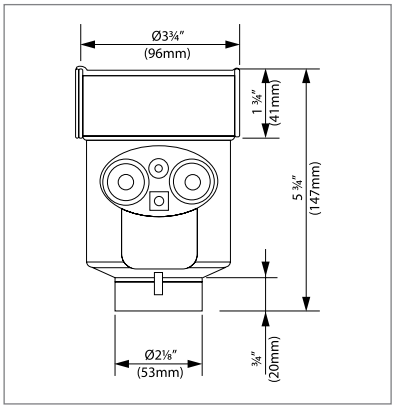


Fig 2: Front view

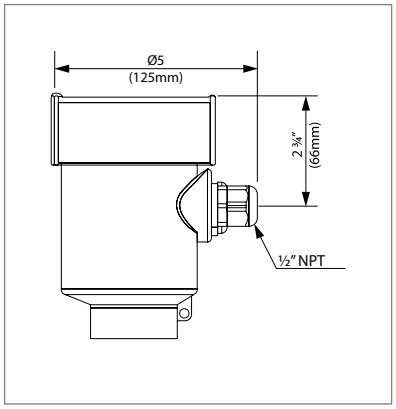


Fig 3: Side View

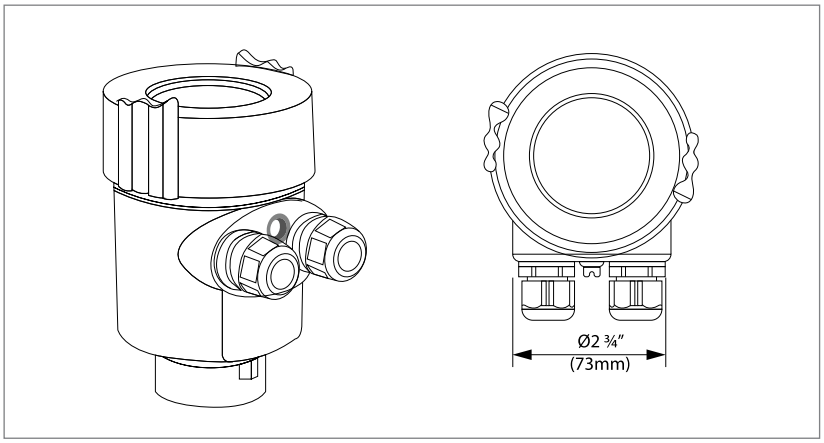


Fig 4: Top View

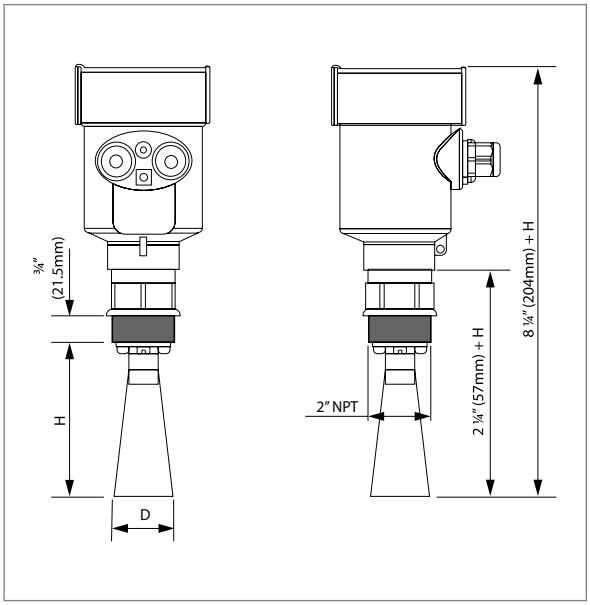


Fig 5: Tek-Wave 4300C Free Space Radar Level Transmitter

Line Size in (mm)	D in (mm)	H in (mm)
2" (50)	1 ¾" (φ46)	5 ½" (140)

Installation

- **Mounting**

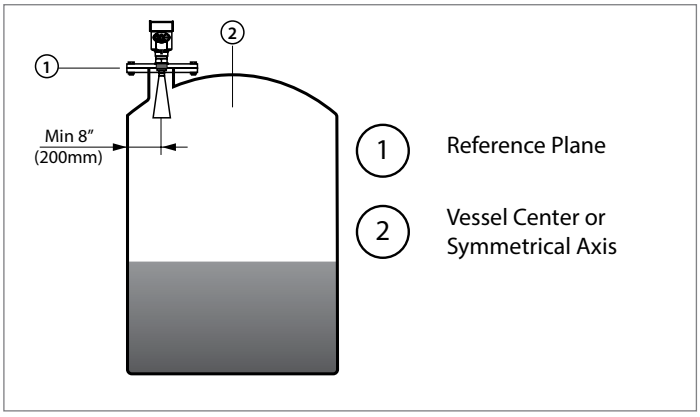


Fig 6: Installation at 1/4 or 1/6 of Diameter

- **Installation on Conical Tank**

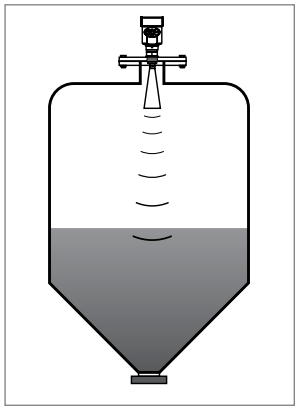


Fig 7: Installation at Conical Tank in Top Plane

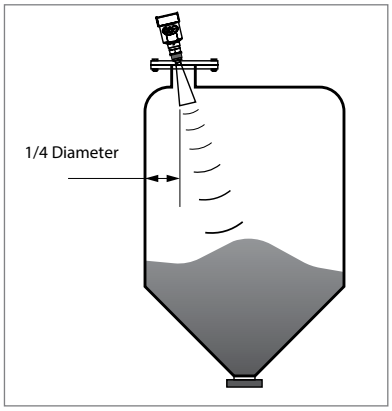


Fig 8: Installation at Conical Tank in inclined Plane

- **Incorrect Installations**

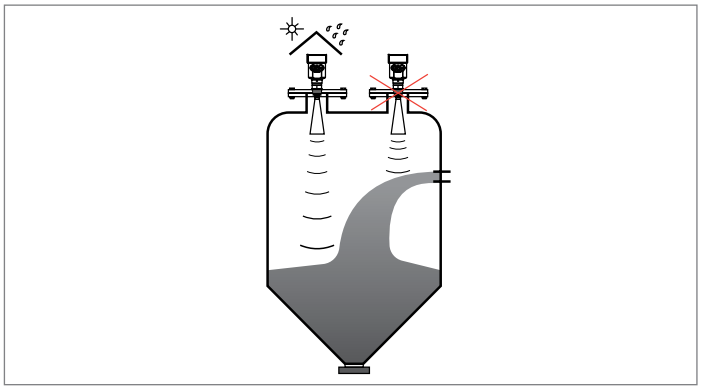


Fig 9: Installation at Conical Tank

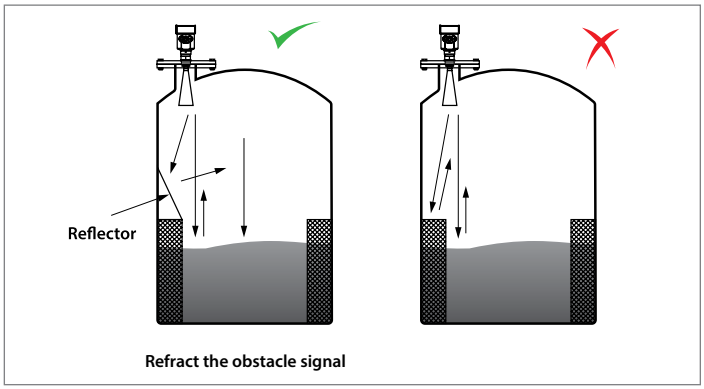


Fig 10: Installation of Reflection Plate

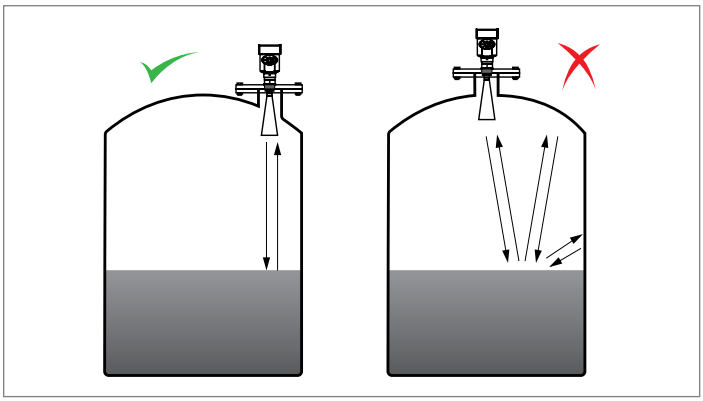


Fig 11: Installation at Round Tank

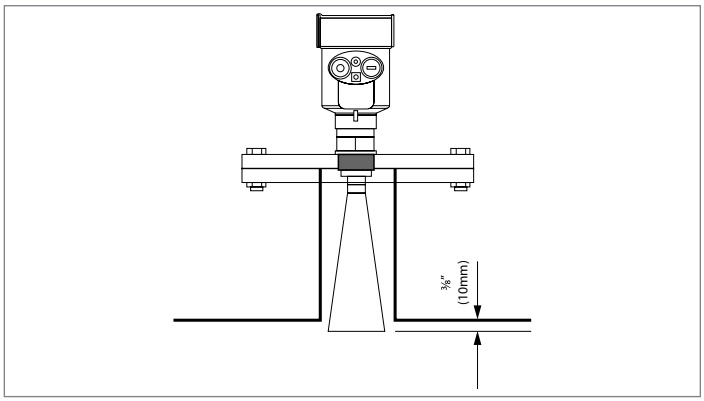


Fig 12: Installation with Height Requirement

Model Chart

Example	Tek-Wave 4300C	01	A	01	A	01	A	01	Tag	Tek-Wave 4300C-01-A-01—A-01-A-01-Tag
Series	Tek-Wave 4300C									Free Space Radar Level Transmitter
Output		01								4-20mA, HART (2-wire)
		02								Modbus RS-485 (4-wire)
Pressure Limits			A							-14.5 to 580 psi (0.1 to 4Mpa)
			X							Special
Temperature Limits				01						Standard : -40 to 300°F (-40 to 150°C)
				02						High: -40 to 482°F (-40 to 250°C)
Process Connection					A					2" NPT
					B					3" 150# Flange
					C					4" 150# Flange
					D					3" 300# Flange
					X					Special
Electrical Connection						01				½" NPT (Two)
						XX				Special
Power Supply							A			16 to 26 VDC
							X			Special
Range								01		90 feet (30 Meters)
Options									TAG	SS Tag
									FC	Factory Configuration

Customer Service & Support

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