FineTek mütec Your safe choice

Experts for bulk solids measurement

Instrumentation for Bulk Material Processes

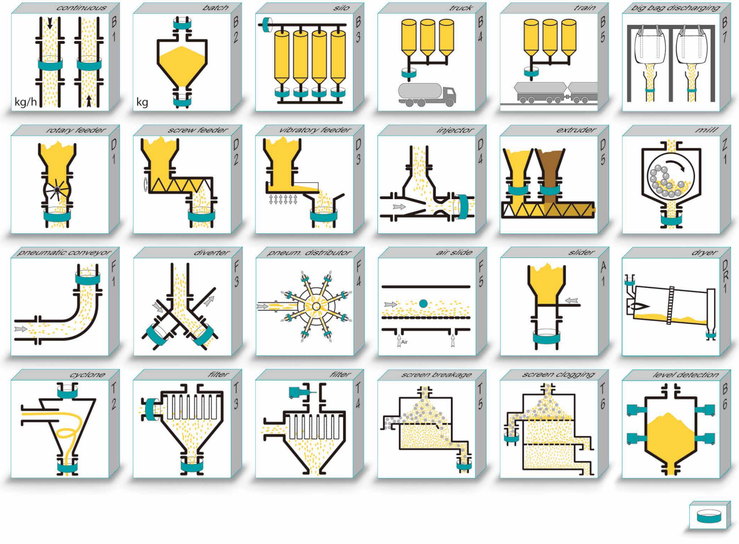
- Moisture measurement
- Flow rate measurement
- Flow trend
- Flow monitoring
- Dust measurement
- Particle size measurement
- Level detection
- Velocity measurement

These instruments are designed to provide robust, high-precision measurement technology for bulk solids applications.
By using a unique variety of measurement principles and sensors, we can offer our customers solutions that are optimally meeting their specific requirements.
Hence you will find our devices in almost all industries in which bulk materials or solids are processed.
Take advantage of our many years of experience from countless projects — we will be glad to advise you!

Industries in which you can find our instruments

- Aerospace industry
- Animal feed industry
- Automotive industry
- Building materials industry
- Chemical industry
- Energy & environment industry
- Food industry
- Glass industry
- Mining industry
- Paint industry
- Pharmaceutical industry
- Plastic industry
- Recycling industry
- Shipbuilding industry
- Steel industry
- Tobacco industry
- Wood industry
- Pit and quarry industry

Applications



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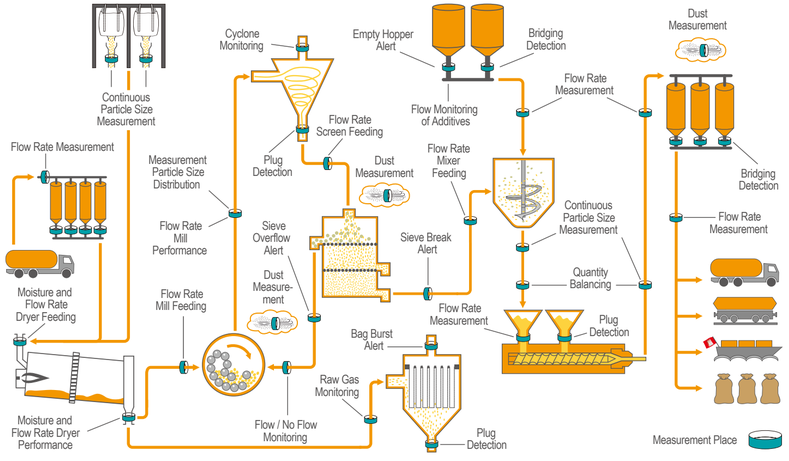

»An imaginary factory«

Increase transparency, control and efficiency in your bulk solids processes.
We will be happy to advise you.

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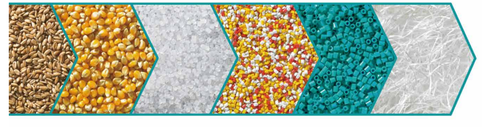

FS 780
FILTER LEAK MONITOR / DUST MONITOR

- Electrostatic measurement principle
- No influence due to build-up
- Adjustable signal attenuation
- Relay- or analogue output
- IEC Ex / ATEX Zone 2/20
- Sensor rod length up to 800 mm

The dust sensors of the FS 780 are used to de tect malfunctions caused by cracks or assembly errors, for example.
They are particularly important in the case of heavily contaminated air, air recirculation into the building, strict emission limits or to prevent product loss when the dust is not waste but a valuable product.
The devices are therefore not only used downstream of dustextraction systems but also on the exhaust air side of cyclone separators for continuous monitoring of the dust concentration.

DS 300
DUST SENSOR FOR MONITORING THE AMBIENT AIR

- Continuous dust measurement of the ambient air
- Recognize dust formation immediately
- Monitor dust concentration at workplaces
- Monitor production halls
- Prevent dust explosions

The DS 300 is a measuring instrument for monitoring the concentration of dust in the ambient air.
The device is used e.g. in industrial production halls and detects if there are leaks in machines or conveying pipelines and dust escapes.
The use of the DS 300 effectively protects the health of employees. In the case of explosive dusts, the danger of dust explosions is detected and intervention is possible.

FS 710
FILTER LEAK MONITOR / DUST MONITOR

- Triboelectric measurement principle
- Automatic one-button calibration
- 2 x Relay output
- ATEX Zone 20/21
- Sensor rod length 250/500 mm

The FS 710 is a reliable, robust filter monitor with practical one-button operation and two relays for prealarm and main alarm.
The highly sensitive FS 710 has an optional analogue output and can also be used in particularly challenging installation locations: Very large air ducts, high temperatures or pressure are no problem.

MF 5000
SOLIDS FLOWMETER WITH MEASURING CAPACITIVE TECHNOLOGY

- Pneumatic conveying and free fall
- Non-contact measurement
- Easy to integrate

The MF 5000 (capacitive measurement) is used to determine the mass flow rate of all kinds of bulk solids online, either in pneumatic conveying systems or in free fall.
Separately from each other the transport velocity and the product concentration is measured and used to calculate the mass flow rate. Thus, the instrument is independent from changing transport velocities.
The device is easy to calibrate and because of the small dimensions also easy to integrate in existing plants. It can be used for smaller up to very high flow rates.
Parametrization and display of the measured values is done with the com mu nication unit which has several interfaces for connection to a PLC.

MF 9000
FLOWMETER FOR HIGH MASS FLOW RATES

- Free product flow – non intrusive installation
- Independent from product properties and conveying conditions
- Gentle non-contact measurement method
- Low-wear

To determine the mass flow rate in pneumatic conveyors and freefall applica tions the measurement system MF 9000 combines the measured values of a velocity measure ment (FS 5000) and a radiometric concentration measurement (LB442). The simultaneous determination of these two values makes this flow measurement independent from variable product properties or process conditions.
Once the system is calibrated in the process (e.g. in a truck or railcar loading station) it is not necessary to recalibrate it, while it gua ran tees a very good repeatability of the results.
MF 9000 can be used also under extreme conditions, operates contact-less and does not have any moving parts. For the concentration measurement we are using instruments of our longterm partner Berthold Techno logies in Bad Wildbad, Germany.

MF 3001
SOLIDS FLOWMETER WITH MICROWAVE TECHNOLOGY

- Non-Contact measurement
- Compact design & easy to install
- Cost-efficient measurement

Using state-of-the-art microwave technology the MF 3001 is designed for mass flow rate measurement in metallic pipelines from a few kg/h to many t/h.
Any bulk material like powders, dust, pellets or granulates can be measured online in pneumatic conveyors or free fall applications with high accuracy.
The measurement principle of the MF 3001 is based on the Doppler effect. The sensor generates a uniform microwave

MF 7000
HIGH-PRECISION SOLIDS FLOWMETER

- Very high accuracy, <1% possible
- Calibration-free
- Independent from changing product properties and flow velocity
- Free product flow, no moving components

The measuring system MF 7000 is a unique flow meter which combines proven weighing technology with non-contact velocity-measurement.
By measuring the weight and the flow velocity at the same time — similar to the belt-weigher principle — the mass flow rate of pourable bulk solids is determined in free fall processes with very high accuracy.
Unlike with impact meters, changing product-properties or varying fall velocities have no influence on the measuring accuracy of this system. Hence a complex calibration in the process especially with several products is not required.
Also regular recalibration is not necessary while a very high reproducibility of the measuring results is granted.
Operational cost can be reduced to an absolute minimum and regular maintenance is normally not required, because the flowmeter does not have any moving components, the solids are flowing smoothly over the weighing chute and the sensor system is well protected.

field inside the pipeline and particles passing by the sensor are reflecting the microwaves. The reflected waves are received by the device and by evaluating the frequency and amplitude changes the mass flow rate is determined.
Parameters for up to 24 different products can be stored.employees. In the case of explosive dusts, the danger of dust explosions is detected and intervention is possible.

PA 3000
IN-LINE PARTICLE SIZE MEASUREMENT IN REAL TIME

- Continuous process recording — Industry 4.0
- Detect screen damage, overflow, overload
- Adjust & optimize screening & grinding processes
- Continuous incoming goods inspection

PA3000 is a measuring device for the continuous determination of the particle size of free-flowing bulk materials between 170 and 6000 µm. It is not necessary to take samples for this, because the measurement takes place directly in the process and in real time.
If the adjustable limit values are exceeded or undershot, alarms can be triggered via three relays. The grain size distribution is displayed using the PS 3000 Viewer software and can optionally be output into a database as well.

The bulk material falls through the sensor pipe for measurement.
A representative partial flow is continuously fed to an optical measuring system and measured.
The optics are protected by scratchresistant borosilicate glass and contamination is prevented by purge air.
The PS 3000 is unique in its kind and was developed in cooperation with CeMOS respectively the Hochschule Mannheim — University of Applied Sciences.

HUMY 301
IN-LINE MOISTURE MEASUREMENT

- Real-time measurement of product moisture
- No laboratory samples necessary
- High-precision measurement results
- Easy integration
- Robust design
- Intuitive parameterization software

Moisture in solids is an important parameter that influences the quality of a product and the economic efficiency of production.
The HUMY 301 determines the product moisture directly in the process and in real time. The measurement results can be used to control a dryer or automatic humidification and to continuously monitor the production process.
The HUMY 301 uses a capacitive measuring method that determines the entire water content of a material — not just at its surface. To do this, the sensor's field lines

just at its surface. To do this, the sensor's field lines penetrate up to 200 mm deep into the material. The measurement result has an accuracy of up to 0.1 % — depending on the bulk material and measurement situation.
The latest version of the analysis software enables precise, even simpler calibration directly from the graphical measured value display.
It is now also possible to select up to 16 different product data sets via 4 digital inputs without connection to a PLC.

SF 5000
FOR THE DETERMINATION OF SOLIDS VELOCITY

- Avoid degradation of sensitive bulk material
- Energy savings through optimized air flow rate

The SF 5000 serves to measure the conveying velocity of bulk material, powder and dust in pneumatic conveyors or free fall processes — contact-less and without calibration.
By using two different measuring methods, the speed can be measured at both high and very low flow rates.
The device makes it possible, for example, to convey sensitive solids at the optimum transport speed. Breakage

and abrasion is thus minimized and blockages are prevented at the same time. By reducing the conveying air volume to the optimum, the efficiency of pneumatic conveying systems can be increased — even with changing bulk materials.
Thanks to the approved CAN-bus technology that is used for communication between the system controller and the sensor, systems can be expanded up to 10 measurement points.