Press Information

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LEM completes its range of transducer's dedicated to the measurement of leakage current in PV inverters

Key points:

- **Measurement of residual current for residential & small commercial PV inverter**
- **Integrated conductor**
- **Designed to meet the EN 61209 requirements**
- **Operating temperature range spans -40 to +105°C**

The LDSR model is an innovative, low cost and lightweight (25g) component, with a reduced footprint. The LDSR is dedicated to measuring the leakage current of 300 mA nominal up to 900 mA peak at 2 KHz frequency. Its main application is in transformerless photovoltaic (PV) inverters for the residential market, where it measures AC & DC fault currents and ensures the safety of people around the installation.

The residual or leakage currents that the LDSR model is designed to measure can arise in fault conditions in a number of industrial or power-generation scenarios. Examples include failure modes such as a short circuits or earth faults. The connection of a solar panel to the grid raises safety concerns; if a fault occurs there is a potentially serious safety issue around any human contact with the system.

The sensor is mounted onto a PCB for primary and secondary connections & provides an analogue voltage output.

LDSR provides a high overload capability up to 3,300A (for a pulse duration of 100μs, and with risetime of 500 A/μs), as well as a very high level of insulation between primary and measurement circuits, thanks to long creepage and clearance distances (7.1 mm), coupled with a CTI (comparative tracking index) of 600 V.

Based on a closed-loop Hall ASIC, the LDSR has been designed with a unique integrated primary conductor capable of 35 A on both the phase and N line. This provides excellent common mode rejection. The proprietary ASIC ensures high-performance accuracy from -40 to +105°C fulfilling the requirements of the EN 61209 standard.

The LDSR model operates from a +5VDC supply and have a typical current consumption of just 40 mA when measuring 300 mA as nominal primary residual current; It provides access to its internal reference voltage, and to options such as a test winding and demagnetisation functions.

LDSR satisfies the needs of PV inverters, offering a competitive price, low dimensions and complying with all regulatory standards. LDSR is also an excellent alternative to expensive fluxgate solutions due to its small footprint and simple construction.

As well as ensuring safety in solar inverter installations, LEM's LDSR product is also ideal for a range of applications that includes symmetry fault detection in medium power inverters and failure detection in a range of power sources.

The transducers are CE and UL marked and conform to the industrial standards. LEM offers a five-year warranty for each transducer.

LEM – At the heart of power electronics
LEM is the market leader in providing innovative and high quality solutions for measuring electrical parameters. Its core products - current and voltage transducers - are used in a broad range of applications in drives & welding, renewable energies & power supplies, traction, high precision, conventional and green cars businesses. LEM's strategy is to exploit the intrinsic strengths of its core business, and to develop opportunities in existing and new markets with new applications. LEM is a mid-size, global company. It has production plants in Beijing (China), Geneva (Switzerland), Machida (Japan) and Sofia (Bulgaria). With its regional sales offices close to its clients' locations, the company offers a seamless service around the globe. LEM is listed on the SIX Swiss Exchange since 1986; the company's ticker symbol is LEHN.

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