The Series GWL Guided Wave Radar Transmitter for Liquids is a level transmitter providing continuous level indication of liquids. The sensor can output level indication as a continuous measurement through its 4 to 20 mA analog output, or it can alert that information into freely adjustable (NC) switching output signals. State-of-the-art Time Domain Reflectometry technology in this transmitter makes for excellent accuracy and stability. Suppression of disturbance signals allows the GWL to measure precisely even when operating close to interfering structures. This series is available with either a rigid or flexible probe depending on the application installation required, as well as a custom probe length. One of the GWL characteristics is virtually no installation restrictions making it ideal for small tanks, tall and narrow nozzles, and various other types of processing and storage applications. The guided wave radar transmitter for liquids features exceptional performance in liquids with low reflectivity such as oils and hydrocarbons, and factory settings can be configured via HART® Communication protocol.

FEATURES
- Precise continuous level measurement and reliable point level detection.
- Disturbance signal suppression.
- Simple installation.
- HART® Communication protocol.
- Economical.
- No density or conductivity restrictions.
- Zero and full span adjustable within measuring range (length minus the top and bottom dead bands).

METHOD OF OPERATION
The GWL senses low-energy, high-frequency electromagnetic impulses, produced by the sensor which are transmitted along the probe immersed in the fluid to be measured. When these impulses hit the surface of the liquid, part of the impulse energy is reflected back up the probe to the sensor which then utilizes the time difference between the impulses sent and the impulses reflected to determine the fluid level.

Example Model
GWL-RN4-01-118

Example
GWL R N4 0 1 118 GWL-RN4-01-118
Series
GWL
Guided Wave Radar Transmitter for Liquids
Probe Type
R
316 SS rod
W
316 SS coaxial
Enclosure
N4
NEMA 4X
Process Connection
0
3/4” NPT
1
3/4” G
Conduit Entries & Cable Glands
1
1/2” NPT (2)
2
Cable gland (2)
3
1/2” NPT, cable gland
Probe Lengths
XXX
Insertion length in inches. Example 048 is 48” length. 316 SS range of 4 to 118”. Wire cable range of 40 to 780”.

SPECIFICATIONS
Service: Compatible, non-combustible liquids and gases.
Wetted Materials:
- 316 SS rod: 316 L SS, PEEK & Klingersil; 316 SS coaxial: > 1.8
- 316 SS coaxial: > 1.4
Dynamic Viscosity: 316 SS rod/wire cable: < 5 cP (5 mPa • s); 316 SS coaxial: < 500 cP (500 mPa • s)
Velocity of Level Change: < 3.2 fps (0.98 m/s)
Start-Up Time: < 0.08 s
Resolution: < 0.08˝
Repeatability: < 0.08 s
Accuracy: ±0.12˝.
Pressure Limits: -14.5 to 580 psi (-1 to 40 bar)
Output Signal: Analog or switch type
Analog Output: 4 to 20 mA
Switch Type: SPST, NC
Power Requirements: 12 to 30 VDC
Electrical Rating: 70 mA @ 24 VDC
Mounting Orientation: Vertical
Response Time: 0.5 s, 2.0 s, 5.0 s selectable
Electrical Connection: Screwless, cage clamp terminal block for stranded and solid wires AWG 22-14
Conduit Connection: 1/2” NPT or M20
Process Connection: 3/4” male NPT or 3/4” male G
Enclosure Rating: NEMA 4X (IP66)
Weight: 2.09 lb (0.95 kg)
Agency Approval: CE

PROBE TYPE RECOMMENDATIONS

WIRE CABLE PROBE
316 SS ROD PROBE
316 SS COAXIAL PROBE

PROBE MOUNTING
Tall & narrow nozzles
Difficult tank or nozzle geometries
Close to internal tank structures or tank wall
Probe might move or touch internal tank structures/tank wall
Liquid spray may touch probe above the liquid surface
Non-stationary interface targets, e.g. agitator blades
Measurement readings at the very top or bottom of the tank
Non-metallic tanks
Bypass chambers and stilling wells
Limited headroom for installation
Tall tanks

MEDIA CHARACTERISTICS
Bulk solids
Measuring low reflectivity liquids (i.e. low dielectric constant)
Viscous, crystallizing, adhesive, coating, or sticky liquids
Fibrous liquids, sludge, slurry, pulp
Liquids containing solid particles
Clean-ability of probe is important

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