

# FL007 Oil in Water Analyzer

## FEATURES

- Simultaneous UV fluorescence and turbidity measurement
- Ø12 mm PG 13.5 immersion probe
- Real time inline measurement
- Calibration for 16 different oil types
- Suitable for hazardous area use
- Alarm, 4-20 mA and Modbus TCP communications



The Kemtrak FL007 is a fiber optic probe based oil in water analyzer. Its state-of-the-art combined fluorescence and turbidity measurement assures reliable continuous monitoring of oil and hydrocarbon contamination in water.

Each oil has its own unique fluorescence intensity resulting from its specific PAH content. The combined fluorescence from both dissolved and dispersed oil in water is measured and correlated to the oil content. Entrained gas and solids present in the stream will not fluoresce and therefore do not affect the measurement.

Oils or hydrocarbons low in aromatic content that may not fluoresce are detected using simultaneous turbidity measurement. Operators are instantly informed of all leaks assuring a high measurement confidence.

Environmentally friendly, mercury-free LED light technology assures drift-free operation with exceptionally high precision. The immersion probe has the same dimensions as industry standard Ø12 mm PG 13.5 pH sensors, allowing a range of standard fittings and retractable probe holders to be used. Scratch-resistant sapphire optics, the absence of onboard electronics, and no moving parts make it suitable for both ordinary and hazardous area use.

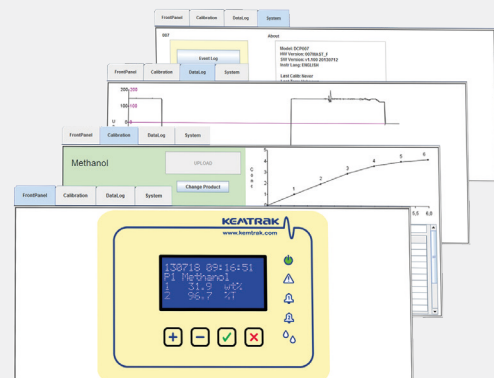


Standard features include 16 separate linearization/calibration tables for multiple product operation, remote zeroing, automatic cleaning cycle operation and advanced signal filtering. An on-board graphical internet based configuration utility allows remote operation, calibration, validation, and data trending using a standard PC.

All Kemtrak products are designed to meet the most demanding application specifications and are made from the highest quality materials to ensure exceptionally long life and the highest reliability.

## TYPICAL APPLICATIONS:

- Trace oil in water
- Leak detection
- Cooling water & condensate return
- Drinking water
- Wastewater monitoring
- Environmental monitoring



# FL007 Oil in Water Analyzer

DISTRIBUTOR

**CellD SARL**

+33 4 66 82 82 60

[www.celld.com](http://www.celld.com)

[avs@celld.com](mailto:avs@celld.com)



## TECHNICAL DATA

### HOUSING

Stainless steel EN 1.4301 (X5CrNi18-10), AISI 304 (V2A)  
 Cam lock with double bit insert & external mounting brackets  
 224 x 215 x 125 mm (L x W x D)  
 IP 65 / EN 60529

### DISPLAY

16 x 4 alphanumeric white on blue dot matrix LCD display  
 LED background illuminated  
 Measurement updates every second  
 LED 1 (green): Power on  
 LED 2 (red): System fault  
 LED 3 & 4 (orange): Alarm 1 & Alarm 2  
 LED 5 (blue): Clean / Hold

### OPERATION

Menu based with 4 operator buttons  
 Remote HTML/Java interface (TCP/IP connection via Ethernet port)

### SOFTWARE FEATURES

Auto gain: Fully automatic signal gain controller  
 Auto zero: Automatically, locally or remotely activated zero  
 Calibration: 16 linearization tables for concentration & mA output  
 Damping: From 0 to 9999 s with noise (air bubble / particle) filter  
 Memory: Nonvolatile - all data retained upon power failure  
 Security: Alphanumeric password protection

### DATA LOGGER

>17 000 data points (timestamp, average, max. & min.), ring buffer  
 Configurable log time interval 1 s to 24 hr

### EVENT LOGGER

>16 000 events, ring buffer  
 Timestamp, alarms, zeroing, cleaning, product change, calibration & system events (power, system warning & error messages)

### AUTOMATIC CLEANING CONTROL

Automatic cleaning sequence, triggering dedicated relay output  
 Manual trigger or external trigger via digital input  
 Configurable automatic cleaning interval, 15 min to 2 months  
 Configurable cleaning duration from 0 to 9999 s  
 Auto-zero after clean option  
 Hold value during clean 0 to 9999 s  
 Hold value after clean (to equilibrate) 0 to 9999 s

### PID CONTROLLER

Control method: Pulse width modulated relay output or 0/4-20mA output  
 Control period: 2 - 99 s  
 Proportional gain: 0.0000 - 999999  
 Integral time: 0.0000 - 999999 s  
 Derivative time: 0.0000 - 999999 s

### REMOTE INPUT

5 x Digital input (potential free contact) for:  
 Input 1-3: Product/range selection  
 Input 4: Zero, instant zero, clean or clean & Zero  
 Input 5: Hold (freeze output), data log or light source control

### LIGHT SOURCE

High performance UV light emitting diodes (LEDs)  
 Typical lamp lifetime >10 000 hrs

## FLUORESCENCE

Measuring principle: UV fluorescence  
 Excitation: 280 nm  
 Detection: 360 nm  
 Nominal Range: 0 - 5000 µg/L PAH<sub>phe</sub>  
 ca. 0 - 200 ppm oil in water\*  
 Detection limit: 1 µg/L PAH<sub>phe</sub>

## TURBIDITY

Measuring principle: Backscatter turbidity  
 Nominal Range: 0 - 10 000 FTU  
 ca. 0 - 20 000 ppm oil in water\*  
 Resolution: Typically < ± 0.5 FTU

\* Oil in water response is dependent on oil type  
 Up to 16 oils can be customer calibrated

## ACCURACY

Typically < ± 2% of reading

## mA OUTPUT

1 x selectable 0 - 20 mA / 4 - 20 mA  
 NAMUR NE43 compliant  
 Galvanically isolated, 500 VDC  
 Accuracy: < 0.1 %  
 Resolution: 0.025 %  
 Load: 0 - 600 Ohm

## RELAY OUTPUTS

1 x 1 A 240 VAC Failsafe output (active when system is ok)  
 2 x 1 A 240 VAC User configurable (alarm, PID)  
 1 x 1 A 240 VAC Automatic cleaning control  
 Fuses: 4 x 1 A (type: MXT), max 100 A breaking capacity  
 LED status indicators flash when relays are active

## FAIL-SAFE

Dedicated relay output, 1 A 240 VAC  
 mA output value used to signal a system fault  
 mA outputs compliant to NAMUR NE43

## NETWORK INTERFACE (REMOTE COMMUNICATIONS)

TCP/IP, 10Base-T and 100Base-TX Link  
 Connector: RJ45  
 Protocol:  
 1. HTML interface using native protocol over TCP/IP  
 Java® version 8 update 202 or later required  
 2. MODBUS slave over TCP/IP (V1.1b3 compliant)  
 Functions: (0x03, 0x04, 0x2B/0x0E - conformity 0x01)

## OPERATING CONDITIONS

Ambient temperature: 0 °C to +50 °C (32 °F to 122 °F)  
 Transport: -20 °C to +70 °C (-4 °F to 158 °F)

## POWER SUPPLY

100 - 240 VAC, 50-60 Hz & 22 - 30 VAC/VDC  
 Mains fuse: 1A (type MST), Max breaking capacity 35A

## POWER CONSUMPTION

25 VA (max.)

## CERTIFICATES

CE & RoHS compliant

## PROCESS MEASUREMENT PROBE

### PROCESS CONNECTION

Compatible with industrial pH sensor dimensions  
 DIN 19263:2007-05, Ø12 mm, PG13.5.  
 Standard probe length 120±2 mm, 225 mm, 325 mm & 425 mm  
 Custom lengths available on request

### MATERIALS

Wetted surfaces in Stainless EN 1.4435 (316L) or Hastelloy C-22

### WINDOW

Sapphire

### SURFACE FINISH

Ra < 0.38 µm (polished)

### ELASTOMERS

FPM (FKM/Viton®, FDA), FFKM (Chemraz®/Kalrez®, FDA), EPDM (FDA)

### OPERATING CONDITIONS

Ambient & process temperatures up to 200 °C (392 °F)  
 Process pressure from 10 mbar to 50 bar (0,14 - 725 psi)  
 Operating conditions subject to material and design in use

### FIBER OPTIC CABLE

Silica core photonic fiber with Kevlar® reinforced flexible LZSH coated stainless steel jacket.  
 Fully-interlocked stainless steel conduit for use above 85 °C (185 °F).  
 Terminated with SMA 905 connectors.  
 Lengths up to 5 m (16 foot)

### PROTECTION

IP66 / EN 60529

Kemtrak is the leading manufacturer of high performance LED based industrial photometers and automation products for the process engineering industry.

Kemtrak provides tailor made solutions to meet the needs of a wide range of industries including chemical, petrochemical & offshore, biotech, pharmaceutical, food & beverage, pulp and paper and water & environment.

Kemtrak has trained representatives and support personnel globally and is certified according to ISO 9001:2015.