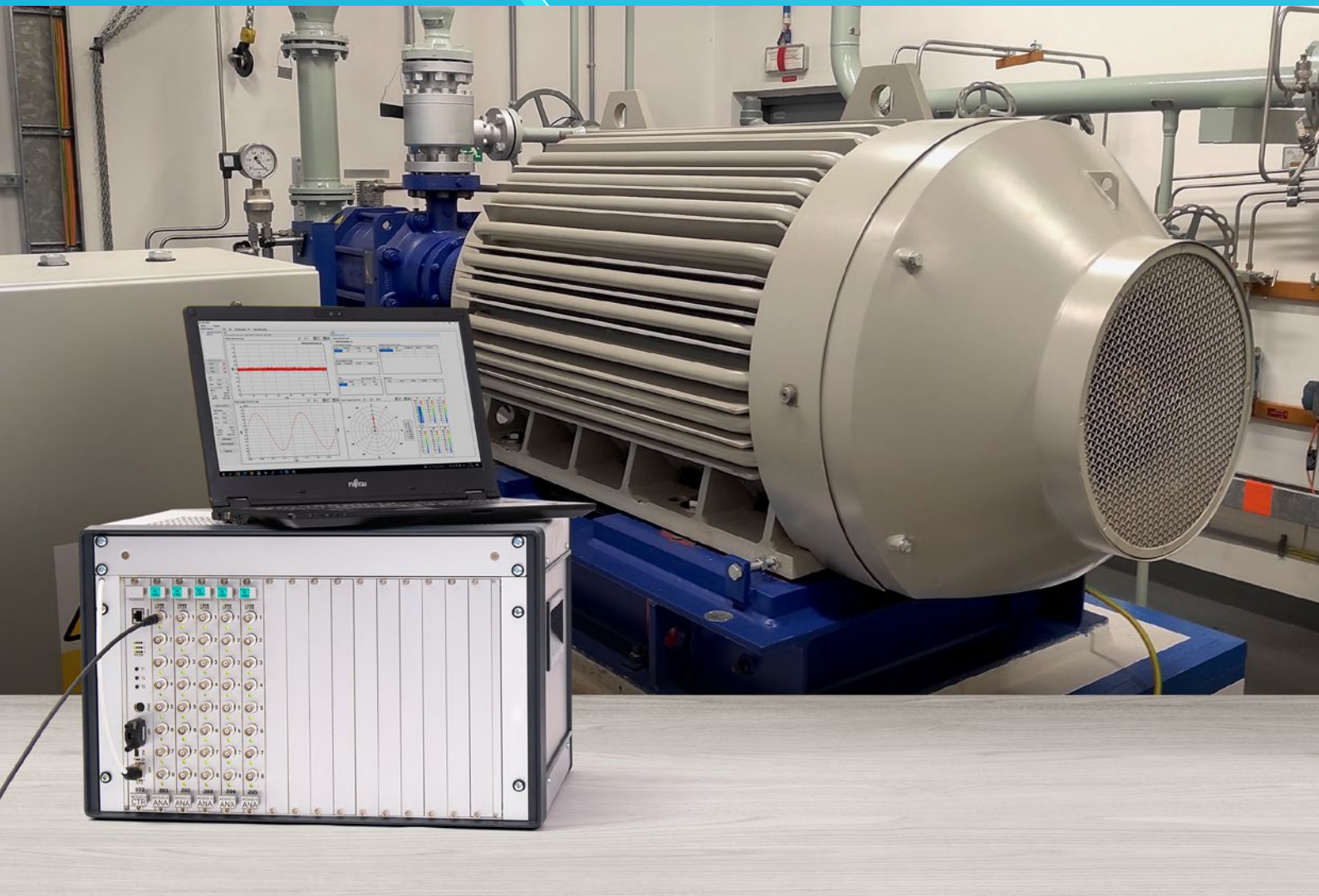




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MOSAD[®]-ESAT

Operational diagnostics of asynchronous motors

Advanced diagnostic methods used in industrial operations with asynchronous motors allow for detecting unexpected motor failures and thus preventing serious economic losses.

To determine the state of induction motors under the actual operational conditions, TES uses a special diagnostic SW application MOSAD[®]-ESAT (Electrical Signature Analysis Toolbox) developed by TES in cooperation with the Brno University of Technology (VUT). An analysis of the tally of the electrical parameters in the motor in operational conditions allows for obtaining complex information about the motor condition without having to carry out unscheduled shutdowns of the generating set.

MOSAD[®]-ESAT

Benefits

- Detecting the state of motor in operational conditions without shutdowns of the operational process.
- Specification of fault type.
- Regular diagnostics.
- Measurement reports.
- Comparison of current measurement results with historical data.



An overview of diagnostic methods included in MOSAD[®]-ESAT SW application

1. Parameter analysis of power voltage and current.
2. Voltage and current asymmetry.
3. Harmonic distortion.
4. Motor load determination.
5. Harmonic, negative, zero sequence component of current and voltage.
6. MCSA Frequency analysis (Motor Current Signature Analysis).

Description of measurement process

- High-quality record of current electrical parameters under maximum operational load.
- Data record check, data compilation and transfer into the format of the diagnostic application.
- Motor parametrization in the diagnostic application according to the technical parameters of the motor.
- Evaluation of the relevant diagnostic method.
- Comparison with the previously recorded data of the relevant diagnostic method.

Brief technical description

The calculations for each diagnostic method are carried out automatically after recording the measured data based on the primary parametrization of the motor.

After the analysis of preliminary results, a competent person performs a necessary optimisation of parameter correction, allowing for more precise determination of the motor operating point.

Options for use

Basic – based on the single-phase current records, the MCSA analysis can be performed. The motor condition is evaluated through the presence of specific frequencies in the area of rotor bars, eccentricity and motor setting.

Complex – if three-phase current and voltage records are available, a complex characteristic of the motor condition can be performed by implementing all the other diagnostic methods included in the MOSAD[®]-ESAT SW application.

