

Improving the manufacturing process of bricks by the reliable measurement of moisture of clay travelling on conveyors

Understanding the problem

Typical accuracy
±0.3%
(2σ)

For the manufacture of bricks or tiles it is critical to have the clay or cement mix at the correct moisture level.

Traditionally this has been achieved by relying on a skilled person who makes a judgment, either with a “thumb” test or by using a basic manual test to help them with this assessment but this is a spot check and not a continuous method. Since the clay is a natural product coming from a quarry, recent weather and storage conditions will affect the moisture of the incoming material requiring constant adjustments to the amount of water that is added to the process to ensure the optimum moisture. The benefits to maintaining a precise control of moisture have a big impact on the plant yield by reducing scrap and poor quality product for both extrusion or mould lines.



PrediktIR II gauge solution

The gauge uses a non-contact near infra red (NIR) method to continuously measure the clay moisture with total precision to an accuracy of ±0.3%.

The patented dual detector design ensures a permanent stable calibration which is unaffected by ambient temperature, light and humidity changes that are typical for most brick works. Due to the accuracy and reliable measurement, the result can be used as a critical control point for the process. Ultimately the measurement is used as part of an automated control loop to adjust the flow of water that is added to the process. On some lines there is an advantage to measure in two locations, on the incoming material before the wet pan and also the outgoing side as a verification.



Installing a PrediktIR II gauge

The PrediktIR II can easily be retrofitted to any line by mounting the gauge above the conveyor.

For particularly dusty installations, an air purge tube is utilised to reduce any manual cleaning of the gauge window. The gauge embraces the latest industry connectivity which means integrating more easily than ever into production control systems using the 4-20mA output or optional Ethernet based protocols or Profibus interface.



About Control Metrix

Control Metrix delivers proven, non-contact measurement solutions that optimise quality and efficiency in bulk materials and building product manufacturing. With a strong track record across brick, cement, aggregates, and mineral processing, we partner with industry leaders to deliver reliable, real-time data that drives smarter production.



Specification

Accuracy (typical): $\pm 0.03\%$ (2σ)

Moisture range (typical): 5...26%

Sampling rate: 16 mS

Operating temp range: 0...50

Construction: Stainless steel

Protection class: IP65

Outputs

4-20mA

Optional

Modbus TCP

EtherNet IP

Profinet IO

Profibus DP

DeviceNet

Order code:
5028476
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