VesselCheck ST1

Non-Invasive Tank Level Gauge

Processor / Display Unit

12 or 24 Vdc

100m MAX

0..5v / 4..20mA / Modbus RS485
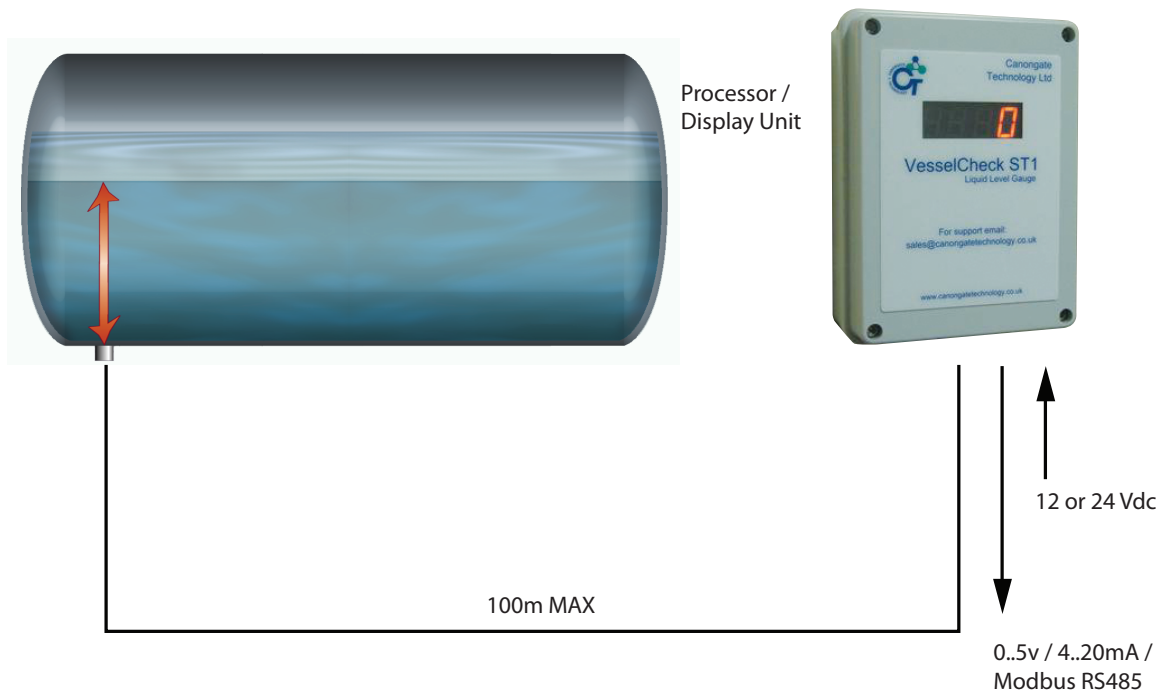
Principle of Operation

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.

Maximum measurement distance = 3000 mm

Applications:

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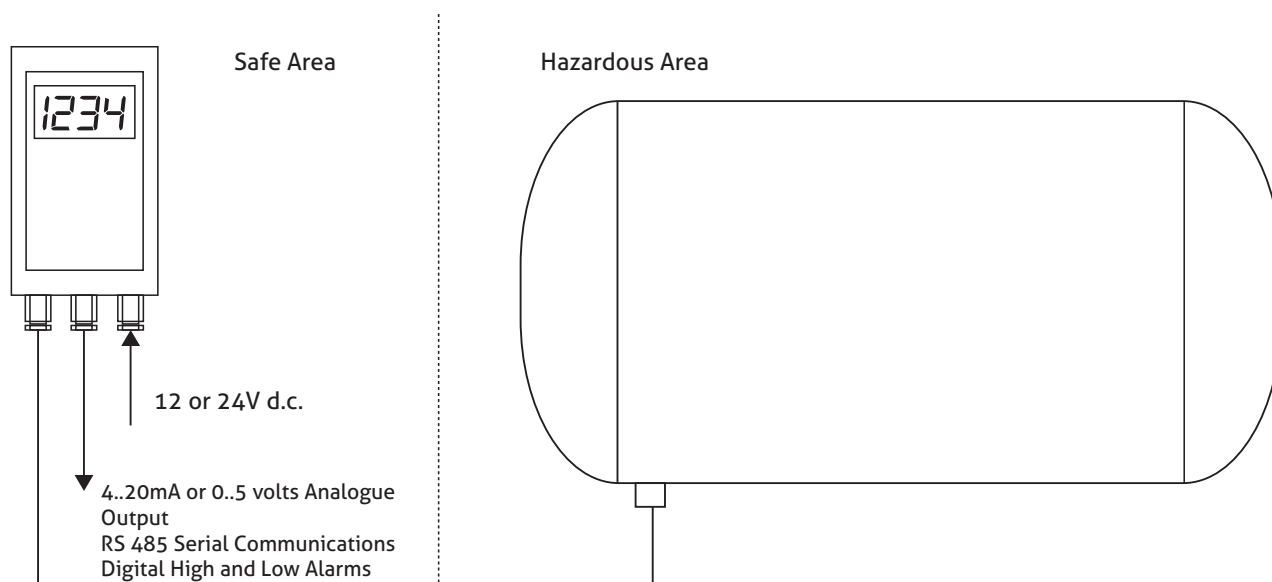- Acids/solvents tanks

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)
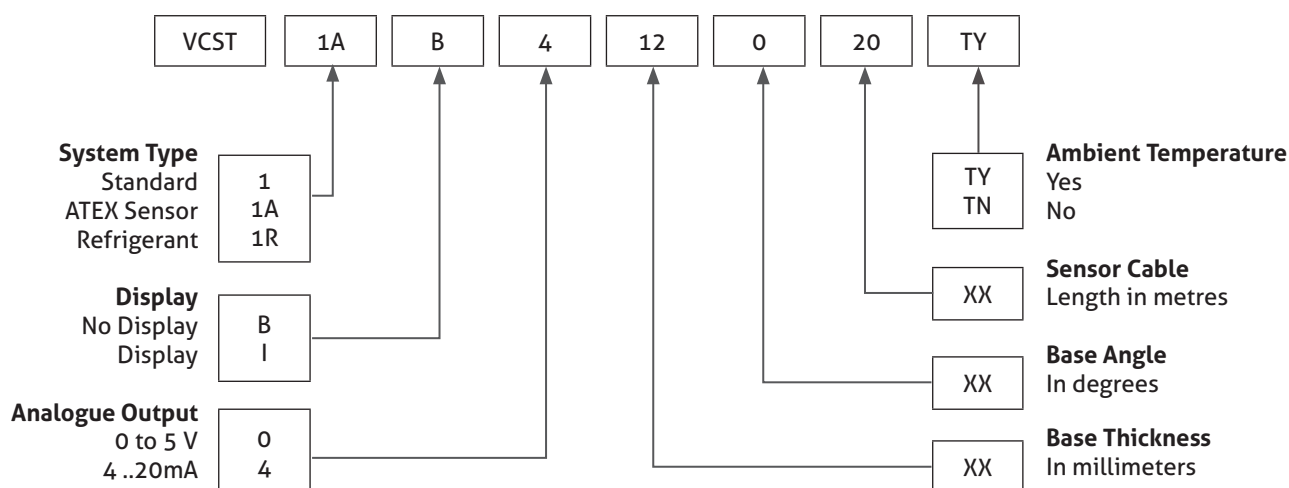- Temperature integrated sensors available

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

Rototherm
Canongate Technology

Excellence the World can Measure™

Vessel Check ST1 -Technical Specification

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

Safe Area

Hazardous Area

12 or 24V d.c.

4..20mA or 0..5 volts Analogue
Output
RS 485 Serial Communications
Digital High and Low Alarms

Product Identification Code (PIC)

VCST	1A	B	4	12	0	20	TY

System Type
Standard — 1
ATEX Sensor — 1A
Refrigerant — 1R

Display
No Display — B
Display — I

Analogue Output
0 to 5 V — 0
4 ..20mA — 4

Ambient Temperature
TY — Yes
TN — No

Sensor Cable
XX — Length in metres

Base Angle
XX — In degrees

Base Thickness
XX — In millimeters

VesselCheck Range Overview

Typical Application	Maximum Height	Number of Tanks	Hazardous Area Approval	Display	Varient
High accuracy: beer, spritis, acids, solvents, water, LPG spheres, wine	20 metres	2	Optional	Optional	ST2
Less accurate: LPG spheres, wine	20 metres	4	Optional	Optional	ST4
Fuel, water, light oils, acids	3 metres	1	No	Optional	ST1
LPG, small spirit tanks	3 metres	1	Sensor Only	Optional	ST1(A)
LPG, solvents, acids, fuels, Sulphur Dioxide, Chlorine	3 metres	1	Sensor & Processor	Yes	ST1AD
Refrigerent Gas	2 metres	1	No	Optional	ST1(R)
Graphic colour operator interface terminal & evaluation unit for use with VesselCheck systems	N/A	Up to 32	No	Yes	VCHMI

Rototherm
Canongate Technology

Excellence the World can Measure™

Rototherm Canongate Technology
Midlothian Innovation Centre, Pentlandfield, Roslin EH25 9RE United Kingdom

T: +44 (0) 131 448 0786   **E**: sales@ct-uk.co.uk   **W**: www.ct-uk.co.uk