

Non-Contact Radar with Superior Performance in Solids

The BinMaster NCR-80 is a non-contact radar level sensor designed specifically for superior performance in powders and bulk solids. Its advanced technology uses an 80 GHz frequency focused in a narrow 4° beam angle. This ensures reliable performance at measuring ranges up to 394 feet and accuracy within 0.2". The NCR-80 is ideal for continuous level measurement in tall and narrow vessels and excels where there is excessive noise or dust.

Reliable level measurement. 80 GHz of power.

There are three versions of the NCR-80 including a metal-jacketed lens antenna, a plastic horn antenna, and a 1-1/2" NPT threaded model. There are countless configurations of the NCR-80 offering a diverse selection of approvals, mounting options, specialized seals, output options, and housings. Inventory can be viewed on BinView® SaaS, Binventory® LAN-based software, or a PLC as well as an assortment of digital panel meters and display consoles.



Swiveling Stainless Steel Flange

NCR-80 for Bulk Solids

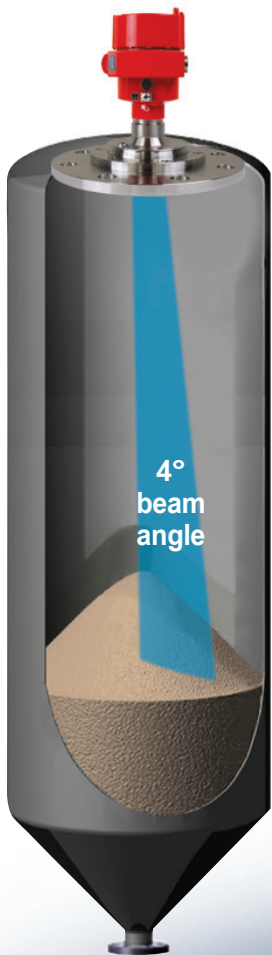
- Powerful 80 GHz non-contact radar
- Measuring distance up to 394 feet
- 4° beam angle for precise targeting
- Reliable accuracy within 0.2"
- High temperatures up to 392°F
- Hazardous location approvals
- BinDisc with Bluetooth setup option



1-1/2" NPT Threaded



Lightweight Plastic Horn Antenna



Narrow 4° Beam Angle for Pinpoint Focus

The narrow 4° beam angle allows for precise aiming to avoid the flow stream, internal structure, or sidewall buildup. Narrow focusing also simplifies setup, as the signal will reflect only from the measured material being targeted. The NCR-80 is resistant to interference, while its advanced filters ensure rapid signal processing and a fast update rate. Its advanced firmware constantly tracks echoes and automatically eliminates false echoes for reliable performance.

Maintenance-Free Antenna System

The NCR-80 antenna lens is encased in a sealed antenna system. This makes it resistant to dust buildup and virtually maintenance free. Its flush face does not protrude into the vessel which prevents potential damage to the sensor. The plastic lens is made of durable, PEEK plastic for ruggedness and long-lasting performance. It is chemical resistant for tough applications and has FDA approval making it suitable for food and pharmaceutical use.

The NCR-80 comes standard with an air purge connection, which is only necessary for extreme conditions with high dust that will cause dust buildup on the lens. It is designed for low air consumption to save on compressed air costs, ensuring fast and efficient cleaning in high dust applications.

80 GHz focuses a narrow 4° beam that measures only material; a 10° beam from 26 GHz may detect internal structure, corrugation, or buildup.

Setup with BinDisc and Bluetooth Option

An optional BinDisc interface enables push-button setup and configuration on the sensor face. BinDisc is also available with a Bluetooth option for setting the sensor up on a cell phone. The BinDisc is installed in the sensor housing and is visible through the cap. BinDisc simplifies setup and provides continuous, at-a-glance, operational status of the sensor. Only one BinDisc is needed to set up multiple sensors, saving money. This handy interface aids in onsite system diagnosis.



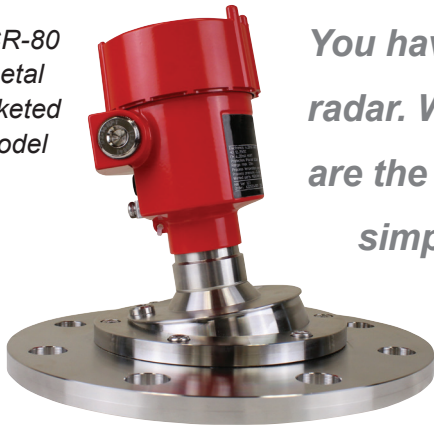
NCR-80 Specifications



	PLASTIC ANTENNA	STAINLESS STEEL FLANGE	1-1/2" NPT THREADED
Frequency	79 GHz	79 GHz	79 GHz
Antenna Type	3.15" (80 mm) plastic horn antenna	metal jacketed lens antenna	integrated horn antenna
Measuring Range	393 feet (120 m)	393 feet (120 m)	80 feet (24 m)
Beam Angle	4°	4°	8°
Accuracy	± 0.2 in. (5mm)	± 0.2 in. (5mm)	± 0.2 in. (5mm)
Power Requirements	Regular Voltage Version: 90 to 253, V AC, 50/60 Hz, Low Voltage Version: 9.6 to 48 V DC, 20 to 42 V AC, 50/60 Hz	Regular Voltage Version: 90 to 253, V AC, 50/60 Hz, Low Voltage Version: 9.6 to 48, V DC, 20 to 42 V AC, 50/60 Hz	Regular Voltage Version: 90 to 253, V AC, 50/60 Hz, Low Voltage, Version: 9.6 to 48 V DC, 20 to 42 V AC, 50/60 Hz
Process Temperature	-40°F to 176°F (-40° to 80°C)	-40°F to 392°F (-40° to 200°C)	-40°F to 392°F (-40° to 200°C)
Process Pressure	-14.5 to +29 PSI, -1 to +2 bar (-100 to +200 kPa)	-14.5 to +43 PSI, -1 to +3 bar (-100 to +300 kPa)	-1 to +20 bar (-100 to +2000 kPa)
Mounting	3", 4", or 8" swiveling flange with 8° adjustable aiming or mounting strap	4", 6", or 8" swiveling flange with 10° adjustable aiming	1-1/2" NPT process connection
Housing Material	Plastic, Painted Aluminum, or Stainless Steel	Plastic, Painted Aluminum, or Stainless Steel	Plastic, Painted Aluminum, or Stainless Steel
Enclosure Rating	IP66/IP68 (0.2 bar), IP66/IP67, IP66/IP68 (1 bar)	IP66/IP68 (0.2 bar), IP66/IP67, IP66/IP68 (1 bar)	IP66/IP68 (0.2 bar), IP66/IP67, IP66/IP68 (1 bar)
Approvals	CSA / FM Class I, II, III, Div 1, Groups A, B, C, D, E, F, G Other Approvals Available	CSA / FM Class I, II, III, Div 1, Groups A, B, C, D, E, F, G, Other Approvals Available	CSA / FM Class I, II, III, Div 1, Groups A, B, C, D, E, F, G Other Approvals Available
Output	Two-wire 4 - 20 mA/HART®, Four-wire 4 - 20 mA, Modbus RTU	Two-wire 4 - 20 mA/HART®, Four-wire 4 - 20 mA, Modbus RTU	Two-wire 4 - 20 mA/HART®, Four-wire 4 - 20 mA, Modbus RTU

Non-Contact Radar Made Better by BinMaster

NCR-80
metal
jacketed
model



You have many choices when it comes to a non-contact radar. What you might NOT get from other manufacturers are the options and accessories that make your installation simpler and more affordable. Plus, BinMaster supplies the complete solution from the sensor to the software and everything in between.

More Mounting Flexibility

With multiple mounting options, there is no on-site fabrication needed. Plus, it is likely that you will be able to use an existing roof flange. This will simplify installation, while saving you time and money. BinMaster offers a wide variety mounting plates for angled roofs as well as swiveling flanges and mounting straps that allow for aiming.

Swivel Mounts for Aiming

For aiming flexibility, a 10° swiveling holder for the metal jacketed version of the NCR-80 that comes in 4", 6", or 8" flange sizes to allow for precise aiming to the output of the vessel. For the NCR-80 plastic horn antenna version, 8° directional aiming is available with 3", 4", 6", or 8" adapter flanges.

NCR-80
with
mounting
plate

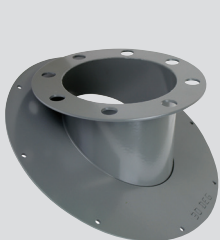


NCR-80
plastic
horn model
with mounting
strap

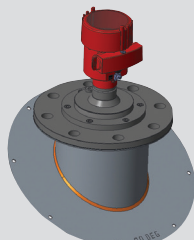


Flat and Angled Mounting Plates

Not all roofs are flat throughout the process industries. Therefore, in addition to the affordable 0° mounting plate BinMaster offers 10°, 30°, and 45° mounting plates with a 4" ANSI flange. The 30° angle is especially prominent in the grain industry, where dust-penetrating 80 GHz non-contact radar is a popular sensor.



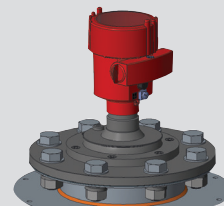
30° Mounting
Plate



30° Mounting Plate with
NCR-80 metal jacketed model



0° Mounting
Plate



0° Mounting Plate with
NCR-80 metal jacketed model

Local Display Options



BinMaster offers several display modules to provide access to level data locally at the bin. This allows workers and drivers quick access to inventory levels from the ground or a vehicle. There is no need to visit a control room or the office. BinMaster will design a solution that fits your needs and budget based upon the number and location of your silos and where it is easiest to access data.

Push-Button Control Console

The BinMaster C-100-R control console provides convenient walk or drive-up access to level and volume data from BinMaster non-contact radar level sensors. It displays bin levels as feet or cubic feet, US gallons or bushels, and tons, metric tons, or kilograms. Measurements can be output as height of material or distance to product (headroom).

Configuration of the C-100:R uses intuitive push-button controls in English or Spanish. User settings are stored in a non-volatile memory to protect against data loss in the event of power failure. The C-100-R features a 24 VDC power supply and a NEMA 4X rating for resistance to dust and rain.

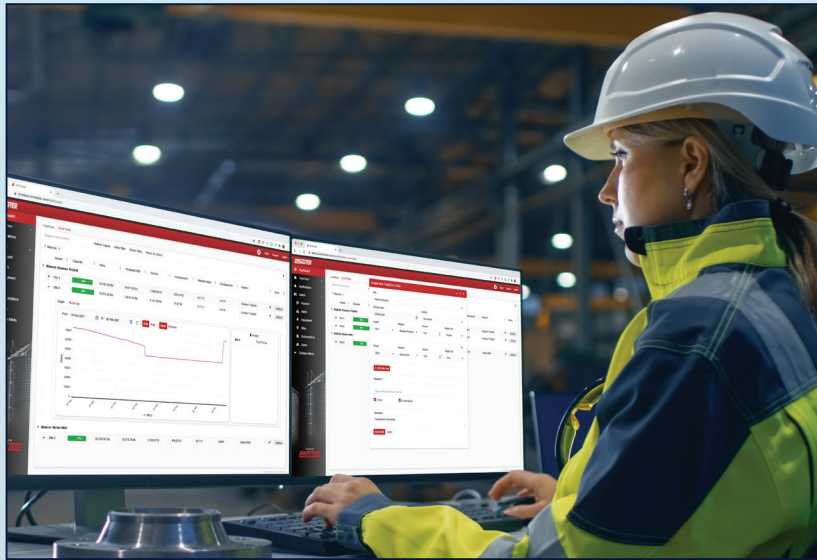


Digital Panel Meters (DPMs)

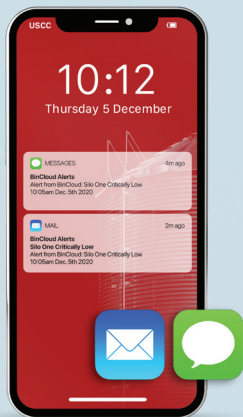
BinMaster's digital panel meters provide easy-to-use, easy-to-see solutions for bin level monitoring and control. They have ultra-bright LED displays that are easily seen in bright sunlight, smoke, fog, or dusty environments. DPMs are offered in single and dual-line configurations and can be installed at each bin or set up to accommodate readings from multiple bins from a single DPM.



Inventory Monitoring Made Easy Options



You buy sensors because you need data to manage your inventory. With BinMaster, you have many options about where the data goes. Data from the sensors can be sent to your PLC or a console, if you prefer. If you are looking for powerful, user-friendly options BinMaster gives you two software alternatives.



Software-as-a-Service (SaaS)

The BinView® SaaS web application is a robust inventory management experience used with the NCR-80 that works anywhere you have a connection to the internet. No software installation, IT department, or server hosting is needed. You can access levels and receive alerts on your phone, tablet, or PC.

BinView® is compatible with many BinMaster sensors as well as other sensors that have a 4 -20 mA analog output or Modbus RTU. BinView® can be used for remote inventory monitoring from multiple locations around the state, country, or worldwide.

Locally Installed Software

BinInventory® software from BinMaster installs on a PC on your LAN, WAN, or VPN. This PC software—formerly known as eBob—can be used to manage inventory data from up to 255 vessels per sensor network. It sends automated high and low-level alerts via text or email, visualizes vessel levels, and generates usage reports. It can be used by one end user or installed across your entire organization.

This advanced software platform is compatible with the NCR-80 and other BinMaster continuous level sensors or just about any sensor using the Modbus RTU or HART protocol. This makes BinInventory® a complete on-site solution for managing the inventory of either solids or liquids contained in bins, tanks, or silos.



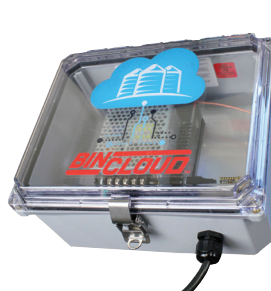
Reduce & Simplify Wiring



BinMaster helps you simplify the installation of an inventory management system. Programmable, compact devices replace wires with over-the-air technology to reduce wiring and labor costs. BinMaster's solution-centric approach ensures countless scalable configurations for any size plant.

BinCloud® Gateway

The BinCloud® Gateway is used to flow data quickly and seamlessly in and out of a network. In an inventory management system, the BinCloud® Gateway receives measurement data from level sensors and sends it to a control room, BinView®, or BinInventory® software.



LoRa Transceiver

The LoRa Transceiver—LTR-100—is a wireless device used to connect sensors with a 2 or 4 wire 4-20mA output to a BinCloud® Gateway using long range radio technology. The LTR-100 is a low-cost option for connecting analog sensors to a gateway used to access BinView® or BinInventory® data from the cloud.



HART Consolidator Module

The HART Consolidator Module—HCM-100—was developed to easily connect multiple sensors using the HART protocol to the BinCloud Gateway®. It can accommodate up to 15 HART v7 enabled sensors in a daisy-chain (multi-drop) sensor network wiring configuration.



NCR-80 Excels in Solids



Grain, Feed & Petfood

- 4° beam angle is ideal for tall, narrow bins or bins with internal structure
- Segmented cement grain bins with multiple compartments
- Bins where the sensor must be mounted near the bin wall
- Targeted locations on grain piles or flat storage warehouses
- On large conveyors for distance measurement to detect overloading
- Rendering operations, measuring feather or bonemeal

Food Processing

- Flour, sugar, and salt silos
- Duty ingredients and malted grains

Cement Silos

- Clinker silos with excessive noise and high temperatures
- Tall or narrow finished cement silos with excessive dust
- Adaptable to powders or bulk solids of raw and finished materials
- Over moving belts and conveyors to prevent overloading
- Inside rock crushers to monitor filling and emptying

Plastic Pellets, Powders, or Flakes

- For narrow silos where precise level is desired
- In low dielectric materials or materials with limited reflectivity



Sand and Aggregates

- For tall narrow silos with excessive dust or noise
- Mounted over piles or pits for level detection

Wood Chips or Pellets

- Detecting level of materials with varying dielectrics and moisture levels
- Performs in high steam environments

Power Plants

- Monitoring level in coal feeders to ensure continuous supply
- Detecting fly ash levels in ESP hoppers preventing overfilling

