

TRG802X GUIDED WAVE RADAR LEVEL TRANSMITTER

Summary

TRG802X series guided wave radar level transmitter is suitable for level measurement in wide temperature, pressure and some other complicated operating conditions, it can output 4~20mA standard current signal. The measuring accuracy is not influenced by medium density, viscosity, dirty coating and corrosive substance, it's easy to operate and maintenance.

Operating Principle

Principle

High-frequency radar pulses are coupled onto a cable (bulk solids) or rod (liquids) and guided along the probe. The pulse is reflected by the product surface. The instrument calculates the level from the running time of the radar pulses and the entered tank height.

Advantages

Sensors operate independently of noise, pressure or temperature fluctuations and are also completely unaffected by changes in density, foaming, steam or dust. Buildup on the probe or on the container wall does not affect the measurement either. This allows simple, straightforward system design and engineering. The menu-driven adjustment routines enable simptime-saving and confident setup.

Technical Parameters

Range: 30m

Accuracy: $\pm 5\text{mm}$ 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: 1.9



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

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

Dual intrinsic-safe and explosion-proof type: Ex d ia [ia Ga]IIC T1 ~ T5/T6 Gb; Ex tD A21 T100°C /T85°C

Housing/IP rating: Aluminium/IP67

Output signal: 4 ~ 20mA

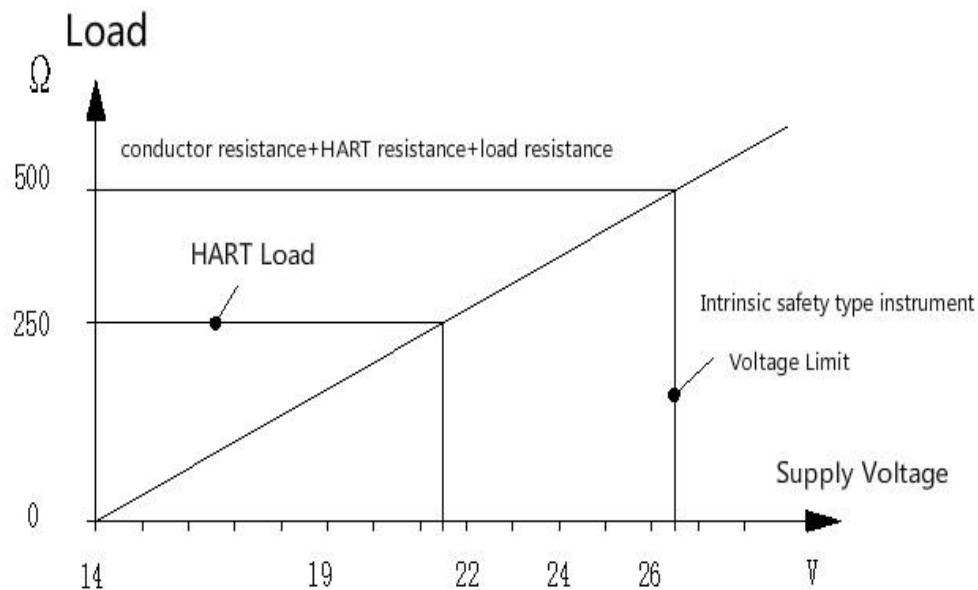
Alarming signal: 3.9mA、20.5mA、22mA

Status display: Optional

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
complicated process condition

Max range: 6m

Accuracy: $\pm 5\text{mm}$

Process connection: G1½ " 、 NPT1½ "

TRG8022



Application: Small dielectric
constant liquid and solid measurement
complicated process condition

Max range: 6m

Accuracy: $\pm 5\text{mm}$

Process connection: G2 " 、 NPT2 "

TRG8023



Application: Liquid and solid measurement
complicated process condition

TRG8024



Application: Small dielectric
constant of liquid and solid
measurement

complicated process condition

Max range: 6m

Max range: 30m

Accuracy: $\pm 5\text{mm}$

Accuracy: $\pm 5\text{mm}$ or $0.1\%FS$

(depend on the bigger one)

Process connection: $G1\frac{1}{2}$ " 、 $NPT1\frac{1}{2}$ "

Process connection: $G2$ " 、 $NPT2$ "

TRG8025



Application: Liquid measurement, high temperature and high pressure working condition

complicated process condition

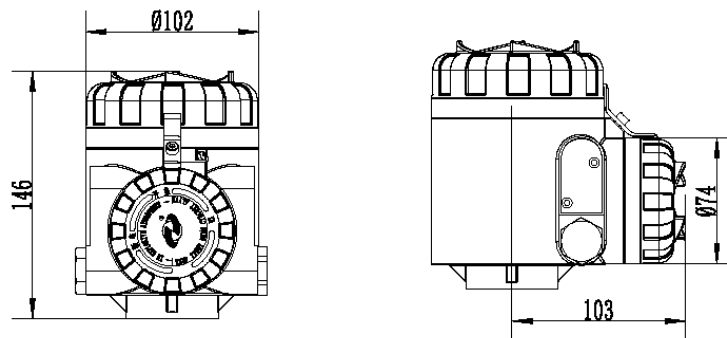
Max range: 30m

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

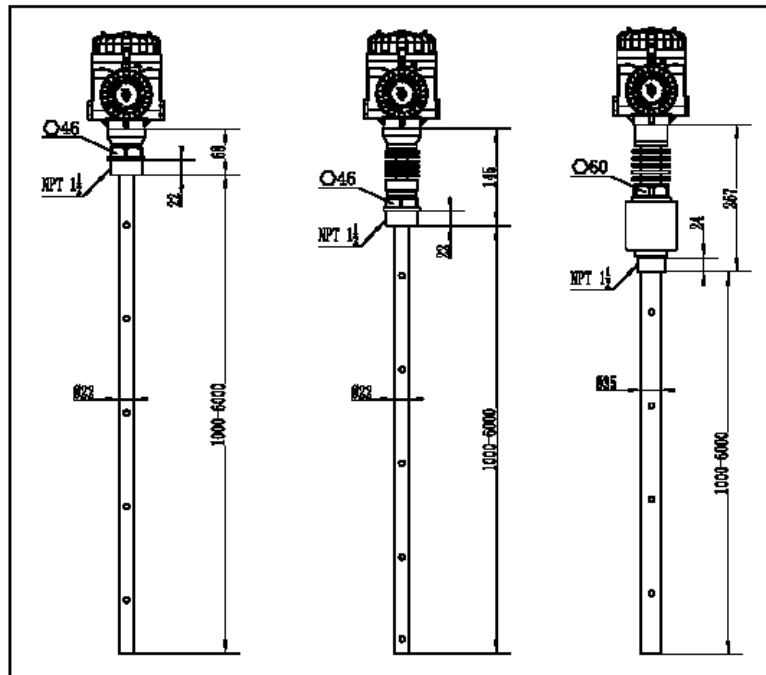
Process connection: $G1\frac{1}{2}$ " 、 $NPT1\frac{1}{2}$ "

Outline Dimensional Drawing

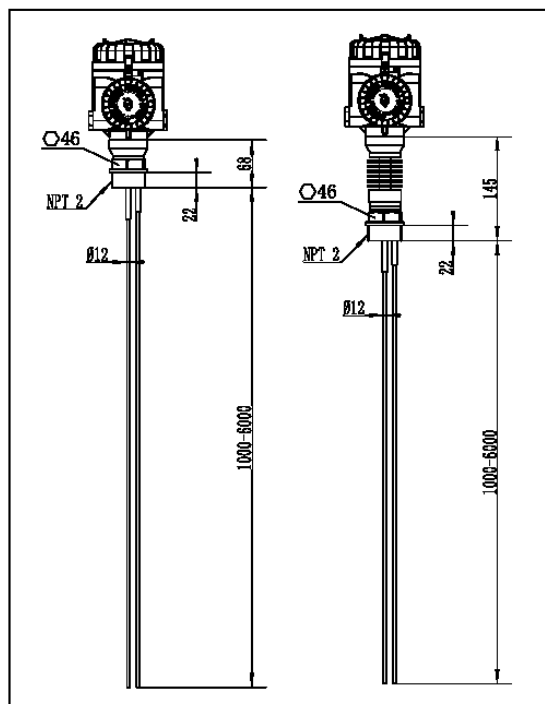
Transmitter



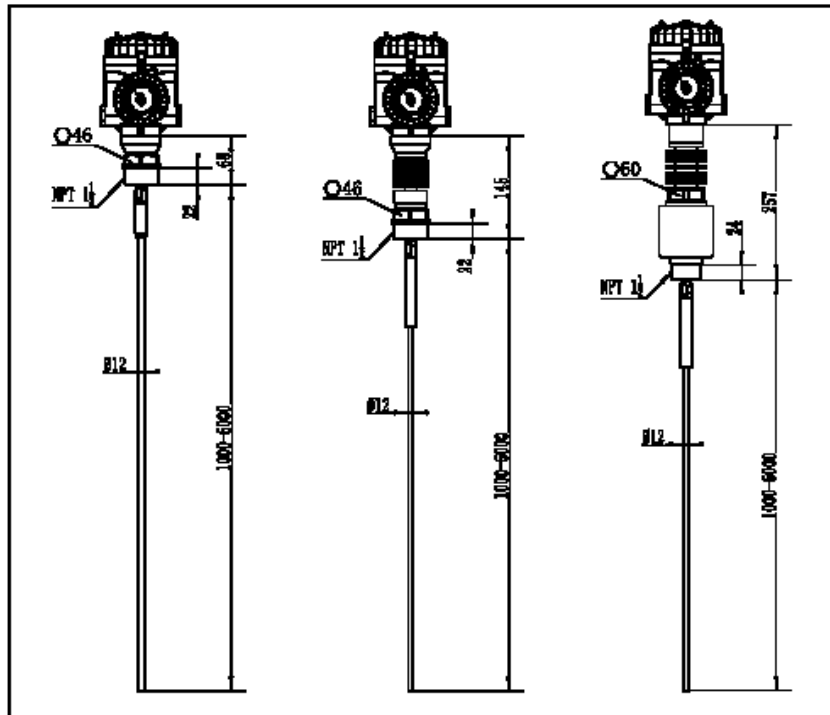
TRG8021



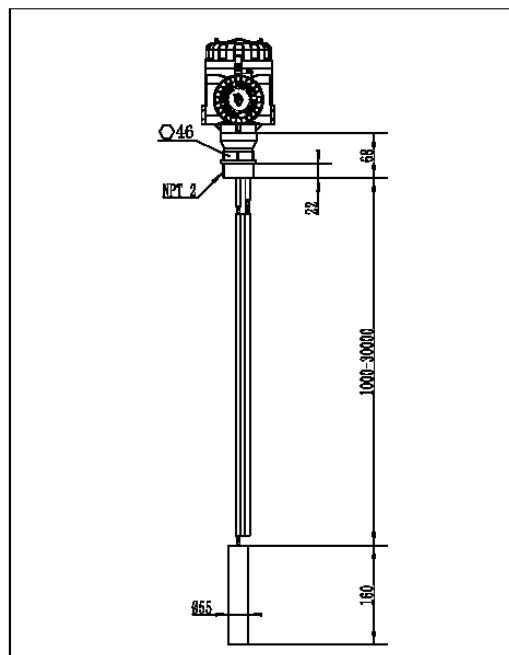
TRG8022



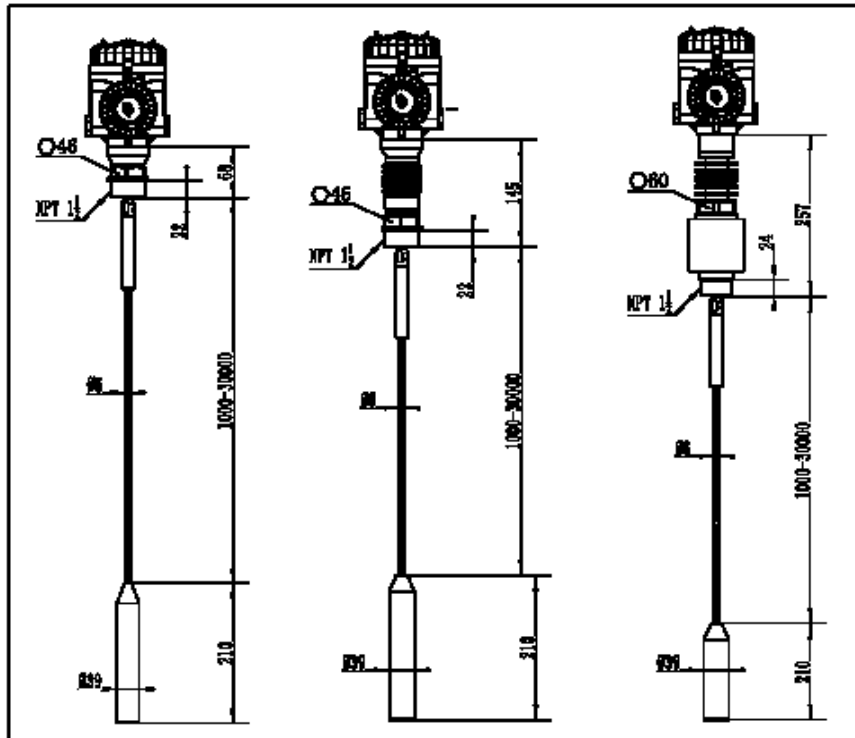
TRG8023



TRG8024



TRG8025



Model Selection Table

Model	Code	Contents
TRG8021		Coaxial mode
	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 : Stainless steel 316L
	X	Special customization
	GP	Process connection: Thread G1½ "
	NP	Process connection: Thread NPT1½ "
	GX	Process connection: Special customization

	2		Seal/Process temperature: FKM (Fluoro rubber) / (-40~150) °C
	3		Seal/Process temperature: FKM (Fluoro rubber) / (-20~250) °C
	4		Seal/Process temperature: Graphite/ (-196~400) °C
		B	Electronic components:(4 ~ 20)mA/ (22.8 ~ 26.4) V DC/HART/Two-wire
		A	Housing/Protection rating: Aluminium alloy/IP67
		M	Cable incoming line:M20×1.5
		N	Cable incoming line:NPT½ "
		A	Status display/ programming : with
		X	Status display/ programming : without
			4 digit number

Example

TRG8021IANP2BAMA1800 is TRG8021 guided wave radar, coaxial mode, intrinsic safety mode, wetted material is 316L, process connection NPT1½ " thread, sealed material is fluoro rubber, process temperature is -40 ~ 150°C, electronic components (4 ~ 20)mA+HART, 24V DC, two-wire, housing material is aluminium alloy, protection rating IP67, cable incoming line M20×1.5, with status display, probe length is 1800mm.

Model	Code		Contents
TRG8022			Double rods mode
	P		Non explosion-proof
	I		Intrinsic safe type (Ex ia IICT1 ~ 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: Stainless steel 316L
	X		Special customization
		GT	Process connection: Thread G2 "

NT		Process connection: Thread NPT2 "
GX		Process connection: Special customization
2		Seal/Process temperature: FKM (Fluoro rubber) / (-40 ~ 150) °C
3		Seal/Process temperature: FKM (Fluoro rubber) / (-20 ~ 250) °C
B		Electronic components:(4 ~ 20)mA/ (22.8 ~ 26.4) V DC/HART/Two-wire
A		Housing/Protection rating: Aluminium alloy /IP67
M		Cable incoming line:M20×1.5
N		Cable incoming line:NPT½ "
A		Status display/ programming : with
X		Status display/ programming : without
	4 digit number	Probe length:(Unit:mm)

Example

TRG8022IANT2BAMA1800 为 TRG8022 guided wave radar, double rods mode, intrinsic safety mode, wetted material is 316L, process connection NPT2 " thread, sealed material is fluoro rubber, process temperature is -40 ~ 150°C, electronic components (4 ~ 20)mA+HART, 24V DC, two -wire, housing material is aluminium alloy, protection rating IP67, cable incoming line M20×1.5, with status display, probe length is 1800mm.

Model	Code	Contents
TRG8023		Single rod mode
	P	Non explosion-proof
	I	Intrinsic safe type (Ex ia IICT1 ~ 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: Stainless steel 316L
	X	Special customization
	GP	Process connection: Thread G1½ "

	NP		Process connection: Thread NPT1½ "
	GX		Process connection: Special customization
		2	Seal/Process temperature: FKM (Fluoro rubber) / (-40 ~ 150) °C
		3	Seal/Process temperature: FKM (Fluoro rubber) / (-20 ~ 250) °C
		4	Seal/Process temperature: Graphite/ (-196~400) °C
		B	Electronic components:(4 ~ 20)mA/ (22.8 ~ 26.4) V DC/HART/Two-wire
		A	Housing/Protection rating: Aluminium alloy /IP67
		M	Cable incoming line:M20×1.5
		N	Cable incoming line:NPT½ "
		A	Status display/ programming : with
		X	Status display/ programming : without
			4 digit number
			Probe length:(Unit:mm)

Example

TRG8023IANP2BAMA1800 is TRG8023 guided wave radar, single rod mode, intrinsic safety mode, wetted material is 316L, process connection NPT1½ " thread, sealed material is fluoro rubber, process temperature is -40 ~ 150°C, electronic components (4 ~ 20)mA+HART, 24V DC, two-wire, housing material is aluminium alloy, protection rating IP67, cable incoming line M20×1.5, with status display, probe length is 1800mm.

Model	Code	Contents
TRG8024		Double cables mode
	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: Stainless steel 316L

	X		Special customization	
		GT	Process connection: Thread G2 "	
		NT	Process connection: Thread NPT2 "	
		GX	Process connection: Special customization	
		2		Seal/Process temperature: FKM (Fluoro rubber)
			B	Electronic components:(4 ~ 20)mA/ (22.8 ~ 26.4) V DC/HART/Two-wire
			A	Housing/Protection rating: Aluminium alloy /IP67
			M	Cable incoming line:M20×1.5
			N	Cable incoming line:NPT½ "
			A	Status display/ programming : with
			X	Status display/ programming : without
				4 digit number
				Probe length:(Unit:mm)

Model	Code	Contents		
TRG8024		Double cables mode		
	P	Non explosion-proof		
	I	Intrinsic safe type (Ex ia IIC1 ~ T5/T6 Ga; Ex iaD 20 T85°C)		
	F	本安隔爆复合型 (Ex d ia [ia Ga]IIC T1 ~ T5/T6 Gb; Ex tD A21 T100°C /T85°C)		
	A	Wetted material: Stainless steel 316L		
	X	Special customization		
		GT	Process connection: Thread G2 "	
		NT	Process connection: Thread NPT2 "	
		GX	Process connection: Special customization	
		2		Seal/Process temperature: FKM (Fluoro rubber)
			B	Electronic components:(4 ~ 20)mA/ (22.8 ~ 26.4) V DC/HART/Two-wire

	A		Housing/Protection rating: Aluminium alloy /IP67	
	M		Cable incoming line:M20×1.5	
	N		Cable incoming line:NPT½ "	
	A		Status display/ programming : with	
	X		Status display/ programming : without	
			4 digit number	Probe length:(Unit:mm)

Example

TRG8024IANT2BAMA5800 is TRG8024 guided wave radar, double cables mode, intrinsic safety type, wetted material is 316L, process connection is NPT2 " thread, sealed material is fluoro rubber, process temperature is -40 ~ 150°C, electronic components (4 ~ 20)mA+HART, 24V DC, two-wire, housing material is aluminium alloy, protection rating IP67, cable incoming line M20×1.5, with status display, probe length is 5800mm.

Model	Code		Contents	
TRG8025			Single cable mode	
	P		Non explosion-proof	
	I		Intrinsic safe type (Ex ia IICT1 ~ 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: Stainless steel 316L	
	X		Special customization	
		GP		Process connection: Thread G1½ " A
		NP		Process connection: Thread NPT1½ "
		GX		Process connection: Special customization
			2	Seal/Process temperature: FKM (Fluoro rubber) / (-40 ~ 150) °C
			3	Seal/Process temperature: FKM (Fluoro rubber) / (-20 ~ 250) °C
			4	Seal/Process temperature: Graphite/ (-196~400) °C

	B		Electronic components:(4 ~ 20)mA/ (22.8 ~ 26.4) V DC/HART/Two-wire
		A	Housing/Protection rating: Aluminium alloy /IP67
	M		Cable incoming line:M20×1.5
		N	Cable incoming line:NPT½ "
	A		Status display/ programming : with
		X	Status display/ programming : without
			4 digit number



Example

TRG8025IANP2BAMA5800 is TRG8021guided wave radar, single cable mode, intrinsic safety type, wetted material is 316L, process connection is NPT1½ " thread, sealed material is fluoro rubber, process temperature is -40 ~ 150°C, electronic components (4 ~ 20)mA+HART, 24V DC, two-wire, housing material is aluminium alloy, protection rating IP67, cable incoming line M20×1.5, with status display, probe length is 5800mm.

Ordering Requirements

Please fill in the following data sheet when you place an order.

Radar Data Sheet	
User Information	
Attn:	Tel:
Email:	Fax:
Company:	
City:	Country:
Storage Tank Information	
	Working Pressure

<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <input type="checkbox"/> Solid Tank </div> <div style="text-align: center;">  <input type="checkbox"/> Liquid </div> <div style="text-align: center;"> <input type="checkbox"/> Standing  </div> </div> <div style="margin-top: 20px; text-align: center;"> <input type="checkbox"/> Lying Tank <input type="checkbox"/> Ball Tank </div>	Normal Pressure: Max Pressure:
<div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> Tank Top: <input type="checkbox"/> open mounted <input type="checkbox"/> flat installation <input type="checkbox"/> cone installation <input type="checkbox"/> arch installation </div> <div style="width: 30%;"> Tank Bottom: <input type="checkbox"/> slope <input type="checkbox"/> flat <input type="checkbox"/> cone <input type="checkbox"/> arch </div> <div style="width: 30%;"> Installation Location: <input type="checkbox"/> top- <input type="checkbox"/> thread <input type="checkbox"/> chamber <input type="checkbox"/> guided wave tube </div> </div>	<div style="text-align: center; font-weight: bold; margin-bottom: 5px;">Tank Dimensions</div> 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	

<p>Medium Name: _____</p> <p>Operating Temperature: Normal °C Max °C</p> <p>Measurement type: <input type="checkbox"/> Liquid measurement <input type="checkbox"/> level measurement</p> <p>Dielectric constant: _____</p> <p>Level Fluctuation: <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Density: _____ kg/m³</p> <p>Viscosity:</p> <p><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)</p>	<p><input type="checkbox"/> liquid <input type="checkbox"/> solid</p> <p><input type="checkbox"/> grout</p> <p>Particle size: (solid)</p> <p><input type="checkbox"/> dust, < 0.5cm <input type="checkbox"/> grits, < 2 cm <input type="checkbox"/> patch, > 2cm <input type="checkbox"/> chunk, < 9 cm</p> <hr/> <p>Foam: <input type="checkbox"/> without <input type="checkbox"/> with</p> <p>Steam: <input type="checkbox"/> without <input type="checkbox"/> with</p>
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Installation

<p>Power Supply:</p> <p><input type="checkbox"/> 24V DC Other</p>	<p>Protection Rating:</p> <p><input type="checkbox"/> IP67 Other</p>	<p>Electrical Interface:</p> <p><input type="checkbox"/> M20*1.5 <input type="checkbox"/> NPT1/2 Other</p>	<p>Explosion-proof:</p> <p><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</p>	<p>Protection Rating:</p> <p><input type="checkbox"/> Process Instruments Other</p>
<p>Communication:</p> <p><input type="checkbox"/> HART Other</p>	<p>Output:</p> <p><input type="checkbox"/> 4-20mA Other</p>			