

Complete Colour & Concentration Control

DCP007 - the clear choice if you want maintenance free operation and long term calibration stability.

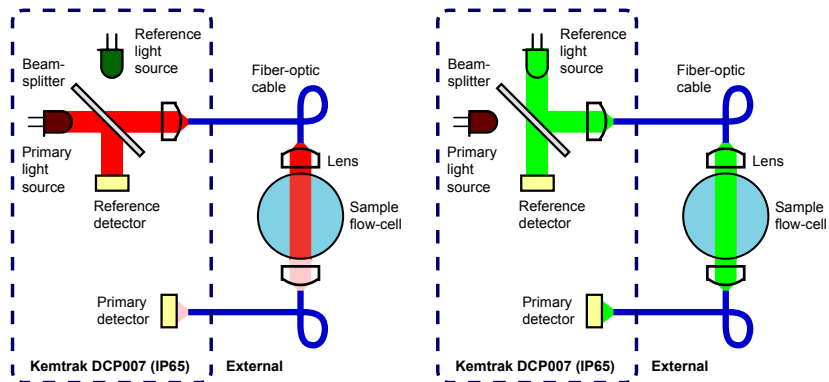


Advanced measurement tool

The Kemtrak DCP007 is an advanced dual wavelength photometer designed to accurately measure the concentration of light absorbing chemicals from 250 to 2500 nm (UV-VIS-IR).

A primary "absorbing" wavelength measures changes in the process medium, while a second reference wavelength, that is not absorbed by the process medium, compensates for turbidity and/or fouling of the optical windows. A reference detector is also used to compensate for changes in the primary light brought about by aging or ambient temperature changes. The resulting measurements are accurate with low drift and long-term calibration stability.

Advanced dual channel UV-VIS-IR absorption sensor with primary and lamp reference detection. Absorbing and non-absorbing wavelengths measure alternatively (10Hz).



Hazard protection

Optic fibers are utilized to pipe the light from within the DCP007 enclosure to the sampling point and back. This is a major benefit as all the electricity is kept within the analyzer enclosure permitting safe operation in even the most hazardous of environments.

An additional benefit is that the light source is "cold" and does not affect the sample.



DN25, ISO DN 25 TriClamp &
ISO DN 51 TriClamp flowcell

User friendly

The DCP007 has an easy to use menu based software with a user configurable display that shows absorbance, transmittance or concentration in real time, in any unit of measure e.g. CU, ppm, g/L. Additionally, the DCP007 has a database and event handler to capture vital process information for use in quality assurance and plant control reports. All data is easily transferable to a PC via a USB interface.

The DCP007 provides relay and analogue outputs, alarms, external cleaning control in addition to a PID regulator using either a pulse modulated relay or analogue (4-20mA) output. Remote process control capabilities include remote zero, remote clean and hold.

KEATRAK

Our optic fibres are available in lengths up to 50m and are well suited for harsh industrial environments. Standard fibers have a silicone-coated steel jacketing and can withstand temperatures up to 250 °C. A range of flowcell manifolds are also available for virtually any application and environment. All our flowcells can be ATEX-certified upon request.

Main features:

- Real time in-line measurement from 250 – 2500nm (UV-VIS-IR)
- Zero maintenance
- Extensive range of sensor design and materials
- Simple menu based interface
- Readings in CU, ppm, g/L or user defined
- Data & system event logger for quality control
- Integrated PID controller
- Alarm signals for data and system failures
- Remote process control functions



KEMTRAK

Typical Applications

Food & Beverage

Colour monitoring (beer, spirits, soft drinks), blending & dilution control (flavour, essence and colour dosing), centrifuge and filtration control (brew house, dairy, food processing, wineries), syrup concentration, extractor monitoring, ion exchange monitoring, trace sugar in condensate (fruit juice processing), post resin bed colour monitoring, heat exchanger leak detection in condensate, process & effluent water monitoring (BOD/COD, colour, trace organics), product quality control.

Chemical

Chemical concentration (cadmium, chlorine, chlorine dioxide, chromium, cobalt, copper, nickel), fuel colour, detection of oil/water interface, heat exchanger leak detection, concentration of colourants (textiles), effluent water monitoring (trace aromatic/organic contamination, colour).

Pulp & Paper

Chlorine dioxide in bleaching solutions and exhaust gas, ozone, process & effluent water monitoring (colour), BOD/COD.

Water & Environment

BOD/COD, chlorine dioxide, chlorine/hypochlorite disinfection, trace aromatics/organics, ozone residuals, raw water colour.

Housing

Glass-fibre reinforced polyester (polyester front panel)
Captive lid screws & external mounting brackets stainless steel
220 x 120 x 90 mm (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
LED 1 (green): power on
LED 2 (red): alarm
LED 3 (red): clean

Operation

4 push buttons

Software Features:

- Auto zero: locally or remotely activated zero
- Calibration: concentration & mA output
- Damping: from 0 to 999s with spike (air bubble) rejection filter
- Memory: Non volatile - configuration and logged data retained upon power failure

Data Logger

- 10 000 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, temperature)

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
- Freeze value after clean (to equilibrate) 0 to 9999s

PID Controller

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

Light Source

High performance light emitting diode (LED)
Wavelength range: 350-2500nm
Full Width-Half Maximum (FWHM): 2nm
Central Wavelength (CWL) Accuracy: ±1nm
Typical lamp lifetime 350-400nm: >10 000 hrs
>400nm: >100 000 hrs

*Note: Measurement wavelengths must be factory installed.
Typical specifications provided for 500nm*

Photodetector

Silicon photodiode (UV-VIS)
InGaAs photodiode (NIR)

Photometric Range

At 500nm, 10mm OPL: 0 - 3 AU

Photometric Accuracy

At 1AU (NIST 930D filter): ±0.001 AU
At 2AU (NIST 1930D filter): ±0.005 AU

Photometric Noise

At 500nm (RMS): ±0.0001 AU

Repeatability

< ±0.05% of respective measuring range

Accuracy

< ±0.5% of respective measuring range

Linearity

< ±1% of respective measuring range (application specific)

Remote Inputs

1 x Digital input (potential free contact) for:
• Auto clean
• Zero
• Freeze 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 0.2A 240VAC User configurable (alarm, PID, system fault)
1 x 0.7A 240VAC Automatic cleaning control
PTC resistor fuses protect short circuit
LED status indicators flash when relays are active

Fail-Safe:

Relay output & 0/4-20mA value

PC Communications

USB (mini-USB connector)

Operating Conditions

Ambient temperature: -10°C to +50°C
Transport: -20°C to +70°C

Power Supply

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

Power Consumption

25 VA (max.)

Certificates

ISO 9001:2000, CE

Manifolds

Standard designs include DIN Flange (DIN 2633), Tri-Clamp (ISO 2852-1993E), Straight Pipe Thread (DIN ISO 228 BSP). Line size up to DN100.

Materials

Wide selection available - including 316 Stainless Steel, TFMC (carbon-filled Teflon®), Kynar®, PEEK, PCTFE, Monel®, Hastelloy C®, Titanium

Window

Quartz & sapphire glass

Elastomers

Viton® EPDM, Kalrez®, NBR, Fluoraz 797®, Silicone, and others

Operating Conditions

Ambient & process temperatures up to 200°C
Process pressure from 10 mbar to 150 bar
Operating conditions subject to material and designs in use

Fibre Optic cable

Stainless steel monocoil or Kevlar reinforced PVC for strain relief and protection. Terminated with SMA 905 connectors 5m (standard) to 50m (max.), Up to 200°C max. operating temperature depending upon configuration.

Protection

IP66 / EN 60529, ATEX (option)



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*We reserve the right to make changes
without previous notice*

