

Field Showcase

Solvent strength control, bio-medical material treatment

Client: Optimal Technologies
Location: Hertfordshire, UK
Application: Nitric & Citric Acid in Bio-Medical Treatment
Solution: DensiCheckTX

In the process of manufacturing artificial hip and knee joints, the metalwork is passivized using certain acid solutions. Optimal Technologies have used the DensiCheckTX over the years for measuring nitric acid strength, and controlling the solvent ratio as necessary.

However changes in the industry mean that citric acid has become ever more popular, as it has a broader set of applications. Citric acid strength has traditionally been measured using capacitance sensors. What makes the DensiCheckTX so versatile, is the ability to store two sets of calibration ranges in just the one instrument.

So just one instrument can be used for dual-liquid measurement, hence consolidating the requirement for two or more liquid concentration sensors. The DensiCheck is suitable for many industrial/pharma applications including hydrogen peroxide, sodium hydroxide, sulphuric acid, ammonium hydroxide and sodium chloride



Medical Implant Processing unit, by Optimal Technologies

OPTIMAL
TECHNOLOGIES

Client Profile:

Optimal Technologies is a specialist supplier of process systems for biomedical applications. These include medical implant preparation, precision optics cleaning and lens coating.

Optimal Technologies & Rototherm Canongate

Canongate and Optimal Technologies have enjoyed a long working partnership. What's important to Optimal Technologies is that they have faith in the instruments. We take pride in the fact, that as the experts, we have helped solve a problem that would otherwise be a significant headache in an already complex mechatronic design process.

One instrument, two functions...

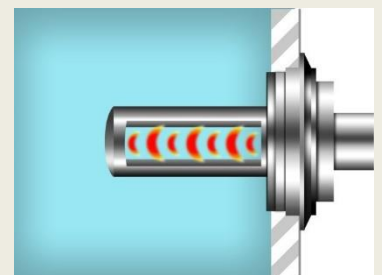
- The two calibration ranges are selected in the DTx Setup software. (E.g. Cal1 = Nitric Acid, Cal2 = Citric Acid)
- A switch (manual or PLC operated) is setup to differentiate between when the Nitric and Citric Acid is in the line
- This switch is linked to the DensiCheckTX digital input channel, which initiates the change of calibration data.

Product Overview:

DensiCheck TX is an innovative solution for measuring in-line concentration, of two separate solutions with the one instrument. This makes the DensiCheck an economic sensing solution for such cases where several media are passed through on line.

Key Features & Benefits:

- ▶ Non-invasive and invasive
- ▶ High accuracy and repeatability
- ▶ ATEX Hazardous area approval
- ▶ No moving parts
- ▶ High reliability
- ▶ Low ownership costs
- ▶ Increased process efficiency
- ▶ Improved quality monitoring
- ▶ Rapid payback of investment



DensiCheck – General Specification

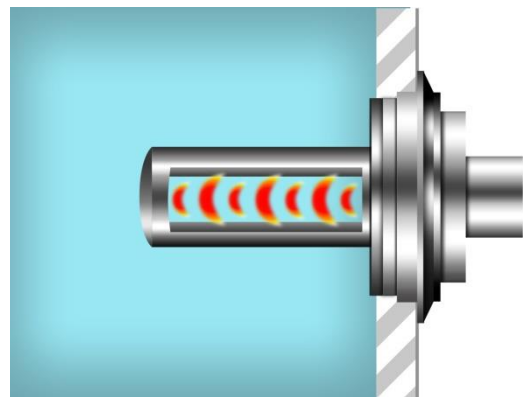
Rating:	IP65
Accuracy:	Typically +/- 0.1% (product dependant)
Repeatability:	+/- 0.01 m/s, +/- 0.02°C
Response Time:	< 1 second
Update:	Every 2 seconds
Stability:	No drift
Calibrations:	Two
Supply:	24Vdc, 250mA
Output:	0..5V or 4..20mA (Active) Maximum – Loop resistance 500 Ω Non-isolated Two digital for hi/lo alarm open collector
Input:	One digital for flow indication
Electronics Approval:	⊕ II 2G EExd II B T5 (-20°C ≤ Ta ≤ 60°C) DEMC: 03 ATEX 135596X
Serial Communications:	RS485, Modbus RTU / ASCII CCOM2

Ultrasonic Transducer

Rating:	⊕ II 2G Exmb II CT5 GB (-20°C ≤ Ta ≤ 60°C)
Temperature:	-10 to +110°C (continuous) (14°C to 230°F) 150°C (5 min intermittently) (320°F)

Process Connections:

- ▼ Non-invasive strap-on / Min. dia 50mm (2")
- ▼ Varivent – Probe depth 63 mm
- ▼ Tri-clamp (2 1/2") – probe depth 81mm
- ▼ Flanged (2 1/2") – Probe depth 133mm
- ▼ DIN 50 – Probe depth 63mm



Product Identification Code

