

TRG806X RADAR LEVEL METER

Summary

TRG8000 series radar level transmitter is an advanced level measuring instrument independently developed by DDTOP. Among them, the 26GHz TRG806X series radar level meter adopts professional microwave technology, small beam angle structure design, small antenna size, concentrated energy, high reliability and high precision, small measurement blind zone, on-site intelligent signal processing, strong anti-interference ability, and other advantages, which largely improve the measurement accuracy.

This radar level transmitter is suitable for a wide range of temperature, humidity, pressure conditions and other process conditions, and is widely used in refineries and storage tanks in storage areas, liquefied petroleum gas storage, petrochemical industry, food and beverage industry, water and wastewater treatment, water utilities and other industries.



Operating Principle

TRG806X series radar level transmitter is a two-wire 26GHz single-pulse radar level transmitter. It transmits a very short pulse with very low energy through the antenna. This pulse propagates in space at the speed of light and encounters the surface of the measured medium, and part of its energy is reflected back, received by the same antenna. The time interval between the transmitted pulse and the received pulse is proportional to the distance from the antenna to the surface of the measured medium. The TRG806X series radar level meter adopts relevant demodulation technology, which can accurately identify the time interval between the transmitted pulse and the received pulse, thereby calculating the distance from the antenna to the surface of the measured medium.

Technical Parameters

Range: 70m

Accuracy: $\pm 3\text{mm}$ or $0.1\%FS$ (depend on the bigger one)

Dead Zone: 300mm

Ambient Temperature: $-40^{\circ}\text{C} \sim 70^{\circ}\text{C}$

Minimum Dielectric Constant: 1.5

Power Supply: (16 ~ 36) V DC (two-wire)

Explosion-proof: Intrinsic safety: Ex ia IICT1 ~ T5/T6 Ga ; Ex ia D 20 T85°C

Composite Type: Ex d ia [ia Ga]IIC T1 ~ T5/T6 Gb; Ex tD A21 T100°C /T85°C

Housing/IP Rating: Aluminum/IP67

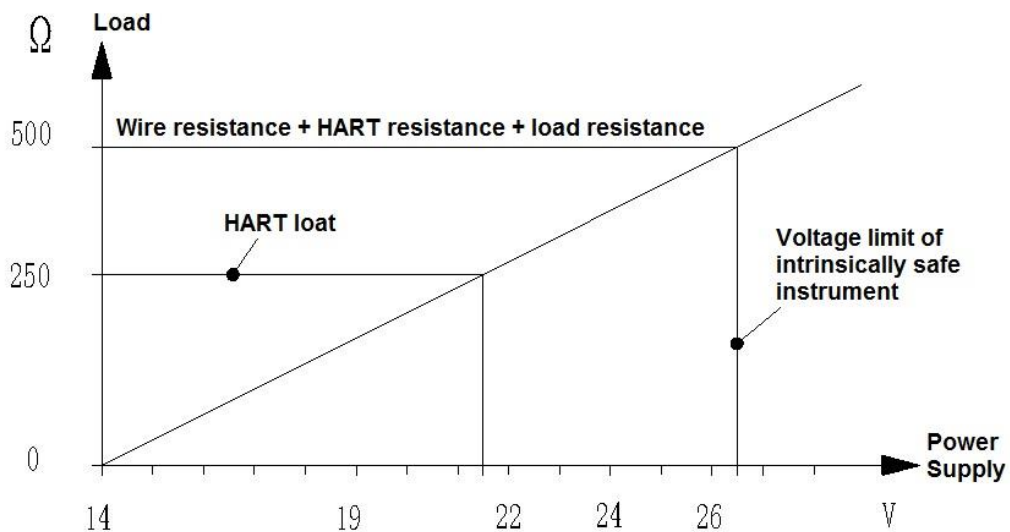
Output Signal: 4 ~ 20Ma

Display Resolution: 1mm

Emission Frequency: 26GHz

Structure: Rod antenna, horn antenna, process sealed antenna, parabolic antenna

Two-wire load resistance diagram



Two-wire Load Resistance Diagram

Outline Drawing and Installation

TRG8061

Application: Suitable for aggressive liquids

Range: 10m

Accuracy: $\pm 5\text{mm}$ or $0.1\%FS$ (depend on the bigger one)

Process Temperature: $(-40 \sim 180) ^\circ\text{C}$

Process Pressure: $(-0.1 \sim 0.3) \text{MPa}$

Antenna Structure: Rod type



TRG8062

Application: Temperature and pressure resistant, slightly corrosive liquids

Range: 30m

Accuracy: $\pm 3\text{mm}$ or $0.1\%FS$ (depend on the bigger one)

Process Temperature: $(-40 \sim 250) ^\circ\text{C}$

Process Pressure: $(-0.1 \sim 4.0) \text{MPa}$

Antenna Structure: Horn type



TRG8063

Application: Suitable for highly corrosive, temperature and pressure resistant, hygienic liquid.

Range: 20m

Accuracy: $\pm 10\text{mm}$ or $0.1\%FS$ (depend on bigger one)

Process Temperature: $(-40 \sim 250) ^\circ\text{C}$

Process Pressure: $(-0.1 \sim 1.0) \text{MPa}$

Antenna Structure: Process sealed type



TRG8064

Application: Small dielectric constant liquid and solid, large range and ultra-large range measurement

Range: 70m

Accuracy: $\pm 10\text{mm}$ or $0.1\%FS$ (depend on bigger one)

Process Temperature: $(-40 \sim 150) ^\circ\text{C}$

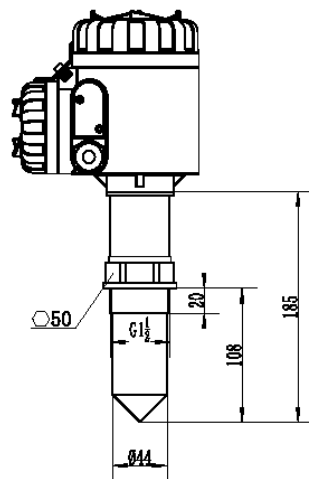
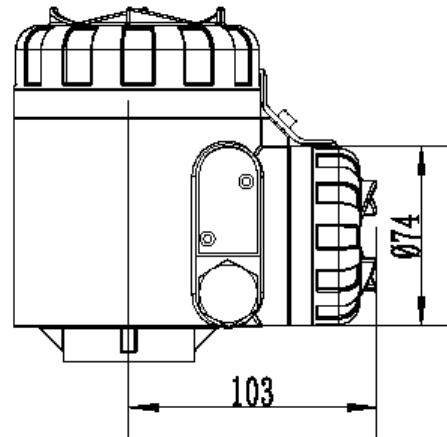
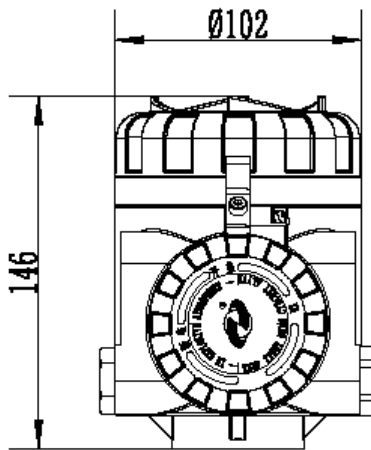


Process Pressure: (-0.1 ~ 4.0) MPa

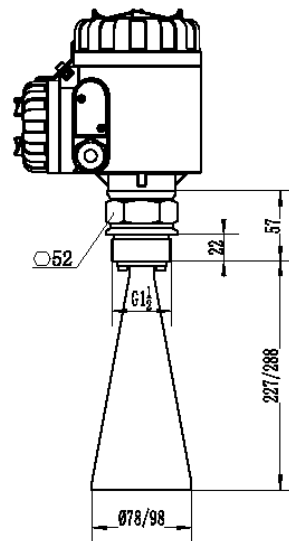
Antenna Structure: parabolic

Outline Drawing

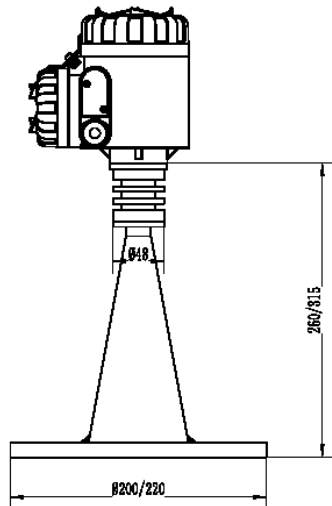
Transmitter



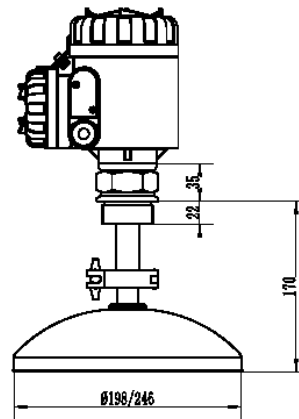
TRG8061



TRG8062



TRG8063



TRG8064

Model Selection Table

Model	Specification Code	Contents
TRG8061		Rod type
	P	Non explosion-proof
	I	Intrinsic safety type (Ex iaD 20 T85°C/Ex ia IICT1 ~ T5/T6 Ga)
	F	Intrinsic safety & flameproof composite type Ex d ia [ia Ga] IIC T1 ~ T5/T6 Gb; Ex tD A21 T100°C /T85°C
	2	Material/Process Temperature: PVDF/(-40 ~ 130)°C
	3	Material/Process Temperature: PEEK/(-40 ~ 200)°C
	GP	Process connection: Threaded G1½ "
	NP	Process connection: Threaded NPT1½ "
	GX	Process connection: Customized
	A	Neck tube:100mm
	B	Neck tube:200mm
	X	Neck tube: Customized
	B	Electronic components:(4 ~ 20)mA/ (22.8 ~ 26.4) V DC/HART/two-wire
	A	Housing/IP Rating: Aluminum alloy/IP67
	M	Cable entrance:M20×1.5
	N	Cable entrance:NPT1/2 "
	A	Local display/Programming: With
	X	Local display/Programming: Without

Example

TRG8061I2GPABAMA is TRG8061 type radar level transmitter, rod type, intrinsically safe, PVDF material,

process temperature -40 ~ 130°C, process connection is threaded G1½", neck tube length 100mm, electronic components (4 ~ 20)mA+HART, 24V DC, two-wire system, aluminum alloy housing, IP67, cable entrance is M20×1.5, with local display

Model	Code	Contents
TRG8062		Horn type
	P	Non explosion-proof
	I	Intrinsic safety type (Ex ia IIC1 ~ T5/T6 Ga; Ex iaD 20 T85°C)
	F	Intrinsic safety & flameproof composite type Ex d ia [ia Ga]IIC T1 ~ T5/T6 Gb; Ex tD A21 T100°C /T85°C
	B	Antenna size/Material: φ48mm/ 316L
	C	Antenna size/Material: φ78mm/ 316L
	D	Antenna size/Material: φ98mm/ 316L
	E	Antenna size/Material: φ123mm/ 316L
	X	Customized
	Z	Dust cover: With
	X	Dust cover: Without
	GP	Process connection: Threaded G1½ "
	NP	Process connection: Threaded NPT1½ "
	GE	Process connection: Threaded G1½ " (With purge function)
	GX	Process connection: Customized
	A	Neck tube:100mm
	B	Neck tube:200mm
	X	Neck tube: Customized
	2	Seal/Process temperature: FKM (fluoro rubber) (-40 ~ 150)°C
	3	Seal/Process temperature: FFKM (perfluoro rubber) (-20 ~ 250)°C
	B	Electronic components:(4 ~ 20)mA/ (22.8 ~ 26.4) V DC/HART/two wire
	A	Housing/IP Rating: Aluminum alloy/IP67
	S	Purge function: With
	X	Purge function: Without
	M	Cable entrance:M20×1.5
	N	Cable entrance:NPT1/2 "
	A	Local display/Programming: With
	X	Local display/Programming: Without

Example

TRG8062IDXGPX2BAXMA is a TRG8062 radar level transmitter, horn type, intrinsically safe, antenna size $\phi 98\text{mm}$, material 316L, without dust cover, process connection is threaded G1½", special customized neck tube, sealing material FKM, process temperature $-40 \sim 150^{\circ}\text{C}$, electronic components (4 ~ 20) mA+HART, 24V DC, two-wire system, aluminum alloy casing material, IP67, without purge function, cable entrance M20×1.5, with local display.

Model	Code	Contents
TRG8063		Process sealed type
	P	Non explosion-proof
	I	Intrinsic safety type (Ex ia IICT1 ~ T5/T6 Ga; Ex iaD 20 T85°C)
	F	Intrinsic safety & flameproof composite type Ex d ia [ia Ga]IIC T1 ~ T5/T6 Gb; Ex tD A21 T100°C /T85°C
	B	Antenna size/Material: $\phi 48\text{mm}/ 304$
	C	Antenna size/Material: $\phi 78\text{mm}/ 304$
	D	Antenna size/Material: $\phi 98\text{mm}/ 304$
	X	Antenna size/Material: Customized
	FB	Process connection: DN50 flange
	FC	Process connection: DN80 flange
	FD	Process connection: DN100 flange
	G	Process connection/Material: Customized
	X	
	2	Seal/Process temperature: FKM (fluoro rubber) ($-40 \sim 150^{\circ}\text{C}$)
	3	Seal/Process temperature: FFKM (perfluoro rubber) ($-60 \sim 250^{\circ}\text{C}$)
	B	Electronic components: (4 ~ 20)mA/ (22.8 ~ 26.4) V DC/HART/two wire
	A	Housing/IP Rating: Aluminum alloy/IP67
	M	Cable entrance: M20×1.5
	N	Cable entrance: NPT1/2 "
	A	Local display/Programming: With
	X	Local display/Programming: Without

Example

TRG8063ICFC2BAMA: TRG8063 radar level transmitter, process sealed, intrinsically safe, antenna size $\phi 78\text{mm}$, material 304, process connection is DN80 flange, sealing material fluorine rubber, process temperature $-40 \sim 150^{\circ}\text{C}$, electronic components (4 ~ 20) mA+HART, 24V DC, two-wire system, housing material

aluminum alloy, IP67, cable entry M20×1.5, with local display.



Model	Code	Contents
TRG8064		Parabolic antenna type
	P	Non explosion-proof
	I	Intrinsic safety type (Ex iaD 20 T85°C/Ex ia IICT1 ~ T5/T6 Ga)
	F	Intrinsic safety & flameproof composite type Ex d ia [ia Ga]IIC T1 ~ T5/T6 Gb; Ex tD A21 T100°C /T85°C
	G	Antenna size/Material: φ198mm/ 316L
	H	Antenna size/Material: φ248mm/ 316L
	X	Antenna size/Material: Customized
	GP	Process connection: Threaded G1½ "
	NP	Process connection: Threaded NPT1½ "
	GX	Process connection: Customized
	2	Seal/Process temperature: FKM (fluoro rubber) (-40 ~ 150)°C
	3	Seal/Process temperature: FFKM (perfluoro rubber) (-60 ~ 250)°C
	B	Electronic components: (4 ~ 20)mA/ (22.8 ~ 26.4) V DC/HART/two wire
	A	Housing/IP Rating: Aluminum alloy/IP67
	M	Cable entrance: M20×1.5
	N	Cable entrance: NPT1/2 "
	A	Local display/Programming: With
	X	Local display/Programming: Without

Example

TRG8064IGGP2BAMA: TRG8064 radar level transmitter, parabolic type, intrinsically safe, antenna size 198mm, material 316L, process connection is thread G1½", sealing material fluorine rubber, process temperature -40 ~ 150°C, electronic component (4 ~ 20) mA+HART, 24V DC, two-wire system, housing material aluminum alloy, IP67, cable entry M20×1.5, with local display.

Ordering Information

Please fill in the following data sheet carefully when ordering.

Radar Data Sheet				
User Information				
Attn:		Tel:		
Email:		Fax:		
Company:				
City:		Country:		
Storage Tank Information				
<input type="checkbox"/> Solid 		<input type="checkbox"/> Liquid 		<input type="checkbox"/> Standing Tank <input type="checkbox"/> Lying Tank <input type="checkbox"/> Ball Tank
			Working Pressure	
			Normal Pressure:	
			Max Pressure:	
			Tank Dimensions	
Tank Roof:			Tank Height: _____ M	
Tank Bottom:			Tank Diameter: _____ M	
Installation Position:			Opening Size: _____ CM	
<input type="checkbox"/> open <input type="checkbox"/> bevel <input type="checkbox"/> top Mounted <input type="checkbox"/> flat <input type="checkbox"/> flat <input type="checkbox"/> screw-thread Mounted <input type="checkbox"/> taper <input type="checkbox"/> taper <input type="checkbox"/> flange Mounted <input type="checkbox"/> arch <input type="checkbox"/> arch <input type="checkbox"/> chamber Mounted <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> wave Guide Tube Mounted			Neck Length: _____ CM	
			Process Connection Type: <input type="checkbox"/> Flange <input type="checkbox"/> Thread	
			Process Connection Size: _____	
			Distance from Tank Edge: _____ CM	
Medium				
Medium Name: _____		<input type="checkbox"/> liquid <input type="checkbox"/> solid <input type="checkbox"/> grout Particle size: _____ (solid)		
Operating Temperature: Normal °C Max °C		<input type="checkbox"/> dust, < 0.5cm <input type="checkbox"/> grits, < 2 cm <input type="checkbox"/> patch, > 2cm <input type="checkbox"/> chunk, < 9 cm		
Measurement type: <input type="checkbox"/> Liquid <input type="checkbox"/> measurement				
Dielectric constant: _____				
Level Fluctuation: <input type="checkbox"/> Yes <input type="checkbox"/> No				
Density: _____ Kg/m ²				
Viscosity:		Foam:		
<input type="checkbox"/> 1-5 cST(water) <input type="checkbox"/> 5-20 cST(motor oil) <input type="checkbox"/> 20-50 cST(cooking oil) <input type="checkbox"/> 50-100 cST(honey) <input type="checkbox"/> 100-500 cST(syrup) <input type="checkbox"/> >500 cST(tar)		<input type="checkbox"/> without <input type="checkbox"/> Steam <input type="checkbox"/> with <input type="checkbox"/> without <input type="checkbox"/> <input type="checkbox"/> with		
Installation				
Power Supply: <input type="checkbox"/> 24V DC Other	Protection Rating: <input type="checkbox"/> IP67 Other	Electrical Interface: <input type="checkbox"/> M20*1.5 <input type="checkbox"/> NPT1/2 Other	Explosion-proof: <input type="checkbox"/> standard type (non explosion-proof) <input type="checkbox"/> Intrinsic safety type Dust:Ex iaD 20 T85°C Gas:Ex ia II CT1~T5/T6 Ga Other	Protection Rating: <input type="checkbox"/> Process Instruments Other
Communication: <input type="checkbox"/> HART Other	Output: <input type="checkbox"/> 4-20mA Other			