



Class-leading Onboard Battery Charger Strengthens BorgWarner's EV Systems Leadership

- *Pioneering silicon carbide technology gives charger best-in-class power density*
- *Compatible with all battery chemistries and voltage ranges of up to 800 volts*
- *Maximum-quality engineering and world-leading manufacturing capability*

Auburn Hills, Michigan, May 16, 2019 – BorgWarner introduces its state-of-the-art Onboard Battery Charger (OBC), adding to the company's impressive portfolio of technologies for plug-in hybrid and pure-electric vehicles. This technology uses pioneering silicon carbide technology and is best in class for power density, power conversion efficiency and safety compliance. The OBC is installed in hybrid or electric vehicles to convert alternating current (AC) from the power grid to direct current (DC) for charging batteries. This exciting technology accepts an extended range of AC inputs including 7.4 kilowatt (kW), 11 kW and 22 kW power ratings with DC-to-DC converter rating integration from 2.3 kW to 3.6 kW as an option. Most importantly, it is compatible with all battery chemistries and voltages of 400 volts, 650 volts and 800 volts.

"Our technical center in Lugo, Italy, is dedicated to designing Onboard Battery Chargers that are uncompromisingly suitable for the global electric and hybrid vehicle markets," said Joel Wiegert, President and General Manager, BorgWarner Morse Systems. "We are proud that our latest offering with its silicon carbide technology provides maximum power conversion efficiency, thus saving energy and delivering an extended range for vehicle manufacturers and their customers."

BorgWarner OBCs have a wide range of charging powers and capabilities. The OBC with a rated charging power of 7.4 kW can also be used for charging powers of 1.8 kW, 3.3 kW and 6.6 kW and uses a single-phase supply from the power grid. The OBC with a rated charging power of 11 kW is more efficient with its three-phase grid supply and fast charging strategy, while the onboard charger rated at 22 kW is even more efficient with its three-phase supply and therefore much faster charging.

BorgWarner OBCs are designed to meet the standards for use in many countries and regions including the US, the EU, Japan, and China. They have good isolation between main input and DC output, are waterproof and dustproof, have an ISO 26262 safety rating and are contained in a liquid-cooled IP6K96 enclosure.

For future applications, BorgWarner's engineering team is targeting further advances in power density, charging power, efficiency, volume weight, power factor and the adjustment of safety levels to meet various national and regional standards.

About BorgWarner

BorgWarner Inc. (NYSE: BWA) is a global product leader in clean and efficient technology solutions for combustion, hybrid and electric vehicles. With manufacturing and technical facilities in 68 locations in 19 countries, the company employs approximately 30,000 worldwide. For more information, please visit borgwarner.com.



BorgWarner's new Onboard Battery Charger converts AC electricity to DC for charging batteries in hybrid or electric vehicles.

BorgWarner Inc. (Class-leading Onboard Battery Charger Strengthens BorgWarner's EV Systems Leadership_EN) – 3

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