

Shamrock Systems Helps Control System Yield Success

About:

Equipment Vendor: Coperion K-Tron

Industry: Powder coatings

Product: Powder paint

Vendor Solution

Shamrock Systems performed materials testing with the customer with the K-Tron K2-MV-T35 twin screw volumetric feeder. The volumetric twin screw T35 feeder performed better than the single screw flexwall feeder for both consistency and reliability of the feed. To communicate with the plant-wide Allen Bradley control package, an Ethernet communication board was added to the KCM controller. With this, the plant control system can start, stop, and control the feeder speed remotely. A cart with locking casters for simple equipment integration into the existing operation was included to complete the package.

Customer Challenge(s)

The customer's plant operated flexwall single screw gravimetric feeders to meter fumed silica products. The feeders were mounted on carts with casters, which made for easy operation to load, locate, or use. To feed consistently and reliably, fumed silica was metered into a vacuum transfer package and through a grinding process at a couple of pounds per hour. This process usually reduces the chipped paint and fumed silica to a fine powder for packaging. The fumed silica was then added to prevent clumping and re-agglomeration of the powder paint through storage and transportation. It's also important that the feeder start, stop, and rate control communicates with the plant-based Allen Bradley PLC automation package. The customer wanted to know if the current system was the best option or if the plant could operate better.

Customer Comments

Fumed silica is a very lightweight powder that absorbs moisture and creates a lot of static electricity. Therefore, the bonding and grounding of the 316 stainless steel feeder is critical. The K-Tron T35 twin concave intermeshing feeder screws reduced any small agglomerations of the fumed silica that had been produced before feeding and created more consistent metering and a better final product. Furthermore, by using the volumetric feeder, the replacement cost of the equipment reduced in half.

