

# Water in Oil Monitor

## MPT

**Water content measurement in crude oil**

**Water content measurement in fuel/kerosine**



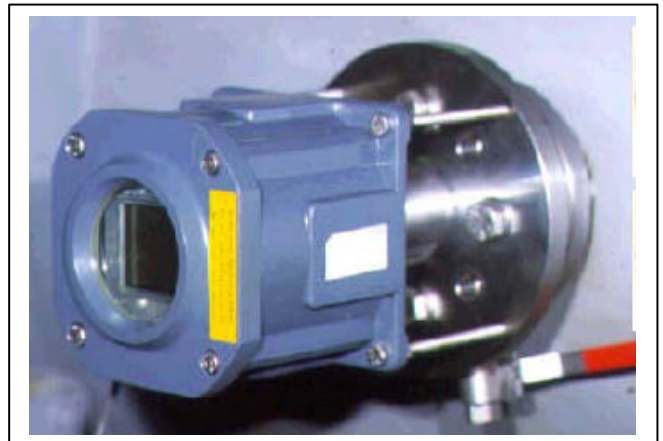
### Technical specifications:

- Physical principle microwaves propagation time monitoring
- Measuring range 0-1 to 0- 100 % Water in Oil
- Analog 4-20 mA superimposed with hart protocol data-link as option
- Resolution : 0.025 % for the range 0-1%
- Accuracy : 0.05% abs from 0 to 1% ; 0.10 % abs from 0 to 10% ; 2% from 0 to 100%
- No viscosity , temperature , velocity , density effect .
- Gas on Oil ratio : no influence below 5%
- Working temperature : -0 to 150 °C ( up to 240°C optional )
- Ambient temperature : - 20 to 70°C
- Enclosure rating : IP 65
- Ex-proof : CENELEC ATEX EEx d(ia) II B T4
- Power supply : 24 V – 150 mA DC
- Process connection : 2" ANSI 300 or customised
- Wetted parts : Stainless steel and PTFE

## Benefits:

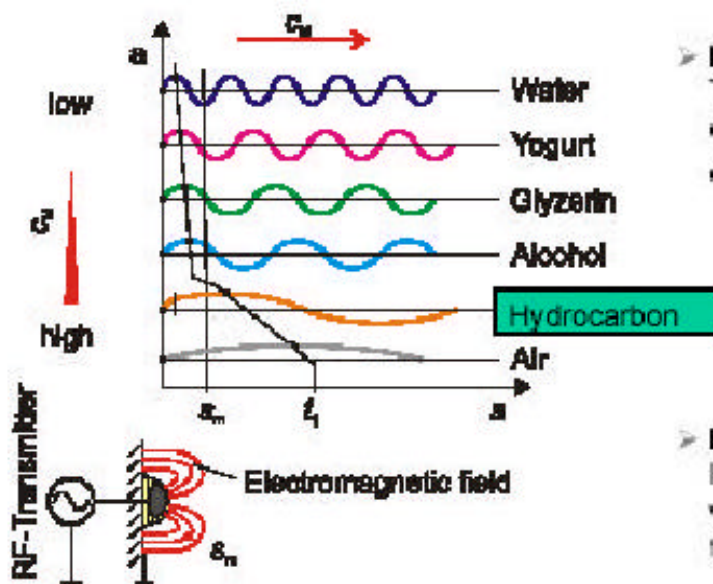
- Direct digital measuring method
- Measurement not dependent on the media
- Accepts sticky coating and fouling conditions
- Operating under hard conditions : emulsion, deposits, foam
- Electromagnetic field distribution in the media
- Compensation for sample temperature
- Highly wear resistant
- Stainless-steel and PTFE wetted parts
- Hazardous area compliance and certification

## The probe



## Principle

More about the [Microwave Propagation Time Monitor: MTPM](#)



- **Runtime measurement:**  
The propagation time  $c_M$  of a electromagnetic wave in a medium depends on the dielectricity value  $\epsilon_r$

$$c_M \sim \sqrt{\frac{1}{\epsilon_r}}$$

- **Marginal point assignation:**  
How long does a electromagnetic wave take from the cap of the device to the vessel wall?

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