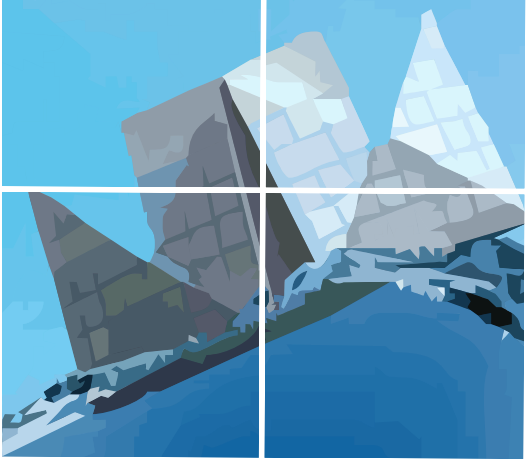
PRODUCT CATALOG



ABOUT US

Marlin-Yug is a research and manufacturing company, founded in 1990. The priority activity areas of the company are the development of unique scientific and technical equipment for environmental and scientific monitoring of the marine environment. In particular, we develop and produce the autonomous marine measurement platforms with different types of communication (including satellite), in particular - surface drifting buoys (drifters). Based on that, we are engaged in the development and implementation of drifting technology as one of the most promising tool to study the ocean and atmosphere variability. Modern measurement and information drifter capabilities allow performing measurements in-situ of all environmental parameters in any part of the World ocean, ensuring the delivery of information to users in real-time.

We are one of a few companies in the world that offers integrated solutions in the field of drifting technology; that are a reliable, inexpensive drifting buoys and measurement platforms of different prototypes with satellite connection. Our products are exported to more than 15 countries, including USA, France, Japan, Sweden, South Africa, India, Australia, New Zealand and other countries, which confirms the quality and relevance of our products.

Since the mid-1990s it was started producing of the SVP-B type of drifters. These buoys are fully consistent with international standards for using in the global drifter observations networks in the oceans.

Since the early 2000s the company started successful development of new perspective projects. In particular production of temperature-profiling drifters was begun. This type includes the set of unique buoys, which enable monitoring of the vertical distribution of temperature in upper layer of sea with high spatial and temporal resolution. Since 2010 the company develops and expands the range of products for the polar and subpolar regions. In particular, this is equipment that adapt to long-term reliable operation in the harsh environment of Arctic. It provides under ice temperature monitoring. These products are used by scientific organizations as well as the oil and gas industrie companies.

Our company carries out full cycle of scientific and production activities: research, development, testing, manufacture, sale and support of products in use. We don’t propose a mass product; we are focusing at creating unique devices that are optimally adapted to the task. As developers and manufacturers, we can always upgrade our products according to the wishes of the customer. Scientific activity is one of the important activities of the company. This is due to joint activity with the Marine Hydrophysical Institute and other organizations - leaders in oceanographic science.

Developed and manufactured in the Marlin-Yug observation tools and methods of data processing allowed significantly expand information and measurement capabilities of environmental monitoring by means drifters. The results of company's employees are reflected in many scientific publications.

We hope for successful and mutually beneficial cooperation!

PRODUCTS

Satellite Trackers

Operational monitoring of direction and velocity of ice and other objects movement (icebergs, ice floes, glaciers, oil spills, fishing nets, etc.).

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Surface Lagrangian Drifters

Monitoring of subsurface ocean currents, including in shelf areas. Measurements of sea surface temperature and sea level pressure (air pressure).

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Temperature-Profiling Drifting Buoys

Monitoring of subsurface ocean currents and vertical temperature variability, including in water layers below ice.

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Water Level Gauges

Operational monitoring of shelf, underground and flood water level.

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Test Equipment

Test receiver ATR20 for different Argos data platform (ARGOS receiver).

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Satellite Tracking Solutions for Animals

Tracking marine and terrestrial animals.

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Satellite Trackers

Satellite Trackers
iceST/20, iceST/20F, iceST/20P, iceST-B/20

Functionality

Real-time monitoring of natural sea ice (icebergs, ice fields) flow movement in open water with temperature and air pressure measurements. Satellite telemetry system is used for tracking and data transfer.

Sensors

Position data (GPS/Glonass)	
GNSS receiver	GlobalTop Titan3
Temperature	
Range	-30°C to 10°C
Accuracy	+/- 0.5°C
Resolution	0.08°C
Air pressure (iceST-B/20)	
Range	850 to 1050 hPa
Accuracy	+/- 2 hPa
Resolution	0.1 hPa
Measurement interval	hourly
Sensors activation	at round hours

Communication

Satellite system Argos (Iridium available upon request)

Operation

Environment temperature	-30°C to 50°C
Lifetime	100 days at least

Construction

Battery	lithium
Activation switch	removable magnet
Hull	
Body	fiberglass plastic
Color	white
Diameter	20 cm
Height	40 cm (iceST/20F) 44 cm (iceST-B/20F)
Mass	3 kg
Tracker in parachute package (iceST/20P)	
Dimension	65×30×25 cm
Weight	8 kg
Fixation on ice (except iceST/20P)	removable rod length 45 cm, diameter 3.5 cm

iceST/20

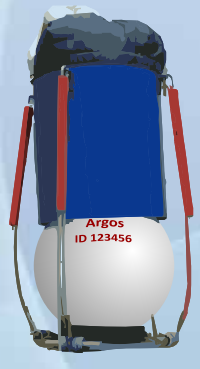
Keeps on operation after drop into water

iceST/20F

Stops operation after drop into water

iceST/20P

With parachute package to air deployment



iceST-B/20

With air pressure sensor.
Stops operation after drop into water

Satellite Trackers
fishST/20, fishST/30 for fishing nets

Functionality

Real-time GPS/Glonass monitoring of location and identification of stationary and drifting fishing nets. Satellite telemetry systems Argos or Iridium are used for data transfer. The tracker is designed as surface buoy with 20 cm (fishST/20) or 34 cm (fishST/30) sphere-shaped hull, attached to fishing net. In addition the water temperature is measured. The accurate coordinates of fishing nets and water temperature readings are easy of access through Internet.

Sensors

Position data (GPS/Glonass)	
GNSS receiver	GlobalTop Titan3
Water temperature	
Range	-5°C to 35°C
Accuracy	+/- 0.5°C
Resolution	0.08°C
Measurement interval*	hourly
Sensors activation*	at round hours

Communication

Satellite system Argos or Iridium (upon request)

Operation

Environment temperature	-30°C to 50°C
Lifetime*	
fishST/20	4 months at least
fishST/30	12 months at least

Construction

Battery*	irremovable
fishST/20	lithium
fishST/30	alkaline
Activation switch	removable magnet
Hull	
Body	fiberglass plastic
Color	white
Diameter	
fishST/20	20 cm
fishST/30	34 cm
Weight	
fishST/20	3 kg
fishST/30	9 kg
Attaching to fishing net	polypropylene line

*These parameters can be modified on user request.
It is possible to limit the operational time by factory setup.

fishST/20

fishST/30

Satellite Trackers
iceST/30, iceST-B/30, iceST/40, iceST-B/40

Functionality

Real-time monitoring of natural sea ice and surface water flow movement with temperature and air pressure measurements. Satellite telemetry system is used for tracking and data transfer.

Sensors

Position data (GPS/Glonass)	
GNSS receiver	GlobalTop Titan3
Temperature	
Range	-30°C to 10°C
Accuracy	+/- 0.5°C
Resolution	0.08°C
Air pressure (iceST-B/30, iceST-B/40)	
Range	850 to 1050 hPa
Accuracy	+/- 2 hPa
Resolution	0.1 hPa
Measurement interval	hourly
Sensors activation	at round hours

Communication

Satellite system Argos (Iridium available upon request)

Operation

Environment temperature	-30°C to 50°C
Lifetime	
iceST/30, iceST-B/30	18 months at least
iceST/40, iceST-B/40	24 months at least

Construction

Battery	alkaline
Activation switch	removable magnet
Hull	
Body	fiberglass plastic
Colour	white
Diameter	
iceST/30, iceST-B/30	34 cm
iceST/40, iceST-B/40	41 cm
Weight	
iceST/30, iceST-B/30	9 kg
iceST/40, iceST-B/40	16 kg

iceST/30, iceST/40

iceST-B/30, iceST-B/40

With air pressure sensor

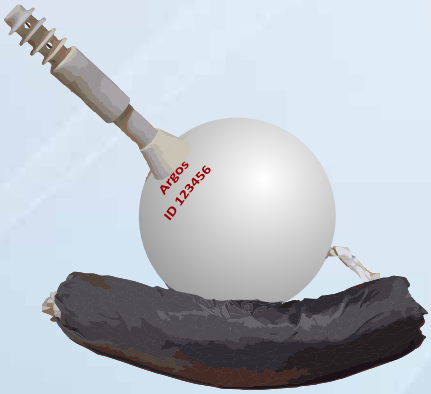
Satellite Tracker
oilST/30P

Functionality

Real-time control of the trajectories of surface pollutions (oil spills, fuel spills) and monitoring of hydrometeorological conditions with data transmission through satellite.

Sensors

Position data (GPS/Glonass)	
GNSS receiver	GlobalTop Titan3 or Hemisphere GNSS Eclipse
Water temperature	
Range	-5 to +35°C
Accuracy	+/- 0.1°C
Resolution	0.01°C
Air temperature	
Range	-30 to +50°C
Accuracy	+/- 1.0°C
Resolution	0.1°C
Air pressure	
Range	850 to 1050 hPa
Accuracy	+/- 1 hPa
Resolution	0.1 hPa
Surface waves parameters	
According to Hemisphere GNSS Eclipse	
Measurement interval	15 min



With parachute pack for aircraft or helicopter deployment

Communication

Satellite systems Argos or Iridium

Operation

Environment temperature	-30°C to +50°C
Lifetime	15 days at least

Construction

Battery	alkaline
Activation switch	removable magnet
Hull	
Body	fiberglass plastic
Colour	white
Diameter	34 cm
Height	75 cm
Weight	14 kg
Parachute pack	30 x 25 x 15 cm

Satellite Trackers
iceST/40-Glacier, iceST-B/40-Glacier

Functionality

Long-term monitoring of motion parameters for the slowly moving ice formations (for example, glaciers), temperature and atmospheric pressure measurements with data transmission through satellite.

Sensors

Position data (GPS/Glonass)	
GNSS receiver	GlobalTop Titan3
Range	
latitude	±90°
longitude	0 to 360°
Accuracy (with processing algorithm)	
latitude	+/- 0.000005°
longitude	+/- 0.000008°
Resolution	0.000001°
Temperature	
Range	-40 to +60°C
Accuracy	+/- 0.5°C
Resolution	0.2°C
Air pressure (iceST-B/40-Glacier)	
Range	850 to 1050 hPa
Accuracy	+/- 2 hPa
Resolution	0.1 hPa
Measurement interval	weekly
Sensors activation	every Sunday
Measurement duration	1 day

Communication

Satellite system Argos or Iridium

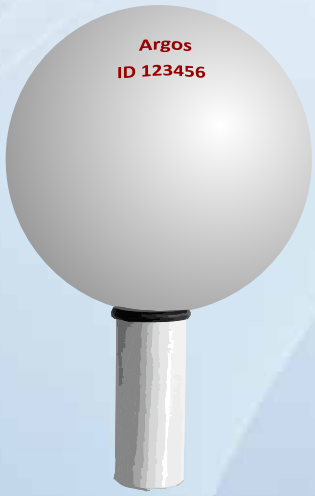
Operation

Environment temperature	-30°C to 50°C
Lifetime	12 month at least

Construction

Battery	alkaline
Activation switch	removable magnet
Hull	
Body	fiberglass plastic
Colour	white
Diameter	41 cm
Weight	16 kg
Fixation on the ice	rod length 26 cm, diameter 10 cm

iceST/40-Glacier



iceST-B/40-Glacier

With air pressure sensor

Surface Drifting Lagrangian Buoys

Surface Drifting Lagrangian Buoys (Drifters)
SVP/30H, SVP-B/30H, SVP/40H, SVP-B/40H

Functionality

The study of water circulation in the upper layer of the open ocean areas and monitoring of hydrometeorological parameters with data transfer through satellite. The buoys are equipped with an underwater Holey Sock drogue and fully agree with technical standards for SVP and SVP-B drifters.

Sensors

Position data (GPS/Glonass)	
GNSS receiver	GlobalTop Titan3
Additionally	Doppler effect
	Argos or Iridium
Sea surface temperature	
Range	-5 to +35°C
Accuracy	+/- 0.1°C
Resolution	0.08°C
Air pressure (SVP-B/30H, SVP-B/40H)	
Range	850 to 1050 hPa
Accuracy	+/- 1 hPa
Resolution	0.1 hPa
Measurement interval	hourly
Sensors activation	at round hours

Communication

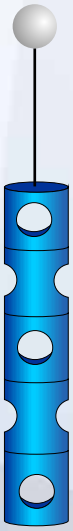
Satellite system Argos or Iridium

Operation

Environment temperature	-30 to +50°C
Lifetime	
SVP/30H, SVP-B/30H	18 months at least
SVP/40H, SVP-B/40H	24 months at least
Deployment	drop from a running ship

Construction

Battery	alkaline
Activation switch	removable magnet
Hull	
SVP/30H, SVP-B/30H	34 cm
SVP/40H, SVP-B/40H	41 cm
Drogue	Holey Sock
Drogue depth	15 m
Drogue height	
SVP/30H, SVP-B/30H	6.1 m
SVP/40H, SVP-B/40H	5.5 m
DAR*	40 at least
Dimension, weight (in the package for automatic deployment)	
SVP/30H, SVP-B/30H	65 x 65 x 60 cm, 20 kg
SVP/40H, SVP-B/40H	93 x 93 x 60 cm, 36 kg



SVP/30H
SVP/40H

SVP-B/30H
SVP-B/40H

In the package for automatic deployment

*DAR (Drag Area Ratio) - ratio of drogue drag area to the total drag area of non drogue elements of drifter

Surface Drifting Lagrangian Buoy (Drifter) SVP/30T

Functionality

Study of water circulation in ocean upper layer, the sea surface temperature measurements with data transfer through GSM and/or satellite. Drifter is equipped with small-sized underwater Tristar drogue and is designed to be used in the shelf areas of ocean.

Sensors

Position data (GPS/Glonass)	
GNSS receiver	GlobalTop Titan3
Temperature	
Range	-5 to +40°C
Accuracy	+/- 0.1°C
Resolution	0.01°C
Measurement interval	1 min

Communication

GSM (GPRS)

Satellite system Argos or Iridium (option)

Operation

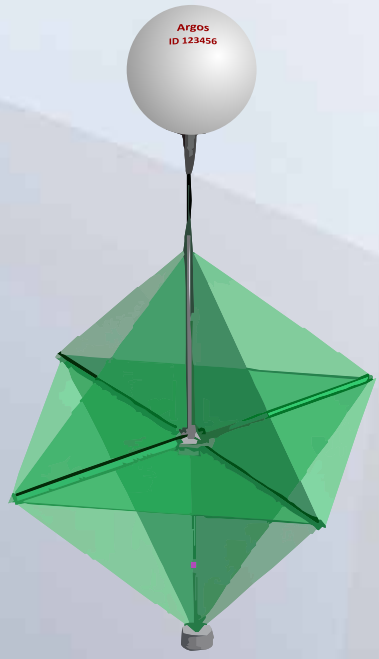
Environment temperature	-20°C to 50°C
Lifetime	48 hours at least

Construction

Battery	alkaline
Type	replaceable
Activation switch	removable magnet
Hull	
Body	fiberglass plastic
Colour	white
Diameter	34 cm
Drogue	
Material	nylon
Type	Tristar
Dimensions	
Operational	100 x 100 x 100 cm
Packaged	25 x 25 x 70 cm
Drogue depth	1 m
DAR*	40 at least
Weight	12 kg

*DAR (Drag Area Ratio) - ratio of drogue drag area to the total drag area of non drogue elements of drifter

SVP/30T



Temperature-Profiling Drifting Buoys

Temperature-Profiling Drifting Buoys SVP-TC80/40H, SVP-BTC80/40H

Functionality

Monitoring of the vertical temperature distribution within upper ocean layer, sub-surface currents and air pressure with data transmission through satellite. The buoys are equipped with underwater Holey Sock drogue and digital temperature-profiling line (thermoline) with profiling depth down to 80 m.

Sensors

Position data (GPS/Glonass)	
GNSS receiver	GlobalTop Titan3
Additionally	Doppler effect
	Argos or Iridium
Water temperature profile	
Range	-5 to +35°C
Accuracy	+/- 0.1°C
Resolution	0.04°C
Number of sensors	17
Profiling depth	80 m
Air pressure (SVP-BTC80/40H)	
Range	850 to 1050 hPa
Accuracy	+/- 1 hPa
Resolution	0.1 hPa
Measurement interval	hourly
Sensors activation	at round hours

Communication

Satellite system Argos or Iridium

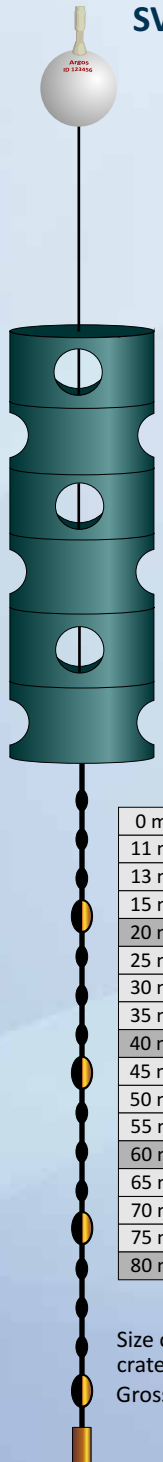
Operation

Environment temperature	-10 to +50°C
Lifetime	24 months at least

Construction

Battery	alkaline
Activation switch	removable magnet
Hull	
Body	fiberglass plastic
Diameter	41 cm
Drogue	
Type	Holey Sock
Depth	12.5 m
Height	5.5 m
Diameter	0.9 m
Thermoline	
Deviations monitoring	by measurements of hydrostatic pressure
Diameter	15 mm (line) 20 mm (temp. sensor) 60 mm (pres. sensor, ballast)
DAR[1]	6.5 at least
Weight	50 kg

SVP-BTC80/40H



Sensors depths [2]

	Temperature	Hydrost.press.
0 m	+	
11 m	+	
13 m	+	
15 m	+	
20 m	+	+
25 m	+	
30 m	+	
35 m	+	
40 m	+	+
45 m	+	
50 m	+	
55 m	+	
60 m	+	+
65 m	+	
70 m	+	
75 m	+	
80 m	+	+

Size of shipping crate	100 x 90 x 60 cm
Gross weight	58 kg

[1] DAR (Drag Area Ratio) - ratio of drogue drag area to the total drag area of non drogue elements of drifter

[2] The number and location of sensors can be changed by agreement with the customer

Temperature-Profiling Drifting Buoys iceTC60/40, iceBTC60/40

Functionality

Monitoring of under ice vertical temperature distribution within upper ocean layer, ice surface temperature and air pressure with data transmission through satellite. The buoys are equipped with digital temperature-profiling line (thermoline) with profiling depth down to 60 m. The design of buoy is optimized for using in polar and subpolar regions. Operation in open water is possible.

Sensors

Position data (GPS/Glonass)	
GNSS receiver	GlobalTop Titan3
Additionally	Doppler effect Argos or Iridium
Temperature profile	
Range	-20 to +20°C
Accuracy	+/- 0.1°C
Resolution	0.04°C
Number of sensors	17
Profiling depth	60 m
Air pressure (iceBTC60/40)	
Range	850 to 1050 hPa
Accuracy	+/- 1 hPa
Resolution	0.1 hPa
Measurement interval	hourly
Sensors activation	at round hours

Communication

Satellite system Argos or Iridium

Operation

Environment temperature	-30 to +50°C
Lifetime	24 months at least

Construction

Battery	alkaline
Activation switch	removable magnet
Hull	
Body	fiberglass plastic
Diameter	41 cm
Colour	white
Thermoline	
Deviations monitoring	by measurements of hydrostatic pressure
Diameter	15 mm (line) 20 mm (temp. sensor) 60 mm (pres. sensor, ballast)
Ballast weight	1.2 kg
Deployment	in a drilled hole in the ice
Weight	30 kg

iceBTC60/40

Sensors depths [1]

	Temperature	Hydrost. press.
0 m	+	
2.5 m	+	
5 m	+	
7.5 m	+	
10 m	+	
12.5 m	+	
15 m	+	
17.5 m	+	
20 m	+	+
25 m	+	
30 m	+	
35 m	+	
40 m	+	+
45 m	+	
50 m	+	
55 m	+	
60 m	+	+

Size of shipping crate 100 x 90 x 60 cm
Gross weight 58 kg

[1] The number and location of sensors can be changed by agreement with the customer

TEMPERATURE-PROFILING DRIFTING BUOYS

Temperature-Profiling Drifting Buoys iceTC150/Cone, iceBTC150/Cone

Functionality

Long-term monitoring of vertical temperature distribution within upper ocean layer, ice surface temperature and air pressure with data transmission through satellite. The buoys are equipped with digital temperature-profiling line (thermoline) with profiling depth down to 150 m. The design of buoy is optimized for using in polar and subpolar regions. The buoy can be deployed both in open water and on ice. Durable conical float provides better probability to keep the float at surface without to be involved below ice, when appearance of young ice.

Sensors

Position data (GPS/Glonass)	
GNSS receiver	GlobalTop Titan3
Additionally	Doppler effect
	Argos or Iridium
Temperature profile	
Range	-20 to +20°C
Accuracy	+/- 0.1°C
Resolution	0.04°C
Number of sensors	16
Profiling depth	150 m
Air pressure (iceBTC150/Cone)	
Range	850 to 1050 hPa
Accuracy	+/- 1 hPa
Resolution	0.1 hPa
Measurement interval	hourly
Sensors activation	at round hours

Communication

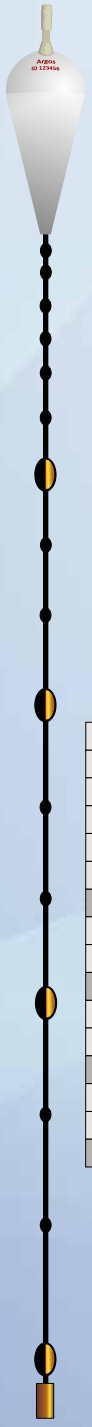
Satellite system Argos or Iridium

Operation

Environment temperature	-30 to +50°C
Lifetime	18 months at least

Construction

Battery	alkaline
Activation switch	removable magnet
Hull	
Body	fiberglass plastic
Colour	white
Diameter	35 cm (max)
Height	110 cm (iceBTC150/Cone)
Thermoline	
Deviations monitoring	by measurements of hydrostatic pressure
Diameter	15 mm (line)
	20 mm (temp. sensor)
	60 mm (pres. sensor, ballast)
Ballast weight	3 kg
Deployment	in a drilled hole in the ice
Weight	60 kg



iceBTC150/Cone

Sensors depths [1]

	Temperature	Hydrost.press.
0 m	+	
1 m	+	
2 m	+	
6 m	+	
11 m	+	
17 m	+	
24 m	+	+
33 m	+	
43 m	+	
54 m	+	+
67 m	+	
81 m	+	
96 m	+	+
113 m	+	
130 m	+	
150 m	+	+

Size of shipping crate	150 x 50 x 50 cm
Gross weight	100 kg

[1] The number and location of sensors can be changed by agreement with the customer

TEMPERATURE-PROFILING DRIFTING BUOYS

marlin@marlin-yug.com
www.marlin-yug.com

Temperature-Profiling Drifting Buoys iceTC2(5)/30, iceBTC2(5)/30

Functionality

Monitoring of vertical distribution of ice temperature (thickness of ice on basis of ice temperature) and temperature of upper ocean layer below ice, ice surface temperature and air pressure with data transmission through satellite. The buoys are equipped with digital temperature-profiling line (thermoline) with profiling depth down to 2 m (TC2 version, 20 cm interval between sensors) or 5 m (TC5 version, 50 cm interval between sensors). The design of buoy is optimized for using in polar and subpolar regions. Operation in open water is possible.

Sensors

Position data (GPS/Glonass)	
GNSS receiver	GlobalTop Titan3
Additionally	Doppler effect
	Argos or Iridium
Temperature profile	
Range	-20 to +20°C
Accuracy	+/- 0.1°C
Resolution	0.04°C
Number of sensors [1]	11
Profiling depth [2]	
iceTC2/30, iceBTC2/30	2 m
iceTC5/30, iceBTC5/30	5 m
Air pressure (iceBTC2(5)/30)	
Range	850 to 1050 hPa
Accuracy	+/- 1 hPa
Resolution	0.1 hPa
Measurement interval	hourly
Sensors activation	at round hours

Communication

Satellite system Argos or Iridium

Operation

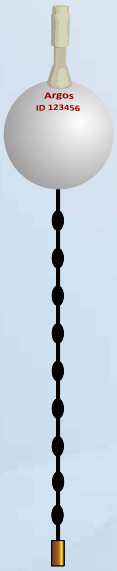
Environment temperature	-30 to +50°C
Lifetime	12 months at least

Construction

Battery	alkaline
Activation switch	removable magnet
Hull	
Body	fiberglass plastic
Diameter	35 cm
Colour	white
Thermoline	
Diameter	15 mm (line)
	20 mm (temp. sensor.)
	35 mm (ballast)
Ballast weight	1.5 kg
Disposition of sensors [3]	equidistant
Weight	12 kg

iceTC2(5)/30

iceBTC2(5)/30



Size of shipping crate	45 x 45 x 55 cm
Gross weight	20 kg

(1,2,3) Profiling depth, number and location of sensors can be changed by agreement with the customer

Water Level Gauges

Water Level Gauge WLG-30

Functionality

Long-term monitoring of water level, water temperature and air pressure with data transmission through satellite (GSM on demand is available). The gauge is deployed in natural or artificial water basins with depth down to 30 m. To fix the gauge's position the bottom anchor is used.

Sensors

Position data (GPS/Glonass)	
GNSS receiver	GlobalTop Titan3
Additionally	Argos doppler effect
Water level	
Range	0 to 30 m
Accuracy	+/- 0.2 m
Resolution	0.02 m
Air pressire	
Range	850 to 1050 hPa
Accuracy	+/- 2 hPa
Разрешение	0.1 гПа
Water temperature	
Range	-5 to +35°C
Accuracy	+/- 0.2°C
Resolution	0.04°C
Hull temperature	
Range	-40 to +60°C
Accuracy	+/- 0.5°C
Resolution	0.2°C
Measurement interval	hourly
Sensors activation	at round hours

Communication

Argos satellite system (Iridium, GSM on demand)

Operation

Environment temperature	-30°C to +50°C
Lifetime	24 months at least

Construction

Hull	
Diameter	35 cm
Submersible unit (without anchor)	
Diameter	60 mm
Height	400 mm
Strength-power-communications cable line	
Length	30 m
Type of deployed	anchor
Weight (without anchor)	22 kg
Anchor weight	25 kg at least

WLG-30

marlin@marlin-yug.com
www.marlin-yug.com

Water Level Gauge WLG-100

Functionality

Long-term monitoring of the water level in the cased ground-water wells with data transmission through satellite (GSM on demand is available). Additionally water temperature and air pressure are measured. The gauge is mounted at the head of casing string.

Sensors

Water level	
Range	0 to 100 m
Accuracy	+/- 0.2 m
Resolution	0.02 m
Air pressure	
Range	960 to 1040 hPa
Acuuracy	+/- 2 hPa
Resolution	0.1 hPa
Water temperature	
Range	0 to +60°C
Accuracy	+/- 0.2°C
Resolution	0.03°C
Hull temperature	
Range	-30 to +50°C
Accuracy	+/- 1°C
Resolution	0.2°C
Measurement interval	hourly
Sensors activation	at round hours

Communication

Argos satellite system (Iridium, GSM on demand)

Operation

Environment temperature	-30°C to +50°C
Lifetime	24 months at least

Construction

Hull	
Diameter	35 cm
Submersible unit	
Diameter	60 mm
Height	200 mm
Strength-power-communications cable line	
Length	up to 100 m
Mounting	
Location	head of casing string
Diameter of casing string	100 to 120 mm
Weight	20 kg

WLG-100

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Test Equipment

Argos Uplink Receiver ATR20

Functionality

Check of different data platforms, equipped with Argos PTTs (platform transmitter terminals). The received data and detailed diagnostic information for Argos uplink messages are available on built-in display or on PC through USB.

Capability

- Receive and display Argos uplink messages
- Automatic determination of the Argos frequency channel and hex ID number
- Display data:
  - carrier frequency
  - Argos frequency channel
  - total duration of transmission
  - duration of pure carrier
  - modulation bit rate
  - received signal strength indicator (RSSI)
- USB interface

Specification

Frequency range	401.629 to 401.681 MHz
Argos channels	S1 to S14 C1 to C9 L1 to L3
Receiver sensitivity	15 uV @ 12 dB Sinad.(typ.)

Operation

Environment temperature	-10 to +60°C

Operation

Type	portative
Power source	4 AA-type batteries
Interface port	USB
Display	LCD with backlight
Case	
Material	ABS plastic
Protection	IP54
Size (without antenna)	22.8 × 11.7 × 4.7 см
Antenna	removable
Length	18 cm
Weight	0.5 kg

ATR20 pack

- ATR 20
- Antenna
- USB cable
- 4 AA batteries
- Manual
- Carrying case

ATR20

Jointly with ES-PAS

Satellite Tracking Solutions for Animals

Wildlife collar "PULSAR" for terrestrial animals

Jointly with ES-PAS

Functionality

Combined with an Argos satellite transmitter, GPS (or GPS/Glonass) receiver and state-of-the-art battery-safe and transmission management technology the collar "PULSAR" is an effective terrestrial animal tracking solution for medium to large animals such as wolves, elks, deers, bisons, tigers, brown and polar bears. The user receives the animal locations via the Internet on regular basis.

Communication

Satellite system Argos

Specification

Signal	
Carrier frequency	401.650 ± 0.03 MHz
Output power	700 mW
Modulation	Manchester encoded phase modulated with 1.1 modulation depth and 400 Hz bitrate
Transmission period	1 min
Position data	
Main	GPS or GPS/Glonass
Additionally	Argos doppler effect
Positioning period	4 min
Ensuring the reliability of transmitted data	BCH coding algorithm

Operation

Environment temperature	-40 to +60°C
Storage temperature	-10 to +10°C
Lifetime	12 months at least

Construction

Power source	lithium batteries
Activation switch	removable magnet
Case	solid one-piece impact-resist assembly
Argos and GPS antennas	built-in
Dimensions (without collar)	18 x 9 x 6 cm
Weight	0.7 to 1.4 kg according to animal

SATELLITE TRACKING SOLUTIONS FOR ANIMALS

Wildlife tags "PULSAR" for marine animals

Jointly with ES-PAS

Functionality

Combined with an Argos satellite transmitter and state-of-the-art battery-safe technology the tags "PULSAR" are an effective wildlife tracking solution for large marine mammals such as beluga wales, seals, dolphins. The animal locations are based on Argos doppler effect. The user tracks the animal via the Internet on regular basis.

Communication

Satellite system Argos

Specification

Signal	
Carrier frequency	401.650 ± 0.03 MHz
Output power	700 mW
Modulation	Manchester encoded phase modulated with 1.1 modulation depth and 400 Hz bitrate
Transmission period	1 min
Position data	Argos doppler effect

Operation

Environment temperature	-40 to +60°C
Storage temperature	-10 to +10°C
Lifetime	12 months at least

Construction

Power source	lithium batteries
Activation switch	removable magnet
Case	one-piece, hermetic, impact-resistant assembly
Antenna	flexible
Weight	up to 350 grams

SATELLITE TRACKING SOLUTIONS FOR ANIMALS