

## APPLICATION NOTE NO. 7

# MAINTAINING PROPER CORNMEAL (DOUGH) LEVEL ON SHEETER ROLLERS USING AN ULTRASONIC PROXIMITY SENSOR WITH ANALOG OUTPUT

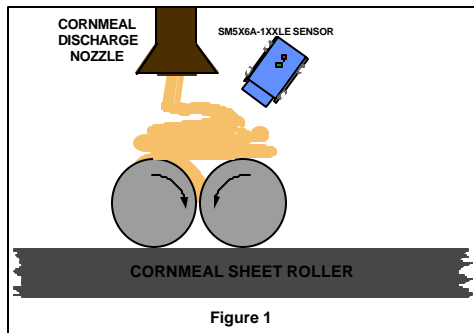
### PROBLEM:

Product uniformity is a major requirement for achieving the highest possible quality standards. The sheeter machine is a critical component of all corn chip processing lines because it rolls out the cornmeal into a thin “cookie-like” sheet, then makes a triangular “cookie cut” just prior to entering the baking oven.

The sheeter machine must roll out a uniform thickness of cornmeal between two rollers continuously to ensure a consistent corn chip product. This thickness is totally dependent on the level of cornmeal on the sheeter rollers. The higher or lower the level, the thicker or thinner the corn chips, respectively.

### SOLUTION:

There are two types of Hyde Park ultrasonic sensor products currently in service to ensure this uniform process takes place: the SUPERPROX<sup>®</sup> self-contained Model SM506 (Figure 1) or the remote sensor controller Model SP186 (Figure 2). Regardless of sensor type, the sensor is mounted to monitor the folded level of cornmeal on the two rollers. The motor driving the two rollers is controlled from the 4 to 20 mA analog signal generated by either style of SUPERPROX<sup>®</sup> sensor. In order to achieve the highest sensing reliability, a feature called loss-of-echo signal hold comes standard in certain self-contained and remote control SUPERPROX<sup>®</sup> sensor models with analog output. This feature keeps the analog output from going to a high or a low signal value should the sensor lose echo reflections from the folded cornmeal. The SUPERPROX<sup>®</sup> analog output sensor models listed below with the loss-of-echo signal hold function are recommended for this application.



The self-contained SUPERPROX<sup>®</sup> sensor version (Figure 1) is any one of the following four models:

- Model SM506A-100LE with 10 ft. integral cable
- Model SM506A-199 with 10 ft. integral cable, includes high/low alarm outputs
- Model SM556A-100LE uses AC105 connector cable
- Model SM556A-199 uses AC115 connector cable, includes high/low alarm outputs

An optional Model AC222 mounting bracket for these self-contained sensors is also available.

The remote SUPERPROX<sup>®</sup> sensor-controller version (Figure 2) composed of the following two model items:

- Model PR101: High gain sensor
- Model SP186: Analog output controller with loss-of-echo signal hold

An optional Model AC201 mounting bracket for the remote sensor is available.

