SONAR-410 FTS-D

Ultrasonic Level Sensor

SONAR-410 FTS-D represents a probe specifically designed for horizontal tanks (ASTs) and a console.

Function Description

When measuring liquid level, the principle used is based on pulse ultrasonic echolocation. The ultrasonic probe's foundation comprises a sensor block with two piezoelectric sensors (for level and submersible water level measurements) and an acoustic waveguide, enabling liquid level measurement in tanks up to 3.5 meters. Additionally, this configuration includes an option for density measurement. Liquid density is measured by a densitometer installed on the acoustic waveguide.

Technological Advantages of Freiberg Technologie

- Absence of high requirements to wear resistance and strength of the equipment structure when implementing the method.
- Measurement and calculation results are displayed on the operator's level gauge monitor and transmitted to the facility's ACS.
- The simplicity of the converters' design and their installation method onto/in reservoirs results in ease of service maintenance and a simplified service support regime, eliminating the need for expensive spare parts.
- Comes complete with a densitometer included in the package.

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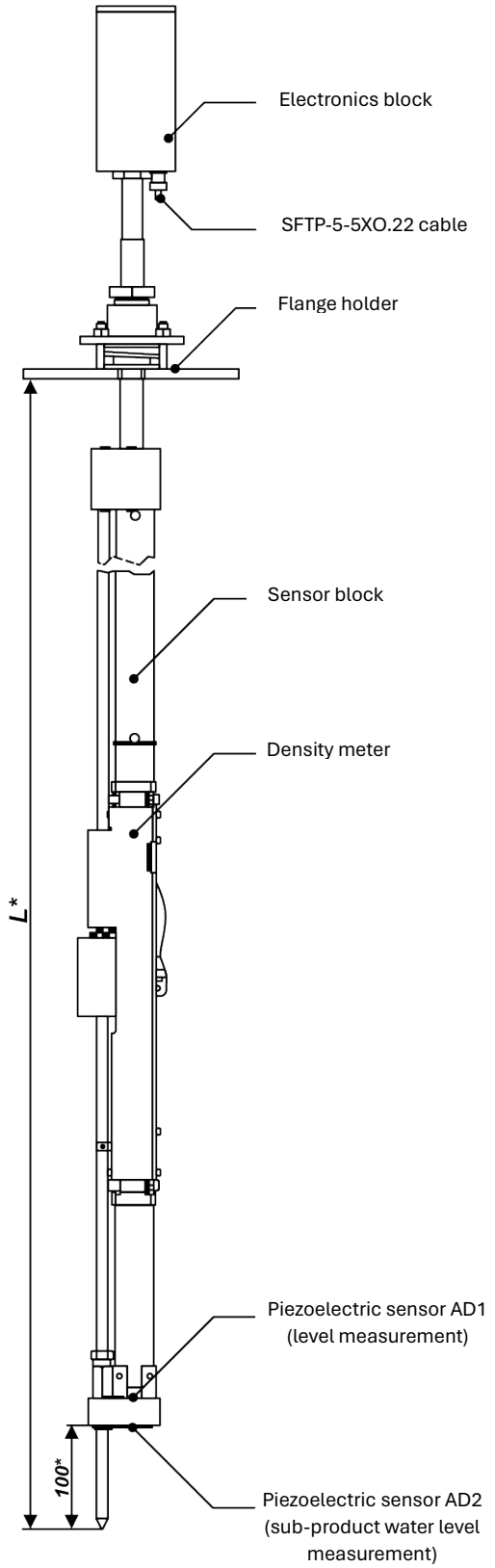

L* - The height of the sensor block is determined by the order (the height of the monitored tank).

100* - The height of the support is determined by the maximum possible level of sub-product water.

Main technical characteristics of the level gauge modification FTS-D

• Measurement range for liquid levels: from 100 mm up to 3500 mm inclusive.

• Maximum permissible inaccuracy in liquid level measurement: ±1.0 mm.

• Range of measurement for product water level: from 5 mm to 100 mm inclusive.

• Maximum permissible inaccuracy in measuring the product water level: ±1.0 mm.

• Range of temperature measurement of the liquid inside the tank: from -10°C to +30°C inclusive.

• Maximum permissible inaccuracy in temperature measurement: ± 0,5 °C.

• Density measurement ranges for light petroleum products:
- Current values:
from 720.0 kg/m^3 to 770.0 kg/m^3 inclusive;
from 770.0 kg/m^3 to 870.0 kg/m^3 inclusive.
- Values adjusted to a temperature of 15°C
from 730.0 kg/m^3 to 770.0 kg/m^3 inclusive;
from 770.0 kg/m^3 to 860.0 kg/m^3 inclusive.

• Maximum permissible inaccuracy in measuring the density of light petroleum products: ± 0.5 kg/m^3.

• Operating temperature of the probe components:
- Sensor block: from -40 to +50 °C;
- Electronics block: from -40 to +50 °C.

•Degree of protection of the level gauges' components against ingress of water, dust, and foreign solid particles:
- IP68 - sensor block of the probe;
- IP65 - electronics block of the probe.

• The components of the probe have explosion-proof design and are marked for explosion protection:
- Sensor block "0Ex ia IIB T4 Ga"
- Electronics block "1Ex ib [ia Ga] IIB T4 Gb"
And can be installed (used) as follows:
- Sensor block - in hazardous area class 0
- Electronics block - in hazardous area class 1

• The probe can be used to measure the level of acoustically transparent liquids that are non-aggressive to the materials from which the components of the probe are made and which come into contact with the environment:
Stainless steel 12X18H9T
Fiberglass pipe is covered with antistatic primer-enamel Steel St10

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