

## 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.
- ▼ **Air purge or dust shield options** to optimize sensor performance in dusty conditions.
- ▼ **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 with powders and bulk solids in vessels up to 98.5 ft. (30m) tall.
- ▼ Provides measurements in dusty conditions.
- ▼ Suitable for various metal or nonmetal vessels.
- ▼ Can monitor height of material on an open area conveyor belt.

For more detailed information, please contact a Monitor representative or visit Monitor's website at <http://www.monitortech.com/radar-level-non-contact-400.shtml>



### OPTIONS

- ▼ Output Options:
  - ▼ “Smart” RS-485 (Modbus RTU compatible)
  - ▼ Analog 4-20mA (two-wire, loop powered)
- ▼ Selection of SS antennas (horns):
  - ▼ 4 inch (98mm) diameter SS horn – for vessels up to 49.2 ft. (15m) tall
  - ▼ 5 inch (123mm) diameter SS horn – for vessels up to 98.5 ft. (30m) tall
- ▼ Variety of mounting flanges.
- ▼ Optional air purge or PFA polymer dust shield for dusty conditions.
- ▼ 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.





## SPECIFICATIONS

More product specifications can be found in #364A Installation Manual.

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	7.0 lbs [3.2kg] without flange
with 5" (123mm) Dia. Antenna	9.0 lbs [4.1kg] without flange
Frequency Range:	26GHz
Signal Output:	"Smart" RS-485 / Modbus RTU (2-wire); 4-20mA Analog (2-wire, loop powered)
Power:	24VDC (16~26VDC)
LCD:	Standard
Housing:	Die cast aluminum, ENCLOSURE TYPE 4X, IP66 Powder Coating
Housing Finish:	
Process Connection:	Gimbal (Swivel)
Flange Accessories:	K-Flange; 4" ANSI
Antenna(s):	4" (98mm) Dia. or 5" (123 mm) Dia. [Stainless Steel]
Approvals:	CE Mark; TÜV Rheinland US/C, Ordinary Loc.

## ORDERING INFORMATION

### RadarRight™ Non-Contact Radar Level Measurement - Series 400

Select	Application Series
4	Series 400 (for Powders & Bulk Solids) <sup>1</sup>
Select	Output
1	"Smart" RS-485 (Modbus) <sup>2</sup>
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/PFA Dust Shield
6	Horn, SS, 5" (123mm) Dia, w/Air Purge
7	Horn, SS, 5" (123mm) Dia, w/PFA Dust Shield
Select	Environment/Approvals
1	Ordinary Location - TÜV <sub>sec</sub>
3	Hazardous Location - ATEX (Pending)
Select	Process Connection
2	Gimbal (Suitable flange required)

**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
R0514-22001 <sup>3</sup>	Belden 9322, Cable, Instrumentation, 2-Lead, Shielded <sup>4</sup>
R0514-18001 <sup>3</sup>	Cable, Instrumentation, 4-Lead, Shielded, 18 AWG <sup>4</sup>
17-8021	Power Supply, Universal AC to 24VDC <sup>4</sup>

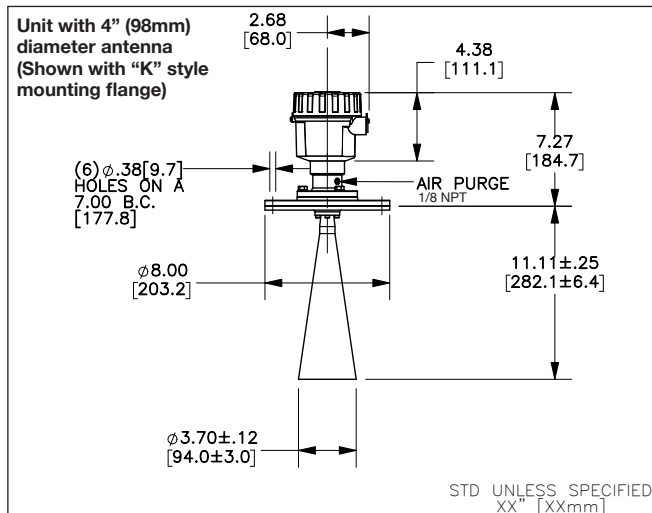
### NOTE:

- Consult Monitor Technologies factory for all applications prior to pricing and issuing quotation.
- Optional HMI2 Operator Interface is for use with "Smart" RS-485 version only.
- Cable is not for plenum installations. Consult local electrical codes and verify compliance before installing.
- Cable or power supply are not included. Must be ordered separately.

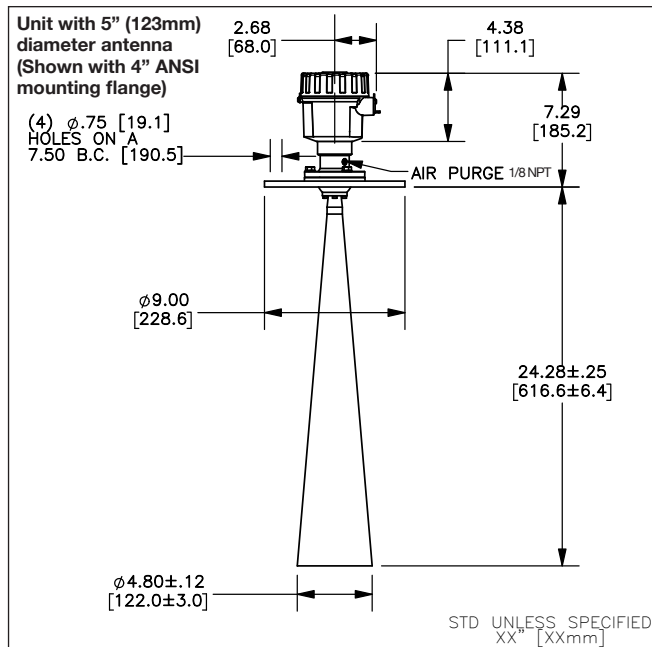


## MECHANICALS

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



Dimensions shown represent units with or without dust shield-equipped antennas.



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Information on this sheet is subject to change without notice

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