FANUC

Accurate robots for high-precision applications

FANUC Secondary Encoders

Benefits of using extra encoders:

- ultra-high levels of accuracy and repeatability
- controls vibration and overshoot
- reduces robot deflection
- compensates for bending due to torque
- features reliable optical detection

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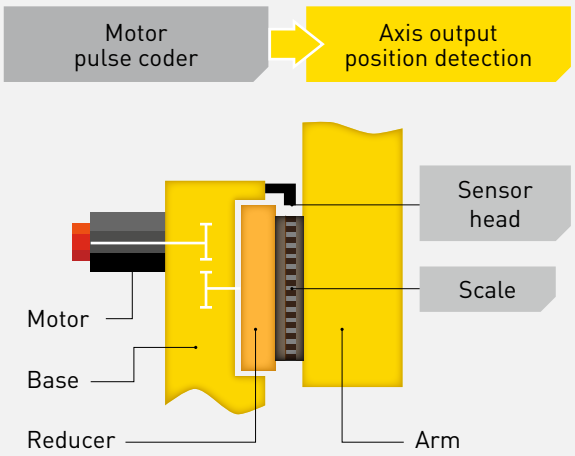
Maximum precision and stiffness

To further enhance the accuracy of a robot on critical processes demanding ultimate precision it is feasible to use a FANUC Secondary Encoder. FANUC robots equipped with optional secondary encoders are specifically designed for processes, such as flow screw drilling, roller hemming or aerospace applications, that require robots to exhibit a high degree of mechanical rigidity and accuracy.



Eliminates error caused by reducer/gear backlash and distortion by detecting the position of the axis output

Deviation compensation

Next to the primary encoder, which measures the input side of the robot's drive train, the secondary encoder measures deviations caused by torque and pressure on the tool and compensates for these by controlling the robot's position at slow speeds or in the end position. Secondary encoders identify vibration and amplitude quicker than primary encoders, enabling them to provide fast, accurate control of vibration and overshoot.

Accuracy enhancement

In addition to the motor position detection by pulse coder, the Accuracy and Stiffness Enhancement Function uses a position detection device located on each robot axis to execute positional control. This device ensures maximum accuracy and stiffness by eliminating the effects of the backlash and distortion caused by the gears and reducers.

Reduced deflection

Skate compensation corrects for bending caused by torque on the robot's mechanical components. It also reduces robot deflection caused by external forces applied during the process. An LED light indicates when the deflection measurement scale has become dirty and needs cleaning.

Reliable position detection

Using Renishaw Optical Detection, pictures of a coded scale located on the robot's axes are analysed via high-speed DSP to determine the absolute position of the tool. A built-in position check algorithm constantly monitors calculations for ultimate safety and reliability. The absolute position is determined immediately upon switch-on.

NEW
FANUC Secondary Encoders are soon to be available on other robot models.

Learn more about FANUC's functions for enhanced intelligence, motion, safety and productivity.
www.fanuc.eu/accessories