

March 26, 2021

Sumitomo Precision Products Co., Ltd.

**Announcement of sales release on a newly developed smallest & highest accuracy*¹
Northfinder™ for downhole resource mining**

Sumitomo Precision Products Co., Ltd. has developed a new MEMS-type small-diameter Northfinder™ "GCAH-1X" that can be installed in measurement tools for downhole resource mining. A customer sample model will be manufactured from April 2021 and will be on sale from September 2021.

The GCAH-1X can find the geographical north pole of earth axis in order to measure the earth's rotation using 3-axes gyro (angular velocity) sensor and 3-axes accelerometer under any attitude. The strengths offered is to contribute the high accuracy directional measurement to overcome the weakness that the magnetic compass used in conventional tools has been faced uncontrollable measurement errors due to surrounded magnetic fields.

The gyro sensor newly developed by SPP has unbeatable wide measurement ranges, not only the resolution to measure the extremely slow angular velocity of 15 degrees per hour of the earth's rotation, but also the fast angular velocity of 400 degrees per second of measurement tool movement.

As a result of many years of MEMS research and development at SPP, this product has achieved a diameter of desirable 30 mm with high accuracy, taking advantage of the MEMS-type "small size, light weight, and low power consumption". It is possible for customers to manufacture a measuring tool with a diameter of 40 mm, which is one of the diameter standards for downhole resource mining.

This product targets to mine the precious metals and rare metals with reduced energy consumption which are essential for spreading electric vehicles for carbon free society. In addition, we believe that it can contribute to a safe and comfortable life in applications such as the pipeline mapping required for maintenance of electric wire pipes and water pipes, and controlling the attitude of railway vehicles.

Toward the promising future, SPP will continuously develop MEMS-type gyro sensors and inertial sensor systems in order to meet markets and customer's needs, wants and demands.

*1 Based on our research as of March 2021

<Contacts on this product>

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It will be sold by our affiliate companies below.

<Asia and Oceania> Silicon Sensing Systems Japan Co., Ltd. (Amagasaki, Hyogo, Japan)

<EU and North America> Silicon Sensing Systems Ltd. (Plymouth, UK).



Northfinder™ 「GCAH-1X」



<Reference >

Product Name	GCAH-01 (conventional model)	GCAH-1X ^{※2}	Ratio ^{※3}
Size	2,142cm ³ (8.6x7.5x34)	184cm³(Φ3x26)	-91%
Weight	2,000g	400g	-80%
Power Consumption	8.0W	1.5W	-81%
Azimuth accuracy	1°	1°	—
Measuring time	240 seconds	90 seconds	-62%

※2 GCAH-1X is a new product which achieves the smallest MEMS-type size with the same highest accuracy as GCAH-01.

※3 Ratio (%): (GCAH-1X - GCAH-01) / (GCAH-01)

■ Silicon Sensing Systems Ltd.

Silicon Sensing Systems Ltd. was formed in 1999 for development, manufacturing and sales of MEMS gyro sensors and accelerometers. As a market leader in the navigation and attitude control fields of silicon MEMS (Micro Electro Mechanical Systems), Silicon Sensing Systems have supplied approximately 40 million MEMS gyro sensors and accelerometers to a large number of customers.

■ Silicon Sensing Systems Japan Co., Ltd.

Silicon Sensing Systems Japan Co., Ltd. is a Japanese subsidiary of Silicon Sensing Systems, a sales company in charge of the Asia-Pacific region. Its head office is located on the premises of Sumitomo Precision Products Amagasaki Head Office.