

## TRG808X Series 80GHz Radar Level Meter

### Summary

TRG808X series 80G radar level meter is a level measuring instrument with international advanced level developed by our company independently. The radar adopts frequency modulated continuous wave (FMCW) technology, which has the characteristics of small antenna beam angle, large range, small blind area and high accuracy. The instrument is easy to calibration and supports the software configuration and upgrading of the upper computer, and supports Bluetooth configuration. The radar level meter is widely used in petrochemical, fine chemical, metallurgy, water treatment, food and other industries.



### Working Principle

The 80G radar level meter uses frequency modulated continuous wave (FMCW) technology, the antenna transmits a high frequency FM radar signal, the signal propagates in space at the speed of light, and encounters the surface of the measured medium, part of its energy is reflected back and is received by the antenna. The frequency difference between the transmitted signal frequency and the received signal frequency is proportional to the measured distance, thus calculating the distance from the antenna to the surface of the measured medium.

### Main Technical Data

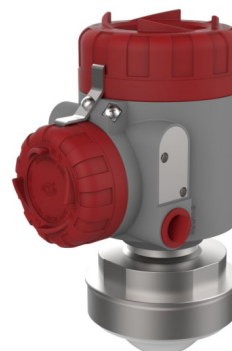
#### TRG8081

Antenna structure: Small lens antenna  
Measuring range: 0.08m/0.08m ~ 10m/0.08m ~ 30m  
Power supply: 12V ~ 28V DC  
Accuracy:  $\pm 1\text{mm}$ : $\pm 1\text{mm}$   
Beam angle:  $8^\circ$   
Output: 4 ~ 20mA+HART  
RS485+Modbus RTU  
Ambient temperature:  $-40^\circ\text{C} \sim +70^\circ\text{C}$   
Ingress protection: IP67  
Housing material: Aluminum alloy  
Process temperature:  $-40 \sim 85^\circ\text{C}$   
Process pressure:  $-0.1 \sim 2.5 \text{ MPa}$



#### TRG8082

Antenna structure: Standard lens antenna  
Measuring range: 0.08m ~ 10m/0.08m ~ 30m/  
0.3m ~ 60m/0.3m ~ 120m  
Power supply: 12 ~ 28V DC  
Accuracy:  $\pm 1\text{mm}/\pm 3\text{mm}$   
Beam angle:  $3^\circ$



Output: 4 ~ 20mA+HART  
RS485+Modbus RTU  
Ambient temperature: -40°C ~ +70°C  
Ingress protection: IP67  
Housing material: Aluminum alloy  
Process temperature: -40 ~ 200°C  
Process pressure: -0.1 ~ 2.5 MPa

### TRG8083

Antenna structure: Anti-corrosion antenna  
Measuring range: 0.08m ~ 10m/0.08m ~ 30m/  
0.3m ~ 60m/0.3m ~ 120m  
Power supply: 12 ~ 28V DC  
Accuracy:  $\pm 1\text{mm}/\pm 3\text{mm}$   
Beam angle: 3°/8°  
Output: 4 ~ 20mA+HART  
RS485+Modbus RTU  
Ambient temperature: -40°C ~ +70°C  
Ingress protection: IP67  
Housing material: Aluminum alloy  
Process temperature: -40 ~ 150°C  
Process pressure: -0.1 ~ 2.5 MPa



### TRG8084

Antenna structure: Universal purge antenna  
Measuring range: 0.08m ~ 10m/0.08m ~ 30m/  
0.3m ~ 60m/0.3m ~ 120m  
Power supply: 12 ~ 28V DC  
Accuracy:  $\pm 1\text{mm}/\pm 3\text{mm}$   
Beam angle: 3°  
Output: 4 ~ 20mA+HART  
RS485+Modbus RTU  
Ambient temperature: -40°C ~ +70°C  
Ingress protection: IP67  
Housing material: Aluminum alloy  
Process temperature: -40 ~ 200°C  
Process pressure: -0.1 ~ 2.5 MPa



### TRG8085

Antenna structure: High temperature and high pressure antenna

Measuring range: 0.08m ~ 10m/0.08m ~ 30m/  
0.3m ~ 60m/0.3m ~ 120m

Power supply: 12 ~ 28V DC

Accuracy:  $\pm 1\text{mm}/\pm 3\text{mm}$

Beam angle:  $3^\circ$

Output: 4 ~ 20mA+HART

RS485+Modbus RTU

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

Ingress protection: IP67

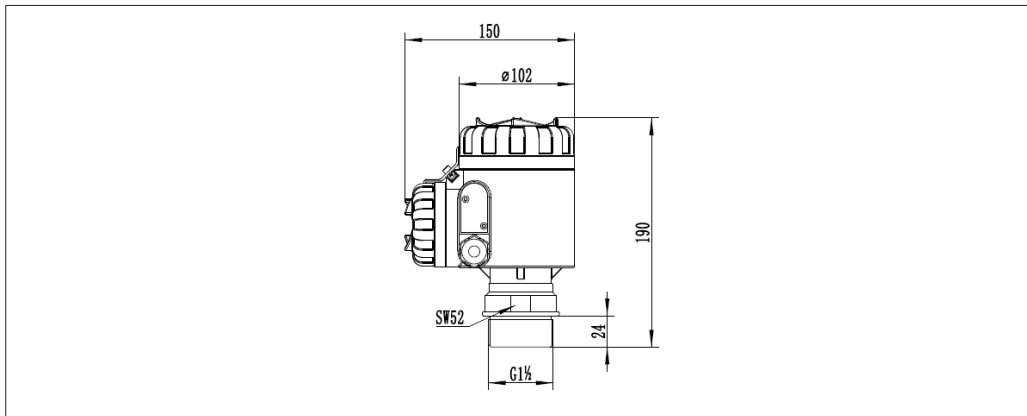
Housing material: Aluminum alloy

Process temperature:  $-40 \sim 1000^\circ\text{C}$

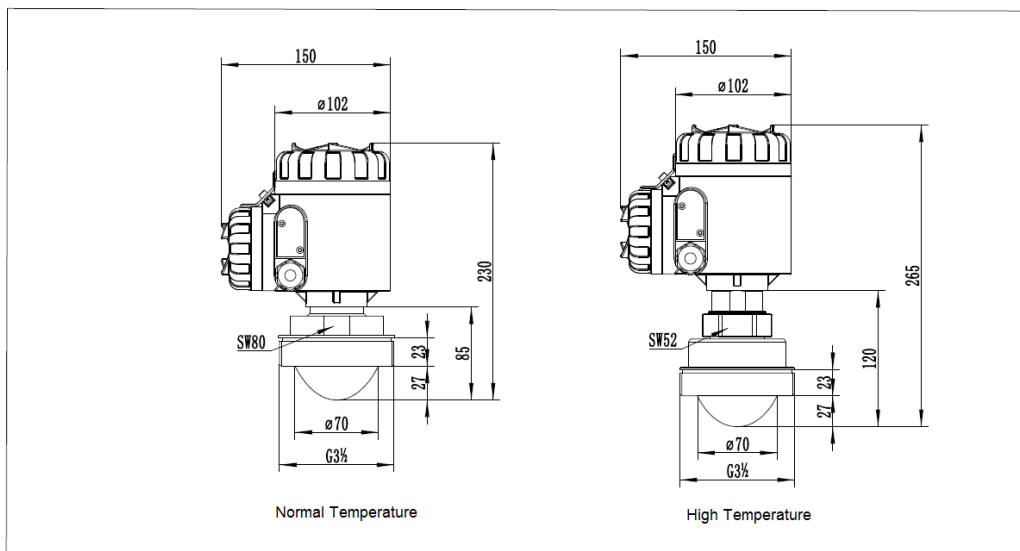
Process pressure:  $-0.1 \sim 10 \text{ MPa}$



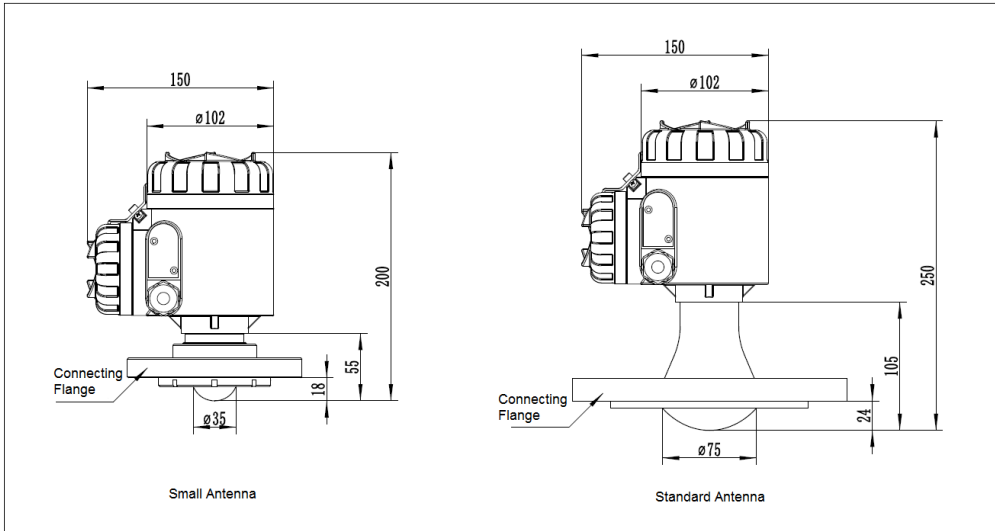
### Outline Drawing



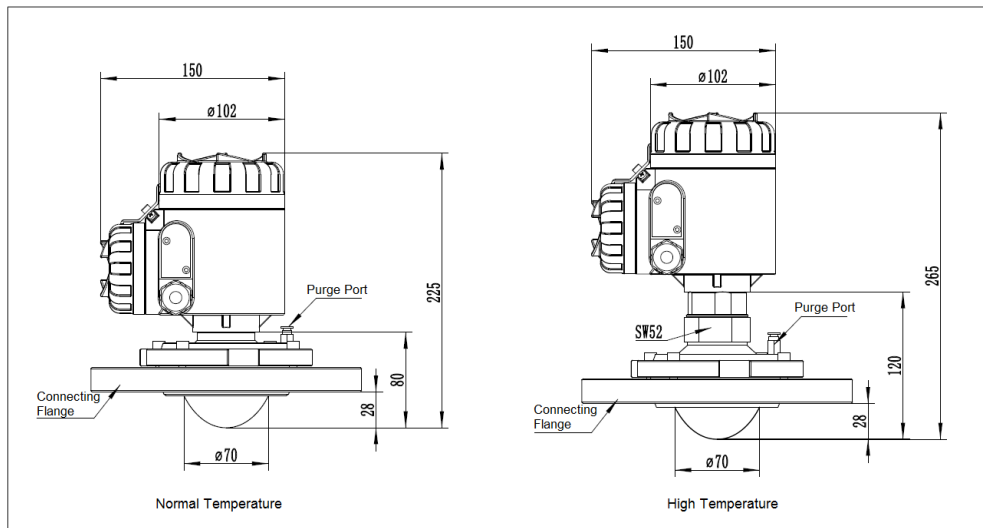
TRG8081



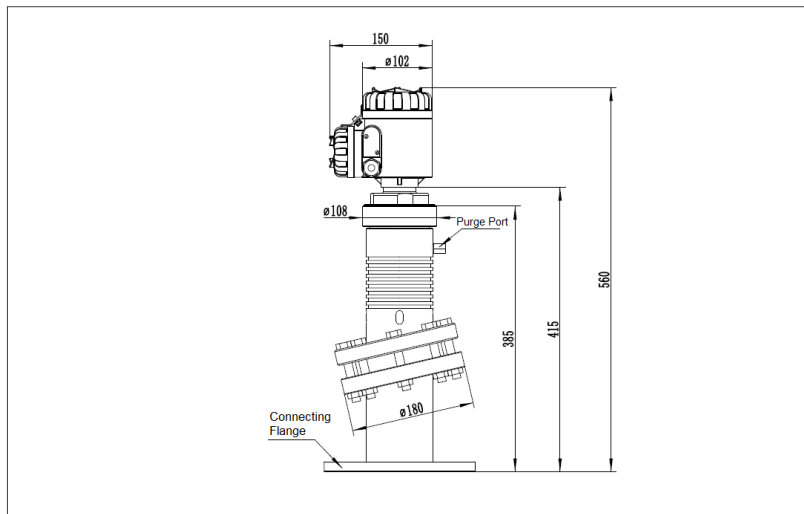
TRG8082



TRG8083



TRG8084



TRG8085

### Model Selection Table

Model	Code	Contents
TRG8081		Small lens antenna
	A	Measure range:0.08m ~ 10m
	B	Measure range:0.08m ~ 30m
	P	Non explosion-proof
	I	Intrinsically safe type (Ex iaD 20 T85°C/Ex ia IICT1 ~ T5/T6 Ga)
	F	Intrinsically safe and explosion-proof composite type Ex d ia [ia Ga]IIC T1 ~ T5/T6 Gb; Ex tD A21 T100°C /T85°C
	1	Process temperature: -40 ~ 85°C
	E	Process pressure: -0.1 ~ 2.5MPa
	A	Electronic components :(4 ~ 20)mA/ (13 ~ 28) V DC/HART/two wire
	B	Electronic components:RS485/ (13 ~ 28) V DC/MODBUS/four wire
	X	Special customization
	M	Cable entrance:M20×1.5
	N	Cable entrance:NPT1/2 "
	O	Cable entrance:G3/4 "
	P	Cable entrance:NPT1/2 "
	A	Local display: without bluetooth
	B	Local display: with bluetooth

#### Example of Model Selection:

TRG8081AI1EAMA type for small lens antenna 80G radar level meter, measuring range 0.08m ~ 10m, intrinsically safe, process temperature -40 ~ 85°C, process pressure -0.1 ~ 2.5MPa, electronic component (4 ~ 20)mA + HART, 24V DC, two-wire system, cable entrance M20 x 1.5, local display without Bluetooth.

Model	Code	Contents
TRG8082		Standard lens antenna
	A	Measure range:0.08m ~ 10m
	B	Measure range:0.08m ~ 30m
	C	Measure range:0.3m ~ 60m
	D	Measure range:0.3m ~ 120m
	P	Non explosion-proof
	I	Intrinsically safe type (Ex iaD 20 T85°C/Ex ia IICT1 ~ T5/T6 Ga)
	F	Intrinsically safe and explosion-proof composite type Ex d ia [ia Ga]IIC T1 ~ T5/T6 Gb; Ex tD A21 T100°C /T85°C
	1	Process temperature: -40 ~ 85°C
	2	Process temperature: -40 ~ 150°C
	3	Process temperature: -40 ~ 200°C
	E	Process pressure: -0.1 ~ 2.5MPa
	A	Electronic components :(4 ~ 20)mA/ (13 ~ 28) V DC/HART/two wire
	B	Electronic components :RS485/ (13 ~ 28) V DC/MODBUS/four wire
	X	Special customization
	M	Cable entrance:M20×1.5
	N	Cable entrance:NPT1/2 "
	O	Cable entrance:G3/4 "
	P	Cable entrance:NPT1/2 "
	A	Local display: without bluetooth
	B	Local display: with bluetooth

**Example of Model Selection:**

Model TRG8082BI2EAMA is a standard lens antenna 80G radar level meter with a range of 0.08m to 30m, intrinsically safe, process temperature -40 to 150°C, process pressure -0.1 to 2.5 MPa, electronic component (4 to 20)mA + HART, 24V DC, two-wire system, cable entrance M20 x 1.5, local display without Bluetooth.

Model	Code	Contents
TRG8083		Anti-corrosion antenna
	A	Measure range:0.08m ~ 10m
	B	Measure range:0.08m ~ 30m
	C	Measure range:0.3m ~ 60m
	D	Measure range:0.3m ~ 120m
	P	Non explosion-proof
	I	Intrinsically safe type (Ex iaD 20 T85°C/Ex ia IICT1 ~ T5/T6 Ga)
	F	Intrinsically safe and explosion-proof composite type Ex d ia [ia Ga]IIC T1 ~ T5/T6 Gb; Ex tD A21 T100°C /T85°C
	S	Lens antenna:φ40mm
	T	Lens antenna:φ80mm
	1	Process temperature: -40 ~ 85°C
	2	Process temperature:-40 ~ 150°C
	E	Process pressure: -0.1 ~ 2.5MPa
	A	Electronic components :(4 ~ 20)mA/ (13 ~ 28) V DC/HART/two wire
	B	Electronic components :RS485/ (13 ~ 28) V DC/MODBUS/four wire

	X	Special customization
	M	Cable entrance:M20×1.5
	N	Cable entrance:NPT1/2 "
	O	Cable entrance:G3/4 "
	P	Cable entrance:NPT1/2 "
	A	Local display: without bluetooth
	B	Local display: with bluetooth

**Example of Model Selection:**

Model TRG8083BIT1EAMA is a corrosion-resistant antenna 80G radar level meter with a range of 0.08m to 30m, intrinsically safe, lens antenna φ80mm, process temperature -40 to 85°C, process pressure -0.1 to 2.5MPa, electronic component (4 to 20) mA + HART, 24V DC, two-wire system, cable entrance M20 x 1.5, local display without Bluetooth

Model	Code	Contents
TRG8084		Universal purge antenna
	A	Measure range:0.08m ~ 10m
	B	Measure range:0.08m ~ 30m
	C	Measure range:0.3m ~ 60m
	D	Measure range:0.3m ~ 120m
	P	Non explosion-proof
	I	Intrinsically safe type (Ex iaD 20 T85°C/Ex ia IICT1 ~ T5/T6 Ga)
	F	Intrinsically safe and explosion-proof composite type Ex d ia [ia Ga]IIC T1 ~ T5/T6 Gb; Ex tD A21 T100°C /T85°C
	1	Process temperature: -40 ~ 85°C
	2	Process temperature: -40 ~ 150°C
	3	Process temperature: -40 ~ 200°C
	E	Process pressure: -0.1 ~ 2.5MPa
	A	Electronic components :(4 ~ 20)mA/ (13 ~ 28) V DC/HART/two wire
	B	Electronic components :RS485/ (13 ~ 28) V DC/MODBUS/four wire
	X	Special customization
	M	Cable entrance:M20×1.5
	N	Cable entrance:NPT1/2 "
	O	Cable entrance:G3/4 "
	P	Cable entrance:NPT1/2 "
A	Local display: without bluetooth	
B	Local display: with bluetooth	

**Example of Model Selection:**

Model TRG8084BI1EAMA is a universal purge antenna 80G radar level meter with a range of 0.08m to 30m, intrinsically safe, process temperature -40 to 85°C, process pressure -0.1 to 2.5 MPa, electronic component (4 to 20)mA + HART, 24V DC, two-wire system, cable entrance M20 x 1.5, local display without Bluetooth.

Model	Code	Contents
TRG8085		High temperature and high pressure antenna
	A	Measure range:0.08m ~ 10m
	B	Measure range:0.08m ~ 30m
	C	Measure range:0.3m ~ 60m
	D	Measure range:0.3m ~ 120m
	P	Non explosion-proof
	I	Intrinsically safe type (Ex iaD 20 T85°C/Ex ia IICT1 ~ T5/T6 Ga)
	F	Intrinsically safe and explosion-proof composite type Ex d ia [ia Ga]IIC T1 ~ T5/T6 Gb; Ex tD A21 T100°C /T85°C
	4	Process temperature: -40 ~ 600°C
	5	Process temperature: -40 ~ 1000°C
	F	Process pressure: -0.1 ~ 5MPa
	G	Process pressure: -0.1 ~ 10MPa
	A	Electronic components :(4 ~ 20)mA/ (13 ~ 28) V DC/HART/two wire
	B	Electronic components :RS485/ (13 ~ 28) V DC/MODBUS/four wire
	X	Special customization
	M	Cable entrance:M20×1.5
	N	Cable entrance:NPT1/2 "
	O	Cable entrance:G3/4 "
	P	Cable entrance:NPT1/2 "
	A	Local display: without bluetooth
	B	Local display: with bluetooth



**Example of Model Selection:**

Model TRG8085BI4FAMA is a high temperature and high pressure antenna 80G radar level meter with a range of 0.08m to 30m, intrinsically safe, process temperature -40 to 600°C, process pressure -0.1 to 5MPa, electronic component (4 to 20)mA + HART, 24V DC, two-wire system, cable inlet M20 x 1.5, local display without Bluetooth.



## Order 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 <sup>2</sup>				
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"/> without <input type="checkbox"/> with <input type="checkbox"/> with		
		Steam		
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			