

SBD Servo Drive

SDSetup software is used to configure SBD drive: [:green_drive_motors:sdsetup.zip](#)

EtherCAT version ESI file: [:green_drive_motors:cmz_sbd_etc.zip](#)

TwinCAT application note: [:green_drive_motors:sdsetup-twincat_cmz_en.pdf](#)

CANopen version EDS file: [:green_drive_motors:sbdcan.zip](#)

ProfiNET version GSDML file: [:green_drive_motors:gsdml_sbd_ssd.zip](#)

TiA Portal application note: [:green_drive_motors:cmzdrivespnt_tiaportal.zip](#)

1) Specify a new motor using

A new motor can be added using File ⇒ User motors ⇒ Manage. Use [Datasheet Engine](#) to view the motor parameters.

Here below, for example the GD350XS motor parameters.

User motors

Name: Manufacturer:

Motor data

Model:	GD350XS
Motion type:	AC3 linear
Poles:	2 poles
Rated current:	2.61 A
Max current:	9.00 A
Mass:	1.00 kg
Inductance:	7.50 mH
Resistance:	7.650 ohm
Force constant:	73.0 N/A
Rated force:	191.0 N
Max force:	1242.0 N
Rated speed:	4.000 m/s
*Max speed:	4.400 m/s
*Max voltage:	1000.0 V
Pole pitch:	60 mm

Feedback sensor

Type:

Phasing offset: ° Phase polarity: °

Temperature sensor

Type:

Fault threshold: ohm

Overload protection

☒ Enabled

*Time: s

Brake

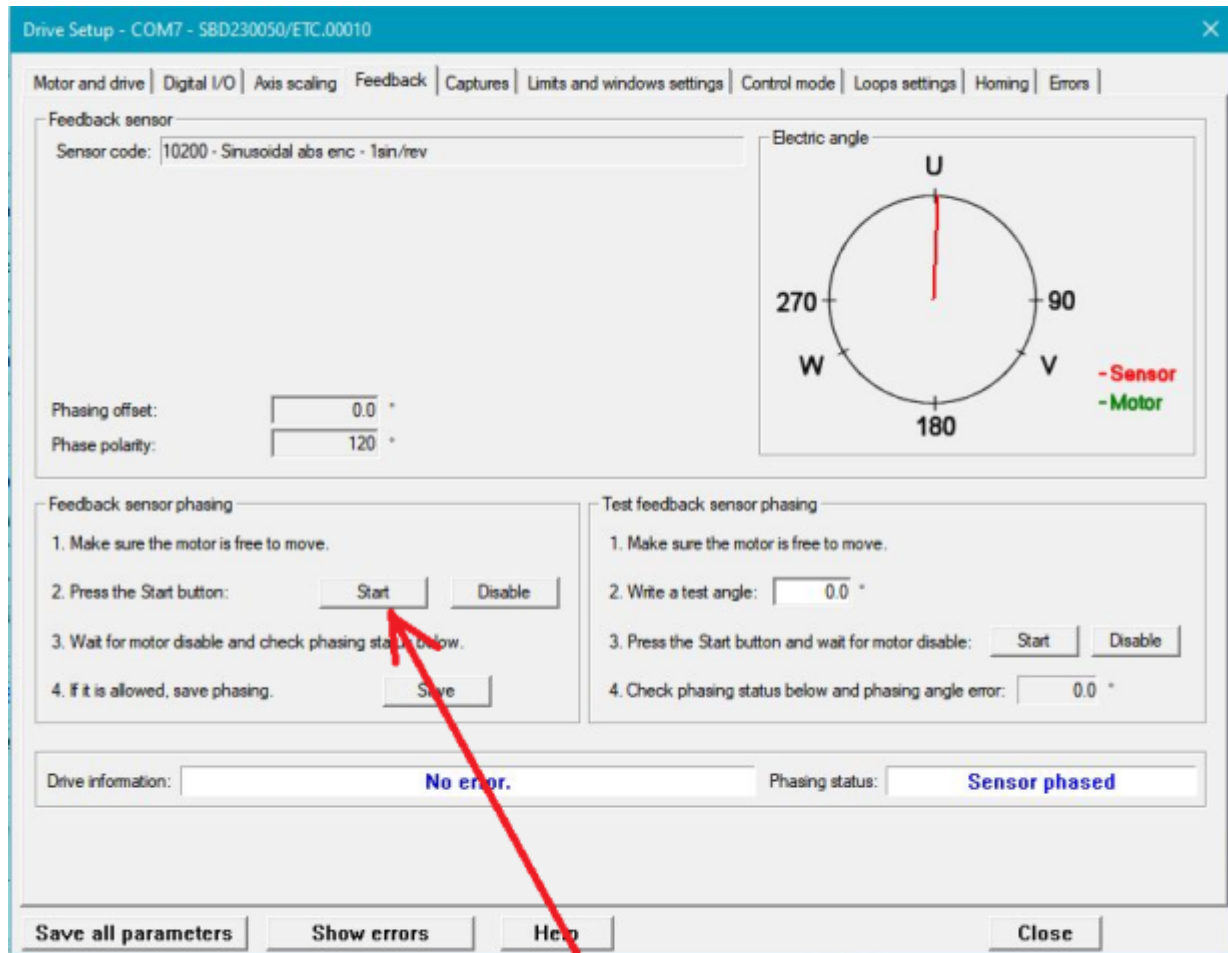
☐ Present

Opening time: ms

Closing time: ms

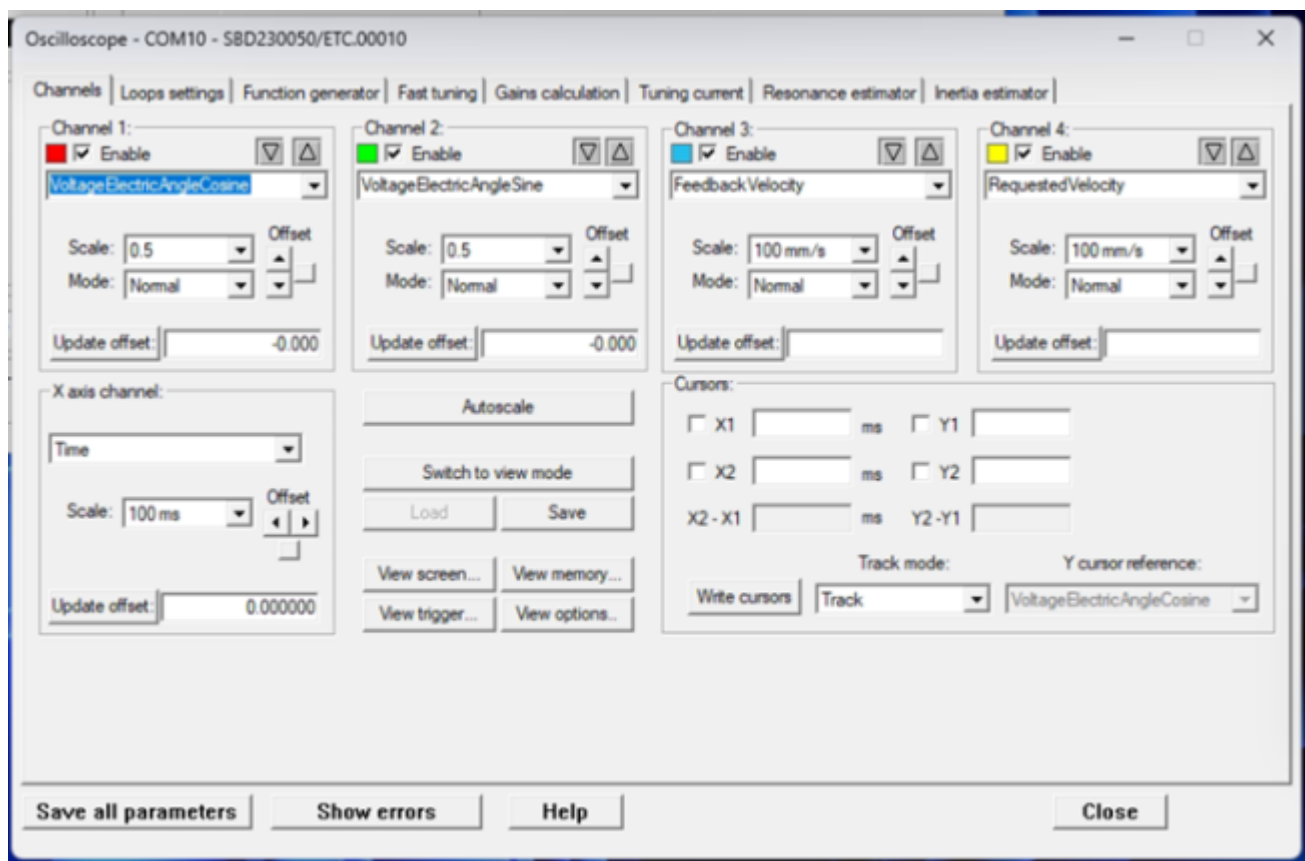
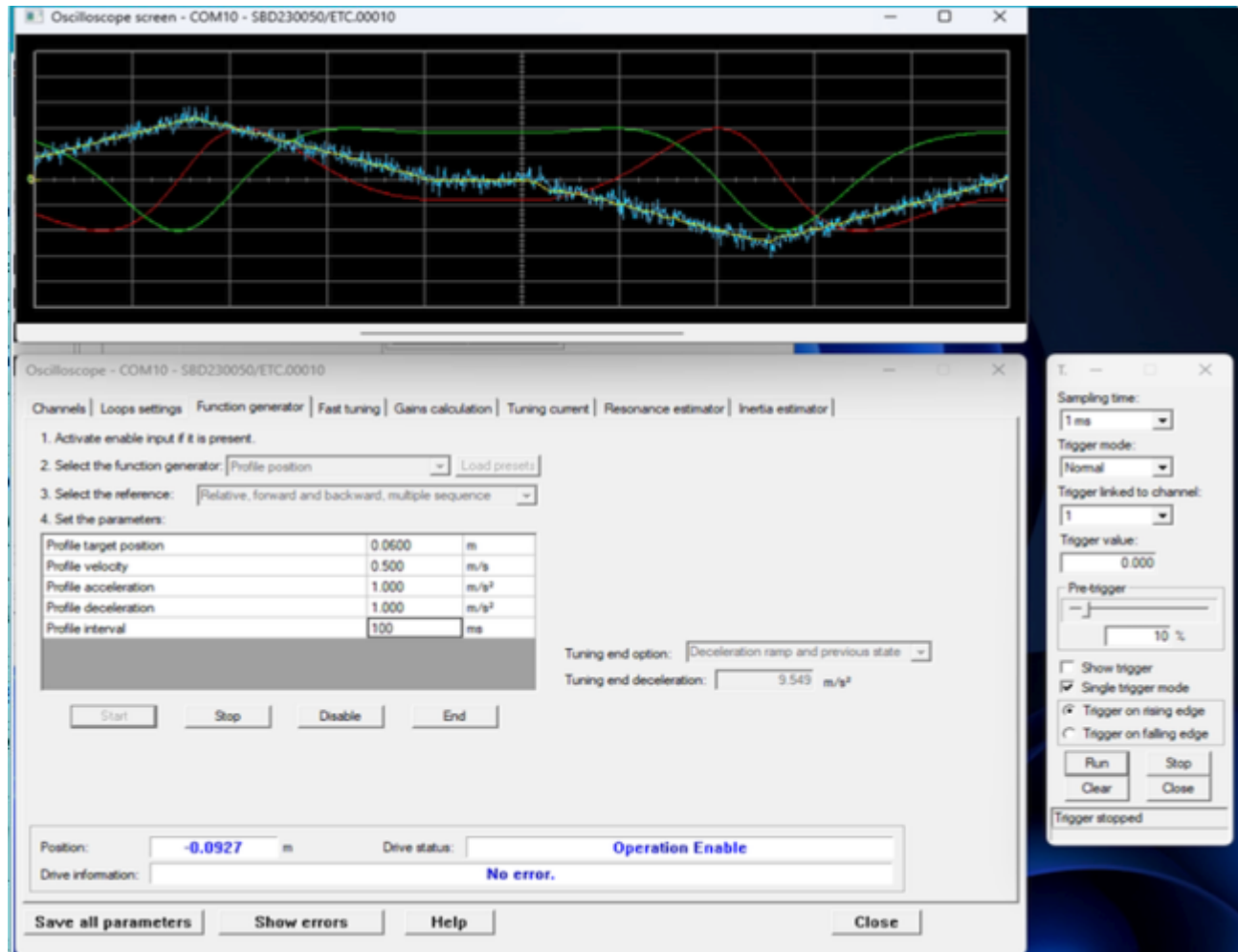
☒ *Auto calculate

2) Phasing the motor



3) Tuning the motor

Using function generator, specify a motion profile



4) Example of loop settings

The screenshot displays the 'Oscilloscope - COM10 - SBD230050/ETC.00010' software window. The 'Loops settings' tab is active, showing configurations for Position, Velocity, and Current loops, along with various filters and bandwidths.

Position loop:

- KPp: 60
- KVff: 1.000
- Close position loop: ☒
- Position stand still: ☐ Enable
- Stability: 34
- Stiffness: [slider]
- Position error dead band: 0.0000 m
- Estimated bandwidth: 15 Hz
- Recalculate

Velocity loop:

- KVp: 100
- KVi: 37
- KVd: 24
- KAff: 1.000
- KVd filter frequency: 15000
- Velocity stand still: ☐ Enable
- Stability: 63
- Stiffness: [slider]

V filters:

- 1: Low pass 2nd order, Frequency: 100 Hz
- 2: None, Frequency: 2000 Hz
- 3: None, Frequency: 2000 Hz
- Sensor: None, Frequency: 2000 Hz
- Angle observer bandwidth: 798 Hz
- Estimated bandwidth: 53 Hz
- Recalculate

Current loop:

- KCp_Q: 2771
- KQ_Q: 8190
- KCp_D: 2771
- KQ_D: 8190
- C filter: Low pass 1st order, Frequency: 500 Hz
- KC_Q reduction: 0.000
- Enable predictive measure: ☐
- Enable EMF compensation: ☐
- Estimated bandwidth: 345 Hz
- Recalculate

Other settings:

- Total estimated inertia: 1.0 x motor inertia
- Reduction factor: 1.000
- Field weakening: Enable - Low pass 1st order
- Load loops parameters from permanent memory
- Recalculate all loops
- End actual tuning command

Buttons: Save all parameters, Show errors, Help, Close

From:

<https://www.nilab.at/dokuwiki/> - **NiLAB GmbH Knowledgebase**

Permanent link:

https://www.nilab.at/dokuwiki/doku.php?id=en:green_drive_motors:sbd_servo

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