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CES 2018: Bosch launches BMA400 ultra-low power accelerometer for wearables and IoT applications

Significantly enhanced battery life for always-on devices

- ▶ Ultra-low power consumption combined with high performance
- ▶ Intelligent power management for battery-powered devices
- ▶ Built-in step counter drawing only 4 μ A
- ▶ BMA400 received CES 2018 Innovation Award
- ▶ Bosch booth at CES: Las Vegas Convention Center, Central Hall, #14028

At the 2018 Consumer Electronics Show (CES) in Las Vegas, USA, Bosch Sensortec is launching the BMA400, an ultra-low power acceleration sensor for wearables and Internet of Things (IoT) applications. The BMA400 draws ten times less current than existing accelerometers while delivering solid high performance. Its greatly reduced power demand significantly extends battery lifetime, especially on coin cell-powered devices. These qualities have won the BMA400 acceleration sensor from Bosch Sensortec a [CES 2018 Innovation Award](#) in the category Embedded Technologies.

Ultra-low power plus high performance

Usually, accelerometers have to choose between low power and high performance. The BMA400 now offers the best of both worlds: its combination of low power consumption, outstanding performance and advanced features is unrivalled by any other device in the market today – by a wide margin.

Due to continuous measurement, the sensor's high-quality measurement signal has precisely defined cutoff frequencies, making it very resistant to vibrations. This is particularly useful in IoT use cases such as smart home security systems, where the BMA400 can distinguish between real alarm situations like broken glass and false signals coming from random vibrations. Therefore, false alarms

triggered by vibrations coming from the outside environment, such as construction works, are easily prevented.

Intelligent power management for battery-driven devices

Due to its ultra-low current step counter at only 4 μA and intelligent power management features like built-in activity recognition, the BMA400 can effectively help wearable devices such as fitness bands, smart clothes, watches and activity trackers to achieve unprecedented battery life.

To further extend battery life, the BMA400 wakes up automatically only when it detects motion and goes back into sleep mode when the motion recedes. This function finds its use especially in ultra-low-power IoT applications powered by coin cells, i.e. smart window sensors in indoor climate control or security systems.

The small size of only 2.0 x 2.0 x 0.95 mm³ and the integrated plug and play step counter make the new BMA400 acceleration sensor easy to design into various applications. This decreases time-to-market, simplifying the addition of step counting functionalities to new types of wearables such as regular watches and jewelry, to give new products the leading edge.

“The BMA400 is the perfect solution for wearable and IoT applications that aim to significantly extend battery lifetime without compromising on performance,” says Dr. Stefan Finkbeiner, CEO of Bosch Sensortec. “By substantially extending the battery replacement interval, the BMA400 gives the end-user improved reliability, ease of use and a greater peace of mind.”

Additional product features

With its built-in voltage regulator, the BMA400 delivers stable performance over a wide supply voltage range. It offers flexible device tuning for power consumption, noise and ODR (output data rate) parameters. The BMA400 has a current consumption of 14 μA at highest performance, continuous measurement and a noise density of 220 $\mu\text{g}/\sqrt{\text{Hz}}$. This falls to just 1 μA and below in the ultra-low power self-wake-up mode. The new sensor further includes a large FIFO of 1 KB. Further information on the BMA400 can be found in the [BMA400 video](#) on the Bosch Sensortec YouTube channel and on the [Bosch Sensortec website](#).

Availability

The BMA400 will be available for OEMs and distributors starting in June 2018. C-samples for OEMS are available on demand.

Bosch at CES 2018:

- **PRESS CONFERENCE:** In Ballrooms B, C, and D, Mandalay Bay Hotel, Las Vegas **South Convention Center, Level 2**, from **8:00 to 8:45 a.m. local time on Monday, January 8, 2018.**
- **BOOTH:** Tuesday to Friday, January 9–12, 2018, in the Central Hall, booth #14028
- **FOLLOW** the Bosch CES 2018 highlights on Twitter: **#BoschCES**
- **PANELS WITH BOSCH EXPERTS:**
 - **Tuesday, January 9, 1:30 – 3:15 p.m.** (local time)
“[Connect2Car: Next-Gen Automobility](#)” session with Kay Stepper, Vice President of Bosch in North America, head of driver assistance and automated driving,
Las Vegas, Convention Center, North Hall, N256
 - **Wednesday, January 10, 2018, 1:45–2:30 p.m.** (local time)
“[Connected Vehicles in Connected Ecosystems](#)” session with Mike Mansueti, President Bosch North America,
Smart Cities Conference, Westgate.
 - **Thursday, January 11, 2018, 11:30 a.m to 12:30 p.m.** (local time)
“[The Future of Robots at Work and Home](#)” session with Phil Roan, Senior Engineer Robotics, BSH Hausgeräte GmbH,
Las Vegas Convention Center, North Hall, N258

Press photos: #1167091, #1257453, #1167093, #1167094, #1259437

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Bosch Sensortec GmbH, a fully owned subsidiary of Robert Bosch GmbH, develops and markets a wide portfolio of microelectromechanical systems (MEMS) sensors and solutions tailored for smartphones, tablets, wearable devices and IoT (Internet of Things) applications. The product portfolio includes 3-axis acceleration, gyroscope and geomagnetic sensors, integrated 6- and 9-axis sensors, environmental sensors, optical microsystems and a comprehensive software portfolio. Since its foundation in 2005, Bosch Sensortec has emerged as the MEMS technology leader in the markets it addresses. Bosch has been both a pioneer and a global market leader in the MEMS sensor segment since 1995 and has, to date, sold more than 9 billion MEMS sensors. More than every second smartphone worldwide uses a Bosch Sensortec sensor.

For more information, please visit www.bosch-sensortec.com, twitter.com/boschMEMS

The Bosch Group is a leading global supplier of technology and services. It employs roughly 390,000 associates worldwide (as of December 31, 2016). The company generated sales of 73.1 billion euros in 2016. Its operations are divided into four business sectors: Mobility Solutions, Industrial Technology, Consumer Goods, and Energy and Building Technology. As a leading IoT company, Bosch offers innovative solutions for smart homes, smart cities, connected mobility, and connected manufacturing. It uses its expertise in sensor technology, software, and services, as well as its own IoT cloud, to offer its customers connected, cross-domain solutions from a single source. The Bosch Group's strategic objective is to deliver innovations for a connected life. Bosch improves quality of life worldwide with products and services that are innovative and spark enthusiasm. In short, Bosch creates technology that is "Invented for life." The Bosch Group comprises Robert Bosch GmbH and its roughly 440 subsidiaries and regional companies in some 60 countries. Including sales and service

partners, Bosch's global manufacturing and sales network covers nearly every country in the world. The basis for the company's future growth is its innovative strength. At 120 locations across the globe, Bosch employs some 59,000 associates in research and development.

The company was set up in Stuttgart in 1886 by Robert Bosch (1861-1942) as "Workshop for Precision Mechanics and Electrical Engineering." The special ownership structure of Robert Bosch GmbH guarantees the entrepreneurial freedom of the Bosch Group, making it possible for the company to plan over the long term and to undertake significant upfront investments in the safeguarding of its future. Ninety-two percent of the share capital of Robert Bosch GmbH is held by Robert Bosch Stiftung GmbH, a charitable foundation. The majority of voting rights are held by Robert Bosch Industrietreuhand KG, an industrial trust. The entrepreneurial ownership functions are carried out by the trust. The remaining shares are held by the Bosch family and by Robert Bosch GmbH.

Additional information is available online at www.bosch.com, www.iot.bosch.com, www.bosch-press.com, www.twitter.com/BoschPresse.