LOTIM CLOUD

User Manual Book

BMS GPS Tracker

Model: LCE25

We're appreciated that you choose on LCE25 a BMS GPS Tracker as a tracking guard of your BMS batteries. Please read this user manual book carefully and follow the instruction. It is suggested that you keep this user manual book for future use.

CATALOG

1. Product description

LCE25 BMS GPS Tracker is a mini, easy-installation, 4G+2G network supported GPS Tracker, it supports 9-100V wide range power input. It could widely applied in monitoring various of BMS batteries for E-scooter, E-bike, E-three-wheelers, E-stations, and robots, etc. It has powerful and accurate satellite location feature with 25*25mm*4mm GPS antenna, and it supports RS232/RS485/CAN/TTL for Battery data transmission.
Note: LCE25(standard version) only do data transmission from battery BMS. If needs data analysis, firmware customization is required.

2. Warning

1) This device is suitable for adults. People with physical disability and cognitive impairment must use it under the supervision of guardian.
2) Keep the product accessories and packaging materials away from children, otherwise there may be accidents or choking hazard.
3) Do not use if it is damaged obviously.
4) The device is only used for its designed purpose and must be used in the manner indicated. The manufacturer shall not be responsible for any damage caused by any improper or reckless act.
5) It is strictly forbidden to use the equipment in violation of the operating instructions, disassemble it without permission, collide, charge, soak in water, exceed 80℃, man-made failure, force majeure damage, etc., otherwise it may cause short circuit, insufficient working time, battery deformation, night leakage, explosion, etc. Loss, no warranty and compensation will be made.
6) Clean the equipment in the prescribed way. Do not use any solvents and disconnect the power supply in advance when cleaning.

3. Precautions

1) Do not exposed this device to rain and high temperature during installation and use.
2) This product uses GPS and BeiDou satellite positioning, and there are irresistible factors that cause positioning failure or abnormal

communication, such as bad weather, artificial shielding of wireless signals, blind areas of wireless signal coverage, etc.

3) This device supports 4G+GSM/GPRS wireless communication network. To achieve better communication and positioning performance, please be sure not to place it in metal shielding boxes or under place with metal surface.
4) This device requires the cooperation of the monitoring platform to implement all its features. For details, please refer to the relevant monitoring platform usage specifications.
5) The contents of this manual may be subject to change without notice. Please refer to the actual product.

4. Production composition

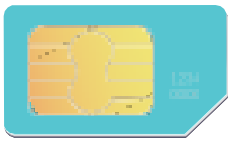
No.	Item	Quantity	Note
1	Main Unit	1PCS	
2	Power Cable	1PCS	Length=0.8 meters

No.	Feature	Instruction
1	Power Positive	Red, input range from 9V to 100V
2	Power Negative	Black cable
3	ACC Input	Orange, connect to ACC signal
4	Relay Output	Yellow, connect to external relay
5	5V + output	Serial port power output
6	Ground	Serial port ground
7	RX/CAN_H	
8	TX/CAN_L	

5. Hardware operation

5.1 Insert SIM Card

Please purchase the right SIM card instructed as below. And confirm with the carrier if these SIM cards have 2G/GPRS network well supported.

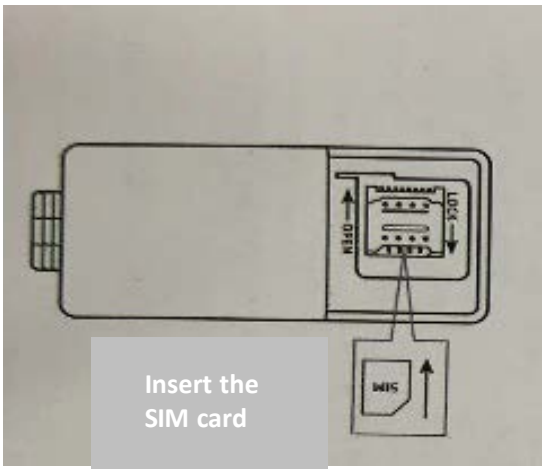


Normal

Micro

Nano

Inset the SIM card as guide below. Please make sure the device is power off before insert or remove the SIM card.



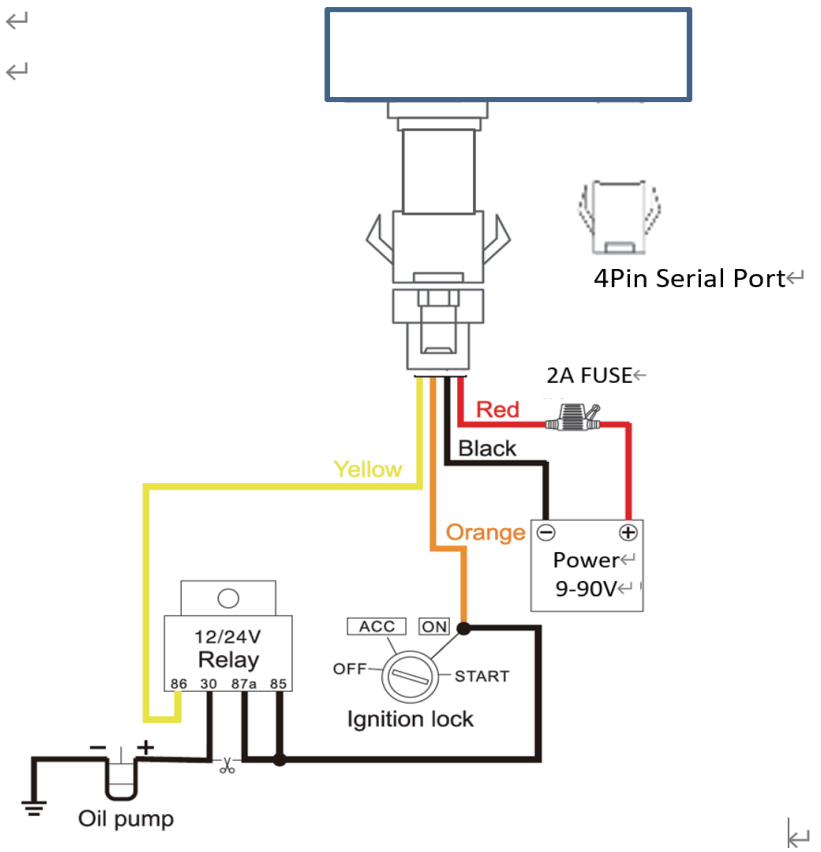
Precautions:

1) The terminal SIM card needs to activate SMS and network communication function.
2) SIM must not be insert reversely; SIM should be 4G+2G/GPRS supported; Make sure the SIM with enough balance.
3) If your SIM card is turned on and you are required to enter the SIM PIN, please refer to your mobile phone user manual to turn off the SIM PIN input function.

5.2 Wiring

The device supports power input from 9~100V, red cable for positive and black for negative, to avoid the short cut, please correctly handle the wire metal connections by electric tape. The side with LED is with GPS antenna,

please keep it face toward sky during installation.
Battery BMS should have relative ports for RS232/RS485/TTL/CAN, and before your connection, make sure the wires are same definition, workable BaudRate.



5.3 Place on batteries

Hidden inside the batteries, make sure the GPS antenna is not blocked by metal or steal kind of materials.

6. Operation of indicator light

By checking the status indicator, you can understand the working status of the device. The status of the indicator is described as follows:

LED Color	LED Status	Meaning
Yellow	Solid bright	GPRS/network working normally
	Quick Flashing	No SIM card read
	Slow Flashing	GSM initiation
	Off	GSM standby or no external power connected
Blue --- Satellite	Solid bright	GPS located
	Quick Flashing	GPS can not be located
	Slow Flashing	Searching for GPS signals
	Off	GPS standby or no external power connected

7. Common command list

7.1 Query

1	CXZT	Inquiry device status Reply info including: hardware version, external battery voltage, internal battery voltage, ACC status, fuel/oil connection status, GSM/LTE signal strength
2	CXCS#SOFTVERSION	Inquiry firmware info
3	123	Location inquiry
4	URL#	Location URL inquiry
5	CXCS#SERVIP#SERVPORT	Inquiry its server IP/Domain and port
6	CQ	Restart the device

7.2 Setting

	Format	Description
1	SZCS#SERVIP=8.218.32.7#SERVPORT=6608	set up server IP and Port or Domain and Port
2	SZCS#APN=cmnet	Set up APN (Access Point Name)

	Or SZCS#APN=cmnet#USERPPP=user'sname#PWPPP=password	APN=ANPNAME|USER|PWD, USER and PWD depends on the operator's configuration
3	SZCS#GMT_SET=E0800	Set up Time Zone, E0800 means E+8 time zone.
4	SZCS#FREQ=*	Set up location report frequency FREQ=*, range from 5-18000 seconds in default T1=T2=10s
5	SZCS#USER=userphonenumber	Set up user phone number for receiving alarms and authorization functions
6	DY	Cut of the engine
7	KY	Restore the engine
8	SZCS#SPEED=*	Set up overspeed threshold, unit in KM/H * ranges from 0-255KM/H, 0 means turn off overspeed alarm. In default *=0.

8. Data sheet

NETWORK COMMUNICATION	
Model versions	**Version 1: 2G** GSM 850/900/1800/1900MH **Version 2: LTE 4G+2G EA** LTE-FDD B1/B3/B5/B7/B8/B20 GSM 900/1800MHz **Version 3: LTE 4G+2G Global** LTE-FDD B1/B2/B3/B4/B5/B7/B8/B28/B66 GSM 850/900/1800/1900MHz
GSM antenna	Built in, FPC antenna
SIM slot	Micro-SIM Card
GNSS SPECIFICATION	
GNSS Technology	GPS/Beidou/LBS
Receiver	25*25*4, 64channels
Tracking sensitivity	-162dBm
Accuracy	<5m
Hot/ Cold start	<2s/<32s

Cellular technology	LTE 4G CAT 1 + GSM/GPRS network
Serial Port	
Wires	RS234or RS485, or TTL or CAN
BaudRate	Settable, in default 115200
ELECTRONICS	
Power input	9-100V
Working current	Working mode: Avg. 38mA @12V Sleep mode: Avg. 10mA @12V
Battery	Li-polymer rechargeable 140mAh, 3 hours standby
WORKING ENVIRONMENT	
Working temperature	-20° ~ 60°
Storage temperature	-20° ~ 70°
Humidity	10% ~ 85% RH
SOFTWARE FEATURES	
Firmware upgrade	OTA
Protocols	JT/T808 Protocol, SMS/GPRS
PHYSICAL SPECIFICATIONS	
Dimensions	80mm*38mm*17mm
Casing	ABS
Net weight	52g
CERTIFICATIONS & APPROVALS	
Regulatory (Pending)	CE, FCC

9. Troubleshooting

FAQ	Reason	Solution
Bad Signal	When using terminals in areas with poor signal reception, such as near tall buildings or in basements, radio waves cannot be effectively transmitted.	Use the terminal in an open air area
Can't connect to the network	The SIM card is not installed	Check the SIM card
	Dirt on the metal surface of the SIM card slot	Wipe with a clean cloth

	SIM card is invalid	Contact your network service provider
	Out of GSM service area	Please move to the network service provider service area
	Weak signal	Please move to a place with strong signal and try again
Unable to charge	The voltage is inconsistent with the range marked by the charger	Please use the same voltage as the charger
	Use a non-standard charger	Please use the charger provided by the factory
Bad Signal	Poor contact	Check if the plug is connected
	When using terminals in areas with poor signal reception, such as near tall buildings or basements, radio waves cannot be effectively transmitted	Use the terminal in a location with good signal
Can’t turn on device	Battery Dead	Use after charging
Can't connect to the network	The SIM card is not installed	Check the SIM card
	Dirt on the metal surface of the SIM card	Wipe with a clean cloth
	SIM card is invalid	Contact your network service provider
	Out of GSM service area	Please move to the network service provider service area
	Weak signal	Please move to a place with strong signal and try again
Unable to charge	The voltage is inconsistent with the range marked by the charger	Please use the same voltage as the charger
	Use a non-standard charger	Please use the charger provided by the factory
	Poor contact	Check if the plug is connected

10. Repair and disposal

1) Never attempt to repair the instrument or adjust it yourself. We can no longer guarantee perfect functioning if you do it.
2) Repairs may only be performed by Customer Service or authorized dealers.
3) For environmental reasons, do not dispose of the device in the household waste at the end of its useful life. Dispose of the unit at a suitable local collection or recycling point. Dispose of the device in accordance with EC Directive – WEEE (Waste Electrical and Electronic

Equipment).

4) If you have any questions, please contact the local department responsible for waste disposal.

11. Warranty card

Maintenance Card	
Maintenance shop	
Delivery information	
Fault description	
Maintenance result	
IMEI number	
Operator	