**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.
DensiCheck TX – General Specification

**Enclosure:**
Die-cast aluminium, blue epoxy painted, IP65

**Accuracy:**
Typically +/- 0.1% (product dependant)

**Repeatability:**
+/-.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**
Local Electronics: -20°C to +60°C, -4°F to 140°F
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

Product Identification Code

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- **Sensor Type:**
  - Varivent
  - DIN50
  - 3” Tri-clamp
  - 1 ½” ANSI 150lb
  - Non-Invasive
  - Other

- **Material:**
  - Stainless Steel
  - PVDF Hastalloy C Tip
  - Custom

- **Temperature Sensor:**
  - Integrated to sensor
  - Remote, weld in pocket
  - Remote, fast response

- **Display:**
  - Blind
  - Integral (Not ATEX)

- **Housing Location:**
  - Mounted on probe
  - Remote

- **Communication:**
  - Modbus ASCII
  - Modbus RTU
  - CCOM2

- **Product Range**

- **Temperature Range**

- **Custom Probe Length**

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DS-DCTX-E