

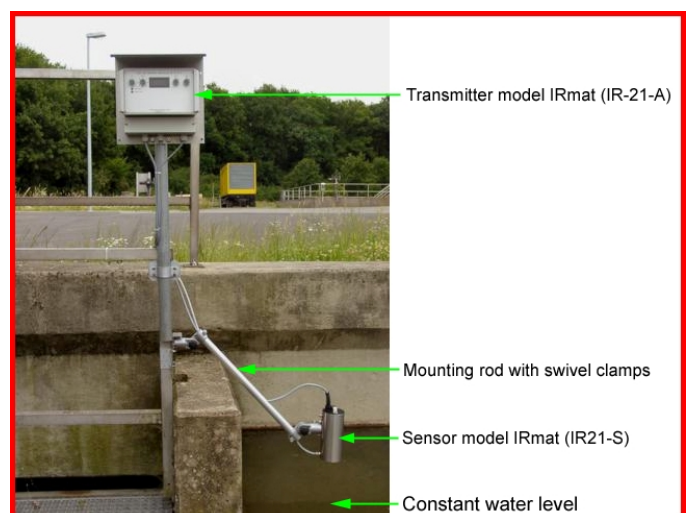
Everything all right?

## Oil on Water Monitor

### Model IRmat (IR-21)

### Non contact Oil monitoring

- Mineral Oil
- Synthetic Oil
- Food Oil
- Silicone Oil
- ....



## Oil on Water Monitor Model IRmat-S

In a variety of industries such as production facilities, power plants, sewage treatment plants, sea-, inland- or airports, represents the contamination of water with oil, problems for process and environment. The oil monitor model IRmat offers a reliable and cost-effective method for the early detection of oil in water. Even very small amounts of oil will be detected. This allows an immediate action in case of oil leakages.



- **Low Maintenance**
- **High Sensitivity**
- **Non Contact Monitoring**
- **Large Detection Area of approx. 8000mm<sup>2</sup>**
- **Automatic Self Diagnostic**
- **Application Specific 2 Point Calibration**
- **Analog Output: 4 – 20mA**
- **Set Point-, System Fail- & Sensor Fail Relays**
- **Optional Level Compensation +/- 75mm**
- **Optional Bypass Container**
- **Optional Floating Device (Pontoons)**

## Oil on Water Monitor Model IRmat

An oil film on the water surface causes a very good visibility to the human eye. This is due to the optical interferences caused by floating oil layers. The oil monitor model IRmat uses this effect and scans the water surface with modulated infrared light. The detection of the optical interferences at the oil/water borderline allows the monitoring of very low amounts of oil. The instrument allows detecting oil films starting at about 5-10 microns thickness. The detection of this thin layer is even more sensitive than the visibility by the human eye.

The sensor was developed for non- contact real time detection of oil in water and is free of maintenance. The modulation of the projected IR- light ensures for a nearly 100% DC-light compensation, so that ambient light does not affect the measured values.

### Monitoring Results

The measurement of the absolute oil amount in mg/l or ppm is not really possible, using the known inline & online measuring systems. The reasoning for this statement is, that oil is not homogeneous distributed in the water. So it often happens that there is no oil detected in a depth of 30cm, but you can see an oil film on the water surface. The systems capture only a fraction of the total water quantity, therefore it is absolutely necessary to ensure, that a monitoring system discovers any oil, which may leak into the process or environment.

Almost all types of oil or at least their components are lighter than water and therefore they float. Due to this property we can expect to get the highest oil concentration at the water surface. The surface scanning method of model IRmat uses these floating characteristic of oil to ensure that any oil leakage will be detected immediately.

### Typical use:

- **Chemical Industry**
- **Petrochemical Industry**
- **Production Plants**
- **Power Station**
- **Automotive**
- **Water Treatment**

### Typical applications:

- **Retention Basins**
- **Oil separation**
- **Water Reservoirs**
- **Operating Wastewater**
- **Cooling Water**
- **Demulsification**

## Technical Data Sensor Model IRmat-S (IR21-S)

Enclosure:	Stainless Steel (316SS / 1,4571)
Protection class:	IP65 / Nema 4x
Dimension:	Ø approx. 60 mm, length ca. 200 mm
Connection:	Cable, 7G 0,5 shielded
Temperature range:	-15°C to +45°C (ice-free)
Humidity:	85% RH

## Transmitter Modell IRmat-A



- **Microprocessor Controlled Transmitter**
- **Easy to use 4 Button Configuration**
- **4 digit 7 Segment LED. Display**
- **Measuring Range: Programmable**
- **Analog Output: 0/4 – 20mA (isolated)**
- **Programmable Set Point Relay for Oil Alarm**
- **System Fail Relay**
- **Sensor Fail Relay**
- **IP65 / Nema 4x ABS- Wall Mount Enclosure**
- **Optional IP65 / Nema 4x Stainless Steel Enclosure**

### Description:

The Model IRmat-A is a microprocessor controlled transmitter for use with the Sensor model IRmat-S. The instrument is used to supply and configure the Sensor, and for visualizing of the measuring results. A rugged ABS- field enclosure with protection class IP65 / NEMA 4X allows installation under raw environmental conditions. An optional stainless steel enclosure (316SS) or a flameproof enclosure (Ex- D IIC) with protection classes IP65 / NEMA 4X are as well available. The transmitter has an isolated 0 / 4-20mA analog output and three potential-free programmable relays for transmitting of measuring values, oil alarm and system status.

### Applications:

- Cooling Water
- Retention Basins
- Water Reservoirs
- Oil- Separators
- Produced & Returned Water
- River- & Seawater Monitoring
- etc.

### Fields of Application:

- Chemical Industry
- Petrochemical Industry
- Automotive
- Potable- / Operating Water Processing
- Power Plants
- Production Facilities
- etc.

### Technical Data Transmitter Model IRmat-A (IR21-A)

Supply Voltage:	115, 230 VAC, 50 - 60 Hz / opt. 24V AC/DC	Reproducibility:	± 2 %
Power Requirement:	maximal 30 VA	Temperature Range:	-15 °C to 45 °C
Set Point:	1 Relay programmable (24V / 1A)	Enclosure:	ABS / optional 316SS (1.4301)
System Fail Messages:	2 Relays (24V / 1A)	Protection Class:	IP65 (NEMA 4X)
Analog Output:	0/4 - 20mA isolated / 500 Ohm	Display:	4 digit / 7 segment LED

# Installation Example in open Channel / Basins

Sampling via pump and surface skimmer  
at variable water level



Swimming platform / Pontoon allows the  
oil monitoring at variable water level.

Fixed installation / Bracked installation  
for oil monitoring at constant water level

