

Complete solution for crusher level with laser level measurement



Laser level measurement plays an important role in optimizing crusher control.

Measurement made easy

01 Crusher line

Overview

With thousands of crusher installations around the world ABB non-contact laser level products such as the LM80 and LLT100 provide solutions for accurate control of crusher operations.

Crushers are key process components in several industries dealing with materials such as minerals, chemicals or agro-based products. Whatever the material to be processed, productivity is of the essence, and monitoring the material level is mandatory to optimize crusher operations.

View our video for an overview of ABB Measurement & Analytics:
<https://www.youtube.com/user/abbmeasurementexpert>

In rock crushing operations, one usually finds a series of rock crushers connected by conveyor belts. At each crushing stage in the system, rocks are crushed smaller and smaller.

ABB laser products provide reliable measurements and are unaffected by the continuous vibrations caused by railcars and conveyors. Lasers can deal with the presence of dust while the conveyor is feeding into the bin. They read crusher levels without being affected by these factors, thus providing inventory measurement or process control without adjustment or maintenance.

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01 Surge bin

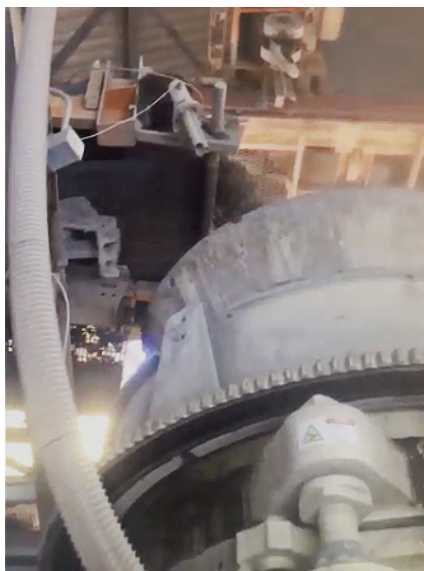
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02 LM80 laser

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03 LM80 dust tube

Optimization

Feed control is crucial as crushers must be fed continuously to prevent serious damages to the equipment and to optimize productivity. It is imperative to maintain a 'choke' level and to avoid running the crusher empty. One must drop 'rock on rock' and not 'rock on metal'. Throughput must also be maximized, hence the plant must quickly react to inconsistent inflows, clogging, or other problems. A rapid and accurate feedback on the material's level in the crusher is a key parameter in feed control optimization to maintain this 'choke' condition.

Also, industries will often use huge surge bins to help maintain a controlled and/or consistent flow for the crusher. Surge bins are often bigger than needed, but they can still be subject to overfilling. Such overfilling, if not addressed quickly, may block the whole inflow line and spill on the ground below, thus creating manual and labor-intensive clean-ups. Maintaining a proper feedback loop on the surge bin (using level transmitters) is therefore as important as maintaining one on the crusher itself. In addition to impacting productivity, preparing for proper level control can allow for significant initial cost reductions when establishing surge bin requirements.



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Versatility

The LM80 is an ideal solution for this type of measurement as it can be installed at different stages on the crushing line, whether it is composed of fixed or mobile crushing units. Each crusher can be of a different type, each design having its particular specifications and limitations. The narrow beam can be easily directed between the crusher mantle and its side wall. The integral pointer allows precise aiming of the laser. The payback associated with using the LM80 is increased production and reduced maintenance expenditures on rebuilding the crusher (due to continual rock damage).

Laser level measurement provides users significant cost reductions, with a return on investment often measured in days or, at most, a few weeks.



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