Monitor and control the melt pressure in an extruder

APPLICATION A125

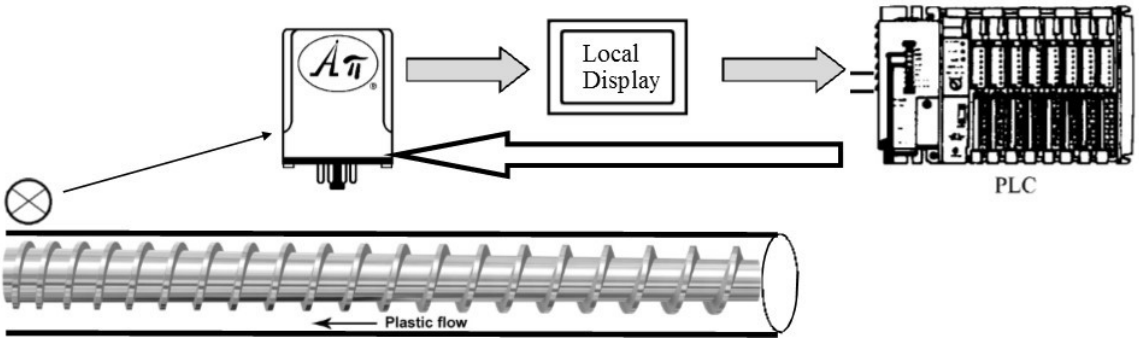
Type of Company: Plastics Manufacturer
Location: Massachusetts

The plastic extrusion process starts by feeding plastic material from a hopper into the barrel of the extruder. The material is gradually melted and the molten polymer is then forced into a die, which shapes the polymer that hardens during cooling. The customer is using a Dynisco melt pressure transducer on their extruder, and an Allen-Bradley MicroLogix 1000 PLC for recording and control functions.


Par Paul Goyette. fr.wikipedia.org. Tuyaux en PVC extrudé

The Engineering Issue

- The engineer wants to locally monitor and control the polymer melt pressure for compliance and product validation.
- The melt pressure signal must be compatible with the Allen-Bradley PLC and have a “system calibration” function.



The engineer selected a API 4059 G M02, which provides excitation power to the transducer and is field-rangeable for the excitation supply, sensitivity/ transducer output, and DC current output. This unit also has 20 V compliance so the output signal can be looped thru both the local display and the PLC for control and recording. An added feature of this API unit is that it utilizes the pressure transducer's internal calibration resistor to unbalance the bridge to a specified value (typically 80% of full scale) when the functional test switch is in the CAL position, ensuring accurate system calibration.

Problem. Solved.

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