

## LEM's new LxSR Hall effect based current transducer range materializes the technology breakthrough

**Key points:**

- **Closed-loop Hall effect ASIC-based current transducers measure from 1.5 A up to 50 A DC, AC or pulsed**
- **Exceptional overall accuracy over the temperature range up to 2 % of  $I_{PN}$  at +105°C**
- **Wide operating temperature range from -40 to +105°C**
- **Variety of models proposing various PCB mounting layouts and options**

At PCIM 2017, LEM launches six new current transducer series to add to their already large portfolio. The new transducer families are called; LXS, LXSR, LES, LESR, LKSR, LPSR. Each transducer can be mounted on printed circuit boards for non-intrusive and isolated measurements of DC, AC and pulsed nominal currents from 1.5 to 50 A thanks to a multi-range configuration.

These closed-loop current transducers are based on a LEM custom proprietary patented Hall Effect ASIC, allowing them to perform at the level of fluxgate transducers.

The LXSR current transducer range has an offset drift that is over four times lower than the previous generation of closed-loop transducers based on Hall cells. The value reached is very similar to those using fluxgate. Offset drift achieves a value between 4 to 14 ppm/°C.

LEM's spinning technique and specialist integrated circuits (IC) have been significant contributors to these drastic improvements.

With the products' performance of fluxgate, customers are not only provided with better control and increased system efficiency, but also a significantly lower price.

Advanced manufacturing techniques have also been introduced with full automotive qualification in mind, allowing these new transducers to achieve the highest levels of quality and traceability. The LXSR production line has been designed to be autonomous, with an "Industry 4.0" approach.

Six families and 22 models are available with various options, such as an integrated reference ( $V_{REF}$ ), footprint (3 or 4 primary pins with different layouts), with an aperture and/or with integrated primary conductors and overcurrent detection output (LPSR models) on a dedicated pin to give an indication that a measured current is exceeding its expected value or to switch power off in the event of a short circuit.



LXSR, LESR, LKSR, LPSR models operate from a single 5 V supply and provide their internal reference voltage to a  $V_{REF}$  pin. An external voltage reference between 0.5 and 2.75V can also be applied to this pin.

This new series is also fully compatible with the previous LEM LTS/LTSR/CAS/CASR/CKSR series, by fitting in the same footprint, integrating the primary conductor and/or with aperture for the primary conductor for those having this option. So, this new series can be easily used to retrofit into old installations while still offering various compact sizes and a variety of PCB mounting layouts, without compromising on the high insulation level provided between the primary and measurement circuits.

Their wide operating temperature range from -40 to +85°C and even up to +105°C (LES & LESR & LKSR & LPSR series) also makes the series suitable for use in any industrial applications.

Applications such as variable speed drives, servo motor drives, uninterruptible and switch-mode power supplies, battery-supply installations, power supplies (welding), air conditioning, home appliances, static converters for DC motor drives, and robotics integrate a higher number of transducers due to the high levels of control and automation that improve productivity and energy efficiency. In the search for the best efficiency at the best price, these applications benefit from the high-performance cost effective LXS, LXSR, LES, LESR, LKSR, LPSR series.

They will be particularly well suited to applications where low offset drift is important such as in the AC output of solar power installations where standards require a very low DC component in the output current.

LXS, LXSR, LES, LESR, LKSR, LPSR series current transducers are CE marked and conform to the latest industrial standards, as well as being covered by LEM's five-year warranty.

These new products have gone beyond what were previously thought of as the limits of Hall effect technology to compete against fluxgate technology performance.

#### **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

**\*\*\*END\*\*\***



**For further information please contact:**

Stéphane Rollier  
Product & MarComs Manager  
Tel: +41 22 706 1449  
E-Mail: [sro@lem.com](mailto:sro@lem.com)  
Website : [www.lem.com](http://www.lem.com)

or

Freya Ward  
Account Manager  
Napier Partnership Limited  
Tel: +44 (0) 1243 531123  
E-Mail: [freya@Napierb2b.com](mailto:freya@Napierb2b.com)