

Twincat Library: CNC Rotational Axis

Application Note

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Table of Contents

1 Target and Purpose.....1	3 TwinCAT configuration.....2
2 PLC Code.....2	4 Spindle G-Code.....2

1 Target and Purpose

The Triamec TwinCat library comes with a basic CNC configuration. This application note describes special settings for rotational axes.

2 PLC Code

There is a limitation of the spindle velocity because positions are usually controlled by the CNC-path-planner. The spindle might have to turn more than half a cycle between two calls of MAIN_FAST. Typical limits are

- MAIN_FAST sample time 0.5ms
- Modulo settings 360°
- Spindle max speed is 60000 rpm
- increasing modulo or decreasing sample time relaxes this limit
- higher speeds are possible, call Triamec

PLCSpindleOverride must be set in HMI/Options/CNC

3 TwinCAT configuration

SERCOS Settings

```
S-0-0032 = 11      Hauptbetriebsart
S-0-0044 = 2       Wichtungsart Geschwindigkeit
S-0-0076 = 130     Wichtungsart Lage
S-0-0103 = 3600000
S-0-0123 = 1000000 (?nötig?)
S-0-0033 = 2       (?nötig?) Nebenbetriebsart
```

Mark CNC-Axis as Spindle in TwinCat Configuration and set the axis mode kenng.achs_mode to 0x00304 in the cnc axis parameter list.

4 Spindle G-Code

Do not use S[G74]

```
M3 S5
S[REV100 POS45 M19 M3]
#CAX      ;Mainspindle used as positioning axis
F10
G1 X0 Y0 C3
#CAX OFF
```

To move more than one modulo, use relative mode G91

- in absolute mode, a positive sign means, move in positive sense
- in absolute mode, no sign means move the shortest way