

# JCI 140 Series Static Monitor Data Sheet



## The JCI 140 is a compact instrument for easy detection and measurement of static electricity

Many materials, in particular plastics, easily become electrostatically charged when rubbed against other materials. Such 'triboelectric' charging causes problems in many areas of industry. It can lead to ignition of flammable gases, vapours and powders, and give shocks to personnel. It can make thin films and light fabrics cling, attract airborne dust and debris, damage semiconductor devices and upset the operation of microelectronic equipment.

### The JCI 140

The JCI 140 Static Monitor is a compact, easy to use instrument for direct non-contact measurement of surface voltage. From a distance of 100 mm, the digital display indicates surface voltage to a resolution of 1 Volt. This makes it particularly easy to find even low levels of static charge and to make measurements with confidence.



## Advantages over competitors

As a field mill instrument, there is no need to switch-on in a static free environment, no need for measurements to be made within a limited time and no need to worry about the influence of air ionisation – which are all concerns with simple ‘induction probe’ type instruments. The novel mode of operation of the JCI 140, with no earthing of the rotor (the instrument must still be earthed), provides quiet, stable performance with a long operational life.

### It is available in 4 options:

- Standard (140) - frequency response of about -3dB at ~ 120Hz
- Fast Response (140F) - 3dB at ~ 400Hz
- Extended Range (140X) – up to 50kV range and -3dB at ~120Hz
- Fast Response Extended Range - up to 50kV range and -3dB @ ~ 400 Hz

Analogue output signals are provided for separate display and recording of observations - for example using a multimeter, oscilloscope, data logger or paper chart recorder.

### Benefits

- Indicates surface voltage
- Extended range version available for higher voltages
- Field mill technology avoids the zeroing required for Induction Probe type monitors
- Full scale of 19.99kV (standard version) with 1V resolution on the most sensitive range.

### Accessories

A ‘Picoscope’ can be used for direct data logging and display on a microcomputer. This enables the full bandwidth capability of observations to be available for display and numerical processing via spreadsheet software.

The JCI 148 is a voltmeter adapter for use with the JCI 140. It allows measurement of voltages on conductors using a probe. The very high input resistance of this system eliminates the loading effects suffered by many high voltage voltmeters and high voltage adaptors for multimeters.

The JCI 147 is a Faraday Pail adaptor for use with the JCI 140. It allows the direct measurement of charge (in Coulombs) on items placed in the Faraday Pail.



## Specification features

<b>SENSITIVITY</b>	2kV and 20kV volts full scale at 100mm separation between surface and sensing aperture. Sensitivity selected via on/off switch or by external control
<b>ZERO STABILITY</b>	Within $\pm 10$ volts on 2kV range
<b>SIGNAL NOISE</b>	Within 6mV pk-pk on analogue output (equivalent to 6V pk-pk at 100mm on 2000V range). 20-25mV pk-pk for fast response (JCI 140F) instruments
<b>ACCURACY &amp; LINEARITY</b>	Within $\pm 2\%$ FSD +2 counts
<b>RESPONSE</b>	-3dB at 120Hz. (-3dB at 400Hz for JCI 140 F)
<b>DISPLAY</b>	3½ digit liquid crystal display of surface voltage directly in kilovolts at 100mm with polarity and 'LO BATT' indication
<b>AUDIO ALARM</b>	Pulsing audio signal when above user set level
<b>POWER SUPPLY</b>	Replaceable PP3 battery via 8w mini DIN from external floating 12V supply 2.1mm DC power connector for 12V external floating power supply input <b>Or JCI142 external mains adapter</b>
<b>EXTERNAL CONNECTIONS</b>	Via 8w mini DIN connector: <ul style="list-style-type: none"> <li>• analogue output signal (+2V FSD)</li> <li>• sensitivity range indication and external control of sensitivity</li> <li>• earth</li> <li>• external power supply inputs</li> </ul>
<b>EARTH BONDING</b>	Combination 10mm Durable and 4mm bayonet socket earth bonding point. Supplied with Durable Dot earth bonding cord
<b>DIMENSIONS</b>	142x66x34mm. Weight: 320grams
<b>CALIBRATION OPTION</b>	Where measurements may be used with contractual or legal implication the JCI 140 should be formally calibrated. Formal calibration to BS 7506: Part 2: 1996



## Optional extra accessories & services

- JCI 143 Analogue Output Cable
- JCI 142 External Mains Adapter
- JCI 169 Permanent Mounting Feet
- Digital USB Oscilloscope & Data Logger
- Basic and enhanced calibration available to BS7506: Part 2:1996
- E-field cross calibration also available
- JCI 125 Zero Check Chamber

## Compatible modular instruments

- JCI 148 Electrostatic Voltmeter Adapter
- JCI 147 Faraday Pail Adapter

# DEKRA Organisational & Process Safety

## Contact

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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