LSD4BTB-PBS1000001

User Manual

Product name：S1 beacon explosion proof version 2

Product model：LSD4BTB-PBS1000001

Version：Rev01

Document revision history

Number	Modify log	Modifier	Reviewer	Version	Date
1	Origin	why	sxt	Rev01	2020-4-22

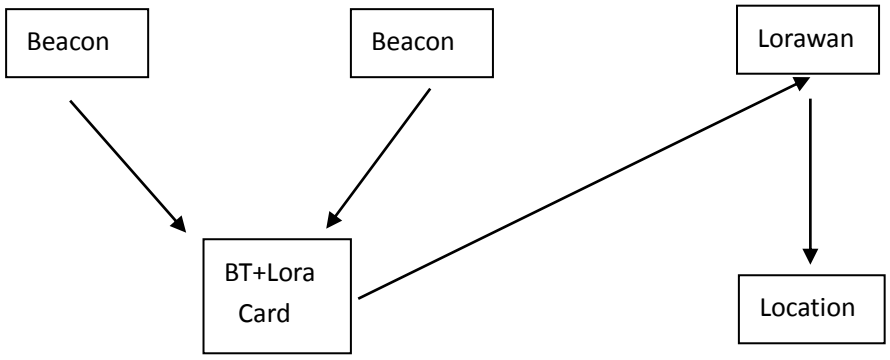
Catalog

Chapter 1 Summary

Chemical plant is a high-risk industrial field. In recent years, safety accidents have caused great losses to employees and enterprises. Therefore, personnel positioning management has become an effective means to reduce potential safety hazards and realize digital and intelligent management in the plant area. Bluetooth RSSI positioning is one of the existing indoor positioning technologies. The factory staff can find out their own position and report to the gateway by wearing positioning cards and scanning the RSSI strength of beacon. Lierda S1 positioning beacon is used as the transmitter of positioning signal in chemical plant. The advantage of this technology is that the software and hardware design of transmitter is simple, and the power consumption is very low.

1.1 Working principle

The S1 positioning beacon is installed on the indoor ceiling of the factory on a grid basis. Each positioning beacon has its own unique ID number. The personnel positioning card is worn on the workers, and Bluetooth module and Lora module are integrated in the card. When the locator is in a certain position in the room, the Bluetooth module in the card will search the RSSI signal strength value of beacon nearby, and then upload the data to lorawan gateway through Lora module. The background determines the specific position of personnel according to the RSSI value and beacon ID number.



1.2 Working conditions

- Temperature：-20℃～60℃；
- Average relative humidity：Less than 95%(25℃)；
- Atmospheric pressure：80kPa～106kPa；
- CE working frequency: 2400MHZ~2483.5MHZ
- Transmit power: -20dBm~4dBm (adjustable by user APP)

Chapter 2 Instructions

2.1 Construction and installation instructions

As shown in the figure below, prepare several S1 type beacons according to the indoor space size of the factory, and install them at an interval of 5m according to the serial number. Note that the serial number in the drawing should correspond to the ID number (minor) of the beacon. In addition to the products, there are two M6 * 25mm expansion pipes, two M4 * 25mm cross countersunk head screws and two decorative caps in the packing box, which are convenient for users to install and fix.

2.2 APP instructions

This product is equipped with two parallel ER14505 energy batteries. The battery capacity can be used continuously for more than 5 years. As shown in the figure below, users can download brightbeacon app to configure the relevant parameters of S1 beacon. The configurable parameters include device name, transmission power and broadcast interval. At the same time, users can directly view the remaining battery power through the app.

2.3 Accessories information

There are several accessories for users to fix our product to the ceiling. One is pressure sensitive adhesive, customer can use this to attach Beacon to concrete surface. Another accessory is expansion screw, customer can use electric drill to fix our beacon to the solid wall. Both of the accessories are shown in the pictures below.

Chapter 3 Matters needing attention

3.1 Precautions for product use

- Please do not hit, shake or throw the product violently to avoid failure;
- Please do not put the product near the microwave oven or high-voltage equipment, otherwise the circuit may be damaged;
- It is forbidden to be close to fire source and water source when using;
- It is strictly forbidden to disassemble or modify the product, otherwise it will cause damage, leakage and circuit failure.

3.2 Battery related precautions

- It is strictly forbidden to short circuit the positive and negative electrodes of the battery, charge it, over discharge it, and heat it to more than 100 ℃. Otherwise, it may cause explosion, combustion and leakage of internal acidic substances;
- It is not allowed to use the battery outside the temperature range;
- When the battery is used to the end voltage, it should be taken out of the instrument in time and buried in the ground.

3.3 EU Declaration of Conformity

Hereby we,

Name of manufacturer:	**Zhejiang Lierda IoThink Technology Co., Ltd**
Address:	Room 301,Building No.1, Lierda IoT park, No.1326 Wenyi Xi Road, Hangzhou,Zhejiang Prov., China
Zip code & City:	311100 Hangzhou
Country:	China
Telephone number:	**+86 18067988348**

declare that this DoC is issued under our sole responsibility and that this product:

Product description:	S1 beacon explosion proof version 2
Type designation(s):	LSD4BTB-PBS1000001 , LSD4BTB-PBS2000001 , LSD4BT-PB95S10002，LSD4BT-PB95S10001
Trademark:	N/A
Batch / Serial number:	

Object of the declaration (further identification of the radio equipment allowing traceability; it may include a color image for the identification of the radio equipment):
……[***Model:***LSD4BTB-PBS1000001，LSD4BTB-PBS2000001，LSD4BT-PB95S10002，LSD4BT-PB95S10001 ***The device is*** S1 beacon explosion proof version 2***, it supports***

5.0 Bluetooth LE. For more details, pls refer to the user manual.]……

is in conformity with the relevant Union harmonization legislation:
Radio Equipment directive: **2014 / 53 / EU**
and other Union harmonization legislation where applicable:

with reference to the following standards applied:

EN 62368-1:2014+A11:2017
EN 301 489-1 V2.2.3(2019-11); EN 301 489-17 V3.2.4(2020-09)
EN 300 328 V2.2.2(2019-07)
EN 62479: 2010

Description of accessories and components, including software, which allow the radio equipment to operate as intended and covered by the DoC:

Accessory:
……
……

Signed for and on behalf of:

_2020.11.26_____ _Herry Kim_Test Manager_ Henry Kim
Place and date of issue Name, Function, signature

3.4 FCC regulatory conformance

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.
(2) This device must accept any interference received, including interference that may cause undesired operation.

NOTE: 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:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.

-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-Consult the dealer or an experienced radio/TV technician for help

NOTE: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

RF Exposure

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Notice to users

You are welcome to use the products of lierda Technology Group Co., Ltd. please read this notice before using our products. If you have already started using it, you have read and accepted this notice. Lierda Technology Group Co., Ltd. reserves the right of final interpretation and modification of all the information provided, subject to change without prior notice.