

PRODUCT CATALOG  
2012

# Acoustics

ACOUSTIC RELEASE PRODUCTS LINE

## Wireless Recovery of Subsea Devices

Teledyne Benthos manufactures a wide range of Acoustic Releases for shallow water and deep sea equipment recovery. All of our releases can be operated from our Deck Boxes, giving users wireless topside control over their subsea devices. With nearly 50 years of experience in undersea applications, Teledyne Benthos Acoustic Releases deliver exceptional performance in harsh environments.



INNOVATIVE UNDERSEA SYSTEMS TECHNOLOGY



**TELEDYNE  
BENTHOS**

A Teledyne Technologies Company

**50** Years of  
Innovation  
1962-2012

## Acoustic Releases

### 875-TD/TE

Shallow water release



#### 875-TD\*

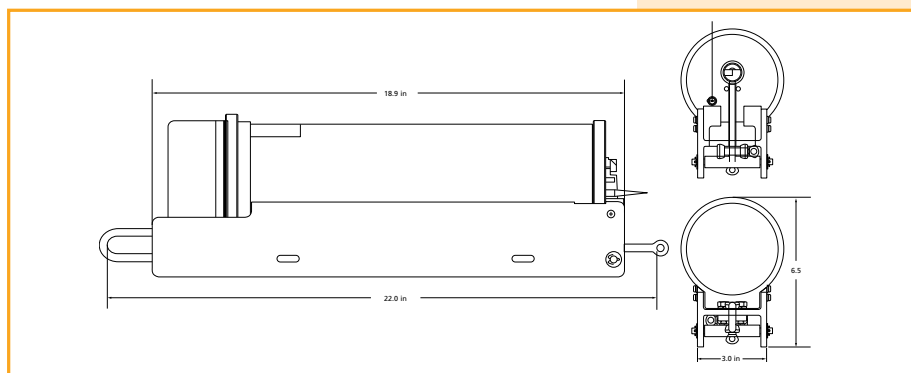
Part Number:  
D846-0280-1

#### 875-TE\*

Part Number:  
D846-0280-2

#### SPECIFICATIONS

Depth Rating	500 m (1,640 ft.)
Release Load Rating	180 kg (0.2 tons)
Lift Load Rating	455 kg (0.5 tons)
Actuation	High torque motor
Transponder Feature	2-3 KM Slant Range
Range Accuracy	1 Meter
Release Confirmation	Yes (Acoustic)
Battery Life	Up to 1 Year (Alkaline) <b>875-TD</b> Up to 5 years (Lithium) <b>875-TE</b>
Battery Voltage Status	Acoustically Transmitted to UDB-9000 Deck Box
Frequency Band	LF (9-14KHz)
Signaling Type	MFSK
Unique Addresses	Up to 255
Source Level (nominal)	167dB
Weight - In Air	4.5 kg (10 lbs)
Weight- In Water	1.4 kg (3 lbs)
<b>DIMENSIONS:</b>	
Length	53.4cm (22 Inches)
Width	10.2 cm (4 Inches)
Height	16.5 cm (6.5 Inches)
Construction	PVC, Fiberglass, (Stainless Steel) <b>875-TD</b> (Titanium) <b>875-TE</b>
Strongback for Easy Mounting	Yes
Accessories	875-TD Spare Battery (B846-0258) 875 Drop Link (0220-008) Spare-Magnet (B-855-152)



\*875-TD/TE must be used with UDB-9000 Deck Box.

## Acoustic Releases

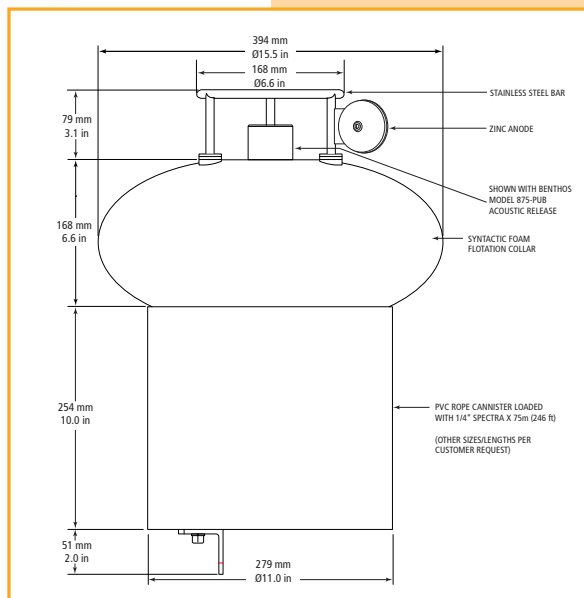
### 875-PUB

#### Pop up buoy

Part Number: C-500-115-1



Our 875 release is configured with a syntactic flotation collar and line canister to mark and recover seabed equipment. 75 m 1/4" spectra line standard 2995 kg (6,600 lbs), other line lengths and diameters available.



#### SPECIFICATIONS

Depth Rating	305 m (1000 ft)
Release Load Rating	—
Lift Load Rating	—
Actuation	High torque motor
Transponder Feature	—
Release Confirmation	—
Timed Disable Feature	—
Enable Feature	—
Disable Feature	—
Tilt Indication Feature	—
Battery Life (receiver)	6 months (Alkaline), 1 year (lithium)
Battery Life (transmissions)	—
Factory Set Receiver (freq.)	7-15 kHz
Selectable Transmit (freq.)	—
Source Level (nominal)	—
Weight—In air	11.3 kg (34 lbs.)
In water	4.5 kg (15 lbs.) Nom Buoyant
Dimensions	30 cm (15.5 in.) diameter collar 50 cm (21.7 in.) length
Construction	PVC, Syntactic Foam
Accessories	875-SB Alkaline Battery (B-855-147) 875-LI-SB Lithium Battery (B-855-157) Spare Magnet (B-855-152)

## Acoustic Releases

### 867-A

### Shallow water transponding release

Part Number:  
D-867-3



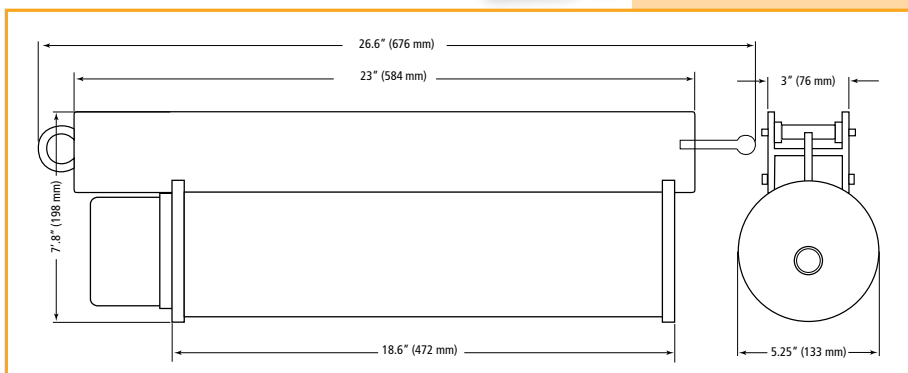
### Remote Head Version

Part Number:  
D-867-13

The 867-A is a low cost, versatile acoustic release designed for recovery of underwater equipment in coastal and inland waters. The transponding function allows users to perform 2-way acoustic ranging to home in on the subsea unit.

#### SPECIFICATIONS

Depth Rating	305 m (1000 ft.)
Release Load Rating	225 kg (0.25 tons)
Lift Load Rating	455 kg (0.50 tons)
Actuation	High torque motor
Transponder Feature	5-10 km slant range
Release Confirmation	Multiple ping reply
Timed Disable Feature	2,4,8, or 16 hours
Enable Feature	Enable command
Disable Feature	Disable command
Tilt Indication Feature	Vertical or horizontal (25° std.)
Battery Life (receiver)	2 years
Battery Life (transmissions)	25,000 pings
Factory Set Receiver (freq.)	7-15 kHz
Selectable Transmit (freq.)	7-15 kHz
Source Level (nominal)	>192 dB ref $\mu$ pa @ 1m
Weight—In air	9 kg (20 lbs.)
In water	3.7 kg (8 lbs.)
Dimensions	63 cm (26.6 in.) length 13 cm (5 in.) dia. housing
Construction	PVC, Fiberglass Strongback
Accessories	867-SB Alkaline Battery (C-867-4) 867-SL Drop Link (0220-008)



# Acoustic Releases

## 866-A

### Transponding release

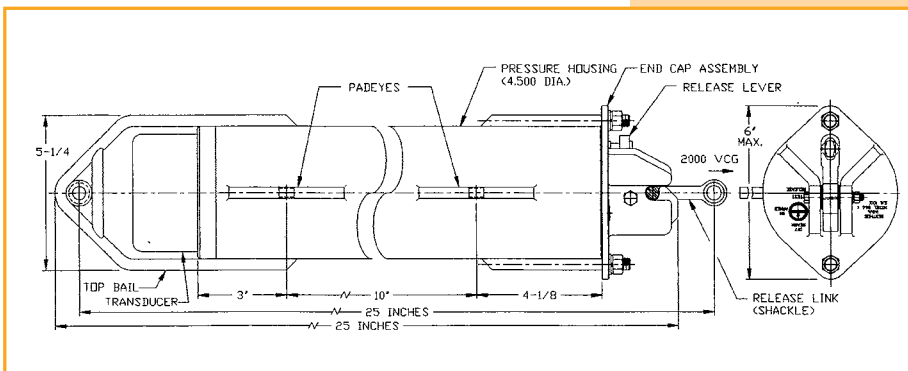
Part Number: D-855-75



Teledyne Benthos has designed the 866-A for mooring recovery applications requiring a rugged stainless steel package and 2200 kg load handling.

#### SPECIFICATIONS

Depth Rating	2000 m (6,562 ft.)
Release Load Rating	2200 kg (2.43 tons)
Lift Load Rating	2200 kg (2.43 tons)
Actuation	High torque motor
Transponder Feature	5-10 km slant range
Release Confirmation	Multiple ping reply
Timed Disable Feature	2,4,8, or 16 hours
Enable Feature	Enable command
Disable Feature	Disable command
Tilt Indication Feature	Vertical (25° std.)
Battery Life (receiver)	2 years (4 year option available)
Battery Life (transmissions)	250,000 pings
Factory Set Receiver (freq.)	7-15 kHz
Selectable Transmit (freq.)	7-15 kHz
Source Level (nominal)	>192 dB ref $\mu\text{pa}$ @ 1m
Weight—In air	18 kg (40 lbs.)
In water	13 kg (29 lbs.)
Dimensions	66 cm (25 in.) length 15 cm (6 in.) dia. housing
Construction	Stainless Steel (ferrallium 255)
Accessories	865-SB-13 Alkaline Battery (C-855-60) 866-SL Drop Link (A-855-124) 866-BA Bar Anode (A-855-139) 866-A Tandem Release Mounting Kit (B-855-197) 866-ORING Kit (866-ORING-Kit)



REV 1312

## Acoustic Releases

### 865-A

#### Deep sea acoustic transponding release

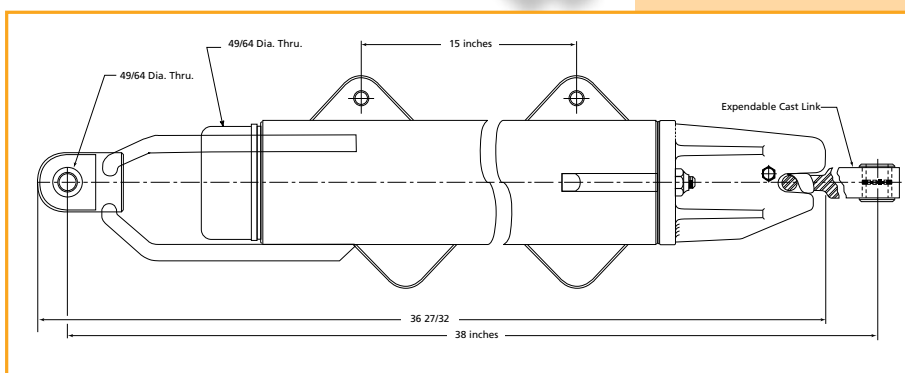
Part Number:  
D-855-74



The 865-A is designed for full ocean depth mooring recovery applications requiring a rugged stainless steel package and 5000 kg load handling.

#### SPECIFICATIONS

Depth Rating	12,000 m (39,370 ft)
Release Load Rating	5000 kg (5.5 tons)
Lift Load Rating	5000 kg (5.5 tons)
Actuation	High torque motor
Transponder Feature	5-10 km slant range
Release Confirmation	Multiple ping reply
Timed Disable Feature	2,4,8, or 16 hours
Enable Feature	Enable command
Disable Feature	Disable command
Tilt Indication Feature	Vertical (25° std.)
Battery Life (receiver)	2 years (4 year option available)
Battery Life (transmissions)	250,000 pings
Factory Set Receiver (freq.)	7-15 kHz
Selectable Transmit (freq.)	7-15 kHz
Source Level (nominal)	>192 dB ref $\mu$ pa @ 1m
Weight—In air	33 kg (70 lbs.)
In water	25 kg (55 lbs.)
Dimensions	96 cm (38 in.) length 15 cm (6 in.) dia. housing
Construction	Stainless Steel (17-4 PH)
Accessories	865-SB-13 Alkaline Battery (C-855-60) 865-SL Drop Link (B-855-186) 865-SA-K1 Bar Anode (A-855-82-1) 865-ORING Kit (865-ORING-Kit)



## Acoustic Releases

### 865-H

#### Load multiplier for 865-A release

Part Number: D-855-72



Our 865-H is a secondary arm to provide a 5:1 mechanical advantage when used on the 865-A Release. This 22,600 kg rated device is used for deployment of anchors and underwater construction.

#### SPECIFICATIONS

Depth Rating	12,000 m (39,370 ft.)
Release Load Rating	22,600 kg (24.9 tons)
Lift Load Rating	22,600 kg (24.9 tons)
Actuation	High torque motor
Transponder Feature	5-10 km slant range
Release Confirmation	Multiple ping reply
Timed Disable Feature	2,4,8, or 16 hours
Enable Feature	Enable command
Disable Feature	Disable command
Tilt Indication Feature	Vertical (25° std.)
Battery Life (receiver)	2 years (4 year option available)
Battery Life (transmissions)	250,000 pings
Factory Set Receiver (freq.)	7-15 kHz
Selectable Transmit (freq.)	7-15 kHz
Source Level (nominal)	>192 dB ref $\mu$ pa @ 1m
Weight—In air	121 kg (268 lbs.) without release
In water	104 kg (230 lbs.) without release
Dimensions	126 cm (50 in.) length 46 cm (18 in.) width <i>(Dim. are w/865-A attached)</i>
Construction	High Strength Carbon Steel
Accessories	865-SL-H Drop Link 865-SB-13 Alkaline Battery (C-855-60)

## Topside Units

The Teledyne Benthos Universal Deck Box has been designed to work with all Benthos acoustic releases, transponders and modems, including the SMART products.

# UNIVERSAL DECK BOX

## UDB-9400

Part Number: UDB-9425E-LF1

The Universal Deck Box is a complete single-unit replacement for all previously offered Teledyne Benthos acoustic deck units, including the DS-7000, DS-8000, and ATM-891. The Universal Deck Box can operate standard acoustic releases, communicate and control acoustic modems, and work with the Teledyne Benthos SMART line of products.

The Universal Deck Box, (UDB), provides two RS-232 serial ports for data/command line interaction, and a large grey-scale touch screen for simple graphical user control and enhanced sunlight readability.

**Size:** 11.75 in. (29.8 cm) L x 17.5 in. (44.4 cm) W  
x 7 in. (17.8 cm) H (each case)

**Weight:** Deck Box < 30 lbs (13.6 kg)  
Transducer with cable < 30 lbs (13.6 kg)

## Features:

- Touch screen display to send and receive commands
- RS-232 ports for direct connection to a PC or laptop
- Speaker for listening to acoustic signals
- Auxiliary jack for optional headset
- AC/DC or internal battery power
- Low frequency (LF) dunking transducer and 25 meter cable (standard)
- Up to 200 m cable available for high-reliability deep water acoustic communications
- Deck box emulation to command other vendor's products

**Power:** Internal 24V lead acid battery  
(two 12V in series)  
External AC, 85-265 VAC, 47 - 63 Hz  
External DC, 10-30 VDC

**Frequency Band:** 7-15 kHz (LF), other frequencies available upon request

## Touch screen to easily input, receive and view information such as:

- Real time data from subsea instrument
- Tilt indication of the subsea acoustic release
- Range information from the subsea modem, transponder or acoustic release
- Release commands and release confirmation of acoustic release
- Power sense and battery level monitoring of surface and subsea equipment (when supported)
- Frequency inputs
- Variable power level (source level) selections easily changed by the user
- Variable bit rate selections to optimize data transfer speed and reliability



## Topside Units

Item	Product Number	Length
UDB-9000 Transducer Deck Cable	B-270-197-1	25 Meters
UDB-9000 Transducer Deck Cable	B-270-197-2	50 Meters
UDB-9000 Transducer Deck Cable	B-270-197-3	75 Meters
UDB-9000 Transducer Deck Cable	B-270-197-4	100 Meters
UDB-9000 Transducer Deck Cable	B-270-197-5	200 Meters

### Part Number

### Description

**UDB-9425E-LF1** ..... UDB-9400E (LF) Low Frequency

Universal Deck Box (UDB) "E". Combined modem and acoustic release deck box for operation with Benthos acoustic releases, acoustic modems and SMART products. (Comes with LF transducer and 25 m cable)

**UDB-9400E-LF1** ..... UDB-9400E (LF) Low Frequency

Universal Deck Box (UDB) "E". Combined modem and acoustic release deck box for operation with Benthos acoustic releases, acoustic modems and SMART products. Standard unit in the 7-15 kHz (LF) band. (Transducer and Cable not included - sold separately)

**013187** ..... UDB-9400-MR (LF) Low Frequency-Rack Mount

Universal Deck Box (UDB) "E". Combined modem and acoustic release deck box for operation with Benthos acoustic releases, acoustic modems and SMART products. Standard unit in the 7-15 kHz (LF) band. (Transducer and Cable not included – sold separately)

**C-270-167-1** ..... UDB-9400 Transducer (LF) Low Frequency

Transducer operating in the 7-15 kHz (LF) band. For use with all UDB-9000 (LF) deck boxes.

**UDB-9000-MR Rack Mount**



## Topside Units



The DS-8750 Acoustic Deck Set is a low cost companion to the Benthos Acoustic Release Model 875A and 875-PUB. It is ideally suited for basic release operations requiring only command capability.

## DS-8750

### Acoustic Deck Set

Part Number: D-875-9

#### Features:

- Operates in the 7-15 kHz range, in 500 Hz increments
- Capable of sending all Benthos FSK commands
- Lightweight and portable, splash proof case
- Internal, rechargeable battery operation
- Includes transducer with 10 meters (30 feet) of cable
- Speaker for pre deployment testing provided

## TU-1000

### Hand Held Acoustic Tester

Part Number: C-875-24

TU-1000 Hand Held Acoustic Tester is a full function "in air" predeployment acoustic tester for Benthos' full line of acoustic transponders and releases. This battery operated, lightweight unit is capable of generating all Benthos FSK commands and interrogation frequencies. Constructed of rugged, black molded plastic, this device is designed to withstand years of exposure to marine environments.



## Programmable Sonar Altimeter

### PSA-916

### Low Cost Programmable Sonar Altimeter

Part Number: 007601

The PSA-916 is a low cost, lightweight altimeter designed for diverse applications in the marine environment. It provides the user with high resolution altitude/range data while simultaneously outputting data through a digital serial port. A wide beam angle provides for reliable and accurate range measurements under the most severe operational conditions.

#### Features:

- Compact size and weight allows for integration with the smallest ROVs or marine sensors
- Simultaneous analog and digital outputs provide altitude/range data
- Electronically isolated to eliminate any potential signal interference with host instrument sensors
- 6000 meter depth
- Low cost

#### Applications:

- ROV/instruments altitude measurement
- Bridge scour studies
- Obstacle avoidance
- Sediment transfer studies
- Docking assistance for ships



#### SPECIFICATIONS

Operating frequency	200 kHz (nominal)
Beam width	14° conical typical
Pulse length	250 ms standard
Repetition rates	5 pps or external
Range	100 meters full scale
Resolution	RS-232: 1 cm Analog: 2.5 cm
Range output	Digital: RS-232 Analog: 0-5 VDC
Operating depth	6000 meters
Power required	7 to 24 VDC
Power consumption	60 ma @ 15 VDC
Size	2.25 in. diameter X 9.75 in. long
Weight	1.4 lbs in air; 0.8 lbs in water

REV 1312

## Acoustic Pinger

### BFP-312

#### Bottom Finding Pinger

Part Number: 001855

A bottom finding pinger, used in conjunction with a standard 12 kHz shipboard bathymetric recorder can be used to monitor the height off bottom of instruments or sampling equipment being lowered through the water column. The instrument can be used effectively for positioning of CTD instrumentation, fishing nets, coring tools, water bottles or other items where accurate vertical positioning relative to the bottom is required.

Precision pingers and positioning beacons require high power, long life and a high level of frequency and repetition rate stability to allow asynchronous operation with shipboard recording and processing instrumentation.

#### Features:

- Monitor instrument height off bottom
- Sea floor positioning beacons



#### SPECIFICATIONS

Operating Frequency	12 kHz
Carrier Frequency Stability	±50 Hz
Source Level	195 dB re 1 µPA @ 1 meter
Repetition Rate	1 second or 0.5 second when activated by mercury tilt switch
Repetition Rate Stability	±50 µsec
Pulse Length	Internally selectable 0.5, 2, 5, 10 msec
Battery Type	20 replaceable "C" cells
Operating Life:	
Alkaline Expendable Batteries	250 hrs @ 1PPS, 0.5 msec pulse width
Rechargeable Battery Charging Time Using Model BC-31 Battery Charger	16 hours maximum
Pressure Housing	Aluminum anodized
Operating Depth	10,000 meters
End Cap Closure	Single bolt closure
Transducer Beam Pattern	180° Omni-directional
Operating Temperature	-5° to +50°C
Storage Temperature	-20° to +81° C
Dimensions	5 in. O.D. X 26 in. long Transducer end 7 in. O.D
Weight	
In Air	42 lbs
In Water	23 lbs

## High Powered Acoustic Pinger

### BFP-312HP

#### High Power Bottom Finding Pinger

Part Number: A-260-26

#### Model BFP-312HP High Power Bottom Finding Pinger

- 210 dB source level
- 100 hour operating life
- Data telemetry option
- External connector for battery charging and control to/from auxiliary instrumentation
- Missed ping option allows periodic skipping of a transmit burst for checking absolute depth of pinger
- Internally selectable repetition rate
- Single bolt end cap closure



SPECIFICATIONS	
Operating Frequency	12 kHz
Carrier Frequency Stability	±50 Hz
Source Level	210 dB re 1 µPA @ 1 meter
Repetition Rate	1 second or 0.5 second when activated by mercury tilt switch
Repetition Rate Stability	±50 µsec
Pulse Length	Internally selectable 0.5, 2, 5, 10 msec
Battery Type	20 replaceable "C" cells
Operating Life:	
Alkaline Expendable Batteries	100 hours @ 1 PPS, 0.5 msec pulse width
Rechargeable Battery Charging Time Using Model BC-31 Battery Charger	16 hours maximum
Pressure Housing	Aluminum anodized
Operating Depth	10,000 meters
End Cap Closure	Single bolt closure
Transducer Beam Pattern	50° conical
Operating Temperature	-5° to +50°C
Storage Temperature	-20° to +81° C
Dimensions	5 in. O.D. X 32 in. long Transducer end 7 in. O.D
Weight	
In Air	70 lbs
In Water	33 lbs

# Underwater Location Devices

## Transponders



**XT-6001**

**TR-6001**

XT-6001 & TR-6001 Acoustic Transponders are glass instrument housings with general purpose transponder electronics. The XT-6001 (left) is an expendable transponder. The TR-6001 (right) incorporates a burn wire release mechanism for ease of recovery. They can be used for acoustic navigation or location marking.

**13", XT-6001**

Part Number:  
D-855-98

**17", TR-6001**

Part Number:  
D-855-97

**13", TR-6001**

Part Number:  
D-855-96

**17", XT-6001**

Part Number:  
D-855-85

**13", XT-6001  
with Titanium  
VPT installed**

Part Number:  
D-855-98-1

**17", XT-6001 with  
Titanium VPT  
installed**

Part Number:  
D-855-85-1

SPECIFICATIONS	XT-6001 & TR-6001
Frequency	7-17 kHz in 250 Hz increments
Acoustic Output re 1 $\mu$ Pa@1m (acoustic Power)	185 dB (20W)
Pulse Length	10 ms
Turn Around Delay	Standard turn around delay is factory set to 3 MS. Adjustable from 3-30 MS.
Housing	Glass sphere, positively buoyant
Weight in Air	26 kg (60 lbs)
Dimensions	24 in maximum diameter
Power Source	16 amp-hour alkaline battery pack
Battery Life	Up to 2 years
Depth Rating	6700 m (22,000 ft)
Notes	XT model is expendable; TR model has burn wire release. UDB 9000 deck box is the surface unit used to range to and release these transponders.

Part Number: B-270-344 ..... Burn Wire Module  
 Part Number: 014534..... Burn Wire Retrofit Kit  
 Part Number: 014529..... Rearming Kit

## Terms & Conditions

Seller's Offer, and any order issued by Buyer to Seller for the goods and/or services specified herein, is strictly limited to Seller's Terms and Conditions of Sale, which can be found at [www.benthos.com](http://www.benthos.com)

**50** Years of  
Innovation  
1962-2012



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Rev 1312