



BRING WIRE ROPE SAFETY TO THE HIGHEST LEVEL



42 countries 2500 users

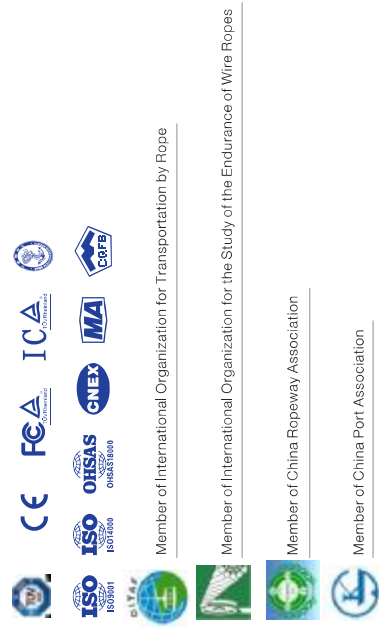


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MAGNETIC MEMORY WIRE ROPE AI WEAK MAGNETIC INSPECTION TECHNOLOGY

Spotlight on New Technology Award Winner at OTC (2018) USA
Won China National Science and Technology Advancement Award



Wire Rope Inspection Technology Co., Ltd. (LY, China)

Magnetic Memory Wire Rope AI Weak Magnetic Inspection Technology (5G)

TCK.W magnetic memory wire rope AI weak magnetic inspection technology fully uses the characteristic of magnetic memory of ferro-magnetic material. It actively regulates a memory magnetic field with appropriate quantity. It uses wide air gap and non-contact weak magnetic sensing technology and AI technology. By collecting magnetic energy potential differential information distributed and memorized in wire rope volume element, it can inspect broken wire, abrasion, corrosion and fatigue caused by strength loss on wire rope qualitatively and quantitatively and position the defects. Thus the technical difficulty of wire rope safety inspection can be resolved. The fifth generation (5G) of TCK.W wire rope inspection technology not only satisfies requirement of wire rope inspection of all countries in the world, but also exceeds the standards in many aspects.

Patent No. of US Patent and Trade Mark Office
Patent No. of European Patent Authority
Patent No. of Japanese Patent Authority
23 Chinese invention patents 24 New Practical Patents
23 Chinese Software Copyrights



Super Large Diameter Wire Rope Inspection Equipment-5G



Winner of 2018 OTC Innovation Award on New Technology



OTC Award Speech:

TCK.W Automatic Real-time Online Wire Rope Inspection System will revolutionize periodic human visual inspection and bring in-process safety monitoring to its highest state through continuous inspection during operation.



Won China National Science and Technology Advance Award



Appraisal Criteria of OTC Technology Innovation Award:

1. The latest and most advanced technology.
2. Original, creative and significant impact.
3. Proven, through full-scale application and or successful prototype testing.
4. Broad appeal for the industry.
5. Provide significant benefits beyond existing technologies.



Flaw detectability

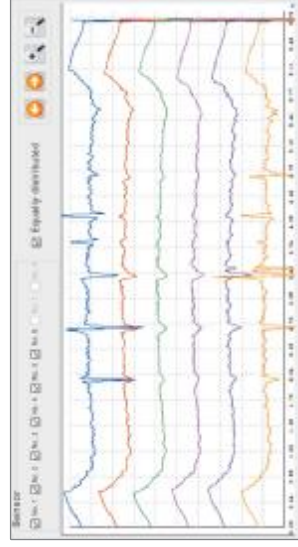
- Severe flaw: LMA reaches 80%-100% of discard upper limit, real-time detectability 100%
- Serious flaw: LMA reaches 60%-80% of discard upper limit, real-time detectability 100%
- Medium flaw: LMA reaches 40%-60% of discard upper limit, real-time detectability 100%
- Minor flaw: LMA reaches 20%-40% of discard upper limit, real-time detectability >99%
- Slight flaw: LMA reaches 20% of discard upper limit, real-time detectability >90%

Inspection repeatability

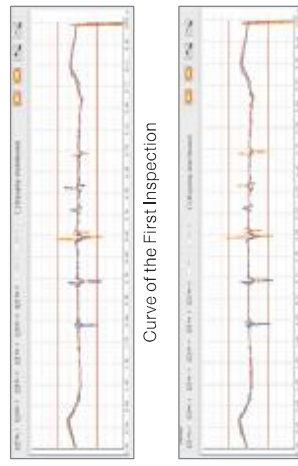
- Severe flaw: 100%
- Serious flaw: 100%
- Medium flaw: 100%
- Minor flaw: >99%
- Slight flaw: >90%



6-Channel sensor sensing information



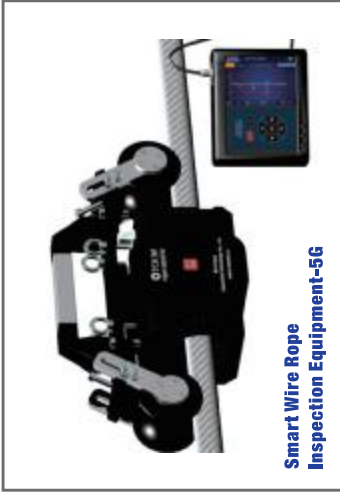
Flaw detectability



Curve of the First Inspection

Curve of the Second Inspection

Portable Wire Rope Inspection Device



Smart Wire Rope Inspection Equipment-5G



Model	Diameter of wire rope(mm)	Weight (Kg)	Dimension L X W X H(mm)
TCK.W-ZN0838-5G	8-38	3.6+9.8	430X130X263(D) 460X193X301(M)
TCK.W-ZN3560-5G	35-60	3.8+12.8	430X130X263(D) 465X231X324(M)
TCK.W-ZN6080-5G	60-80	14.8+29.8	546X243X400(D) 546X243X400(M)
TCK.W-ZN80120-5G	80-120	---	Customized

Technical Parameters

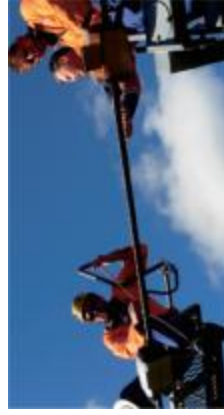
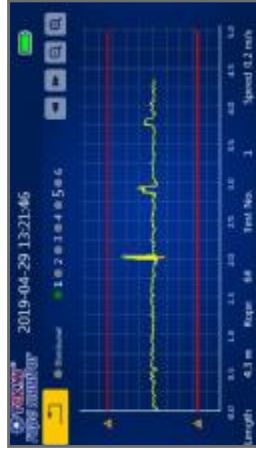
1. Inspection function: quantitative inspection on broken wires, abrasion, corrosion and fatigue.
2. Benchmarking function: Auto benchmarking once with single point location without need to benchmark on multiple positions for multiple times.
3. Operation system: equipped with wide color touch screen and key pad with key membrane. Support dual mode operation.
4. Display function: wide color touch screen displays inspection curve during inspection.
5. Retrieval function: can retrieve inspection content on real-time through touch screen, including current curve of wire rope, flaw position, flaw quantity list and major flaw list. Historic inspection data can also be retrieved.
6. Report function: By connecting with computer through wifi, inspection report can be printed out instantly. Can also print inspection report of any historic point whenever necessary. Inspection report is automatically generated by software and easy to be read and interpreted
7. Magnetic memory regulation device: the function of regulating memorized magnetic field. Memorized magnetic field can be maintained forever if no external interference.
8. Inspection device: non-contact weak magnetic sensor array. Can collect magnetic energy potential differential information in wire rope and analyze quantitatively without connecting external operation system.
9. Data storage: 64G Class 10 high speed flash memory can support saving maximum 50,000 meters long wire rope for single inspection. Storage supports saving 1,000 inspections for 10,000 meter/time.
10. Emergency unlock: Device can be offline rapidly. Unlock time < 1 second; (4G model)
11. LMA inspection error: < ± 1 %
12. Flaw positioning accuracy: ≥ 99%
13. Self-diagnosis function: have self-diagnosis function for sensor property, communication modular, storage modular and AD/DA modular.
14. Passing capability: air gap between sensor and wire rope: 10-30mm
15. Inspection speed: 0-3m/s. Not affected by surface warp, oil and deformation.
16. Data transmission: Wifi transmission or USB transmission.
17. Sensitivity of sensor: 1.5V/mT
18. Sensor working magnetic strength: < 20mT
19. Electric magnetic sensing signal-to-noise ratio: S/N > 86dB
20. Maximum Sampling rate: 2048 times/m
21. Rated working voltage: Power supply by Lithium battery, DC 7.4 V with CE marking
22. Continuous operation hours of battery: ≥ 6hours
23. Ingress protection: IP53



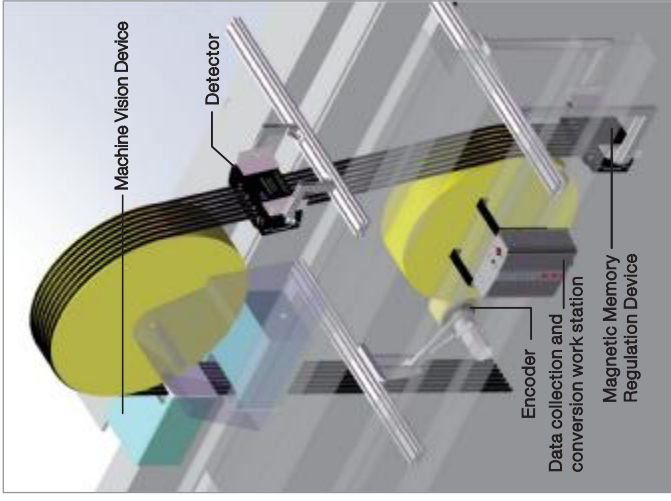
Portable Wire Rope Inspection Device-4G



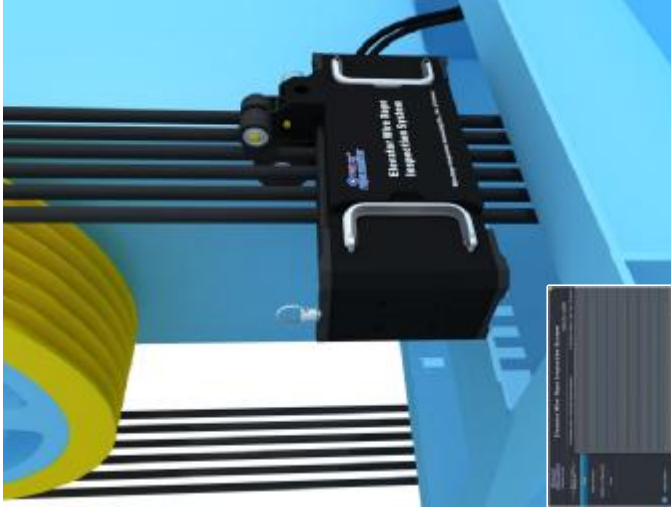
Model	Diameter of wire rope(mm)	Weight (Kg)	Dimension L X W X H(mm)
TCK.W-BX30-4G	6-16	0.5+1	180X106X64(D) 180X106X64(M)
TCK.W-BX40-4G	16-26	2.8+3	267X155X195(D) 316X178X195(M)
TCK.W-BX55-4G	26-42	2.8+8.5	460X193X301(D) 316X178X195(M)
TCK.W-BX65-4G	36-52	2.8+9.8	460X193X301(D) 316X178X195(M)



▶▶ Elevator Wire Rope Intelligent Inspection Expert System



▶▶ Elevator Wire Rope Inspection Device

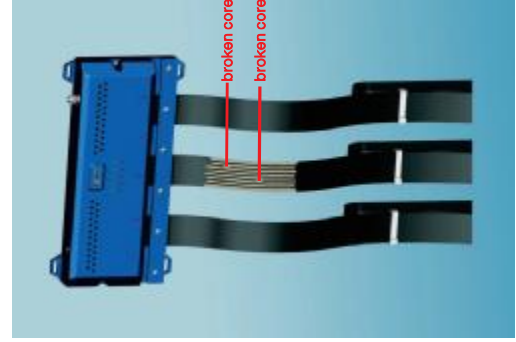


▶▶ Elevator Traction Belt Broken Cord Monitoring Device

Elevator Traction Belt: Broken Cord Monitoring Device connects the inspected traction belt steel core through a dedicated connector for inspection. Once one or multiple steel cores breakage in the traction belt is detected, alarm will be prompted and elevator control system will be triggered to take protective measures.

Technical Parameters

- Specification/model: TCK.W-GDAJ model
- Application traction belt width: 30-60mm
- Applicable steel core number: 10-30 pieces
- Steel core diameter range: ≤2mm
- Traction belt: number under synchronized monitoring: 1-5 pieces
- Device working environment: temperature -20°C-50°C
- Humidity: ≤95%RH
- Broken core detectability: 100%
- Device power supply: DC24V
- Power: ≤ 15W
- Alarm mode: Sound and light alarm
- Technical expansion: can be customized as per client's requirement



Technical Parameters

- 1.Product model: TCK.W-DT624
- 2.Implemented standard: Q/LYWR08-2014 Elevator Wire Rope Inspection System Enterprise Standard
- 3.Operation method: portable, routine inspection
- 4.Inspection function: quantitative and synchronized inspection on broken wires, abrasion, corrosion and fatigue for multiple ropes, benchmark on multiple positions for multiple times.
- 5.Operation system: Human-machine data exchange can be realized by connecting inspection device with laptop LAN or through wifi.
- 7.Display function: inspection curve can be displayed on real time during inspection.
- 8.Retrieval function: can retrieve inspection content on real-time on terminal, including current curve of wire rope, flaw position, flaw quantity list and major flaw list. Historic inspection data can also be retrieved.
- 9.Report function: By connecting with computer through wifi, inspection report can be printed out instantly. Can also print inspection report of any historic point whenever necessary. Inspection report is automatically generated by software and easy to be read and interpreted.
- 10.Magnetic memory regulation device: the function of regulating memorized magnetic field. Memorized magnetic field can be maintained forever if no external interference.
- 11.Inspection device: non-contact weak magnetic sensor array. Can collect magnetic energy potential differential information in wire rope and analyze quantitatively.
- 12.Data storage: 64G Class 10 high speed flash memory
- 13.Self-diagnosis function: have self-diagnosis function for sensor property, communication modular, storage modular and AD/DA modular.
- 14.Wide air gap: ≥5mm, Not affected by surface warp, oil and deformation.
- 15.Device profile dimension(mm):350*230*150
- 16.Device weight: inspection device 4.6kg, weak magnetic memory regulation device 5.7kg
- 17.Data transmission: Wifi transmission or USB transmission.
- 18.Electric magnetic sensing signal-to-noise ratio: S/N>85dB
- 19.Flaw positioning accuracy: ≥99%
- 20.LMA inspection error: ≤±1%
- 21.Inspection range: φ6-24mm
- 22.Sensitivity of sensor: 1.5V/mT
- 23.Sensor working magnetic strength: <20mT
- 24.Maximum Sampling rate: 2048 times/m
- 25.Maximum width of rope displacement: 220mm
- 26.Inspection speed: 0-5m/s.
- 27.Power supply by Lithium battery: 8.4VDC
- 28.Continuous operation hours of battery: ≥6hours
- 29.Ingress protection: IP53

