

Encoders - Absolute Vs. Incremental

DESCRIPTION:

Encoders

Positioning tasks require precise position values to monitor or control motion activity. In many applications position sensing is done using rotary encoders, also called shaft encoders or simply encoders. These sensors transform a mechanical angular position of a shaft into an electronic signal that can be processed by a control system.

Incremental Rotary Encoders

For decades, CNC plasma and oxy-fuel cutting machines have been configured with incremental encoders. Incremental encoders lose positional information whenever power is removed from the CNC control system or the servo drives. As a result, the machine must be re-homed to a reference point whenever power is turned off.

Absolute Rotary Encoders

Park Industries configures all CNC controlled machines with absolute encoders. Absolute encoders are homed by the installing technician when the machine is initially commissioned. From then on, Park Industries machines do not require homing - even if power to the CNC or servo drives is interrupted. Absolute encoders provide positional information even for movements that occur while the system is without power. Accurate positional values are available once the encoder is powered up again.

BENEFITS OF ABSOLUTE ENCODERS:

- No homing necessary after power loss or E-stop
- No interruption of work position on power loss
- Daily re-homing of the machine is not required
- No need to remember or follow unnecessary shut-down or power-up procedures



Examples of absolute encoders