# MICRO-SLUDGE™ ANALYZER

DATA SHEET

## Online Analyzer Micro-Sludge™.

Solids measurement in wastewater treatment and environmental technology

**Maintenance-free, no moving parts.**

***Solids content***

***Microwave technology***

***no moving parts***

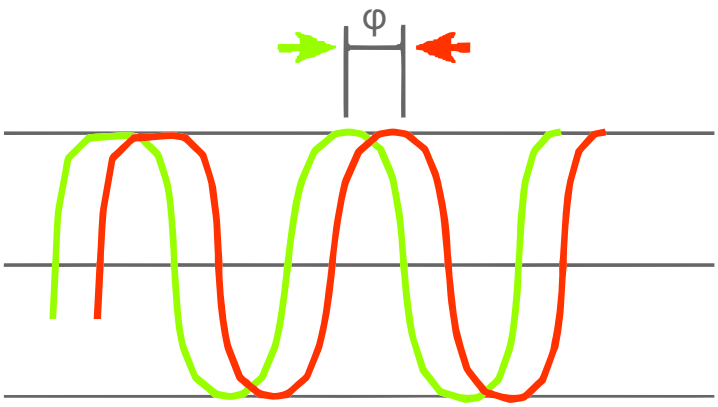
***maintenance free***

## Solids Measurement in Wastewater Treatment and Environmental Technology

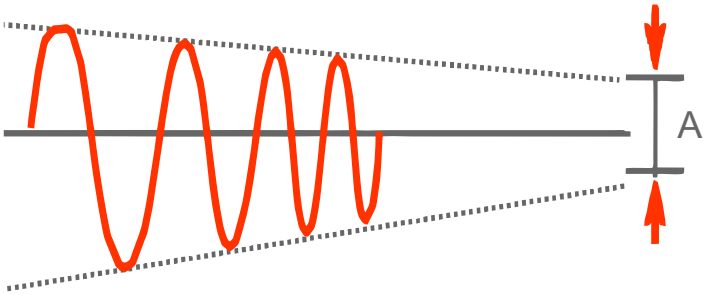
Micro-Sludge™ is an intelligent microwave measuring device for measuring the solids content of sewage sludge etc. in closed pipes or tanks. In real time - simple, accurate and reliable. Micro-Sludge™ optimizes processes, reduces polymer consumption and optimizes the operation of incinerators and decanter centrifuges.

## Measuring Principle

The principle is to send microwaves through the product to be characterized and measure their influence in relation to a reference signal. The measured phase shift and attenuation of the amplitude are proportional to the solids content.



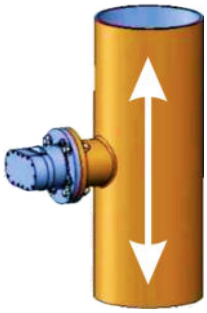

*Phase shift φ*

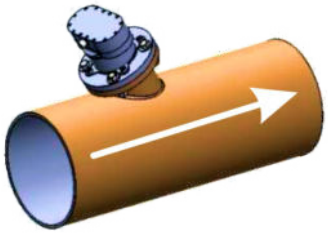



*Attenuation of the amplitude A*

The intensity of the signal emitted is harmless to humans and to the product being analyzed.

## Assembly Examples:





## Advantages:

- reliable, precise and continuous online measurement
- high long-term stability
- penetrating measurement
- easy installation
- easy handling
- self-sufficient measurement
- works with all sludges and liquids containing solids

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## Application Examples in Wastewater Treatment:

| PROCESS | SENSOR POSITION | SOLIDS CONTENT | PURPOSE OF THE MEASUREMENT | ADVANTAGES |
|---|---|---|---|---|
| Thickening | Primary treatment | 0 … 10 % | Measurement-dependent control of the sludge pumps | Energy savings, higher pump performance |
| | Secondary treatment | 1 … 10 % | | |
| Conditioning | Polymer, Mineral | 10 … 20 % | Control of polymer and lime dosage, etc. | Reduced raw material consumption |
| Stabilization | Fermenter, digestion tower | 10 … 20 % | Process optimization | Optimized sludge digestion, energy savings |
| Mechanical dehydration | Band filter | 12 … 25 % | Dehydration quality control | Reduced sludge pumping, quality of sludge and supernatant water |
| | Decanter centrifuge | 20 … 30 % | | |
| | Filter press | 25 … 40 % | | |
| Conditioning | Post-liming | 15 … 30 % | Control of polymer and lime dosage | Reduced raw material consumption, compliance with regulations, better agricultural value creation |
| Thermal dehydration | Dryer inlet before pelletizing | 20 … 30 % | Process optimization | Energy savings, prevents dryer clogging |
| | Gasification inlet, pyrolysis inlet | 60 … 95 % | | Energy savings |
| Incineration | Incineration plant inlet | 20 … 40 % | Optimized combustion | Energy savings during preheating |

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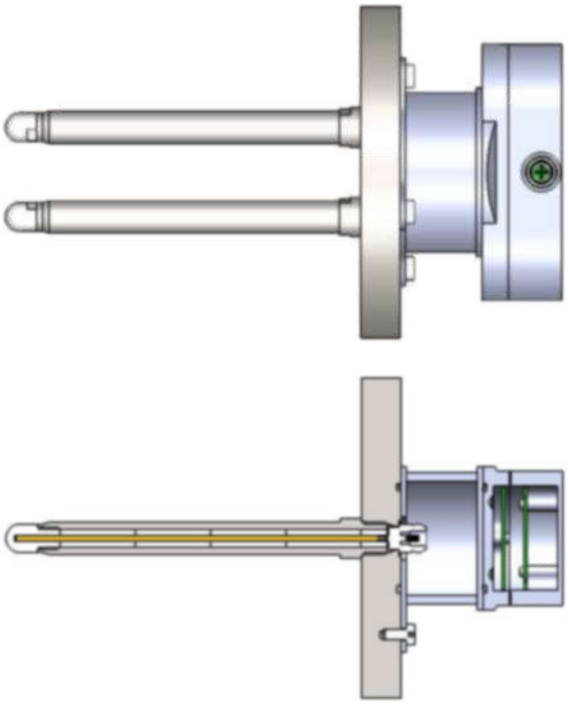
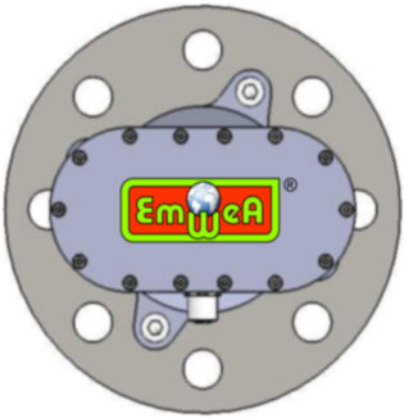
## Technical Specifications:

| | |
|---|---|
| Housing: | Stainless steel/aluminium |
| Connection flange: | DN65 PN6 (for pipes up to DN150)<br>DN65 PN10/16 (for tanks and pipes > DN150) |
| Antennas (pipe up to DN150): | 94 x 75 mm |
| Antennas (tank, pipe > DN150): | 160 x 255 mm |
| Measured variable: | Solids content |
| Measuring range: | 0 ... 70 % |
| Supply voltage: | 110/220 V AC |
| Current consumption: | 45 W |
| Ambient temperature: | -20 ... +60 °C |
| Product temperature: | 0 ... +130 °C |
| Protection: | IP66 |
| Binary inputs: | 2 x 0 ... 24 V DC, optoisolated (product, filtering) |
| Analog inputs: | 1 x 0/4 ... 20 mA (optional temperature measurement) |
| Analog outputs: | 2 x 0/4 ... 20 mA |
| Interfaces: | 1 x USB-A, 2 x Ethernet RJ45, 1 x RS485 (Modbus/RTU) |
| Sensor cable: | 5 m (standard) |
| Supplied software: | MAcontrol SE |
| Languages: | English, French, Chinese |

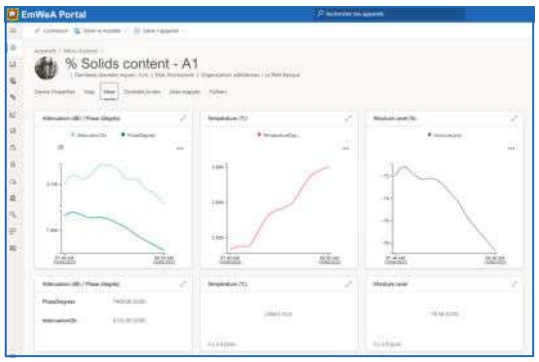


## Accesories:

Control unit with HMI for on-site operation



4G kit for internet connection




EmWeA Portal
(IoT cloud platform)

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Any question?

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