



ZF and Danfoss Seal Strategic Partnership

- **New joint R&D initiative at the interface between power modules and inverters**
- **Danfoss awarded automotive traction power modules supply contract for ZF volume production projects**

Schweinfurt/Nordborg. ZF Friedrichshafen AG and Danfoss Silicon Power GmbH have stepped up their existing cooperation with a new strategic partnership for silicon- and silicon-carbide power modules. The partners plan to improve the efficiency of electric drivelines by leveraging engineering and cost benefits at the interface between power modules and inverters.

"This is a robust long-term partnership that enables ZF and Danfoss to pool their strengths. Coming together on this opens up significant innovation potential to improve the technical and commercial competitiveness of our inverters. We will utilize this advantage in all our drivetrain applications, from hybrid up to full electric applications," explains Jörg Grotendorst, Head of ZF's E-Mobility Division.

The partnership will see the two companies engage in joint research and development, with Danfoss also supplying power modules for silicon applications. One of the first major milestones in this new initiative is a supply contract for Danfoss power modules destined for large-scale ZF volume production projects. Beside 400 Volt standard applications the two companies have also begun co-developing an 800 Volt Silicon Carbide power module for a large volume production project, aiming to position themselves at the forefront of this new segment.

ZF's E-Mobility division supplies electric drive systems and components, while Danfoss Silicon power GmbH (DSP) is a specialist in silicon and silicon-carbide power modules. By joining forces to produce innovative open technology solutions for e-mobility drivelines, they aim to make a vital contribution to cutting vehicle emissions. In electric and hybrid



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vehicles, power modules control the efficiency of the energy supply to the drive, battery and onboard electronics. This means that the development of space-saving inverters and more efficient power modules is crucial to reducing emissions over the long term.

“We are proud to join this partnership with ZF. We believe this closer cooperation between Danfoss and ZF has the potential to be a game changer for the development and innovation of future drivetrains for electrification of vehicles. Together we can enable an acceleration of the transition of the transport sector,” Kim Fausing, CEO of the Danfoss Group concludes.

Danfoss' power modules could also use power-chips developed by ZF in the recently announced cooperation with semiconductor specialist Cree. As one of the leading manufacturers of electromobility solutions, ZF aims to further advance electric driveline technology through the strategic partnerships.

Since January 2016, ZF has bundled its electromobility activities in the E-Mobility Division headquartered in Schweinfurt, Germany. More than 9,000 employees work in this division, spread across various locations around the world.

Danfoss Silicon Power is a subsidiary of the Danfoss Group, the largest industrial company in Denmark. For decades, Danfoss Silicon Power has been helping top tier manufacturers and system suppliers meet stringent reliability, design and cost targets by designing, developing and manufacturing customized power modules for automotive, industrial and renewable applications.

Caption:

Harald Deiss, Head of ZF Business Unit Electronic Systems, Jörg Grotendorst, Head of ZF Division E-Mobility, Kim Fausing CEO Danfoss Group, Claus A. Petersen, Head of Danfoss Silicon Power signing the partnership



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Photo: ZF

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ZF Friedrichshafen AG

ZF is a global leader in driveline and chassis technology as well as active and passive safety systems. The company has a global workforce of 148,000 with approximately 230 locations in some 40 countries. In 2018, ZF achieved sales of €36.9 billion. ZF is one of the largest automotive suppliers worldwide.

ZF allows vehicles to see, think and act. The company invests more than six percent of its sales in research and development annually – in particular for the development of efficient and electric drivelines and also in striving for a world without accidents. With its broad portfolio, ZF is advancing mobility and services in the passenger car, commercial vehicle and industrial technology sectors.

For further press information and photos, please visit: www.zf.com.

Danfoss A/S

Danfoss engineers advanced technologies that enable us to build a better, smarter and more efficient tomorrow. In the world's growing cities, we ensure the supply of fresh food and optimal comfort in our homes and offices, while meeting the need for energy-efficient infrastructure, connected systems and integrated renewable energy. Our solutions are used in areas, such as refrigeration, air conditioning, heating, motor control and mobile machinery. Our innovative engineering dates back to 1933 and today Danfoss holds market-leading positions, employing 27,000 people and serving customers in more than 100 countries. We are privately held by the founding family.

Read more about us at www.danfoss.com