

# Ultrasonic Object Detection Sensors Reduce Costs on the Farm

*Senix ToughSonic Ultrasonic Level and Distance Sensors with Built-in Switch Capabilities can Reduce Costs and Saves Farmers Money*

HINESBURG, VT, USA, May 28, 2020 /EINPresswire.com/ -- An innovative sonic spray attachment from a farm equipment manufacturer uses Senix ultrasonic level and distance sensors for object detection to detect orchard trees and precisely control the application of sprayed materials. The farmers that use this sonic spray attachment use 25% to 40% less spray material.

The sonic spray saves farmers money by reducing the amount of spray material used, simply by turning off the spray when no tree is present. The sonic spray reduces material usage by 25% to 40%, depending on tree size and row spacing. It also reduces unproductive trips back and forth to refill the sprayer. Even small growers can realize a return on investment in less than two years. There are very few agricultural investments that offer that kind of ROI and an environmental benefit as well.

The sonic spray attachment uses six high-speed Senix ToughSonic 50 ultrasonic sensors to detect trees. The spray valves are turned on or off at



Ultrasonic Level and Distance Sensors



sonic spray for farmers



Ultrasonic Level and Distance Sensors

exactly the right time to treat the trees, but not the empty space between the trees. When a tree is detected by one or more sensors, a signal is sent to the system controller. The sensor's analog output is combined with data on ground speed and operator inputs to control spray valves. This output is also displayed on the CAN display so the operator can see what each sensor is detecting.

The operator has push-button control over which sensor and spray zones are active and the maximum distance each sensor will measure. For example, if the display indicates that the sensors are picking up trees from the next row, the maximum detection distance can be reduced so the further trees are ignored. The SenixVIEW configuration and analysis software, allows farmers to adjust ultrasonic sensors during product development and testing. Being able to connect a laptop and fine tune system performance in the field definitely can accelerate the product development process. Further, the ability to provide the spray operators with real-time, push-button command over sensor behavior significantly improves control and productivity.

Synchronizing all six sensors to prevent them from receiving signals from one another was also important. Using the ToughSonic SYNCH feature and RS-485 serial output offered on all Senix sensors, farmers are able to tune the on-board sensor array. Master and slave sensors are defined and each one operates in precise synchronization with the others. A 50 millisecond measurement interval is maintained to detect small branches even while traveling at 3 mph to 4 mph.

The Senix ToughSonic [ultrasonic sensor](#) also provide simultaneous serial and digital outputs. The speed of RS-485 communications was necessary to synchronize all six sensors, while the analog output provides system control and operator display data. Senix ultrasonic sensors are unique in their ability to provide multiple simultaneous serial, analog and switch outputs.

Farm-tough ultrasonic sensors..... any sensor installed on farm machinery has to be weather-tight, rugged and durable enough to withstand regular use in the field. Senix ToughSonic sensors are made of 316 Stainless Steel, with potted in electronics and have an IP68 rating.

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