DMA517B

# KANNAD 406 XS-2 GPS


# MANUEL UTILISATEUR
# USER MANUAL

# ATTENTION

**Balise de détresse classe II**

**Utilisation prohibée en dehors de toute situation de détresse**

**Avant toute utilisation, cette balise doit être enregistrée auprès des autorités locales**

# WARNING

**Distress beacon class II**

**Use only in situations of grave and imminent danger**

**Register PLB with national authority before use**

# ACTIVATION

## WARNING

**It is unlawful to transmit a distress signal unless an emergency exists.**

(1) Unfold the antenna.

(2) Break the blue button lower part (seal) by pulling off the safety red ribbon.

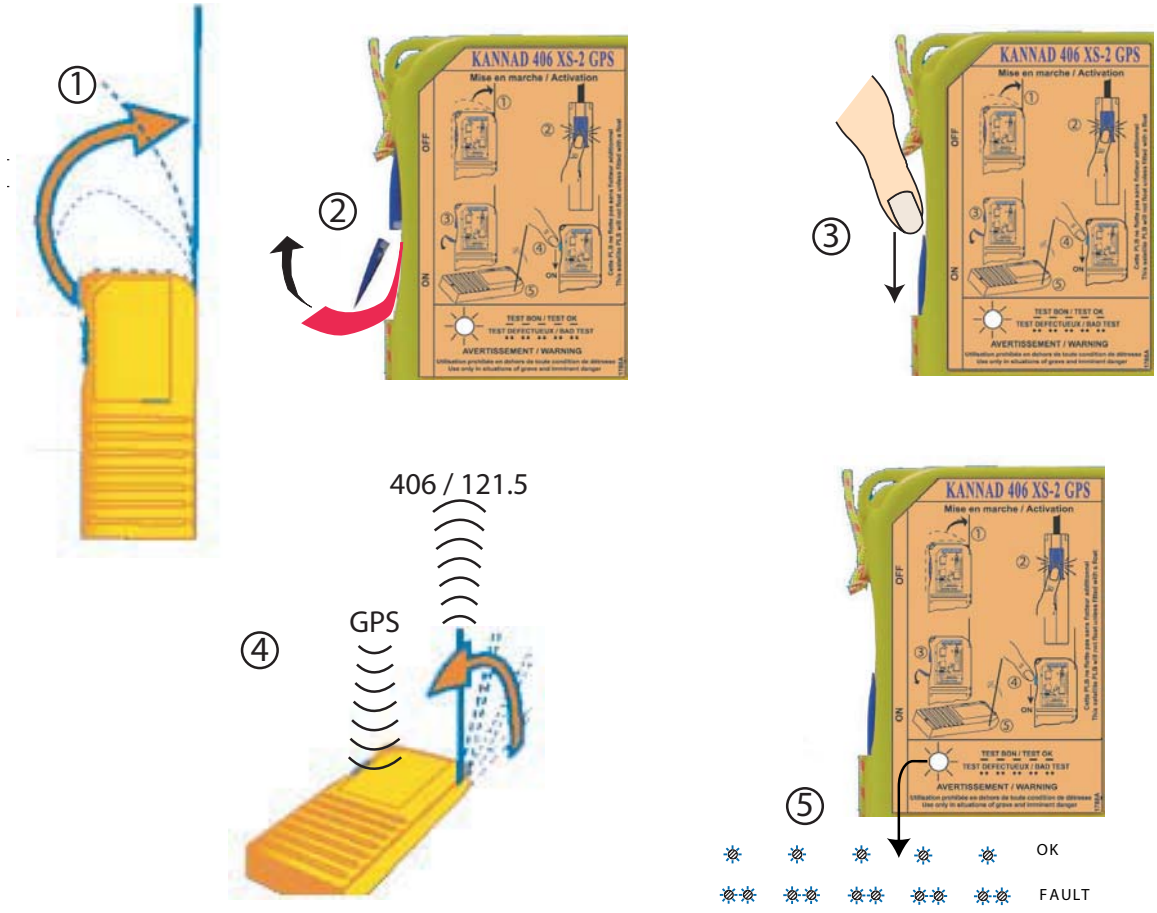
(3) Slide the blue button down to "ON".

(4) Place beacon in horizontal position in a clear area, antenna in vertical position.
**Important:** *After activation, the user shall make every effort to keep the beacon out of the water, avoid any retention of water on the antenna and keep the beacon oriented so that the antenna has an unobstructed view of the sky. The user should keep his hand away from the antenna and GPS antenna side.*

(5) Check that the light flashes:

- 1 stroke every 3 seconds indicates good operation.
- 2 grouped flickers every 3 seconds indicate faulty operation.

**TO STOP BEACON:** Slide blue button up to "OFF" position.



CONTENTS

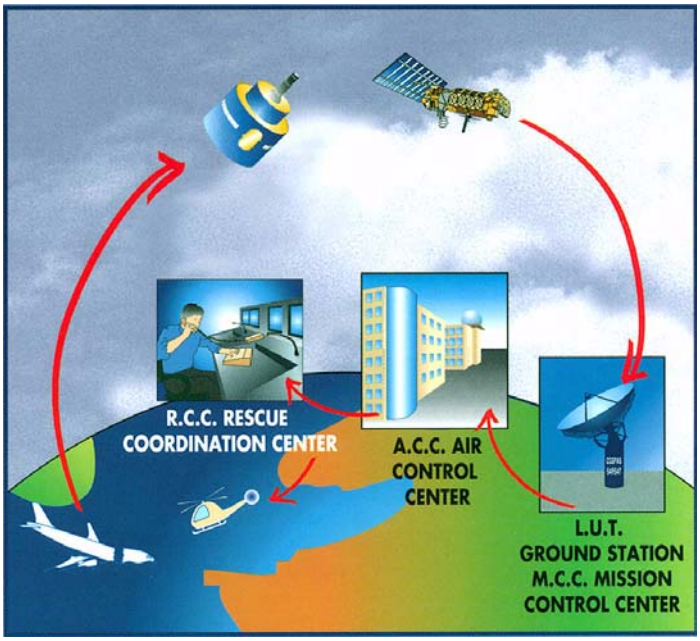
## COSPAS-SARSAT SYSTEM DESCRIPTION

COSPAS-SARSAT is a global distress warning system operating on the 406.028 MHz frequency.

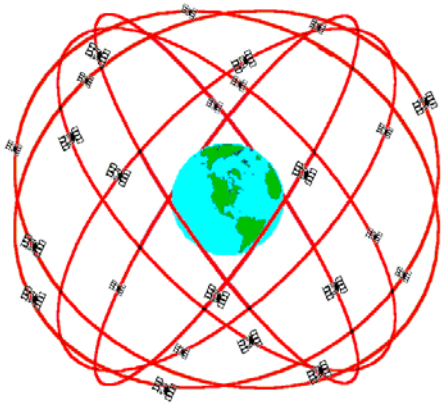
The 406 MHz frequency coded with the beacon ID, is used to determine the position of the beacon to alert the nearest Search and Rescue Services (S.A.R.).

The system consists of:

- Distress beacons.
- 7 satellites on 100 minutes polar orbits.
- Local User Terminals (LUTs).
- Mission and Rescue Control Centers (MRCC's).




*COSPAS-SARSAT System*




*GPS satellite orbital plane*

## NEW GENERATION OF 406 MHZ BEACONS

The COSPAS-SARSAT program has been created to help pinpoint distress thanks to the global coverage provided by the COSPAS-SARSAT satellites (7 satellites).

EPIRBs (Emergency Position Indicating Radio Beacons), ELTs (Emergency Locator Transmitters) and PLBs (Personal Locator Beacons) such as KANNAD 406 range of beacons are part of this program and give the position and identification of a distress within one nautical mile, anywhere in the world.

KANNAD 406 transmits a distress signal on the 406 MHz frequency (international distress frequency). This message is picked up by the COSPAS-SARSAT satellites which store it and continuously retransmit it to the Local User Terminals (L.U.T., 32 World Wide).

The data are processed and retransmitted to Mission and Rescue Control Centers (MRCC's) and to Search And Rescue Center nearest to the distress to organize the rescue operations.

The 121.5 MHz frequency is also transmitted by the beacon and is used as a homing frequency in the final stages of rescue (see ***note*** below).

The message transmitted by the beacon to the satellites:

- Transmits the distress from any point on earth within one hour depending on the latitude, 2 hours at the equator (100 % satellite coverage).
- Gives the position of the distress within one nautical mile anywhere in the word.
- Gives the identification thanks to the unique number issue by national authorities and programmed inside the beacon

There is no need anymore to search for hours and days. The 406 MHz frequency takes the search out of the search and rescue operations.

406 MHz beacons such as KANNAD 406 beacons gain precious time and save lives.

***Note concerning old generation of 121.5 / 243 MHz beacons***:

From February 2009 the international satellite system (COSPAS-SARSAT) will no longer process the 121.5 signal. This will make all 121.5 beacons obsolete. Owners of 121.5 beacons should replace them with 406 MHz beacons at the next battery replacement.

## KANNAD 406 XS-2 GPS
## PERSONAL LOCATOR BEACON (PLB) DESCRIPTION

The **KANNAD 406 XS-2 GPS** is a survival manually activated survival PLB approved to COSPAS-SARSAT class II requirements.

The distress signal transmitted by the beacon can be picked up anywhere thanks to the satellite global coverage.

The **KANNAD 406 XS-2 GPS** operates on the frequencies 406.028 MHz and 121.5 MHz

- 406 MHz: this frequency transmits the beacon-coded distress signal to the COSPAS-SARSAT satellites for identification and pinpointing by the L.U.T. (Local Users Terminals).
- 121.5 MHz: this frequency is only used for homing in the final stages of the SAR operations (Notice concerning old generations of 121.5 / 243 MHz beacons, see page 4).

The **KANNAD 406 XS-2 GPS** is fitted with a built-in GPS

- The advantage of GPS is that it will produce a much more accurate position coded in the long message of the beacon, typically about a thirty meters as compared to 1 to 2 kilometers for 406 MHz transmitter and 15 to 20 kilometers for 121.5 / 243.0 MHz transmitters (see page 15).

The **KANNAD 406 XS-2 GPS** is light, tiny, sturdy:

- Small size: 156 x 70 x 34 mm.
- Small weight: 380 grams.
- Made of yellow thermoplastics, highly resistant to shocks.
- Watertight and buoyant (when used in its pouch).

The **KANNAD 406 XS-2 GPS** is easy to use:

- Ergonomic, it holds easily in one hand.
- Easy and safe activation to avoid false alarms.
- Multi environment (Air, sea, land).
- Fits easy inside a pocket (Life jacket, anorak, flying suit) etc…

The **KANNAD 406 XS-2 GPS** is a performing beacon.

Minimum transmission is 24 hours at -20°C and about 3 days at +20°C.

Long battery storage life. Battery replacement recommended every 5 years.

The **KANNAD 406 XS-2 GPS** is activated by breaking the lower part of the blue button (which is also a seal) and sliding the upper part to "ON", to avoid any accidental operation creating a false alert.

## KANNAD 406 XS-2 GPS DESCRIPTION

(1) ON / OFF button:
- to activate the beacon;
- to stop the beacon transmission;
- is also a tamperproof seal.

(2) Safety tape:
- to break the seal.

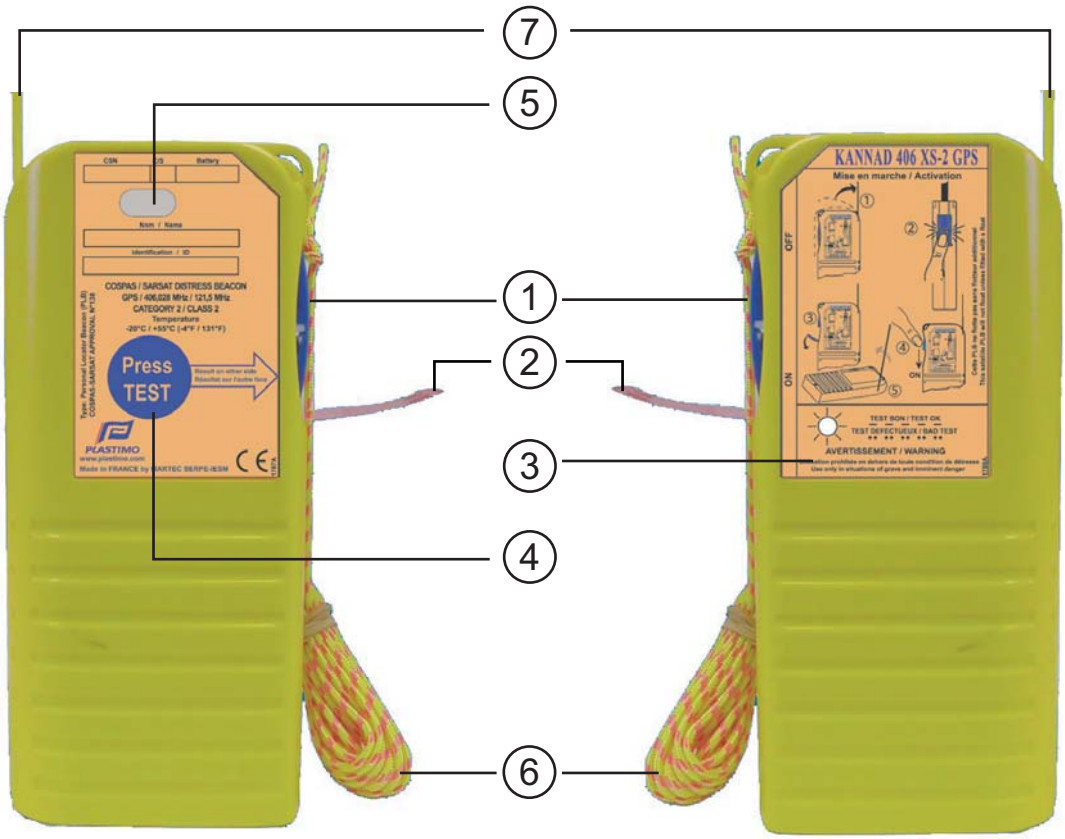
(3) Beacon control lamp:
- to check good operation in ON position;
- to check good operation when performing a self-test.

(4) TEST pushbutton:
- to perform a self-test.

(5) Programming window:
- to program beacon (by manufacturer or authorized maintenance stations).

(6) Tether line:
- to attach the beacon to a liferaft, life jacket, etc.

(7) 406 / 121.5 MHz antenna



# TESTS INSTRUCTIONS

## Test of GPS and 406 / 121.5 MHz frequencies

(1) Unfold the antenna.

(2) Press "TEST" touch button on rear face.

(3) Check the blinking of the lamp on front face:

- 5 steady strokes (1 every second) indicates good operation.
- 5 grouped flickers (2 strokes every second) indicates faulty operation.

*Repeat 3 times to confirm failure before contacting agent.*

# INSTRUCTIONS FOR USE

## WARNING

⚠ **It is unlawful to transmit a distress signal unless an emergency exists.**

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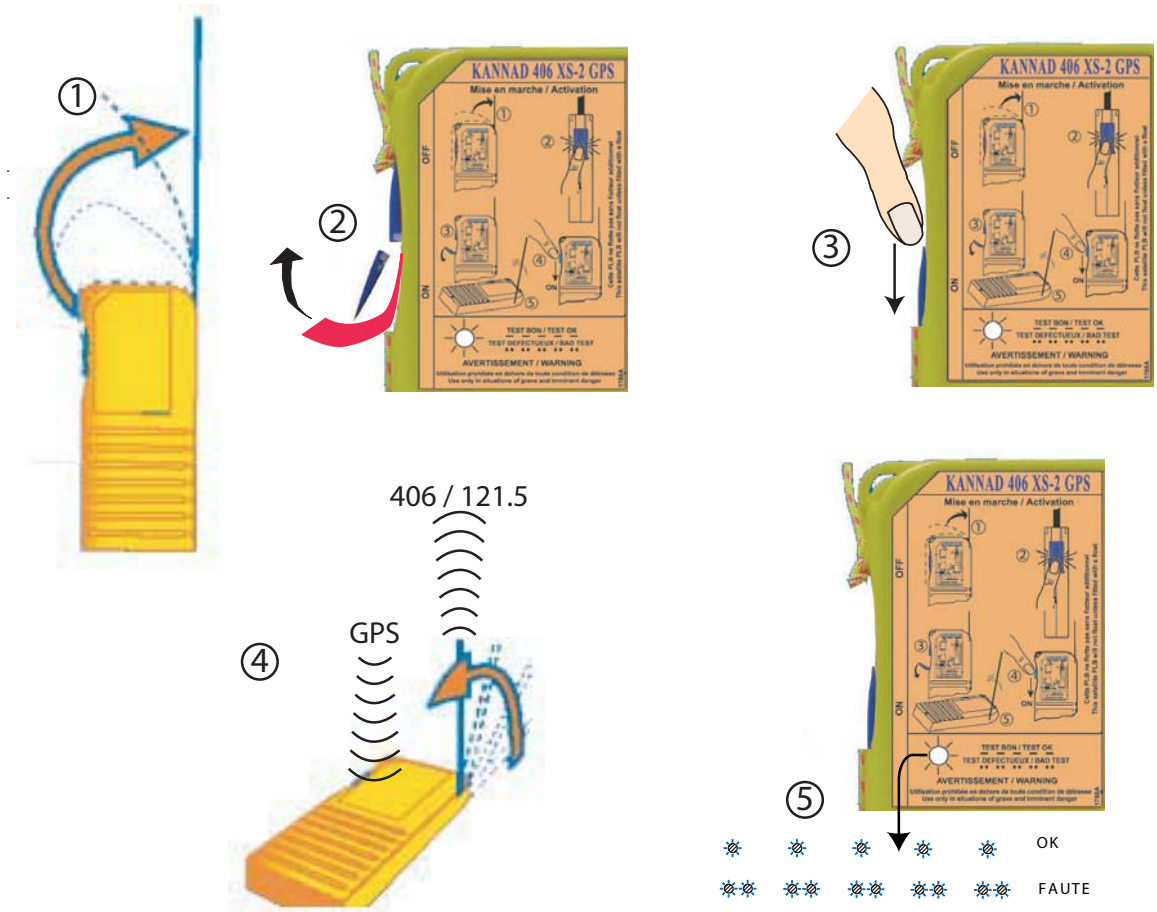

## TECHNICAL SPECIFICATIONS

Temperature range : -20°C to +55°C.

Storage temperature : -40°C to +65°C.

Lithium manganese batteries : High energy $LiMnO_2$

- Expiry : 5years from date of manufacture

Operating life : 24 hours mini. at -20°C.

Housing made of yellow thermoplastic with a high resistance to shocks.

Watertight and unsinkable (when used in its pouch).

Dimensions: 156 x 70 x 34 mm Weight: 380 g Volume: 330 cm3

*406 MHz SATELLITE TRANSMISSION*

Frequency : 406.028 MHz ± 0.001 MHz

UHF output power : 5W ± 2 dB

Phase modulation : ± 1.1 ± 0.1 radians peak

Modulation : AM audio sweep

Repetition period : 50 sec. ± 5%

Transmission time : 520 msec. ± 1%

*121.5 MHz HOMING TRANSMITTER*

Frequency : 121.5 MHz ± 0.003 MHz

Power : 25 mW -0 + 6 dB

Modulation format : 3K20A3N

Transmission : Continuous

## SPECIFICATIONS TECHNIQUES GPS

Récepteur µBLOX GPS

| | |
|---|---|
| Récepteur | : Fréquence L1 |
| Précision | : ≈ 30 mètres |
| Acquisition | : 8 (chaud) à 45 secondes (froid). |
| Limites opérationnelles | : Altitude < 60,000 pieds |
| | : Vitesse < 1,000 nœuds |

Positions transmises via système COSPAS-SARSAT : résolution 4 secondes.

Délai typique d'alerte avec positionnement GPS en zones couvertes par satellites géostationnaires : 10 minutes.

Conformément à la norme COSPAS-SARSAT, la position GPS est mise à jour toutes les 20 minutes.

**Avertissement : la société Martec Serpe-lesm ne pourra être tenue pour responsable ni du fonctionnement, ni du temps de réponse, ni de la précision des systèmes satellitaires GPS et COSPAS-SARSAT.**

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## GPS TECHNICAL SPECIFICATIONS

µBLOX GPS Receiver

| | |
|---|---|
| Receiver | : Frequency L1 |
| Accuracy | : ≈ 30 meters |
| Acquisition | : 8 (Hot start) to 45 seconds (Cold start). |
| Operational limits | : Altitude < 60,000 pieds |
| | : Speed < 1,000 nœuds |

Positions transmitted via COSPAS-SARSAT system: 4 second resolution.

Typical alert time with GPS positioning within zones covered by geostationary satellites: 10 minutes.

In compliance with COSPAS-SARSAT specifications, the GPS position is updated every 20 minutes.

**Warning : under no circumstances shall SERPE-IESM be held responsible neither for any defective operating, nor response time nor precision of GPS and COSPAS-SARSAT satellite systems.**.

## DECLARATION D'ENREGISTREMENT

*Note : la règlementation concernant l'enregistrement et l'utilisation des PLBs varie d'un pays à un autre. Il est conseillé de s'informer de la règlementation en vigueur dans le pays où la balise doit être enregistrée ainsi que dans le pays où elle doit être utilisée.*

Chaque balise est codée avec un numéro ID unique composé de 15 caractères permettant son identification. Ce numéro est inscrit dans le champ ID de l'étiquette de la PLB .

Le propriétaire de cette PLB doit impérativement l'enregistrer auprès des autorités nationales compétentes qui lui fourniront le formulaire nécessaire à cet enregistrement.

La balise doit être ré-enregistrée à chaque changement de propriétaire.

La KANNAD 406 XS-2 GPS est codée conformément aux protocoles du système COSPAS-SARSAT en code sérialisé ou selon le protocole de codage en vigueur dans le pays dans lequel elle est enregistrée :

- En version maritime : MMSI, code radio ou code sérialisé.
- En version aviation, en tant que deuxième balise embarquée à bord : code sérialisé (S/N), adresse 24 bit de l'aéronef (ICAO), Aircraft Operator Designator + numéro de série de la balise (AOD) ou numéro de queue (T/N).
- En version terrestre : code sérialisé.

## REGISTRATION

*Note: regulations regarding registration and use of PLBs vary from nation to nation. Make sure you are aware of the appropriate local regulations.*

Each PLB is programmed with a unique 15 digit Hexadecimal identity number (ID). This number is to be found in the ID field of the PLB label.

The owner of the PLB must imperatively register its PLB with the national authorities who will supply the form necessary for its registration.

The PLB must be re-registered when changing ownership.

The KANNAD 406 XS-2 GPS is coded in compliance with COSPAS-SARSAT serialised protocol or with coding protocol applicable with the country of registration:

- For marine use: either MMSI number, radio call sign or serialized protocol.
- On board an aircraft: either with the serialized number (S/N), aircraft 24 bit address (ICAO), aircraft operator designator + ELT serial number (AOD), tail number (T/N).
- For use on land: with serialised protocol.

## MAINTENANCE

Auto test

- Tous les mois par l'utilisateur (voir instructions de test page 9).

Remplacement des piles

- Les piles ont une durée de vie maximale de 5 ans à compter de la date de fabrication. Elles doivent être remplacées et la radiobalise contrôlée par un agent agréé disposant de pièces d'origine uniquement disponibles chez SERPE-IESM.

En cas d'émission de la balise, les piles doivent être remplacées et la balise contrôlée comme indiqué ci-dessus.

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## MAINTENANCE POLICY

Self test

- Every month by the user (see TEST instructions page 10).

Battery replacement

- Batteries are valid for a period of 5 years maximum from date of manufacture. The battery pack must be replaced and the beacon controlled by an authorized agent with original parts only available from SERPE-IESM.

In case of activation, the battery pack must be replaced and the beacon controlled as indicated above.

## AVERTISSEMENT RELATIF AUX PILES

Le remplacement des piles doit être effectué par un agent agréé par SERPE-IESM qui en disposera et utilisera uniquement les pièces d'origine fournies par SERPE-IESM.

- NE PAS OUVRIR LA BALISE
- NE PAS TENTER DE RECHARGER LA PILE
- NE PAS LA JETER DANS LE FEU
- NE PAS L'EXPOSER A UNE TEMPERATURE DE PLUS DE 90°C
- NE PAS COURT-CIRCUITER

Si la radiobalise est utilisée plus de 30 minutes ou pour une autre raison que le test, le piles doivent être remplacées.

**Avertissement**

Prière de vous renseigner auprès de votre compagnie aérienne si vous avez l'intention de transporter une KANNAD 406 XS-2-GPS (piles au lithium).

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## BATTERY WARNING

The replacement of the battery pack must be performed by an authorized SERPE-IESM agent who will dispose of it and will only use factory replacement pack supplied by SERPE-IESM.

- DO NOT OPEN THE BEACON
- DO NOT CHANGE THE BATTERY
- DO NOT THROW IN FIRE
- DO NOT EXPOSE TO TEMPERATURE OVER 90°C
- DO NOT SHORT CIRCUIT

Should the beacon be used for more than 30 minutes or for any reasons other than testing, the battery pack must be changed.

**Advisory**

Please contact your airline for guidance if you intended to utilize transport for a KANNAD 406 XS-2-GPS (lithium battery pack).

## CONTROLE SORTIE D'USINE / PRE-DELIVERY INSPECTION LOG

CSN :
3.....

Date de remplacement des piles / Battery replacement date:
.....

Date de sortie d'usine / Factory date :
.....

Signature et cachet de contrôle / Signature and stamp

# PREMIERE AFFECTATION DE LA BALISE
# BEACON FIRST ASSIGNMENT

(Voir / See page 16)

**Environment : Maritime**

Nom du bateau / Vessel name:

.....

MMSI - Code radio / MMSI - Radio Code:

.....

Nom propriétaire / Owner's name:

.....

N° série / Serial N°:

.....

Code ID (HEX) / ID Code (HEX):

.....

**Environment : Aviation**

Protocole / Protocol: T/N ICAO AOD S/N

N° identification / Identication N°:

.....

Code ID / ID Code (HEX):

.....

N° de queue / Tail number:

.....

**Environment : Terre / Land**

Code ID / ID Code (HEX):

.....

Nom propriétaire / Owner's name:

.....

Cachet d'inspection / Inspection stamp

Date, signature

# AFFECTATIONS SUCCESSIVES DE LA BALISE
# BEACON LOCATION LOG

(Voir / See page 16)

**Environment : Maritime**

Nom du bateau / Vessel name:

.....

MMSI - Code radio / MMSI - Radio Code:

.....

Nom propriétaire / Owner's name:

.....

N° série / Serial N°:

.....

Code ID (HEX) / ID Code (HEX):

.....

**Environment : Aviation**

Protocole / Protocol: T/N ICAO AOD S/N

N° identification / Identication N°:

.....

Code ID / ID Code (HEX):

.....

N° de queue / Tail number:

.....

**Environment : Terre / Land**

Code ID / ID Code (HEX):

.....

Nom propriétaire / Owner's name:

.....

Cachet d'inspection / Inspection stamp | Date, signature

## AFFECTATIONS SUCCESSIVES DE LA BALISE
## BEACON LOCATION LOG

(Voir / See page 16)

**Environment : Maritime**

Nom du bateau / Vessel name:

.....

MMSI - Code radio / MMSI - Radio Code:

.....

Nom propriétaire / Owner's name:

.....

N° série / Serial N°:

.....

Code ID (HEX) / ID Code (HEX):

.....

**Environment : Aviation**

Protocole / Protocol: T/N ICAO AOD S/N

N° identification / Identication N°:

.....

Code ID / ID Code (HEX):

.....

N° de queue / Tail number:

.....

**Environment : Terre / Land**

Code ID / ID Code (HEX):

.....

Nom propriétaire / Owner's name:

.....

Cachet d'inspection / Inspection stamp

Date, signature

## AFFECTATIONS SUCCESSIVES DE LA BALISE
## BEACON LOCATION LOG

(Voir / See page 16)

**Environment : Maritime**

Nom du bateau / Vessel name:

.....

MMSI - Code radio / MMSI - Radio Code:

.....

Nom propriétaire / Owner's name:

.....

N° série / Serial N°:

.....

Code ID (HEX) / ID Code (HEX):

.....

**Environment : Aviation**

Protocole / Protocol: T/N ICAO AOD S/N

N° identification / Identication N°:

.....

Code ID / ID Code (HEX):

.....

N° de queue / Tail number:

.....

**Environment : Terre / Land**

Code ID / ID Code (HEX):

.....

Nom propriétaire / Owner's name:

.....

Cachet d'inspection / Inspection stamp

Date, signature

## AFFECTATIONS SUCCESSIVES DE LA BALISE
## BEACON LOCATION LOG

(Voir / See page 16)

**Environment : Maritime**

Nom du bateau / Vessel name:

.....

MMSI - Code radio / MMSI - Radio Code:

.....

Nom propriétaire / Owner's name:

.....

N° série / Serial N°:

.....

Code ID (HEX) / ID Code (HEX):

.....

**Environment : Aviation**

Protocole / Protocol: T/N ICAO AOD S/N

N° identification / Identication N°:

.....

Code ID / ID Code (HEX):

.....

N° de queue / Tail number:

.....

**Environment : Terre / Land**

Code ID / ID Code (HEX):

.....

Nom propriétaire / Owner's name:

.....

Cachet d'inspection / Inspection stamp

Date, signature

## WARRANTY

Warranty is one year from date of invoice againsts defect in material and workmanship, repair in our GUIDEL factory or replacement which ever is more suitable, excluding transport to and from our factory.

Our warranty excludes abuse or misuse, alteration, incorrect and / or non authorised service, equipment on which the manufacturer seal has been altered, mutilated or removed.

The equipment shall be returned in its original packaging. Proof of purchase will be required.

Work carried out under the warranty shall not have the effect of extending the warranty period.

In respect of this warranty, after a defect has been noted by our services, the sole obligation incumbent upon us shall be the repair of the equipment or the element identified as being defective by our services or possibly its replacement free of charge, to the exclusion of all compensation or damages.

The cost of transportation of the equipment replaced or repaired are the purchaser's exclusive responsibility.The risks shall be borne by the purchaser.

## DISTRESS BEACON LIFE CYCLE

Safety is our prime and constant concern. We have more than 15 years of experience in the production and maintenance of distress beacons. KANNAD 406 beacons are reputed the most reliable on the market to-day and this leads us to determine the life cycle of KANNAD beacons.

This is the reason why SERPE-IESM has decided to limit the life cycle of KANNAD 406 to 12 years from their date of production.

Limiting the beacons life cycle is intended to prevent possible risk of failure on old beacons, particularly under strain in a distress situation.

Regular testing and controls performed by SERPE-IESM accredited service stations with original parts will contribute to the beacon good operating order.

## FEUILLET DE CONTROLE PERIODIQUE / PERIODIC INSPECTION LOG

Prochain contrôle / Next control:
Piles à remplacer le / Battery replacement date:
Agent de contrôle / Control agent:
Contrôle effectué le / Date of control:

Prochain contrôle / Next control:
Piles à remplacer le / Battery replacement date:
Agent de contrôle / Control agent:
Contrôle effectué le / Date of control:

Prochain contrôle / Next control:
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Agent de contrôle / Control agent:
Contrôle effectué le / Date of control:


www.plastimo.com

Fabriqué par / Manufactured by

MARTEC Serpe-Iesm

FRANCE

DMA : 517B

Certificat d'approbation COSPAS-SARSAT n° 138

COSPAS-SARSAT type approval certificate n° 138