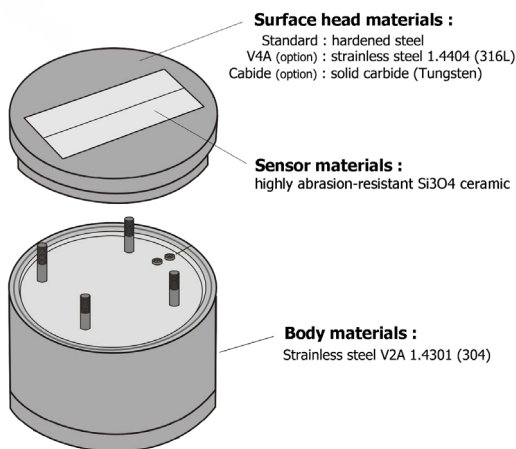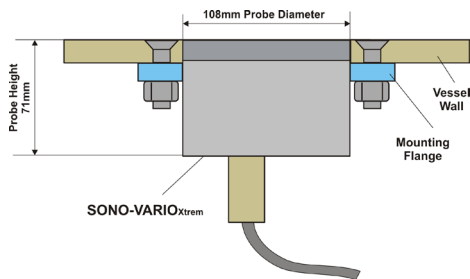# MOISTURE PROBE
SONO-VARIO Xtrem

MADE IN GERMANY

Features

- Ideal for measurements in highly abrasive bulk solids like for example 8-32mm gravel or sludge
- Highest reliability also when measuring adhesive materials like pastes, lime, powder, cellulose, dough and similar
- The probe head consists of strongly abrasion-resistant, hardened steel with a rectangular ceramic window and it is interchangeable
- Precise measurement also under extreme conditions
- Simple installation in containers, shafts, silos, conveyor belts and others
- In case of abrasion at probe head an automatic correction of the measuring value happens – without recalibration
- TRIME®-TDR Winner of multiple awardes. Innovation awards, such as the Bauma Innovation Award 2016 and DLG Approved certificattion from the German Agricultural Society (DLG - 2018) it is unaffected by steam or changing particle sizes of sand and gravel

Drawing

108mm Probe Diameter

Probe Height 71mm

Vessel Wall

Mounting Flange

SONO-VARIOXtrem

Surface head materials :
Standard : hardened steel
V4A (option) : strainless steel 1.4404 (316L)
Cabide (option) : solid carbide (Tungsten)

Sensor materials :
highly abrasion-resistant Si3O4 ceramic

Body materials :
Strainless steel V2A 1.4301 (304)

Technical data

Moisture range : 0...100% H_2O (depending on materials)
Accuracy : 0.1 %H2O (within the calibration range)
Conductivity range : 0...20 mS/cm (The conductivity range is reduced in moisture measurement ranges >50%)
Measuring technology : TRIME® (**T**ime-Domain-**R**eflectometry with **I**ntelligent **M**icromodule **E**lements)
Measuring principle : radar wave frequency 600MHz to 1.2 GHz
Temperature range : 0...70°C
Field expansion range : approx. 30...80 mm (depending on material and moisture)
Signal output : 2 x 0(4)...20 mA

Analog output 1	moisture in %
Analog output 2	conductivity, temperature or standard deviation

Communication : RS-485, IMP-Bus
Power supply : 12...24Vdc, 3W
Connector plug : 10-pole MIL plug
Body material : strainless steel V2A 1.4301 (304)
Sensor material : highly abrasion-resistant Si_3O_4 ceramic
Surface head material :

Standard	hardened steel
V4A (option)	strainless steel 1.4404 (316L)
Cabide (option)	solid carbide (Tungsten)

Dimension : Φ108 x 71h mm
Protection class : IP67

AVAILABLE MATERIALS for SONO-VARIO Xtrem

The SONO-VARIO Xtrem is suited for measuring of high abrasive materials.

- ## Sand, gravel and minerals *(gain size up to 32mm)*

    For example....

Fine sand

Sand

Gravel

Quartz sand

Gypsum

Ceramic powder

Coal

Different aggregates

pet litter

Lime stone

- ## Plastic and synthetic materials *(gain size up to 32mm)*

    For example....

Grain plastic

Plastic film

Shredded plastic

Para rubber

Colour pigments

Washing powder

Silica

Fertilizer

Raw resin

Recycle glass

www.omi.co.th

Omega Measuring Instrument Co., Ltd.
Tel : 02-105-4676
Fax : 02-903-0080 ext. 6867
Email : info@omi.co.th
Line : @omith

AVAILABLE MATERIALS for SONO-VARIO Xtrem

The SONO-VARIO Xtrem is suited for measuring of high abrasive materials.

- **Food** *(gain size up to 32mm)*

  For example....

Paddy	Rice	Cassava	Palm
Dried Corn	Flour / powder	Malt	Seeds
dried fruites	Sugar	Salt	Sunflower seed
Pet food	Cereal	Coffee	Bagasse

- **Wood materials** *(gain size up to 32mm)*

  For example....

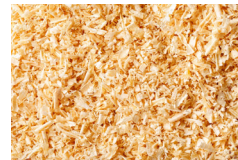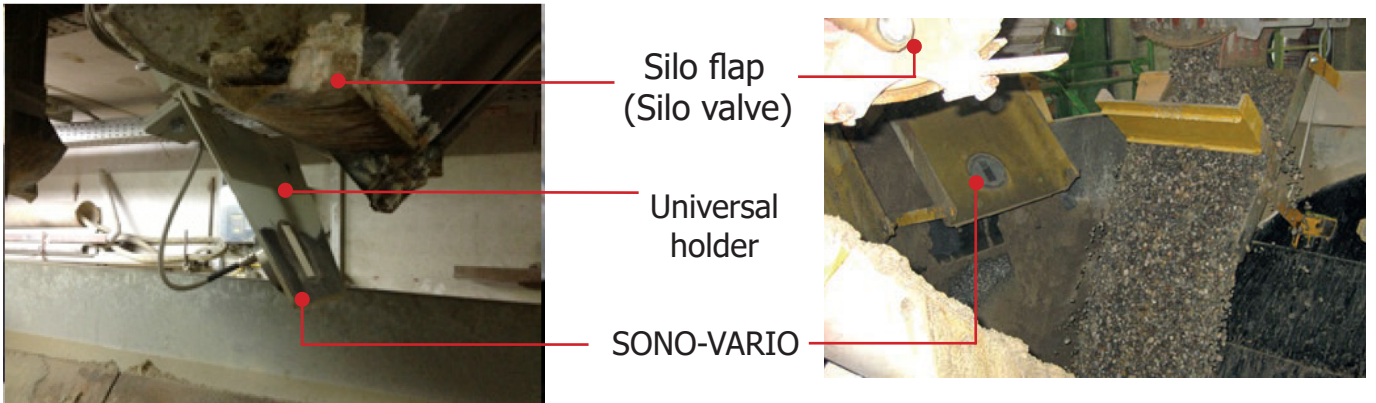|			
Biomass	Wood pellets	Saw dust	Wood fibre
Silage	Wood chips		

Furthermore, these materials that are shown, please do not hesitate to contact us for consulting

MOISTURE PROBE

# INSTALLATION EXAMPLE SONO-VARIO Xtrem

• Under silo flap (silo valve)

Silo flap
(Silo valve)

Universal
holder

SONO-VARIO

• Conveyor belt

SONO-VARIO

Sliding incl. mounting

**note ; The moisture probe, SONO-VARIO. It is able to install various position. So,the installation of probe depend on conditions and structure of working place. The more installation correctly, the more effective of moisture probe.

SONO SENSOR APPLICATION

Depending on the group, SONO sensors differ in resolution and measuring range. The higher the conductivity range of a sensor, the lower the resolution or the performance characteristics. Use the following diagram to help you choose sensor.
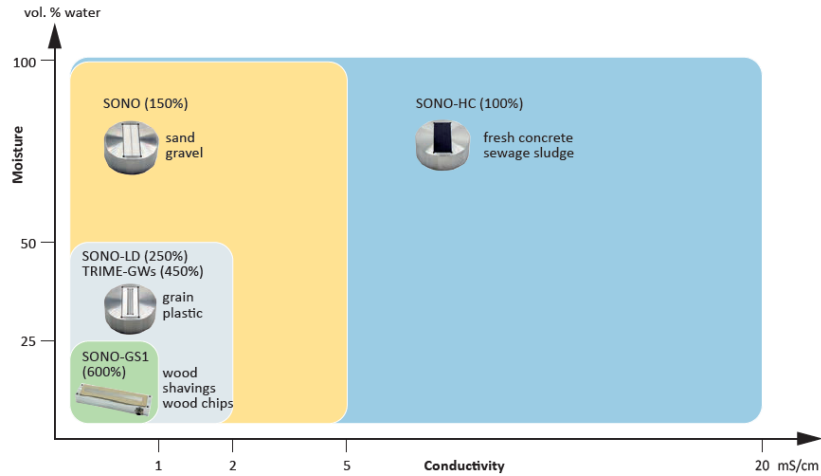
The sensitivity of the individual sensor series in comparison to SONO-HC is marked in brackets
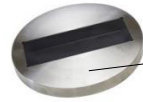
Ordering code

SONO - VARIO Xtrem - ☐ - ☐

LD : **Low density version**
Moisture 0...50% water
Conductivity 0...2 mS/cm

- : **Standard version**
Moisture 0...100% water,
Conductivity 0...5 mS/cm

HC : **High electrical conductivity**
Moisture 0...100% water,
Conductivity 0...20 mS/cm

Surface head material

- : Hardened steel [Allowed to all version]

V4A : Strainless steel 1.4404 (316L) [Allowed to standard and HC version]

carbide : Solid carbide (Tungsten) [Allowed to standard and HC version]

Example : SONO-VARIO Xtream - HC - V4A
Moisture probe sensor high electrical conductivity version, moisture range 0...100% water, material's conductivity 0...20 mS/cm, with Strainless steel 1.4404 (316L) sensor material

ACCESSORIES for SONO-VARIO Xtrem

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.

Surface head ☐ : Surface head is a spare-part. The user can change when old sensor material is damaged

Standard : Hardened steel
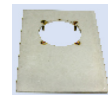
V4A : Strainless steel 1.4404 (316L)

Cabide : Solid carbide (Tungsten)

Mounting flange : The mounting flange is 108 mm (diameter). the flange can either be installed at the base or the side wall of containers.

Baffle plate : The Baffle plate that is used for round sensor e.g. SONO-VARIO. It is installed under silo flap. The dimension is 300 x 200 mm.

Universal holder : The unversal hold that is used for round sensor e.g. SONO-VARIO. It is installed under silo flap. It is combined between baffle plate and tilt mechanism.

Slider incl. mounting : The Slider incl. mounting is used for round sensor e.g. SONO-VARIO. It is installed at conveyor belt.

Slider wear-resistant incl. mounting : The Slider incl. mounting is used for round sensor e.g. SONO-VARIO. It is installed at conveyor belt. The device is carbide coating for wear-resistant.

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.