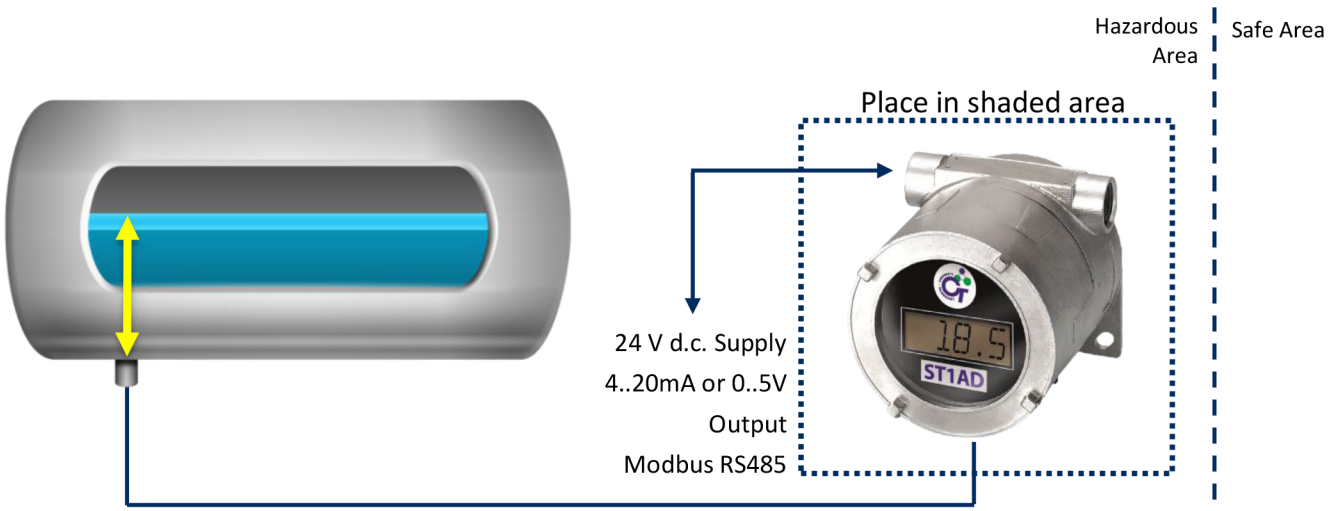
TOTAL Instrumentation Ltd
Measurable Solutions

Non-contact Level Measurement

VesselCheck ST1AD



Background

Rototherm 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 sensor 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
- Sensor bonds to outside of tank shell
- Ambient temperature compensated
- 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

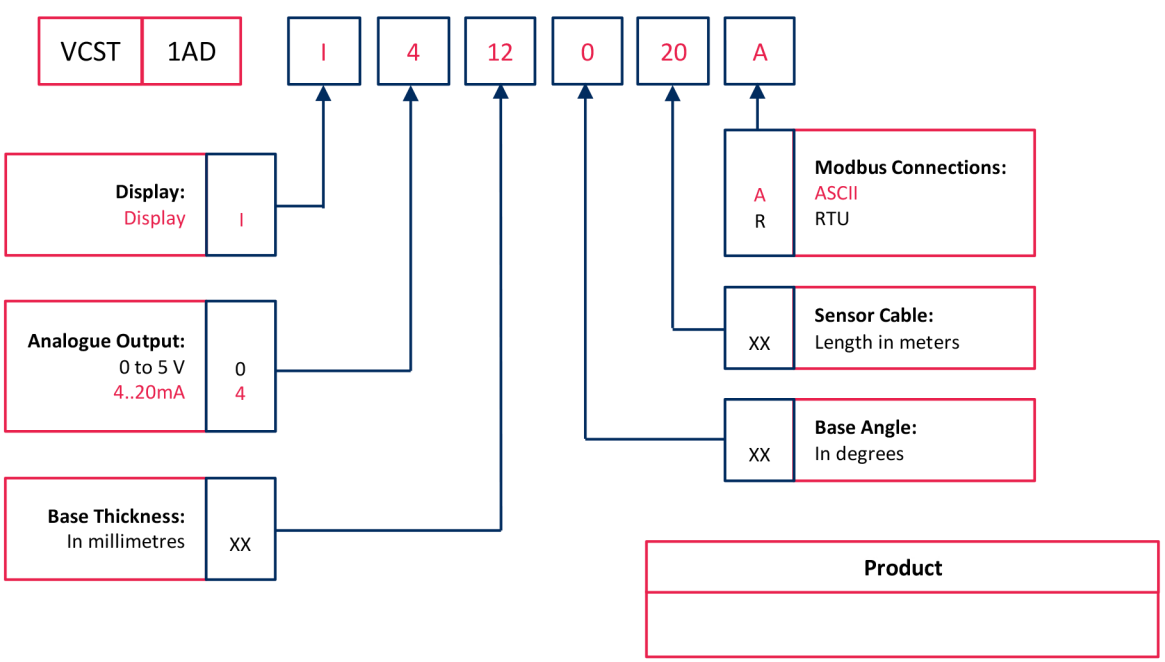


ATEX Sensor

VesselCheck ST1AD – Specification

Accuracy:	Depends on liquid and temperature range
Measuring Range:	Up to 3m / 10 feet
Temperature Range (sensor):	-20°C to +60°C, - 4°F to 140°F
Hazardous Area Approval (processor/display):	IECEx BAS 10.0080 Ex d IIC T5 (-20°C < Ta < +60°C)
Hazardous Area Approval (sensor):	IECEx BAS 11.0039X Ex mb IIC T5 Gb (-20°C ≤ Ta ≤ +60°C)
Sensor Material:	Tufnol with stainless steel cladding
Analogue Output (optional):	0..5Vdc / 4..20mA
Serial Communications:	Modbus RS485 RTU / ASCII
Power Supply:	12 / 24Vdc
Protection Rating	IP66

Product Identification Code



VesselCheck ST1AD Application Overview

Typical Application	Maximum Height	Number of Tanks	Hazardous Area Approval	Display	Variant
LPG, solvents, acids, fuels, Sulphur Dioxide, Chlorine	3 meters	1	Sensor & Processor	Yes	ST1AD