

Product Information AGW

LIFE SCIENCES

AGW Life Sciences Series Guided Wave Radar

Application/intended use

- Continuous level monitoring in vessels up to 10 ft (3 m) in height
- Level measurement in virtually all media in the Life Sciences industry
- Level measurement of foaming media
- Minimum product dielectric of ϵ_{K2} , suitable to all water based media including WFI

Application examples

- Bioreactor level monitoring
- WFI storage and production level monitoring
- CIP tank level monitorings

Hygienic design/process connection

- Designed in compliance with ASME BPE 2016
- Product contact materials are 316L and USP class VI PEEK
- Options for common tri-clamp sizes
- Housing made of stainless steel (protection class NEMA 4X)
- Continuous process up to 290 F (143 C)

Special features/advantages

- 2-Wire sensor with 4...20mA and Hart 5.0 output
- Factory bent probes available to accommodate unique tank geometries
- Programming and set-up including strapping table can be configured via Anderson-Negele E-Scope software
- Transmitter head removable without breaking sterile boundary allowing dry calibration with optional dry-verification kit.
- Fixed 316L electropolished probe standard
- Material and calibration certificates included in standard scope of supply
- Optional PC Hart modem available for use with Anderson-Negele E-Scope software

Options/accessories

- USB Hart modem with BlueTooth
- Pre-assembled cable for M12 plug
- Dry bench calibration kit

Functional principle

The AGW Guided Wave Radar uses the TDR (Time Domain Reflectometry) principle. The instrument sends low power nanosecond wide pulses along an electronically conductive rod with a known propagation speed (the speed of light). When a pulse reaches the surface of the medium that has a higher dielectric than the air/vapor in which it is traveling, the pulse is reflected. The reflected pulse is detected as an electrical voltage signal and processed by the electronics. The level measurement is directly proportional to the time of flight of the pulse. The measured level is converted into 4-20 mA current and HART signals which is displayed on the LCD display. The level data measuring values can be calculated into volume.

Authorizations

**AMSE BPE
2019**
Compliant

AGW - Guided Wave Radar



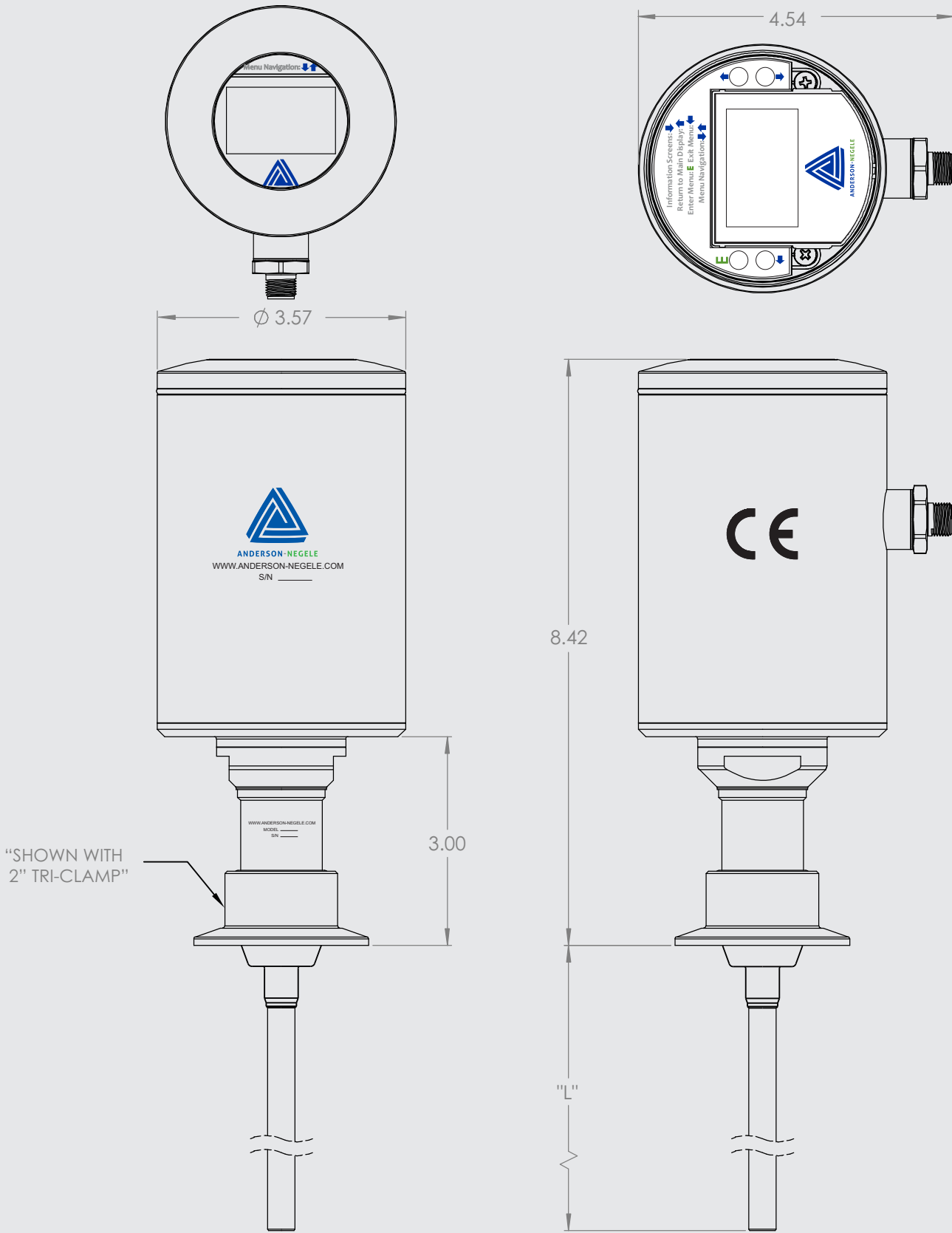
| Specification | | |
|------------------------------|--|---|
| Rod length | Product contacting | 120 in max. 24 in min 36 in max after bend |
| Deadband | length beyond process connection | 10 in max |
| Process connection | Tri-Clamp | 1...1½", 2", 2½", 3" |
| Process pressure | | 230 psi (16 bar) max. |
| Materials | Connecting head Plastic cap/viewing window Threaded connector Insulating part Process connection and rod | 304 SS Polycarbonate 304 SS USP class VI PEEK (FDA approval number: 21 CFR 177 2415; 3A-20) 316L SS, Ra<20 microinch with EP |
| Temperature range | Process CIP/SIP cleaning | 14...284 °F (-10...140 °C) 290 °F (143 °C) max 120 minutes |
| Repeatability | | +/- .08" (2mm) |
| Accuracy | | +/-0.2" (5mm) |
| Linearity | | < 1.0 % of the upper range value (= rod length) |
| Temperature drift | At 25 °C | ≤ 0.1 % |
| Response time | | < 500 ms |
| Electrical connection | Supply Protection class Output signal Ohmic resistance | 18...36 V DC NEMA 4X Analog 4...20 mA, galvanically separated from housing, 2-wire loop 0...750 Ω |

Conventional usage



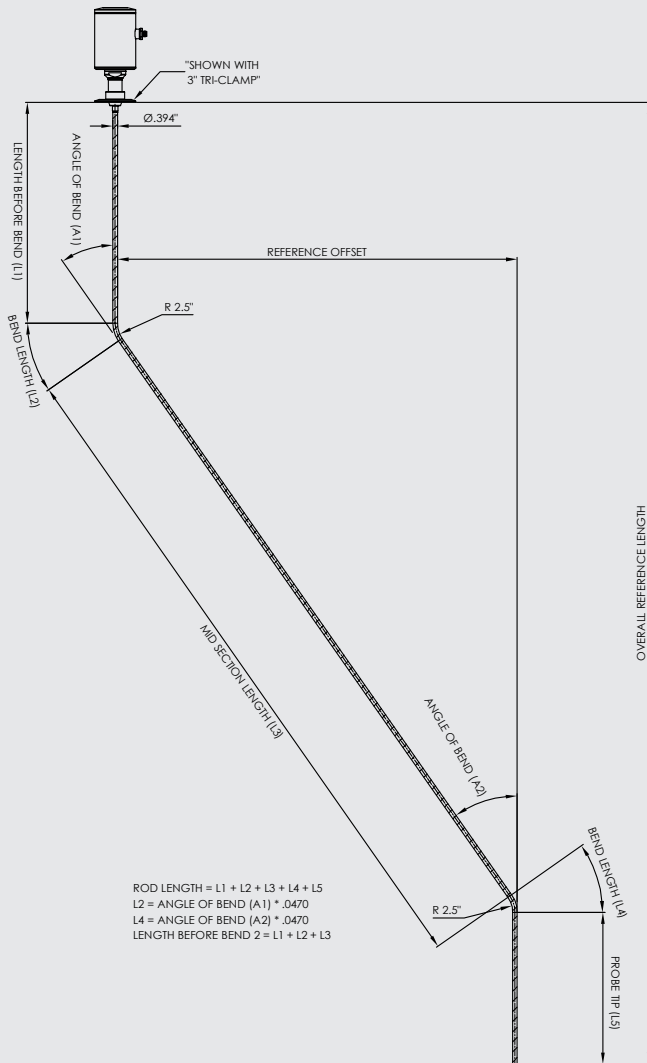
- Not suitable for applications in explosive areas.
- Not suitable for applications in security-relevant equipment (SIL).

AGW



Dual Bend Probe

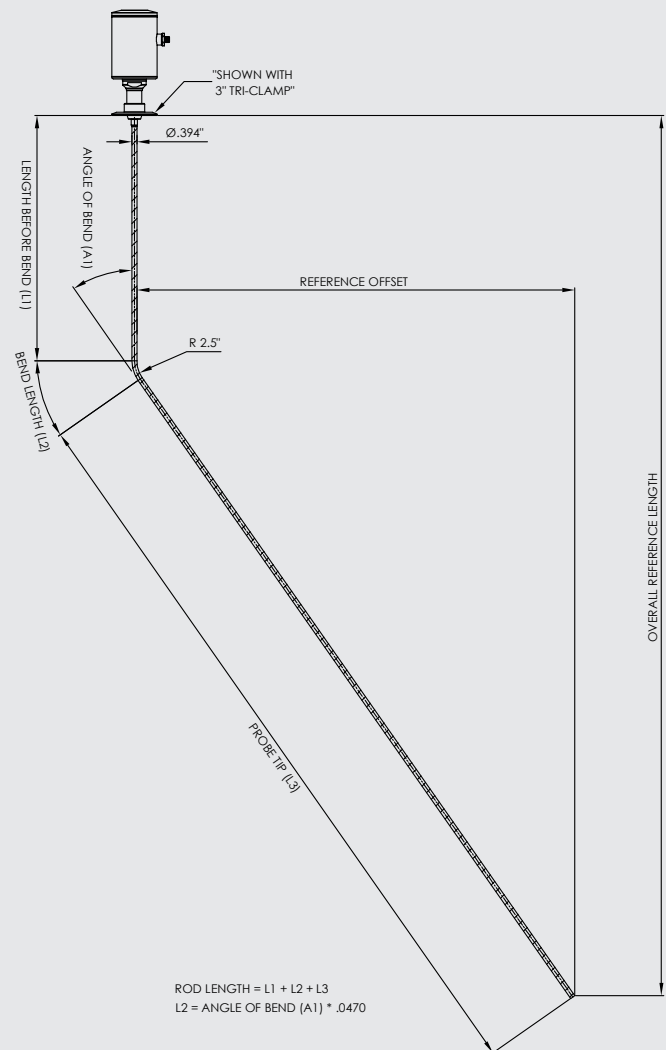
DUAL BEND PROBE



Rod Length = $L1 + L2 + L3 + L4 + L5$
 $L2 = \text{Angle of Bend (A1)} * .0429$
 $L4 = \text{Angle of Bend (A2)} * .0429$
 Length Before Bend 2 = $L1 + L2 + L3$

Single Bend Probe

SINGLE BEND PROBE



Rod Length = $L1 + L2 + L3$
 $L2 = \text{Angle of Bend (A1)} * .0429$

Order code

AGW-A (Life Sciences Series Guided Wave Radar)

Rod Length, Enter length desired in whole inches 024in...120in (e.g. 36in = 036)

024...120

Rod Length 1/4's, Enter number of 1/4 inch additions

0 No addition
1 1/4in
2 1/2in
3 3/4in

Fitting

004 1-1/2" Tri-Clamp®
005 2" Tri-Clamp®
007 3" Tri-Clamp®
008 4" Tri-Clamp®

Rod Material

A 316L 20 Ra EP
B 316L 25 Ra Mech

Cap

B Blind
C Clear

Electrical connector

A M12
M Minifast
C Cord Grip
N NPT

Length Before Bend

XXX No Bend
018-110 Whole inches before bend

Length Before Bend 1/4's

0 No addition
1 1/4in
2 1/2in
3 3/4in

Angle of Bend

00-45 In degrees up to 45

AGW-A/ 036/ 0/ 004/ A/ C/ A/ XXX/ 0/ 00/

Order code

AGW-P (AGW- Replacement Probe)

Rod Length, Enter length desired in whole inches 024in...120in (e.g. 36in = 036)
024...120

Rod Length 1/4's, Enter number of 1/4 inch additions
0 - 3

Fitting
 004 1-1/2" Tri-Clamp®
 005 2" Tri-Clamp®
 007 3" Tri-Clamp®
 008 4" Tri-Clamp

Rod Material
A 316L 20 Ra EP
B 316L 25 Ra Mech

Fixed Characters
XX

Length Before Bend
XXX No Bend
018-110 Whole inches before bend

Length Before Bend 1/4's
0-3

Angle of Bend
00-45 In degrees up to 45

AGW-P/ 036/ 0/ 004/ A/ XX/ XXX/ 0/ 00/

Order code

AGW-E (AGW - Transmitter only)

Rod Length, Enter length desired in whole inches 024in...120in (e.g. 36in = 036)
024...120

Rod Length 1/4's, Enter number of 1/4 inch additions
0 - 3

Fixed Characters
XXXX

Cap
B Blind
C Clear

Electrical connector
A M12
M Minifast
C Cord Grip
N NPT

Fixed Characters
XXXXXX

AGW-E/ 036/ 0/ XXXX/ C/ A/ XXXXXX/