

Integrated Touchscreen Sulfur Analyzer Lcd Total Sulfur Determinator

Item Number: KT-DL1



Introduction

Engineered for highly precise total sulfur determination, this integrated touchscreen sulfur analyzer combines coulometric titration with automated dual-stage combustion. Rapid five-minute analysis cycles deliver exceptional measurement accuracy and operational repeatability across coal, coke, mineral, cement, and chemical testing laboratories worldwide.

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Application	Description	Key Benefit
Coal Quality Grading & Commercial Inspection	Quantitative analysis of total sulfur in raw coal, cleaned coal, and middlings according to standard coal testing protocols.	Ensures accurate caloric evaluation and pricing while meeting regional trade specifications.
Thermal Power Generation	Continuous monitoring of pulverized coal feedstocks to forecast sulfur dioxide emissions and optimize desulfurization systems.	Prevents boiler tube corrosion and maintains stringent compliance with air emission permits.
Coke and Metallurgical Manufacturing	Rigorous verification of sulfur content in metallurgical coke, pulverized injection coal, and foundry-grade fuels.	Minimizes sulfur migration into molten iron, safeguarding steel ductility and tensile strength.
Cement Clinker & Building Materials	Assessment of raw meal, gypsum, rotary kiln fuels, and finished hydraulic cements for total sulfate and sulfide content.	Controls setting times, suppresses efflorescence, and prevents structural degradation in concrete.
Mineral Extraction & Geological Ore Profiling	Rapid assaying of base metal ores, polymetallic concentrates, and tailings for total sulfide and sulfate minerals.	Guides flotation processing adjustments and aids in predicting acid mine drainage risks.
Chemical & Petrochemical Processing	Quality control screening of industrial chemical precursors, carbonaceous additives, and petroleum refining byproducts.	Prevents catalyst poisoning in downstream synthesis and guarantees uniform purity standards.
Environmental Solid Waste Auditing	High-throughput combustion analysis of industrial slags, ash residues, and solid waste materials before disposal.	Delivers auditable data for environmental reporting and landfill disposal classification.

Specification Parameter	Primary Controller Unit	High-Temperature Tube Furnace
Model Identifier	KT-DL1 (Control & Titration Module)	KT-DL1 (Combustion Tube Module)
Analytical Measurement Principle	Dynamic Coulometric Titration (Compliant with GB/T 214)	High-Temperature Controlled Atmosphere Combustion
Total Sulfur Measurement Range	0.00% to 99.00%	0.00% to 99.00%
Analysis Time per Sample	~5 minutes total (45 s at ~700°C; 4 min 15 s at 1150°C)	Continuously synchronized with automated sample pusher
Furnace Temperature Range	Digital PID regulation, 0°C to 1250°C adjustable	Factory preset at 1150°C ± 5°C; 90 mm uniform hot zone
Furnace Heating Element	Controlled via solid-state relay (SSR) digital trigger	Silicon carbide (SiC) tube element (Model 40/30 × 200/160 mm)
Electrode & Titration Cell	Dual platinum indicator pair; 400 mL cell volume	1.0 × 1.5 cm ² active platinum electrolytic working electrodes
Electrochemical Response Time	≤ 1.0 second (Iodine / Iodide equilibrium shift)	Not applicable
Measurement Linearity	±0.01% across analytical range	Not applicable

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Integrator Baseline Drift	≤ ±0.2 ppm Sulfur within 10 minutes	Not applicable
Heating Current Control	0 to 15 A adjustable across 10 discrete steps	Integrated ultra-fast electronic current overload protection
Recommended Sample Mass	~50 mg per analytical determination	Loaded in reusable combustion boats
Sample Grain Size Requirement	Granulated to approximately 0.1 mm	Facilitates complete thermal oxidation
Carrier Gas Specifications	Purified dry air free of acidic oxides; flow rate > 1500 mL/min	Metered sample combustion gas flow rate: 1000 mL/min
Switching & Triggering Tech	Contactless Hall-effect sensors and Solid-State Relays	Eliminates mechanical contact oxidation and arcing
Data Logging & Reporting	Microprocessor memory with automatic index incrementing (+1)	Onboard print generation and digital query interface
Ambient Operating Limits	Temperature: 5°C to 40°C; Relative Humidity: ≤ 85% RH	Temperature: 5°C to 40°C; Relative Humidity: ≤ 85% RH
Physical Dimensions (L × W × H)	360 × 280 × 140 mm (36 × 28 × 14 cm)	600 × 290 × 250 mm (60 × 29 × 25 cm)
Power Supply Requirements	AC 220V ± 10%, 50 Hz	System peak power rating: 3.0 kW