

The LLT100 laser level transmitter for sugar cane conveyors



In this application note, we present how ABB's LLT100 laser level transmitter is used into the process of a sugar cane factory.

Measurement made easy.

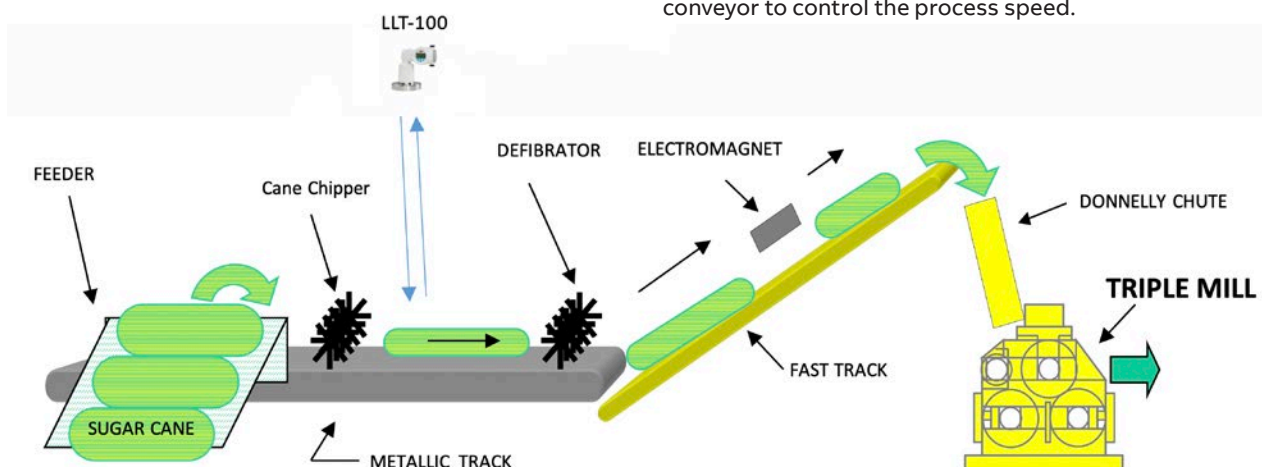
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01 Measurement using
the ABB LLT100

The process

On its way to the triple mill, the sugar cane goes from the feeder on to a metal conveyor and passes through the chipper towards the shredder. Afterwards, the material runs by an electromagnet that pulls out any metal objects before being fed through a funnel (Donnelly Chute) into the triple mill.

The ultimate objectives are to keep this system as linear as possible, avoid variations in the production of steam which can destabilize the production process, and increase grinding efficiency and performance.

From this need came the application of the LLT100 to measure the level accurately and without mechanical interference and to send a 4 to 20 mA signal proportional to the level of the sugar cane layer on the metal conveyor to control the process speed.





Purpose

Keep the sugar cane layer as linear as possible on the conveyor belt up to the Donelly Chute (a type of funnel). The constant linear feeding of the metallic track from the feeder increases the extraction performance by removing sucrose from the cane and improving performance of the steam turbines by avoiding oscillations that could cause instability in the steam generation process.

How it worked previously

Control was handled by a mechanical device activating a position transmitter that provided a 4 to 20 mA output and, in some cases, an operator would visualize the level to control the conveyor speed.

Difficulty encountered before application of the LLT100

The alternating bumps that occurred during the variation of the volume of the sugar cane on the conveyor caused instability that affected performance. Problem solved with the ABB LLT100.

01 Mechanical device

ABB Inc.
Measurement & Analytics
3400, rue Pierre-Ardouin, Québec, Québec
G1P 0B2 Canada

Tel.: +1 418-877-2944
1 800 858-3847 (North America)
Email: radars@ca.abb.com

abb.com/level

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