MONITOR

Practical solutions... at every level!

RadarRight™ Series 400

Non-Contact Radar Continuous Level Sensor for Powders & Bulk Solids



FEATURES & ADVANTAGES

- **Non-contact** level measurement solution...nothing to "touch" your process.
- **Real-time continuous output** provides immediate level measurements.
- **No moving parts** to wear which leads to long operational life and low maintenance.
- **Proven microwave "pulse" technology** for dependable measurements.
- **Easy set-up / configuration** with LCD push button display module (included).
- **Small beam angle** to concentrate energy for high accuracy and reliability with materials having a wide range of characteristics.
- **Small antenna sizes (diameters)** for easy mounting.
- **Minimal "dead band" ("blanking zone")** for optimum measurement in vessel.
- **Gimbal (swivel) style process connection** allows for aiming antenna for added measurement accuracy and avoiding internal obstacles, flow streams, etc.
- **Advanced microprocessor** and unique echo processing technology provide for reliable operation under various process conditions.
- **Dust protection options** including air purge or dust shield.
- **Extremely low emission power** with "pulse" technology; is harmless towards the environment and human beings.

PRINCIPLE OF OPERATION

The **RadarRight**™ radar level instrument emits a microwave pulse from its antenna, which travels at the speed of light to the surface of the medium below. The time-of-flight of the pulse and its reflection back to the instrument location is directly related to the empty distance in the vessel and the material level. The output from the electronics is continuously updated as the level of the material surface changes. The **RadarRight** radar level instrument uses the proven 26GHz as the transmitting frequency.

PRACTICAL APPLICATIONS

- Excellent when application requires that nothing contacts or interferes with the process.
- Strong performance in powders and bulk solids in vessels up to 98.5 ft. (30m) tall.
- Suitable for various metal or nonmetal vessels.
- Provides measurements in dusty conditions...dust protection options are available.
- Can monitor height of material on an open area conveyor belt.

OPTIONS

- Output Options:
  - "Smart" RS-485 (Modbus compatible)
  - Analog 4-20mA (two-wire loop powered)
- Selection of antennas:
  - 4 inch (98mm) diameter horn – for vessels up to 49.2 ft. (15m) tall
  - 5 inch (123mm) diameter horn – for vessels up to 98.5 ft. (30m) tall
- Variety of mounting flanges.
- Optional air purge or PVDF dust shield for dusty conditions.
- ATEX Hazardous Location Approvals available. (Consult Monitor)
- HMI2 Local Operator Interface Control Console (For use with Smart RS-485 sensor only.)

Scan this with a smartphone QR-Code app for more product details.

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SPECIFICATIONS

Application:	Bulk Solids / Powders for Vessels up to 98.5 ft. (30m) High (with 5" dia. antenna)
Max. Measurement Range:	4" (98mm) Dia. Antenna: 49.2 ft (15m) 5" (123mm) Dia. Antenna: 98.5 ft (30m)
Measurement Accuracy:	±0.39in (±10mm)
Ambient Operating Temp.:	-40~150° F (-40~65° C)
Process Temperature:	-40~266° F (-40~130° C)
Process Pressure:	15 psi
Dead Band:	16" to 30" (406mm to 762mm) - Antenna Dependent
3dB Beam Angle:	4" (98mm) Dia. Antenna: 8° 5" (123mm) Dia. Antenna: 6°
Weight (Approx.)	
with 4" (98mm) Dia. Antenna	6.5 lbs [3kg] without flange
with 5" (123mm) Dia. Antenna	9.5 lbs [4.3kg] without flange
Frequency Range:	26GHz
Signal Output:	4-20mA Analog (2-wire loop); Smart RS-485 / Modbus (4-wire)
Power:	24VDC (16~26VDC)
LCD:	Standard
Housing:	Die cast aluminum, NEMA 4X / ENCLOSURE TYPE 4X, IP66
Housing Finish:	Powder Coating
Process Connection:	Gimbal (Swivel)
Flange Accessories:	K-Flange; 3", 4" and 8" ANSI
Antenna(s):	4" (98mm) Dia., 5" (123 mm) Dia.
Approvals:	CE Mark; TÜV Rheinland US/C, Ordinary Loc.

ORDERING INFORMATION

RadarRight® Pulse Radar Level Measurement

Select	Application Series
4	Series 400 (for Powders & Bulk Solids) [1]

Select	Output
1	"Smart" RS-485 (Modbus) [2]
2	Analog 4-20mA (Two-wire loop powered)

Select	Antenna Type
4	Horn, SS, 4" (98mm) Dia, w/Air Purge
5	Horn, SS, 4" (98mm) Dia, w/PVDF Dust Shield
6	Horn, SS, 5" (123mm) Dia, w/Air Purge
7	Horn, SS, 5" (123mm) Dia, w/PVDF Dust Shield

Select	Environment/Approvals
1	Ordinary Location
3	Hazardous Location - ATEX (Consult Factory)

Select	Process Connection
2	Gimbal (Suitable for Flange)

15	-	8	4	x	x	-	x	2	0	Order Number

Optional Flanges and Accessories:

Part #	Description	
15-3111	Flange, "K" Style, Aluminum, gimbal/swivel	(suitable for 4" and 5" dia. antennas)
15-3114	Flange, 4" ANSI, 316SS, gimbal/swivel	(suitable for 4" and 5" dia. antennas)
1-2400	Spanner Wrench For Cover Removal / Tighten	
RO514-22001 [3]	Belden 9322 RS-485 Communication Cable	

NOTE:
1 Consult Monitor Technologies factory for all applications prior to pricing and issuing quotation.
2 For use with HMI2 Operator Interface.
3 R0514-22001 cable is not for plenum installations. Consult local electrical codes and verify compliance before installing.

Silo Installation Example



Display Module



HMI2 (optional)

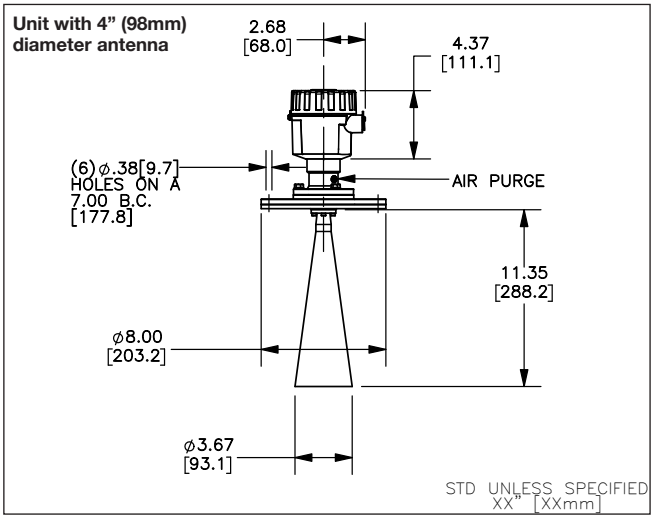


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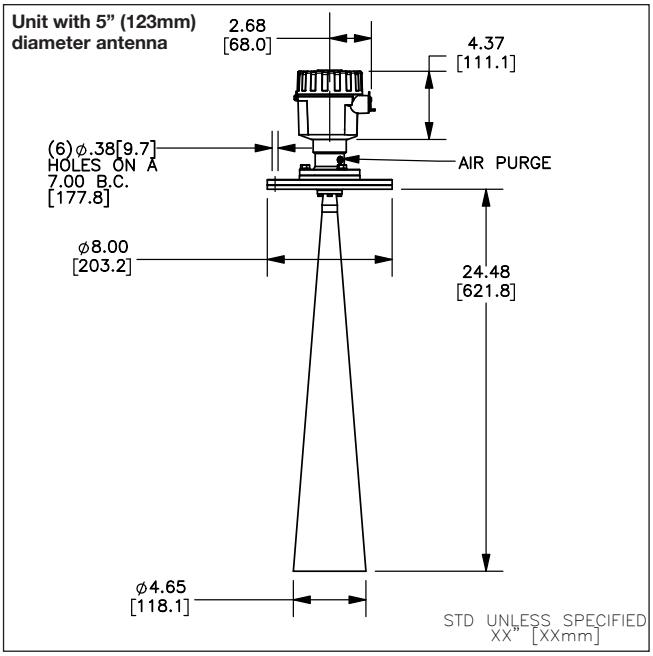
MECHANICALS

DIMENSIONS ARE SHOWN IN INCHES WITH MILLIMETER EQUIVALENT IN BRACKETS UNLESS OTHERWISE STATED

Unit with 4" (98mm) diameter antenna



Unit with 5" (123mm) diameter antenna



For antennas with PVDF dust shields add approximately 0.5" [12.7mm] H and 0.25" [6.4mm] W to shown dimensions.



Dust Shield

2-Year Limited Warranty

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