Suspended Solids Control

Kemtrak NBP007

Main features:

- **0.0005% (10 NTU) to >60% suspended solids**
- **Real time, in-line measurement**
- **Robust hygienic TriClamp probe design**
- **Basckscatter NIR measurement technology**
- **Display in NTU, FTU, ppm, mg/l, g/l or %**
- **4-20 mA current output**
- **Alarm signals for data and system failures**
- **Data and event log for quality control**

The Kemtrak NBP007 revolutionizes the measurement of high concentration suspended solids by utilizing a proprietary backscatter NIR measurement technology. This technology is particularly applicable to applications in the dairy as it can accurately measure up to and exceeding 60% milk fat concentration.

Traditional turbidity based optical measurement instruments lack resolution and stop working at approximately 1% suspended solids due to the extremely high optical density. This limitation is overcome with the NBP007 and for the first time the operator can monitor and have complete control over their process.

KEMTRAK

Interested in cost reduction & improved product quality?

- **interface detection**
  product-water, product-product
- **reduce set-up times**
  Our customers report massive reduction in separator start-up times
- **prevent product loss**
  Avoid phase inversion by accurately monitoring changes leading up to this
- **product differentiation**
  Measure minute variations between products and grades of product
- **product damage**
  Measure minute changes resulting from pumping & other sources of shear
- **monitor, control & optimize CIP cycles**
- **milk fat & solids measurement**
- **leak detection**
- **detect transition points**
- **reduce waste & wastewater costs**
- **increase product consistency**

A wide range of applications exit for in-line analysis, control and optimization using Kemtrak process photometers and turbidimeters.

By knowing exactly what is happening at all times, process changes can be quickly implemented that result in substantial cost savings.

The Kemtrak NBP007 utilizes a robust hygienic TriClamp process connection that is designed to withstand the temperatures, pressures and chemicals present in CIP cycles. Fiber optics are used to pipe light to the measurement point and back and the measurement probe contains no electronics or serviceable parts. The TriClamp measurement probe is suitable for all pipe diameters from DN25 / 1" using a suitable pipe bend adapter.

All Kemtrak's products are made from the highest quality materials and are designed to the most demanding specifications to ensure long life and extremely low maintenance.

Technical Data

Measurement Principle
Proprietary NIR backscatter photometric technique

Measurement Range
LOW 0.0005% (ca. 20NTU) - 10% total suspended solids
HIGH 0.001% - >60% total suspended solids
Measurement range is factory configured

In-line Hygienic Fiber Optic Measurement Probe

Process connection:	Tri-Clamp® (ISO 2852 & DIN 32676)
Line size:	DN25 (1") and above
Material:	Stainless steel EN 1.4435 (316L)
Surface Finish:	Ra < 0.4 µm
Temperature:	130°C (266°F) (process & ambient)
Process Pressure:	10 mbar to 10 bar
Cable length:	5m standard
	other lengths available on request

Light Source
High performance near infra-red (NIR) light emitting diode
Typical NIR lamp lifetime: >100 000 hrs

Control Unit Housing
Glass-fibre reinforced polyester & polyester front panel
Captive lid screws & wall mounting brackets stainless steel
220 x 120 x 90 mm (8.66 x 4.72 x 3.54 inch) L x W x D
IP 65 / EN 60529

Display
16 x 2 alphanumeric dot matrix LCD display
LED background illuminated

Display update:	0.5 seconds
Display units:	NTU, FTU, ppm, mg/l, g/l, EBC or %.
	User configurable
LED 1 (green):	power on
LED 2 (red):	alarm
LED 3 (red):	clean

Operation
4 push buttons

Software Features:

• Auto gain:	Gain switching is fully software controlled
• Calibration:	Concentration & mA output
• Damping:	from 0 to 9999s with noise (air bubble / particle) filter
• Memory:	Non volatile - configuration and data retained upon power failure
• Security:	Alphanumeric password protection
• Clean:	Automatic cleaning control
• PID:	Input PID controller - Pulse width modulated relay output or 0/4-20mA output

Data Logger
- 6 900 data points (timestamp, average, max. & min.), ring buffer
- Configurable log time interval 1s to 24hr

Event Logger
- 10 000 events
- Alarms, zeroing, cleaning, calibration & system events (power, system failures, high/low system temperature)

Remote Input
1 x Digital input (potential free contact) for:
- Auto clean
- Hold output

mA Output
1 x 0/4 - 20 mA galvanically isolated

Accuracy:	<0.2%
Resolution:	< 0.05%
Load:	0 - 400 Ohm

Relay Outputs
2 x 0.5A 240VAC User configurable (alarm, PID, system fault)
1 x 0.5A 240VAC Automatic cleaning control
PTC resistor fuses in series with the relays
LED status indicators flash when relays are active

Fail-Safe:
Relay output & 0/4-20mA value

PC Communications
USB (mini-USB connector)

Power Supply
115/230V AC selectable, 50-60Hz, 1A

Power Consumption
25 VA (max.)

Control Unit Operating Conditions

Ambient temperature:	-10°C to +50°C (14°F to 122°F)
Transport:	-20°C to +70°C (-4°F to 158°F)

Certificates
CE, ISO 9001:2000,

KEMTRAK
www.kemtrak.com

Kemtrak AB • Box 2940 • SE-187 29 Stockholm • Sweden
Info@kemtrak.com • www.kemtrak.com

Distributor

Kemtrak is a leading manufacturer of fiber optic measuring and automation products for the process engineering industry. The Company provides tailor made solutions to meet the needs of a wide range of industries including pulp and paper, food & beverages, chemical, petrochemical, pharmaceutical and water & environment. With its headquarters in Stockholm, Sweden, Kemtrak has distributors in 20 countries around the world. The main manufacturing facility in Gothenburg, Sweden is certified according to ISO 9001:2000.