

WEIGHT RADIOMETRIC MEASUREMENT IN ETHANOL PRODUCTION

Ronan Measurements Division supplies the process control industry with leading-edge Radiometric Measurement Systems that provide non-contact measurement solutions for the harshest environments.

RONAN'S WEIGHT RADIOMETRIC MEASUREMENT SYSTEM

Application

Weighing grain material in an ethanol processing environment, where the product to be measured are often inconsistent and drag chain conveyors are enclosed, plants must employ a weight system which is rugged, reliable, and not requiring modification to the conveyor enclosure, all while keeping the overall cost of ownership low.

Problem

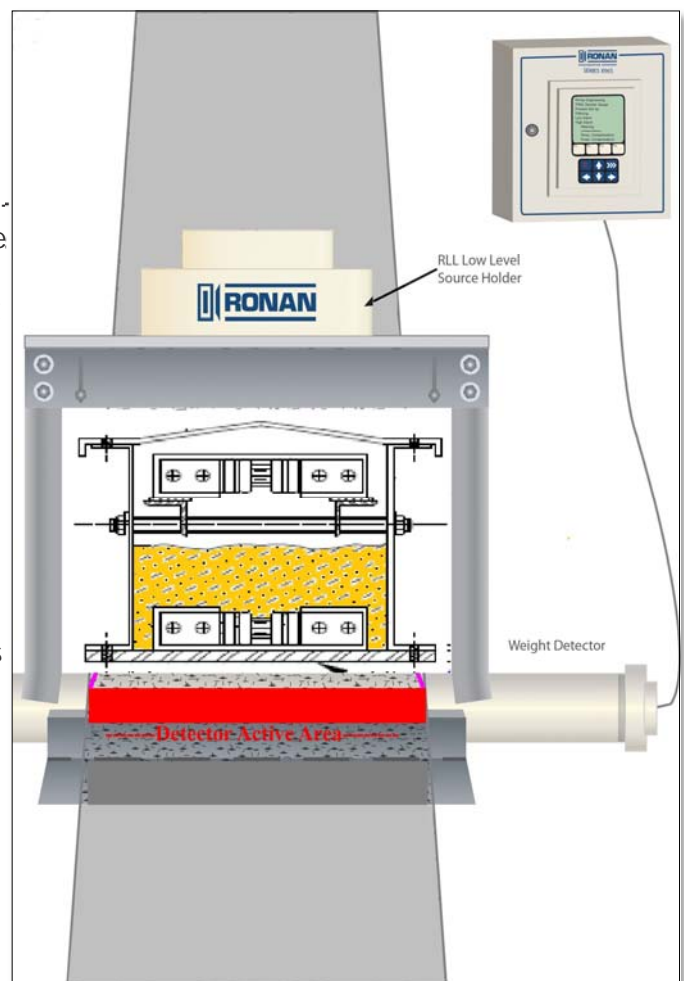
Weight scales that come in direct contact with conveyors often require frequent maintenance because they are exposed to continual loading and vibration. In addition, installation requires the conveyor to be shut down and, in some cases, disassembled. Lost production time for routine recalibration by a specialist, unscheduled maintenance, expensive repairs, and high cost of installation add up to a high overall cost of ownership.

Solution

Radiometric Measurement is a highly reliable and low maintenance technique for weighing bulk materials on virtually any conveying method, including belt, drag chain, screw, and metal plate conveyors. The measurement system does not come into direct contact with the process material, so it is not affected by belt misalignment, changes in belt tension, high vibration, or violent flow. The system is mounted externally around the conveyor housing, without the need for heavy supports and braces. It is customized to fit around the drag chain or screw conveyor housing and modular so it can be assembled around the enclosure without stopping the process.

Summary

The Ronan Radiometric Weight Measurement System is reliable and accurate. The overall cost of ownership is low because regular calibration requirements are eliminated. Maintenance costs are minimized as there are no moving parts in the system. Productivity and throughput are increased by reducing downtime for installation, calibration, and repairs. Each system is customized to produce an accurate, repeatable measurement in virtually any area of the plant.



RLL Low-Level Source

Ronan is the only manufacturer to offer the revolutionary **Radiation Low-Level (RLL)** Source Holder. The RLL uses up to 100 times less gamma energy than comparable gauges, and is the only source holder recognized by the NRC to be so safe that it does not require the stringent documentation, training or handling procedures of other systems. The gauge can be relocated by your personnel, without a licensed person present. It does not require wipe testing, on-off shutter checks, or radiation surveys.



Scintillation Detector

Ronan pioneered the use of solid crystal scintillation detectors more than 20 years ago, and now has an installed base in the thousands across a wide variety of applications worldwide. Ronan employs two types of crystals, Scintillating Plastic Crystals for standard applications and Sodium Iodide scintillating crystals for ultra low-level fields. Scintillation Detectors provide efficient detection, enabling the use of lower-level sources.



Frame

Custom designed, modular frame allows mounting around conveyor frame without stopping the process or removing any components of the conveyor system. The frame is centered on the conveyor, allowing for all of the process material to be measured.



X96S Series Transmitter

The **X96S** Transmitter features the fastest processor in the industry. It offers calibration and configuration in a simplified format, and can be achieved locally through push buttons. Various configurations accept multiple digital or analog inputs from Ronan's scintillation detector and VFD speed sensors, as well as multiple analog 4-20mA outputs. Operators are able to observe the rate, speed, weight, and total load from the local display.