

Tutorial-2: Sunday, 23<sup>rd</sup> August 2020, 09:00-11:30 CET.

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## Advanced Testing of Inverter-fed Drives

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### Tutorial Abstract:

The concern for energy saving has drawn the attention of industry on more efficient inverter-fed drives in the industrial applications, transportation, power generation and home appliances. In order to achieve maximum efficiency with minimum size and costs, the inverter and the electrical machine must be very well matched to one another. A new inverter or machine design must be properly tested to check if the inverter-fed drive fulfills the requirements of the application since the nameplate data and the rated parameters are not enough to evaluate performance. Therefore, the inverter and the machine should be properly characterized and different parameters must be identified. For this purpose, an overview of the necessary measurement methods and some intelligent evaluation methods are presented in this tutorial.

The tutorial is addressed to industry R&D centers and academia and presents an advanced testing method of inverter-fed drives using a high-speed, high-precision data recorder that represents “all-in-one” measuring tool, including electrical quantities (voltage, current) measurement and mechanical (torque, speed, position) quantities.

### Biographies:



**Dr. Johannes Teigelkötter** is a teaching and researching Professor in the fields of electrical machines, power electronics and drives at University of Applied Sciences Aschaffenburg, Germany. He studied electrical power engineering and received the Dipl.-Ing. (FH) degree at the University of Applied Sciences Düsseldorf in 1986. From 1986 to 1991 he worked as a development engineer in the field of power electronics and instrumentation at ABB in Lampertheim, Germany. After that, he worked as research assistant at the Ruhr-University Bochum, where he received the PhD (Dr.-Ing.) degree in 1996. From 1996 to 2000 Mr. Teigelkötter worked as a development engineer in drive technology for locomotives at Siemens, Erlangen, Germany.



**Dipl.-Ing. Klaus Lang** is Business Development Manager for Electric power testing at Hottinger Bruel & Kjaer (HKB) in Darmstadt, Germany. He studied Telekommunikations at the University of the German Telekom in Dieburg. Then he joined GOULD as a Product Specialist for paper recorders, later digital data recorders. Later at NICOLET, and then at LDS, he was Product Manager for transient recorders and digital storage oscilloscopes. Since HBM (now HBK) acquired LDS in 2009, he is responsible as Business Development Manager for “Electric Power Testing”.