JAT JENAER ANTRIEBSTECHNIK

Implement complex drive applications cost-effectively and easily

with integrated **Technology Functions** in the JAT servo amplifier

The engineering software ECOSTUDIO® supports a wide range of standard and optional technology functions. The listed functions are an excerpt and can be implemented with the following drive components:

- ECOVARIO® 114D
- ECOVARIO® 616
- ECOVARIO® 616D
- ECOMPACT® E100
- ECOMODUL

With the engineering tool ECOSTUDIO® you can easily set up and control your drive system depending on the machine task. For application-specific drive solutions, numerous standard and optional technology functions are available in the software of the servo drive. Thanks to the direct access to the internal parameters of the servo amplifier, the machine can be quickly and flexibly adapted to the task without programming.

Sensorless Control - Optimal control of applications without an encoder

- **Cost-saving** – No cost-intensive components
- **Reliable** – No sensitive hardware
- **Flexible** – Small space
- **Available**

The sensorless control is particularly suitable for velocity applications, such as belt drives. Encoder, cable and related electronics are not needed. In addition, the required space is reduced and opens up freedom in machine design. The encoder is replaced by sensorless velocity control with mathematical calculations.

Velocity Observer - Optimize the drive system quickly & cost-effectively

- **Optimized performance** – Better synchronization
- **Reliable** – Better control of disturbances
- **Cost-saving** – Encoder with low resolution can be used
- **Available**

In applications with low encoder resolution and velocity, the velocity observer allows you to optimize the dynamics of the drive system. The velocity observer makes it possible to dampen mechanical resonance effects and to minimize tracking errors.

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Active Load Compensation - Remove resonances in the drive system quickly and inexpensively

- **Cost-saving**
  No mechanical adaptations
- **Reliable**
  Higher contour accuracy
- **Optimized performance**
  Improved dynamics
- **Available**

Load shifts cause resonances in the mechanics. Negative effects on the position and velocity control can be eliminated with active load compensation. Disturbances are actively compensated.

Rotary Table Function* - Implement rotary table applications quickly and easily

- **Cost-saving**
  No external controller required
- **Faster commissioning**
  No programming required
- **Flexible**
  Endless relative movement possible
- **Available**

The rotary table function enables easy commissioning and intuitive operation of the positioning of rotary tables in the range of 0-360 ° as well as multiple revolutions. The rotary table function includes the configurable "modulo function" and the function "positioning by the shortest route.

* also implemented in JAT 1-axis servo amplifiers

Dancer Control - Realize winding applications quickly and easily

- **Cost-saving**
  No external controller required
- **Faster commissioning**
  Winding process without programming
- **Reliable**
  Web speed - highest consistency
- **Available**

With this function, you quickly and cost-effectively realize winding applications for the constant supply of materials. For constant web speed or tension, an additional control can be saved, taking into account the position of so-called dancers.

System Analysis - Automatically analyze drive system for optimization

- **Cost-saving**
  No cost-intensive components required
- **Faster commissioning**
  Automatic parameter determination
- **Reliable**
  Optimal controller parameters
- **Under preparation**

The system analysis helps to understand the drive system and enables you to analyze the entire system automatically and quickly. It helps to discover potential for improvement. At the click of a mouse, mechanical parameters such as the type of mechanics, dominating resonance and anti-resonant frequencies, stiffness and moments of inertia on the motor and load side can be determined. By means of the analyzed parameters, for example, a controller optimization is possible.

System Filter - Optimize drive system quickly & cost-effectively

- **Reliable**
  Automatic compensation of resonances
- **Optimized performance**
  Improved dynamics & accuracy
- **Under preparation**

This function optimizes your drive system by targeted damping of system resonances. The mechanical couplings of the drive elements lead according to their rigidity and damping to resonances in the drive train, which limit the control in terms of speed and accuracy.
Ideally, the system filter can be used in conjunction with the technology function System Analysis.

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