

Conveyor Belt - Longitudinal belt tear detector

Model: IS-BTD-Z





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OVERVIEWS

When the conveyor belt occurs longitudinal tear, foreign body puncture, junction damage in operation, Belt tear detector can send alarm or emergency stop signal timely through sensor detection, avoid the expansion of the accident

CHARACTERISTIC

- Single control box connected with more than one sensor, suitable for long conveyor use .
- Intelligent design, automatic dust removal .
- Two kinds of detection methods, double detection of blanking and intercept rop .
- Adopt the principle of programmable control, the parameters of alarm point and alarm delay can be set .
- Adopt relay output, large contact capacity

TECHNICAL DATA

Ambient temperature	-10 ℃~50 ℃	Working voltage	AC220V 50/60Hz
	0 050/		
Relative humidity	0~95%	Rated power	9000
Atmospheric pressure	80 kPa~110kPa	Output mode of alarm signal	Normal open-closed conversion
Output relay load current	220v 3A	Protection level	IP65

Structure features and main dimensions





Size diagram of blanking inspection table - Units: mm





Belt width	L1	L2
1000	1090	854

Size specification of blanking inspection table



Appearance size chart Units: mm

INSTALLATION



Installation indication diagram









- 1) Select the installation position near the blanking port of the belt conveyor, as close as possible to the blanking port
- 2) As shown in the figure, use fasteners to install the both sides base together with the blanking detection device. Note the direction position relation of the material table and the both sides base



3) Place the assembled parts in a suitable position of the longitudinal beam of the belt conveyor between the two idler groups and fixed with U-bolts. Note the position relation between the opening direction of the blanking table and the running direction of the conveyor belt





(4) Install the intercept rope sensor (a pair) on the base, fix it with fasteners and pay attention to the installation direction: that is, the swinging direction of the red swing arm is consistent with the running direction of the conveyor belt, as shown in the figure



5) According to the installation diagram, insert both ends of the intercept rope into the red swing arm of the two intercept rope sensors, which are lower than the upper conveyor belt. If installation is limited, the intercept rope shall be installed on the intercept rope sensor before Step 4







6) Adjustment of the intercept rope: According to the tightness and pulsation of the conveyor belt, control the gap between the intercept rope and the conveyor belt at about 30mm. When the conveyor belt pulsates, the gap should be larger; otherwise, the gap should be smaller, finally lock the fasteners



7) Select a place with good environment and easy observation to install the control box. Step 2 is the wiring method of the control box



8) Only the forward end can be wiring connected of the intercept rope sensor, while the backward does not need to be wiring connected







The operation panel of the control box is composed of three parts: signal indicator light, instrument and control. Please refer to the following table for details

Area	Name	Instructions	
	Unloading operation	Indicator light of operation when the material table is unloading	
Indicator	Horizontal position	The indicator light is on when the material table is horizontal, off when it is not horizontal. The indicator light flicker when it cannot be reset to the horizontal position or when the position sensor fails	
light	Intercept rope alarm	The indicator light is on when the intercept rope alarm	
	Blanking alarm	The indicator light is on when the blanking amount reaches the set value	
	MENU	Menu, press into the menu, enter the password'555'entering, enter the value, press this key to switch to the next item or complete	
Instrument	MOVE	MOVE, which is used to move cursor position when numeric input is made	
	SET	SET, press this key to increase the value from 0 to 9 in a cycle when entering the value	
Control	Unloading mode	Automatic unloading is performed according to the set program when automatic, and manual operation is performed when manual	
	Reset mode	Automatic reset after alarm (not recommended) when automatic, manual reset operation when manual	
	Manual unloading	Unloading mode" is valid when manual"	
	Manual reset	Reset mode" is valid when manual"	
	Reset	Press this button to reset the test data of the instrument to zero	





The instrument display part is composed of 5-bit LED digital tube. The display content and description are shown in the following table

Display	Factory default	Set range	Meaning
PA000	555	(No)	(Password setting)
HP	1.00	0-999.99KG	Blanking alarm threshold can be modified to a reasonable value according to the site situation
HPd	3	S 0-999	Delay alarm time after the blanking amount reaches the alarm threshold
HPLd	0	S 0-999	Alarm hold time, set to 0 to keep permanently

Control box wiring terminal

There are 7 sets of user terminals in the control box. Please connect the terminals according to the color of the cable core. The terminals are plug - in design. Users should unplug the terminals before wiring them

Terminal name	Meaning	
XT1	Total power input, voltage AC220V	
XT2	Power output of unloading motor	
XT3	Horizontal limit signal input of material table	
XT4	The output of the intercept rope alarm, a group of changeover contacts which are normally open or closed	
XT5	Output of blanking alarm, a group of changeover contacts which are normally open or closed	
XT6	Input of blanking signal.	
XT7	The intercept rope signal input terminal is connected with the intercept rope sensor	

Operation method

First use - The first time to power on, the parameters of the instrument should be set first, and then press the "reset" button to rese the detected value of the instrument

Normal condition - Move the "Unloading mode" knob to the "Automatic" position and the "Reset mode"] knob to the "Manual" position

Blanking alarm - When alarming, the accident site should be handled first, then the Unloading mode' button is dialed to the 'Manual' position, and the material is unloaded by pressing the 'Manual unloading' button

Intercept rope alarm - When alarming, the accident scene should be handled first, then press "Manual reset" to cancel the alarm

Working Principle

When the conveyor belt is torn, the material on the conveyor belt leaks to the material table of the device through the crack. When

the amount of material falls to the alarm threshold, the detector can send out the alarm signal

The device also has the function of intercept rope detect. When the foreign body punctures the belt and touches the intercept rope device, the detector is also triggered and outputs an alarm signal

