Instructions for Speed switch
ZAXDH-T-S V2.0

Zax Technology Co., Ltd

1. Overviews

By detecting the belt running speed of belt conveyor, the towing type speed switch can judge whether the belt has slipping fault, and send alarm signal timely according to the change of speed, avoid the loss and the expansion of accident.

2. Characteristic

2.1. Separate design, flexible and convenient installation.

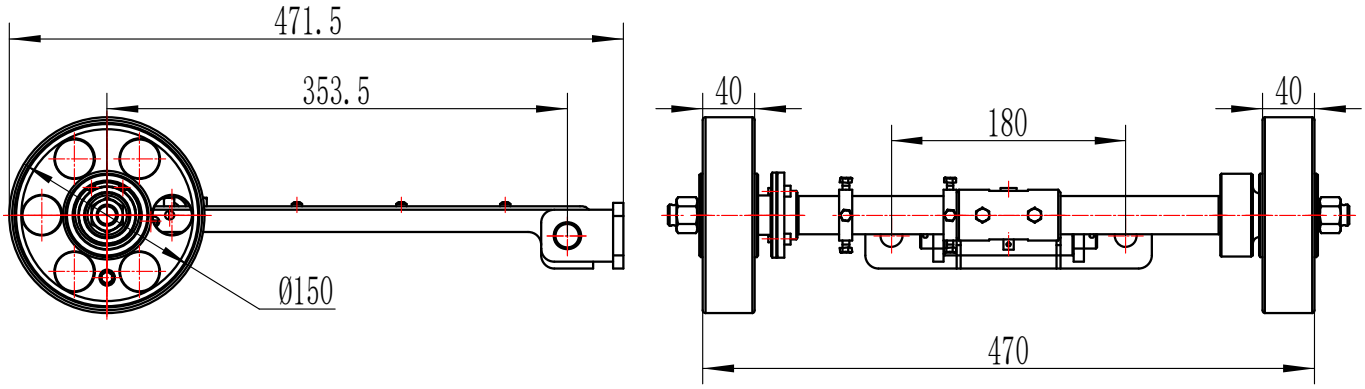
2.2.4 Four-bit LED digital tube constitutes a display, which shows the running state of the conveyor in real time.

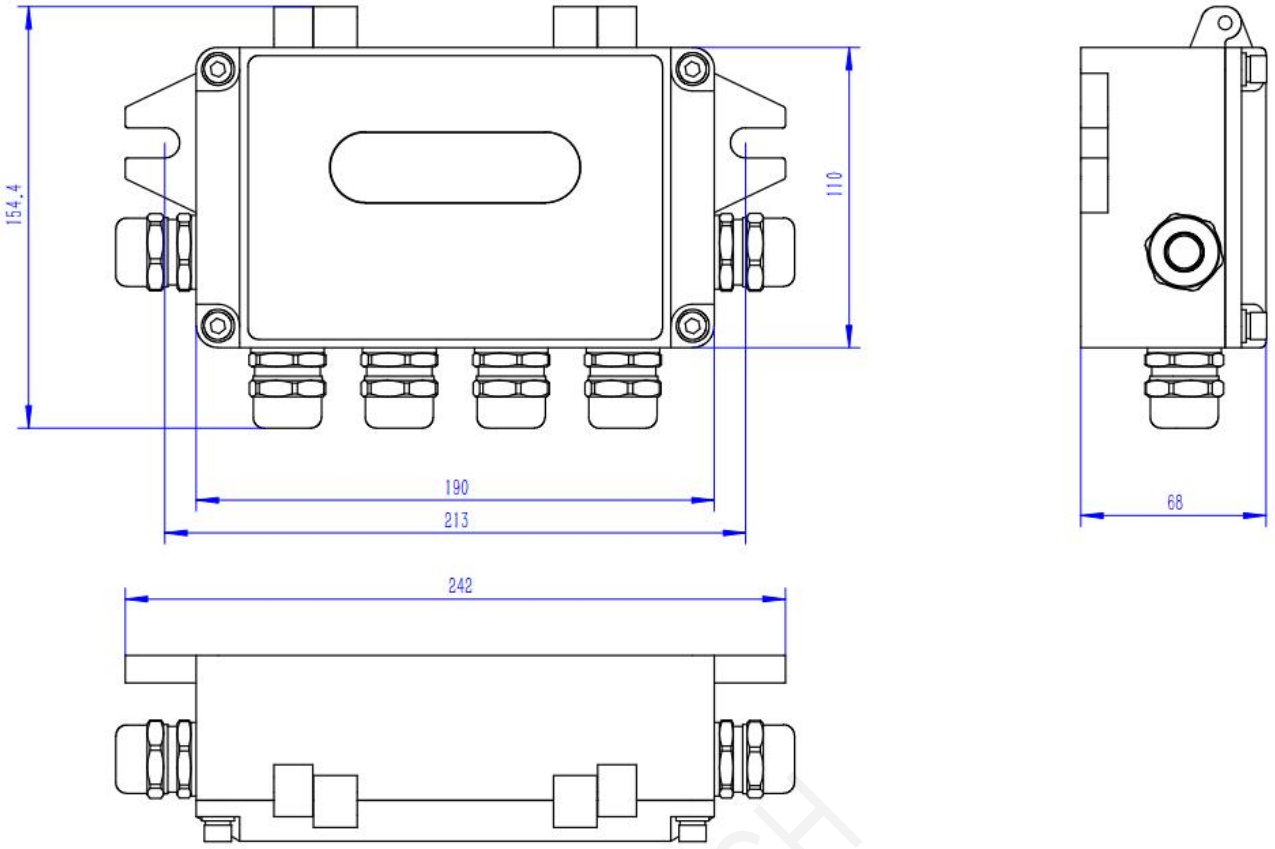
2.2. Adopt programmable design, can set slip alarm point, alarm delay and other parameters according to customer requirements.

3. Parameter table

Ambient temperature	-40℃~50℃
Relative humidity	0~95%
Atmospheric pressure	80 kPa ~110kPa
Working voltage	AC220V 50/60HZ
Power consumption of the whole machine	15W
Output mode and quantity	2 × SPDT
Contact rating	AC250V 3A DC30V 3A
Alarm threshold	Alarm1： Speed reduced by 10% Alarm2： Speed reduced by 50% <Adjust before order>
Start delay	0~99 S <Adjust before order>
Protection level	IP67
Display mode	LED digital tube and indicator

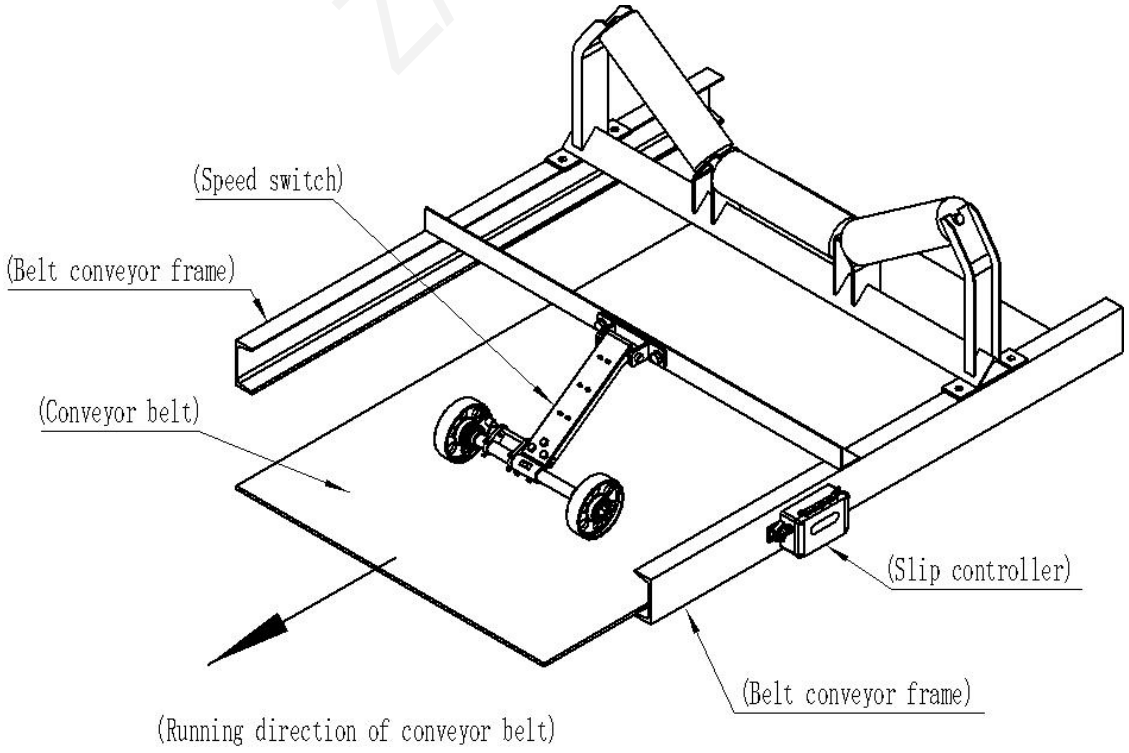
4. Structure features and main dimensions





Appearance size chart(Units: mm)

5. Installation indication



Installation indication diagram

6. Installation instructions

6.1.WARNING：

6.1.1. Do not live operation.

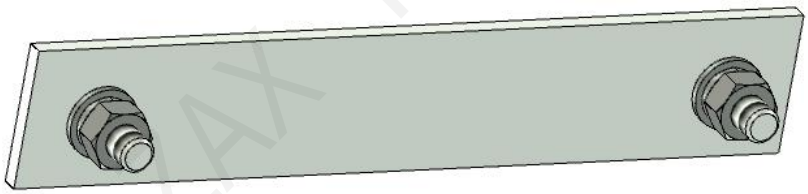
6.1.2. This product is non-explosion-proof products, please do not use in inflammable and explosive environment.

6.1.3. The grounding end of the shell must be grounded, otherwise the speed switch will not be protected against anti-thunder and anti-surge, and the service life will be reduced.

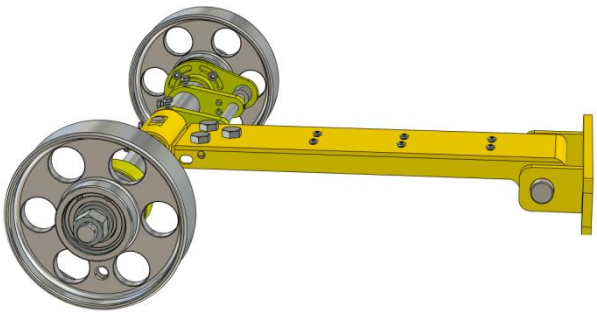
6.2.Prepare materials :

6.2.1. Mounting bracket

6.2.2. Controller mounting bracket

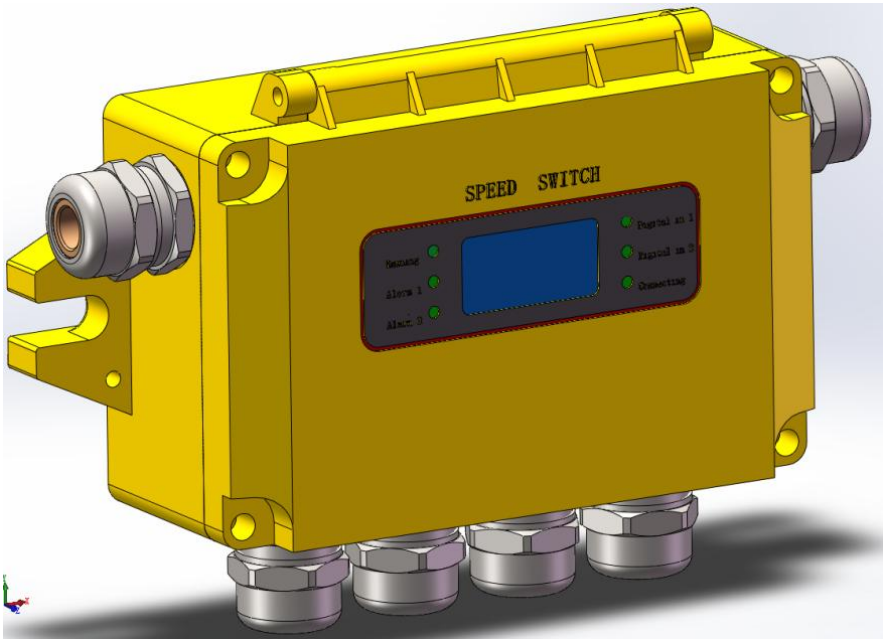


6.2.3. Speed switch



6.2.4. Fastener 2 sets （M10×35）

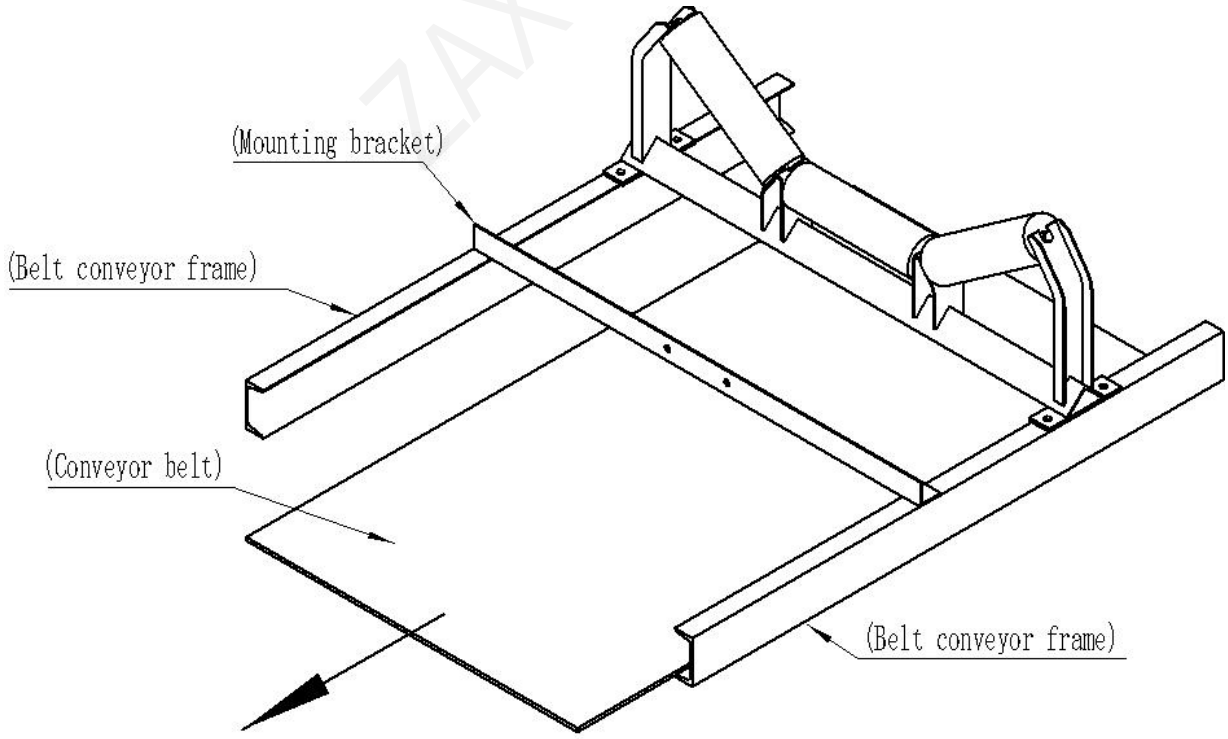
6.2.5. Slip controller



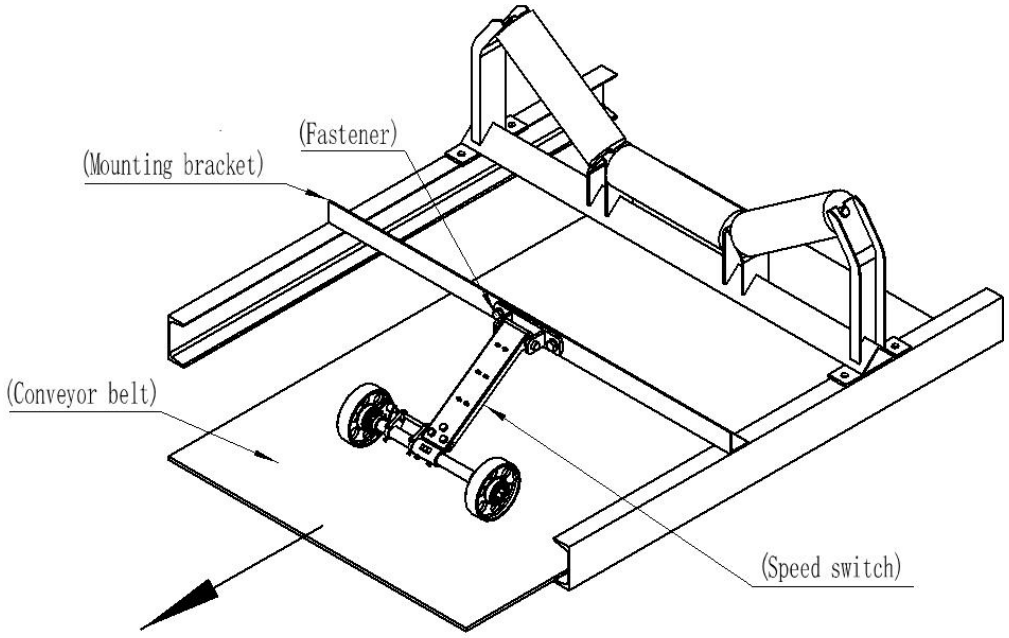
6.3.Installation steps：

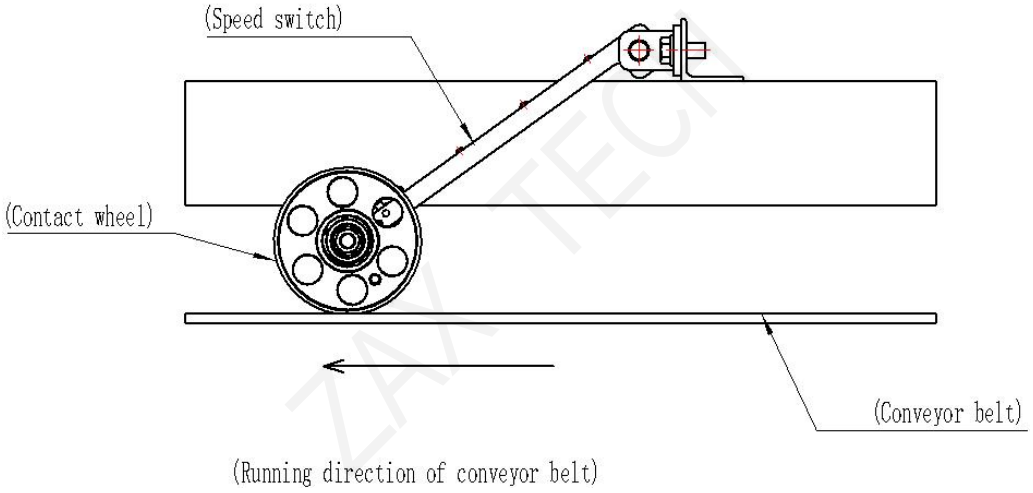
6.3.1.

Install the mounting bracket on the belt conveyor frame as shown in the figure, pay attention to the running direction of the conveyor.

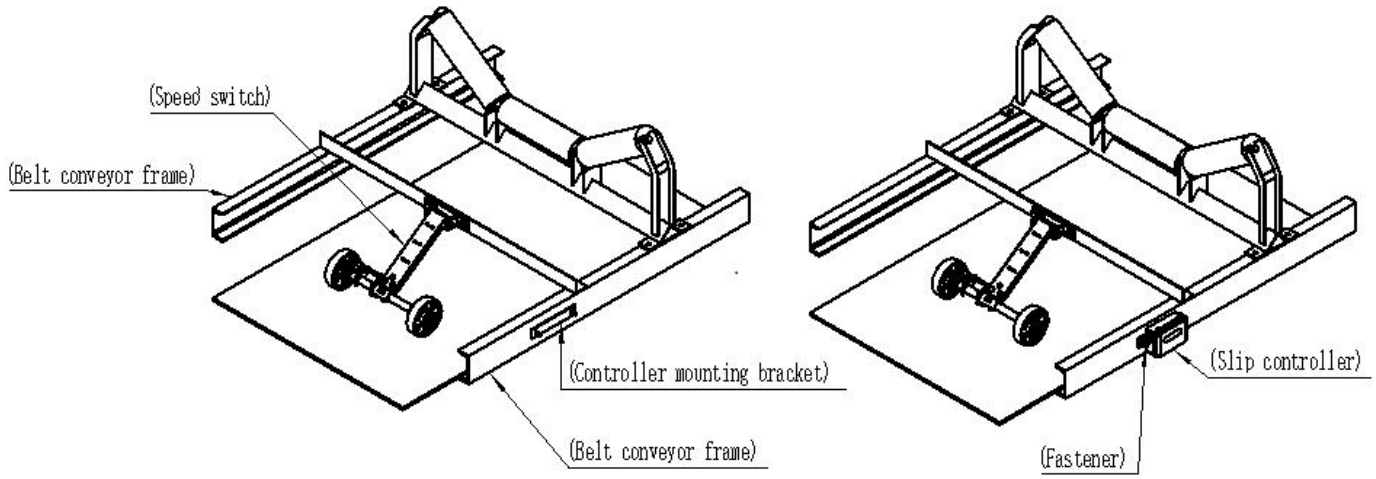


6.3.2.Fix the speed switch on the mounting bracket with fasteners so that the contact wheel and the conveyor belt are in natural contact.

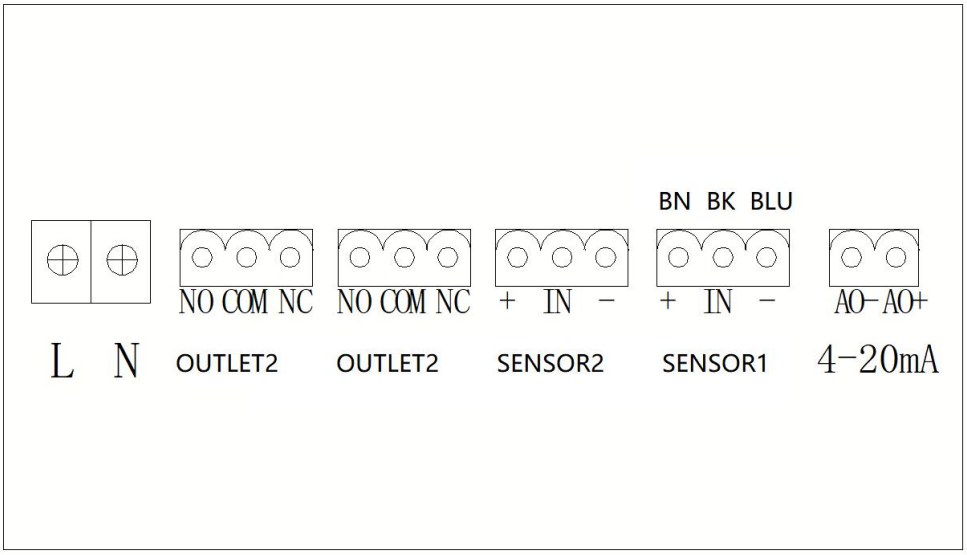




6.3.3.Install the slip controller mounting bracket on the belt conveyor frame near the slip controller, and then install the slip controller on the slip controller mounting bracket with fasteners.

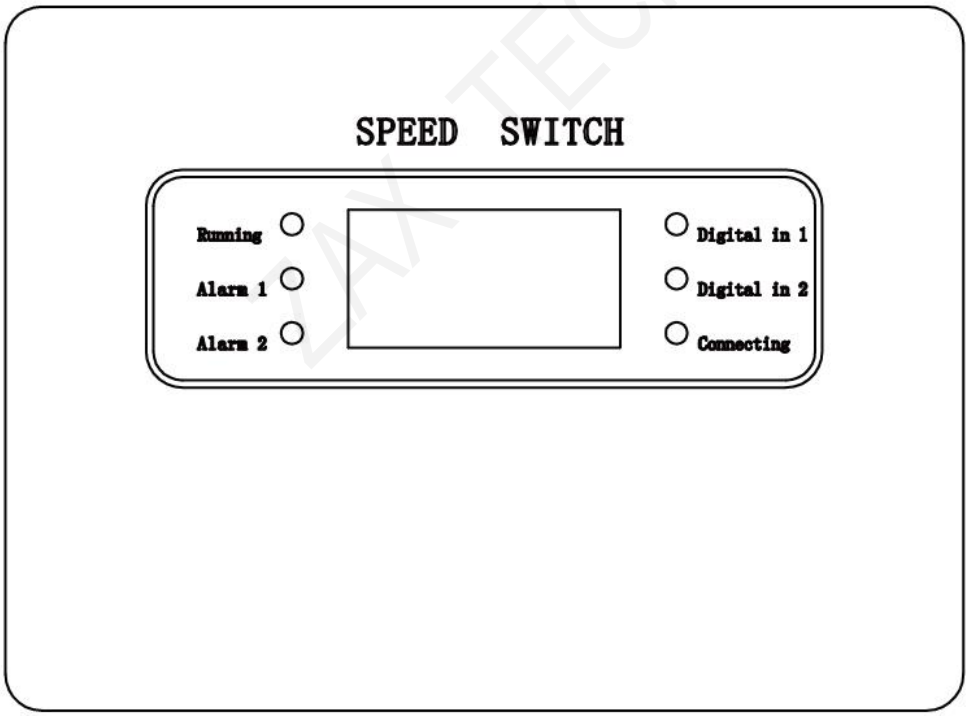


6.4.Wiring principle



Speed switch wiring diagram

6.5.Definition of indicator light



6.5.1. Running: Flash in learning mode, always on after learning.

6.5.2. Alarm 1: Light slip alarm indicator.

6.5.3. Signal 1: The sensor input status display shows that the indicator light turns on when the detection strip is detected.

6.5.4. Connect: Turn on when connected to Bluetooth, otherwise off.

6.6. 4-20mA meaning of analog output signal.

4-20mA The analog signal indicates belt speed variation, where 4mA indicates stop or slip alarm, 12mA denotes 100% belt speed operation, and 20mA represents 200% belt speed operation.

Load impedance: The analog output signal of this device supports a load impedance range of 0-300Ω. When the wiring is excessively long or installed alongside high-voltage circuits such as power lines, shielded cables must be used with the shielding layer properly grounded.

6.7. To adjust factory parameters or functions, you can install our company's parameter-setting tool APP and connect via Bluetooth to configure the device on-site. The adjustable parameters are listed in the table below.

6.8.

Default Parameter Settings Table for Slip Detection	
1、device ID	1
2、Bluetooth address	0
4、Display Mode	speed
5、roller diameter	0
6、running mode,operational mode	learning model
7、standard speed	0
8、Enable feedback	forbidden
9、power-on delay	30
10、Training sessions	10
11、Learning time limit	30
12、self-recovery time	0
13、downtime judgment time	10
14、learning error	5
15、Output 1 under-speed threshold	10
16、Output 1 over-speed threshold	0
17、Output 1 alarm delay	3
18、Output 1 power failure alarm function	forbidden
19、Output 2 under-speed threshold	50
20、Output 2 over-speed threshold	0
21、Output 2 alarm delay	3
22、Output 2 power failure alarm function	forbidden

7.Working principle

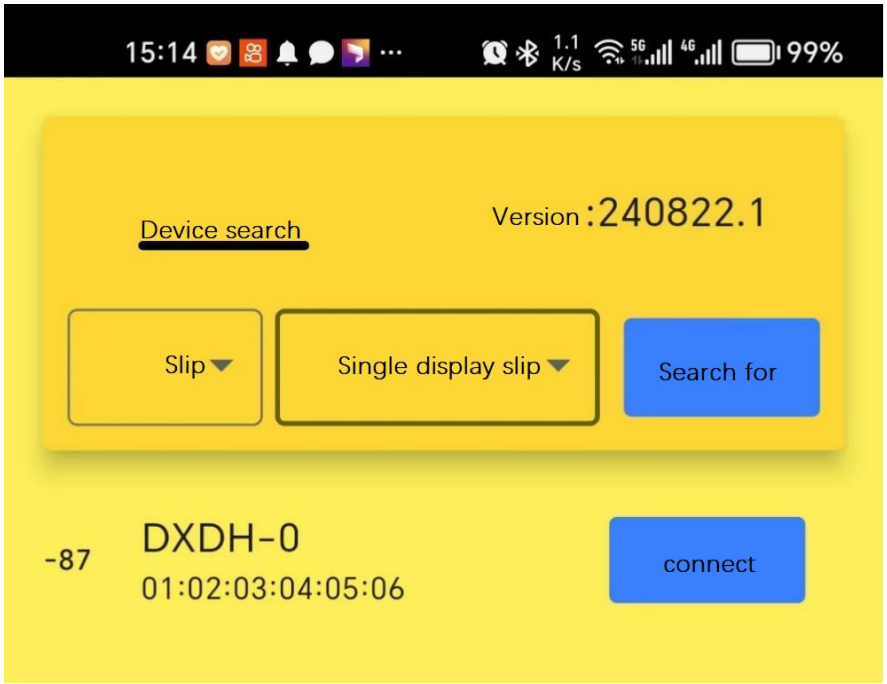
The sensor is used to detect the running speed of the conveyor belt in real time. When the belt slips, the speed will drop below the alarm point. The device will send out switch signal. The user can using this signal as an alarm or interlocking signal, the upper conveyor or discharge outlet can stop feeding to this conveyor.

Speed switch workflow: It starts to judge whether the conveyor belt is running after the power is switched on; If the conveyor belt does not operate, alarm 1 and 2 relays will output alarm signals about 15 seconds after it power on, and at the same time, the indicator light of alarm 1 and 2 will flicker. The conveyor belt is in normal operation If it is switched on, It will start automatic learning standard speed of conveyor belt after the start delay (default 10 seconds), holding time at this stage approximately 30 seconds (actual use time is related with conveyor belt running speed, the faster the speed, the shorter the time), after the standard speed learning is completed it will be stored, digital tube displays real-time speed (R/M), then it starts detect the conveyor belt running speed in real-time, and real-time measurement results compared with the standard speed, when the running speed of the conveyor is drops by 10% than the standard value, alarm 1 relay will act, and the indicator light of alarm 1 will be on; when the running speed is drops by 50% than the standard value, alarm 2 relay will act, and the indicator light of alarm 2 will be on. When the conveyor belt starts again, the speed switch detects the conveyor belt running, alarm 1 and alarm 2 relays reset simultaneously, and the alarm 1 indicator light and alarm 2 indicator light go out.

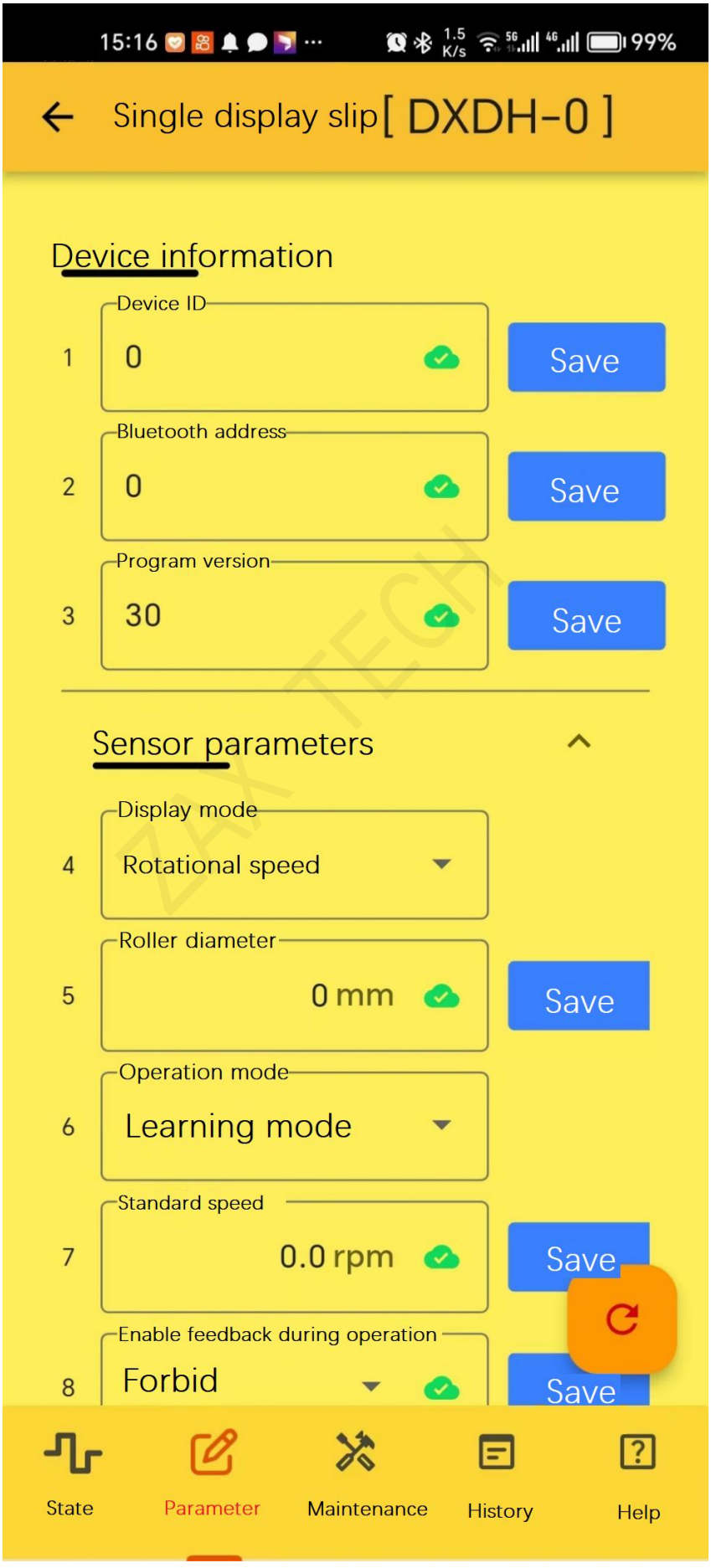
8.Set parameter tool APP

8.1. First, contact the company to download the software installation package at the designated location and install it (the APP only supports Android).

8.2. Enable Bluetooth and location on your phone. On the app's home screen, tap' Slip 'in the first drop down, then select' Single Display Slip' in the second. Click the search button, choose DXDH-0, and tap Connect.



8.3. Click the parameter button below to enter the parameter settings interface. Click the parameter you want to modify. After modification, click the save button on the right.



8.4. After modifying the parameters, scroll down to the end and click the Save & Restart button to complete the changes.

8.5. Click the help button to learn the meaning of APP parameters.

9. Maintain

9.1. Check the distance between sensor and detection piece regularly;

9.2. Check whether the detector mounting bracket is firm and reliable.