Split signals for separate monitoring and control
APPLICATION A118

Type of Company: Plastics Manufacturer
**Location:** Texas

The principal plastic manufacturing processes are: blow molding, casting, compression molding, extrusion, fabrication, foaming, injection molding, and rotational molding. These processes are used to produce large numbers of identical items, from high-precision engineering components to disposable consumer goods. One of the commonly monitored process variables used to control these manufacturing systems is temperature, and many times different departments need to monitor the same temperature. This particular company is using loop-powered temperature transmitters to control their systems, and both a chart recorder and a DCS system to monitor.

Photo by Cjp24

The Engineering Issue

- The QC engineer and process engineer both need to monitor the output from one of their temperature transmitters but they cannot add another set of sensors.

- The process engineer wants to ensure that, if the QC engineer "breaks the loop" by taking the chart recorder or DCS offline for any reason, it does not affect production.

Xmit

Chart Recorder
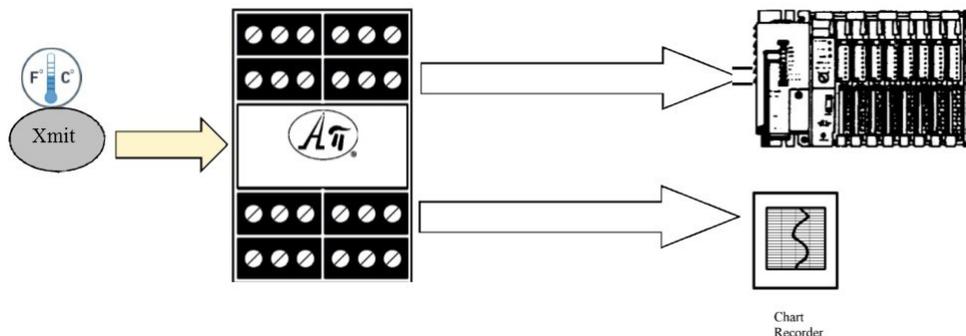
The engineer used an APD 4393 IsoSplitter. The APD 4393 is placed in series with the loop-powered transmitter and the DCS to accept the 4-20 mA signal and provides two optically-isolated outputs that are linearly related to the input. The input signal is filtered, amplified, and split, then passed through to both output stages. The two isolated output channels provides a simple and economical solution.

Problem. Solved.