

SETTING NEW STANDARDS FOR CONTINUOUS MONITORING OF:

Oil-in-Water

Multi-Functional-Monitor

Type: **OMD-7**



Computer Unit

Accurate monitoring of:

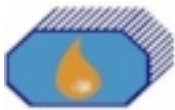
Oil-in-Water

Solids-in-Water

Turbidity

3 Measurements in one Instrument.

We help to protect the Environment.



DECKMA HAMBURG GmbH

DECKMA Decksmaschinen und Automation Vertriebsgesellschaft in Hamburg mbH

DECKMA HAMBURG GmbH are proud to announce the launch of an all new Oil-in-Water Monitor, the "OMD-7 Industrial Monitor", designed to measure the content of Free Oils, Suspended Solids and Turbidity in Water continuously and independently.

This design represents the first all new Industrial Monitor capable of distinguishing between the different characteristics of Oil particles, Solid particles and Water Turbidity on a continuous basis. The OMD-7 comprises a compact Measuring Cell, Monitor with integral Computer Unit and Monochrome Alphanumeric Display and our proven Sample Conditioning Unit (SCU) for sample processing.



The measurement method employs light scattering as the base technique but uses a novel concept whereby multiple wavelength light sources combined with multiple detector angles are used to differentiate between the various contaminants within the water phase.

Great attention has been given to ensure the instrument construction is rugged whilst remaining easy to use. The proven Automatic cell cleaning device, as used on our OCD range of products, has been incorporated to ensure the measuring cell remains in 100% optimum condition throughout even the most demanding of applications.

All variable operational parameters can be adjusted on site by key inputs at the Monitor Key Pad. These include Oil, Solids and Turbidity range and Alarm Set Points, Alarm Time Delays and Frequency of Cleaning Cycle.

By use of this novel Light Scattering technique the OMD-7 is capable of measuring Free Oil, Solids and Turbidity in the following applications:

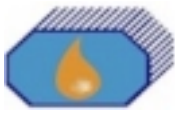
Surface Water Run-Off from Power Stations, Chemical Plants, Refineries and Petroleum Tank Farms. Boiler Condensate returns, Produced Water Discharge from Production Platforms and FPSO's, Cooling Water in a variety of Industrial environments.

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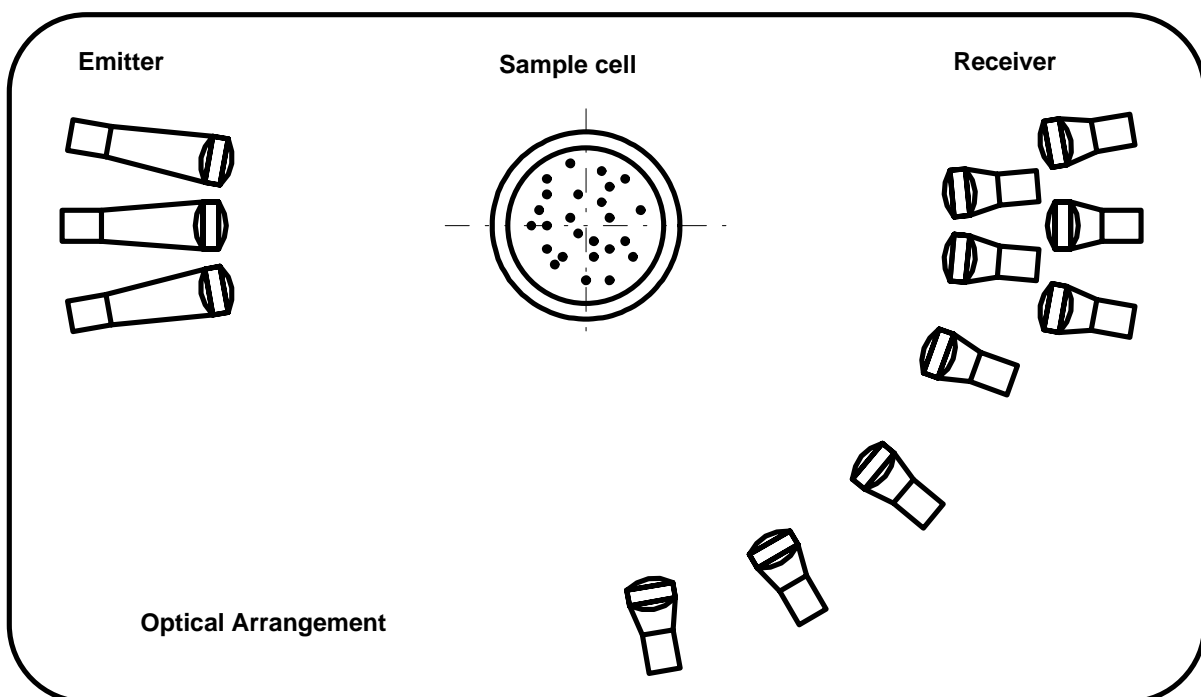
Measuring Principle of the OMD-7

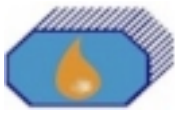
The principle of measurement is based on the scattering of light, internationally known as "Scattered Light Principle".

The measurement is based on the fact that oil droplets and solids particles present in the sample water scatter light (due to the system arrangement in the measuring cell). The use of three different wave length for the incident light and the angular arrangement of the receivers allow the monitoring of typical scattered light distribution patterns of oil droplets and solids.

The intensity of scattered light from the sample glass tube is received by the solid state detectors. After amplification the signals converted into digital data. A microprocessor controls data acquisition, data integrity and light source intensities. The data is sent to the electronic unit for further processing. The oil content can now be calculated independently from the solids content as well as the sample turbidity. All calculated values are displayed on a LCD display.

Parallel to the above measurements, the projected light signals are monitored and in the absence of the light-beams, the alarm circuits are activated ("Monitor Fault Alarm").





Novel Concept of Oil-in-Water Monitoring

Introduction

Environmental awareness has forced the introduction of stricter discharge limits for oil emission/pollution. Therefore the accuracy requirements for measuring equipment are increasing. Natural turbidity of water, caused by solids or biological growth has always had an adverse effect on oil content measuring equipment. Continuous monitoring of the free oil content, even in waste water, now becomes possible with the new OMD-7 oil monitoring device from DECKMA HAMBURG GmbH (Germany).

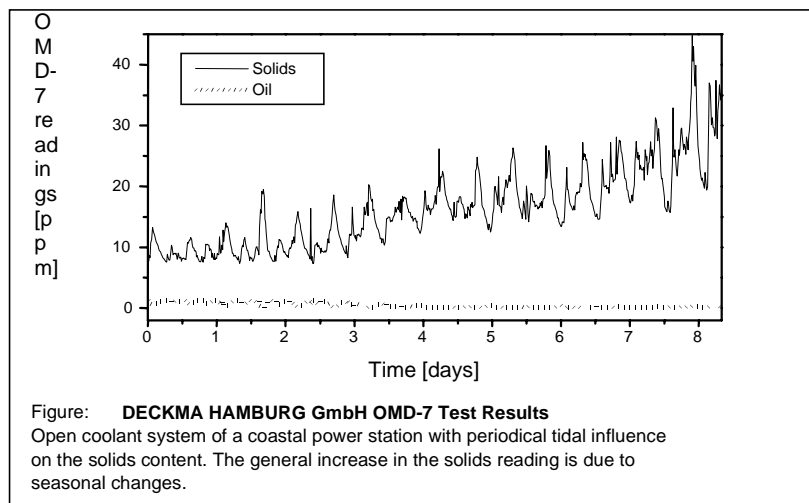
Measuring Principle

After intensive research a novel concept for oil-in-water monitoring was developed. It features a multi-angle multi-wavelength optical measurement system. The water sample is treated by a sample conditioning unit to ensure full homogenisation. The data acquired by the optical system yields different scatter patterns that allows discrimination of solids particles from oil particles in the sample stream. Natural sources of turbidity such as mud or algae does not influence the oil content measurement up to a high level of solids contamination. The turbidity of the sample is also displayed.

The sensitivity of the new measuring concept is well suited for oil separator monitoring and coolant control. Scattered light measurements could not replace laboratory analysis in all cases, but can now offer a much more accurate reaction to potential pollution risks. More important, the OMD-7 requires no hazardous chemicals, solvents or consumables so no toxic waste is produced.

A typical application for the OMD-7 is the monitoring of cooling water from a coastal power station (see fig.).

Due to tidal variations the intake water had differing levels of turbidity, but this solids content can now be discriminated from the oil content.

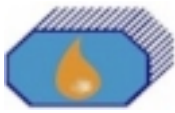


Summary

Continuous oil monitoring in waste water and many other industrial applications without using chemicals and consumables is now possible with the new OMD-7 Monitor from DECKMA HAMBURG GmbH. A high background level of solids contamination is no longer a problem with this novel measuring technique.

Due to the novel light scattering technique the OMD-7 is capable of measuring free oil, solids and turbidity in the following applications:

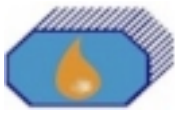
Surface Water Run-Off from Power Stations, Chemical Plants, Refineries and Petroleum Tank Farms, Boiler Condensate returns, Produced Water Discharge from Production Platforms and FPSO's, as well as Cooling Water in a variety of Industrial environments.



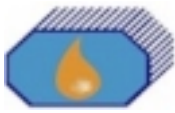
Oil-in-Water Monitoring Systems



OMD-7 System with Air Compressor and Sample Lift Pump.



OMD-7 System for hazardous area (Air-purged system)



OMD-7 Components



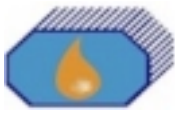
Monitor



Measuring Cell



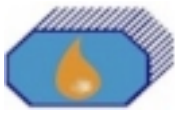
Sample Conditioning Unit



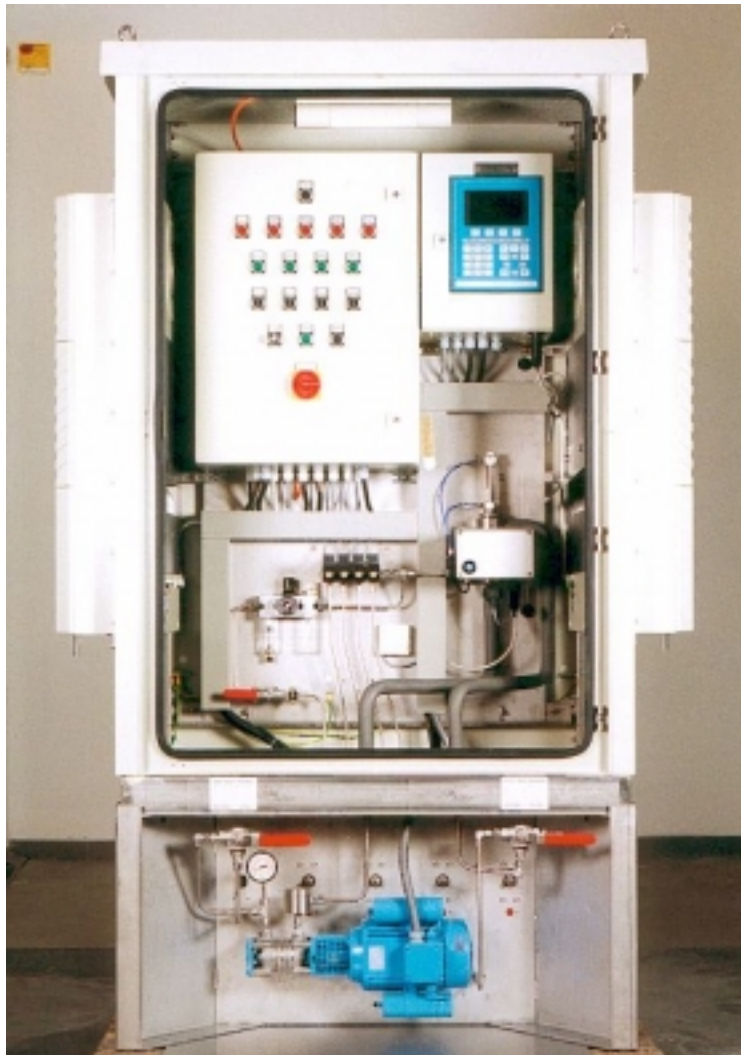
OMD-7 System (outdoor-application)



OMD-7 System (outdoor-application)



**OMD-7 System "Special" for Separator control with Air Conditioning System,
suitable for 4 sample points.**



Sample Selection Valves