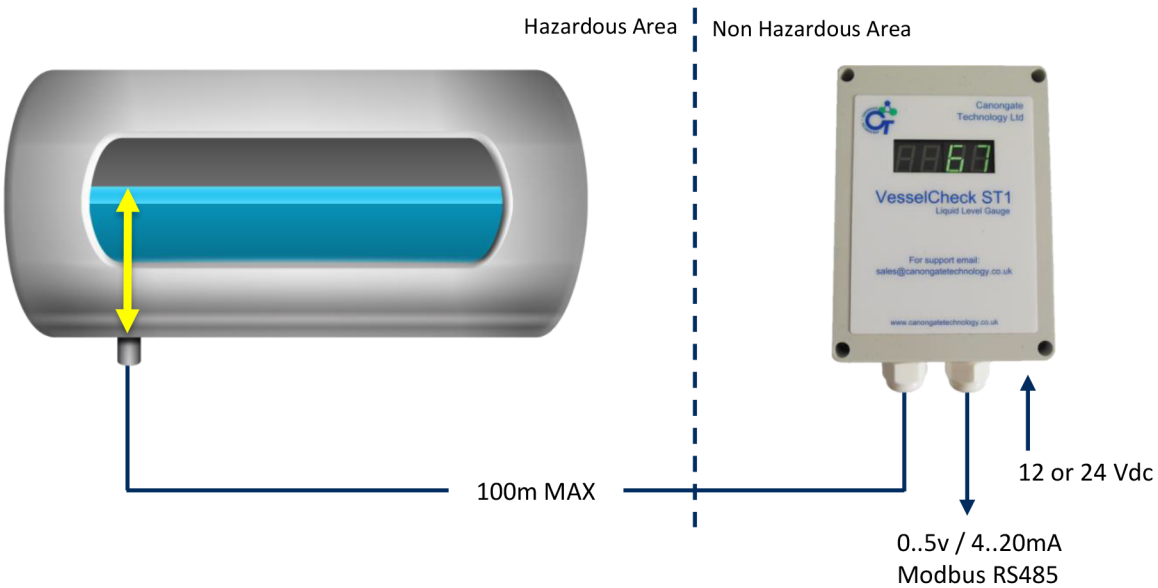
TOTAL Instrumentation Ltd
Measurable Solutions

Non-contact Level Measurement

VesselCheck ST1



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 integrated 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



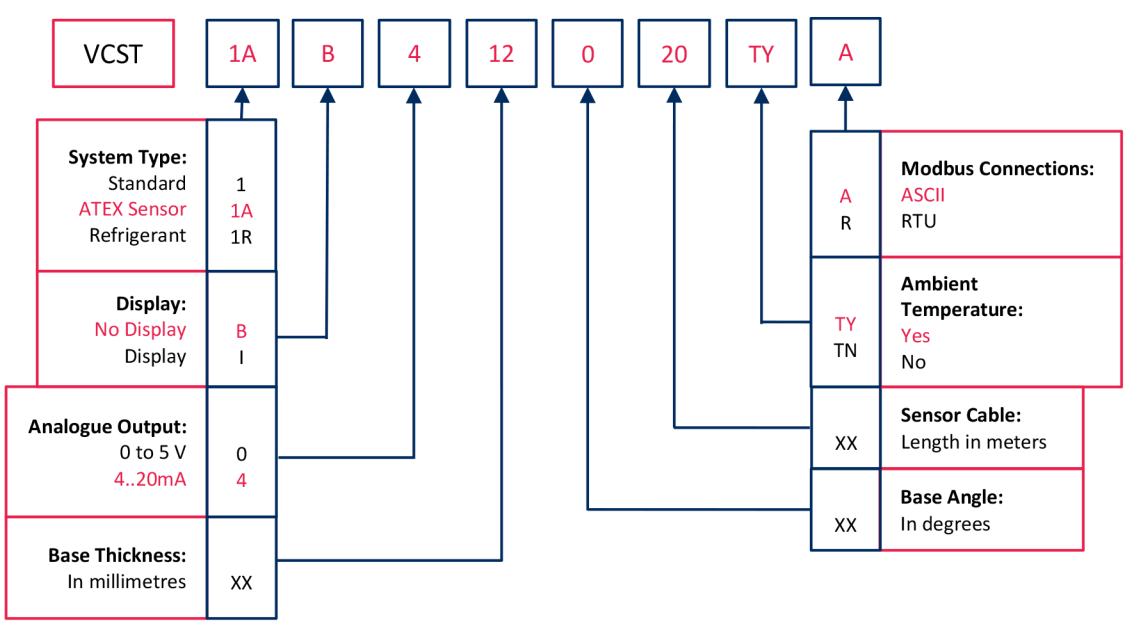
Ultrasonic Sensor

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www.totalinstrumentation.co.uk

VesselCheck ST1 – Specification

Accuracy:	Depends on liquid and temperature range
Measuring Range:	Up to 3000mm / 10 feet (application dependent)
Temperature Range (sensor):	-20°C to +125°C, - 4°F to 257°F
Hazardous Area Approval (sensor):	Ex mb IIC T5 Gb (-20°C ≤ Ta ≤ 60°C) 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
Serial Outputs:	RS485 Modbus RTU / ASCII
Power Supply:	12 to 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 TIUP

Product Identification Code



VesselCheck ST1 Application Overview

Typical Application	Maximum Height	Number of Tanks	Hazardous Area Approval	Display	Variant
Fuel, water, light oils, acids	3 meters	1	No	Optional	ST1
LPG, small spirit tanks	3 meters	1	Sensor Only	Optional	ST1(A)