

TELEDYNE HASTINGS

APPLICATION NOTES

INSTRUMENTS

Goal: Cost Efficient Integration of Vacuum Device for Animal Food Processing

Solution: Teledyne Hastings HPM-2002 Dual Vacuum Sensor



Manufacturing of freeze-dried animal food is a delicate process. Elimination of the appropriate amounts of moisture and heat during the freeze-drying stage requires precision and accuracy as it has significant effect in preserving the quality and shelf life of the product.

The HPM-2002, the Teledyne Hastings wide range vacuum gauge (1000 to 1×10^{-4}), is used in the desiccation process when vacuum level monitoring is critical as the oven is heated during the evaporation stage. This is a particularly delicate step; the elimination of water does not pass the liquid phase inside the animal food being processed.

To monitor and to control the accurate vacuum level, the integrated set point alarms trigger the necessary vacuum and heating system directly from the HPM-2002's digital RS-485 interface. This is done through a PLC or an intermediary control switch that relays the vacuum reading to signal processing and then commands the necessary alarm to trigger.

The success of this precision application is primarily due to features of the Teledyne Hastings HPM-2002 including the wide range capability to measure pressure from 1000 to 10^{-4} Torr and digital communication interface.