Application Note No. AP_2009/42_1e

Date: 14.10.2009
Author: Stefan Grandel / Stefan Leimer

Topic: Connection of the analog tracks of an absolute encoder

⚠WARNING

Uncontrolled movements of the motor shaft!

Because of faulty connected absolute encoders a not controllable drive system is generated. This can cause extremely dangerous movements of the machine axis!

At absolute encoders like

- S-type encoder
- T-type encoder
- E-type encoder
- F-type encoder
- P-type encoder
- Q-type encoder

the encoder tracks are not allowed to be connected in a interchanged or a reversed poled way. If the terminal has been interchanged or reversed poled the digital track in the encoder and in the calculated analog track of the controller unit run the reverse way. The result of this is that the position and the commutation can not be related clearly and the motor can not be controlled.

countermeasures:

- Connect the encoder as of the manufacturer destined.
- To reverse the direction of rotation do **NOT** change 2 encoder tracks and 2 motor phases as in the handling of the I-type encoder.
- Check during the motor is free of torque, by manual movement of the motor shaft, if the control loop sense is correct. (positive sense of rotation in turning clockwise direction with view on the motor shaft has to bring a rising positive actual position value)