Beckhoff extends servomotor range with the AM3500 series

Higher moment of inertia without an additional gear unit

Beckhoff extends its Drive Technology range with the AM3500 servomotor series. In contrast to current trends, these new servomotors have a higher moment of inertia, making them particularly suitable for machine tool axes with stringent synchronism requirements. They are also ideal for applications with higher inertia, such as rotary tables, for example – without the need for an additional gear unit.

Against the trend: The AM3500 servomotors from Beckhoff have a higher moment of inertia, making them particularly suitable for machine tool axes with stringent synchronism requirements or applications with higher inertia.

The low-inertia servomotors from the Beckhoff AM3000 series, which are based on new material and manufacturing technologies, are predominantly used in highly dynamic motion applications. The aim of most motor development efforts is to generate more torque with a design that is as compact as possible. The challenge is that loads to be moved do not decrease accordingly – on the contrary, with each machine generation, the trend is toward ever higher loads. The aggravation of the inertia ratio between load and motor has a negative impact on control quality – in extreme cases, the mechanical system can become unstable. The inertia ratio can be optimized through suitable gearing. However, this reduces the maximum possible speed, which means that in many applications, the required velocity can no longer be reached so a larger motor and controller have to be used. Beckhoff presents the new AM3500 motor series in order to avoid the associated higher costs.

The AM3500 motors are particularly suitable for highly dynamic applications with high loads, for machine tool axes or gearless applications. In conjunction with higher rotor inertia, they offer the same benefits as the AM3xxx motor series such as the pole-wound stator winding, which significantly reduces the overall motor size. The flanges, connectors and shafts of the new AM3500 series are compatible with the tried and tested AM3000 motors. The new AM3500 models are available with flange sizes 3 to 6 and torques between 1.9 and 15 Nm. The rated speed range is 3,000 to 6,000 rpm. Resolvers or absolute encoders (single- or multi-turn) are available as a feedback system. The standard protection class is IP 64; IP 65/67 is available as an option. This motor series is CE-, UL- and CSA-listed.

→ www.beckhoff.com/am3500