

# Milk Fat Control

## Over 60% milk fat concentration!

### Kemtrak NBP007

#### Main features:

- 0.0005 to >60% suspended solids measurement (milk fat)
- Real time, in-line measurement
- Robust hygienic TriClamp probe design
- Patented NIR Measurement technique
- 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 NIR backscatter photometer utilizes a revolutionary new and patented measurement technology that can measure extremely high suspended solids concentrations. This technology is particularly applicable to dairy applications as it can accurately measure up to 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 dairy processes.



## 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 exist throughout the dairy process for in-line analysis, control and optimization using Kemtrak process photometers.

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.



**Measurement Principle**

Patented 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.



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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.*

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