

**Document No.**

**Revision 1**

# User's Manual

**SA tag SA24/003000**

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**Prepared by:**

**Distribution (Check all appropriate):**

Precyse Only  Project Team Only  Customer and Supplier



### Revision Record

Rev.	Effective Date	Description
1		Initial release
1.01		Removed duplicate FCC warning

### Reference documents

#	Doc #	Description
1		

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## Acronyms

<i>PBS</i>	RF Base Station
<i>Beacon/PBC</i>	RF Transmitter that is continuously transmitting its ID
<i>SA tag (SAT)</i>	compact battery powered device, usually attached to the monitored asset



## Introduction

This document provides you with technical support information, and sources for additional product information.

## Regulatory Information/disclaimers

Installation and use of this Wireless Radio device must be in strict accordance with the instructions included in the user documentation provided with the product. Any changes or modifications made to this device that are not expressly approved by the manufacturer may void the user's authority to operate the equipment. The Manufacturer is not responsible for any radio or television interference caused by unauthorized modification of this device, of the substitution or attachment. Manufacturer and its authorized resellers or distributors will assume no liability for any damage or violation of government regulations arising from failing to comply with these guidelines.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

Instructions concerning human exposure to radio frequency electromagnetic fields:

To comply with FCC Section 1.307 (b) (1) for human exposure to radio frequency electromagnetic fields, implement the following instruction:

A distance of at least 20cm. between the equipment and all persons should be maintained during the operation of the equipment. The minimum distance will be determined after testing has been completed.

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This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference and
- (2) This device must accept any interference received, including interference that may cause undesired operation."

## The FCC Wants You to Know

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- a) Reorient or relocate the receiving antenna.
- b) Increase the separation between the equipment and receiver.
- c) Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- d) Consult the dealer or an experienced radio/TV technician.

## FCC Warning

Modifications not expressly approved by the manufacturer could void the user authority to operate the equipment under FCC Rules.

## Product description

### SA tag:

The SAT is used to track assets in real time. It is based on an RF transceiver and a microcontroller. It uses the iLocate proprietary protocol which provides a 2 way, half duplex communication with the base station. The unit is powered by 2x 2/3 AA lithium thionyl chloride (Li-SOCl<sub>2</sub>) batteries and is hermetically sealed with no connectors available to the end user.

## Technical Parameters

### Compatibility:

SA Tag, 2.45GHz, versions: SA24 / 003000

### Performance:

**Read range:** up to 500 m. (Within line of sight)

**Write range:** up to 500 m. (Within line of sight)

**Read rate:** 256 Kbps.

**Write rate:** 256 Kbps.

**Battery size:** up to two 3.6V 2/3 AA Lithium non rechargeable (LI-SOCl<sub>2</sub>)

**Battery life:** up to 7 years (depending on application)

### Communication:

**Frequency:** 2400 – 2483.5 MHz ISM license free band

**Modulation:** Q-PSK (DSSS)

**Channel bandwidth:** 5MHz

**EIRP:** Up to 23 dBm, digitally controlled

**Communication protocol:** 2WiSAP, optional AES128 Encryption

**Transmission:** Event base and on demand

**External interfaces:** 2 Analog inputs, 6 digital IOs, up to 5 user buttons. No external connector is available to the end user.

**Internal sensors:** Motion and temperature sensors.

### Electrical:

**Power supply:** Two 3.6 V DC batteries, permanently attached.

Environmental:

**Size:** 70mm base diameter X 28mm height

**Operating temperature:** -40°C to +90°C (-40°F to +194°F)

**Humidity:** 90% non-condensing

**Enclosure:** IP65

**Weight:** 50gr. (1.76 ounce)

## General View



Here you can find the standard SAT variation, with two push buttons on it and one internal antenna. There are more than one options for SAT configuration, for example: keypad instead of push buttons or external antenna instead of internal one.



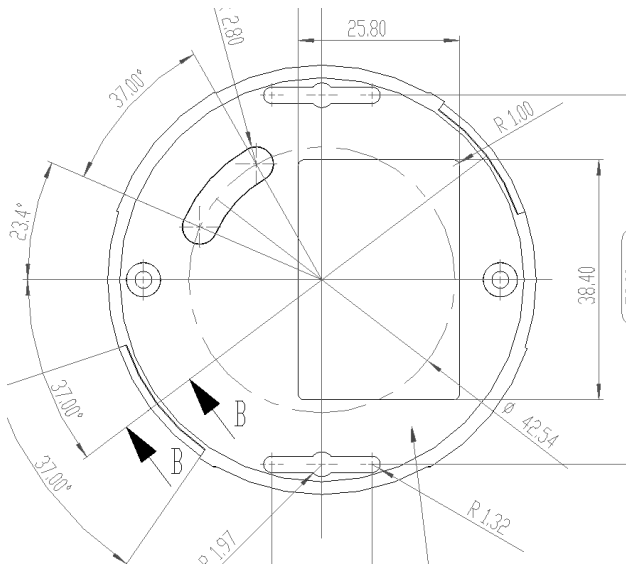
Enclosure assembly:



Top cover



Bottom cover.



Label placement

Label and markings are in the rectangular section.

IP 65 sealed enclosure with size of 70mm base diameter X 28mm height.





## Installation

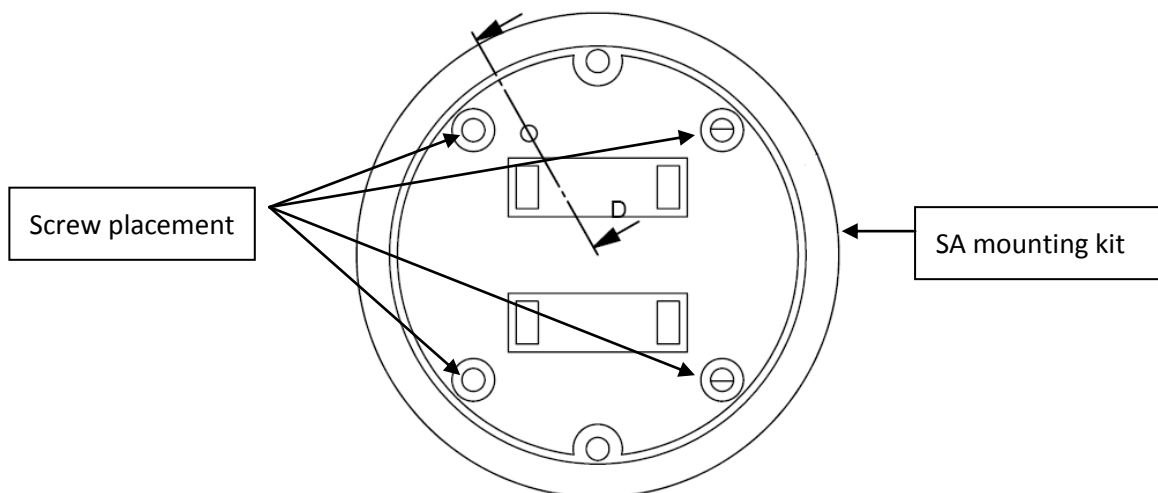
The SA tag supplied with mounting kit and can be installed on-site by an authorized service technician only. Please acknowledge the following important notice:

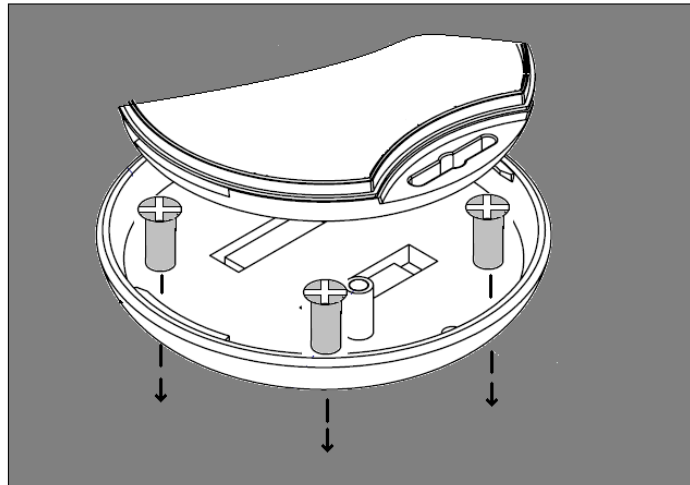


Warning: Opening the unit voids the warranty.

Step by step installation:

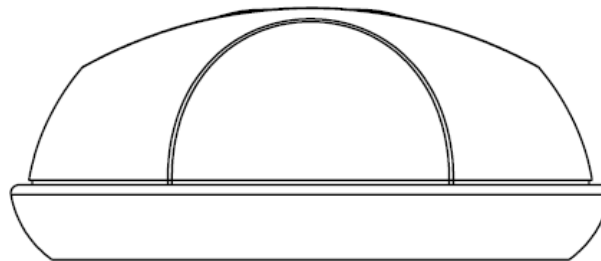
1. Define the specific location of SA tag on your product or on any other asset you want to track –
2. Install the mounting kit of SA tag accordingly to the picture below :





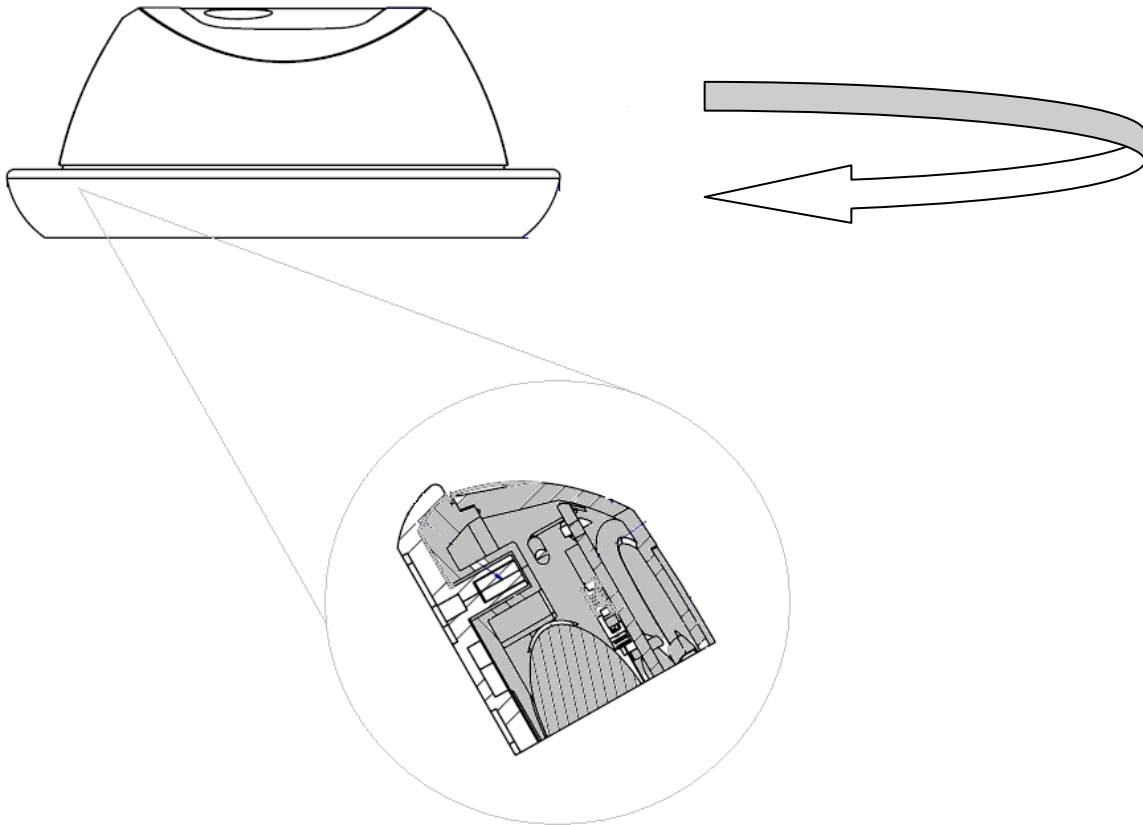
3. Place your SA tag inside the mounting kit and look it accordingly to the picture below:

a) Insert the SA tag inside the mounting kit –

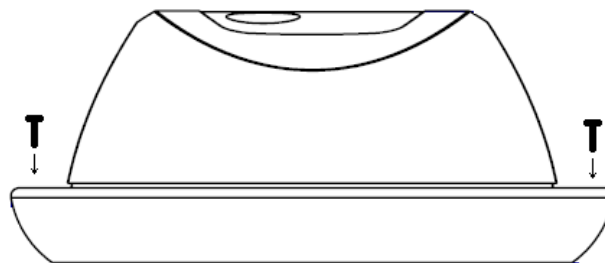


b) Turn the tag at 15 degrees to the right to lock it inside the mounting kit -





c) Fix the tag in its place by screwing it to the body of the mounting kit -



4. Double check after installation.

