



CONTROL

Electrical Measurement Solutions

Electrical Measurement Solutions for Battery Applications

As electrification becomes more prevalent across many different classes and types of vehicles, the technology that drives its backbone of systems and components continues to advance. This is especially true with batteries, where gains in efficiency, size, charge time, and capacity seem to be ever moving.

To continue to push these gains with battery technology, companies have been looking to raise the bar with DC voltage levels seen within these energy storage systems. This is largely due to the continued trend for increased motor power in electric vehicles. Without higher voltages, to increase motor power, the current would have to rise.

This would cause system losses and create the need for additional copper to carry this current, ultimately resulting in heavier vehicles. And as battery voltage continues to rise, so does the importance associated with measuring it, and doing so in a safe way. This is where product solutions from Knick Interface have proven to bring real value. Knick's voltage transducers perform in applications upward of 4800 VDC, both from standpoints of measurement and electrical isolation capability.

Further information on Knick Interface's range of electrical measurement solutions can be found by visiting:

www.knick-interface.com

Applications for Knick Interface electrical measurement solutions associated with battery-based environments have proven to be diverse. Some of the use cases include:

- Battery charge and discharge level confirmation
- Calculations within test stands
- Control of systems on high battery potential
- DC-to-DC converters
- Measurements within charging systems/stations
- Inverter DC link voltage
- Safety detection of "power-off" status













Quality is brought with the following:

- **Accuracy:**
Measurement error < 0.10 % of measured value with most products, up to 4800 V
- **Safety:**
Complete electrical isolation (working voltage) up to 4800 VDC, and tested up to 18 kVAC
- **Speed:**
Cutoff frequencies to > 10kHz and response time (T90) to < 60 μ s
- **Flexibility:**
Configurable input/output ranges and universal power supply (20-253 VAC/DC)



ELECTRICAL MEASUREMENT SOLUTIONS

For Reliable Current and Voltage Measurements with High Isolation Requirements

PRODUCTS	 P27000	 P29000	 P41000	 P42000	 P51000	 P52000
DC Voltage Measurement/ Isolation Range	0 - 200 VDC Measurement 1000 VAC/DC Isolation	0 - 1000 VDC Measurement 1000 VAC/DC Isolation	3600 VAC/DC Isolation	0 - 3600 VAC/DC Measurement 3600 VAC/DC Isolation	4800 VAC/DC Isolation	0 - 4800 VDC Measurement 4800 VAC/DC Isolation
Current Measurement Range	Up to 20 kA with shunt voltage measurement (mV)	Up to 20 kA with shunt voltage measurement (mV)	Up to 20 kA with shunt voltage measurement (mV)	Up to 20 kA with shunt voltage measurement (mV)	Up to 20 kA with shunt voltage measurement (mV)	Up to 20 kA with shunt voltage measurement (mV)
AC Ranges Available			Yes AC to DC conversion with TRMS output	Yes AC to DC conversion with TRMS output		
Input	0... 20 mV/ 200 V 0... 0.1mA/ 100 mA unipolar/ bipolar	0... 30 mV/ 1000 V unipolar/ bipolar	0... 50 mV/ 100 V unipolar/ bipolar	0... 100 mV/ 3600 V unipolar/ bipolar	0... 30 mV/ 125 V unipolar/ bipolar	0... 100 V/ 4800 V unipolar/ bipolar
Output	0/4... 20 mA 0... 10 V 1... 5 V unipolar/ bipolar	0/4... 20 mA 0... 10 V 4... 20 mA passive unipolar/ bipolar	0/4... 20 mA 0... 10 V unipolar/ bipolar	0/4... 20 mA 0... 10 V unipolar/ bipolar	0/4... 20 mA 0... 10 V 0... 5 V unipolar/ bipolar	0/4... 20 mA 0... 10 V 0... 5 V unipolar/ bipolar
Special Features	<ul style="list-style-type: none"> • 480 Calibrated Ranges • Measurement error < 0.08% • 10 kHz Cutoff Frequency • 20-253 V AC/DC Power Supply 	<ul style="list-style-type: none"> • Calibrated Range Selection via Dip Switches • Measurement error < 0.20% • Test Jacks for Measuring Output Without Wire Disconnect • 20-253 V AC/DC Power Supply 	<ul style="list-style-type: none"> • Switchable & Fixed Units Available • Measurement error < 0.10% • High Immunity to Transient Common-Mode Interference • 20-253 V AC/DC Power Supply 	<ul style="list-style-type: none"> • Switchable & Fixed Units Available • Measurement error < 0.30% • High Measurement Accuracy Without Long-Term Drift • 20-253 V AC/DC Power Supply 	<ul style="list-style-type: none"> • Switchable & Fixed Units Available • Measurement error < 0.10% • Diagnostic Outputs for Wiring & Device Health • 20-253 V AC/DC Power Supply 	<ul style="list-style-type: none"> • Switchable & Fixed Units Available • Measurement error < 0.10% • Diagnostic Outputs for Wiring & Device Health • 20-253 V AC/DC Power Supply
Certifications & Approvals						

Contact Us for further information as to how these High Voltage Measurement Solutions might bring value to your challenging applications

Dynamic Measurement & Control

(408) 780-9190

sales@dynamiccrep.com



DYNAMIC
Measurement & Control Solutions, LLC