UNDERWATER
COMMUNICATION & NAVIGATION
LABORATORY

+7 (499) 322 2537
support@unavlab.com
http://unavlab.com

Datasheet

Zima

USBL underwater navigation system
ZimaR device

DESCRIPTION:

ZimaR is a beacon-responder of ultrashort baseline navigation system.

The device is designed for receiving telecontrol commands from the base station, transmitting the telemetry information to the base station and for determining the direction of both the beacon (for the base station) and the base station (for the beacon) and the simultaneous distance determination.

The device can be both stand-alone (with an additional battery pack), and be interfaced energetically and informationally with the vehicle. In this case, telecontrol commands, distance to the base station and an azimuth angle to the base station can be transmitted to the vehicle.

An ideal solution for determining the direction and distance to underwater objects.

The extremely small size, low power consumption and ease of use make the Zima direction finding system an ideal solution for working with autonomous and remote-controlled devices as well as determining the relative position of divers.

KEY FEATURES:

- Minimum weight and dimensions
- Operating range up to 8000 m
- Highly reliable digital hydroacoustic communication resistant to multipath propagation
- Low power consumption 0.3 / 25 W (Rx / Tx)
- Up to 23 beacon-responders
- The patented technology of simultaneous navigation

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TECHNICAL SPECIFICATION:

DIMENSIONS	Ø64x62 mm
WEIGHT (DRY)[1]	0.3 kg
ACOUSTIC RANGE (ENERGETIC)	8000 m
FREQUENCY BAND	6-18 kHz
DEPTH RATING	300 m
NOMINAL DEPTH ACCURACY	0.1 m
BIT ERROR RATE	10^-6
START-UP TIME	100 ms
SNR[2]	-6 dB
WIRE LENGTH[3]	1.5 m
RELATIVE VELOCITY (RT-TX)	+/- 1.8 m/s
TEMPERATURE RANGE	-5..50 ˚C
BUILT-IN TEMPERATURE SENSOR ACCURACY	0.1 ˚C
POWER CONSUMPTION (RX / TX)	0.3 / 25 W
POWER SUPPLY	4-12 V
INTERFACE[4]	UART 9600 bit/s
PROTOCOL	NMEA 0183 + PZMA
DATA LINE VOLTAGE	0..3 V
CODE DIVISION SCHEME (COMMANDS/SUBSCRIBERS)	32/23
NOMINAL ACCURACY OF DETERMINING THE HORIZONTAL ANGLE[5]	1˚
NOMINAL ACCURACY OF DISTANCE DETERMINATION	0.3 m

1. Without taking into account the weight of the battery pack. The standard battery pack is Ø50x165 mm, 0.58 kg, 2.9 Ah 12 V. Operating time from the standard battery pack in standby mode is up to 70 hours, with the emission of 1 time in 3 seconds to 8 hours
2. Value obtained without multipath effect
3. Can be changed by special request
4. Obtained under laboratory conditions in a static experiment
5. Can be changed by special request