

Shamrock Systems Suggests K-Tron Feeders to Fix Customer Challenges

About:

Equipment Vendor: Coperion K-Tron

Industry: Plastics producer

Product: Polypropylene resin

Vendor Solution

Shamrock Systems proposed the K-Tron volumetric K2 platform of feeders to the customer to resolve their issues. This platform comprises a 316 stainless steel feeder with a steep-walled hopper and DC motor to meet the class II division 2 area requirement. For the handling of talc, the feeder consists of a K2-MV-T60 twin-screw 60mm auger set. The feeding of the various additives, such as powder, beads, and flakes, was addressed by incorporating several K2-MV-S60 single-screw-type feeders with a non-stick internal coating. The auger tube diameters were also increased to aid in feeding performance. A customized approach was offered to address the scale and existing control platform. The approach now includes strain gauge load cells (versus standard Smart Force Transducers) on the feeders. The strain gauge load cells will be tied into a junction box to communicate with the existing PLC control platform.

Customer Challenge(s)

The producer plant had been operating flexwall gravimetric feeders to add talc, various additive powders, beads, and flakes to an extruder to produce polypropylene resin pellets. After 25 years of operation, the feeding equipment required maintenance, and reliability issues started to plague the equipment. Due to the special nature of these ingredients, augers broke, drive shaft leakage occurred, bearings failed, and vinyl hoppers became ineffective. The plant requested to maintain its existing control platform, which included DC drives and a PLC-based control platform. They also stressed the need to utilize strain-gauge-type load cells versus the K-Tron digital sensors to measure weight loss during operation.

Customer Comments

Coperion K-Tron feeders have been installed and are operational with little to no downtime. The feed system has been integrated with the existing control platform and is running successfully. The second production line has been upgraded following the original project's success.

