

6.7.8. 10 Steps for cam generation

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Example:

- ◆ Electronic Cam with 2 standstill areas,
- ◆ Master signal is the internal virtual master.

6.7.8.1 Step 1: C3 ServoManager

- ◆ Install Compax3 ServoManager (Compax3-CD 840-100005) on your PC (it is recommended to un-install all previous versions beforehand).
- ◆ Install CamDesigner (Compax3-CD 840-100005).
- ◆ You need a RS232 cable (SSK1/xx) for the connection PC - Compax3 X10.

6.7.8.2 Step 2: Connect motor.

- ◆ Motor cable to Compax3 X3
- ◆ Feedback cable to Compax3 X13.

6.7.8.3 Step 3: Supply & I/O wiring

- ◆ AC supply (1 or 3 phase) to X1
- ◆ DC supply to X4
- ◆ Device enable by 24VDC on X4/Pin3
- ◆ The following digital inputs must be assigned:

Input 0 - Pin X12/6	24V = Enable of the power output stage
Input 1 - Pin X12/7	24V = Start machine zero
Input 2 - Pin X12/8	24V = Start virtual master
	0V = Stop virtual master
Input 4 - Pin X12/10	24V = select and start curve
Input 5 - Pin X12/12	24V = curve coupling
Input 6 - Pin X12/13	24V = curve decoupling
Input 7 - Pin X12/14	24V = Reset (ackn.)

6.7.8.4 Step 4: RS232 connection & C3 ServoManager

- ◆ Establish RS232 connection (cable SSk1/xx) between PC and C3 X10.
- ◆ Start C3 ServoManager

6.7.8.5 Step 5: Set Compax3 device type

- ◆ Compax3 device selection wizard, select type
- or
- ◆ Type online identification

6.7.8.6 Step 6: Configuration

Start configuration in the C3 ServoManager and configure Compax3.

- ◆ Set motor
- ◆ Braking Resistor
- ◆ External moment of inertia
- ◆ Reference System
 - ◆ Unit: Degrees
 - ◆ Travel distance per motor revolution numerator = 360°
 - ◆ Travel distance per revolution – Denominator = 1
 - ◆ Reset distance numerator = 360°
 - ◆ Reset distance denominator = 1
- ◆ Machine zero = mode 34
- ◆ Limit switch
- ◆ Jerk / Ramps
- ◆ Monitoring / Limits: Following error to 5°
- ◆ Encoder Simulation
- ◆ Variable (Recipe) List

6.7.8.7 Step 7: Selecting Master signal source

- ◆ Open entry of signal source (left side of the tree)
- ◆ Select master signal source: virtual Master
- ◆ Enter units and reset distance (360°)
- ◆ Rs485 settings

load configuration into Compax3.

6.7.8.8 Step 8: Generating the cam

Call up/process curve with the aid of the CamEditor

- ◆ Enter axis name
- ◆ Select signal source of virtual master
- ◆ Enter number of interpolation points: 360
- ◆ Enter motion law: dwell-to-dwell: "Modified Sine Line according to Neklutin"
- ◆ Start CamDesigner
- ◆ Under Menu File: New sequence. Select axis name
- ◆ Add 2 standstill areas: 0/360; 0/310; 50/360 (Path coordinate/clock angle)
- ◆ View path-time-diagram and optimize curve if needs be
- ◆ End CamDesigner via Menu:File:End
- ◆ Download of the curve into Compax3

6.7.8.9 Step 9: Create IEC program

- ◆ Start IEC development environment (in the tree on the left side under Programming: IEC61131-3 development environment)
- ◆ File, enter new project name
- ◆ Set target system: CoDeSys for C3 T40
- ◆ Open program example "cd\examables\10StepsToCam" in CFC.
- ◆ Save project
- ◆ Project translate everything
- ◆ Download of the IEC program into Compax3 (in the C3 ServoManager in the tree on the left side under Download: IEC61131-3)

6.7.8.10 Step 10: Starting and monitoring cam

Input 0 - Pin X12/6	24V = energize Compax3
Input 1 - Pin X12/7	24V = Starting the homing run
Input 2 - Pin X12/8	24V = Start virtual master
	0V = Stop virtual master
Input 4 - Pin X12/10	24V = select and start curve
Input 5 - Pin X12/12	24V = curve coupling
Input 6 - Pin X12/13	24V = curve decoupling
Input 7 - Pin X12/14	24V = Reset (ackn.)

Control status values in the IEC61131-3 - Debugger or in the oscilloscope (optimization window) (e. g. C3Cam.STATUSMASTER_Position, ...)