

Determination of sunflower-bagasse in edible oil



Measurement of sunflower-bagasse in an edible oil process using laser level.

Measurement made easy.

—
01 LLT100 installed
on a cooling tube

Overview

The Turkish Thrace Oil Seeds Agricultural Sales Cooperatives Union, which was founded by Babaeski, Edirne and Lüleburgaz Oil Seeds Agricultural Sales Cooperatives in 1966, is known as the Thrace Union. Trakya Birlik produces between 30% and 50% of the annual sunflowers production in Turkey. The Trakya Birlik facility is mandated to evaluate common products and meet producers' needs for seeds, fertilizers, agricultural tools and equipment. This application note outlines the advantages of using the ABB LLT100 laser level transmitter in their facility.



Application

It's very important for the operator to continuously know the level of the bagasse. For this application, an open-path radar device was tried first, but the loss of signal was encountered too often because of false echoes in the tank. So the producer decided to choose ABB's LLT100 for its advanced software functions, which allowed the laser to measure the level without losing the signal during the filling process because of its transient signal rejection function implemented in the ABB laser device. Also, when the material filled and emptied with a significant angle of repose, the open-path radar was unreliable.

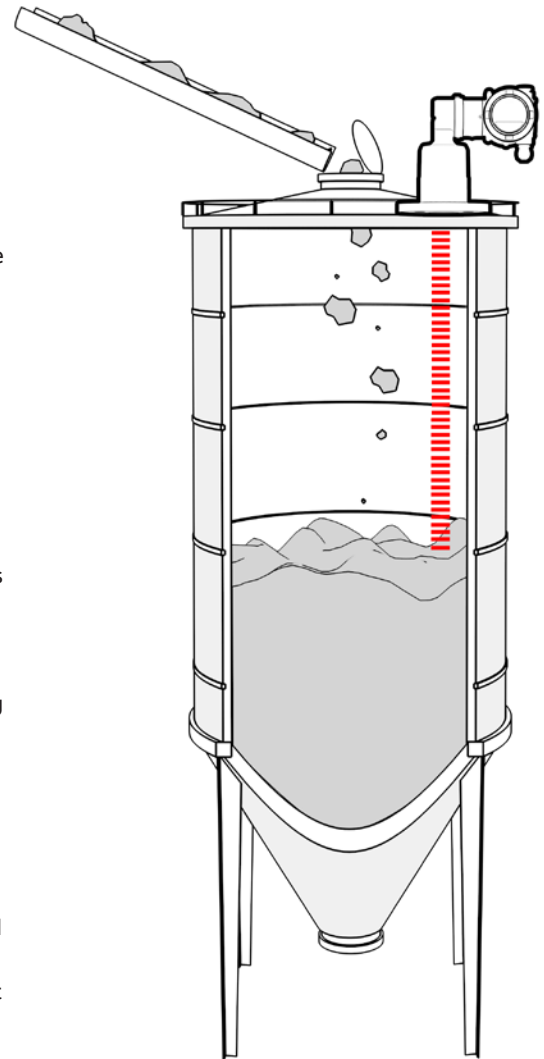
The selection criteria for the ABB laser transmitters were: proper measurement of the bagasse at all angles of repose, easy installation without any mapping required and simple configuration. The ABB laser level technology is a plug-and-play instrument. The user-friendly menu enables a quick setup on commissioning and does not require any calibration or special configuration.

In this application, a conical silo is used with a grinding system. While the process has a high temperature, the dielectric constant of the sunflower-bagasse is very low. With its short wavelength, the ABB laser level transmitter offers a narrow beam with extremely low divergence (<0.3-degrees). This enables the instrument to measure accurately in conical silos.

While the process is high temperature, the dielectric constant of the sunflower-bagasse is very low. With a cooling tube accessory that creates a heat gradient, the laser works perfectly, unaffected by temperature fluctuations. A common challenge for non-contact radars, besides false echoes, is the ability to measure a low dielectric material accurately, which is never an issue with the ABB laser level products.

Result

The high sensitivity of the LLT100 allows precise level measurements in sunflower-bagasse vessels from top to bottom. The transmitter's narrow laser beam can be precisely aimed to circumvent obstacles. Installation is very flexible because the transmitter can be placed close to the wall or angled inside the vessel.



The LLT100 provides a unique and reliable level measurement solution for a variety of sugar level applications such as inventory measurement for sunflower-bagasse in conical and tall silos. There's no mapping or any adjustments of the various angles of repose or material dielectrics.

Ask a sugar mill or refinery production manager and maintenance supervisor if they need effective inventory monitoring for their bagasse products. The answer is ABB's LLT100 laser level transmitter.