DATASHEET

GUIDED WAVE RADAR LEVEL TRANSMITTER

INTRODUCTION

Guided wave radar (GWR or TDR), is one of the most versatile methods of level measurement giving reliable results in both liquids and solids, even in applications with foam, condensation or vapours.

We provide a highly competitive range of guided wave radar products, from our own branded solutions detailed in this datasheet to selected options from Vega Controls where applications require a larger range of specifications.

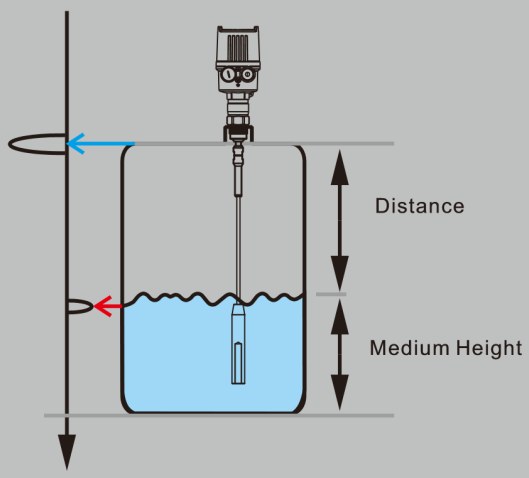
Our GWR's can be supplied on their own, in a bypass chamber or as part of a complete level control system.

APPLICATIONS

- Fuel Storage facilities
- Ammonia tanks
- Interface measurement
- Powder silos
- Bitumen tanks
- Liquified gas
- Seperators

OPERATION

GWR's transmit a microwave pulse that travels along the steel wire cable or rod, dependent on the version purchased. When the pulse reaches the mediums surface, part of it is reflected back to the sensor, and the travel time is measured. The electronics calculates the level based on this time and the programming it has of the tank/vessels information.



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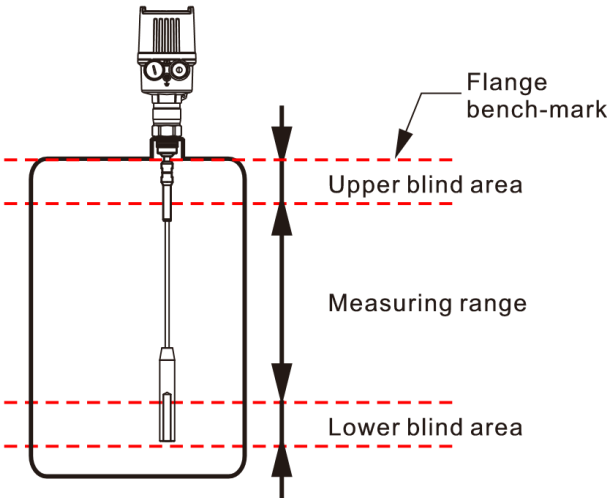
MEASURING RANGE



With GWR's/TDR's there are upper and lower blind areas where measurements cannot be taken.

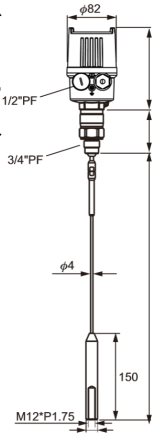
The reference point of the measuring range is from the bottom of the connection thread or flange.

The upper blind area can be added from the underside (wetted) of the flange or thread, the measurement range starts here.

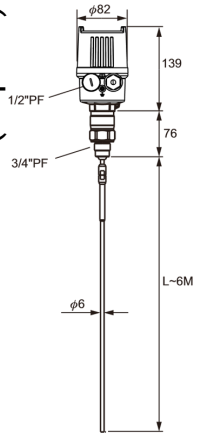
The lower blind area measurement can be taken from the bottom of the rod/cable

MODEL DIMENSIONS

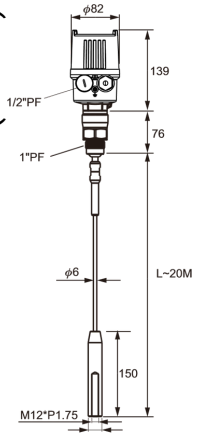
GWR301 Cable (Liquids)



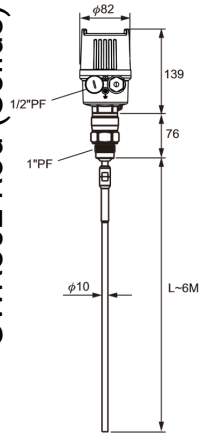
GWR301 Rod (Liquids)



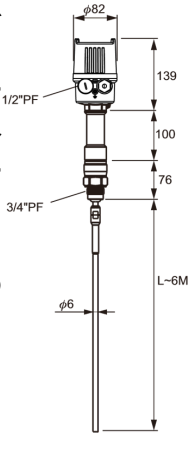
GWR302 Cable (Solids)



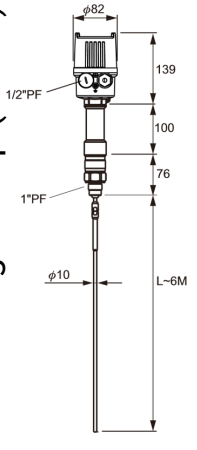
GWR302 Rod (Solids)



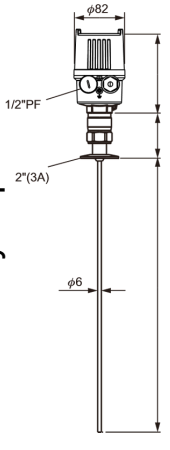
GWR301 High Temp (Liquids)



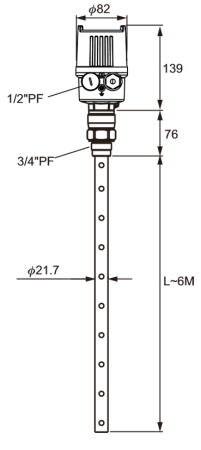
GWR302 High Temp (Solids)



GWR30A Sanitary Liquids/Solids



GWR305 Low Dielectric



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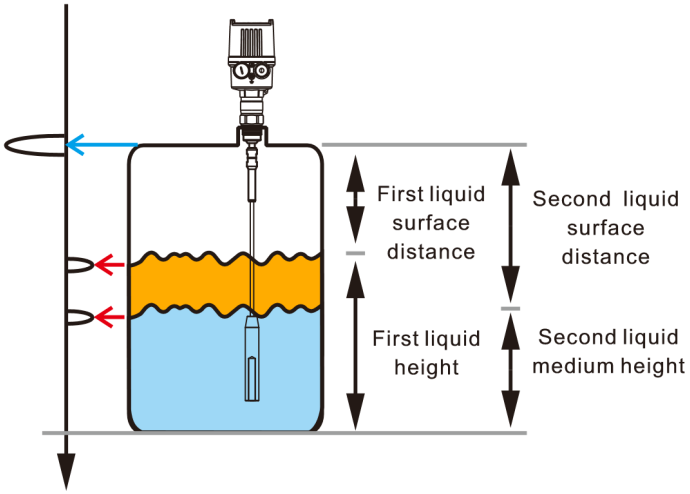
INTERFACE MEASUREMENT



In applications where more than one liquid is needed to be measured in the same tank/vessel a GWR can be used to calculate the level of each liquid. When the pulse travels along the cable or rod, part of the pulse reflects back on contact with the first surface and part penetrates through the upper layer to generate a second reflection when it reaches the top of the second liquid. The travel time of each pulse is calculated to provide the level of each liquid. With the vessel/tanks dimensional data programmed the electronics can provide the interface measurement data and the volume of each liquid.

GENERAL SPECIFICATIONS

	LIQUID	SOLIDS	LOW-DIALECTRIC
MODEL	GWR301	GWR302	GWR305
HOUSING MATERIAL	Aluminium Alloy	Aluminium Alloy	Aluminium Alloy
HOUSING IP RATING	IP67	IP67	IP67
CONNECTION TYPE	3/4" Screwed to 6" Flanged Options	3/4" Screwed to 6" Flanged Options	3/4" Screwed to 6" Flanged Options
TYPE	Rod or Steel Wire	Rod or Steel Wire	Coaxial
MEASURING LENGTH	ROD: 6M CABLE: 20M	ROD: 6M CABLE: 20M	6M
DIELECTRIC COEF.	2.0	2.0	1.6
ACCURACY	5mm	5mm	5mm
REPEATABILITY	3mm	3mm	3mm
AMB. TEMPERATURE (DEGREES C)	STD: -40 to +80	STD: -40 to +80	STD: -40 to +80
OPER. TEMPERATURE (DEGREES C)	STD: -140 to +150 HT: -40 to +230	STD: -140 to +150 HT: -40 to +230	STD: -140 to +150 HT: -40 to +230
OPER. PRESSURE	0-60 Bar	0-60 Bar	0-60 Bar
OUTPUT OPTIONS	4-20mA, HART 7.0, Modbus	4-20mA, HART 7.0, Modbus	4-20mA, HART 7.0, Modbus
ATEX OPTION	II 1G Exia IIC T2-T6 Ga	II 1G Exia IIC T2-T6 Ga	II 1G Exia IIC T2-T6 Ga
POWER SUPPLY	16-30Vdc Loop Power, 16-30Vdc 4 Wire	16-30Vdc Loop Power, 16-30Vdc 4 Wire	16-30Vdc Loop Power, 16-30Vdc 4 Wire

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PART CODE

GWR3	(1,2)	(3,4)	(5,6)	(7,8)	(9,10)	(11,12)	(13)	(14-17)
DESCRIPTION								
MODEL (1,2)								
Liquids	01							
Liquids High Temp	H1							
Solids	02							
Solids High Temp	H2							
Low Dielectric	05							
Sanitary	0A							
CERTIFICATION (3,4)								
None		00						
ATEX Ex ia		1B						
PROBE TYPE (5,6)								
Rod Type Liquid			A1					
Steel Cable Liquid			A2					
Coaxial Liquid			A3					
Rod Type Solid			B1					
Steel Cable Solid			B2					
Sanitary Rod			E1					
PROBE MATERIAL (7,8)								
SUS 304				MA				
SUS 316				MB				
SUS 316L				MC				
CONNECTION TYPE (9,10)								
Flange ANSI RF					AN			
Flange DIN RF					AR			
Flange JIS RF					AJ			
Sanitary					AI			
Thread ANSI					AC			
Thread JIS					AA			
CONNECTION SIZE (11,12)								
¾”						A7		
1”						A8		
1.5”						B1		
2”						B2		
3”						B5		
4”						B7		
DN40						E1		
Other						XX		
OUTPUT/INPUT (13)								
LP 16-30Vdc +HART							B	
LP 16-30Vdc (x2) +HART							D	
4W 16-30Vdc 4-20mA +RS485							E	
4W 16-30Vdc 4-20mA (x2) +RS485							H	
PROBE LENGTH (14,15,16,17)								
Custom Length e.g. 4.5M = 4500 6M = 6000 10M = A100 20M = A200								XXXX

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