

DCP007 Process Photometer



Benefits:

- Real time in-line measurement
- Zero maintenance measurement cells & fiber optics
- Long life LED lamps
- Lamps/wavelength easy to change

The Kemtrak DCP007 is an easy to operate industrial UV-VIS-NIR fiber optic photometer designed to accurately measure the concentration and color of process samples. Measurements are real time and in-line.

The Kemtrak DCP007 uses long life high performance LED lamps and precision fiber optics to provide drift and noise-free measurement with very high precision.

A proprietary dual wavelength four channel measurement technique and advanced digital electronics design allows deep absorbance measurement to 6 AU. A range of shorter optical path-lengths allow for deeper absorbance measurements.

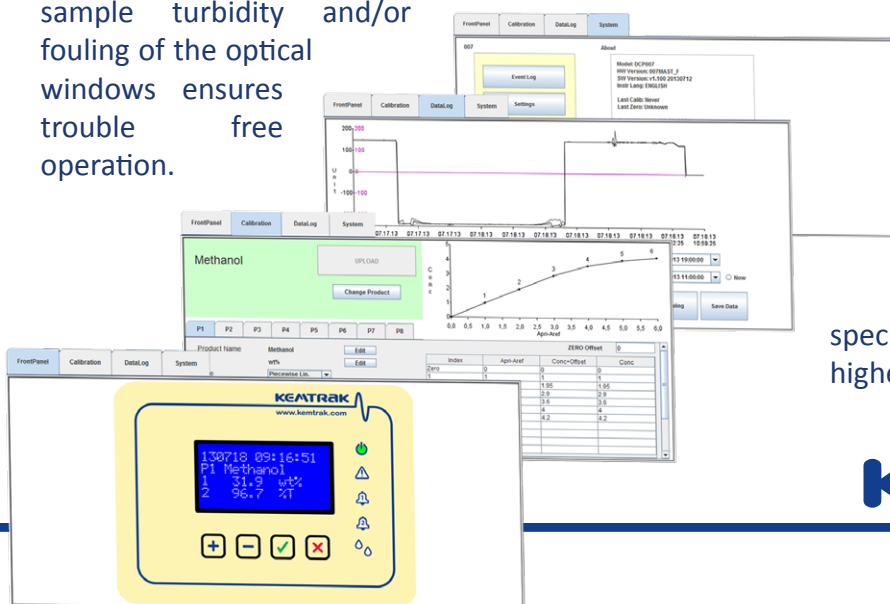
Automatic compensation for sample turbidity and/or fouling of the optical windows ensures trouble free operation.



Maintenance free measurement cells with sapphire windows have no electronics or moving parts making the unit suitable for hazardous area use.

Standard features include multiple product switching, remote zeroing and signal damping. A graphical internet based interface allows remote operation, calibration, validation and data trending using a standard web browser eliminating the need to install software.

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



KEATRak

Housing

Stainless steel EN 1.4301 (X5CrNi18-10), AISI 304 (V2A)
 Captive lid screws & external mounting brackets stainless steel
 224 x 215 x 105 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

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: 8 Products, Concentration & mA output
- Damping: From 0 to 9999s with noise (air bubble / particle) filter
- Memory: Nonvolatile - all data retained upon power failure
- Security: Alphanumeric password protection

Data Logger

- >23 000 data points (timestamp, average, max. & min.), ring buffer
- Configurable log time interval 1s to 24hr

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, 15min to 24hr
- Configurable cleaning duration from 0 to 9999s
- Auto-zero after clean option
- Hold value after clean (to equilibrate) 0 to 9999s

PID Controller

Control method: Pulse width modulated relay output or 0/4-20mA output
 Control period: 2 - 99s
 Proportional gain: 0.0000 - 999 999
 Integral time: 0.0000 - 999 999s
 Derivative time: 0.0000 - 999 999s

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) or Data log control

Temperature Input (optional)

3-wire PT100 input.
 Range: -20 to 200°C (-4 to 392°F)
 Resolution: 0.07°C (0.126°F)

Light Source

High performance light emitting diode (LED)
 Wavelength range: 255 - 1 550nm
 Full Width-Half Maximum (FWHM): 10 nm
 Central Wavelength (CWL) Accuracy: ±1nm
 Typical lamp lifetime >100 000 hrs
 Note: Measurement wavelengths must be factory installed.
 Typical specifications provided for 500nm

Photometric Range

At 500nm, 10mm OPL: 0.000 - 6 AU

Photometric Accuracy

At 1AU : ±0.001 AU
 At 2AU : ±0.005 AU

Photometric Noise

At 1AU, 25°C, 500nm: ±0.0001 AU

Linearity

±0.5% of respective measuring range

mA Output

1 x selectable 0 – 20 mA / 4 - 20 mA (NAMUR, max 21.6mA)
 Optional second mA output
 Galvanically isolated, tested during final inspection to 500 VDC
 Accuracy: < 0.1 %
 Resolution: 0.025 %
 Load: 0 – 600 Ohm

Relay Outputs

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

Fail-Safe:

Dedicated relay output, 1A 240 VAC
 mA output value used to signal a system fault (NAMUR <3.6mA or >21.0 mA)

Network interface (remote communications):

TCP/IP, 10Base-T and 100Base-TX Link
 HTML/Java interface using native protocol over TCP/IP
 Connector: RJ45
 Software: Web browser with Java version 6 or later

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 - 240V AC, 50-60Hz, 1A
 Mains fuse: 1A (type MST), Max breaking capacity 35A

Power Consumption

25 VA (max.)

Certificates

ISO 9001:2000, CE, ATEX Exd IIB + H2 T6 IP66 Category 2 G (option)

Manifolds

Standard designs include DIN Flange (DIN EN 1092-1), ANSI (ANSI B 16.5 and B53293) Tri-Clamp® (ISO 2852 & DIN 32676), Straight pipe thread (DIN ISO 228 BSP), NPT tapered pipe thread. Line size up to DN100.

Materials

Standard material stainless steel 316L (EN 1.4435 or EN 1.4404)
 Other materials include Titanium Gr 2, Hastelloy C-276 & C-22, Monel 400, PTFE C25 (TFMC, carbon filled Teflon) & PVDF (Kynar)

Window

Sapphire, UV Fused silica

Surface Finish

Ra < 0.4 µm (on hygienic measurement cells)

Elastomers

FPM (FKM, Viton®, Fluorel®), EPDM (FDA), NBR (nitrile), Silicone, FFKM (Kalrez® Spectrum 6375, Kalrez® 6230 FDA) and others

Operating Conditions

Ambient & process temperatures up to 250°C (482°F)
 Process pressure from 10 mbar to 200 bar (0,14 – 2900 psi)
 Operating conditions subject to material and design in use
 Higher temperatures available on request.

Fibre Optic cable

Silica core photonic fiber with fully-interlocked flexible stainless steel jacket and Kevlar® reinforcement.
 Terminated with SMA 905 connectors.
 Lengths up to 100m (328 foot)

Operating Temperature

Normal: -60°C to +125°C (-76°F to +257°F), Autoclave.
 Higher temperature option: -60°C to 250°C (-76°F to +482°F)

Protection

IP66 / EN 60529



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

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Distributor



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