Sultan Acoustic Wave Technology

Acoustic Wave Beats Radar yet again!
Short range secondary crusher on chrome ore – South Africa.

Crushers of all types such as Primary, Secondary, Tertiary or Auxiliary require precise control of feed height to work in optimal condition. Blockages of crushers are one of the major causes of throughput stoppage in comminution processes and these blockages are often caused due to choking the crusher throat whether the crusher is a jaw, gyration or roller type. With precise and accurate level control crusher feed height is able to be maintained at the optimum level ensuring maximum throughput without the risk of choking.

For many radar manufacturers crushers are an application that is simply passed over or installed units have failed due to the harsh conditions. The amount of dust generated by a crusher can be tremendous in of itself and with the addition of dust suppressing water sprays can completely attenuate radar signals.

HAWK’s Sultan Acoustic Wave Level Sensors operate on a completely different physical principle and uses a compression wave in the form of a sound pulse which easily moves around and trough particles of dust or water suspended in the air of the crusher mouth. The low frequency of these acoustic wave devices in comparison to other ultrasonic units in the market means pulse power is prioritised in design.

Application problem

Customer’s application involved a secondary crusher taking feed from a belt directly from the plants primary crusher. Choking of this crusher would mean backing up the primary crusher and potentially choking it, resulting in the shutdown of the entire stream causing significant downtime while these blockages are removed.

Historically, the customer had relied on a competitor’s radar level instrument; however, in a few short weeks the radar had stopped working.

As can be seen in the photos, build-up, dust and water sprays are all present rendering radar technology totally unsuitable. Downtime due to blockage and damage to the crusher has resulted in significant losses in production and increases in maintenance costs.

Solution

At this point the customer turned to HAWK’s Sultan Acoustic Wave and a relatively small unit was chosen for the shorter range application.

Since installation and commissioning in April of 2016, the customer has reported no false/nuisance trips or instrument failure since installation that caused any downtime.

Ordering information

- AWR234SUXXXXX – Sultan remote transmitter
- AWRT20T4XXXXC15XX – Sultan remote transmitter
- FA4A-4 – Acoustically isolated flange
- CO4-8 – Crush Proof Focaliser Cone
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Level, Flow, Positioning, Collision Protection

Sultan Acoustic Wave is a powerful low frequency, high power instrument. The Sultan Acoustic Wave unit can operate in harsh conditions.

Acoustic Cleaning