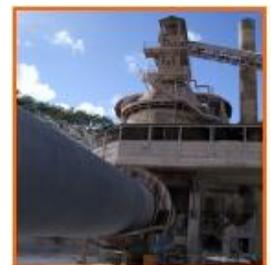


HYCONTROL

LEVEL MEASUREMENT SOLUTIONS



Blocked Chute Detection Application



Hycontrol supply 100% safe blocked chute detection system for Singleton Birch

Solids level measurement specialists Hycontrol have replaced a gamma radiation blocked chute detector with a new safe low power microwave system for Singleton Birch* at their lime kiln in Batts Combe quarry, Somerset.



The blocked chute detection system plays a key role in ensuring a steady, uninterrupted supply of crushed limestone to the kiln, determining when the feed hopper has emptied and is ready to be refilled. This is no application for fragile optical or capacitive devices and, despite their draw backs, until recently, nucleonic devices were considered to be the only reliable form of instrumentation for level measuring applications in such harsh environments. However, although nucleonics provides a technically competent technology, this measurement technique requires a radiation source from a radioactive isotope, such as Caesium Cs137 or Cobalt 60 in order to detect the presence of material in the hopper. The radiation source then has to be specially shielded so that the radiation is only directed through the hopper wall towards the product. Levels of radiation detected on the opposite side of the hopper are then used to determine whether there is a blockage or not.

The potential dangers, high costs and strict licensing requirements associated with the use of nuclear sources in industrial environments are extremely onerous. The straightforward cost comparisons alone give microwave technology a favourable five to ten fold advantage, but additional costs of ownership for the nucleonics system have to factor in the added mandatory site security, strict operator training, provisions for checks from the authorities plus annual licensing fees. In addition, the nuclear sources have a very high cost of disposal, in isolation typically equating to more than twice the initial cost of a comparable microwave system.



Hycontrol's new generation of microwave switches is proving to be an extremely reliable, robust and cost effective alternative, offering operators a 100% safe solution for blocked chute detection. This range of microwave level switches provides a simple non-contact, non-intrusive option suitable for

many applications on both liquids and solids. Batts Combe is a typical installation consisting of a microwave transmitter and receiver, mounted facing one another across the bottom of the hopper. During operation the transmitter emits a continuous, low power, 24GHz microwave beam to the receiver and an output relay is energised or de-energised when this beam is obstructed by the material being monitored. The switch trigger point is determined by the amount of microwave energy received and can therefore be adjusted to cater for specific products and applications.

A key advantage of this latest generation microwave technology is its ability to 'see through' low



dielectric materials such as refractory bricks, ceramics, plastics and polymers. This means that low cost replaceable windows can easily be fitted into the sides of a chute, vessel or container, keeping the process closed with no disruption to material flow and the microwave transmitters/receivers at arm's length away from the harsh environment. The system is extremely easy to set up and calibrate and the microwave

signals are unaffected by high dust levels or material build up on the sides of the chute. In the Batts Combe application, low friction, temperature resistant PTFE windows are utilized.

Microwave power levels are well below any required industry standards and therefore this device requires no special procedures for its operation and use. Depending on the application, Hycontrol microwave technology can also supply additional site monitoring benefits. With the addition of a flow switch module, the same detector set can then provide flow and no-flow detection together with blocked chute alarms.

**Singleton Birch Ltd can trace its history back to 1815 and today is the UK's leading independent lime supplier. Their product range includes quicklime, hydrated lime, natural hydraulic lime, graded chalk, aggregates and other specialist products and services. The company's products are used in the production of steel, various chemical processes, waste and water treatment, purification of flue gases, production of lightweight building materials and various other sectors of the construction industry.*

To read more of our applications in the chemical, food & beverage, nuclear, water & waste, recycling, quarrying and metals industries, please go online at hycontrol.com

Hycontrol UK (Head Office)
Orchard Street
Redditch
Worcestershire
England
B98 7DP
Tel: +44 (0) 1527 406800
Fax: +44 (0)1527 406810
Email: sales@hycontrol.com
Web: www.hycontrol.com

Hycontrol China
Room N601 Peking Times Square
Hui Zhong Li
Chao Yang District
Beijing 100101
China
Tel: +86 108 487 1101
Fax: +86 108 487 1033
Email: simon@hycontrol.com.cn
Web: www.hycontrol.com.cn

HYCONTROL
LEVEL MEASUREMENT SOLUTIONS
