

In-Line Measurement

DensiCheck TX

In-line liquid concentration transmitter

General Description

DensiCheck TX is a cost effective solution for monitoring the liquid concentration and density in a wide variety of applications. An in-line sensor and integral transmitter, the DensiCheck TX provides a continuous output of concentration to enable processes to be automated and optimised. The result – reduced labour, improved quality of process and lower running costs. Approved for ATEX installation.

On corrosive, toxic or hygienic applications where a non-invasive instrument is required, Rototherm Canongate can design a customised solution. These sensors are typically fitted on a flanged or spool piece with a remote connection to the electronics.



Applications

DensiCheck TX is being used in many different industries to measure the concentration of numerous different liquids:

Food and Beverage

- ▼ Beer
- ▼ Wort
- ▼ Ethanol (Alcohol)
- ▼ Sucrose
- ▼ Soft Drinks

Industrial Processes

- ▼ Acids
- ▼ Chlorides
- ▼ Sodium Hydroxide
- ▼ Acetone
- ▼ Isopropyl Alcohol (IPA)

Manufacturing

- ▼ Glycol
- ▼ Hydrogen Peroxide
- ▼ Ammonium Hydroxide
- ▼ Methanol

Features:

- ▼ Unrivalled accuracy and repeatability
- ▼ ATEX/IECEX approvals
- ▼ No moving parts

Benefits:

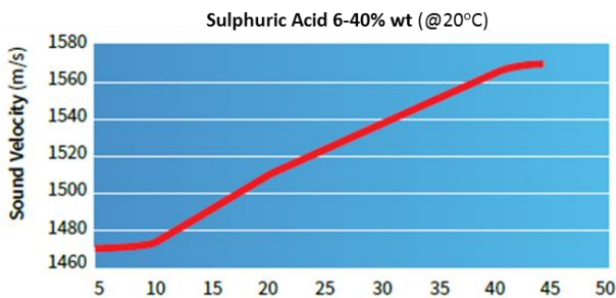
- ▼ High reliability
- ▼ Increased process efficiency
- ▼ Improved quality process monitoring
- ▼ Rapid payback of investment

Principle of Operation

DensiCheck TX uses the established principal that ultrasonic velocity (the speed that ultrasound travels through a liquid) is related to concentration. High frequency pulses are transmitted and reflected to their source. The time of transmission is measured using advanced high speed electronics, and the variation is converted by the on-board microprocessor to a signal representing the liquid concentration. Temperature is compensated for by an integral sensor and the resulting value is transmitted via an analogue or digital signal to a suitable display or host controller.

Mode of Operation

DensiCheck TX is designed for measuring one or two liquid types at a single process point. For multi-line or multi-product applications, DensiCheck TX can be combined with a separate Display/Control unit to form a DensiCheck 2000 System capable of monitoring up to four lines with 32 different calibrations.



Typical DensiCheckTX calibration program, sulphuric acid

DensiCheck TX – General Specification

Enclosure :	Die-cast aluminium, blue epoxy painted, 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
Power Supply Requirement:	24Vdc, 250mA
Outputs:	4..20mA (Active, non-isolated) Two digital for hi/lo alarm open collector
Input:	Digital input for no-flow indication or product selection
Enclosure/Electronics Approval:	⊕ II 2G Ex d IIB T5 Gb (- 20°C ≤ Ta ≤ 60°C) Cert No(s). Baseefa13ATEX0047
Serial Communications:	RS485, Modbus RTU / ASCII CCOM2

Ultrasonic Transducer

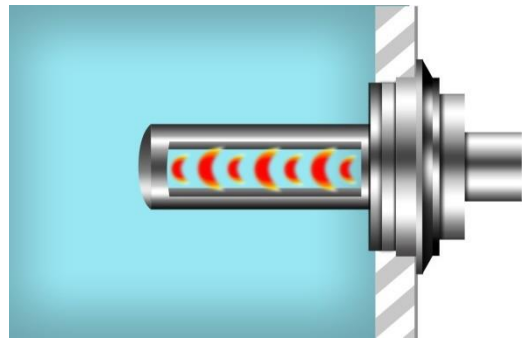
Approval: ⊕ II 2G Ex mb IIC T5 Gb (- 20°C ≤ Ta ≤ 60°C)
Cert No(s). Baseefa03ATEX0087X

Temperature Ratings -20°C to +60°C, -4°F to 140°F
Local Electronics:

Remote Electronics: -10°C to +110°C (continuous) (14°F to 230°F)
150°C (5 min intermittently) (320°F)

Standard Process Connections:

- ▶ Varivent – probe depth 63 mm
- ▶ Tri-clamp – probe depth 81mm
- ▶ Flanged – probe depth 133mm
- ▶ DIN 50 – probe depth 63mm



DensiCheckTX installed with Varivent connection

Product Identification Code

