

MASS DETECTION CASE STUDY

USING A CUSTOM CAPACITIVE
SENSOR TO DETECT A SUDDEN
CHANGE IN WEB MASS

APPLICATION:

Detecting changes in the mass of an extruded polymer in a manufacturing environment.

SENSOR SOLUTION:

Custom probe and CPA100 driver

**Custom Probes**

Lion Precision is able to design and supply custom probes quickly. Over half of probes produced are customized in some way.

**BENEFITS:**

The customer can instantaneously detect a step change in mass of the material passing underneath the sensor. A corrective action can be taken quickly before the problem causes a large, expensive amount of scrap.

A Manufacturer That produces a polymer web was having quality control issues. The web is a combination of the output of many extruders. If one of the extruders malfunctions, there is an instantaneous change in the mass of the web. This change is not visible, but causes the web to be underweight.

Lion Precision worked with the customer to come up with a solution. A custom wide probe similar in shape to the LRD 6300 was developed. This sensor allows the wide material to stay under the sensing area of the probe. As the mass of the material changes, the dielectric in the sensing gap changes as well. This results in a change in capacitance in the sensing area. The custom probe measures the change which is output as an analog signal from the CPA100 Driver. This system is able to detect a step change in target material mass reliably and instantaneously.