

TRG802X GUIDED WAVE RADAR LEVEL METER

Overview

TRG8000 series radar level transmitter is independently developed by DDTOP. TRG802X series guided wave radar level transmitter is suitable for liquid level or interface measurement under a wide range of temperature, pressure and other complex process conditions, and outputs 4~20mA standard current signal. The measurement accuracy is not affected by medium density, viscosity, dirty coating and corrosive substances, and the operation and maintenance are simple.

Working Principle

The high-frequency microwave pulse emitted by the guided wave radar level transmitter propagates along the detection component (rod or cable), encounters the measured medium, and causes reflection due to a sudden change in the dielectric constant, and part of the pulse energy is reflected back. The time interval between transmitting pulses and receiving pulses is proportional to the distance of the measured medium.

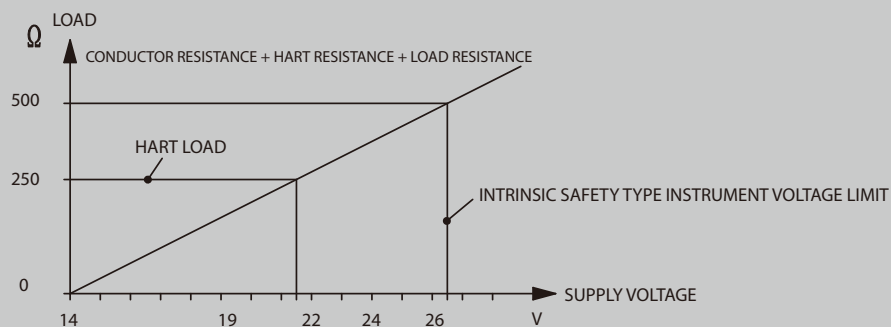


Features

Due to the advanced microprocessor and unique echo processing technology, the guided wave radar level gauge can be applied to various complex working conditions. A variety of process connection methods and types of detection components make TRG802X series guided wave radar level transmitters suitable for various complex working conditions and applications. Using pulse working mode, the transmission power of guided wave radar level gauge is extremely low, and it can be installed in various metal and non-metal containers without harming the human body and the environment.

Main Technical Data

- **Measuring range:** 30m
- **Accuracy:** $\pm 5\text{mm}$ or 0.1%FS (take the bigger one)
- **Blind spot:** 300~3000mm (Can be customized out of range)
- **Pressure rating:** 300mm
- **Ambient temperature:** $-40^{\circ}\text{C} \sim 70^{\circ}\text{C}$
- **Minimum dielectric constant:** 1.9
- **Power supply:** (16~36) V DC (two wire)
- **Dual intrinsic-safe and explosion-proof type:** Ex d ia [ia Ga]IIC T1 ~T5/T6 Gb, Ex tD A21 T100 $^{\circ}\text{C}$ /T85 $^{\circ}\text{C}$
- **Housing/Ingress protection:** Aluminum/IP67
- **Output:** 4~20mA
- **Display resolution:** 1mm
- **Structure form:** Coaxial, double rod, single rod, double cable, single cable



TWO-WIRE LOAD RESISTANCE DIAGRAM

Outline Drawing and Parameters

TRG8021

- **Application:** small dielectric constant liquid measurement, complex process conditions
- **Maximum range:** 6m
- **Accuracy:** $\pm 5\text{mm}$
- **Process connection:** G1½" ,NPT1½"
- **Probe material:** Stainless steel 316L
- **Probe outer diameter:** $\varnothing 22\text{mm}/\varnothing 35\text{mm}$
- **Process temperature:** $(-196 \leq T \leq 400) \text{ }^{\circ}\text{C}$
- **Process pressure:** $(-0.1 \sim 34.5) \text{ MPa}$
- **Output:** (4~20) mA/HART
- **Power supply:** two wire (DC24V)



TRG8022

- **Application:** small dielectric constant liquid and solid measurement, complex process conditions.
- **Maximum range:** 6m
- **Accuracy:** $\pm 5\text{mm}$
- **Process connection:** G2" ,NPT2"
- **Probe material:** Stainless steel 316L
- **Probe outer diameter:** $\varnothing 12\text{mm}$
- **Process temperature:** $(-40 \leq T \leq 250) \text{ }^{\circ}\text{C}$
- **Process pressure:** $(-0.1 \sim 5) \text{ MPa}$
- **Output:** (4~20) mA/HART
- **Power supply:** two wire (DC24V)



TRG8023

- **Application:** liquid and solid measurement, complex process conditions
- **Maximum range:** 6m
- **Accuracy:** $\pm 5\text{mm}$
- **Process connection:** G1½" ,NPT1½"
- **Probe material:** Stainless steel 316L
- **Probe outer diameter:** $\varnothing 12\text{mm}$
- **Process temperature:** $(-196 \leq T \leq 400) \text{ }^{\circ}\text{C}$
- **Process pressure:** $(-0.1 \sim 34.5) \text{ MPa}$
- **Output:** (4~20) mA/HART
- **Power supply:** two wire (DC24V)



TRG8024

- **Application:** small dielectric constant liquid and solid measurement, complex process conditions
- **Maximum range:** 30m
- **Accuracy:** $\pm 5\text{mm}$ or 0.1%FS (take the bigger one)
- **Process connection:** G2" ,NPT2"
- **Probe material:** Stainless steel 316L
- **Probe outer diameter:** $\phi 4\text{mm}$
- **Process temperature:** $(-40 \leq T \leq 150) \text{ }^\circ\text{C}$
- **Process pressure:** $(-0.1 \sim 5) \text{ MPa}$
- **Output:** (4~20) mA/HART
- **Power supply:** two wire (DC24V)

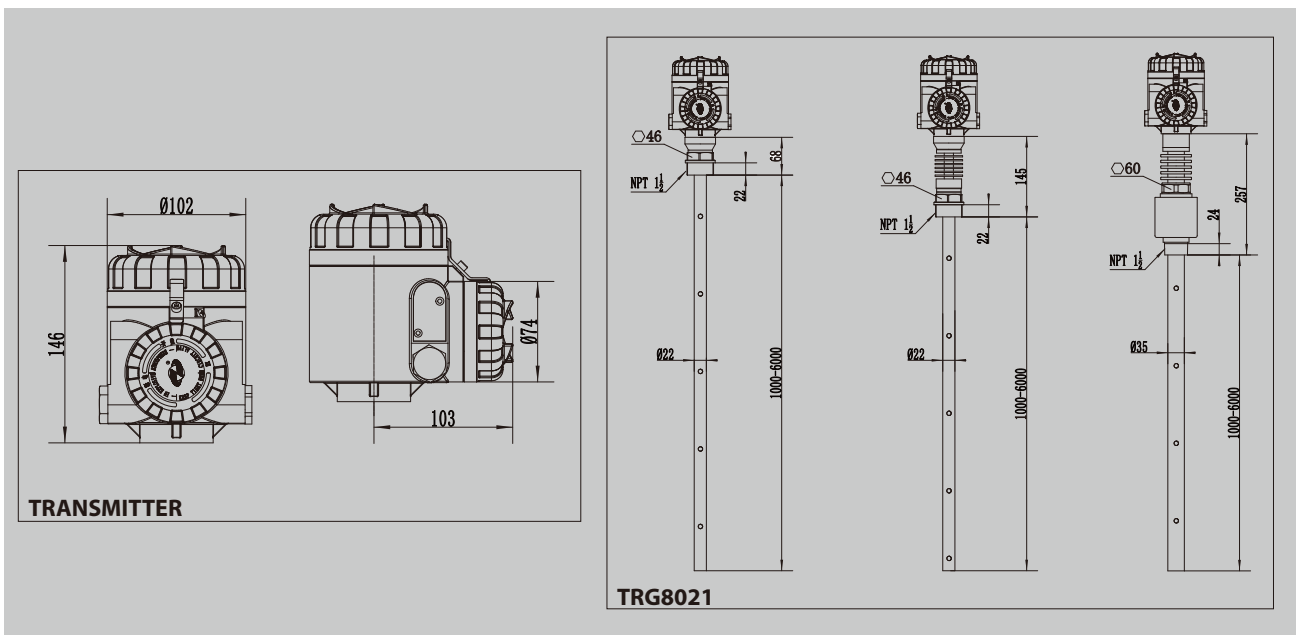


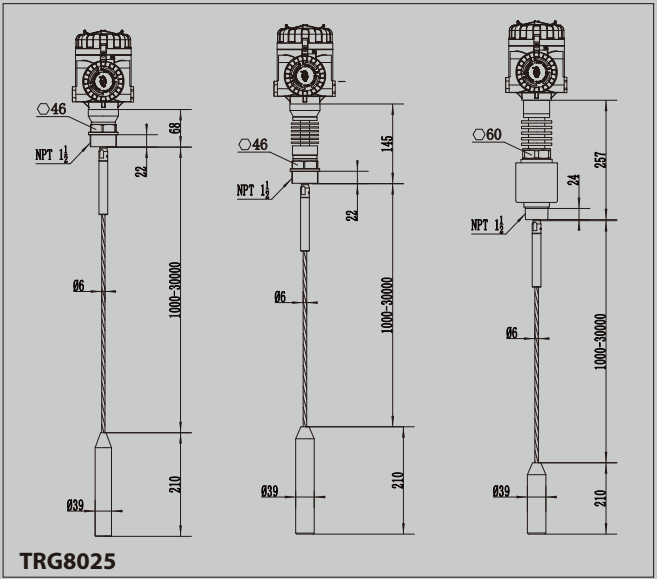
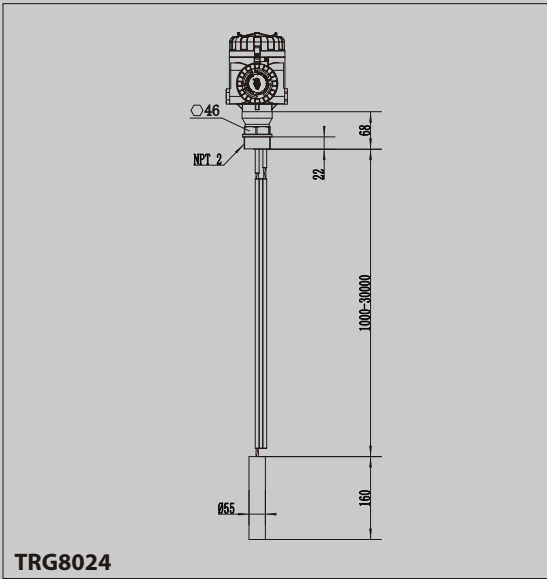
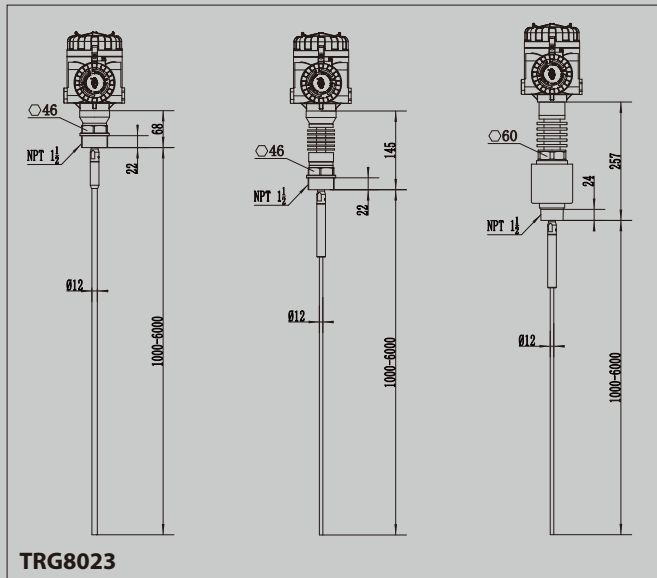
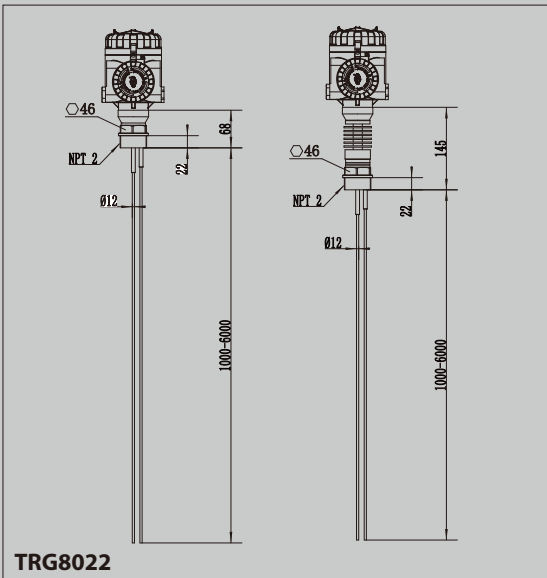
TRG8025

- **Application:** liquid measurement, high temperature and high pressure working conditions, complex process conditions
- **Maximum range:** 30m
- **Accuracy:** $\pm 5\text{mm}$ or 0.1%FS (take the bigger one)
- **Process connection:** G1½" ,NPT1½"
- **Probe material:** Stainless steel 316L
- **Probe outer diameter:** $\phi 6\text{mm}$
- **Process temperature:** $(-196 \leq T \leq 400) \text{ }^\circ\text{C}$
- **Process pressure:** $(-0.1 \sim 34.5) \text{ MPa}$
- **Output:** (4~20) mA/HART
- **Power supply:** two wire (DC24V)



Outline Drawing





Model Selection Table

Model	Code	Content
TRG8021		Coaxial type
	P	Non explosion-proof
	I	Intrinsic safe type (Ex ia IIC T1 ~ T5/T6 Ga; Ex iaD 20 T85°C)
	F	Dual intrinsic-safe and explosion-proof type (Ex d ia [ia Ga] ICT1 ~ T5/T6 Gb; Ex tD A21 T100°C/T85°C)
	A	Wetted material: SS316L
	X	Special customization
	GP	Process connection: G1½"
	NP	Process connection: NPT1½"
	GX	Process connection: Special customization
	2	Seal/Process temperature: FKM (Fluororubber) / (-40~150) °C
	3	Seal/process temperature: FFKM (perfluororubber)/(-20~250) °C
	4	Seal/Process temperature: Graphite/ (-196~400) °C
	B	Electronic components:(4~20)mA/ (22.8~26.4) VDC/HART/Two-wire
	A	Housing/Ingress protection: Aluminium alloy /IP67
	M	Cable entrance: M20×1.5
	N	Cable entrance: NPT1/2"
	A	Local display/ programming : with
	X	Local display/ programming : without
		4 digits
		Probe length:(Unit:mm)

Example of Model Selection

TRG8021IANP2BAMA1800 is TRG8021 guided wave radar level transmitter, coaxial type, intrinsically safe, wetted material 316L, process connection NPT1½", sealing material fluororubber, process temperature -40 ~ 150 °C, electronic components (4 ~ 20) mA+HART, 24V DC, two-wire system, housing material aluminum alloy, ingress protection IP67, cable entry M20×1.5, with local display, probe length 1800mm.

Model	Code	Content
TRG8022		Double rods type
	P	Non explosion-proof
	I	Intrinsic safe type (Ex ia IIC T1 ~ T5/T6 Ga; Ex iaD 20 T85°C)
	F	Dual intrinsic-safe and explosion-proof type (Ex d ia [ia Ga] ICT1 ~ T5/T6 Gb; Ex tD A21 T100°C/T85°C)
	A	Wetted material: SS316L
	X	Special customization
	GT	Process connection: G2"
	NT	Process connection: NPT2"
	GX	Process connection: Special customization
	2	Seal/Process temperature: FKM (Fluoro rubber) / (-40~150) °C
	3	Seal/process temperature: FFKM (perfluororubber)/(-20~250) °C
	B	Electronic components:(4~20)mA/ (22.8~26.4) VDC/HART/Two-wire
	A	Housing/Ingress protection: Aluminium alloy /IP67
	M	Cable entrance: M20×1.5
	N	Cable entrance: NPT1/2"
	A	Local display/ programming : with
	X	Local display/ programming : without
		4 digits
		Probe length:(Unit:mm)

Example of Model Selection

TRG8022IANP2BAMA1800 is TRG8022 guided wave radar level transmitter, double-rod type, intrinsically safe, wetted material 316L, process connection NPT2" thread, sealing material fluororubber, process temperature -40 ~ 150 °C, electronic components (4 ~ 20) mA+HART, 24V DC, two-wire system, housing material aluminum alloy, ingress protection IP67, cable entry M20×1.5, with local display, probe rod length 1800mm.

Model	Code	Content
TRG8023		Single rod type
	P	Non explosion-proof
	I	Intrinsic safe type (Ex ia IIC T1 ~ T5/T6 Ga; Ex iaD 20 T85°C)
	F	Dual intrinsic-safe and explosion-proof type (Ex d ia [ia Ga] IIC T1 ~ T5/T6 Gb; ExtDA21 T100°C/T85°C)
	A	Wetted material: SS316L
	X	Special customization
	GP	Process connection: G1½"
	NP	Process connection: NPT1½"
	GX	Process connection: Special customization
	2	Seal/Process temperature: FKM (Fluoro rubber) /(-40~150) C
	3	Seal/process temperature: FFKM (perfluororubber)/(-20~250) C
	4	Seal/Process temperature: Graphite/(-196~400) C
	B	Electronic components:(4~20)mA/ (22.8~26.4) VDC/HART/Two-wire
	A	Housing/Ingress protection: Aluminium alloy /IP67
	M	Cable entrance: M20×1.5
	N	Cable entrance: NPT1/2"
	A	Local display/ programming : with
	X	Local display/ programming : without
		4 digits
		Probe length:(Unit:mm)

Example of Model Selection

TRG8023IANP2BAMA1800 is TRG8023 guided wave radar level transmitter, single rod type, intrinsically safe, wetted material 316L, process connection NPT1½" thread, sealing material fluororubber, process temperature -40 ~ 150 C, electronic components (4 ~ 20) mA+HART, 24V DC, two-wire system, housing material aluminum alloy, ingress protection IP67, cable entry M20×1.5, with local display, probe rod length 1800mm.

Model	Code	Content
TRG8024		Double cables type
	P	Non explosion-proof
	I	Intrinsic safe type (Ex ia IIC T1 ~ T5/T6 Ga; Ex iaD 20 T85°C)
	F	Dual intrinsic-safe and explosion-proof type (Ex d ia [ia Ga] IIC T1 ~ T5/T6 Gb; ExtDA21 T100°C/T85°C)
	A	Wetted material: SS316L
	X	Special customization
	GT	Process connection: G2"
	NT	Process connection: NPT2"
	GX	Process connection: Special customization
	2	Seal/Process temperature: FKM(Fluoro rubber)/(-40~150) C
	B	Electronic components:(4~20)mA/(22.8~26.4)VDC/HART/Two-wire
	A	Housing/Ingress protection: Aluminium alloy /IP67
	M	Cable entrance: M20×1.5
	N	Cable entrance: NPT1/2"
	A	Local display/ programming : with
	X	Local display/ programming : without
		4 digits
		Probe length:(Unit:mm)

Example of Model Selection

TRG8024IANT2BAMA5800 is TRG8024 guided wave radar level transmitter, double cable type, intrinsically safe, wetted material 316L, process connection NPT2" thread, sealing material fluororubber, process temperature -40 ~ 150 C, electronic components (4 ~ 20) mA+HART, 24V DC, two-wire system, housing material aluminum alloy, ingress protection IP67, cable entry M20×1.5, with local display, probe rod length 5800mm.

Model Selection Table



Model	Code	Content
TRG8025		Single cable type
	P	Non explosion-proof
	I	Intrinsic safe type (Ex ia IIC T1 ~ T5/T6 Ga; Ex iaD 20 T85°C)
	F	Dual intrinsic-safe and explosion-proof type (Ex d ia [ia Ga] IIC T1 ~ T5/T6 Gb; Ex tD A21 T100°C/T85°C)
	A	Wetted material: SS316L
	X	Special customization
	GP	Process connection: G1½"
	NP	Process connection: NPT1½"
	GX	Process connection: Special customization
	2	Seal/Process temperature: FKM (Fluororubber) / (-40~150) C
	3	Seal/process temperature: FFKM (perfluororubber)/(-20~250) C
	4	Seal/Process temperature: Graphite/ (-196~400) C
	B	Electronic components:(4~20)mA/ (22.8~26.4) VDC/HART/Two-wire
	A	Housing/Ingress protection: Aluminium alloy /IP67
	M	Cable entrance: M20×1.5
	N	Cable entrance: NPT1/2"
	A	Local display/ programming : with
	X	Local display/ programming : without
		4 digits
		Probe length:(Unit:mm)

Example of Model Selection

TRG8025IANP2BAMA5800 is TRG8021 guided wave radar level transmitter, single cable type, intrinsically safe, wetted material 316L, process connection NPT1½" thread, sealing material fluororubber, process temperature -40 ~ 150 C, electronic components (4 ~ 20) mA+HART, 24V DC, two-wire system, housing material aluminum alloy, ingress protection IP67, cable entry M20×1.5, with local display, probe rod length 5800mm.

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 Bottom		Installation Position
<input type="checkbox"/> open <input type="checkbox"/> flat <input type="checkbox"/> taper <input type="checkbox"/> arch		<input type="checkbox"/> bevel <input type="checkbox"/> flat <input type="checkbox"/> taper <input type="checkbox"/> arch		<input type="checkbox"/> top Mounted <input type="checkbox"/> screw-thread Mounted <input type="checkbox"/> flange Mounted <input type="checkbox"/> chamber Mounted <input type="checkbox"/> waveGuide Tube Mounted
				Tank Height
				M
				Tank Diameter
				M
				Opening Size
				CM
				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		
Operating Temperature		Particle size		
Normal °C Max °C		(solid)		
Measurement Type		<input type="checkbox"/> dust, < 0.5cm <input type="checkbox"/> grits, < 2cm <input type="checkbox"/> patch, > 2cm <input type="checkbox"/> chunk, < 9cm		
<input type="checkbox"/> Liquid <input type="checkbox"/> Measurement				
Dielectric Constant				
Level Fluctuation		Foam		
<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> without <input type="checkbox"/> steam <input type="checkbox"/> with <input type="checkbox"/> with		
Density				
kg/m ³				
Viscosity				
<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)				
Installation				
Power Supply	Protection Rating	Electrical Interface	Explosion-proof	Protection Rating
<input type="checkbox"/> 24V DC Other	<input type="checkbox"/> IP66 Other	<input type="checkbox"/> M20×1.5 <input type="checkbox"/> NPT1/2 Other	<input type="checkbox"/> Standard type (non explosion-proof) <input type="checkbox"/> Intrinsic safety type (Ex ia IIC T1 ~ T5/T6 Ga, Ex iaD 20 T85°C) <input type="checkbox"/> Dual intrinsic-safe and explosion-proof type (Ex d ia [ia Ga] IIC T1 ~ T5/T6 Gb, Ex tD A21 T100°C /T85°C) Other	<input type="checkbox"/> Process Other
Communication	Output			
<input type="checkbox"/> HART/4 ~ 20mA Other	<input type="checkbox"/> 4 ~ 20mA Other			