Environment (Continued)

Radio transceivers (such as a walkie-talkie) can produce a signal with the same frequency as the oscillator circuit of the sensor. This is called radio frequency interference (RFI). Most manufacturers have taken steps to provide the maximum protection against RFI and false operation of the sensor.

Electrical interference from nearby motors, solenoids, relays and the like could have an affect on sensor operation as well. **An induced line or current spike** (called a showering arc or EFT) **can cause a false operation of the sensor.** This spike can be produced by the electrical arc created when an electrical/mechanical switch or a contactor closes. If the lines connecting the sensor and these devices are adjacent and parallel to one another, the spike will affect the sensor. Most codes and specifications call for a separation of control and power leads so this is not often a problem.

The ambient temperature can affect sensing range. The effect is referred to as temperature drift. The sensing range can change by as much as ±10%.

Because sensing ranges can vary due to component, circuit and temperature variations, along with the effects of normal machine wear, **sensors should be selected based on sensing the target at 75%, and releasing at 125% of the rated sensing distance**.

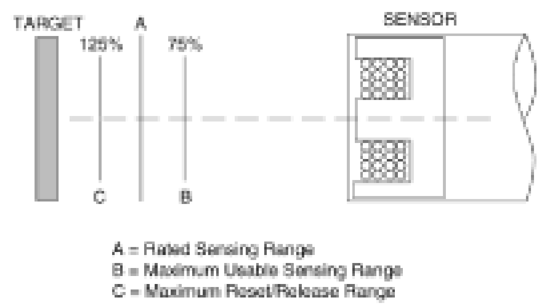

FIGURE 60: SENSING DISTANCE TOLERANCES

IN THE WORKPLACE

On the automated processing line at Harris House Paints, a can would occasionally come through the packaging process without a lid. Lids entered the line through a gravity feed and occasionally a lid would get momentarily hung up.

By mounting an inductive proximity sensor over the passing cans, the line could reject a can with a missing lid.

FIGURE 61: AN INDUCTIVE PROXIMITY SENSOR KEEPS A LID ON THINGS