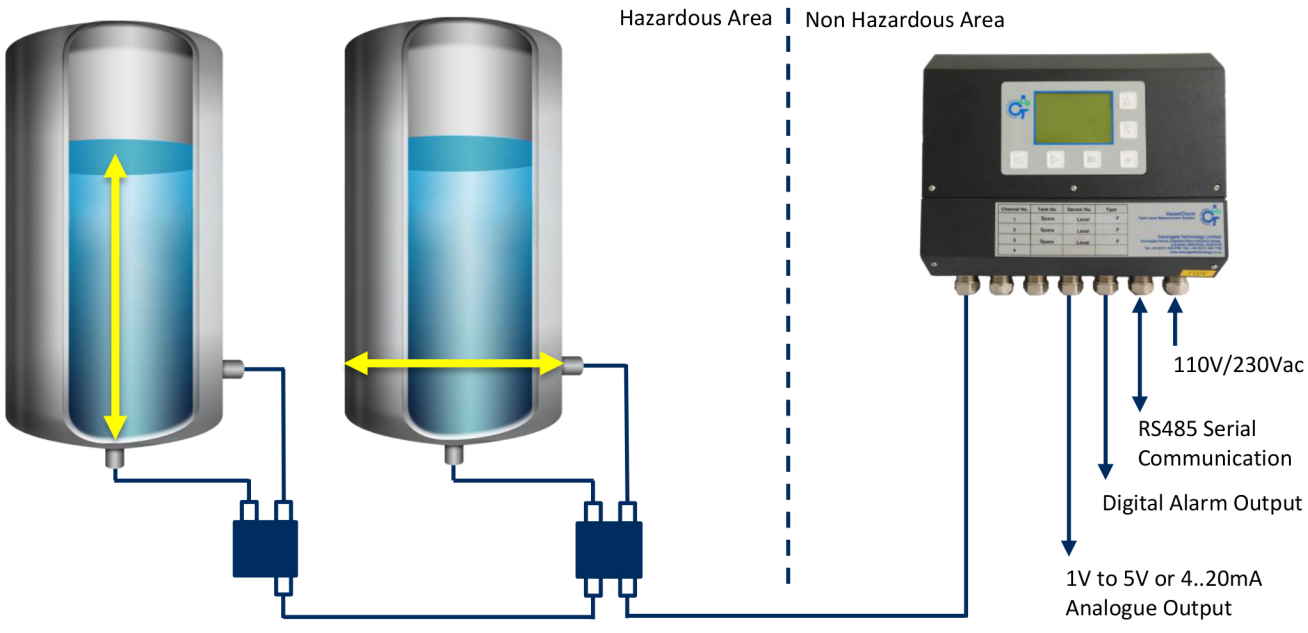
TOTAL Instrumentation Ltd
Measurable Solutions

Non-contact Level Measurement

VesselCheck ST2



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
- No moving parts – little or no maintenance required

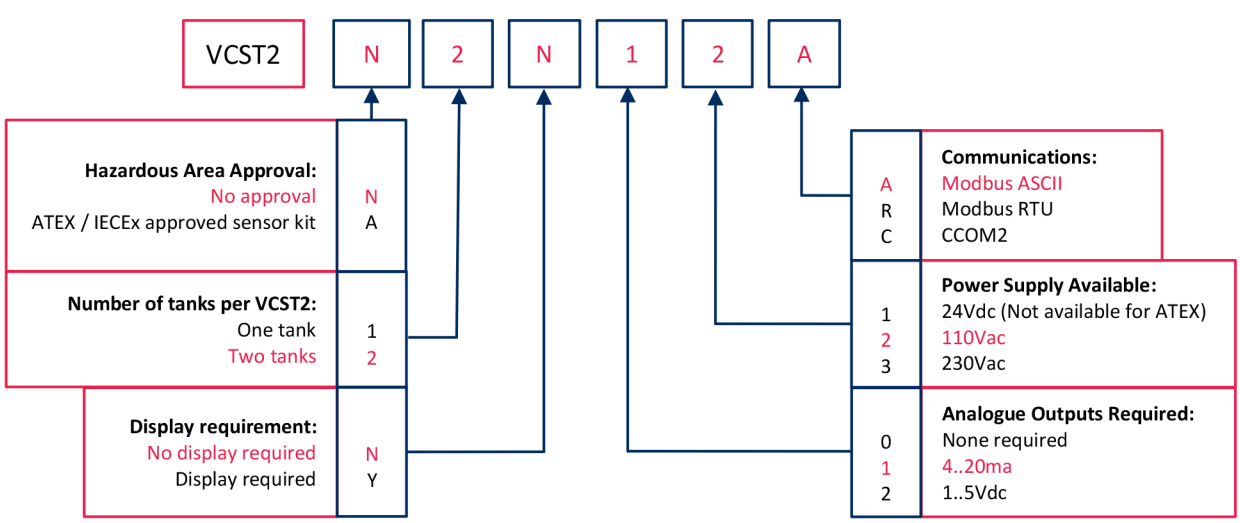


Ultrasonic Sensor

VesselCheck ST2 – Specification

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

Product Identification Code



VesselCheck ST2 Application Overview

Typical Application	Maximum Height	Number of Tanks	Hazardous Area Approval	Display	Variant
High accuaracy: beer, acids, solvents, water, LPG spheres, wine	20 meters	2	Optional	Optional	ST2