

# LIQUID LEVEL RADAR

Non-Contact Level Measurement  
of Liquified Materials



NCR-25



NCR-30

The BinMaster NCR-25 and NCR-30 non-contact radar level sensors continuously measure all types of liquids contained in vessels up to 114 feet tall. The NCR-25 is best suited for water, fuels, oils, and other freely-flowing, clean liquids. The NCR-30 is for use in aggressive materials such as asphalt or syrups. It is also appropriate for sanitary environments such as human or animal food processing or pharmaceuticals. Both models are compatible with the Bin-View® web application and Binventory® software for simple access to inventory data from a phone, tablet, or desktop PC.

# LET US HELP YOU SELECT THE **RIGHT MODEL**



The NCR-25 and NCR-30 are compatible with BinInventory® software and the BinView® web application for data monitoring on a phone, tablet, or desktop PC. If you're using other BinMaster sensors with either of these programs, you can monitor the level of both your solids and liquids in a single login.

## **NCR-25 Versatility in Storage or Process Tanks**

The versatile NCR-25 is universally suitable for many types of liquid level applications, even under the difficult process conditions, high temperatures, and pressures. It can be used in water, liquid feeds, fuels, oils, fats, and other liquified materials such as resins. It comes in three models including a 1.59" horn antenna with 49' maximum measurement and 15° beam angle, a 1.89" horn antenna with 65' maximum measurement and 15° beam angle, or a 2.95" horn antenna with 114' maximum measurement and 10° beam angle.



## **NCR-30 Corrosive Materials or Sanitary Environments**

The robust NCR-30 is suited for very corrosive or syrupy liquids in storage tanks and process vessels. It is appropriate for process conditions where sanitation and hygiene are essential, such as in human or animal food or pharmaceutical manufacturing. Its encapsulated horn antenna system guards against impairment of the sensor's operation. A maintenance-free design ensures the sensor resists buildup on the face of the unit. The NCR-30 can be used for clean-in-place operations with strict hygienic standards



## **Principle of Operation**

Short radar pulses are sent to the surface of the liquid. The liquid reflects the signal, which is returned to the sensor for processing. Level is calculated in the sensor electronics based upon the time of flight and converted to a distance. Proprietary processing ensures fast updates as well as reliable, precise measurement.

# FIT FOR A VARIETY OF **TANKS & MATERIALS**



- ◆ *Liquid feeds or supplements for ruminants*
- ◆ *Molasses, fructose, corn syrup, and other liquid sugars*
- ◆ *Fat and oil tanks in rendering operations*
- ◆ *Diesel fuel at a grain cooperative*
- ◆ *Waterproofing or liquid roofing products*

- ◆ *Pigments and binders at paint manufacturers*
- ◆ *Flavoring and colorants used to make soda*
- ◆ *Water and wastewater at treatment plants*
- ◆ *Fluids used in making frac sand or proppants*



- ◆ *Measuring liquid fertilizers in agriculture*
- ◆ *Lubricants, fluids, and water used in the mining industry*
- ◆ *Stillage liquid waste at ethanol plants*
- ◆ *Plasticizers used in fluid concrete*

- ◆ *Mixing tanks used while producing plastics and resins*
- ◆ *Residues from pulping and bleaching processes in paper making*
- ◆ *Cooling and storage tanks in power plants*
- ◆ *Asphalt tanks in the construction industry*



## **Monitor Solids & Powders in One Platform**

**Compatibility:** The NCR-25 and NCR-30 allow you to measure all your solids and liquids in one interface using either BinInventory® software or the BinView® web application.

**Accessibility:** No switching between programs, heading outdoors, or off to the control room with inventory access from your phone, tablet, or desktop.

**Reliability:** With a wide sensor selection, BinMaster can match your application to the type of technology your tough applications demand.

**Sensibility:** Improve safety, reduce maintenance, and simplify inventory management.

# WE'LL HELP YOU CONFIGURE THE BEST **SENSOR OPTIONS**



The versatile NCR-25 offers three versions for vessel heights of up to 49, 65, or 114 feet for unclassified areas or with FM and CSA hazardous location approvals. Mounting options include a 1.5", 2.0", or 3.0" NPT or a 2", 3", or 4" flange. Different seal materials address temperature requirements with a range of up to 266°C or 482°C for high temperature environments. Aluminum, plastic, and stainless-steel single and dual chamber housings are available.

The encapsulated antenna NCR-30 radar level sensor can be configured for use in either corrosive materials or to meet the requirements of sanitary applications. This 26 GHz radar can be used in unclassified areas or in hazardous locations with FM or CSA approvals. Mounting flanges are available in 2", 3", 4", 6", or 8" sizes. Alternatively, a 2" and 3" hygienic clamp is suitable for sanitary operations. Single- and double-chamber housings are offered in aluminum or stainless steel.



Programming for the NCR-25 and NCR-30 can be done via the optional BinDisc display that can be seen through a window on the housing. Both the NCR-25 and NCR-30 offer two- and four-wire 4-20 mA output options, and a four-wire Modbus output. Alternatively, use BinMaster's digital panel meters to view sensor data safely and conveniently at ground level.

	<b>NCR-25</b>	<b>NCR-30</b>
<b>Applications</b>	Storage containers, mixing tanks, and process vessels with various process conditions	Tanks containing aggressive liquids or with sanitary requirements
<b>Operating spectrum</b>	26 GHz frequency band	26 GHz frequency band
<b>Measuring range</b>	Up to 114 ft. (35 m) depending on version selected	Up to 114 ft. (35 m)
<b>Antenna material</b>	Horn antenna made of 316L stainless steel	Hygienically encapsulated horn antenna made of PTFE
<b>Process temperature</b>	-321°F to +842°F (-196°C to +450°C)	-321°F to +392°F (-196°C to +200°C)
<b>Process pressure</b>	-1 ... +160 bar (-100 ... +16000 kPa)	-1 ... +16 bar (-100 ... +1600 kPa)
<b>Measuring accuracy</b>	±0.08 in. (±2 mm)	±0.08 in. (±2 mm)
<b>Output</b>	2-wire 4-20 mA, 4-wire 4-20 mA, 4-wire Modbus	2-wire 4-20 mA, 4-wire 4-20 mA, 4-wire Modbus
<b>Display</b>	BinDisc, BinView, Binventory, Digital Panel Meters	BinDisc, BinView, Binventory, Digital Panel Meters
<b>Benefits</b>	Optimal solution for nearly all clean liquid level applications using different horn sizes based upon measuring distance	Low maintenance due to high chemical resistance, optimal flush-front design meets sanitary requirements
<b>Approvals</b>	CSA or FM (NI) Class I, Div 2 Groups A, B, C, D CSA or FM (IS) Class I, II, III, Div 1, Groups A, B, C, D, E, F CSA or FM (XP-IS) Class I, II, III Div 1, Groups A, B, C, D, E, F, G FM (XP) Class I, Div 1, Groups A, B, C, D, (DIP) Class II, III Div 1, Groups E, F, G	CSA or FM (NI) Class I, Div 2 Groups A, B, C, D CSA or FM (IS) Class I, II, III, Div 1, Groups A, B, C, D, E, F CSA or FM (XP-IS) Class I, II, III Div 1, Groups A, B, C, D, E, F, G FM (XP) Class I, Div 1, Groups A, B, C, D, (DIP) Class II, III Div 1, Groups E, F, G

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