PRESS INFORMATION

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LEM announces Sentinel 3+ battery monitoring transducer upgrade for latest UPS designs

Key points:

- **Advanced battery monitoring components track latest changes in UPS design practice**
- **Uprated robustness, improved EMC performance and enhanced noise shielding maintain measurement performance**
- **Offered as a portfolio of measurement components, or complete monitoring platform for incorporation in to battery systems**
- **Dedicated and hardened bus communicates comprehensive data to supervisory systems**

LEM has announced the introduction of Sentinel 3+, the latest generation of the proven Sentinel product that continuously monitors the state of health of batteries in uninterruptible power supply (UPS) systems. The enhancements incorporated in Sentinel 3+ enable it to be fully integrated into the newest architectures of UPS, accommodating UPS design evolutions such as transformerless circuit topologies.

Sentinel 3+ is a battery-monitoring transducer that makes measurements of voltage, temperature and impedance, of cells and complete batteries, in UPS installations of all sizes up to mega-watt back-up power supplies for data centres and hospitals. Sentinel 3+ reports its measurements – on VRLA (valve-regulated lead-acid), gel or flooded stationary batteries – to supervisory systems over a dedicated communications bus, and offers a unique capability to assess the true state-of-health of UPS batteries while they are in service. Sentinel 3+ gives complete confidence that battery arrays will deliver their rated power when called on to do so, and identifies weak and failing cells without the need to remove them from service for cycling tests.

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Designers of the latest UPS systems have exploited technology developments such as the availability of fast IGBTs (insulated-gate bipolar transistors) to reduce costs by eliminating bulky and expensive transformers from their circuit configurations. The battery packs that the Sentinel product monitors are, in consequence, operated in a floating voltage mode: the battery is subjected to higher ripple currents, and the monitoring circuitry must handle high common-mode voltages, with superimposed high-amplitude, fast transients.

LEM's Sentinel 3+ features upgraded algorithms to take account of this more challenging measurement environment, maintaining the well-proven accuracy of the Sentinel product family, as well as improved EMC immunity and enhanced overall robustness. Sentinel 3+ delivers voltage measurements over a range of 0.9 to 16V with an accuracy of +/-0.5%; impedance measurement from 0.05 to 250 mΩ with repeatability of +/-2%. Sentinel 3+ features Common Mode Transient Immunity up to 20 kV/µsec with a common-mode voltage level of +/-600V, and a transient repetition rate of 20 kHz.

Further information about the Sentinel 3+ battery monitoring system can be found on the company's website at www.lem.com.

LEM – At the heart of power electronics
LEM is the global leader in providing innovative and high quality solutions for measuring electrical parameters. Its current and voltage transducers are used in a broad range of applications in industrial, traction, energy & automation and automotive markets. LEM is a high growth global company with approximately 1000 employees worldwide. It has production plants in Geneva (Switzerland), Copenhagen (Denmark), Machida (Japan), Beijing (China) and regional sales offices close to its customer's locations. LEM has been listed on the SIX Swiss Exchange since 1986; the company's ticker symbol is LEHN.

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