

## Ultrasonic Level Transmitter

### AlphaSonic - xx

#### Technical Passport

#### BASIC TECHNICAL SPECIFICATIONS

Description		Value
Resolution, mm		0.1
Error of measurement	Reduced	±5% (AlphaSonic-10) ±2% (AlphaSonic-20)
	Absolute	±1mm (AlphaSonic-30)
Operating temperature range, °C		- 40 ... + 75
Measuring range, mm		100...2400*
Transmitter parts IP rating		IP67
Transmitter explosion-proof marking		II 2G Ex ib IIB T4 Gb
Explosion-proof marking of spark protection unit BIZ-06 (individual product)		II (1) G [Ex ia Ga] IIB
Supply voltage, working range, V		+4 ...+6
Current consumption, mA, max		100
* - If the fuel level is less than the lower limit of the measuring range, incorrect transmitter readings are possible. It is recommended to refuel without waiting for the fuel level to reach the lower limit of the measuring range		

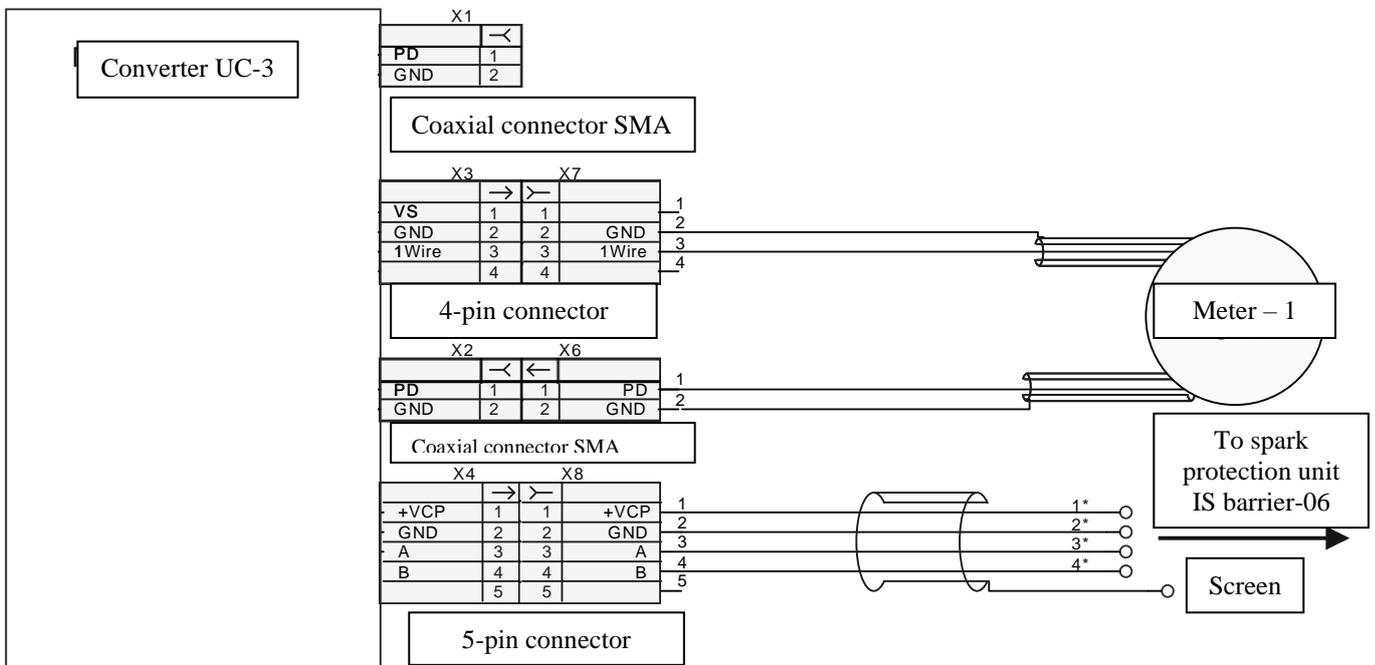
## PRODUCT BASIC DATA

This technical passport is for AlphaSonic-xx level transmitter (hereinafter referred to as transmitters) designed for continuous automatic non-contact measurement of liquid and liquefied fuel levels (for example, propane-butane) located in stationary cylindrical metal containers (tanks) and conversion it into a proportional digital signal.

The transmitter comprises the ultrasonic transmitters/meters connected to a signal converter, which, in turn, is connected to the external data and power lines through the spark protection unit, as shown in Fig. 1 to 3:

Model Series and designation of the transmitter design version when ordering:

- **AlphaSonic-10** – 1 meter with a temperature transmitter and a converter (Fig. 1);
- **AlphaSonic-20** – 1 meter with a temperature transmitter, 1 meter without a temperature transmitter and a converter (Fig. 2);
- **AlphaSonic-30** – 2 meters without a temperature transmitter, a distributed temperature meter and a converter (Fig. 3).



*Fig. 1 - Connection diagram of the AlphaSonic-10 model transmitter*

Meters are installed from the outer lower or lower and lateral sides of the tank. They emit ultrasonic waves into the fuel tank and receive the reflected signal, which is sent to the transmitter.

The 1 meter measures the distance to the separation of media (liquid and gaseous), the 2 meter is used for measuring the medium properties (sound velocity) and is intended to correct the readings of the 1 meter to increase the accuracy of measurements.

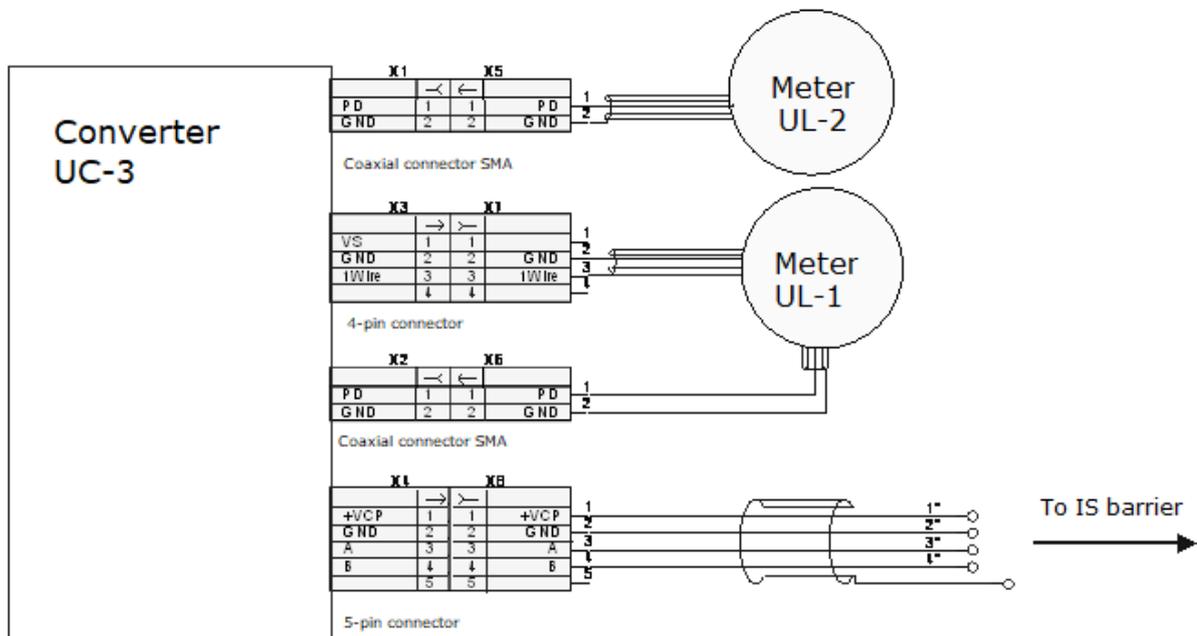


Fig. 2 - Connection diagram of the AlphaSonic-20 model transmitter

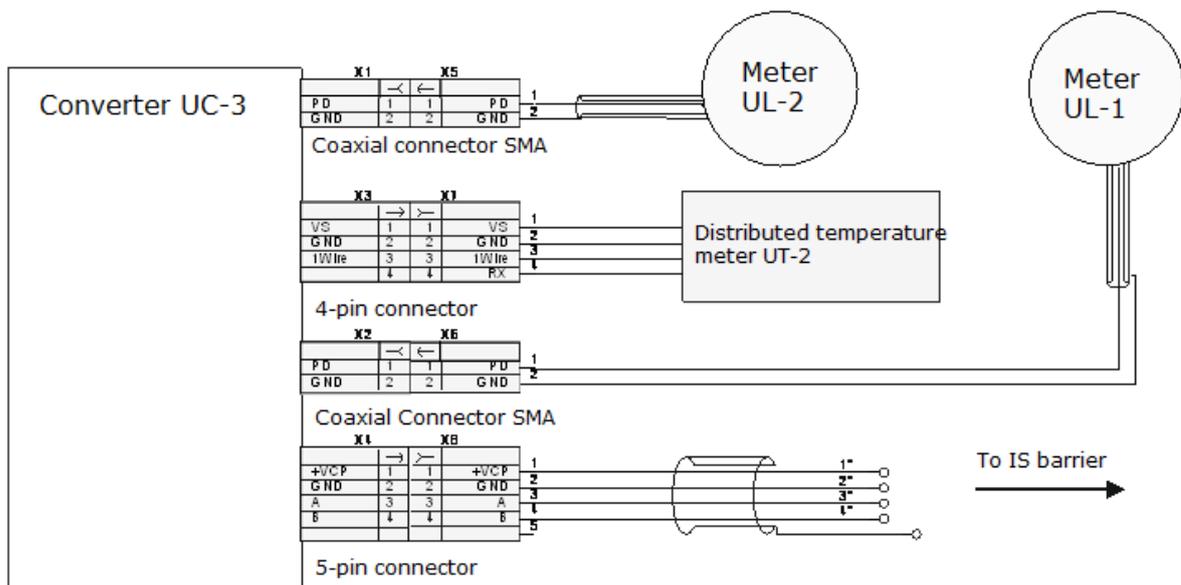


Fig. 3 - Connection diagram of the AlphaSonic-30 model transmitter

In the AlphaSonic-30 model transmitter, a chain of UT-2 distributed temperature transmitters is connected to the converter to measure the medium temperature, also to increase the accuracy of measurements.

The converter calculates the fuel level based on the results of processing data from the meters and transmits the data through an external galvanic separation in the IS barrier spark protection unit (it is not included in the scope of delivery of the transmitter) to an external controller device for further processing via the RS-485 or RS-232 interface.

Type of climatic design version of meters, transmitter and spark protection unit is UKL 1 according to GOST 15150, but for the range of ambient temperature from minus 40°C to plus 75°C.

The transmitters belong to single-function, renewable, repaired products.

### SCOPE OF DELIVERY

Description	QTY			Remarks	It. on Fig. 4
	10	20	30		
Meter UL-1	1	1	-	With temperature transmitter, 3.5 m cable length	1
Meter UL-2	-	1	2	Without temperature transmitter, 3.5 m cable length	2
Temperature meter UT-2	-	-	1	1.5 m cable length	4
Heat insulators	-	-	1	set	7
Ground wires	-	-	2	1m wire length	
Converter UC-3	1				3
Cable	1				5
Meter lock	1			set	6
Connectors cover	1				8
Connector cap	1				9
Screw M5 x 12	2				15
Cable tie	20			140 x 3.5 mm	16
Mounting area for cable ties	5				17
Grease ЦИАТИМ-221	20 g				20
Box	1			with serial number label	10
Technical Passport	1				11
Installation and Operation Manual ULB.0000 IOM	1				12

All transmitter models **must** be connected to external data and power lines through the IS barrier unit, which is supplied as a separate product.

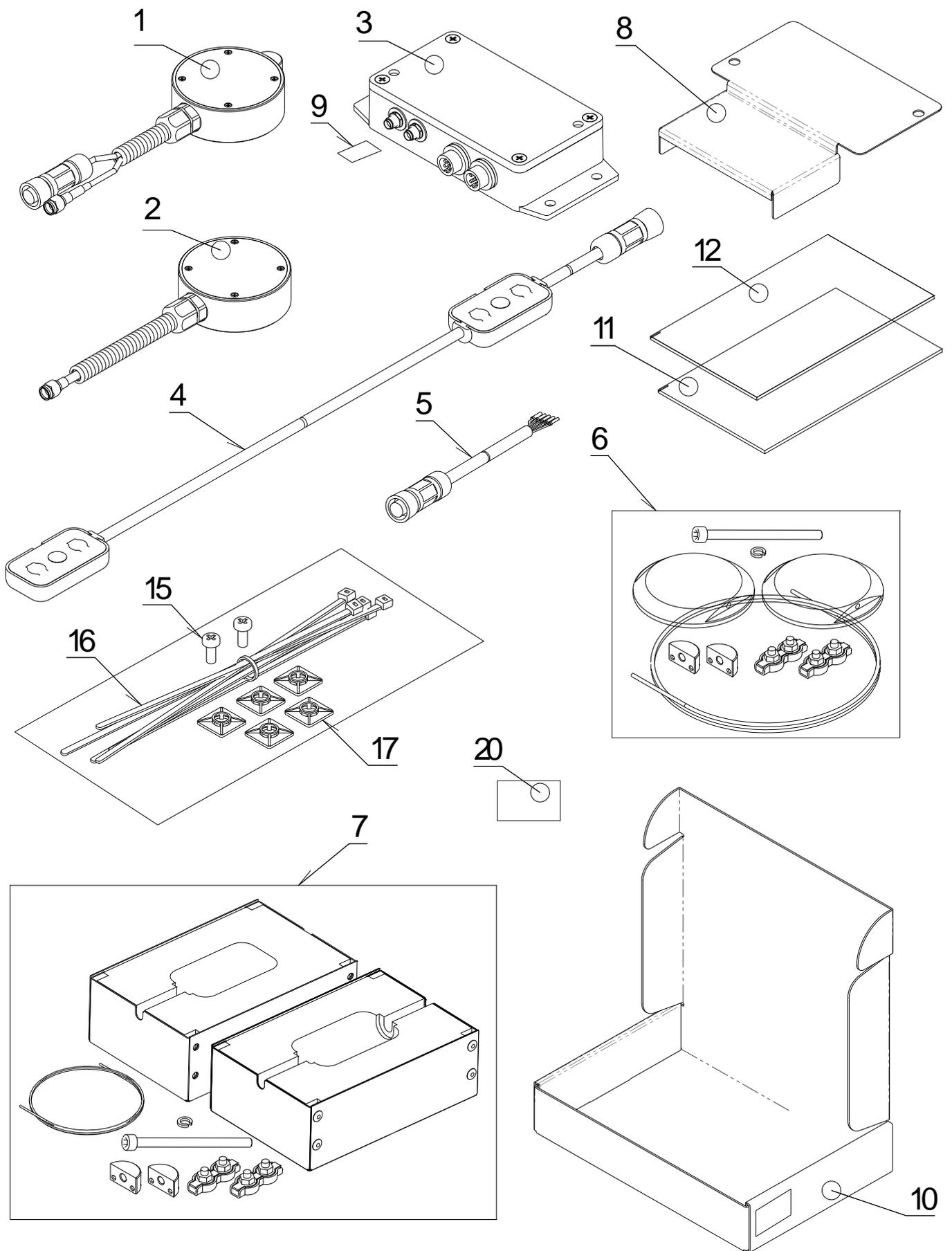


Fig. 4 – Scope of delivery

## INSTALLATION

Installation and adjustment of the transmitter are carried out according to the Installation and Operating Manual 0000 IOM.

The electrical connection of the transmitter comprises connecting the transmitter parts in accordance with the diagrams of Fig. 1 to 3 and cable connection of the spark protection unit. The spark protection unit is connected to an external controller.

### Service of interface cable outputs

No. of wire	Service
1	U <sub>+</sub>
2	U <sub>-</sub> (common)
3	A (RS-485)
4	B (RS-485)

The tank must be grounded!

## MANUFACTURER (SUPPLIER) WARRANTY

Warranty period is 12 months from the date of sale of the transmitter to the end user.

If there is no mark of the selling organization on the sale date in this technical passport or warranty card, the warranty period is 18 months from the date of manufacture of the transmitter by the manufacturer.

The specified warranty is valid if the user complies with the requirements of the current operational documentation.

In case of violation of these requirements, or in the presence of traces of high-voltage voltage, aggressive media or mechanical damage, the warranty is considered invalid.

## SERVICE CENTRE ADDRESS

10 Priorska Str., Kyiv, 04114, Ukraine  
Phone/Fax: (+38044) 502-46-55  
E-mail: [support@technotrade.ua](mailto:support@technotrade.ua)

## ACCEPTANCE CERTIFICATE

AlphaSonic Level Transmitter - \_\_\_\_ Model

of Serial No. \_\_\_\_\_

is manufactured and accepted in accordance with the current technical documentation  
and approved as fit for operation.

QCD Representative

Seal

\_\_\_\_\_

signature

\_\_\_\_\_

full name

\_\_\_\_\_20\_\_

## PURCHASE CERTIFICATE

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Name of the Company has sold the product

Seal

\_\_\_\_\_

signature

\_\_\_\_\_

full name

\_\_\_\_\_20\_\_

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