

# Microwave Level Gauge

# MRG-10



## Typical Application

**Power Plants**

**Waterworks**

**Sanitary Food  
Process Storage**

**Sticky Oil Storage**

**Vapor-Rich Steel  
Coolant**

### Features

#### Principle

Time Flight Impulse Radar Technology

#### Wide Measuring Range

Up to 20m Max.

#### Variety of Antennas

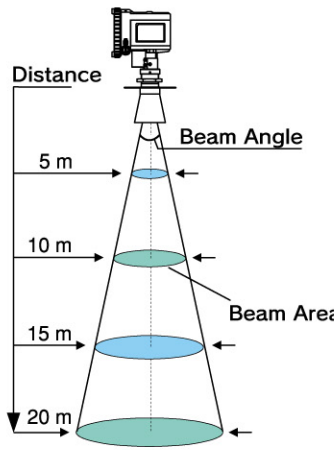
4inch Cone Antenna  
6inch Cone Antenna  
8inch Cone Antenna  
PFA Rod Antenna (Long / Short size)

#### Easy Configuration

Menu driven 4-keys input  
Graphical HART Configuration



## SPECIFICATIONS

General																																																						
Measuring principle	Time Flight Impulse Radar Technology																																																					
Operating frequency	6 GHz																																																					
Half power beam angle	 <table border="1" data-bbox="877 313 1428 627"> <thead> <tr> <th colspan="2">Antenna</th> <th colspan="3">Cone</th> <th>Rod</th> </tr> <tr> <th colspan="2">Beam Angle(<math>\theta</math>)</th> <th>4 inch</th> <th>6 inch</th> <th>8 inch</th> <th>30°</th> </tr> </thead> <tbody> <tr> <td rowspan="8">Distance</td> <td>1m</td> <td>0.6m</td> <td>0.4m</td> <td>0.3m</td> <td>0.5m</td> </tr> <tr> <td>2m</td> <td>1.2m</td> <td>0.8m</td> <td>0.6m</td> <td>1m</td> </tr> <tr> <td>3m</td> <td>1.8m</td> <td>1.2m</td> <td>0.9m</td> <td>1.6m</td> </tr> <tr> <td>4m</td> <td>2.4m</td> <td>1.6m</td> <td>1.2m</td> <td>2.1m</td> </tr> <tr> <td>5m</td> <td>2.9m</td> <td>1.9m</td> <td>1.5m</td> <td>2.7m</td> </tr> <tr> <td>10m</td> <td>5.8m</td> <td>3.8m</td> <td>3.0m</td> <td>5.4m</td> </tr> <tr> <td>15m</td> <td>8.8m</td> <td>5.7m</td> <td>4.4m</td> <td>8.0m</td> </tr> <tr> <td>20m</td> <td>11.7m</td> <td>7.6m</td> <td>5.9m</td> <td>10.7m</td> </tr> </tbody> </table>	Antenna		Cone			Rod	Beam Angle( $\theta$ )		4 inch	6 inch	8 inch	30°	Distance	1m	0.6m	0.4m	0.3m	0.5m	2m	1.2m	0.8m	0.6m	1m	3m	1.8m	1.2m	0.9m	1.6m	4m	2.4m	1.6m	1.2m	2.1m	5m	2.9m	1.9m	1.5m	2.7m	10m	5.8m	3.8m	3.0m	5.4m	15m	8.8m	5.7m	4.4m	8.0m	20m	11.7m	7.6m	5.9m	10.7m
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Microwave output power	Max 1 $\mu$ W																																																					
Reference conditions	Free space reflection from metal surface, ambient temperature 25°C, atmospheric pressure																																																					
Display / Configuration																																																						
Local display	5-digit LCD display with 4 configuration keys. (Level, Ullage, Volume, Current or Amplitude output)																																																					
PC Remote configuration	Windows-based setup and configuration software																																																					
Electrical																																																						
Power supply	Loop powered 16~36 VDC (16~30VDC in Ex applications)																																																					
Output	Analog DC4~20mA +HART																																																					
Output variable	Level, Ullage in m or ft., Volume in %, Amplitude in dB.																																																					
Alarm signals	Hold, Low (3.9mA), High (22mA)																																																					
Cable entry	2-M20 $\times$ 1.5 (Applicable cable diameter : 6.5~9.0mm)																																																					
Mechanical																																																						
Antenna	Rod antenna, Cone antenna 4", 6", 8"																																																					
Antenna material exposed to tank	Rod antenna: PFA and SUS (316L, ext.version) Cone antenna: 4", 6", 8" SUS(316L), PTFE, Viton																																																					
Housing / Enclosure	Casting aluminum																																																					
Flange	On request or customer supply																																																					
Mass	3.3~4.3Kg, depend on antenna size																																																					
Height above flange	230 mm																																																					
Environment Condition																																																						
Max. pressure	10 bar. (145 psi)																																																					
Ambient temperature	-20 °C~70 °C (-4° F~158° F), LCD Display -20°C~70°C																																																					
Tank inside temperature	-20 °C~150 °C (-4° F~302° F)																																																					
Ingress protection	IP65																																																					
Ex. Approval	TIIS Ex ia IIC T4																																																					
Measuring Performance																																																						
Instrument accuracy	+/- 10mm																																																					
Repeatability	+/- 1mm																																																					
Update interval	1 second																																																					
Measuring range	Up to 20m Max.																																																					

Design and specifications are subject to change without prior notice, and without any obligation on the part of the manufacturer.



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