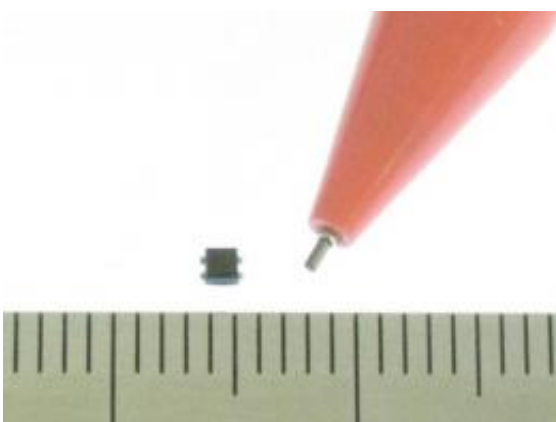


# NEC supports smart cities with ultra low power magnetic sensors for electronic water and gas meters

February 21 2012

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MR Sensor for Electronic Meters

NEC Corporation announced today the commencement of sales for the MRUS74S and MRUS74X, two new ultra low power magnetic sensors, which enable the use of electronic water meters and gas meters that are essential for Smart Cities.

In recent years, the replacement of mechanical water meters and gas meters with electronic meters has advanced worldwide as the Smart Grid and [Smart City](#) concepts have evolved. Electronic meters detect the rotation of magnets inside meters using a magnetic sensor, which enables functions such as automated meter reading and meter management

control, as well as automatic detection of water and [gas leaks](#).

Key features of the new MRUS74S and MRUS74X are as follows:

## **Ultra low power consumption**

The driving current for [magnetic sensors](#) has been reduced to 0.3 microampere ( $\mu\text{A}$ ) or less by using technologies that curtail the sampling time to 1 microsecond ( $\mu\text{s}$ ). This enables the size reduction of sensor batteries and eliminates the need to replace them for 10 years.

## **High magnetic sensitivity**

The ability to detect magnet rotation has improved by enhancing the film formation process of the magnetic-resistance elements (MR elements). As a result, MRUS74S features high [magnetic](#) sensitivity of 1.0 to 2.5 millitesla (mT), and MRUS74X of 1.0 mT or less. This enables the size reduction of magnets, and thereby contributes to magnet cost reduction and magnet sensor layout flexibility.

## **Compact and highly reliable**

In addition to items 1 and 2 above, the sensors have been made more compact (1.5 mm (width) x 1.8 mm (length) x 0.8 mm (thickness)) by laminating and integrating the MR element and the semiconductor integrated circuit. Also, operation is possible even with an ambient temperature of 105°C.

NEC will market and sell the new MRUS74S and MRUS74X globally, with a target of attaining a worldwide share of 30% in the electronic water meter and gas meter market within the next three years.

Please refer to the attachment for specifications on the MRUS74S and MRUS74X.

Provided by NEC

Citation: NEC supports smart cities with ultra low power magnetic sensors for electronic water and gas meters (2012, February 21) retrieved 27 April 2024 from <https://phys.org/news/2012-02-nec-smart-cities-ultra-power.html>

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