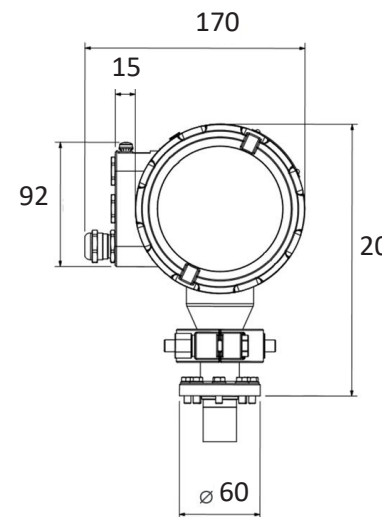
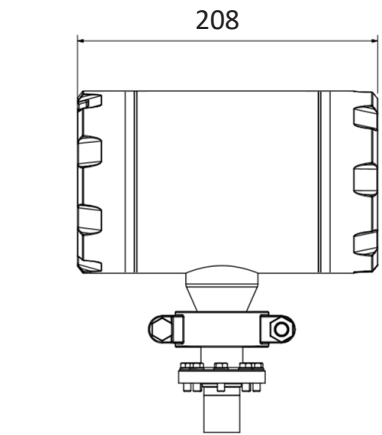


About us



PERFORMANCE SPECIFICATIONS	
Method:	Ultrasonic Spectral Power / Acoustic impedance
Density Range:	0 ... 80 wt%
Resolution:	0.02 wt%
Readings:	Density in wt% solids
Accuracy:	Up to 0.005 wt% ... +/- 0.1% of reading
Decay time:	1 to 99 s (adjustable)
Display:	Monochrome display with RGB backlight, visible through glass cover.
Operation:	Push-buttons, HART, Computer <i>Optional: RCU Remote Control Unit</i>

GENERAL SPECIFICATIONS	
Process conditions	
Pressure:	1 ... 16 bar
Temperature:	0 °C ... 110 °C (32 °F ... 230 °F)
Wetted materials:	Ceramics and Duplex Stainless steel 1.4462
Electrical specifications	
Power supply:	18 ... 32 VDC, 8 Watt <i>Optional: Power supply/converter for 90 ... 240 VAC</i>
Output:	4 ... 20 mA / HART
Communication:	2-way through HART protocol <i>Optional: RCU unit as converter to Modbus RTU or Profibus DP</i>
Data logging & fault reporting:	Internal memory, via USB memory stick
Cable entries:	3X M16X1.5, cable OD Ø 3-10 mm
Ambient conditions	
Ambient temperature:	-20 °C ... +65 °C (-4 °F ... 149 °F)
Humidity:	< 95% at 40 °C (noncondensing)
Protection:	IP68, NEMA 6P
Vibration:	Resistant to moderate / high vibration of pumps
Dimensions and weights	
Weight:	Approx. 6.4 – 6.8 kg
Housing materials:	Coated stainless steel
Housing dimensions:	218 – 402 mm * (L) x 208 (W) x 170 mm (H) * Various depths, depending on probe type
Process connection:	Spool (sensor depth: 146 mm) Weldolet (sensor depth: 34 or 52 mm) Wafer (sensor depth: 146 or 200 mm)
Standards:	DIN/ANSI/JIS (others on request)
Nominal pipe size:	Up to 60"

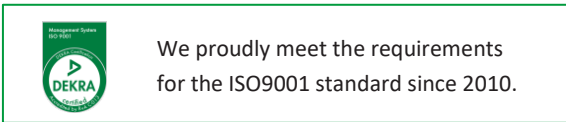


A: Analyser
B: Tri-clamp
C: Sensor
D: Various depths 16/34/52/146/200 mm



MEASURING BEYOND LIMITS

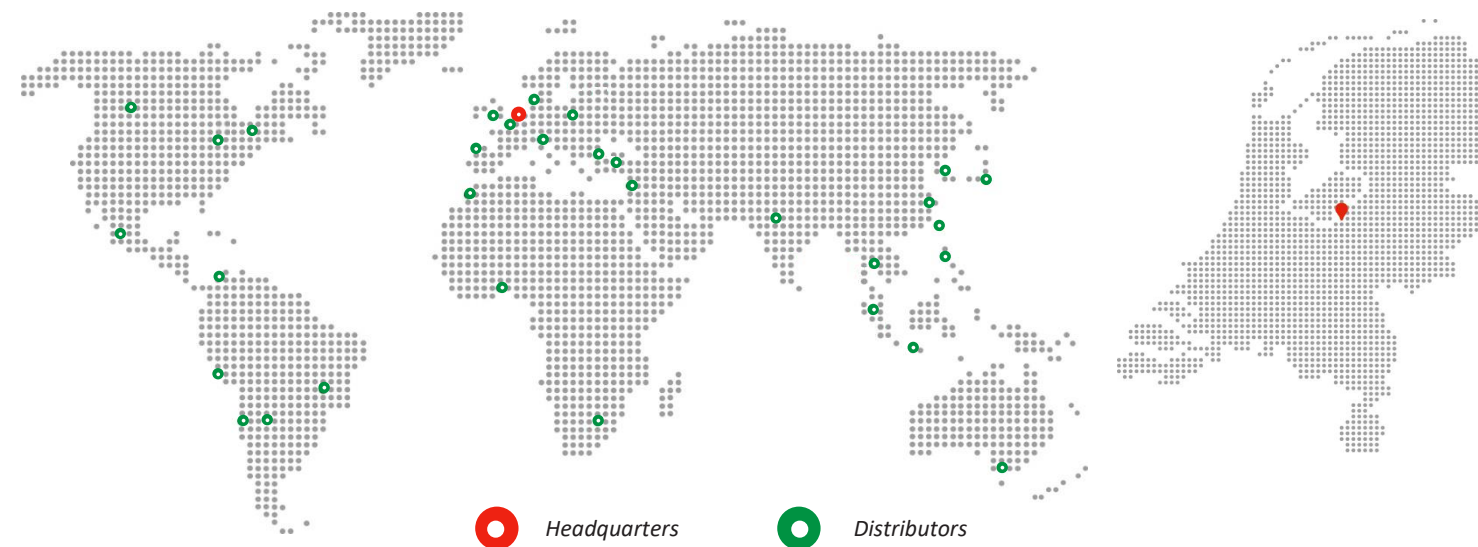
Rhosonics is based in the Netherlands in Putten. We design, produce and supply state-of-the-art measuring instruments for virtually any industry. The company cooperates with partners worldwide to offer the best technology solutions. We use craftsmanship, capability and creativity to create measurements beyond limits.



CONTACT US

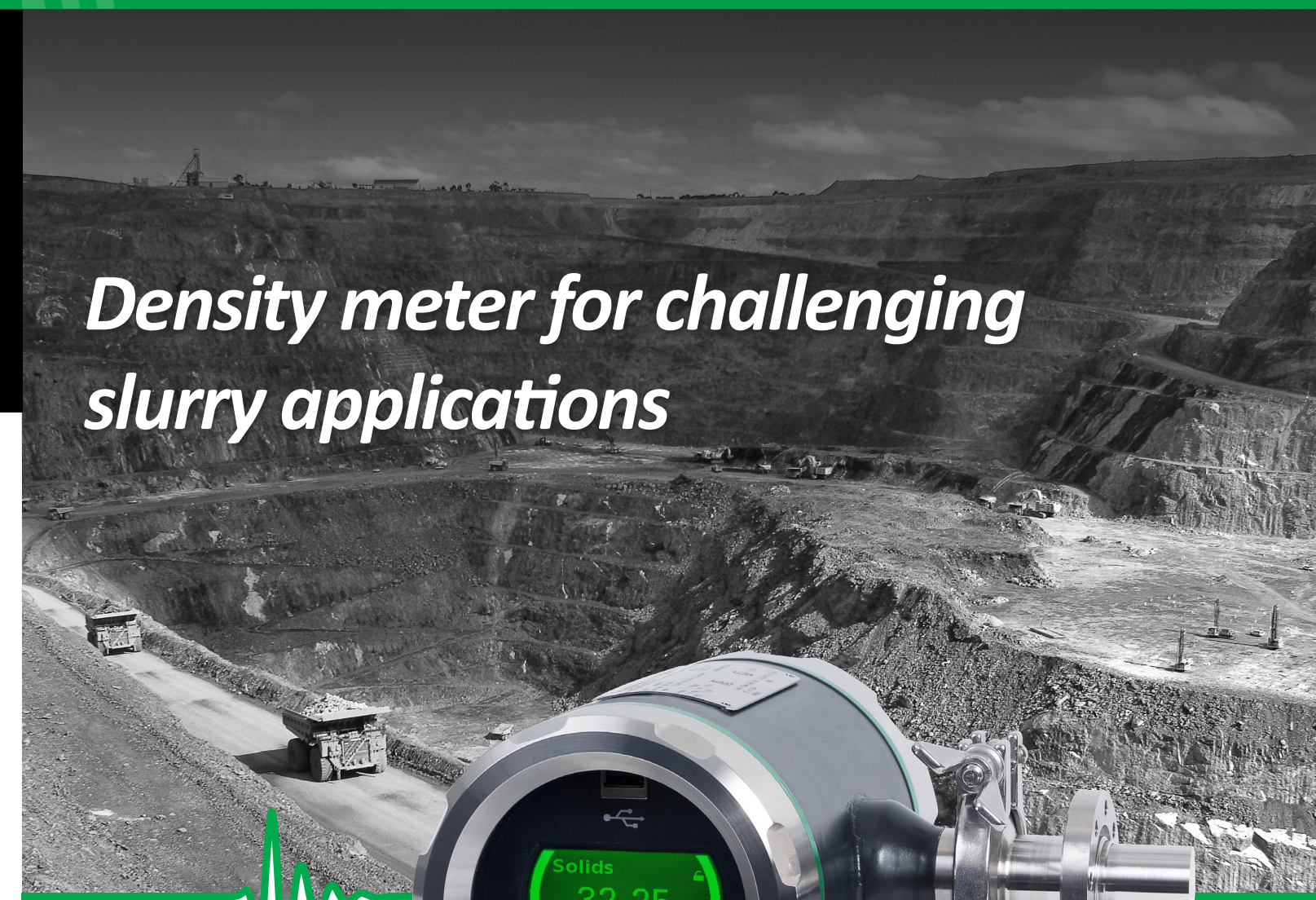
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We work with a global network of specialized distributors. Please check our website for distributors in your specific region.

Density meter for challenging slurry applications



SDM WT - SLURRY DENSITY METER
PRODUCT INFORMATION

Non-nuclear density meter for wt% solids determination

INTRODUCTION

Rhosonics introduces the Slurry Density Meter WT (SDM WT). This robust measuring instrument accurately shows the density value in wt% solids.

More than ten years of experience with harsh applications has been used for the development of this second generation device. For this reason, the SDM WT can measure the density of challenging water-based slurries in industries like dredging and mineral processing.

For many years, nuclear devices were the only option. Nowadays the non-nuclear SDM is used to replace these radiation sources. Rhosonics employs the field proven ultrasonic technology for density measurement. The transition to ultrasonic will significantly reduce operational costs, related administration workload and eliminates the associated health and safety risks on-site.

INDUSTRIES

SDM WT is used in the following industries:

- Mining and Minerals processing
- Dredging
- Construction
- Energy and power supply
- Any other where density measurement in water-based slurries is required



Mineral slurry



Dredging slurry

SDM WT – DESCRIPTION

The Rhosonics SDM WT has its sensor, analyzer, cable and software integrated in just one system. The density meter is compact and lightweight. In addition, the 'HART' protocol helps to improve communication with the DCS system.



SDM WT density meter with wafer installation

A single ultrasonic probe is used for accurate density measurements in light to very dense slurries. The density is measured by ultrasonic technology which is non-nuclear and completely environmental friendly.

The sensor is easily mounted and is not intruding the slurry. Furthermore, the sensor is made of durable and abrasion resistant materials for a long service life and low maintenance needs.

FEATURES AND BENEFITS

- Non-nuclear technology
- Robust, compact and lightweight
- Easy installation and calibration
- Durable probe system
- Lowest possible maintenance needs
- High accuracy and reproducibility
- Suitable for various types of slurries
- Communication via 4 ... 20 mA / HART
- Continuous data logging

- Benefits compared to the nuclear device:
 - no health and safety risks
 - no radiation safety officer (RSO)
 - no licenses or obligatory training
 - no costs for disposal and transport of the radiation source

RCU – REMOTE CONTROL UNIT

A Remote Control Unit (RCU) is available to read values, convert signals and change settings of the SDM WT from a convenient location of choice. Please contact Rhosonics for more information.

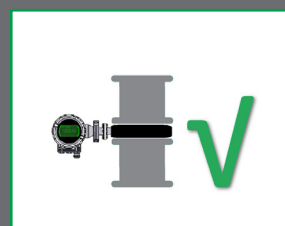


RCU unit – optional control unit for the SDM WT

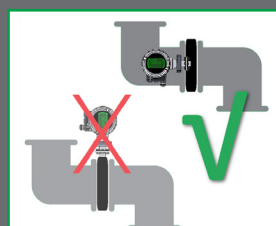
HOW TO INSTALL

The following guidelines apply for installation:

- Install the sensor with 5xD of straight pipe length upstream or 3xD of straight pipe length downstream.
- Horizontal pipe installation is preferred. The sensors must be installed at a 45° angle position from the bottom of the pipe.



Vertical installation

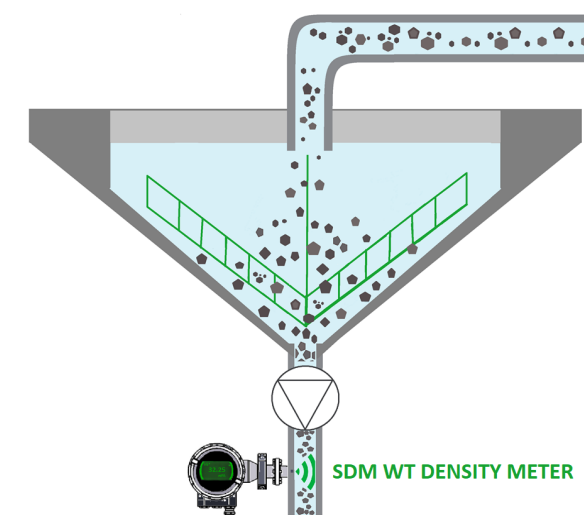


Horizontal installation

A TYPICAL APPLICATION

The SDM WT density meter can be used in many applications to measure the density of a slurry. For the mining industry, typical applications are a thickener underflow and a cyclone feedline. Also applications like dredging, power plant ash, lime stone milk and many others are possible. The measured density value is used for process control but also in combination with flow measurement for production yield.

The Rhosonics SDM WT ultrasonic density meter is in general THE alternative for nuclear density technology for slurry applications.



Density measurement in the slurry of a thickener underflow

INSTALLATION METHODS

Rhosonics offers different installation methods to fit every customer's need. The most important installation methods are discussed.

- UFTP Spool (with/without liner)
- Weldolet
- UWC Wafer

UFTP Spool (with or without liner)

A spool is a pipe piece which can be mounted between two flanges. The spool piece can be made of HDPE, steel A106/A105 or other steel grades. Also, this installation method is available with PU liner, Ceramic liner and other liners on request. The choice of materials can be different for each customer application.

Weldolet

The Weldolet is a metal adapter which can be used for flush-mounted installation in new or existing steel pipes. This Weldolet piece is welded on the outside of the pipe at the location where a hole is drilled. This installation method is mostly used in dredging applications.

UWC Wafer (Ultrasonic Wafer Cell)

The UWC is a synthetic 60 mm thick ring made of UHPE (Ultra High Density Poly Ethylene). It can be clamped between two flanges in almost every pipe system. The UWC Wafer is a perfect solution for all thickener underflow applications.

HOW DOES IT WORK?

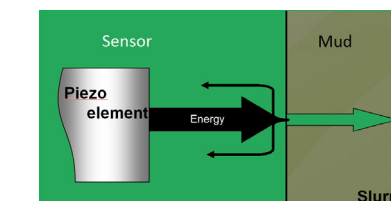
The density measurement is based on the measurement of the acoustic impedance using the Physical law established by Sir Rayleigh.

$$Z = C \times \rho$$

Z = acoustic impedance
C = speed of sound
 ρ = density

The acoustic impedance is the reflection of the ultrasonic signal on the interface between the sensor and the slurry medium. The speed of sound is based on the sound velocity of water which is programmed in the analyser.

Ultrasonic measurement principle



SDM WT MODELS

SDM WT MODEL	SDM-4	SDM-2 & SDM-3		SDM-4 & SDM-5	
Installation method	UFTP Spool	Weldolet		UWC Wafer	
Suitable for nominal pipe OD	4" ... 16"	All	All	3" ... 30" *	30" ... 60" *
Sensor depth (in mm)	146	34	52	146	200
Suitable for pipe WT (in mm)	N/A	2...17	17...40	N/A	N/A

* Depending on the standard, determined by Rhosonics