Brief Introduction

1、Company Profile

Weite Technologies Co., Ltd. is specialized in the development and service of crane safety monitoring and management system. It is a national specialized, special and new little giant enterprise, a national high-tech enterprise, a national service-oriented manufacturing demonstration platform construction unit, a national industrial design enterprise, and a drafting unit of national standards for hoisting machinery. Weite Technologies specializes in the design, production and service of crane safety monitoring system and industrial automation monitoring equipment. The products are widely used in electric power, port, steel, metallurgy, marine engineering, construction and other industries.

Weite Company is a crane safety protection expert, a domestic crane safety technology leader, and the preferred brand of China's large crane safety monitoring and management system. Most of the domestic key engineering projects have micro-special applications. At present, the number of patents and scientific and technological achievements of Weite has reached 236, and the technology has reached the international advanced level. Since 2012, it has become a member of the National Hoisting Machinery Standardization Technical Committee, and participated in the drafting of 12 national standards such as "Lifting Machinery Safety Regulations" and "Explosion-proof Overhead Cranes". It is an industry expert in the field of hoisting machinery safety protection. The leader in the overall ranking of the industry. With the personalized design and service of crane safety monitoring and management related products, the market share is continuously expanding, and it ranks first in the market share in the same industry sales nationwide. It has provided hoisting safety monitoring scheme design and on-site installation services for key construction projects such as the Nanhai Offshore Platform, the Pingtan Strait Highway-Railway Bridge, and the Xuyan High-speed Railway. Local safety supervision and quality supervision departments provide supervision data, which greatly improves the level of project safety supervision and accelerates the progress of project construction. Products are exported to nearly 30 countries and regions.

2、Theory Basis

(1), " Maintenance, Inspection and Scrap of Lifting Machinery Wire Rope" (GB/T5972-2016)

(2), "Safe Use and Maintenance of Wire Rope" (GB/T29086-2012)

(3), "Technical Conditions for Non-destructive Testing Instrument Wire Rope Electromagnetic Non-destructive Testing Instrument" (GB/T 26832)

(4), "Wire Rope (Cable) Online Nondestructive Quantitative Detection Method and Judgment Rules" (MT/T 970-2005)

(5), "Technical Conditions for Non-destructive Testing Instrument Wire Rope Electromagnetic Non-destructive Testing Instrument" (GB/T 26832)3、Introduction and Theory

WT-WRNDT-HH series portable wire rope flaw detectors are based on the magnetic sensor with independent intellectual property rights and independent commercial production. The diameter range is 12~42mm. The flaw detector has a high sampling rate and good real-time performance, which can accurately identify various types of wire rope damage, accurately locate the damage location, and fully grasp the wire rope status. Our products are smaller in size, lower in power consumption, and more convenient to use. They are truly upgraded products.

- Model: WT-WRNDT-HH series
- Applicable rope diameter: 12~42mm
- Operating voltage: 24VDC ± 10%
- Working hours：210min
- Communication mode: Ethernet
- Type of flaw detection: internal and external wire break, wear, corrosion, deformation and other damage
- Maximum relative speed: 10 m/s
- Safety test speed: 0 ~ 5 m/s
- Acquisition frequency: 2kHz
- Detection distance: 10,000 m
- Injury detection rate: 98%
- Injury quantification rate: 95%
- Detection accuracy: 98%
- Detection repetition rate: 95%
- Ambient temperature: -45~85℃
- Ambient humidity: 98% (no liquid state)

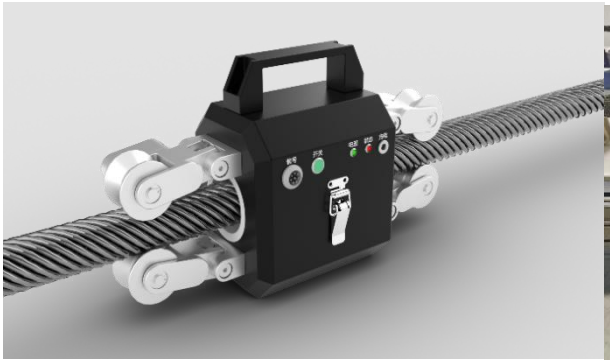
- Level of protection: IP65
- Lightning protection and wave surge level: level 2
- Anti-static electricity grade: level 3
- Anti-electric pulse level: level 3

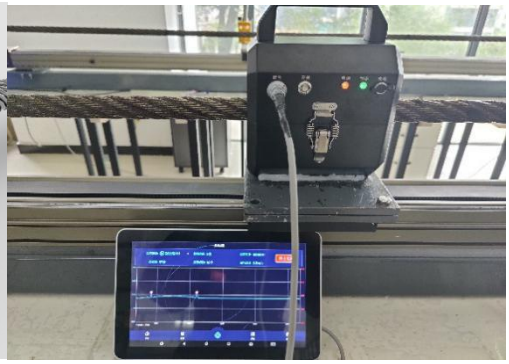
5、Product introduction

Name	Function	Specification
Portable Wire Rope Flaw Detector	Wire rope status data collection	WT-WRNDT-HH
Portable display	Data processing and information visualization	Android system
Cable	data transmission	special cable
Charger	device charging	24V

6、Display

6.1、photos





6.2、Equipment use

The sensor should be installed at the position where the wire rope swings minimum. The installation should have certain flexibility, and it should be fixed by suspension to avoid the wire rope from shaking in the probe.

Only the wire rope passing through the sensor part can be detected, and the detection point should be selected as far as possible to detect more comprehensively.

Should be far away from heat sources, strong magnetic sources, and other locations that

interfere with magnetic fields.

The detection position can be selected at the daily maintenance of the wire rope.

It should be noted that a certain operating space should be reserved at the detection position to ensure the safety of personnel and equipment. In the case of a certain detection position, the stability of the detection instrument is mainly realized by the detection personnel. During overhead inspection, inspectors must wear safety belts and use necessary soft connection methods for inspection instruments (such as nylon ropes, safety belts, etc.). When held by the operator, the moving speed of the wire rope to be tested should be less than 0.5 m/s (it is recommended that the detection speed should not exceed 3 m/s).

The static installation is adopted for the wire rope in work. That is to say, when the device is not turned on, the sensor is installed at the detection start mark determined by the detection plan, and the wire rope segment is detected while the equipment drives the wire rope to operate. Notes are as follows:

(1) Ensure the safety of testing personnel;

(2) The instrument should be in a relatively stable state during use;

(3) Does not affect the normal operation of the lifting equipment;

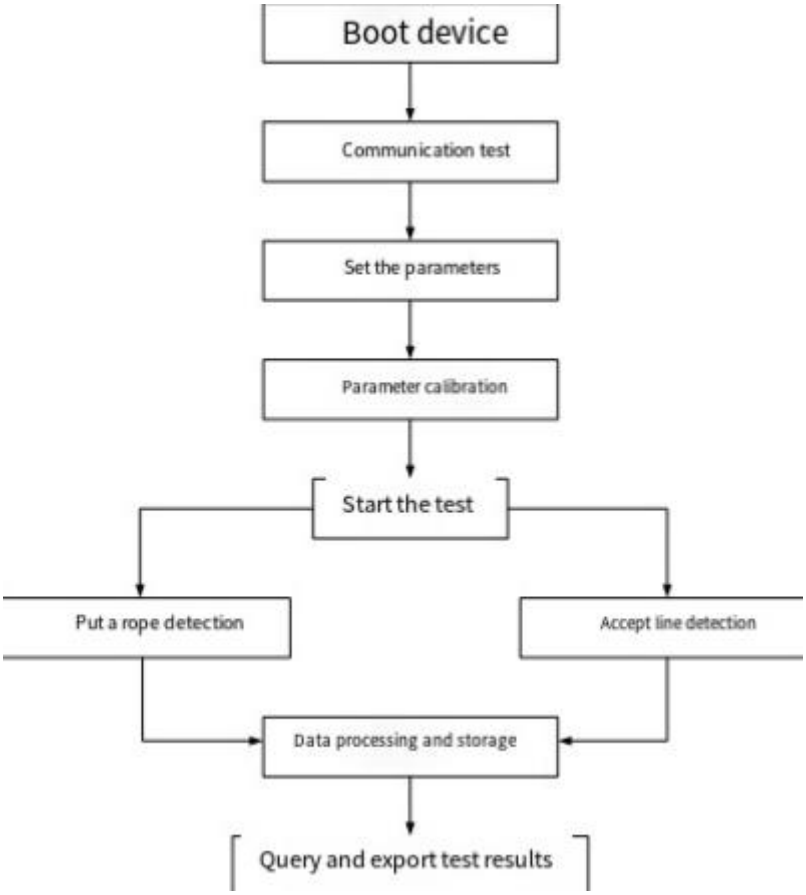
(4) There is no connector in the wire rope detection section;

(5) Use the necessary soft connections to protect the testing instruments;

7.Software

Supporting wire rope detection software, in order to display the wire rope signal processing results, on Windows and Android systems, Qt Creator is used to build the display interface of the wire rope online detection system software platform. Signal processing such as filtering and de-noising is carried out through the internal algorithm to calculate the damage status of the wire rope, and the processed signal is displayed on the display. The system software platform is mainly divided into two parts, one part is the parameter setting module, the other part is the signal processing demonstration module. It includes five interfaces: device overview, device detection, historical query, parameter settings and system settings.

8、Display Operation



Operation flow chart

1、Turn on the instrument power supply

2、Set up parameters

A. Set the communication information, mainly set the IP address.

B. Set the wire rope specification and model information.

C. Instrument installation, fix the instrument on both sides of the wire rope according to the guide.

D. Start the test and turn the guide wheel to check whether the data is normal.

E. Start the equipment to make the wire rope run normally. The relative movement speed between the testing equipment and the steel wire rope should be less than or equal to 3m/s.

4、Termination of the experiment

In case of abnormal conditions or human reasons, the experiment needs to be terminated. You can directly press the panel power button or directly exit the measurement mode.

5. Shut down and end the measurement

Click the switch button and wait for the indicator to go out.

6. Long-term maintenance

A. If the instrument is not used for a long time, it is recommended to charge it once every 6 months, and the charging time is 10 hours each time.

B. Recharge before next use.