

The Growco GSR Series Smart Radar Gauges are typically used as standalone level gauges or used together with control systems or PLC for many kinds of products storage tanks. The GSR Smart Radar Gauge can be used in trucks loading terminals, barge loading terminals, rail cars, crude oil, palm oil, coal & powder coal bunkers or related process level measuring environment installations.

➤ **TYPICAL FEATURES OF GSR SERIES**

- Stable and reliable operations.
- Simple structure and easy maintenance.
- Ranging up to 35m.



**Typical Photograph of Growco  
Smart Radar Level Gauge**

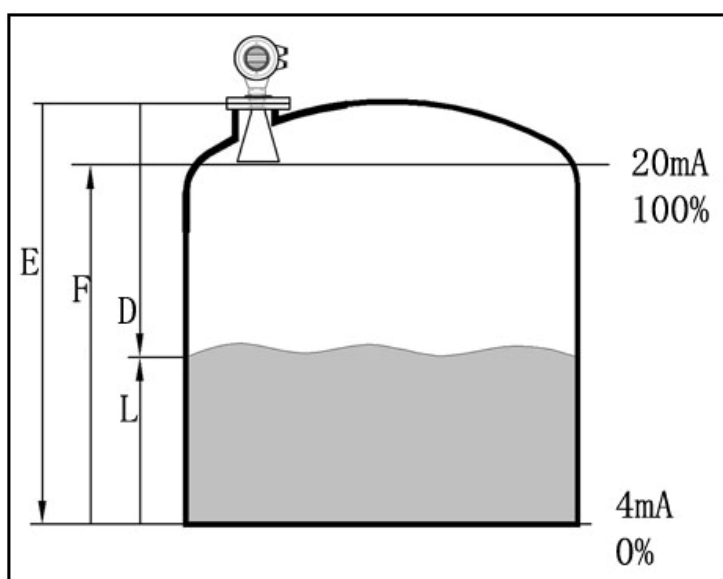
➤ **GENERAL SPECIFICATIONS**

- Measuring Range : Up to 35 meters
- Process Connection : Flange 2" ; 3" ; 4" ; 6" ; 8" ; 10"
- Process Temperature : -40 to 250 °C
- Process Pressure : -1.0 – 40 Bar
- Repeatability : ± 3 mm
- Precision : < 0.1%
- Frequency Range : 6.8 GHz
- Signal Output : 4 to 20mA / HART (two phases)
- Environment Conditions : -40 to 80 °C
- Power Source : 24VDC
- Electric Current Signal : 4 to 20mA
- Communication Interface: HART Communication Protocol
- Enclosure : IP68

### ➤ MEASURING PRINCIPLE

The ultrashort microwave impulse with very short emission energy can be emitted and received through antenna. The radar wave moves at the velocity of light. The moving time can be converted into substance position signal through electrical components. A special time-extension method can secure stable and precise measurement within very short time.

Even under very complicated working conditions, such as the existence of false wave echo, it is possible to precisely analyze the wave echo of the substance position by using the latest micro-processing technology and debugging software.



### ➤ Input

The antenna receives the reflected microwave impulse and transmits it to the electric circuit, the micro processor processes this signal, recognizes the wave echo produced by microwave impulse on the substance surface. The correct microwave echo signal recognition is completed intelligent software, the precision can reach millimeter grade. The distance from the substance surface  $D$  is proportional to impulse time stroke  $T$ :  $D = C \times T/2$ . Among them,  $C$  is velocity of light as the distance of empty tank  $E$  is known, the substance position  $L$  is:  $L = E - D$

### ➤ Output

By inputting empty tank height  $E$  (=O), full tank height  $F$  (=full) and some application parameter to set up, the application parameter will make the gauge adapted to the measuring environment, corresponding to 4-20mA output.



### **CAUTIONS FOR THE INSTALLATION:**

- ❑ Welding slug, foreign particles, etc. in the tank must be cleared up before the tank gauge is installed.
- ❑ Install the tank gauge correctly.
- ❑ Please also follow any required local standard recommendations of tanks installations to ensure compliance to local safety requirements.



### **NOTICE WHEN ORDERING:**

- Describe its application
- Specify accuracy type
- Specify its model/series or size
- Specify working & maximum pressures
- Specify product & maximum viscosity
- Specify the flange connection size are required.
- Other useful details or contact us

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**TOTAL MEASUREMENT SOLUTIONS PROVIDER**

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