GRUBATEC
MESS- UND REGELTECHNIK

Schaller
Messtechnik / humimeter.com

Bioenergy

Installation instructions
humimeter BLO online measuring system

78,0°F | 6,16% | 456kg/m³ | -27,3td | 0,64aw | 51,9%r.H. | 14,8%abs | 100,4g/m² | 09m/s | 4,90Ugl | 163ym | 23,2°C | 78,8°F | 6,21% |424 kg/

Made in Austria

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In general:

The humimeter BLO consists of an analysing unit and a sensor. According to the requirements, different sensors are available. The sensors are connected to the analysing unit (article no. 12089) via a delivered 5 metre cable. The analysing unit is powered by 24 VDC (15 to 29 VDC) resp. optionally by 115-230 VAC. Water content and material temperature are shown on a display of the analysing unit and are output via the analogue 4-20mA power output.

Information about BLO with wood chips sensor article no. 12122 resp. 12470:

Requirements:

During the measurement, the two stainless metal sheets have to have constant contact with the product (wood chips). To ensure correct measuring results, the wood chips have to exert a minimum pressure of 20 N/dm² on the sensor surface. The sensor measures the material that directly touches the sensor field on its surface. It must be ensured that no electrically conductive material affects the sensor surface. Both sensors offer a measuring range of 10 to 55% water content (corresponds to 120% wood moisture) for wood chips. The material temperature measuring range is between 0 and +70 °C.

Possible installation positions:

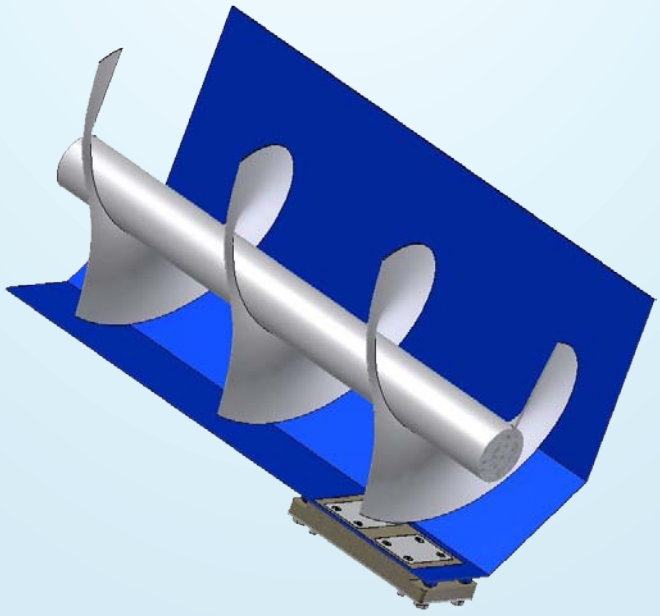
- Screw conveyor: installation at the bottom of the trough
- In-feed chute with hydraulic ram: installation at the side wall
- Bunker: installation at the side wall (to ensure the minimum pressure, the sensor 12122 possibly has to be mounted at an angle resp. sensor 12470 with compressing construction has to be used)

Measuring principle:

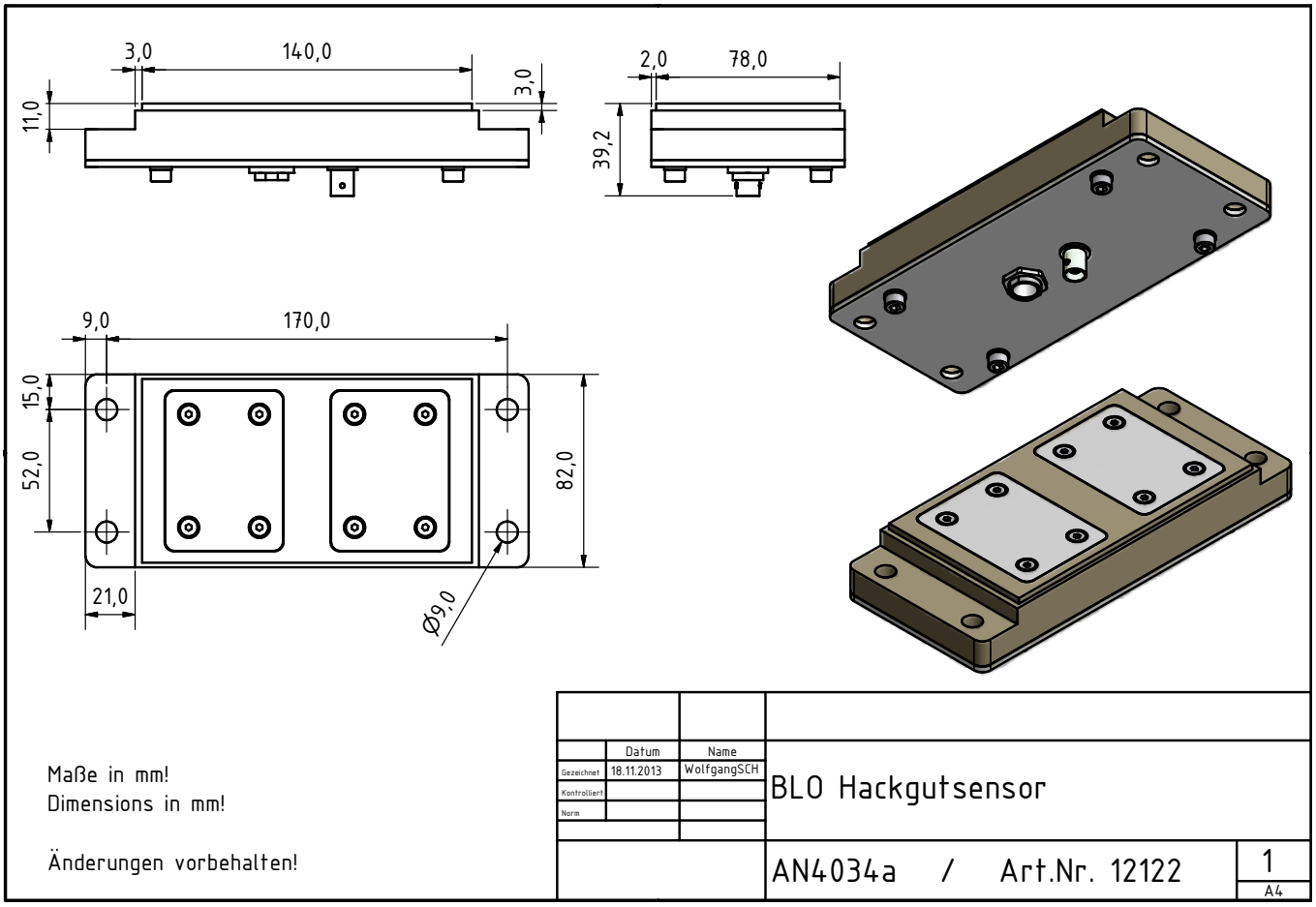
The humimeter BLO uses a conductance measurement specially developed by Schaller GmbH. This principle is based on the fact that electrical conductivity changes according to the moisture content of a porous material. Electrical conductivity in dry material is lower than in wet material. The evaluation electronics converts the measured conductance value into weight percent and shows the water content on the display.

Information for installation after dryer:

After drying, the material to measure (wood chips) at the outside is much dryer than at its core. Therefore an installation directly after the dryer will lead to too low measuring values. The specified minimum measuring range of 10% water content (for wood chips) will not be possible, in fact the measuring range limit is higher.



Technical drawing sensor article no. 12122:



Maße in mm!
Dimensions in mm!

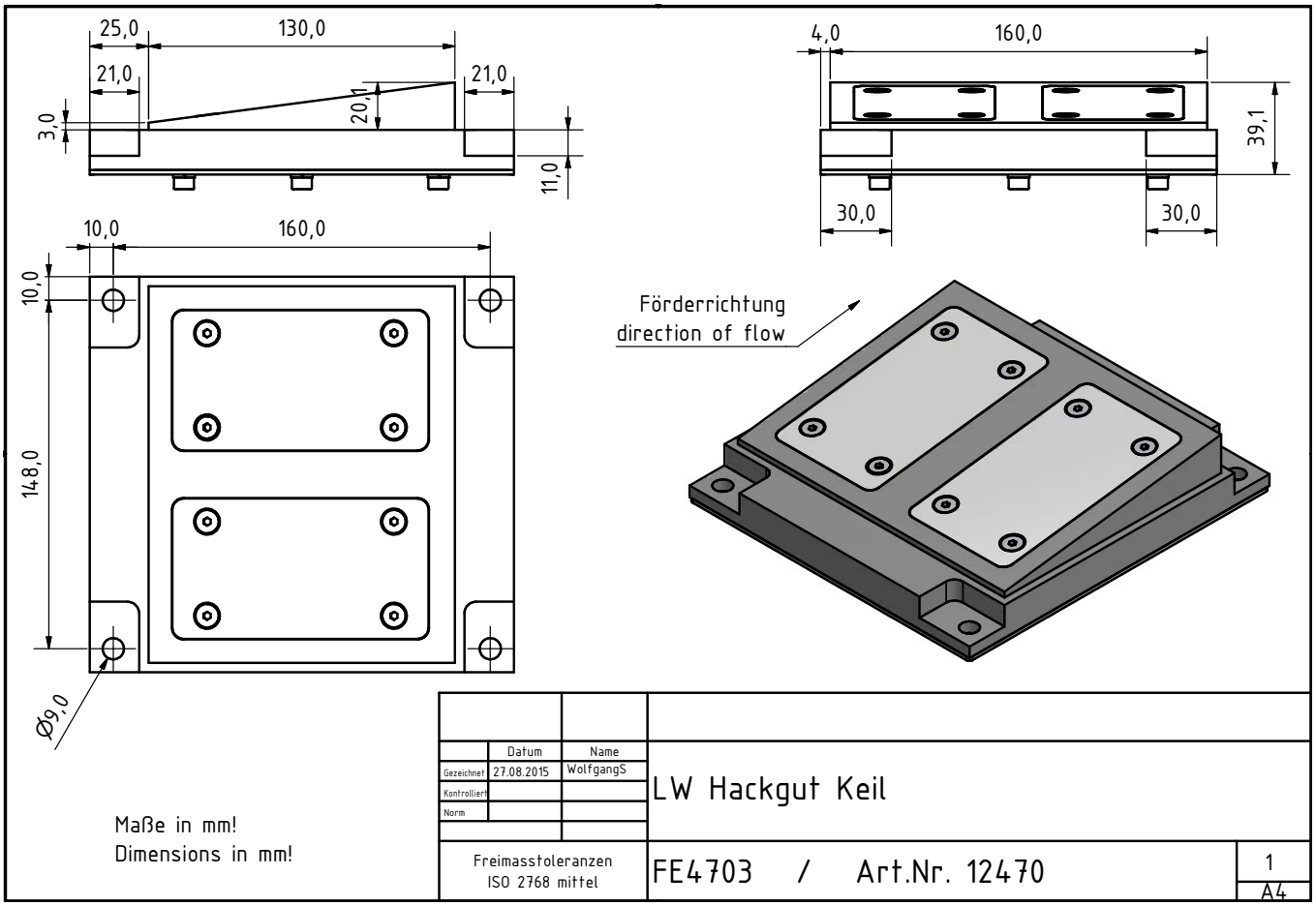
Änderungen vorbehalten!

	Datum	Name
Gezeichnet	18.11.2013	WolfgangSCH
Kontrolliert		
Norm		

BLO Hackgutsensor

AN4034a / Art.Nr. 12122 | 1 | A4

Technical drawing sensor article no. 12470:



Maße in mm!
Dimensions in mm!

	Datum	Name
Gezeichnet	27.08.2015	WolfgangS
Kontrolliert		
Norm		

LW Hackgut Keil

Freimasstoleranzen ISO 2768 mittel

FE4703 / Art.Nr. 12470 | 1 | A4

Information about BLO with universal moisture sensor article no. 12477

Requirements:

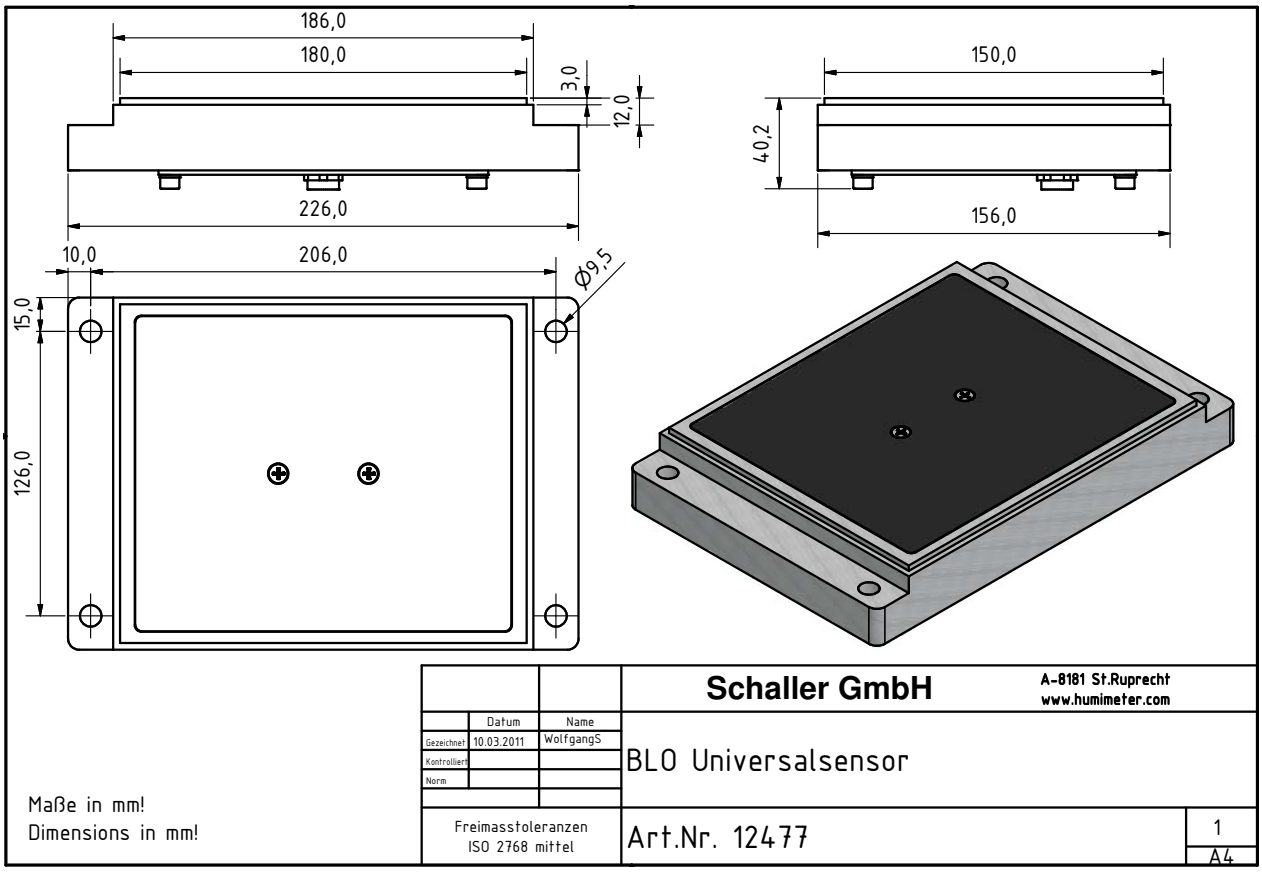
During the measurement, the black sensor surface has to have constant contact with the product (wood chips). The sensor penetrates the complete material to measure up to a measuring depth of 200 mm. For correct measuring results it is essential that the amount of material in front of the sensor measuring field is constant. Furthermore it has to be ensured that no other material in the measuring field can influence the measurement.
The universal moisture sensor offers a measuring range of 2 to 60% water content (corresponds to 150% wood moisture) for wood chips. The material temperature measuring range is between 0 and +70 °C.

Possible installation positions:

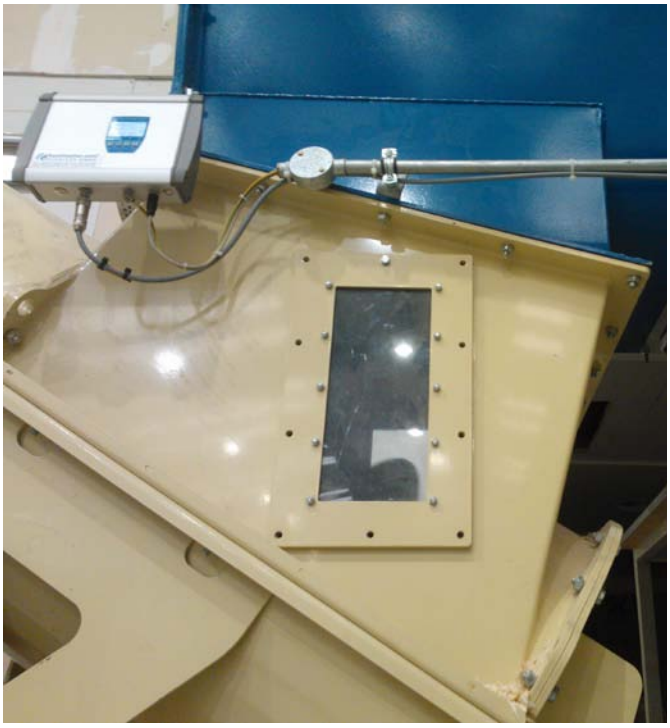
- Bunker: installation at the side wall
- Screw conveyor: installation at the bottom of the trough, there must not be coils above the sensor

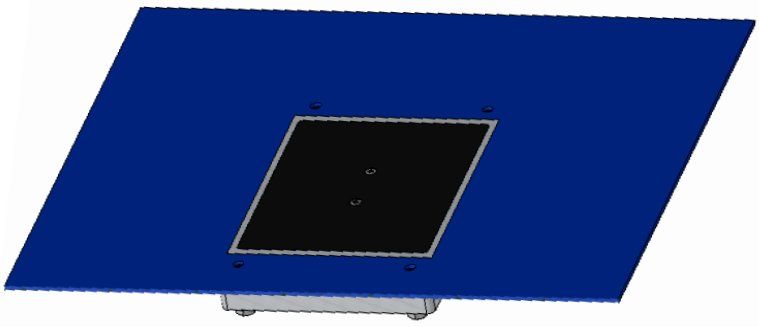
Measuring principle:

The capacitive measuring principle utilises the different dielectric coefficient (electric field permeability of a material) of dry, nonconductive material (approx. 2-10) and water (approx. 80).
The wetter the material, the higher is its dielectric coefficient. Material with higher water content in the stray field of the sensor is reflected in a higher capacity. The evaluation electronics converts this capacity value into weight percent and shows the water content on the display.



Example installations:





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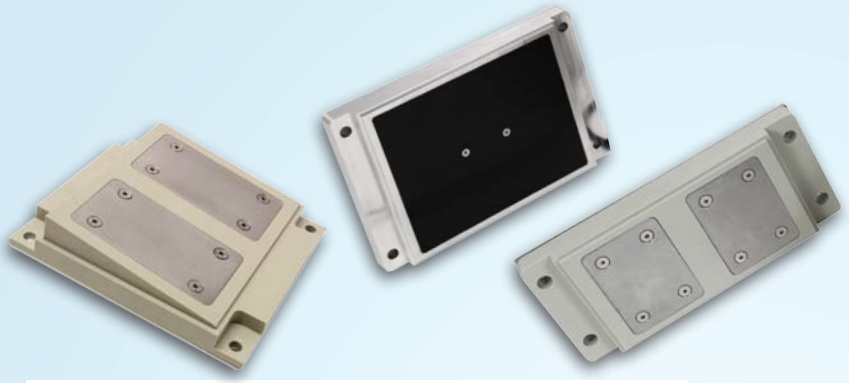
Bioenergy

humimeter BLO online measuring system

for the determination of water content of wood chips (with standard wood chips sensor for installation in a screw conveyor) and other materials (with adapted external sensors, higher resolution and advanced temperature range)



Features

- Measuring range dependent on the sensor type
- Resolution 0.5% water content
- Sample temperature measurement
- Automatic temperature compensation
- Temperature range for determination of water content 0 to +40°C; 32 to 104°F
- Temperature measuring range -10 to +60°C; 14 to 140°F
- Large, well-lit LC display
- Menu languages: English, German, Italian, French, Spanish, Russian and many others on request
- Casing protection class: IP54
- Power supply 24VDC (15 to 29VDC)
- Optional 115/230 volt AC 50/60 Hz possible
- 2 analogue outputs 4 – 20 mA for water content and temperature
- Optional: 2 relay outputs for water content
- Optional: PC interface incl. software

The humimeter BLO enables a facile online determination of the water content of wood chips and similar materials. The wood chips sensor for the installation in a screw conveyor can easily be integrated also in existing plants.
With this online measuring system you can optimize your dryer or oven relating to the water content. This enables an efficiency improvement of your oven and accordingly a reduction of the energy consumption for drying.
The water content and temperature are shown on the well-lit LC display of the analysing device. The connection to a control system can be realised by the 4-20mA analogue output.
As the humimeter BLO for wood chips is already completely calibrated, the installation can be realised with a modicum of effort


Climate / Environment


Foods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Material


Buildings


Paper / Board

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