

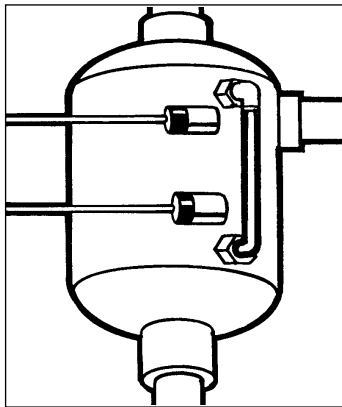
Namco offers a full line of capacitive sensors designed to sense non-metallic products. Capacitive proximity sensors can be adjusted so that they will ignore or "see through" an object in order to detect a second object behind it. As long as the object in the foreground is not metallic, the sensor will actually be able to sense products such as powders, granular material, and liquids even when they are hidden from view.

Capacitive sensors operate by detecting the change in capacitance between the capacitive sensor and the intended target. Capacitance is an electrical property between two separate materials, and its strength varies with distance and the properties of the materials. Namco's capacitive sensors have sensing ranges up to 70mm.

Namco capacitive proximity sensors are available in three housing styles and can detect many different liquid and solid materials including oil, water, soaps, beverages, chemicals, powders, and grains. Their versatility and range make them ideal for a variety of food industry applications. Detecting product level inside a hopper or storage tank is an easy task for the sensor as is sensing the contents of a sealed package to make sure it contains the proper amount of product. At the end of the production line Namco's capacitive sensors can be used to make sure cases are full of packaged product and to detect shipping pallets for automatic case loading applications.

### How do I control liquid level in a tank?

Use a sight glass and two capacitive proximity sensors. The sight glass can be clear glass or any non-metallic material like PVC. The sensors detect the high and low liquid level through the wall of the sight glass or pipe. Whether the liquid is clear or not does not affect sensing.



### Should I use a capacitive sensor with a metal or plastic body?

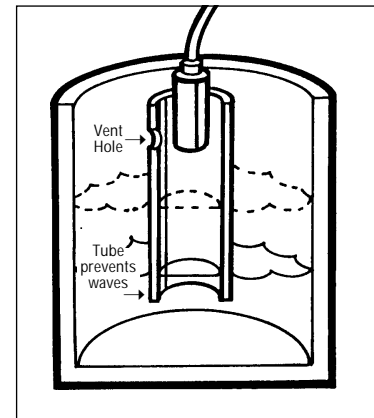
Generally, plastic body capacitive sensors are more suitable for applications where chemical or water resistance is desired. This would include food applications.

Metal body sensors are more appropriate where physical strength and rigidity are needed as well as in high vibration applications.

### What if I have a metallic tank and no sight glass?

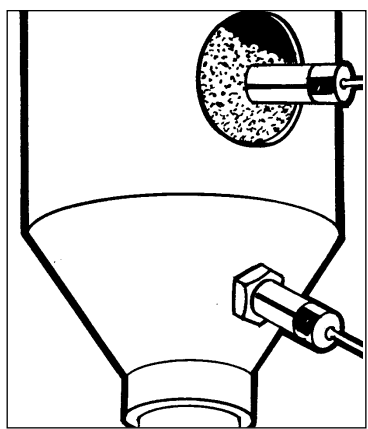
To sense liquid level in a metal tank, you'll need two capacitive sensors and mounting wells which project through the tank walls. The wells allow the sensors to project far enough into the tank to avoid side sensing of the tank walls. (Capacitive sensors do sense metal as well as non-metallic objects.)

Another common "high-level" or "tank full" application technique involves mounting the sensor inside a tube to prevent splashing and "waves" from falsely tripping the sensor. This technique is also used when a hole or sight glass is not possible.



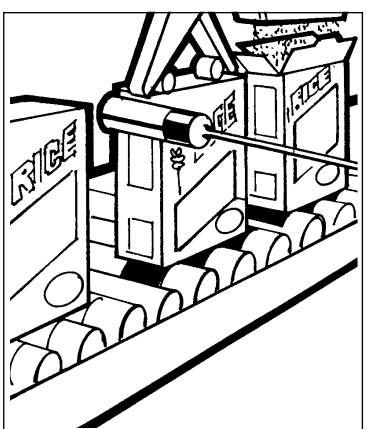
**How can I sense dry bulk material in a hopper?**

Again, you'll need two capacitive sensors--one for "high" level, one for "low" level. These can be mounted either of two ways: through a plastic window, or by mounting through the wall using the sensor's jam nuts.



**Can sensors be used to insure my product is in its package?**

Of course! Commonly found uses are for full-case detection as well as individual package checking. Detection is easy because the sensor "sees" through plastic, paper, or even cardboard boxes.



**What about checking to make sure bottles have been filled?**

Capacitive sensors have a number of uses in bottle filling and capping.

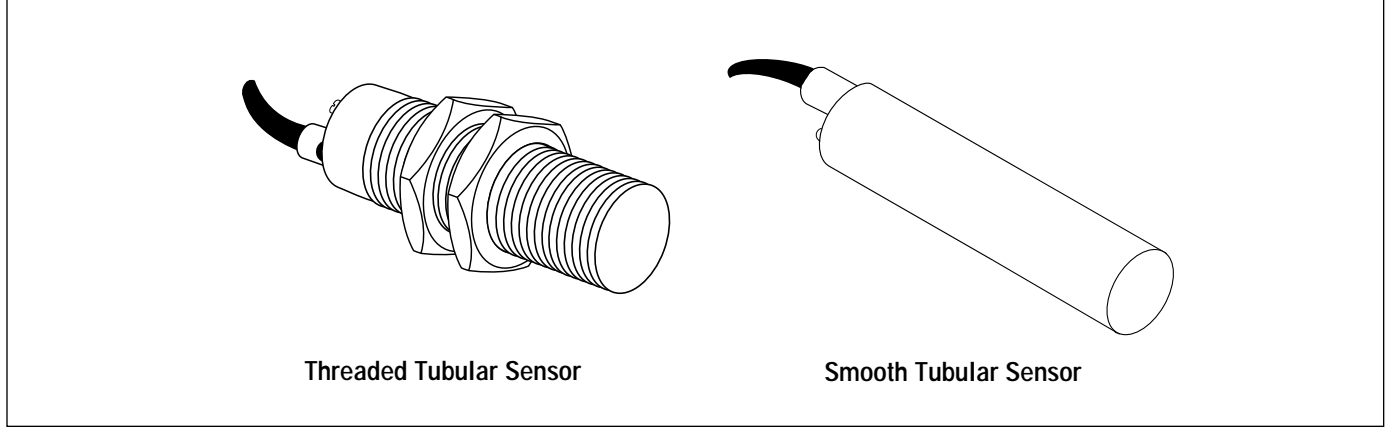
They can make sure empty bottles are continuously supplied to the filler. The line is shut down if there is no supply.

They can be used as a liquid level sensor to control the filling equipment.

They can also be used to check that all containers have been capped.



**Capacitive Proximity Sensors**



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