

# ACO –



# Moisture Measurement

BENEFIT FROM OVER 20 YEARS OF EXPERIENCE



# We are...

- middle-sized company
- 10 employees
- Head Office in Wutoeschingen in the very South of Germany
- Founded in 2001
- Founder and boss Johannes Mergl



# Why everybody should have an ACO moisture measurement...

- Cost reduction through optimized production processes
- Quality improvement by extended control and regulation options
- Energy saving
- Improving the ecological footprint
- Secure competitiveness for the future





# ACO measures the moisture in ...



Biomass



Feed



Food



Minerals



Gypsum



Clay  
Ceramics



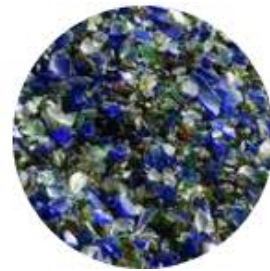
Raw materials  
Ore



Environment



Energy



Recycling



Foils



Chemistry  
Pharma

# Moisture Measurement in practice...

Analogue and digital measuring systems for every installation location

## Sensors

- High quality technic
- Rugged design
- Universal use
- Easy handling



## Process integration

- Proven installation kits
- Long-term experience in practice
- Individual solutions

## Our service

... includes everything from advice and sales, installation and calibration on site, to laboratory tests and training for your staff, all from a single source.

# ACO sensor family **DMMS**

The DMMS system combines high flexibility with easy installation and high comfort.

- moisture measurement with up to 16 sensors
- High accuracy
- Calibration in process
- Easy to extend
- Material switching per sensor
- Continuous measurement or batch operation
- Measured value transmission via Profibus, Profinet or analogue signal
- Optional sensor variants for explosion-proof areas, extended temperature range up to 100°C, silo, mixer, acid-resistant housing



# ACO sensor family **BMMS**

The BMMS sensor combines the advantages of calibration in process with direct transfer of measured values in its compact design.

- Compact digital sensor solution without evaluation unit
- Moisture sensor 1:1 exchangeable
- Easy to use
- In-process calibration
- Multipoint and polynomial calibration
- Calibration by intuitive software
- Direct analogue measured value transmission (4...20mA)
- Automatic batch measurement



# ACO sensor family **MMS**

The MMS sensor stands for universal application, simple installation and the best price-performance ratio

- Autonomous sensor
- Robust and simple
- Calibration takes place on the sensor outside the process
- Decades of proven measuring circuitry
- Direct analogue measured value transmission
- Optional variants with PT100 temperature measurement, silo, mixer, measuring surface with teflon or rubber





# ACO Installation kits

Installation kits for process installation of the moisture measurement



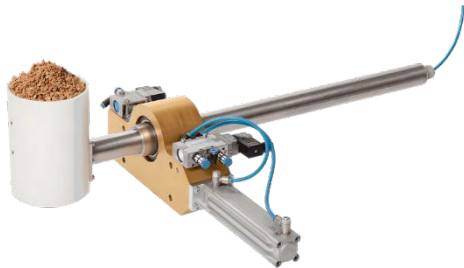
TFM1 – compaction unit



SFM1\_HACK – compaction unit



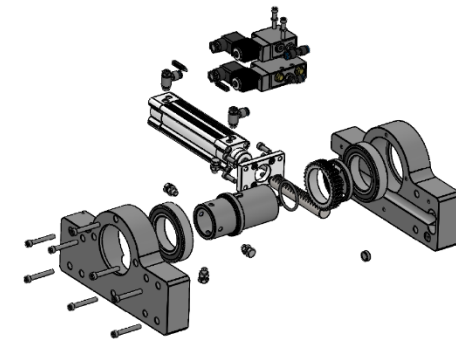
SFM1 – compaction unit



PN1 – sample taker



SFM4 – screw conveyor

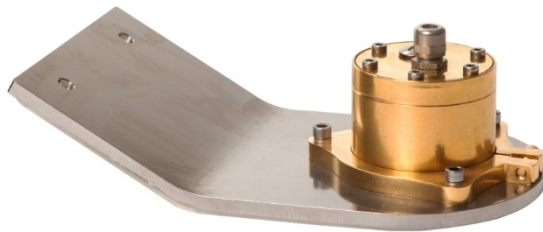


Customized installation solutions

# ACO sensor slide

Sensor slide in various finishes and materials depending on application

Slide made of various materials



Sensor slide mounting bracket with slide and flansh

Slide for installation under conveyor belt



# ACO all about moisture measurement...

Portable moisture measurement | laboratory moisture measurement | air-humidity transmitter



Portable moisture measurement



Laboratory moisture measurement



air-humidity transmitter hygrometer

# ACO sensors in the field...



Pomace



Wood chips



FGD-Gypsum



Cocoa beans



Gypsum fibre boards



Sawdust



## Further examples...



Limestone



Salt



Clay



Sewage sludge



Lignite ashes



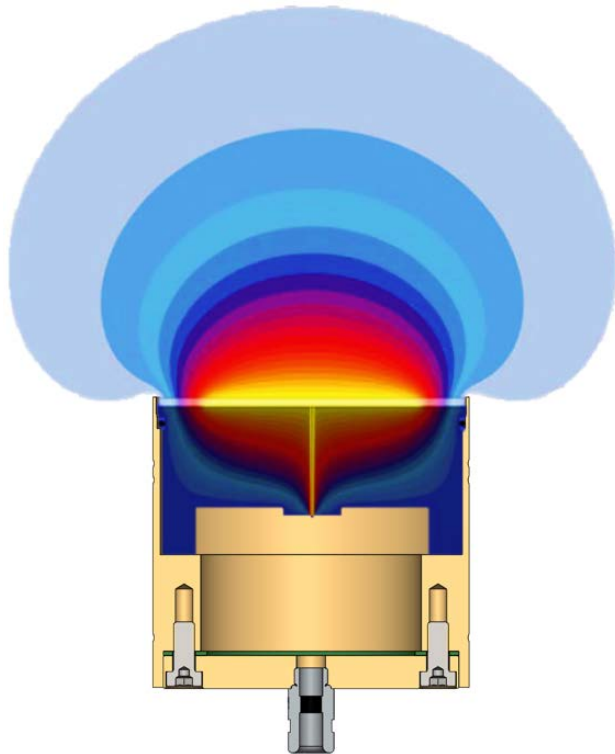
Iron ore



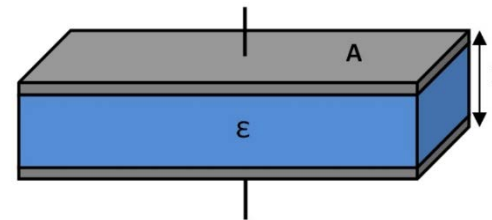
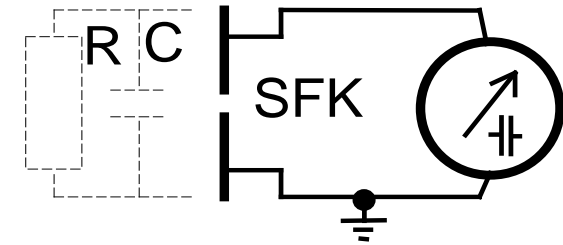
# ACO measuring principle – an indirect method...

All ACO sensors work on the capacitive measuring principle. They are influenced by the permittivity of material to be measured.

Free water influences this permittivity. This physical change can be measured and evaluated in a complex way.

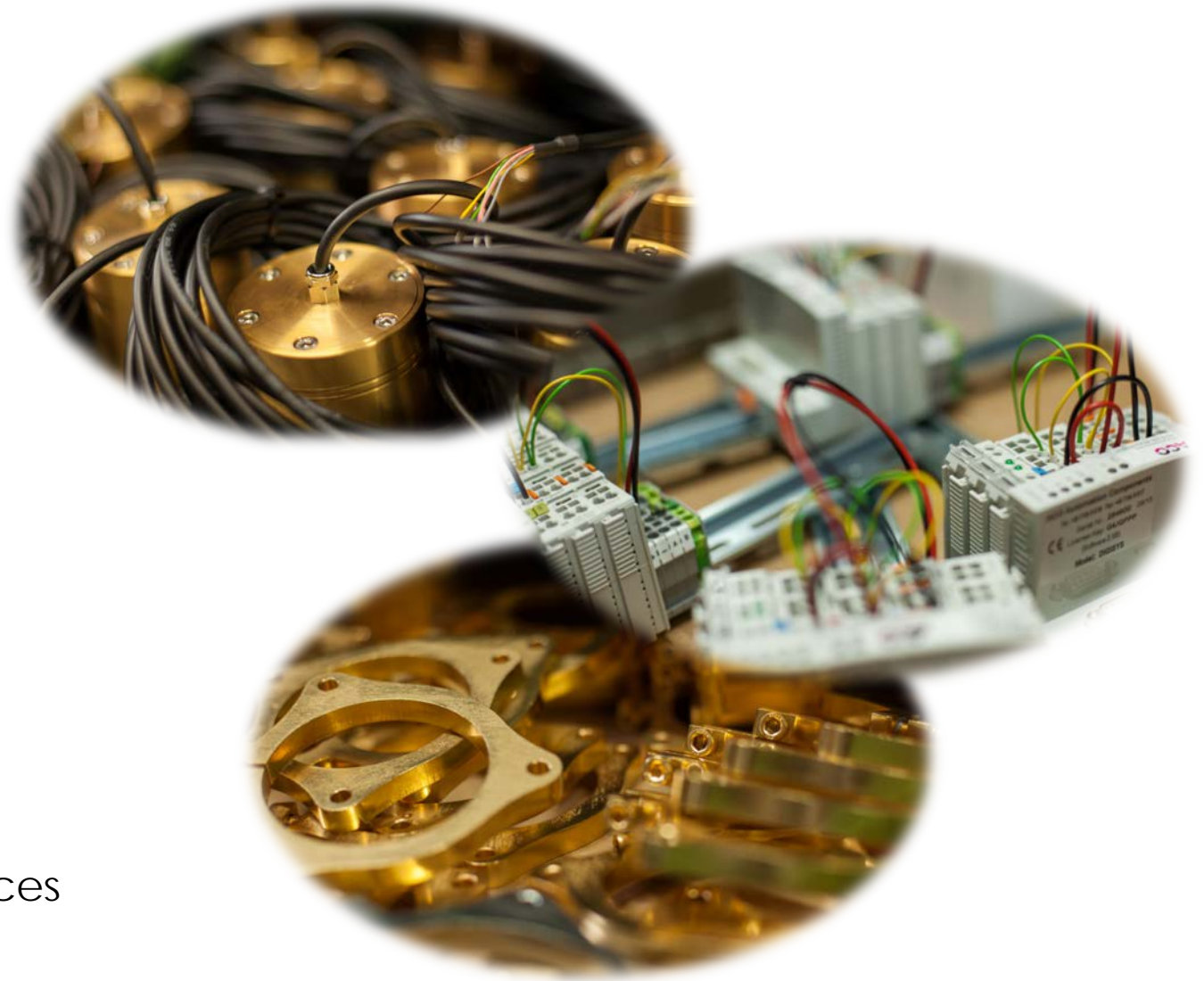


$$C = \epsilon_0 \epsilon_r * \frac{A}{D}$$



# Why ACO...

- Comprehensive advice
- Developed by practitioners
- Reliable quality and service
- Easy to use
- Proven measuring principle
- Good price-performance ratio
- Robust technology
- Flexible systems
- Universally applicable
- Low sensitivity to environmental influences
- Handy sensor dimension



# Checklist for a Moisture Measurement...

- Which material shall be measured?
- Are there several materials to be measured?
- Which moisture range is to be measured?
- What are the material and ambient temperature?
- Where should the moisture measurement be integrated?
- Is the material in bulk, powder, sludge or similar?
- What is the desired accuracy?
- How should the measured value be transmitted (analogue, ProfiBus, ProfiNet)?
- Is EX approval required?





# FEUCHTEMESSUNG MOISTURE MEASUREMENT

**ACO Automation Components**  
**Johannes Mergl e.K.**  
Industriestrasse 2  
D-79793 Wutöschingen

Phone.: +49 7746 91316  
Fax number: +49 7746 91317

Email: [info@acoweb.de](mailto:info@acoweb.de)  
Website: [www.acoweb.de](http://www.acoweb.de)

