CTN-230
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%.



BRK

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.











Sales Contact: Beata Jiang

Mobile: +86 191 2880 9831

Email: sales3@botech-gz.com

Address: Building 11, Weifa High-tech Park, Panyu District, Guangzhou, China 511400

BRK Website

Part 1: Product Introduction



CTN-230



CTN-2NF

- Large Measuring Range
- Three Measurement Modes
- 13 Types of Probes Optional
- Gram Weight Display



Statistical Mode



Standard Mode



G/m² Weight Measurement Mode

The CTN-230 is a newly developed coating thickness gauge from BRK. It employs advanced sensing technology and intelligent algorithms to maintain high accuracy even over a large measuring range. Breaking through the limitations of a single probe, it is compatible with up to 13 specialized probes, easily tackling measurement challenges on various complex substrates (ferrous, non-ferrous, aluminum, etc.) and coatings (paint, plating, anti-corrosion layers, plastic, etc.). Its wide coverage means it can handle both flat surfaces and complex curved surfaces (pipes, screws, small workpieces). From ultra-thin decorative coatings to heavy industrial anti-corrosion layers, from precise laboratory inspections to harsh field environments, this single device handles it all without frequent equipment changes, greatly improving work efficiency and applicability.

Part 2: Product Advantages

The BRK CTN-230 Coating Thickness Gauge offers high precision, a wide measuring range, multiple calibration and measurement modes, powerful data processing and storage functions, and convenient operation and interfaces. It is suitable for various materials and measurement requirements and is widely used in manufacturing, metal processing, and many other inspection fields.

Key Features:

- User-friendly interface operation for greater convenience.
- Utilizes both magnetic induction and eddy current measurement methods.
- Compatible with 13 probe types: F400, F500, F1, F1/90°, F1-H, F3, F3-H, F5, F10, N400, N1, N1-H, N3. CTN-230NF can only equip with NF probe.
- Limit setting: Automatically alarms for measurements outside set limits; allows analysis of a batch of measurements via histogram.
- Fully sealed housing: Suitable for harsh operating environments, resistant to vibration, shock, and electromagnetic interference.
- High-end chip: High efficiency, stable performance, focus on quality.
- Error prompt function: Alerts users to errors via screen display or buzzer.
- Two shutdown modes: Manual shutdown and automatic shutdown.
- Direct display of current measurement value and other data; free switching between three measurement modes.
- LCD display: 128x64 graphic dot matrix LCD, providing rich and intuitive information.

Applications

Metal Substrate	Coating Material	Examples	Recommended Probe
Ferromagnetic Materials: Iron, Cobalt, Nickel, Gadolinium	Non-ferrous metals:Copper, Aluminum, Brass, etc.	Zinc on iron, copper on iron, chrome on iron,aluminum on iron, silver on iron	Magnetic Probe
	Non-metallic materials: Paint, Coating, Plastic, etc.	Paint on iron, powder coating on iron	
Non-ferrous Metals:Copper, Aluminum, Magnesium, Zinc	Non-conductive materials: Anodizing, Paint	Anodizing on aluminum, paint on copper	Non-Ferrous (Eddy Current) Probe
Paper, Film, etc. Thin workpiece thickness measurement	/	/	/

Part 3: Practical Application Cases



Ferrous Metal Thickness Measurement



Non-ferrous Metal Thickness Measurement

The working principle of the coating thickness gauge is primarily based on electromagnetic induction or eddy current principles. For magnetic induction: when the probe contacts the coating, the probe and the magnetic metal substrate form a closed magnetic circuit; the presence of the non-magnetic coating changes the magnetic reluctance of this circuit. For eddy current: high-frequency alternating current in the coil generates an electromagnetic field; when the probe contacts the coating, eddy currents are induced in the metal substrate; the thickness of the coating can be derived by measuring the magnitude of these eddy currents.



F1-90 Internal Cavity Coating Thickness Measurement



High-Temperature Pipe Surface Coating Measurement



Copper Plate Coating Thickness Measurement



Iron Plate Coating Thickness measurement

Part 4: Technical Specification

CTN-230 Coating Thickness Gauge	
Measurement Principle	Magnetic Induction and Eddy Current
Probe Connection	Detachable cable connection (interchangeable)
Measuring Range	0-13000 μm (dependent on probe)
Resolution	0.1 μm (for all probes)
Temperature / Humidity	0-40°C / 20%RH ~ 90%RH
Statistical Functions	Average, Max, Min, Number of readings, Standard deviation
Operation Mode	Direct mode and Group mode
Measurement Method	Continuous measurement and Single measurement
High/Low Limit Setting	Yes
Gram Weight Measurement	Yes
Storage Capacity	10 groups, 1000 measurement values
Data Export	Yes
Shutdown Mode	Manual and Automatic
Power Supply	AA battery
Probe Models	13 types of probes available as options. CTN-230NF can only equip with NF probe.

Part 5: Optional probes and parameters

Magnetic Probe Technical Parameters								
Probe Image	Probe Model	Measuring Range (μm)	Resolution at Lower End (μm)	Accuracy Error		Test Conditions		
				1-Point Cal. (μm)	2-Point Cal. (μm)	Min Convex Radius (mm)	Min Area Ø(mm)	Min Substrate Thickness (mm)
	F400	0~400	0~0.1	±(3%H+1)	±(1~3%H+0.7)	Convex	Φ3	0.2
	F500	0~500				1	Φ5	0.3
	F1	0~1800			±(1~3%H+1)	1.5	Φ5	0.5
	F1-H							
	F1-90					Flat	Φ5	0.5
	F3	0~3000		±(3%H+3)	±(1~3%H+3)	3	Φ10	0.8
	F3-H							
	F5	0~5000		±(3%H+5)	±(1~3%H+5)	5	Φ20	1
	F10	0~13000		±(3%H+10)	±(1~3%H+10)	10	Φ40	2

Eddy Current Probe Technical Parameters

Probe Image	Probe Model	Measuring Range (μm)	Resolution at Lower End (μm)	Accuracy Error		Test Conditions		
				1-Point Cal.	2-Point Cal.	Min Convex Radius (mm)	Min Area Ø(mm)	Min Substrate Thickness (mm)
	N400	0-400	0-0.1	±(3%H+0.7)	±(1~3%H+0.7)	Convex 1.5	Φ4	0.3
	N1	0-1800		±(3%H+1.5)	±(1~3%H+0.7)	3	Φ5	0.3
	N1-H					Flat		
	N3	0~3000		±(5%H+1)	±(1~3%H+3)	5	Φ10	1

NF Dual Purpose Probe Technical Parameters

Probe Image	Probe Model	Measuring Range (μm)	Resolution at Lower End (μm)	Accuracy Error		Test Conditions		
				1-Point Cal.	2-Point Cal.	Min Convex Radius	Min Area Ø	Min Substrate Thickness
	NF Combo F Mode	0~1500	0.1	±(2%H+1)	±(1%H+1)	6mm	Φ7mm	0.5mm
	NF Combo F Mode	0~1800 (Chrome on Copper 0~40)	1	±(2%H+3)	±(1%H+3)	6mm	Φ7mm	1mm

Part 6: Configuration List *

CTN-230 Coating Thickness Gauge			
No.	**Item Name**	**Qty**	**Remarks**
1	CTN-230 Main Unit	1 unit	
2	Probe (Optional)	1 piece	Optional
3	Zero Calibration Base	1 piece	
4	Standard Calibration Plate (Optional)	1 set	Optional
5	Operation Guide	1 copy	
6	Certificate of Conformity	1 copy	
7	Warranty Card	1 copy	
8	Operation Manual	1 copy	
9	Carrying Case	1 unit	

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



Part 7: Instrument Maintenance

The installation and use site should avoid strong electromagnetic interference. If necessary, install proper grounding and enhance shielding to effectively prevent interference signals and ensure stable and reliable instrument operation.

The instrument must be connected to the specified power supply and peripherals to work. Do not open the casing or insert hands or tools into the instrument while it is powered on, to avoid personal injury or instrument damage.

After use, cover the instrument with a dust cover. During the humid season, power on the instrument for 1-2 hours regularly to dissipate internal moisture.

If the instrument malfunctions, first carefully read the user manual to check if the operation is correct. You may also consult experienced personnel or the manufacturer. Do not disassemble the instrument for repair arbitrarily to avoid unnecessary complications.

Users are welcome to contact us by letter or phone if they have any questions or need assistance during use. We promise to respond at the earliest opportunity.

Part 8: Quality Assurance

1. Quality Assurance

The quality assurance period is two (2) years after final acceptance, calculated from the date of final acceptance signing.

2. After-Sales Service

2.1 The seller guarantees that under normal circumstances, upon receiving the user's after-sales service request (including a fault description), will respond, diagnose, and resolve the equipment fault within 24 hours via phone, fax, or email.

2.2 During the warranty period, after-sales service is provided free of charge by the seller. The manufacturer shall respond to user notifications within 8 hours.

Part 9: Supplementary Provisions

1. The Seller shall ensure that the Buyer, when using the detection equipment or any part thereof purchased from the Seller, shall not be subject to any claims from third parties alleging infringement of patent rights, trademark rights, or industrial design rights. If any third party raises an infringement claim regarding the goods purchased by the Buyer, the Seller shall negotiate with the third party and bear all potential legal liabilities and costs.
2. This agreement constitutes an integral part of the sales contract. In the event of any conflict between the provisions of this agreement and the sales contract, the terms of the sales contract shall prevail.
3. Matters not covered herein shall be resolved through friendly consultations between both parties.
4. This agreement shall become effective upon signature and sealing by both parties. This agreement is executed in duplicate, with each party holding one copy. Both copies possess equal legal effect. Faxed copies and scanned copies of the original shall be equally valid.