

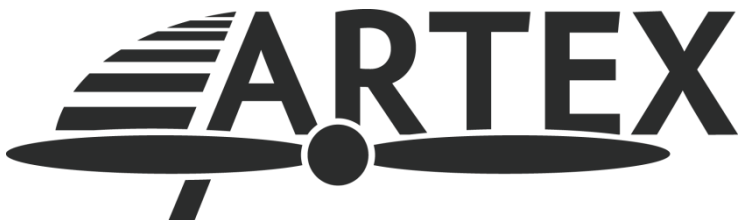


ARTEX PLB Personal Locator Beacon



User Manual Y1-03-0339 Rev. B

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No liability can be accepted for any inaccuracies or omissions in this manual.

IN CASE OF EMERGENCY

USE ONLY IN CASE OF GRAVE OR IMMINENT DANGER

- PULL THE ANTENNA OUT FROM THE BODY TO ITS FULL EXTENT USING THE BLACK TAB.
- LIFT THE FLAP UP.
- PRESS THE "ON" KEY FOR ONE SECOND TO ACTIVATE THE BEACON.
- THE GREEN LED WILL FLASH TO INDICATE ACTIVATION.
- THE STROBE LIGHT WILL START FLASHING TO INDICATE IT IS ACTIVATED.
- RELEASE THE "ON" KEY.
- ENSURE THE ANTENNA IS HELD VERTICALLY WHILE OPERATING THE PLB.



NOTE: Refer to section 3.2 for deactivation instructions.



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1. GENERAL

1.1 Exposure to RF Electromagnetic Energy

This product also complies with EN62479 (EU) and RSS-102 (Canada).

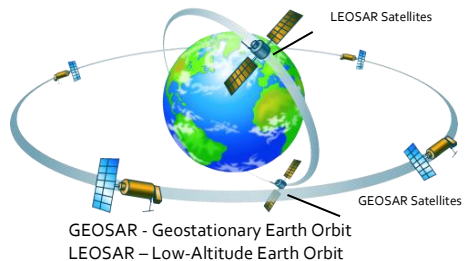
1.2 Warnings

- ⚠ It is a legal requirement to register your PLB with your National Authority.
- ⚠ Only use your PLB in a situation of grave and imminent danger. Deliberately misusing your PLB or setting it off accidentally may result in prosecution and a fine.
- ⚠ Your PLB contains small lithium batteries. Please see the Appendix (section 5) for information on safe transportation.
- ⚠ The battery in your PLB should be replaced immediately if it has been activated, or if the test indicator shows the battery as “used”, or if the expiry date marked on the unit has been exceeded.
- ⚠ THIS PLB WILL NOT FLOAT unless fitted with a flotation pouch.
- ⚠ The ARTEX PLB is not designed and intended for operation while floating in water. Please hold above the water when activated.
- ⚠ Please read these instructions carefully. Failure to follow the guidance in this manual may result in loss of warranty.

1.3 COSPAS/SARSAT System

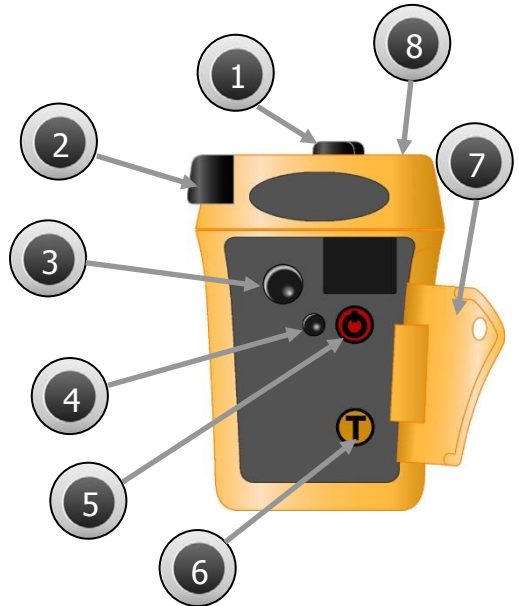
The COSPAS/SARSAT system utilises two satellite arrays to provide distress alert and location data to search and rescue authorities. The GEOSAR system can provide near immediate alerting within the coverage of the receiving satellite. The LEOSAR system provides coverage of the polar region beyond the range of the GEOSAR system.

Ground receiving stations, referred to as Local User Terminals (LUTs), receive and process the satellite downlink signal to generate the distress alerts which are then received by Mission Control Centers (MCCs) which then forward the alert to Rescue Coordination Centres (RCCs), Search and Rescue Points of Contacts (SPOCs) and other MCCs.



2. ARTEX PLB OVERVIEW

- 1) Antenna rewind knob
- 2) Antenna pull grip
- 3) Strobe light
- 4) Indicator LED
- 5) "ON" key (under flap)
- 6) "TEST" key (under flap)
- 7) Lift up flap
- 8) Lanyard fixing (on rear of case)




The PLB is supplied with a clear label that is already applied on the rear of the product to protect the UIN information.

The unique cradle mounting system allows the PLB to be easily attached to a belt, clothing, or other protective equipment. Simply fit the rubber strap around the mounting point and attach to the cradle as shown.

The cradle then clips to the PLB at the four fixing points.

A lanyard cord is provided to secure your beacon to clothing or other protective gear to avoid accidental loss.



-  Once affixed using the cradle or pouch, the PLB should be securely tethered to your person or clothing using the supplied lanyard. This will guard against accidental loss if the PLB is unknowingly removed from its housing.

3. OPERATION

WARNING: USE ONLY IN SITUATIONS OF GRAVE AND IMMINENT DANGER. MISUSE MAY RESULT IN A SEVERE PENALTY

Ensure that your ARTEX PLB is always fitted with an unused battery that is within the marked expiry date. Failure to do so may result in reduced operating time when needed in a real emergency. Please observe the recommendations on testing in section 4 (Testing).

3.1 Activation

Only activate your ARTEX PLB in situations requiring emergency assistance from the rescue authorities. Deliberate misuse of your PLB may result in a fine.

- To activate your PLB in an emergency, pull the black antenna tab out completely.
- Lift the protective flap and press the "ON" key until the green LED starts flashing and then release the key.

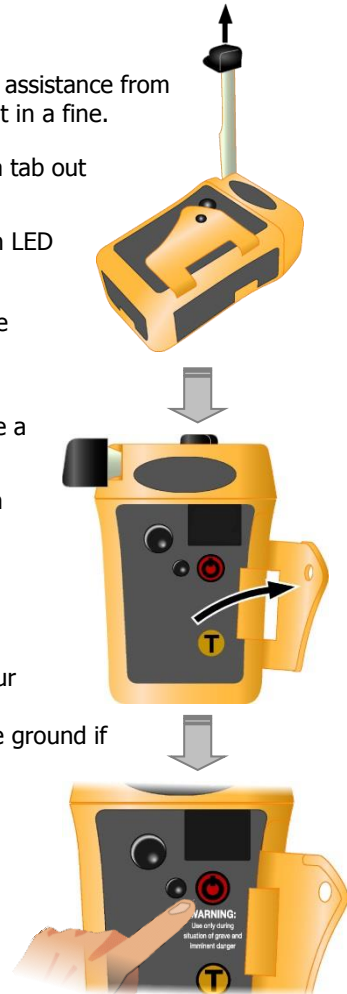


Do not force the flap open more than 180°, otherwise the hinge may break.

- During operation, the green LED will flash once every five seconds while the GPS is turned on and obtaining a fix. Once a fix is obtained, the green LED will flash quickly three times.
- Each time a 406 MHz transmission is made, the LED will flash quickly five times; green for transmission with a GPS position and red for a transmission without a position.
- The red LED will flash every 2.5 seconds while the 121.5MHz homing beacon is active.
- When operating the PLB over water, tether the beacon to your body or the life raft. Keep the PLB clear of water when operating. When operating on land, place the PLB flat on the ground if possible.
- Hold your beacon lying flat with the antenna standing vertically. Keep the area marked "GPS Antenna" free from obstruction, which would interfere with the GPS reception.



The PLB does not transmit an alert until approximately 50 seconds have elapsed. This allows time to deactivate the unit if accidentally turned on.



3.2 Deactivation

To deactivate your PLB after use, or if it is accidentally activated, press the "ON" key until the indicator LED flashes red twice, then release. Rewind the antenna using the knob on the top of the PLB.



Do not push the antenna back into the PLB as this may cause it to be damaged.

3.3 False Alerts

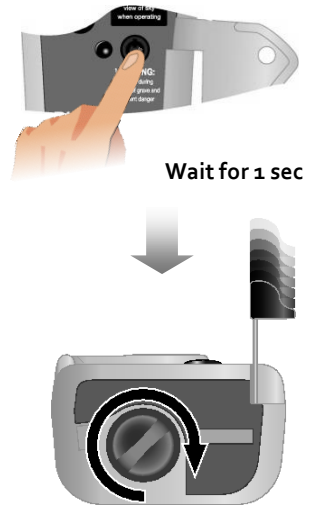
False alerts cause the rescue authorities unnecessary time and expense. To avoid false alerts, make sure your PLB is safely stowed with the protective cover closed and the antenna fully retracted. Make sure that there is no excessive pressure applied to the protective cover. Ensure that anybody carrying the PLB is fully aware that this device is for emergencies and should only be used in situations of grave and imminent danger.

If you accidentally activate your beacon or otherwise set it off when a rescue is not required, contact your local emergency services as soon as possible and advise them of your beacon's 15 digit HEX code (UIN), your current location and the time the beacon was first activated.

The UIN is printed on the label on the rear of the PLB.

For USA phone: 1-800-851-3051 (USAF Rescue Coordination Center)


For UK phone: +44 (0)1326 317575. (UKCG)



4. TESTING

Routine testing of your PLB is recommended to ensure it is in good working order if needed, but please follow the guidance notes below on the frequency that tests should be carried out. Please remember that each test will reduce the battery capacity slightly and reduce the operation time of your PLB during an emergency.

4.1 Beacon test


 Pull antenna out fully before commencing the test. Retract the antenna after the test.


To test that your ARTEX PLB is functioning correctly, press and hold the “TEST” key for one second. The red LED will come on to indicate the switch is depressed, followed by the red LED flashing rapidly. The switch may now be released. After a delay, the strobe light will flash once and the indicator LED will flash to show the pass or fail status.


Note: This status indication is repeated a second time after a short delay.

The number of green/amber flashes in each group indicates the battery status as shown in the table below.

Green / Amber Indicator <i>Changes to amber after 1 hour of use</i>		Red Indicator
No of Flashes	No of Hours Use	Type of Failure
1 Flash	0 to 1hr (Green)	121.5 MHz homer
	1 to 2hrs (Amber)	
2 Flashes	2 to 4hrs (Amber)	406 MHz generation
3 Flashes	4 to 6hrs (Amber)	406 MHz power amp
4 Flashes	6 to 8hrs (Amber)	Replace battery
5 Flashes	8 to 10hrs (Amber)	Other failure
6 Flashes	Over 10hrs (Amber)	

 Because the test transmits a short burst on the aircraft distress frequency of 121.5MHz, please only carry out this test in the first five minutes of each hour.

 It is recommended to test your PLB once a month.

 The amber test result is an electronic witness that indicates the battery has been used for over one hour or the allowed number of tests has been exceeded. The PLB will still operate normally in distress, but the battery should be replaced to ensure the full operating life when your PLB is needed.

4.2 GPS test

WARNING: DURING TESTING, THE GPS RECEIVER EXPENDS SIGNIFICANT AMOUNTS OF BATTERY ENERGY. DO NOT TEST THE GPS OPERATION MORE THAN ONCE A YEAR. TESTING THE GPS RECEIVER IS LIMITED TO 10 TESTS OVER THE LIFETIME OF THE BATTERY. AFTER THIS, THE GPS TEST WILL FAIL TO ACTIVATE.

THIS TEST MUST ONLY BE PERFORMED WHERE THE PLB HAS A CLEAR AND UNOBSTRUCTED VIEW OF THE SKY. THIS IS REQUIRED TO ALLOW THE GPS RECEIVER TO ACQUIRE A SIGNAL FROM SUFFICIENT SATELLITES TO ALLOW IT TO DETERMINE A POSITION. MAKE SURE THE AREA MARKED "GPS ANTENNA" IS NOT OBSTRUCTED.

Press and hold the "TEST" key. The LED will illuminate red to indicate the key has been pressed, and then start flashing. Shortly after, the LED will cease flashing and become a steady red light. The "TEST" key can now be released.

During the GPS test, the LED will repeat a long red flash followed by a short green flash until either a position fix is obtained or the GPS test fails. A successful test will be indicated by the strobe flashing and the green LED flashing. The number of green flashes indicates one more than the number of GPS tests remaining (e.g. 8 flashes = 7 tests remaining). A failure is indicated by the red LED flashing. The test can be ended by holding the "TEST" key for five seconds.



5. APPENDIX

5.1 Maintenance and Troubleshooting

Your PLB will require little maintenance except periodic cleaning, if required. Always use a damp cloth to clean the case and dry thoroughly. Do not use solvents or other cleaning fluids as this may cause the plastics to deteriorate. Ensure the antenna is free to unwind.

5.2 Batteries

The ARTEX PLB contains lithium batteries for long operating life. Your battery must be replaced either after the expiry date or after the PLB has been activated, even if only for a short period of time. Battery replacement must be done by an authorized ACR Electronics, Inc. battery replacement center.

5.3 Transport

When shipping your PLB, the following guidance and regulations should be followed, but you are advised to contact your nearest battery replacement center or ACR Electronics, Inc. prior to shipping as regulations may have changed. The ARTEX PLB battery contains <2g of lithium.

- Always pack your PLB securely in a stout cardboard carton. ACR Electronics, Inc. advises that you keep the original packaging in case of return for service.
- For surface transport, the PLB may be shipped "excepted" under special provision 188.
- For air transport, the PLB should be shipped as category UN3091 and packed under IATA packing instruction 970 section II. If you are hand carrying your PLB on an aircraft, please contact your airline for advice.

5.4 Disposal

Care should be taken when disposing of your PLB when it is no longer needed. It is recommended that you remove the battery from the PLB by removing the case lid. The case screws are covered by the top label. Dispose of the battery in accordance with local waste regulations.

NOTE: The ARTEX PLB is not user serviceable and removing the lid will invalidate the warranty.



5.5 Specifications

406MHz Transmitter

Frequency 406.040 MHz \pm 1KHz
 Output Power 5W Typical
 Modulation Phase \pm 1.1 Radians Pk
 (16K0G1D)
 Encoding Biphase L
 Rate 400 bps

121.5MHz Transmitter

Frequency 121.5 MHz
 Output Power 25-100mW PEP
 Modulation Swept Tone AM (3K20A3X)
 Modulation Depth \sim 97%
 Frequency Stability \pm 50ppm
 Duty Cycle \sim 35%

Low Duty Cycle Strobe

Light Type High Intensity LED
 Light Color / Intensity White / 1candela (typ)
 Flash Rate 20-30 per minute

Battery

Type..... Lithium Manganese Dioxide (LiMnO₂)
 Operating >24Hours @ -20°C
 Replacement Interval 7 years

GPS Receiver

Satellites Tracked 66 Channels
 Sensitivity -148dBm
 Cold Start Re-acquisition -163dBm
 GPS Antenna Micro strip Patch

General

Height of Body 76mm
 Width of Body 52mm
 Depth of Body..... 32mm
 Weight 116grams

Environmental

IEC60945 Category Portable
 Operating Temperature Class 2 -20C to +55C
 Storage Temperature Class 2 -30C to +70C
 Waterproof 15m depth

5.6 Approvals

5.6.1 European Declaration of Conformity

Hereby, ACR Electronics, Inc. declares that the radio equipment type ARTEX PLB is in compliance with Directive 2014/53/EU.

See <https://www.acrartex.com/support/acr-support/acr-declaration-of-conformity/>



5.6.2 Country of Intended Use (EU requirement)

Austria	✓	Germany	✓	Netherlands	✓
Belgium	✓	Greece	✓	Poland	✓
Bulgaria	✓	Hungary	✓	Portugal	✓
Cyprus	✓	Ireland	✓	Romania	✓
Czech Republic	✓	Italy	✓	Slovakia	✓
Denmark	✓	Latvia	✓	Slovenia	✓
Estonia	✓	Lithuania	✓	Spain	✓
Finland	✓	Luxembourg	✓	Sweden	✓
France	✓	Malta	✓	United Kingdom	✓

5.6.3 Industry Canada Approval

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

5.7 Registration

To register your beacon, contact your national registration authority via mail, email or online. Provide your 15 digit HEX ID (UIN), 5 digit checksum if required, your contact details and emergency contact information. Some countries also require additional information such as boat type and identification, or alternative emergency contacts.

For UK registrations go to:

www.gov.uk/406beacon

For USA registrations go to:

www.beaconregistration.noaa.gov/

For a complete list of all countries with online registration links visit:

www.acrartex.com/support/registrations/

5.8 Limited Warranty

Your ACR Electronics, Inc. ARTEX PLB is warranted against manufacturing defects in materials and workmanship for a period of 7 years from the date of purchase and in accordance with the following conditions.

ACR Electronics, Inc. will, at its discretion, repair or replace faulty product free of charge excluding the cost of shipping. Proof of purchase shall be required in order for a warranty claim to be valid from the original purchaser. All claims shall be made in writing to ACR Electronics, Inc. or an approved service dealer.

ACR Electronics, Inc. shall not be liable to the buyer under the above warranty:

- For any repairs or modifications carried out on the PLB using parts that are not supplied or approved by the manufacturer ACR Electronics, Inc. including batteries, and for work carried out other than by ACR Electronics, Inc. or approved service dealers.
- For any part, material or accessory that is not manufactured by ACR Electronics, Inc. the consumer will be covered by the guarantee / warranty offered to ACR Electronics, Inc. by the manufacturer or supplier.
- For product which has not been paid for in full.
- For any product supplied by ACR Electronics, Inc. to a customer under an alternative warranty agreement.
- For the cost of shipping product to and from the customer.

The battery is only warranted until the date of expiry, provided the unit is tested in accordance with the information in this user manual. This warranty does not apply to a used battery as indicated by the electronic witness (see Testing page 9).

The following specific items are excluded from this warranty:

- lift up flap and associated mechanism
- retractable antenna

This warranty does not affect your statutory rights. This warranty is to be interpreted under U.S. and English law.

For further assistance, contact our Technical Service Department at 1-800-432-0227 or email: service@acrartex.com.