JCI 178 Charge Measurement Unit
Data Sheet

For general measurement of small quantities of charge and measurement of charge transfer in static discharges.

The JCI 178

The JCI 178 is a compact and easy to use instrument for the sensitive measurement of charge in the range 10pC to 200nC. A special low sensitivity version, the JCI 178X, can be custom manufactured giving the operator the capability to measure up to 20µC.
The display reads the quantity of charge transfer measured in nanocoulombs (nC).
For measurement of charge transfer in electrostatic discharges the unit can be fitted with a JCI 179 Spark Discharge Probe. This ensures that observations can be interpreted with confidence and valid judgments made on the risk of ignition presented in relation to quantities of charge transferred.

The unit is based on a 'virtual earth' charge measurement circuit. As this ensures the input remains essentially at earth potential insulation leakage problems are minimised. This may help recognition of untoward charge generation situations and identification of hazardous discharges in practical testing.

Benefits

- Hand held with full scale to 200nC (standard version)
- Highly portable with mounting feet option for permanent installation
- Single coaxial connection to JCI 150 faraday pail
- Battery or mains powered via JCI 142 External Mains Adapter
- Resolution 10pC (standard version)
- Extended range version available with a full scale of 20µC.

Specification

SENSITIVITY RANGE	20nC & 200nC FSD for JCI 178 2µC & 20µC FSD for JCI 178X
POWER SUPPLY	PP3 replaceable battery JCI 142 External Mains Adapter
ACCURACY AND LINEARITY	Within ±5%FSD.
DISPLAY	3½ digit liquid crystal display
CONTROLS	• 3 position slide switch for sensitivity selection • Zeroing push button • Earth bonding connector • 8w min DIN connector • 2.1mm 12V external power supply input connection
ALARM	An audio alarm is included with a user settable threshold level.

Optional extra accessories & services

- JCI179 - Electrostatic Discharge Probe:
- Charge transfer measurements in spark type electrostatic discharges need to be made using a shielded probe, such as the JCI 179. The JCI 179 probe can be mounted directly on the input BNC connector of the JCI 178. The JCI 178 will not resolve any fast steps in the rising edge of a charge transfer but they will show the overall quantity of charge transferred.
- Picoscope:
- Observations may usefully be recorded using a digital storage oscilloscope – for instance a Picoscope.

DEKRA Organisational & Process Safety

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DEKRA Organisational and Process Safety are a behavioural change and process safety consultancy company. Working in collaboration with our clients, our approach is to assess the process safety and influence the safety culture with the aim of making a difference.
In terms of behavioural change, we deliver the skills, methods, and motivation to change leadership attitudes, behaviours, and decision-making among employees. Supporting our clients in creating a culture of care and measurable sustainable improvement of safety outcomes is our goal. The breadth and depth of expertise in process safety makes us globally recognised specialists and trusted advisors. We help our clients understand and evaluate their risks, and we work together to develop pragmatic solutions. Our value-adding and practical approach integrate specialist process safety management, engineering, and testing. We seek to educate and grow client competence in order to provide sustainable performance improvement. Partnering with our clients, we combine technical expertise with a passion for life preservation, harm reduction and asset protection.
We are a service unit of DEKRA SE, a global leader in safety since 1925 with over 48,000 employees in 60 countries and five continents. As a part of the world's leading expert organisation DEKRA, we are the global partner for a safe world.
We have offices throughout North America, Europe, and Asia.

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Would you like more information?

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