Benefits:

- UV fluorescence measurement of trace oil in water
- Real time in-line measurement
- Precision fiber optics
- Calibration for 16 different oil types
- Suitable for hazardous area use
- Alarm, 4-20mA and Modbus communications

The Kemtrak FL007 analyzer is a new generation fiber optic probe based oil in water monitor. A state-of-the-art fluorescence measurement technique assures reliable continuous trace monitoring of oil and hydrocarbon contamination in water.

Mineral oils rich in aromatic content will fluoresce when illuminated with ultraviolet light. The intensity of this fluorescence is dependent upon the polyaromatic hydrocarbon (PAH) content of the oil. Typical oils that fluoresce include fuel oil, crude oil, hydraulic oil and transformer oil. 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 can be measured and correlated to oil content.

Typical Applications:

- Leak detection
- Cooling water
- Condensate return
- Drinking water
- Wastewater monitoring
- Environmental protection

Standard features include 16 linearization tables for multiple product switching, remote zeroing, automatic cleaning cycle and signal filtering. The robust industrial fiber optic probe with scratch resistant sapphire optics, no electronics and no moving parts are well suited for both ordinary and hazardous area installation. A built-in graphical internet based interface allows remote operation, calibration, validation and data trending using a standard web browser.

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 possible.

Entrained solids and gas present in the process stream will not fluoresce and therefore will not affect the measurement, eliminating the risk of false alarms.

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.
Housing
Stainless steel (EN 1.4301 (X5CrNi18-10), AB 304 (V2A))
Capillary glass screen & external mounting bracket stainless steel
224 x 215 x 125 mm (L x W x H)
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
4 push buttons
Remote HTML/Java interface (TCP/IP connection via Ethernet port)

Software Features:
- Auto gain: Fully automatic photometer gain switching
- Auto zero: Automatically, locally, or remotely activated zero
- Calibration: 16 linearization tables for concentration & MA output
- Damping: From 0 to 99999 with noise (air bubble / particle) filter
- Memory: Nonvolatile - all data retained upon power failure
- Security: Alphanumeric password protection

Data Logger
- >17000 data points (timestamp, average, max. & min.), ring buffer
- Configurable log time interval from 1 to 24h

Event Logger
- >16000 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 99999
- Autozero after clean option
- Hold value after clean (to equilibrate) 0 to 99999

PID Controller
Control method: Proportional-width modulated relay output or 0-20mA output
Control period: 2 to 99.9s
Proportional gain: 0.0000 - 999999
Integral time: 0.0000 - 999999
Derivative time: 0.0000 - 999999

Remote Input
5 x Digital input (potential-free contact) for:
- Input 1-2: Product/Range selection
- Input 4: Zero, instant zero, clean or clean & Zero
- Input 5: Hold (freeze output), data log control or light source control

Light Source
High performance pulsed Xenon UV light source
Typical lamp lifetime:
> 10 000 hrs

Fluorescence
Measuring principle: UV fluorescence
Nominal range: 0 - 100 ppm oil in water
Resolution: 0.01 FLU

Linear:
10.5% of respective measuring range

Accuracy:
Typically ±0.5% of reading

mA Output
x 1 selectable (0 - 20mA / 4 - 20mA [NAMUR, max 21.6mA])
Optional second mA output

Relay Outputs
2 x 1 A 240 VAC AC relays 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

Network Interface
TCP/IP, 10Base-T and 100Base-TX Link

Power Supply
100-240 VAC, 50-60Hz, & 22-30 VAC/VDC

Power Consumption
25 VA (max.)

Protection
IP 65 / EN 60529

Process Connection
Compatible with industrial pH sensor dimensions
DIN 19263/200/20, Ø12 mm, PG 13.5
Standard probe length: 205, 225, 255, 325 & 425 mm
Custom lengths available on request

Materials
Stainless Steel EN 1.4435 / 316L or Hastelloy C-27

Surface Finish
Ra < 0.38 μm (electropolishing available on hygienic measurement cells)

elasticators
PFA (FKM, Viton®), EPDM (FDA), FFKM (Kalrez® Spectrum 6375)

Operating Conditions
Ambient & process temperatures up to 75°C (167°F)
Process pressure from 10 mbar to 100 bar (0.14 - 1450 psi)
Operating conditions subject to material and design in use

Fibre Optical cable
Silica core photonic fiber with Kevlar® reinforced flexible LSH2 coated stainless steel jacket
Fully-sealed photonic fiber cable for use above 85°C (185°F)
Terminated with SMA 905 connectors.
Lengths up to 10 m (33ft)

Kemtrac is a leading manufacturer of fiber optic measuring and automation products for the process engineering industry. The company provides tailor-made solutions to meet specific needs of industries including chemical, petrochemical & offshore, pharmaceutical, food & beverage, pulp and paper and water & environment. With its headquarters in Stockholm Sweden, Kemtrac has trained representatives and support personnel globally. The main manufacturing facility in Gothenburg, Sweden is certified according to ISO 9001:2008.