Underwater Digital Interface

UDI™ 28

Ordering information

UDI-28 wrist unit	T.99.04703
UDI-28 boat unit	U-B28

UDI-28 is an outstanding, technology proven device, supported by state of the art algorithms, designed to fulfill the professional's needs. It offers a new software package, a large number of users and messages and provides an extended range, depth, endurance and a more robust error correction code, along with a new computerbased boat unit and a new active antenna.

The UDI-28 system consists of a diver's wrist-worn unit and a boat (surface) unit. It incorporates a digital acoustic messaging technology with SOS and homing capabilities and a 3D compass.

The UDI-28 compact wrist-worn unit is an underwater communication and safety device. This unit connects the diver with the surface vessel where the boat unit is located, as well as with fellow divers.

Benefits

- Two-way communication using up to 28 preset text messages
- Communication with the boat unit and with any other diver in the same network
- Enhanced safety & reliability
- Prompt handling of in-water emergencies
- Diver initiated & remotely initiated SOS signal
- Location of lost diver by homing beacon
- 3D digital underwater compass
- Supports up to 28 divers in a network
- Depth: up to 70 meters/230 feet
- Range: up to 1,000 meters/3280 feet depending on sea conditions)
- Compact & lightweight
- Robust, water-resistant & energy efficient boat units
- Programming through PC interface
- Long-lasting rechargeable battery

UDI-28 wrist unit

The UDI™ 28 is a computation hardware device combined with software applications that implements wireless underwater digital acoustic communication capabilities , digital compass, navigation or tracking after acoustical signals, with a high accuracy for targeting, navigation and location of a lost diver.

Salient features of the system:

- Allows for two way communication via pre-configured text messaging (underwater SMS);
- Able to send and receive up to 28 pre-configured text messages;
- Dual channel transmission bands and powerful error correction code for improving noise immunity;
- Provides both a diver SOS and a remote SOS that can be sent in the event of an emergency;
- Has the capacity to be able to locate a “lost” diver via a homing beacon;
- Incorporates a 3D digital compass for use underwater;
- Can be configured using a PC interface;
- Can be configured to allow up to 28 different divers on 2 different networks;
- Communicate with the surface or with each other;
- Increases the safety and decreases response time to deal with in-water emergencies;
- Compact lightweight device with a user-friendly HMI (Human Machine Interface)

UDI-28 boat unit

It is used for text message communication with the underwater divers, and its homing capabilities allow divers to navigate their way back to the boat. Naval command and control features, in-water surveillance capabilities that give additional stratum for the diver protection and safety.

Salient features of the system:

- Able to send and receive up to 28 pre-configured text messaging from the diver;
- Provides a remote SOS to a diver that is suspected to be “lost”;
- Configured to allow up to 28 different divers on 2 different networks to communicate with the surface;
- Allows divers to navigate their way back to the boat via a homing beacon;
- Dual channel transmission bands and powerful error correction code for improving noise immunity;
- Water resistant suitcase, extra long battery power, external power connection, and PC link;
- Most streamlined with a user-friendly HMI (Human Machine Interface);
- Increases the safety and decreases response time to deal with in-water emergencies;

The UDI is the affordable solution – far less cost than other wireless communications available, in terms of price, usage and without the need to waste air consumption due to the increased volume of the full face masks required to accommodate the communications.

Wrist unit


Boat unit

The technology innovator.

Communication
Till now - only dolphins could communicate underwater - now you can too!
Based on text messaging technology, the UDI system allows divers to transmit pre-saved messages to other divers in the network, at a range of up to 500 meters (550 yards).

Depending on the individual needs of the team, divers can create up to 14 text messages that are saved in the memory of the unit. When a message is sent, a received signal activates an audible alert and lights up the graphic LCD screen to notify the recipient. The recipient sends an acknowledgement back to the sender.

A Messages can also be transmitted between individual units and the boat unit. The result is an underwater digital network that connects divers together to promote safety and to enable more sophisticated communication to enhance the diving experience for all.

Examples of possible messages are:
"A boat is above you"
"I want to show you something"
"I need help. Slow down"
Or even -
"Will you marry me?"

Safety
The UDI SOS and Homing features allow direct navigation to a diver who has sent an emergency SOS message or to a boat unit that has transmitted a homing signal.

SOS
A diver in distress can send an SOS signal to other divers or to a boat unit. The receiving diver acknowledges the SOS call and receives graphical 3D instructions on his UDI unit that allow him to navigate his way to the diver in distress and provide assistance.

Remote SOS
If a diver suspects that his buddy or a nearby diver may be in distress, he or she can send a remote SOS signal to the diver. If the diver does not require assistance, he can choose to disable the signal. If he does not disable it, and is, in fact, in distress, receipt of the Remote SOS activates his unit to send an SOS.
The SOS signal is received by the other divers using the UDI system, allowing them to navigate to the diver in distress following the graphical instructions on their clear view screens.

Homing
When a diver sends a Remote Homing message to a boat unit, the boat unit transmits a homing signal that enables the diver to easily locate the boat. He then follows the graphical instructions on his screen and easily locates his target. UDI's advanced navigation and SOS features ensure diving safety of unprecedented levels.

Dive computer
All in One
The UDI "all in one" concept includes a high quality dive computer (based on the RGBM algorithm), licensed by Dr. B. Wienke. Divers can use any EAN mixture, altitude corrections, multiple dives, deep stops options and many additional features of this leading technology.

With this dive computer - you get much more than a dive computer!

RGBM
As part of the "all in one" concept: In addition to the messaging and navigation features, it also includes a high quality diving computer (RGBM based). The dive computer allows users to pre-plan a dive, or simulate a dive on a PC or on the UDI unit.

3D compass
The "all in one" UDI unit includes also a digital 3D compass. With UDI, there is no need for an additional hand strapped device. The 3D compass is corrected to elevations of up to ±60°. It presents directions either in digit form or graphical screen with your heading.

Log book
The UDI unit also comprises a data logger and a dive book. The unit itself is capable of storing as many as 100 dives. Dives can be downloaded to a PC using the DiveSim™ software, provided with the unit (including the USB connecting cable), whenever it is convenient for you. The software also lets you manage you dive log book, present its depth profile and the diving computer data at any time, in graphical form.

PC Software
The UDI system includes state-of-the-art computer software DiveSim™ with four functionalities:

1) Simulate a dive on a PC and see how the dive computer will respond.
2) Simulate a dive on your connected UDI unit, watching how the UDI will present its data as if you are underwater.
3) Manage a database of your real dives as well as your simulated training dives.
4) Load your own pre-saved text messages and user list to the UDI unit.

Specifications

General specifications

Colors	Black
Operating temperature range	0˚C to 45˚C
Storage temperature range	0˚C to 50˚C
Metric/Imperial unit of measure selection	Yes
PC software	DiveSim
PC communication	USB, cable included
PC logbook	Database + graphic presentation

Communication

Number of preset text messages	28
Number of networks	2
Number of users per network	28
.Average transmission time	3.2 sec
SOS frequency	37.266 KHz
Homing frequency	Determined by network
Frequency band	Low band: 35 to 41 KHz; High band: 51 to 56 KHz
SOS nominal range	Calm sea conditions: 1000m; Sea condition 4: 800m
Homing nominal range	Calm sea conditions: 1000m; Sea condition 4: less than 800m
Nominal message transmission range	Calm sea conditions: 1000m; Sea condition 4: less than 800m
Maximum depth	70m
Probability of correct reception	95%; Sea condition 4: 80%
3D compass accuracy	±2.5°
Receiver sensitivity	-80 dBV
Maximum velocity (diver's speed)	2 m/sec
Battery type	7.4V Li-ion, 2500mAh, rechargeable
Battery life	9 hrs. assuming one transmission / 4 min
Expected battery charging cycles	500
Low battery indicator	Last 90 minutes on screen
Transducer	Piezoelectric type
Housing	High impact injection molded plastic
Buzzer / Alarm	Audible signal + super bright LED
Broadcasting mode	With acknowledgement indication

PC software

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