

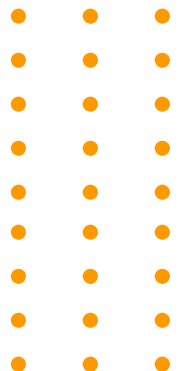
CTN-210 Series Coating Thickness Gauge Technical Solutions



BRK provides professional non-destructive testing solutions. Since its founding, the company has been dedicated to delivering high-quality instruments and expert services to meet customer demands in scientific research, industrial production, quality control, and related fields.

BRK's core strength lies in its continuous technological innovation and superior product quality. The BRK team comprises experienced and highly skilled professionals focused on advancing research and development in non-destructive testing. Combining technical expertise with a commitment to innovation, BRK serves clients worldwide with cutting-edge products and solutions.

BRK specializes in solving complex challenges by offering customized non-destructive testing solutions. As an industry pioneer, the company stays ahead of trends and technological developments. Its product portfolio includes ultrasonic flaw detectors, eddy current flaw detectors, coating thickness gauges, ultrasonic thickness gauges, Leeb hardness testers, surface roughness testers, gloss meters, industrial borescopes, and more. With a strong global reputation, BRK maintains an outstanding customer satisfaction rate of 95.7%.





One-Stop Supplier of Non-Destructive Testing Solutions

The factory under the BRK brand possesses complete production processes, sophisticated testing methods, and strong R&D capabilities. As a high-tech enterprise specializing in the development, production, sales, and service of non-destructive testing instruments, all products from portable NDT equipment to large-scale automated systems feature independent intellectual property rights. The company has applied for dozens of invention patents, utility model patents, and software copyrights, obtained the Intellectual Property Management System Certification, and was honored as a National High-Tech Enterprise in 2024.

Quality Testing

We collaborate with authoritative quality supervision institutions and utilize the most advanced high-performance testing equipment. All products undergo rigorous testing procedures to ensure stability and compatibility. Our scientific and meticulous quality inspection processes comply with national industry standards.

Quality Assurance

For any quality-related inquiries, we provide product origin certification. For specific customer requirements, we offer comprehensive laboratory testing services.

Quality Commitment

We guarantee top-tier product quality. Every product we provide is manufactured at our original facility, delivered in original packaging and strictly adheres to professional quality standards. Our standardized, precise, and scientific management and monitoring processes ensure authenticity and premium quality at every stage.



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BRK Website

Part 1: Product Introduction



CTN-210C Coating Thickness Gauge

**High Precision
& Wide Applicability**

**Portable Design &
Intuitive Operation**



CTN-210B Coating Thickness Gauge

Sealed Metal Housing

**Dual-Mode (Al/Fe) with
Rapid Response**

The CTN series coating thickness gauge is a high-end coating thickness gauge independently developed by Botech. As a portable measuring instrument, it can quickly, non-destructive, and accurately measure the thickness of coatings. It has the advantages of wide measurement range, fast measurement speed, and high measurement accuracy. It can be used in both laboratories and engineering sites. By using different probes, various measurement needs can also be met. Applied in testing fields such as manufacturing, metal processing, chemical industry, and commercial inspection. It is an essential tool for surface protection engineering.

Part 2: Product Advantages

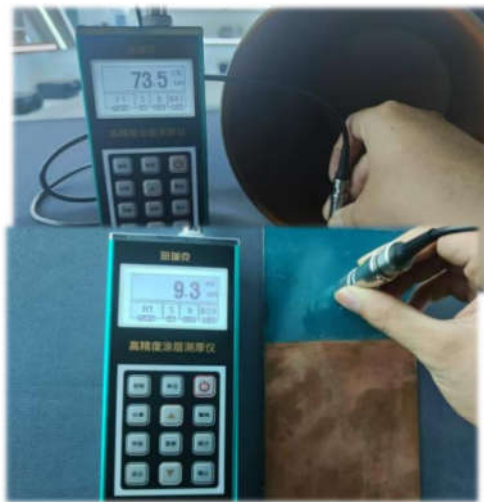
The CTN-210 series coating thickness gauge provides high accuracy, a wide measurement range, multiple calibration and measurement modes, powerful data processing and storage functions, and user-friendly operation with convenient interfaces. Designed for diverse materials and measurement requirements, this instrument is extensively applied in manufacturing, metal processing, and various inspection fields.

Key Features:

- The instrument operates with a full English interface for enhanced convenience
- This instrument adopts two thickness measurement methods: magnetic induction and eddy current
- Can be equipped with 10 types of measuring heads F400, F1, F1/90°, F10, CN02, N1, CN02, N10, F5
- Settable limits: automatic alarm for measured values outside the limit
- LCD display with switchable backlight control
- It provides menu-based operation
- With error prompt function, prompt through screen display or beep sound
- There are two shutdown methods available: manual shutdown and automatic shutdown
- It is equipped with a standard 9-pin international socket
- The Model 210B variant has a fully sealed aluminum alloy housing for harsh environments, resistant to vibration, shock, and electromagnetic interference
- The Model 210B utilizes lithium battery power with up to 200 hours of continuous operation (backlight off)

Part 3: Application

The working principle of coating thickness gauges is primarily based on magnetic induction or eddy current principles. When the probe contacts the coating surface, it forms a closed magnetic circuit with the ferrous metal substrate, where the non-magnetic coating layer causes changes in magnetic reluctance. Alternatively, a high-frequency alternating current generates an electromagnetic field in the probe coil; when approaching conductive substrates, this induces eddy currents whose magnitude is measured to determine the coating thickness.



Solder Resist Ink Layer Measurement



Paper Thickness Measurement

Industry Applications

Coatings & Corrosion Protection Industry

Ensure coatings achieve expected anti-corrosion effects, prolonging substrate service life.

Automotive Manufacturing

Measure vehicle surface coating thickness to guarantee appearance quality and protective performance compliance.

Electronics Manufacturing

Detect film thickness on integrated circuits and electronic components, ensuring product quality and performance.

Plating & Spraying Industries

Monitor plating/coating thickness to meet design specifications and quality standards.

Metal Hardware Industry

Hardware components typically feature single or multiple protective coating layers on their surfaces. The coating thickness gauge is utilized to measure these coating layers, ensuring product quality and performance, while providing crucial technical support.

Part 4: Technical Specification

CTN-210 Series Coating Thickness Gauge		
Model	CTN-210B	CTN-210C
Measuring Principle	Magnetic induction and eddy current	
Probe Connection Method	Split type wire connection	
Range	0-10000um(depending on the probe)	
Resolution	0.1um(F1、N1 measuring head)	
Indicating Accuracy	±(2%H+1)um; H denotes the measured coating thickness	
Display	128*64 Dot Matrix LCD	
Storage Function	Can store 5 sets(up to 100 measurement values per set)of measurement method	
Measurement Units	Freely switchable between metric(μm) and imperial (mil)	
Operating Voltage	3.7V	AA battery
Power Supply	5V2A	
Operating Time	>200 hours continuous (backlight off)	
Dimension	125*71*27mm(host)	185*75*32
Weight	0.4kg	0.25kg
Statistical Function	Average,maximum,minimum,number of tests, standard deviation	
Working Mode	Direct and group methods	
Measurement Mode	Continuous measurement method and single measurement method	
Temperature	-20℃~+50℃(Operating temperature) -30℃~+70℃(Storage temperature)	0-40℃
Humidity	≤90%RH	20%RH~90%RH
Environmental requirements	No strong vibrations, no intense magnetic fields, no corrosive media, and no severe dust	

Part 5: Optional probes and parameters

CTN-210 Series Probe Model							
Probe Model		F400	F1	F1/90	F10	N1	CN02
Image							
Working Principle		Magnetic induction				Eddy current	
Measuring Range（um）		0-400	0-1250		0-10000	0-1250(chrome plating on copper0-40um)	10-200
Low Resolution Limit(um)		0.1	0.1		10	0.1	1
Indication Error	A little Calibration(um)	±[3%H+1]			±[3%H+10]	±[3%H+1.5]	±[3%H+1]
	Two-Point Calibration(um)	±[(1～3)%H+0.7]	±[(1～3)%H+1]		±[(1～3)%H+10]	±[(1～3)%H+1.5]	-
Measurement Conditions	Minimum Radius of Curvature(mm)	Convex 1	Convex 1.5	Plane	10	3	Plane
	The Diameter of The Smallest Area of The Substrate(mm)	φ3	φ7	φ7	φ40	φ5	φ7
	Minimum Critical Thickness(mm)	0.2	0.5	0.5	2	0.3	No limits
Coating Thickness Gauge Probe Selection Table							
Covering layer substrate		Non-magnetic coatings such as organic materials (such as paint, lacquer, enamel, enamel, plastic and anodizing)				Non-magnetic non-ferrous metal coatings (such as chromium, zinc, aluminum, copper, tin, silver, etc.)	
		The thickness of the cover layer does not exceed 100um	Covering thickness exceeds 100um	The thickness of the cover layer does not exceed 100um		Covering thickness exceeds 100um	

Magnetic metals such as iron and steel	The diameter of the measured area is greater than 30mm	F400 probe 0~400μm	F1 probe 0~1250μm	F400 probe 0~400μm	F1 probe 0~1250μm
		F1 probe 0~1250μm	F10 probe 0~10mm	F1 probe 0~1250μm	F10 probe 0~10mm
	The diameter of the measured area is less than 30mm	F400 probe 0~400μm	F400 probe 0~400μm	F400 probe 0~400μm	F400 probe 0~400μm
			F1 probe 0~1250μm		F1 probe 0~1250μm
Copper, aluminum, brass, zinc, tin and other non-ferrous metals	The diameter of the measured area is greater than 5mm	N1 probe 0~1250μm			Only for chrome-plated copper N1 probe 0~40μm
Plastic, printed circuit non-metal substrate	The diameter of the measured area is greater than 7mm	-			CN02 probe 10~200μm

Part 6: CTN-210 Series Coating Thickness Gauge Accessories

Packing List:

S/N	Item Name		Qty	Remark
1	CTN-210C Host	CTN-210B Host	1	
2	Ferrous probe (FE)		1	
3	Zero calibration matrix		1	
4	Standard test piece		1	
5	Charger and charging cable		1	
6	Packaging box		1	
7	Operating Manual		1	
8	Certificate		1	
9	Warranty Card		1	
10	USB cable		1	optional
11	Aluminum-based probe (NFE)		1	optional
12	Other probes		1	optional

* This table is for reference only. Final contents are subject to the actual packing list.

Part 7: Instrument Maintenance

1. Electromagnetic Interference Prevention

Install the instrument in environments free from strong electromagnetic interference. When necessary, install certified grounding devices and enhance shielding facilities to suppress signal interference and ensure stable operation.

2. Power Connection Requirements

Connect only to specified power supplies with peripheral devices. Prohibit opening the housing or inserting hands/tools during operation to prevent personal injury or equipment damage.

3. Post-Operation Maintenance

Cover with dust-proof cover after use.

During humid seasons, power on for 1-2 hours weekly to dissipate internal moisture. In the event of abnormal instrument operation, users should first thoroughly review the user manual to verify correct operating procedures, and may consult experienced personnel or the manufacturer for guidance. Under no circumstances should unauthorized disassembly or repair attempts be made, as this may lead to unnecessary complications. Should any inquiries or assistance requirements arise during usage, please contact us via written correspondence or telephone communication. We guarantee prompt response to all service requests.

Part 8: Quality Assurance

1. Quality Assurance

The quality assurance period is one (1) year from the date of final acceptance and signing.

2. After-Sales Service

- (1) Under normal circumstances, the seller guarantees to respond within 24 hours upon receiving the user's after-sales service request (including a fault description) via phone, fax, or email, providing troubleshooting and fault resolution.
- (2) During the warranty period, the manufacturer shall provide free after-sales service and respond to user notifications within 8 hours.

Part 9: Supplementary Provisions

The seller warrants that the buyer shall not face any third-party claims of patent, trademark, or industrial design infringement while using the purchased testing equipment or any part thereof. If any third party raises an infringement claim, the seller shall handle the dispute and bear all legal liabilities and costs.

This agreement is an integral part of the sales contract. In case of any conflict, the terms of the sales contract shall prevail.

Matters not covered herein shall be resolved through amicable negotiation between both parties.

This agreement becomes effective upon signing by both parties. It is executed in duplicate, with each party holding one copy of equal legal validity. Faxed or scanned copies are equally binding.

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