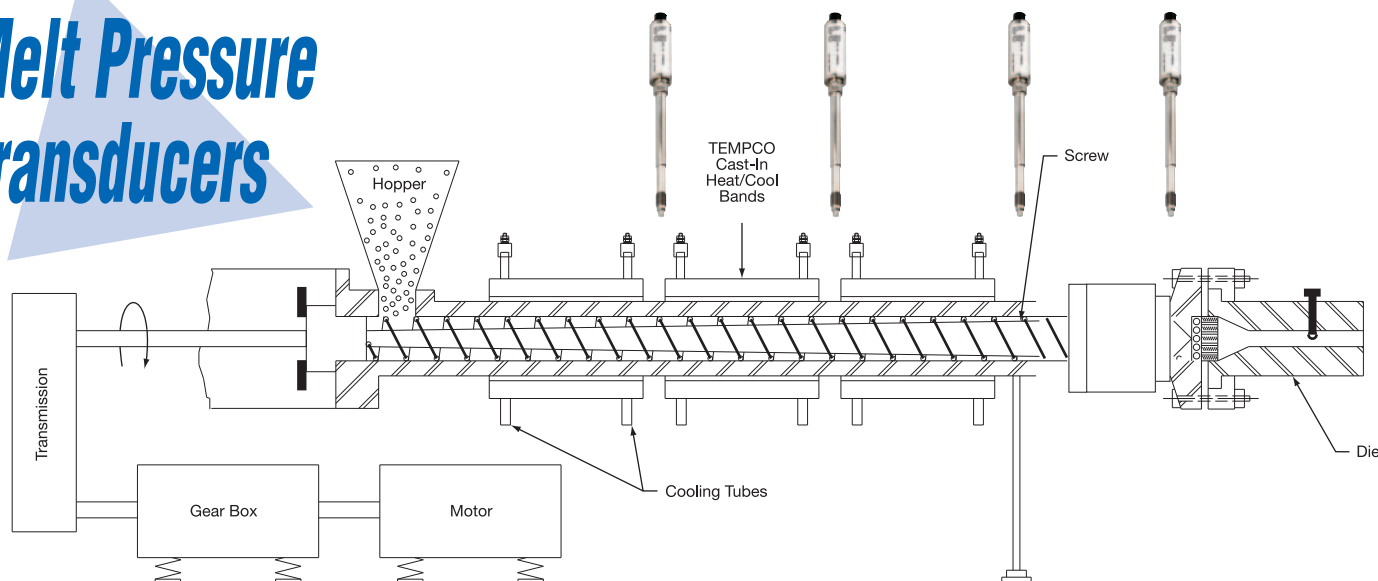


INTRODUCTION TO

Melt Pressure Transducers



Designed for Maximum Operating Efficiency

Tempco Melt Pressure Transducers are used to sense the pressure associated with the extrusion processing of plastic materials. They range in pressure from 0-500 PSI to 0-20,000 PSI with temperatures in the range of 70-750°F. Typical transducer outputs are 3.3 mV/V, 4-20 mA, 0-5 V, or 0-10 V (at full scale output).

APPLICATION

Plastic materials are formed to shape by a process defined as extrusion. This is accomplished by first softening the material with heat. Through the use of a drive screw, which is rotated by a motor, the material is forced toward and then through an opening, called a die, used to shape the plastic melt.

Various compounds, colorants and additives can be mixed with the plastic materials as they move along the screw path. The heated materials are shaped by the die and/or other post-extrusion equipment and then cooled to retain their shape.

WHERE AND WHY TRANSDUCERS ARE USED

Melt pressure transducers can be effectively used along many points of the extrusion process for a variety of reasons:

1. From a **quality control viewpoint**, a transducer should be located in the die. The measurement of the melt pressure at this point is used as an indication of flow rate.
2. To indicate when a **screen is in need of changing** and also to insure the safety of personnel and equipment alike, a transducer will be located somewhere ahead of the screen changer. This is most likely located either in the adapter or along the screw path within the barrel. An even more accurate determination of screen plugging can be made by reading the differential pressure between transducers located on either side of the screen, one being in the adapter, the other located in the barrel ahead of the screw tip.
3. For **research and development** purposes, Tempco transducers should be located at various points along the barrel in order to accurately monitor the pressure and mixing characteristics of the melt.
4. Transducers are also used for **pressure sensing on post-extrusion equipment** such as blow-molding heads, extrusion pumps and spinnerettes.
5. Locating transducers anywhere along the apparatus also serves to **improve the safety** of the extruder.

END PRODUCTS OF EXTRUSION PROCESS

The end results of the extrusion process can be found in various products. Some examples include:

1. The feedstock for other plastic packaging systems used for compounding and mixing.
2. Plastic film used to create bags and packaging materials.
3. Plastic tubing, hose, and pipe to contain water, gases or chemicals.
4. Insulated cable and wire housing.
5. Filaments used to create textiles, brushes, rope and twine.