

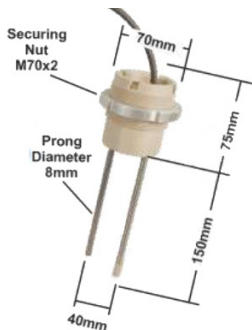
## RICE and WHOLE GRAINS MOISTURE PROBE TRIME-GWs-GR



### Features

- Determination of grain and product moisture directly in the dryer
- Additional determination of product temperature with a temperature sensor
- Reduced working time and higher process transparency by continuous measurement
- Probe body made of temperature stable special material PEEK to be used in food industry and robust probe designs for long-term use under extreme conditions'
- TRIME®-TDR Winner of multiple awards. Innovation awards, such as the Bauma Innovation Award 2016 and DLG Approved certification from the German Agricultural Society (DLG - 2018) it is unaffected by steam or changing particle sizes of sand and gravel

### Drawing



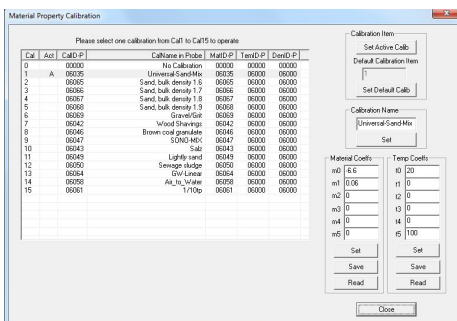
### Technical data

- Material application :** rice and all whole grains  
**Moisture range :** 0...50 %H<sub>2</sub>O by weight on a wet mass basis (depending on materials)  
**Accuracy :** 0.1 %H<sub>2</sub>O (within the calibration range)  
**Measuring technology :** TRIME® (Time-Domain-Reflectometry with Intelligent Micromodule Elements)  
**Measuring principle :** radar wave frequency 600MHz to 1.2 GHz  
**Temperature range (probe) :** 0...120°C (short-time up to 150°C)  
**Temperature range (Transmitter) :** -10...70°C  
**Field expansion range :** approx. 2 liters  
**Operating Conductivity :** 0...2 mS/cm (The conductivity range is reduced in moisture measurement ranges >50%)  
**Signal output :** 2 x 0(4)...20 mA

Analog output 1	moisture in %H <sub>2</sub> O
Analog output 2	temperature in °C

- Communication :** RS-485, IMP-Bus  
**Power supply :** 12...24Vdc, 3W  
**Connector plug :** 10-pole MIL flange plug.  
**Cable length of probe :** 2.5 meters  
**Material :** Aluminium diecasting (Casing)  
 waterproof sealed PEEK (Probe)

- Dimension :** 175 x 80 x 58 mm (Transmitter)  
 2 Nut M70 and 70 x 75 mm (Casing)  
 2 Rods Ø8 x 150 mm (Probe)  
**Protection class :** IP65 (Casing), IP68 (Probe)



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## AVAILABLE MATERIALS for TRIME-GWs-GR

The TRIME-GWs-GR is suited for measuring of rice, whole grains and conductive materials 0...2 mS/cm

- **Bulk solid and Food**

For example...



Rice



Cereals



Oil seeds



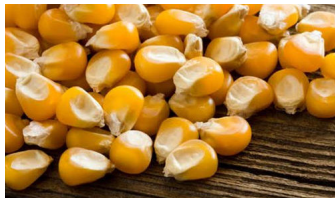
Animals food



Malt



Coffee



Dried corn



Sunflower seed



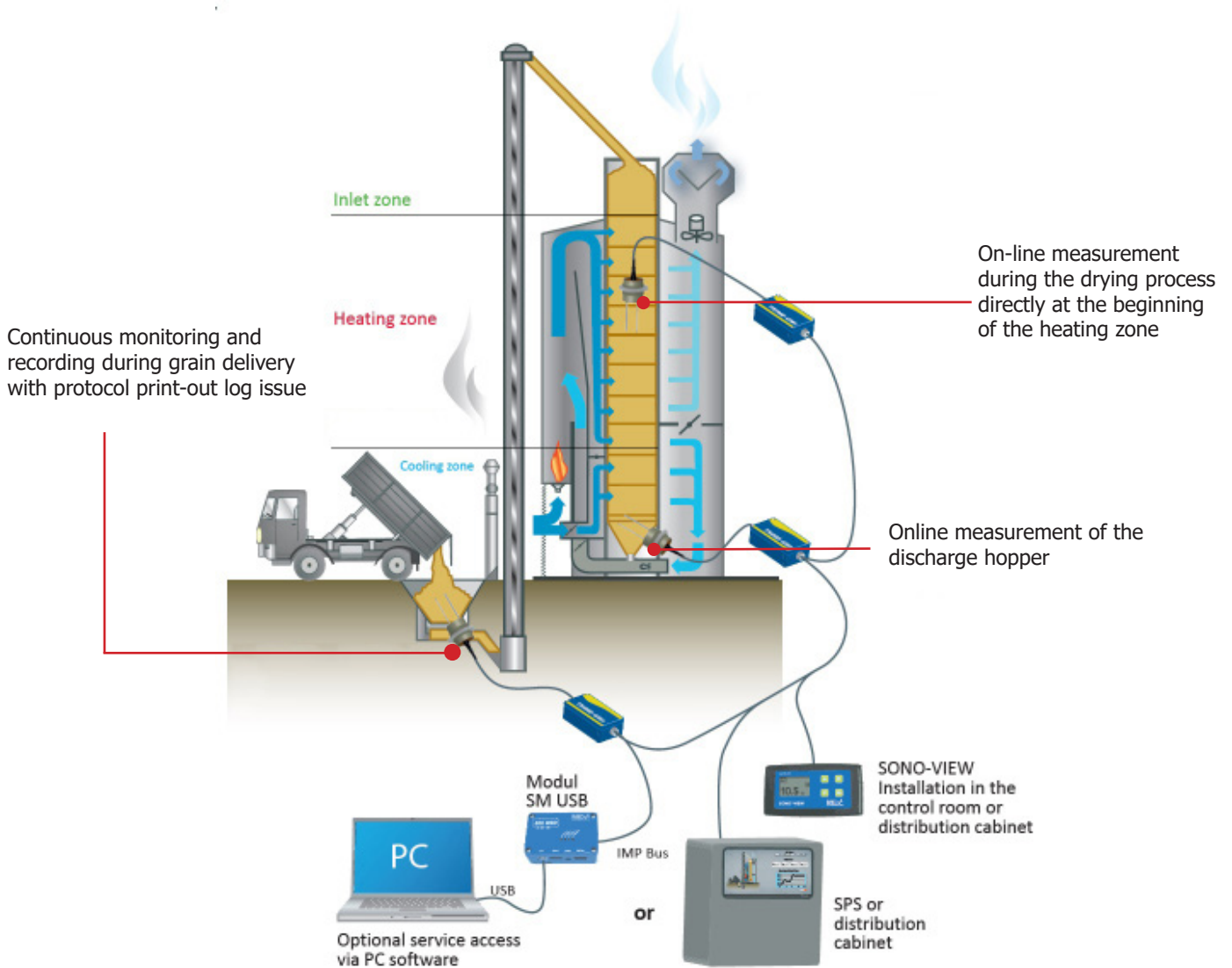
Coarse grain



*For other materials which associate bulk solid and foods, please do not hesitate to contact us for consulting*

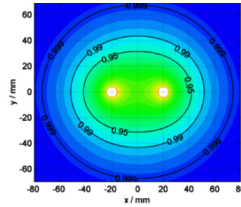
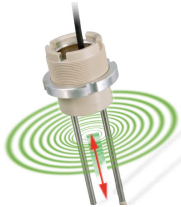
## RICE and WHOLE GRAINS MOISTURE PROBE INSTALLATION EXAMPLE TRIME-GWs-GR

- Grain vertical dryer



*Note : The **TRIME-GWs-GR** can resist temperature up to 0...120°C (short-time up to 150°C). Thus, do not use the probe above range of temperature.*

## TRIME-GWs-GR SENSOR TECHNOLOGY



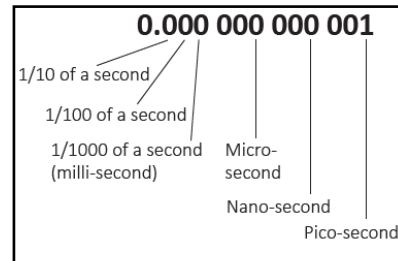
### TRIME® - TDR technology

The TDR technology is characterized by its low maintenance requirements. The measurement technology is immune to variations in the grading curve and fine content and the design of the measuring head is completely new.

The signal conductor in the sensors lies between two rods and is in direct contact with the material to be measured. The figure shows the measurement field of the standard GR probe. The broad distribution of the measurement field up to 95% (green area) ensures optimal measurement results.

### Time resolution of the sensory mechanism

Using a new patented measuring method, IMKO has achieved to measure the transit time of this pulse with a resolution of 1 picosecond ( $1 \times 10^{-12}$ ), consequently determine the moisture and the conductivity of the measured material.



## Ordering code

**TRIME-GWs-GR**

- : The rod with PEEK protection cap

r : The rod with Stainless steel protection cap

### Example : TRIME-GWs-GR

Moisture probe sensor and transmitter, moisture range 0...50% by weight, electrical conductivity 0...2 mS/cm, bulk solids density of approx. 3...10 kg/m<sup>3</sup>, with Stainless steel protection cap

## ACCESSORIES for TRIME-GWs-GR

These are necessary equipments that using with products and increase efficiency.

**SM-USB** : SM-USB is the signal transmitter. it can connect your SONO probes with a PC and setting, adjustment, calibration by SONO-CONFIG software.



**Sensor cable**  : The connection cables with MIL connectors are available in cable lengths.

**308029** : Cable length of 4 meters

**308032** : Cable length of 10 meters

**308033** : Cable length of 25 meters



**SONO-VIEW** : SONO-View is a display and configuration for advanced process control with TRIME and SONO probes. Up to 4 probes can be connected via serial interface for displaying the measured values, setting of operation mode, calibration curves and other functions.



**TRIME-GWs** : TRIME-GWs is the signal transmitter. it can connect your SONO probes with a PC and communicate with the probe. it can be used at up to 70°C.



**Alu flange** : The mounting flange is 120 x 120 x 10 mm. the flange can either be installed at the base or the side wall.



**SONO-CONFIG** : SONO-CONFIG it is possible to make process-related adjustments of individual parameters of the SONO probe. Furthermore the measurement values of the SONO probe can be read from the probe via the serial interface and displayed on the screen.

