Increasing demands for efficiency are forcing OEMs to find new solutions to reduce energy consumption. Often the most economical way is to increase motor efficiency and apply speed control.

Responding to these needs, ABB launched its magnet-free IE4 synchronous reluctance (SynRM) motor technology in 2011. Even though the IE4 efficiency level was not officially established until the beginning of 2014, some industry segments are already requiring efficiency levels above IE4. ABB's answer to these demands is to extend the award winning SynRM technology. The new SynRM² technology platform can further reduce motor losses by 20% - often considered to be the difference between IE classes – enabling IE5 Ultra Premium efficiency to be achieved. For OEMs this avoids the need for costly design changes to their product.

**Ferrite assisted synchronous reluctance motor and drive concept**

The new technology platform utilizes permanent magnets but avoids the need for the expensive rare earth magnets used in conventional permanent magnet motor technology. Rare earth magnets can deliver very high performance, but the cost of the magnets makes the motors very expensive. ABB's approach uses cost-effective ferrite magnets to further improve the performance of the SynRM motor concept. Performance is increased to practically the same level as in rare earth permanent magnet motors, but ferrite magnets are more cost effective and easier to source. The result is an offering that is economically and ecologically more sustainable.

The focus of the new technology platform is in the 1 – 15 kW power and 1000 – 4000 rpm speed ranges.

The new SynRM² technology platform offers great flexibility, enabling technical and commercial characteristics to be optimized to meet customer requirements. All ABB motor-drive packages are tailored on the basis of customer specifications.

**Unique ABB package benefits**

Both the motors and drives are manufactured and supplied by ABB, meaning that we take full responsibility for ensuring a perfect match.

Our state-of-the-art efficiency measurement capabilities mean that very accurate data is available for the full motor-drive package. Reliable efficiency data for the drive system is crucial for successfully optimizing the energy consumption of the overall equipment.

**Broad hardware portfolio and application expertise**

The new technology concept can be applied to a variety of ABB hardware platforms in order to find the most suitable customer specific offering.

Contact us:
www.abb.com/motors&generators
www.abb.com/drives

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