Product Overview
Carbon Dioxide, Density & Level Measurement
Introduction

Canongate Technology is a leading supplier of process measurement technology for level, liquid concentration and density and Carbon Dioxide. Using our unique non invasive ultrasonic technology our products are widely used amongst World leading organisations in the Petrochemical, Pharmaceutical, Beverage, Refrigeration and Transport industries.

Our proven technology developed through experience is well suited for level, liquid concentration and density across numerous applications. The non tank break in ensures no downtime is lost during the easy installation process, and our products require minimal maintenance thus reducing the overall cost of ownership. This low cost highly reliable solution that is suitable for most shapes of tanks and materials has been successfully monitoring our customers requirements in facilities of World leading companies throughout the globe.

Rototherm Group

Since 2012, Canongate Technology has become a prominent member of the Rototherm Group - a global leader in the measurement of Temperature, Pressure, Flow and Level.

With over 170 years of manufacturing and in-house knowledge coupled with technical and on-site expertise we have the experience to ensure you find the correct instrumentation solution for your specific application.

In addition to our experience and expertise our worldwide presence and local market knowledge allows us to provide technical and sales support when and wherever it is needed.

With experience throughout Oil & Gas, Pharmaceutical, Water, Transport, Beverage, Power, Defence, Chemicals & Refining industries and the seal of approval from these industry leaders we have no doubt that by choosing Rototherm products and services you too will have confidence in knowing that your processes are been monitored by the highest quality and reliable product along with peace of mind knowing support is available 24/7.

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DensiCheck TX
In-line liquid concentration transmitter

DensiCheck TX is an economic answer to the problem of monitoring liquid concentration and density in a wide variety of applications.

Available as an in-line transmitter in both Non-invasive and invasive formats.

DensiCheck TX provides a continuous output of concentration to enable processes to be optimised.

The result - reduced rework, improved quality and lower costs.

Approved for ATEX installations.

On applications where a non-invasive instrument is required, Canongate can supply you with a custom designed sensor. These sensors are typically fitted on a flanged or opened spool peace 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 including:

- Acetic Acid
- Beer
- Ethanol
- Glycol
- Hydrogen Peroxide
- Nitric Acid
- Sodium Hydroxide
- Sucrose
- Acetone
- Calcium Chloride
- Ethylene Chloride
- Hydrofluoric Acid
- Isopropyl Alcohol
- Phosphoric Acid
- Soft Drinks
- Sulphuric Acid
- Ammonium Hydroxide
- Chromic Acid
- Ferric Chloride
- Hydrogen Chloride
- Methanol
- Sodium Chloride
- Spirits
- Wort

Features

DensiCheck TX’s many features include:

- Non-invasive and invasive process connections
- Zero drift and no-recalibration
- High accuracy and repeatability
- ATEX Hazardous area approval
- No moving parts

Benefits

DensiCheck TX simplifies liquid concentration measurement bringing countless benefits of ownership such as:

- Lower installation and maintenance costs
- High reliability
- Low ownership costs
- Increased process efficiency
- Improved quality monitoring

Working Principle

DensiCheck TX uses the established principal that sound velocity in a liquid is related to its concentration. Ultrasound pulses are transmitted through the liquid and reflected to their source. The time of transmission is measured using advanced highspeed electronics, and the variation is converted by the on-board microprocessor to a signal representing the liquid concentration. Temperature is automatically compensated for by an integral sensor, and the resulting value of transmitted via an analogue or digital signal to a suitable display or host controller.

Mode of Operation

DensiCheck TX is designed to hold a two pre-loaded calibration for measuring 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.

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TECHNOLOGIES
We Measure Quality...
Sensor Options

There are also intrusive options with integral temperature sensor.

Specifications

<table>
<thead>
<tr>
<th>General</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rating</strong></td>
<td>IP65</td>
</tr>
<tr>
<td><strong>Accuracy</strong></td>
<td>Typically +/- 0.1%</td>
</tr>
<tr>
<td><strong>Repeatability</strong></td>
<td>+/- 0.01 m/s, +/- 0.02ºC</td>
</tr>
<tr>
<td><strong>Response Time</strong></td>
<td>&lt; 1 second</td>
</tr>
<tr>
<td><strong>Update</strong></td>
<td>Every 2 seconds</td>
</tr>
<tr>
<td><strong>Stability</strong></td>
<td>No drift</td>
</tr>
<tr>
<td><strong>Calibrations</strong></td>
<td>Two</td>
</tr>
<tr>
<td><strong>Supply</strong></td>
<td>24Vdc, 250 mA</td>
</tr>
<tr>
<td><strong>Output</strong></td>
<td>0..5V or 4..20 mA (Active) Maximum -Loop resistance 500 Ω Non-isolated Two digital for hi/lo alarm open collector</td>
</tr>
<tr>
<td><strong>Input</strong></td>
<td>One digital for flow indication</td>
</tr>
<tr>
<td><strong>Electronics</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Approval</strong></td>
<td>II 2G Exmb II CT5 GB (-20ºC ≤ Ta ≤ 60ºC)</td>
</tr>
<tr>
<td><strong>Serial</strong></td>
<td>RS485, Modbus RTU / ASCII Comm2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ultrasonic Transducer</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rating</strong></td>
<td>II 2G Exd II B T5 (-20ºC ≤ Ta ≤ 60ºC)</td>
</tr>
<tr>
<td><strong>Temperature</strong></td>
<td>-10 to +110ºC (continuous) (14º to 230ºF) 150ºC (5 min intermittently) (302ºF)</td>
</tr>
<tr>
<td><strong>Process Connections</strong></td>
<td>DensiCheck TX can be supplied with various process connections, including:</td>
</tr>
<tr>
<td></td>
<td>* Non-invasive strap-on / Min. dia 50mm (2&quot;)</td>
</tr>
<tr>
<td></td>
<td>* Varivent - Probe depth 63 mm</td>
</tr>
<tr>
<td></td>
<td>* Tri-clamp (2 1/2&quot;) - Probe depth 81mm</td>
</tr>
<tr>
<td></td>
<td>* Flanged (2 1/2&quot;) - Probe depth 133 mm</td>
</tr>
<tr>
<td></td>
<td>* DIN 50 - Probe depth 63 mm</td>
</tr>
</tbody>
</table>

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VesselCheck
Non-Invasive Liquid Level Measurement

VesselCheck is a highly versatile and accurate range of non-invasive liquid level measurement systems, comprising a signal processing unit and ultrasonic transceivers.

Working Principle

Ultrasonic sensors are clamped or bonded to the outside walls of the vessel; one on the bottom of the vessel, with the fully density compensated option, one on the side. Signals from the transducers are fed into the processor and either displayed locally, if that option is selected, or output to a separate system. The system calculates the height and volume of the liquid in the tank, from the time taken for the signal to be received from the liquid surface.

Benefits

- Fast, reliable and accurate tank contents measurement
- Not affected by pressure
- Easy installation - no tank break-in, easy retrofit to existing tanks
- No down-time during installation
- No moving parts – little or no maintenance required

Features

- Ultrasound technology proven for over twenty years
- Fits tanks of most shapes and sizes above ground
- Truly non-invasive sensing technique
- Sensors bonded to outside of tank base and side wall
- Optional local display and/or output to higher level system for up to two tanks

<table>
<thead>
<tr>
<th>VesselCheck Range Overview</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typical Application</td>
</tr>
<tr>
<td>-------------------------</td>
</tr>
<tr>
<td>High accuracy: beer, spritis, acids, solvents, water, LPG spheres, wine</td>
</tr>
<tr>
<td>Less accurate: LPG spheres, wine</td>
</tr>
<tr>
<td>Fuel, water, light oils, acids</td>
</tr>
<tr>
<td>LPG, small spirit tanks</td>
</tr>
<tr>
<td>LPG, solvents, acids, fuels, Sulphur Dioxide, Chlorine</td>
</tr>
<tr>
<td>Refrigerent Gas</td>
</tr>
<tr>
<td>Graphic colour operator interface terminal &amp; evaluation unit for use with VesselCheck systems</td>
</tr>
</tbody>
</table>

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VesselCheck ST1 Non-Invasive Tank Level Gauge

Features:
• Truly non-invasive sensing technique
• Sensors bonded to outside of tank base
• Fits tanks of most shapes and sizes
• Output to telemetry system – various options
• ATEX / IECEx approved for hazardous areas (ST1A sensor)
• Temperature integrated sensors available

Benefits:
• Low cost, reliable & accurate tank gauging
• Not affected by pressure
• Easy installation - no tank break-in
• Simple retrofit to existing tanks
• No down-time during installation
• No moving parts – no maintenance

Principle of Operation
A small ultrasonic sensor is clamped or bonded to the outside base of the vessel. The system calculates the height of the liquid in the tank from the time taken for the signal to be transmitted and then received from the liquid surface. Signals from the transducer are fed into the processor and then output to a separate system. The package is supplied as a sensor/processor pair.

A temperature integrate ultrasonic sensor is available offering compensation for the effects of varying temperatures.

Applications:
• Refrigerant receivers (up to 2000mm)
• LPG tanks
• Fuel Tanks
• Distilled spirit vats
• Beers tanks
• Pure water tanks
• Liquid chlorine tanks
• Acids/solvents tanks

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### Vessel Check ST1 - Technical Specification

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Accuracy</strong></td>
<td>Depends on liquid and temperature range</td>
</tr>
<tr>
<td><strong>Measuring Range</strong></td>
<td>Up to 3000mm / 10 feet (application dependent)</td>
</tr>
<tr>
<td><strong>Temperature Range (sensors)</strong></td>
<td>-20ºC to +125ºC / -40ºF to 257ºF</td>
</tr>
<tr>
<td><strong>Hazardous Area Approval (sensors)</strong></td>
<td>Ex mb IIC T5 Gb (-20ºC ≤ Ta ≤ 60ºC) Cert No. IECEx BAS 11.00.0039X</td>
</tr>
<tr>
<td><strong>Analogue Outputs (optional)</strong></td>
<td>4..20mA (active) / 0..5Vdc</td>
</tr>
<tr>
<td><strong>Digital Alarm Outputs (optional)</strong></td>
<td>2 x Solid state volt-free contacts</td>
</tr>
<tr>
<td><strong>Max distance (processor to sensor)</strong></td>
<td>100m (it is recommended that this distance is kept as short as possible)</td>
</tr>
<tr>
<td><strong>Serial Outputs</strong></td>
<td>RS485, Modbus RTU / ASCII</td>
</tr>
<tr>
<td><strong>Power Supply</strong></td>
<td>12 or 24Vdc</td>
</tr>
<tr>
<td><strong>Protection Rating (processor)</strong></td>
<td>IP65</td>
</tr>
<tr>
<td><strong>Protection Rating (sensor)</strong></td>
<td>IP66</td>
</tr>
<tr>
<td><strong>Sensor Material</strong></td>
<td>Tufnol + stainless steel housing for ST1A version</td>
</tr>
<tr>
<td><strong>Processor Enclosure Material</strong></td>
<td>Polycarbonate</td>
</tr>
<tr>
<td><strong>Display Size (optional)</strong></td>
<td>70x43mm / 2.75x1.7&quot;</td>
</tr>
<tr>
<td><strong>Dimensions (processor / display unit)</strong></td>
<td>150x110x70mm / 6x4.5x3&quot;</td>
</tr>
<tr>
<td><strong>Temperature Compensation</strong></td>
<td>Optional via TIVP sensor</td>
</tr>
</tbody>
</table>

### Product Identification Code (PIC)

```
<table>
<thead>
<tr>
<th>PIC Code</th>
<th>System Type</th>
<th>Display</th>
<th>Analogue Output</th>
<th>Ambient Temperature</th>
<th>Sensor Cable</th>
<th>Base Angle</th>
<th>Base Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>VCST 1A</td>
<td>Standard</td>
<td>No</td>
<td>0 to 5 V</td>
<td>Yes</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
</tr>
<tr>
<td></td>
<td>ATEX Sensor</td>
<td>No</td>
<td>4..20mA</td>
<td>Yes</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
</tr>
<tr>
<td></td>
<td>Refrigerant</td>
<td>No</td>
<td></td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
```

#### Diagram:
- **Safe Area**:
  - 24V d.c.
  - 4..20mA or 0..5 volts Analogue Output
  - RS485 Serial Communications
  - Digital High and Low Alarms
- **Hazardous Area**:
  - 4..20mA or 0..5 volts Analogue Output
  - RS485 Serial Communications
  - Digital High and Low Alarms

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**VesselCheck ST2**
Non-Invasive Tank Level Measurement System

![Diagram of VesselCheck ST2](image)

**Principle of Operation**

The ST2 uses two small ultrasonic sensors bonded or clamped to the outside walls of the vessel - one on the bottom of the vessel and the other on the side, to compensate for variations in sonic velocity and temperature. Signals from the transducers are fed into the processor and displayed locally and/or output to the plant control system. The system calculates the height and volume of the liquid in the tank from the time taken for the signal to be received from the liquid surface.

**Features:**

- Truly non-invasive sensing technique
- Sensors bonded to outside of tank base and side wall
- 20 point calibration table
- Optional local display & keypad
- 4..20mA / 1..5V analogue outputs
- RS485 / 232 Modbus serial communications
- ATEX / IECEx approved sensors for hazardous areas available

**Benefits:**

- Fast, reliable and accurate tank contents measurement
- Easy installation - no tank break-in, easy retrofit to existing tanks
- No down-time during installation

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![ATEX Sensor shown](image)
Vessel Check ST2 - Technical Specification

<table>
<thead>
<tr>
<th>Accuracy</th>
<th>+/- 2mm or better</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repeatability</td>
<td>+/- 0.5mm</td>
</tr>
<tr>
<td>Measuring Range</td>
<td>75mm to 25 metres / 3” to 80 feet (application dependent)</td>
</tr>
<tr>
<td>Temperature Range</td>
<td>-20ºC to +125ºC / -4ºF to 257ºF</td>
</tr>
<tr>
<td>Hazardous Area Approval</td>
<td>T5 Gb (Ex mb IIC T5 Gb (-20ºC ≤ Ta ≤ 60ºC) Cert No. IECEx BAS 11.00.0039X)</td>
</tr>
<tr>
<td>Analogue Outputs</td>
<td>4..20mA (active) / 1..5Vdc</td>
</tr>
<tr>
<td>Digital Alarm Outputs</td>
<td>4 x Solid state active outputs (&gt;17Vdc)</td>
</tr>
<tr>
<td>Max distance</td>
<td>100m</td>
</tr>
<tr>
<td>Serial Outputs</td>
<td>RS232, RS485, Modbus RTU / ASCII</td>
</tr>
<tr>
<td>Power Supply</td>
<td>24Vdc (N/A for haz area applications) or 110 / 230 Vac, 50/60Hz.</td>
</tr>
<tr>
<td>Protection Rating</td>
<td>IP65</td>
</tr>
<tr>
<td>Sensor Material</td>
<td>Tufnol / Ertacetal</td>
</tr>
<tr>
<td>Processor Enclosure Material</td>
<td>High Impact Polystyrene</td>
</tr>
<tr>
<td>Display Size</td>
<td>70x43mm / 2.75x1.7”</td>
</tr>
<tr>
<td>Dimensions</td>
<td>270x215x85mm / 10.5x8.5x3.5”</td>
</tr>
<tr>
<td>Weight</td>
<td>1.4Kg, 3lbs</td>
</tr>
</tbody>
</table>

Product Identification Code (PIC)

- **VCST2**: No approval
- **N**: ATEX / IECEx Approved sensor kit
- **2**: Analogue Outputs required
  - 0: None required
  - 1: 4..20mA
  - 2: 1..5Vdc
- **1**: Power Supply Available
  - 1: 24Vdc (Not available for ATEX)
  - 2: 110Vac
  - 3: 230Vac

NOTE
Cable (C) must be installed to comply with installation standard IEC0079-14
VesselCheck ST4
Non-Invasive Tank Level Measurement System

Features:
- Truly non-invasive sensing technique
- Sensors bonded to outside of tank base and side wall
- 20 point calibration table
- Optional local display & keypad
- 4..20mA / 1..5V analogue outputs
- RS485 / 232 Modbus serial communications
- ATEX / IECEx approved sensors for hazardous areas available
- Various methods of temperature compensation

Benefits:
- Fast, reliable and accurate tank contents measurement
- Easy installation - no tank break-in, easy retrofit to existing tanks
- No down-time during installation

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## Vessel Check ST4 - Technical Specification

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Accuracy</strong></td>
<td>+/- 2mm or better</td>
</tr>
<tr>
<td><strong>Repeatability</strong></td>
<td>+/- 0.5mm</td>
</tr>
<tr>
<td><strong>Measuring Range (sensors)</strong></td>
<td>75mm to 25 metres / 3” to 80 feet (application dependent)</td>
</tr>
<tr>
<td><strong>Temperature Range (sensors)</strong></td>
<td>-20°C to +125°C / -4°F to 257°F</td>
</tr>
<tr>
<td><strong>Hazardous Area Approval (sensors)</strong></td>
<td>Ex mb IIC T5 Gb (-20°C ≤ Ta ≤ 60°C) Cert No. IECEx BAS 11.00.0039X</td>
</tr>
<tr>
<td><strong>Analogue Outputs (optional)</strong></td>
<td>4..20mA (active) / 1..5Vdc</td>
</tr>
<tr>
<td><strong>Digital Alarm Outputs (optional)</strong></td>
<td>4 x Solid state active outputs (&gt;17Vdc)</td>
</tr>
<tr>
<td><strong>Max distance (processor to sensor)</strong></td>
<td>100m</td>
</tr>
<tr>
<td><strong>Serial Outputs</strong></td>
<td>RS232, RS485, Modbus RTU / ASCII</td>
</tr>
<tr>
<td><strong>Power Supply</strong></td>
<td>24Vdc (N/A for haz area applications) or 110 / 230 Vac, 50/60Hz.</td>
</tr>
<tr>
<td><strong>Protection Rating (processor)</strong></td>
<td>IP65</td>
</tr>
<tr>
<td><strong>Protection Rating (sensor)</strong></td>
<td>IP66</td>
</tr>
<tr>
<td><strong>Sensor Material</strong></td>
<td>Tufnol / Ertacetal</td>
</tr>
<tr>
<td><strong>Processor Enclosure Material</strong></td>
<td>High Impact Polystyrene</td>
</tr>
<tr>
<td><strong>Display Size (optional)</strong></td>
<td>70x43mm / 2.75x1.7”</td>
</tr>
<tr>
<td><strong>Dimensions (processor / display unit)</strong></td>
<td>270x215x85mm / 10.5x8.5x3.5”</td>
</tr>
<tr>
<td><strong>Weight (processor)</strong></td>
<td>1.4Kg, 3lbs</td>
</tr>
</tbody>
</table>

### Product Identification Code (PIC)

```
| VCST4 | N  | 4  | N  | 1  | 2  | 1 |
```

- **Hazardous Area Approval**
  - No approval
  - ATEX / IECEx Approved sensor kit

- **Number of tanks per VCST4**
  - One tank
  - Two tanks
  - Three tanks
  - Four tanks

- **Display Requirement**
  - No display required
  - Display required

- **Analogue Outputs required**
  - None required
  - 4..20ma
  - 1..5Vdc

### Temperature Compensation
- No
- TUIP Sensor
  - 4..20mA input
- Modbus Communications

### Power Supply Available
- 24Vdc (Not available for ATEX)
- 110Vac
- 230Vac

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![ATEX Sensor shown](image-url)
NOTE
Cable (C) must be installed to comply
with installation standard IEC6079-14

Where Steel Wired Armour Cable is not available, cables must be
mechanically protected in Steel Conduit.

Systems connect to an ATEX sensor, can only be supplied as either
110V a.c. or 230V a.c.

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VesselCheck ST1AD
Non-Invasive Level Gauge

Background
Canongate Technology has been using ultrasound technology in a variety of applications for over twenty years. VesselCheck is used by most of the leading beverage, pharmaceutical and chemical companies around the world for accurate, reliable, simple and safe tank contents gauging. This particular configuration has been specifically designed to meet requirements on LPG vessels. A number of leading LPG suppliers and users are already using our technology to provide reliable level measurement.

Principle of Operation
A small ultrasonic sensor is bonded to the outside base of the vessel. Signals from the transceiver are fed into the processor, displayed beside the tank and/or output to a separate system. The ST1AD transmitter measures the time for the transmitted ultrasonic signal to return from the liquid surface. It applies ambient temperature compensation to that value and uses it to accurately calculate the height of the liquid in the tank. The package is supplied as a sensor / processor pair.

Features:
- Truly non-invasive sensing technique
- Transceiver bonds to outside of tank shell
- Ambient temperature compensated (temperature measurement in display unit)
- 0..5v / 4…20mA Analogue Output
- Approved for hazardous areas (flameproof Exd)

Benefits:
- No tank break-in - Easy installation
- No down-time during installation
- Suitable for tanks of most shapes and materials
- Not affected by pressure
- No moving parts – no maintenance
- Low cost & reliable tank gauging
<table>
<thead>
<tr>
<th><strong>Vessel Check ST1AD -Technical Specification</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Accuracy</strong></td>
</tr>
<tr>
<td><strong>Measuring Range</strong></td>
</tr>
<tr>
<td><strong>Temperature Range (sensors)</strong></td>
</tr>
<tr>
<td><strong>Hazardous Area Approval (processor/display)</strong></td>
</tr>
<tr>
<td><strong>Hazardous Area Approval (sensor)</strong></td>
</tr>
<tr>
<td><strong>Sensor Material</strong></td>
</tr>
<tr>
<td><strong>Analogue Output</strong></td>
</tr>
<tr>
<td><strong>Serial Communications</strong></td>
</tr>
<tr>
<td><strong>Power Supply</strong></td>
</tr>
<tr>
<td><strong>Protection Rating</strong></td>
</tr>
</tbody>
</table>

![Diagram showing safe area and hazardous area with components labeled.](image)

**Product Identification Code (PIC)**

| VCST | 1AD | | | | |

- **Analog Output**: 0 to 5 V, 4…20mA
- **Base Thickness**: In millimetres
- **Base Angle**: In Degrees
- **Sensor Cable**: Length in Metres

**Authorized Dealer in INDIA**
VesselCheck HMI
Graphic Colour Operator Interface Terminal

Graphic Colour Operator Interface Terminal and Evaluation Unit for use with Canongate VesselCheck series of level measurement systems.

Standard Features:

• 5.7” TFT Colour LCD
• 5 Button Keypad
• Resistive Analogue Touchscreen
• RS232/422/485 Comms ports
• Integrated Ethernet & web server
• USB port
• Configured to your application

General Description

The G306 Operator Interface Terminal combines unique capabilities normally expected with high-end units. It is built around a high performance core with integrated functionality. This core allows us to configure the unit to the specific duty required. As standard the unit is supplied within a stainless steel enclosure but other configurations are available. Larger screen sizes up to 10” are available.

Communications

The G306 is able to communicate with many different types of hardware using high-speed RS232/422/485 communications ports and Ethernet 10 Base T/100 Base TX communications. A USB port is included for fast downloads of trending and logging data. Screens can be navigated by means of the 5-button keypad or the touchscreen.

Optional cards are available for:

• PROFIBUS
• DeviceNet
• OPC
• Communicating with over 170 different protocols

Remote Monitoring

Using a standard web browser you can see the same screens as the operator. We also offer an online troubleshooting and maintenance service that can be delivered via the internet. The G306A can also send alarm events by email or SMS allowing you to keep control of your process when you are off-site.

Canongate Technology Ltd

24vDC or 110/240v AC
RS486 Serial Communications
Digital Alarm Outputs
1 to 5 volts or 4..20mA Analogue Outputs
### Vessel Check HMI - Technical Specification

<table>
<thead>
<tr>
<th>Description</th>
<th>6&quot; TFT Analogue Touchscreen Terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display Type</td>
<td>5.7&quot; TFT Active Matrix, 256-colour QVGA display</td>
</tr>
<tr>
<td>Resolution</td>
<td>320x240 pixels</td>
</tr>
<tr>
<td>Comms Ports</td>
<td>Two RS232, one RS422/485</td>
</tr>
<tr>
<td>Ethernet</td>
<td>10 Base-T / 100 Base-TX</td>
</tr>
<tr>
<td>Compact Flash Slot</td>
<td>CompactFlash Slot</td>
</tr>
<tr>
<td>Power Supply</td>
<td>110/230 Vac</td>
</tr>
<tr>
<td>Keypad</td>
<td>Touch Screen</td>
</tr>
<tr>
<td>Environmental</td>
<td>0 to 50ºC / 32 to 122ºF</td>
</tr>
<tr>
<td>Material</td>
<td>Housed in stainless steel wall mounting enclosure</td>
</tr>
<tr>
<td>Dimensions</td>
<td>295 x 295 x 160 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>8Kg</td>
</tr>
<tr>
<td>Ratings</td>
<td>NEMA 6 / IP66</td>
</tr>
</tbody>
</table>

---

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![TECHNOLOGIES We Measure Quality...]
**SpotCheck 1000**
Non-invasive Point Level Detector for tanks & pipes

SpotCheck is a liquid level switch for use in applications where avoiding contact is vital. The sensor is clamped externally to the wall of the pipe or vessel. The method of measurement is suitable for steel, plastic or glass up to 50mm thick.

**Working Principle**

SpotCheck uses an ultrasonic “footprint” to determine the presence of absence of liquid inside a tank or pipe. It provides two wire, 24Vdc operation with an appropriate current sensor but also incorporates a relay switch output.

The piezo-electronic transducer emits ultrasonic energy into the wall of the tanks or pipe, which acts as a wave-guide. The electronics detect the difference between “wet”, “dry” and “fault” conditions.

**Typical Applications**

- Tank high / low level alarm
- Non contact level switch
- Overfill procedure
- Pump run dry protection
- Pig Detection
- Tanker off-load pump control
- Liquids with suspended solids and free gas
- Detect liquid / foam interface
- Aggressive or toxic liquids, effluent, sewage etc.
- Hygienic level switch for hygienic liquids, foodstuffs, pharmaceuticals, chemicals
- Flowing and static liquids
- High or low pressure pipes or vessels
- Detect presence of spray e.g. Tank washing

**Installation / Set-up**

SpotCheck is easy to install and set-up. Simply push the calibrate button when the sensor is uncovered. A red / green / amber LED gives an indication of status.

**Series 1000 - Standard Version**

The Series 1000 SpotCheck is powered by 24Vdc and includes a single relay output. The sensor also modulates the current draw

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[TECHNOLOGIES](#)

*We Measure Quality...*
### SpotCheck - Technical Specification

<table>
<thead>
<tr>
<th>Input:</th>
<th>Amplitude of ultrasonic ring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output:</td>
<td>Single relay dual change-over contacts</td>
</tr>
<tr>
<td>Switches at:</td>
<td>Midpoint of sensor</td>
</tr>
<tr>
<td>Repeatability:</td>
<td>+/- 2mm</td>
</tr>
<tr>
<td>Response Time:</td>
<td>1 second as standard</td>
</tr>
<tr>
<td>Wall Thickness:</td>
<td>1.6...50 mm</td>
</tr>
<tr>
<td>Surface Finish:</td>
<td>240...300 grit or better</td>
</tr>
<tr>
<td>Vessel Diameter:</td>
<td>Minimum 60mm - no maximum</td>
</tr>
<tr>
<td>Power:</td>
<td>+24V dc (50 mA maximum)</td>
</tr>
<tr>
<td>Dimensions:</td>
<td><strong>Body:</strong> 11 cm long</td>
</tr>
<tr>
<td></td>
<td><strong>Cap:</strong> 8 cm wide</td>
</tr>
<tr>
<td></td>
<td>Width of top including gland = 10 cm</td>
</tr>
<tr>
<td>Weight:</td>
<td>256 grms</td>
</tr>
<tr>
<td>Electrical Connection:</td>
<td>2 or 4 core cable</td>
</tr>
<tr>
<td>Vessel / Pipe</td>
<td>Temperature Range:</td>
</tr>
<tr>
<td>Sensor Electronics</td>
<td>SpotCheck 1000</td>
</tr>
</tbody>
</table>

### SpotCheck Ordering Information

1. **Certification Requirements**
   - None (standard)

2. **Wall Thickness**
   - Thin “Steel”
   - Thick “Steel”
   - Plastic / Glass / Aluminium
   - 0
   - 1
   - 2

3. **Fixing**
   - Vessel Bracket
   - Pipe Clamp
   - 1
   - 2

4. **Current Sensor**
   - None
   - Current Sensor (Fault & Alarm Relay)
   - 0
   - A

5. **Application**
   - Liquid Level
   - Pump protection (Pig detection)
   - Tank Wash Detection (Spray)
   - 0
   - 1
   - 2

---

*for wall thicknesses between 6mm & 8mm contact Canongate*
Embra CarboCheck System 2000
Non-sampling, integrated CO₂ measurement and control for carbonated beverages

Originally launched in 1982 and with over two thousand sensors installed round the world.

General Description

As the world’s leading CO₂ monitor and control system, Embra CarboCheck uses the well-known saturation pressure / temperature technique for accurate, non-sampling measurement. Embra CarboCheck can be used for measurement alone or configured as a control system.

Principle of Operation

The CarboCheck sensor features a silicone rubber membrane, through which the dissolved CO₂ permeates into a sealed, evacuated chamber. The partial pressure of the gas is then measured and displayed by the analyser / control unit as a CO₂ content. The system incorporates a vacuum exhauster to regularly evacuate the sensor, providing continual, accurate measurement of dissolved CO₂.

The analyser / control unit can be linked to a carbonation system to enable fully integrated CO₂ measurement, injection and control.

Enhancements

CarboCheck System 2000 incorporates:
• Measurement and compensation for the effect of O₂ and N₂
• Discrete calibrations for different products
• Start / stop and product set-point remote change facility
• Faster performance on filling lines

Typical Applications

• Beer carbonation ex-filter
• Mineral waters carbonation
• Sparkling wines carbonation
• In-line CO₂ monitoring on brewery and soft drinks packaging lines
• Carbonation of pre-mixed drinks

Benefits

• Accurate monitoring and control of dissolved CO₂ levels in carbonated beverages
• Improved “right first time” carbonation figures in-line or in tank
• More efficient process control
• Reduction in re-work

Features

• Accurate to +/-0.02 vol/vol (+/-0.04 g/l)
• No sampling or product by-pass lines
• Hygienic fitting, can be cleaned-in place
• No moving parts
• Low maintenance requirement
• Available as single / dual channel controller or up to 4 channel monitor

Description of Equipment

The measuring system comprises the analyser / control unit, CO₂ sensor assembly, resistance thermometer and vacuum exhauster.

Analyser / Control Unit

Supplied in an IP65 (NEMA 4) enclosure for panel or wall mounting, the control unit can monitor up to four process streams. High and low alarms are available for each channel, as are outputs for recorders, PLCs or supervisory systems.

The analyser / control unit also provides:
• Analogue outputs of CO₂ temperature and pressure
• Analogue input for remote set-point
• Digital outputs for high and low level alarms
• Digital inputs for remote start, no flow
• RS422 serial communications link

The CO₂ Sensor

This is designed to fit in the shortened leg of a standard 3” ISS T-piece or Varivent type body. The materials in contact with the liquid are food quality 316 stainless steel and silicone rubber cured to 250°C, impervious to all known CIP solutions.

The Vacuum Exhauster

This is housed in a separate IP65 (NEMA 4) poly-carbonate (or optional stainless steel) enclosure. The function of the unit is to evacuate the sealed chamber of the CO₂ sensor at start-up to remove all gases. The cell is ‘refreshed’ regularly (at a user-defined interval) to maintain the accuracy of the reading.
EmbraLabs CT4 Mashing Bath

Measurement of extract by IOB, EBC or ASBC Procedures

Application

• Precision control of Standard Methods mashing conditions for preparation of laboratory worts
• Facility to handle up to 25 samples per batch

Features:

• PLC control
• Colour graphics with touch display
• Programmable delayed start
• Audible alarm
• Remote servicing available via modem
• Two automatic pre-programmed mashing sequences
• One user programmable sequence

Description

The CT4 Mashing Bath replaces the world-renowned CM1/2/3 Mashing Baths. The apparatus consists of a stainless steel bath supported in a steel framework. An integral pump circulates water through a heater box and the bath. Beakers in the bath are stirred using magnetic followers driven by electric motors beneath the bath. All samples are mashed and cooled together. Distilled water for mashing is heated in a separate stainless steel tank and dispensed to the beakers by an electric pump.

Features / Benefits

• Bath temperature controlled by internal attemporation unit
• Temperature measured and controlled to +/- 0.2o C
• Low level water cut out
• Accurate water dispense (+/- 5 ml) to all beakers in less than 2 minutes
• Simple touch screen access to volume calibrations
• Real time trending of machine sequence
• Overview screen to monitor all control and I/O operations

The bath is designed to be fully automatic although some of the operations can be done manually. Manual control of the water fill valve, the water drain valve and each motor stirring bank are

Technical Specification

<table>
<thead>
<tr>
<th>Case:</th>
<th>Painted Mild Steel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bath:</td>
<td>Stainless Steel</td>
</tr>
<tr>
<td>Net Dimensions:</td>
<td>113 cm x 86 cm x 61 cm / 44.5” x 33.8” x 24” (l x h x w)</td>
</tr>
<tr>
<td>Approximate Gross Weight:</td>
<td>270 Kg / 595 lb</td>
</tr>
<tr>
<td>Power Supply:</td>
<td>240 vAC, 50/60Hz</td>
</tr>
<tr>
<td>Number of Samples</td>
<td>25</td>
</tr>
</tbody>
</table>

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EmbraLabs GrainStain

Designed to carry out rapid staining tests on seeds, particularly barley and wheat

Features:

• Two and four place versions available
• Electronic control of staining fluid temperature
• Independent vacuum gauge and control of each tube
• Integral pump adjustable to 380 mm Hg
• Individual tube drain system
• Audible alarm system

Precision control of temperature, vacuum and time allows staining to be carried out under reproducible and standardised conditions, thereby ensuring optimum staining performance. Powered by mains voltage it can accommodate several samples at once or in overlapping sequence.

The GrainStain is completely self-contained with its own integral vacuum pump. Electrically heated sample tubes, fitted into a corrosion resistant casing are sealed with push fit tops. An adjustable vacuum relief valve allows evacuation to 380 mm of mercury indicated by a gauge. vacuum to each gauge is controlled by individual 3-way taps via a manifold. The vacuum pump filter bowl and adjustable relief valve are fitted on the outside of the case for ease of maintenance.

Tubes are individually heated and temperature control is by electronic sensor with front of panel set-point adjustaments up to 60ºC. Each tube can be darined for cleaning and replacement of staining fluid by means of a tap mounted on the outside if the casing. All taps connect with a common drain outlet.

Other Features / Benefits

• Illuminated mains power on/off switch
• Vacuum pump switch plus indicating LED
• Timers adjustable up t 30 minutes each with indicating LEDs
• Audible alarm system with push button cancel facility
• Heater indicating LEDs
• Individual adjusters for each sample tube temperature measurement

Technical Specification

<table>
<thead>
<tr>
<th>Case:</th>
<th>Glass reinforced plastic</th>
</tr>
</thead>
</table>
| Dimensions:   | Two Place : 335 x 300 x 165 mm  
               | Four Place : 535 x 300 x 165 mm               |
| Sample Tubes: | Material : High Temperature plastic          |
|               | Dimensions : 150 mm deep x 35 mm diameter      |
| Weight:       | Two Place : 8 Kg                             |
|               | Four Place : 14 Kg                           |
| Power Supply: | Mains - 110 or 240v 50/60 Hz                  |
| Vacuum System Capacity: | Adjustable up to 380 mm Hg          |
| Timer:        | Adjustable up to 30 minutes delay             |
| Heater Mats:  | 20 watt                                       |
| Temperature Controls: | Adjustable up to 60ºC +/- 0.5ºC          |

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TECHNOLOGIES
We Measure Quality...
CT Holledge
Pneumatic and electronic level and pressure measurement systems.

Features
• Suitable for hygienic applications
• High accuracy
• Long term proven reliability
• Rugged construction
• Simple installation and set-up
• Standard and bespoke units
• Pneumatic systems for hazardous areas
• Liquid and slurry continuous level measurement
• Continuous pressure monitoring

CT Holledge “PB” systems

There are many reasons for the popularity and continued success of the Holledge pneumatic “PB” (pressure balance) system. Firstly it is attractive due to its proven reliability. It is also intrinsically safe, has a low cost of installation and exhibits high accuracy and repeatability.

The sensor - A pressure sensitive diaphragm - can be matched to most requirements. Whether it’s a hygienic application such as brewing, dairy or food, or a corrosive one, such as chemicals or CIP (cleaning in place), there is a Holledge sensor to suit.

CT Holledge helps you to achieve the highest accuracy of measurement with minimal risk to your production process.

The system can be used to measure pipe pressure, vessel contents or other parameters such as mass or density (SG).

The principle - The “Pressure Balance” principle is simple and comprises a transmitter, an air flow regulator, and a receiving instrument, usually a P to I (pressure to current) converter or a pneumatic gauge.

A constant flow of instrument air - at a pressure above the maximum process pressure - is fed into a transmitter. With no process pressure applied, the air is vented past the transmitter diaphragm to atmosphere. When the process exerts a pressure on the diaphragm, the diaphragm distends slightly, reducing the size of the vent, thus restricting the flow and causing a back pressure, equivalent to the process pressure, to build up in the system. The P to I converter turns the back pressure into a mA signal, directly proportional to the process pressure. The analogue output means that the PB system can be easily integrated with electronic displays SCADA control and monitoring facilities or PLC’s.

Capable of sensing process pressures from a few mm water gauge to 14bar, these sensors are suitable for all kinds of pipes or vessels either pressurised or vented.

The options - The standard version is manufactured entirely in 316 Stainless Steel, with options covering the supply of wetted parts in TITANIUM, INCONEL, HASTELLOY or Stainless Steel coated with FEP, thus providing full compatibility with the product media.

Applications
• Series “HF” Air flow regulator
By maintaining a constant differential pressure across a built in pneumatic regulator, the series “HF” is able to provide a set flow of instrument air to the transmitter. The unit is also suitable for bubbler type systems and for purging electrical enclosures in hazardous areas. Constructed in epoxy coated aluminium with treated springs and screws, the unit offers robust performance and a constant air supply to the “PB” transmitters.

• Series H420. P to I converters
CT Holledge H420 instruments are two-wire pressure to current converters. Two models are available for applications where pneumatic signals are required to be converted to current outputs:
  • H420G - for single pressure inputs
  • H420D - for differential pressure inputs
Both converters use high performance, solid state piezoresistive sensors, they measure air pressure, or any non-corrosive gas. Output is a proportional 4..20mA

Accessories
• Diaphragm protection guard - to protect the unit from physical damage.
• Body extension - for lagged or jacketed vessels
• Angled air connectors - allow connections without distorting transmission lines where space is tight.
• Submerged type vent - for use when the “PB” is completely submerged.
• Weather type vent - prevents ingress of rain or damaging particulates.

Authorized Dealer in INDIA
Beverage Industry

Process Instrumentation
Since our inception Canongate has been a leader and innovator working successfully with the Beverage industry. During this period we have continuously developed and enhanced our product through knowledge and experience.

With the ever growing stricter regulatory standards, instrumentation need to be reliable, accurate and quality manufactured. Today Canongate Technology product is present in most of the leading beverage organisations plants throughout the world.

Light Beer level measurement
The Canongate VesselCheck is a highly accurate, truly non-invasive liquid level system based on our unique ultrasonic technology proven for over 20 years and is ideally suited for level detection of light beer.

Concentration monitoring
The Canongate DensiCheck can be used to measure the Alcohol, Plato or SG concentrations in bright beer. The DensiCheck can also be used to measure the concentration of cold, hot and boiling wort in the brewhouse.

For blending applications where a higher degree of accuracy is required in the concentration measurement, a signal from a densitometer may be combined with the DensiCheck measurement to achieve this.

Carbon Dioxide Monitoring
The Canongate CarboCheck has been used for over 30 years in the brewing industry to measure and control the level of CO2 in a bright beer stream.

Products
- VesselCheck ST2
  Bright Beer Tank Level Measurement
- CarboCheck In-line CO2 Analyser
  Used by all the major breweries worldwide, the CarboCheck is a highly accurate system for the monitoring and control of CO2 in-line.
- DensiCheck TX In-line Alcohol Measurement
  High accuracy system used to measure density, alcohol and plato.

Transport Industry

Level Measurement in Aircraft Refueling Vehicles
The aviation industries search for continuous improvement of high safety standards across airport infrastructure is an ever growing process and the refuelling of aircraft from lorry tankers is no exception to this.

Canongate VesselCheck ST1A has provided a unique cost effective solution to tanker companies and has resulted in enhanced levels of safety and efficiencies in the process of refuelling of aircraft.

The ST1A provides the operator real time level measurement of fuel levels within the vehicle, ensuring awareness of level before the refuelling process begins. This non manual monitoring of fuel levels is significantly safer and quicker than current level measure manual process.

Canongate product is being rolled out across a number of airports throughout continental Europe.
Pharmaceutical Industry

Process Instrumentation

Our control and instrumentation solution are widely used by many of the world’s leading chemical and pharmaceutical companies to improve all kinds of processes and delivering key process measurements allowing tighter quality control.

Level measurement in High Purity Water

Canongate VesselCheck ST2 is ideally suited for the level measurement of pure water storage and mixing tanks, as the sensor is coupled to the outside of the tank wall and does not come into contact with the product.

The reliable and highly accurate measurement system is unaffected by pressure, concentration and temperature variations as it uses a reference sensor to self-compensate. This technology has been proven on this style of application over the past 20 years.

Today Canongate systems are installed in World leading Pharmaceutical companies Water for pure water storage tanks, providing reliable results in a highly regulated industry.

Refrigeration Industry

Process Instrumentation

Refrigerant leakage is one of the main challenges facing the commercial refrigeration industry and solutions aimed at reducing the probability of a leak is welcomed within the industry. As our products are truly non-invasive no new sources of potential leaks are created hence Canongates unique non invasive level measurement technology provides a low cost solution to monitoring of refrigerant levels.

Non invasive level monitoring for Horizontal refrigerant receivers

Canongate VesselCheck ST1-R was specifically designed as a low cost solution for measuring refrigerant. The ST1-R is highly reliable, accurate, requires no re-calibration, no drift, no moving parts and is not affected by pressure fluctuations making the product well suited to this type of application. The ST1-R is an easy external fitting to the receiver resulting in no down time lost during the installation process.

Our ST1-R is installed in over 3000 tanks throughout the UK.

Products

VesselCheck ST2
 Entirely Non-Invasive Chemical Tank Level Measurement

Our well recognised non-invasive ultrasonic tank level measurement system has been around for over 25 years. Our latest systems offer fast, reliable and very accurate tank level monitoring for all chemical types.

Benefits
• Entirely non-invasive
• Accuracy +/- 2mm
• No Maintenance
• ATEX Approved

DensiCheck TX
 In-line liquid concentration & density transmitter

Our DensiCheck TX in-line liquid concentration system is by far the most accurate and recognised system in the chemical industry.

Benefits
• Zero Drift
• Rapid payback
• ATEX Approved

Refrigeration Industry

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Refrigeration Industry

Process Instrumentation

Refrigerant leakage is one of the main challenges facing the commercial refrigeration industry and solutions aimed at reducing the probability of a leak is welcomed within the industry. As our products are truly non-invasive no new sources of potential leaks are created hence Canongates unique non invasive level measurement technology provides a low cost solution to monitoring of refrigerant levels.

Non invasive level monitoring for Horizontal refrigerant receivers

Canongate VesselCheck ST1-R was specifically designed as a low cost solution for measuring refrigerant. The ST1-R is highly reliable, accurate, requires no re-calibration, no drift, no moving parts and is not affected by pressure fluctuations making the product well suited to this type of application. The ST1-R is an easy external fitting to the receiver resulting in no down time lost during the installation process.

Our ST1-R is installed in over 3000 tanks throughout the UK.

Products

VesselCheck ST2
 Entirely Non-Invasive Chemical Tank Level Measurement

Our well recognised non-invasive ultrasonic tank level measurement system has been around for over 25 years. Our latest systems offer fast, reliable and very accurate tank level monitoring for all chemical types.

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Benefits
• Zero Drift
• Rapid payback
• ATEX Approved

Refrigeration Industry

Process Instrumentation

Refrigerant leakage is one of the main challenges facing the commercial refrigeration industry and solutions aimed at reducing the probability of a leak is welcomed within the industry. As our products are truly non-invasive no new sources of potential leaks are created hence Canongates unique non invasive level measurement technology provides a low cost solution to monitoring of refrigerant levels.

Non invasive level monitoring for Horizontal refrigerant receivers

Canongate VesselCheck ST1-R was specifically designed as a low cost solution for measuring refrigerant. The ST1-R is highly reliable, accurate, requires no re-calibration, no drift, no moving parts and is not affected by pressure fluctuations making the product well suited to this type of application. The ST1-R is an easy external fitting to the receiver resulting in no down time lost during the installation process.

Our ST1-R is installed in over 3000 tanks throughout the UK.
Process Instrumentation

The Canongate VesselCheck systems are ideally suited for measuring the levels in light liquids. Due to the non-invasive concept they are unaffected by corrosion from acids and solvents.

VesselCheck from Canongate Technology provides a truly non-invasive level measurement system, where the sensors are bonded to outside of tank walls. Options for multi-point calibration tables and local or remote display indication.

Connectivity to plant control systems via 4..20mA or 1..5v volt analogue signals, or RS485 Modbus RTU and ASCII serial protocol.

Easy installation with no tank break-in, ideal to retrofit to existing installations. With no moving parts there is little to no maintenance required.

Systems can be custom designed to suit applications where the non-approved equipment needs to be placed in an approved flameproof enclosure.

The DensiCheck has been used for many years in the chemicals industry to measure the online concentration of liquids without drawing a sample from product stream. Where required the DensiCheck has been tailored designed to meet the customers process requirements. Some typical applications:

- Acetone
- Ammonia
- Ammonium Sulphate
- Calcium Chlorate
- Ethanol
- Ethylene Glycol
- Fluorine
- Glycerine
- Hydrochloric Acid
- Hydrogen Peroxide
- Nitric Acid
- Phosphoric Acid
- Sodium Chloride
- Sodium Hydroxide
- Sodium Nitrate
- Sulphuric Acid
- Toluene
- Trytophan

Chemical Industry

LPG Industry

Process Instrumentation

Our non-invasive sensors technology provides robust, safe, reliable and simple to install level gauging solutions across a variety of LPG applications.

VesselCheck from Canongate Technology provides a truly non-invasive level measurement system, where the sensors are bonded to outside of tank walls. Options for multi-point calibration tables and local or remote display indication.

Connectivity to plant control systems via 4..20mA or 1..5v volt analogue signals, or RS485 Modbus RTU and ASCII serial protocol.

Easy installation with no tank break-in, ideal to retrofit to existing installations. With no moving parts there is little to no maintenance required.

Systems can be custom designed to suit applications where the non-approved equipment needs to be placed in an approved flameproof enclosure.

Products

VesselCheck ST1AD
Non-invasive Level Gauge for LPG Tanks

Benefits

- No Tank break-in - easy installation
- No downtime during installation
- Suitable for tanks of most shapes and materials
- Not affected by pressure
- No moving parts - no maintenance
- Low cost, reliable & accurate tank gauging

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Applications in Liquid Petroleum Gas (LPG) and Liquid Natural Gas (LNG)

The nature of the Petrochemical industries, high standards, critical safety requirements means quality and reliability are principle foundations for any products operating in this environment.

Canongate part of the Rototherm group with a strong heritage in the Petrochemical sector manufacture our products to the highest quality to ensure our products meet and exceed standards set by regulatory bodies. This ensures our products meet the high demands in the field and maintain their reputation for reliability.

Level Measurement with VesselCheck ST1AD

The Canongate VesselCheck ST1AD is a truly non invasive liquid level system based on our unique ultrasonic technology proven for over 20 years and is well suited for level detection applications in LPG to give a contents measurement in percentage. The non tank break in ensures no downtime is lost during the easy installation process, and our products require minimal maintenance thus reducing the overall cost of ownership.

This low cost highly reliable solution that is suitable for most shapes of tanks and materials has been successfully monitoring LPG levels in facilities of World leading companies throughout the globe. Both the electronics and transducer can be placed in the hazardous area.

Level Measurement with VesselCheck ST1A

The Canongate VesselCheck ST1A uses the same unique measurement principles as the ST1AD, however the electronics are not suitable to be mounted in the hazardous area.

Level Measurement with VesselCheck ST4

The Canongate VesselCheck ST4 is a 4 channel monitor using the same unique measurement principles as the ST1AD, but measures over a greater distance and gives a contents display in measurement units (tonnes, litres, etc). The ST4 sensor incorporates a temperature sensor in the ultrasonic transducer to compensate for sonic velocity changes due to temperature. The ST4 electronics must be place in the non hazardous area.

Level Measurement with VesselCheck ST2

The Canongate VesselCheck ST2 is a 2 channel monitor using the same unique measurement principles as the ST1AD, but measures over a greater distance and gives a contents display in measurement units (tonnes, litres, etc). The ST2 uses a reference sensor to compensate the sonic velocity for temperature and concentration changes. The use of the reference sensor makes ST2 a highly accurate self compensating measurement system.

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In keeping with Rototherm Group policy for continual product development and improvement, we reserve the right to amend specifications without notice.

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