

ARNOLD automation Feuchtemesssysteme Werne & Thiel GdB, Wutöschingen-Degernau, Germany

Moisture measurement using high frequency-capacitive electronics

At this year's bauma, Arnold automation Feuchtemesssysteme Werne & Thiel of Wutöschingen is showing its latest advances in moisture measurement. The company uses probes that work on basis

of high frequency capacitive measurement and which can determine the moisture content before weighing, directly in the silo or on the conveyors.

Their own team developed the improved electronic measurement that gives a high resolution and, associated with that, a highly accurate measurement of moisture in all kinds of bulk materials, such as the measurement of moisture in sand for concrete production.

By appropriate positioning of the sensors in the main stream of the material flow, for example in the discharge section of a sand silo, a consistently good concrete quality can be obtained without great expense.

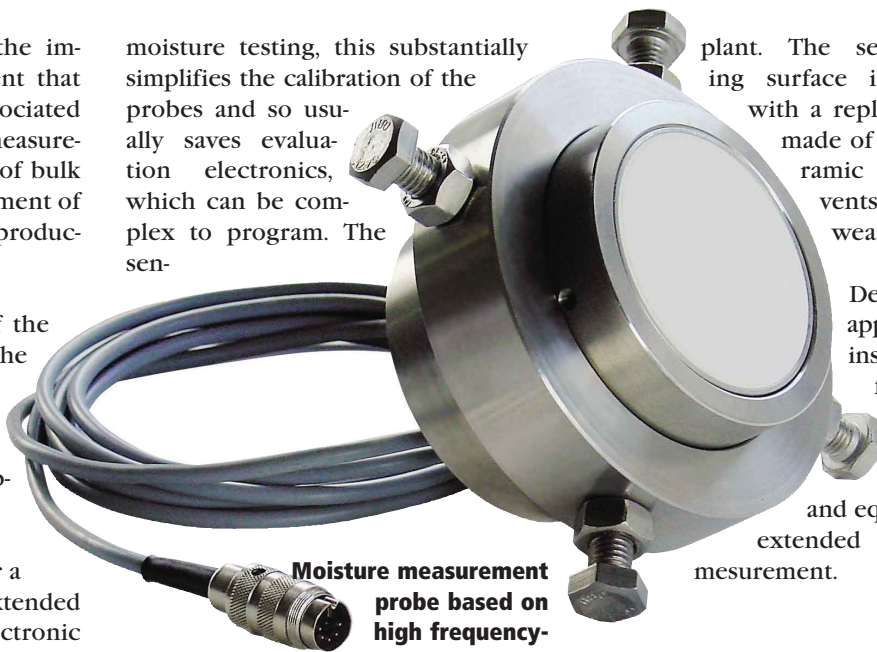
According to the manufacturer a substantial advantage of this extended high frequency-capacitive electronic measurement is, the fact that the output signal of the measuring sensors has an almost linear relationship to the moisture content of the sand. This was also confirmed in an investigative report by the Materialforschungs- und Prüfanstalt an der Bauhaus-Universität Weimar [the Material Research and Testing Institute of the Bauhaus University of Weimar] dated 15.12.2003, test report No. B81 / 1666 -03.

In the practical application of sand

moisture testing, this substantially simplifies the calibration of the probes and so usually saves evaluation electronics, which can be complex to program. The sensor

plant. The sensor-measuring surface is protected with a replaceable disk made of a special ceramic which prevents excessive wear.

Depending on application and installation, different designs are available - all proven and equipped with extended electronic measurement. ■



Moisture measurement probe based on high frequency-capacitive electronic measurement

measurement signal can then be used directly in the program control for the automatic correction of the sand / water ratio.

The company makes all housings and mountings of the probes in stainless steel to protect the sensitive measurement electronics, which noticeably increases the life span of these devices in the tough environment of a concrete

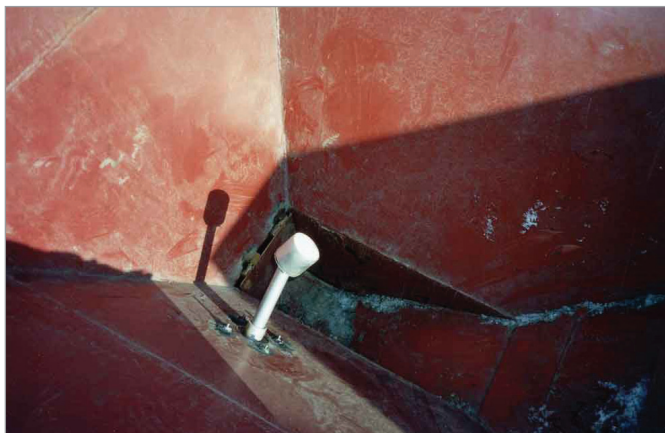
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External fixing of a probe at the funnel



Moisture measurement probe in the funnel

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Please send us information on the following:

- Arnold moisture measurement systems
- Installation methods and use of different types of probes
- Level sensors
- Laboratory moisture quantifier Type MB35/MB45
- New "OFS" turbidity moisture measurement unit
e.g. for precise online measurement of solids content
in concrete recycling water

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