

HUMY 3000

Moisture measuring system for bulk materials



Fast and precise online-measurement

HUMY 3000
Moisture
measurement

MF 3000
Mass flow
measurement

FlowSwitch Series
Mass flow
monitoring

Application and Function

The moisture in solids is an important parameter which strongly influences the quality of the product and can increase the economic efficiency of a production fundamentally. HUMY 3000 is in many processes, successfully in use among others at sugar, tobacco, grain, malt, flour, coal, sand, wood shavings, dried food, fertilizer, powder, pigments, plastic granules. As installation places conveyor belts, screw conveyors, silos, funnel are particularly suitable. The In-Line moisture measurement is also possible in Batch processes.

At the measuring the relative permittivity and the high-frequency recession of the solid is measured in the high-frequency range. The measurement

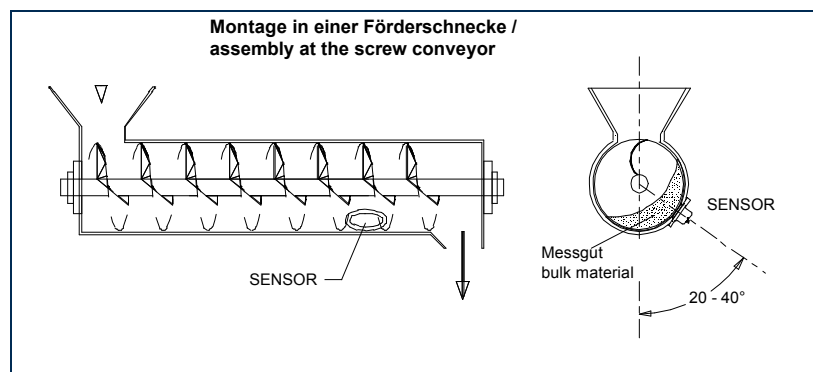
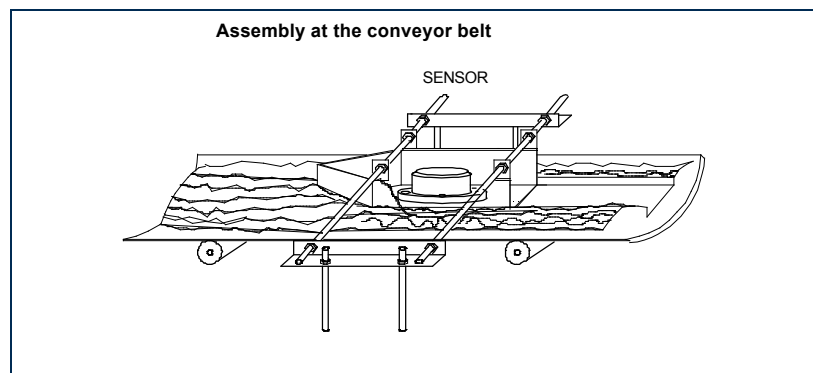
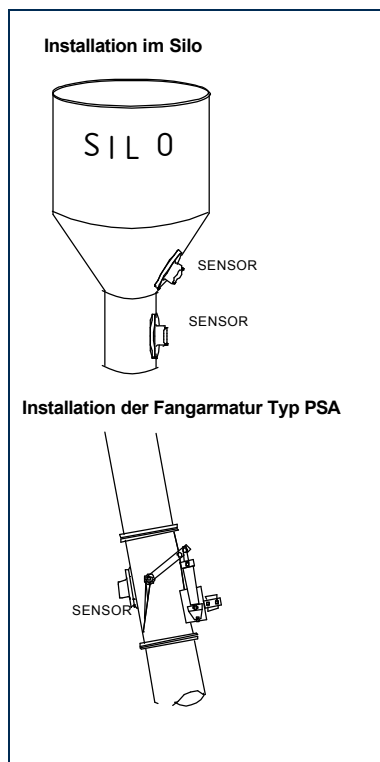
procedure makes a short and simple calibration as well as a high precision of up to 0.1% possible. The measuring probe transmits the data digitally. This makes the measurement assignment disturbance insensitive and allows a distance of the sensor to the end judging unity up to 1 km. The system supervising himself has an integrated data logger besides an automatic compensation of temperature and ageing drift, digital and alarm exits. On the LC display are represented the measurements analogously and digitally. A simple control and parameter setting of all functions is carried out via soft keys. For product or process changes different product parameters can be stored.

Main Benefits

- ◆ No samples for the laboratory necessary
- ◆ Saving of energy costs
- ◆ Improvement on the product quality
- ◆ Very short amortization time
- ◆ High selective sensitiveness
- ◆ High measuring speed
- ◆ Precision better than 0,1% (under consideration of the product)
- ◆ Easy and economical installation
- ◆ Fast and simple calibration
- ◆ Optional ATEX-Version for Zone 20 und Zone 2



Examples for Installations



Application examples of successfully measured products

Chemistry, pharmacy Powders, granules, tablets, pasta, foils
Fertilizer, phosphate, salt, potash
Washing-powder, Styrofoam, synthetic material, PVC, acryl Pigments

Food- and semi-luxury items

Grain, strength, flour, malt, hop
Soya, rape seed, corn, lenses reis, pasta, beans
Sugar beets, beet mash beet escalopes
Confectionery, Cerealien, snack meal
Raw coffee, food means, fish meal, dried food
Potato products, -flour, -chips, -flakes, sauce powders, powdered milks, spices, nuts

Building materials: Sand/gravel quartz powder-sand, bricks (raw material), ceramic (raw material), plaster

Recycling:
Bio-, sludge, compost

Other:
Wood shavings, wood flour, coal, coaldust
Tobacco, foundry sand, glass/ceramic

Applications



Wood chips



Animal feed



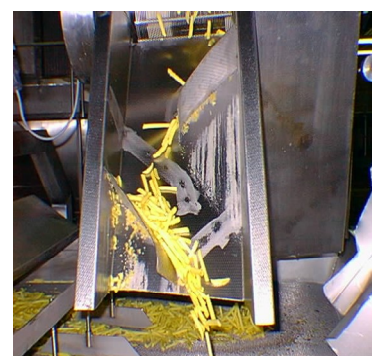
Sensor in a screw conveyor



Grain



Cereals



Pommes Frites

Technical Data Measuring Unit Humy 3000

Construction F:	Field-/wall-mounting housing, B 265 x H 240 x T 250, weight approx. 6.500 g, with sight-door IP 65
Construction T:	Desk-housing B 236 x H 132 x T 330mm, weight approx. 4.500g, Option panel housing
Construction E:	19"-plugin 3HE / 42 TE, weight approx. 2.000 g
Construction S:	Panel housing with sight door B270 x H183 x T223, IP 58
Indication:	¼ VGA-LC-Display 100 x 77 mm, 320 x 240 colour-pixel. For analog and digital measurement representation
Display:	Date, time, kind of product temperature, value of residual, moisture or value of dehydrated substance, Min- and Max-alarm values, analog bar graph indication, dragging pointer, width of deviation of measuring value with intensified indication of width of deviation of measuring value, digital indication and description of Min-/Max-limit values and the softkeys
Auflösung:	20 Bit for 0-85,0% moisture and 15 - 100% dry substance
Measuring range moisture:	Min. 0,000 - 0,100%, max. 0,0 - 90%, with 1,-2- or 3 digits behind the point
Measuring range temperature:	Span min.: 0-5° C Span max.: 0-120° C
Accuracy:	max. 0,02 % in accordance to material to be measured
Handling:	Foil-keyboard with each 4 pcs.. 10-Block + Function-keys + Softkeys
Averaging time	0-999 sec.
Memory:	User-memory for storage of parameters of 24 different products.
Data-logger:	Storage of historical values up to 10 years. Real time clock for measurement record keeping.
Relay output	Nominal opened and nominal closed contact for each Min- and Max-alarm relay Contact load: 30VDC or 62,5 VAC
Analog output	Measuring value of residual moisture or dehydrated substance 0/4-20 mA (load 750 Ω. measuring value of product temperature, 0/4-20 mA, max. load 750 Ω.
Analog input	mA- and PT 100- input
Digital output	2x galvanic isolated, 24 V open-drain (max. 50mA)
Digital input	2x galvanic isolated, active signals (8-36 V)
Interface	RS 232 with connection for RxD, TxD, OV and RS 485
Supply	230 V AC / 115 V AC or 24 V AC/DC All supplies can be available simultaneously (230 V AC und 24 V AC/DC oder 115 V AC und 24 V AC/DC).

Technical Data Moisture Sensor

FMS 400 K:	Measuring surface PTFE
FMS 400 C:	Measuring surface ceramic
Housing:	Stainl. steel 1.4307
Weight:	Approx. 1.050 g
Protection class:	IP 67 according to EN 60529
Connection cable:	Geschirmte Leitung, 4-wires 0,25 up to 0,5 mm ²
Cable length	max. 1000 m by 0,75 mm ²
Process-temperature:	-10° - 90° C 140°C with cooling
Storage temperature:	-10 - 80° C
Response Time:	Approx. 1 sec
Power consumption:	0,4 Watt
Signal:	RS 485
Load pressure:	6 bar

Forms of construction



- Cover: Shows the system in desk-housing
- picture at the top: shows the system in field housing for on-wall installation
- Above picture: shows the system in 19"-plugin in