

This device uses advanced pulse radar technology to provide reliable level measurement in liquids and slurries up to 20 m (65 ft.). The IQ Radar 300 is available both for standard applications and for applications that require explosion proof protection.

The IQ Radar 300 features a compact design and robust construction and is available with an epoxy-coated aluminum or stainless steel housing. Operating at low frequency and high signal transmission speed, it is virtually unaffected by atmospheric or temperature conditions. It provides reliable measurement in environments with harsh chemicals, steam, dust, encrustation, turbulence and agitation. The high resistance PTFE rod antenna is chemically immune and resistant to material build-up. The IQ Radar 300 can communicate using the following protocols: Modbus,[®] Hart,[®] or optional Profibus-PA.

It is easily installed by positioning the unit on a standpipe, bolting it in place and connecting it to the power supply. There's no need to fill or empty the vessel for calibration or commissioning.



Product Features

- Easy installation, low maintenance
- Infrared intrinsically safe (I.S.) handheld or remote programming
- Patented Sonic Intelligence[®] signal processing
- Built-in diagnostics
- Various flanges, horn and waveguide antenna options available
- Extremely high signal-to-noise ratio
- Easy false echo suppression of fixed obstructions

Technical Specifications

Electrical

Power (universal ac/dc power supply)

- 24-230 Vac, $\pm 15\%$, 40-70Hz, 28 VA (11W) or
- 24-230 Vdc, $\pm 15\%$, (9W)

Interface

- analog output: optically-isolated 4-20 mA into 450 Ω max., 0.02 mA resolution
- Dolphin/RS-485 link
- programmer link: infrared receiver
- Programmer (remote keypad):
I.S. model with EEx ia IIC T4, SIRA certificate EX002030
- display (local): alphanumeric and multi-graphic liquid crystal for readout and entry
- Modbus and HART or optional Profibus-PA
- Upgradable Flash via RS-485

Performance*

- frequency: 5.8 GHz (U.S.A. 6.3 GHz)
- accuracy at 20°C: ± 15 mm from 0.4 m to 10 m
 $\pm 0.15\%$ from 10 m to 20 m
- temperature drift: $\leq \pm 0.25\%$ of maximum range from -40 to 60°C
(-40 to 392°F)
- repeatability: ± 2 mm (range < 3 m), ± 3 mm (range < 5 m)
 ± 5 mm (range < 10 m), ± 10 mm (range < 20 m)
- fail-safe: mA programmable high, low or hold upon LOE condition

Mechanical

Enclosure (electronic):

- construction: aluminum, epoxy coated, or optional 316 stainless steel
- conduit: 2 x 1/2" NPT or M20 x 1.5 entry
- ingress protection: Type 4X/NEMA 4X, Type 6/NEMA 6, IP-67

Process Connections:

- flat faced flanges: 316 stainless steel, 50, 80, 100 mm (2, 3, 4")
(bolt hole pattern to ANSI, DIN, and JIS sizes)
- other connections available, refer to IQ Radar Accessories

Environmental

- location: indoor/outdoor
- altitude: 2000 m max.
- ambient temperature: -40 to 60°C (-40 to 140°F)
- relative humidity: suitable for outdoor (Type 6/NEMA 6/IP 67 enclosure)
- installation category: II
- pollution degree: 4

Process

- material dielectric: $\epsilon_r > 3$ (for $\epsilon_r < 3$, contact nearest Milltronics representative)
- temperature: -40 to 200°C (-40 to 392°F)
- pressure (vessel): dependant on process connection type and temperature (refer to graph on reverse)

Weight

- 6.5 kg (14.3 lbs.) with 2"/150 psi flange, weight will vary with flange size and rating (aluminum model)

Antennas

- dielectric rod:
 - Teflon[®] (PTFE)
 - length 41 cm (16.3") including integral gasket
- other antenna types available, refer to IQ Radar Accessories

Approvals**

- CSA^{NRTL/C}, CE, FM, 3A Sanitary
- radio: Europe, Industry Canada, FCC
- hazardous areas:
 - ATEX II 2G Eex de IIC T6
 - EEx de [ia] IIC T6
 - CSA/FM Class I, II, Div I, Gr. A,B,C,D,E,F and G

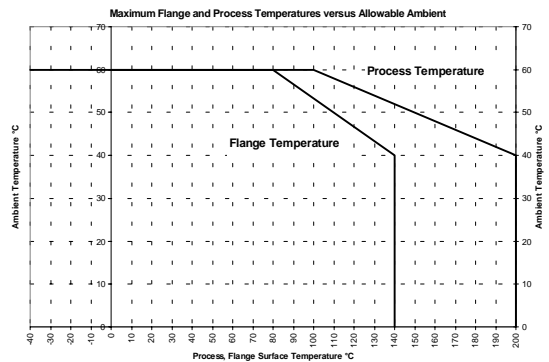
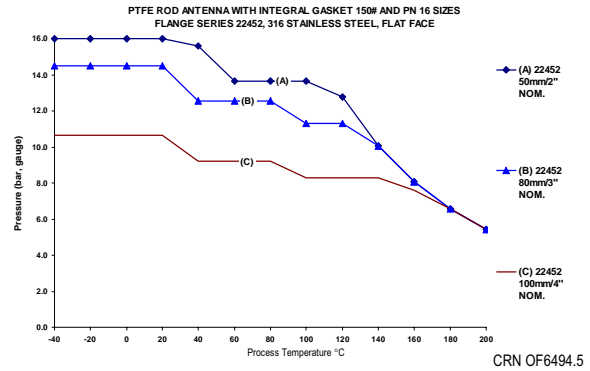
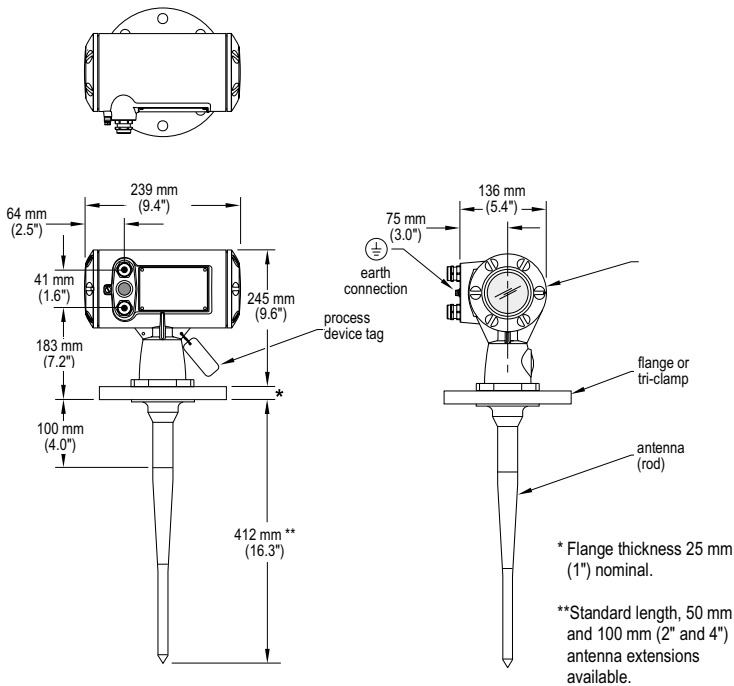
* Under reference conditions

** Some approvals listed are pending, visit www.milltronics.com for current listing
HART is a registered trademark of the HART Communications Foundation.
Modbus is a registered trademark of Groupe Schneider.
Teflon is a registered trademark of DuPont.

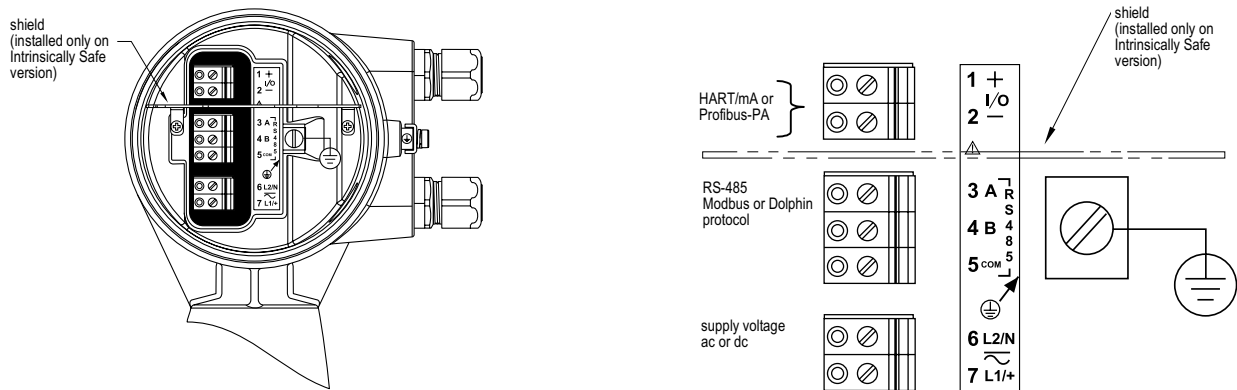
Specifications are subject to change without notice.

IQ Radar 300

Dimensions



Wiring



Notes

- recommended torque on terminal clamping screws, 0.5 – 0.6 Nm
- ground shields at one end only
- all field wiring must have insulation suitable for at least 250V
- the equipment must be protected by a 15 A fuse or circuit breaker in the building installation
- a circuit breaker or switch in the building installation, marked as the disconnect switch, shall be in close proximity to the equipment and within easy reach of the operator

Wiring Requirements

- Increased safety, EEx e version
 - solid 4
 - flexible stranded 2.5
- General safety or hazardous EEx d version
 - rigid 0.2 to 4
 - flexible stranded 0.2 to 2.5
 - AWG 24 to 12