

WD-300

IOT device for e-bike

Catalogue

About this document	错误! 未定义书签。
Range	2
1 . Product introduction	3
1.1 Overview	3
1.2 Appearance image	3
1.3 Features	4
2 .Description functions	5
3 .Wiring definition	6

About this document

Range

This document describes the basic information, functional interface design and features of WD-300.

Revision history

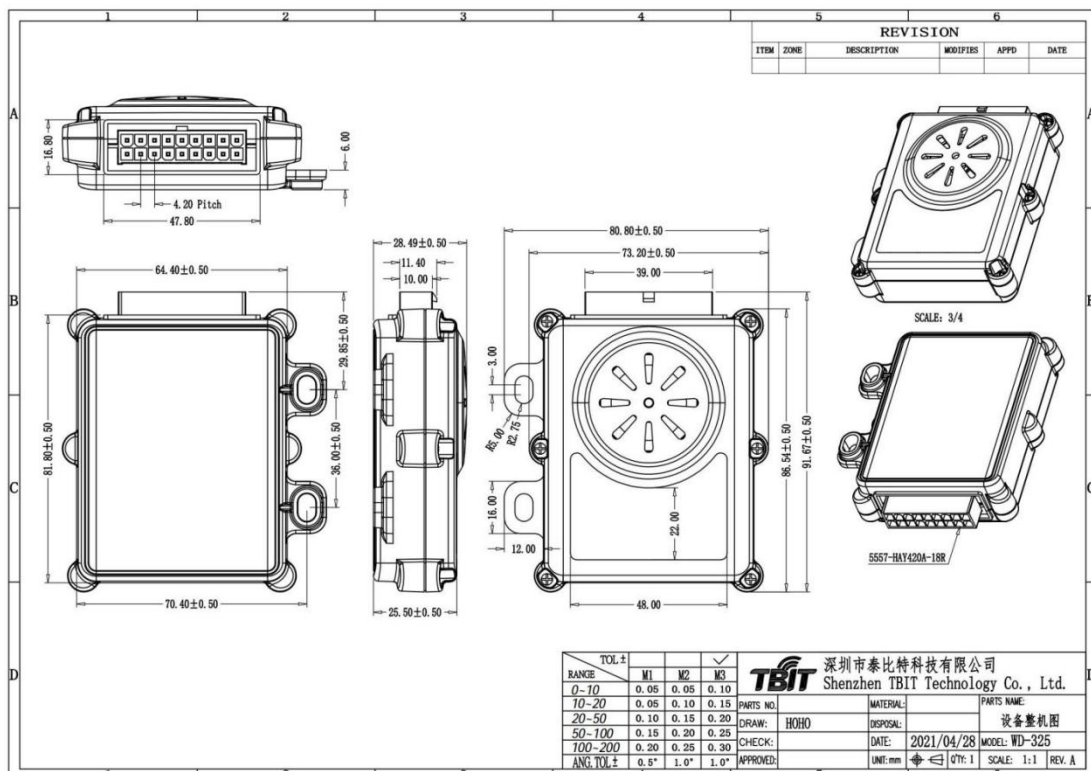
Version	Date	Modify	Writer
1.0	2026-03-12	Initial version	罗坤林

1 . Product introduction

1.1 Overview

WD-300 is smart IOT device for the e-bikes, it supports the communication via 485/CANBUS. Its main functions includes GPS positioning, remote control the e-bike via 4G LTE-CAT1 ,Bluetooth communication, vibration detection, anti-theft alarm and so on. WD-300 can interact with the platform and mobile APP via LTE and Bluetooth, then control the e-bike and upload the real-time status of the e-bike to the server.

1.2 Appearance image



1.3 Features

1.3.1 Parameters

Size	(91.67±0.5)mm × (73.8±0.5)mm × (25.5±0.5)mm
Range of input voltage	12V-90V (DC)
Built-in battery	Rechargeable lithium battery: 3.7V, 1000mAh
Waterproof and dust-proof	≥IP65
Material of shell	ABS+PC,V0 level fire-proof
Working temperature	-20 °C ~ +70 °C
Working humidity	20 ~ 95%
SIM card	Micro-SIM card

1.3.2 Internet

Supported modes	LTE-FDD/LTE-TDD
Maximum transmitting	LTE-FDD/LTE-TDD: 23dBm
Frequency band	LTE-FDD:B1/B3/B5/B8 LTE-TDD:B34/B38/B39/B40/B41

1.3.3 GPS

Positioning	GPS: L1&L5 BEIDOU: B1I,B1C,B2a
Sensitivity of tracking	< -162dBm
Start time	Cold start: 35 seconds Hot start:2 seconds
Accuracy of positioning	10 meters
Accuracy of speed	0.3 meters/second
AGPS	Supported
Positioning conditions	The number of searched satellites is ≥ 4 , and the signal-to-noise ratio is greater than 30dB
Base station positioning	Supported, positioning accuracy of 200 meters (related to base station density)

1.3.4 Bluetooth

Bluetooth version	BLE5.0
Receiving sensitivity	-90dBm
Maximum receiving distance	30 meters,in open area
Receiving distance inside the e-bike	10-20 meters,depending on the installation environment

2 .Description of functions

Functions	Descriptions
Positioning	WD-300 can be positioned in real time, and the current positioning information of the device can be obtained by issuing commands remotely from the platform. When there is a GPS signal, the GPS position location is reported. When there is no GPS signal, the location information of LBS will be reported. The location information will be uploaded to the platform and APP, and the device supports GPS+BEIDOU positioning.
Alarm	In alarm mode, WD-300 detects the signal of vibration/wheel rotation and ACC. If it detects a vibration signal, the vibration alarm will be generated. And when the wheel rotation signal is detected, a wheel rotation alarm will be generated.
Disarm	In disarm mode, WD-300 won't detect the signal of vibration, but still detect the signal of wheel rotation and ACC .
433M remote controller	It can matched with 433M remote controller,and works with two remote controllers.
485 or CANBUS	Communicate with the controller through the 485 or CANBUS, to obtain the related information of the controller, BMS and other accessories.
Uploading data in real-time	The device and the platform are connected through the network,the data is transmitted in real time.
OTA	Supported
Vibration detection	WD-300 has G-sensor that can detect the signal of vibration . When the e-scooter is in alarm mode, the vibration alarm will be generated if the e-scooter has vibration.
Wheel rotation detection	When the e-scooter is in alarm mode, the wheel rotation alarm will be generated if the wheel of the e-scooter has rotated.
ACC detection	The power-up status of the e-scooter is detected in real time.
Voice broadcast	It can play the voice broadcast when connected with the voice speaker.
Battery lock	Support 5V battery lock

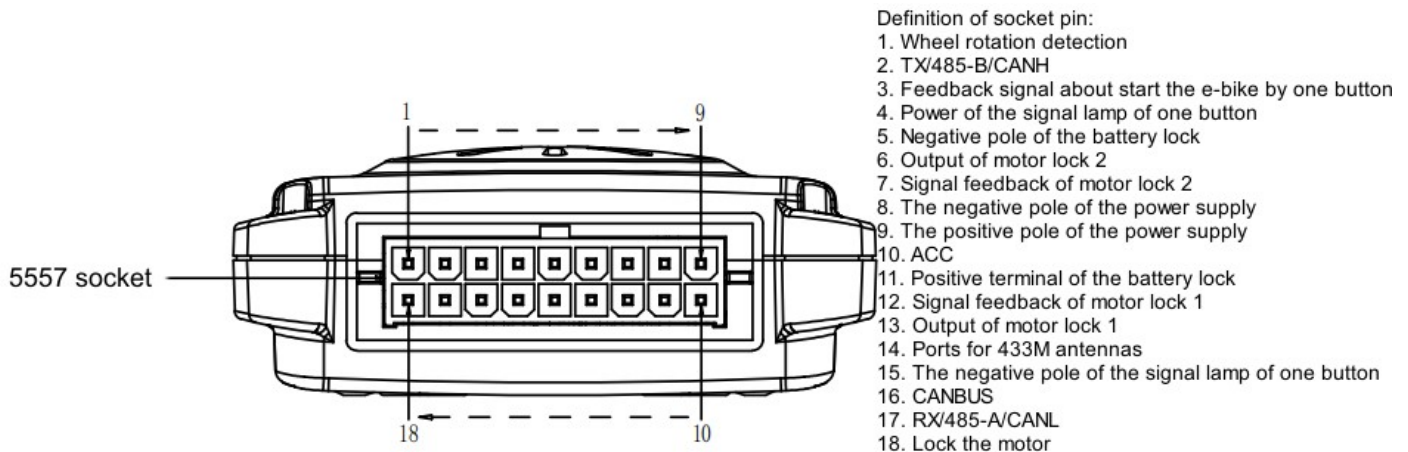
Helmet lock Support 4pin helmet lock

Induction The user can unlock the e-bike by the mobile phone when close to the e-bike, and lock the e-bike when far away the e-bike.

Start the e-bike by one button It can start the e-bike by one button.

Long standby sleep mode Supports cyclic power-on modes of 24h, 8h, 1h, and 10min. With one location update per day, standby time is up to 70 days.

3 .Wiring definition



Items	Definition of socket pin
1	Wheel rotation detection
2	TX/485-B/CANH
3	Feedback signal about start the e-bike by one button
4	Power of the signal lamp of one button
5	Negative pole of the battery lock
6	Output of motor lock 2
7	Signal feedback of motor lock 2
8	The negative pole of the power supply
9	The positive pole of the power supply
10	ACC
11	Positive terminal of the battery lock
12	Signal feedback of motor lock 1
13	Output of motor lock 1
14	Ports for 433M antennas
15	The negative pole of the signal lamp of one button
16	CANBUS
17	RX/485-A/CANL
18	Lock the motor