

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

Feedback sensor

Type:

Phasing offset: ° Phase polarity: °

Temperature sensor

Type:

Fault threshold: ohm

Overload protection

Enabled

*Time: s

Brake

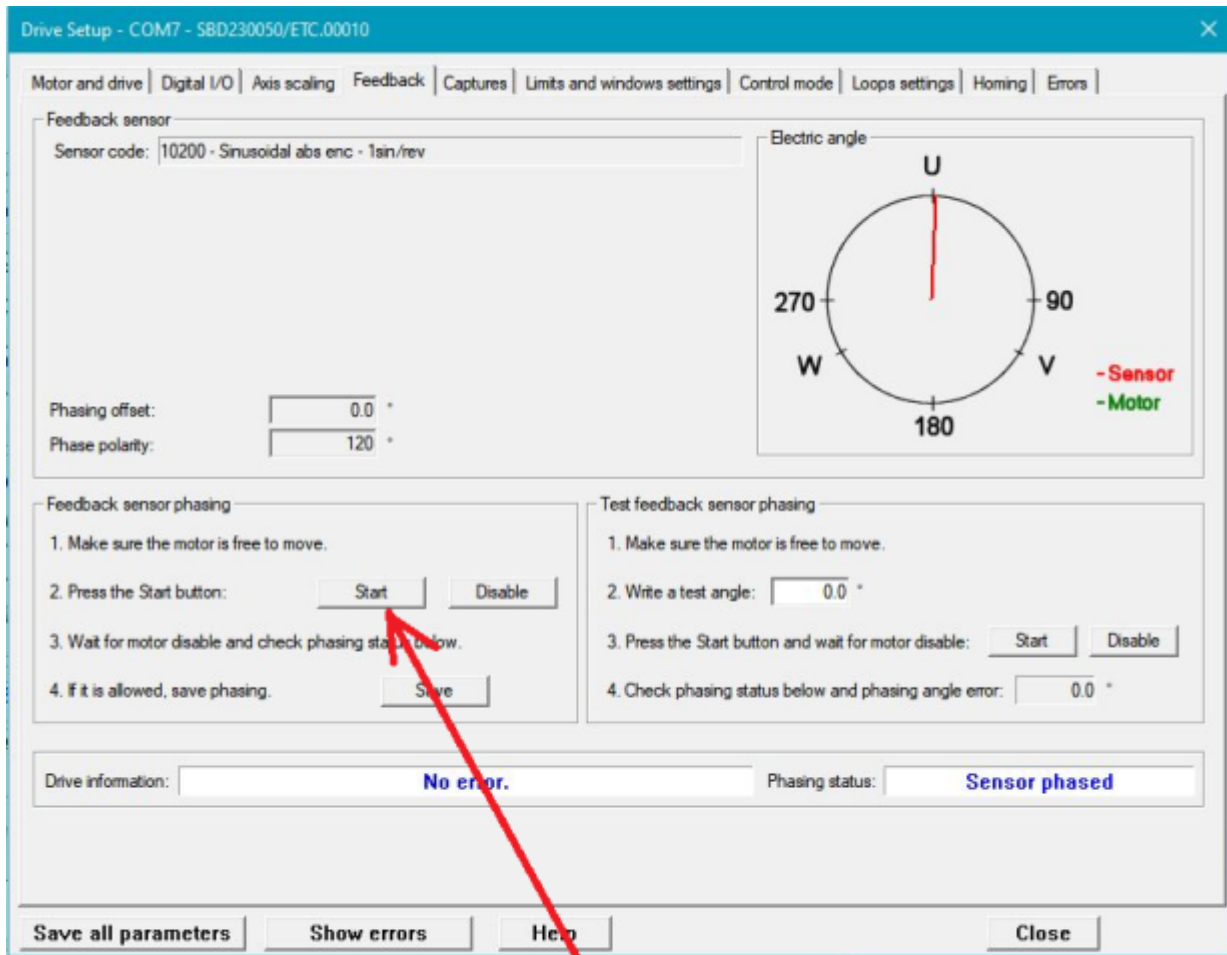
Present

Opening time: ms

Closing time: ms

*Auto calculate

2) Phasing the motor



3) Tuning the motor

Using function generator, specify a motion profile

The top part of the image shows an oscilloscope window with a grid and a blue waveform. Below it is a configuration window titled "Oscilloscope - COM10 - SBD230050/ETC.00010".

Channels | Loops settings | Function generator | Fast tuning | Gains calculation | Tuning current | Resonance estimator | Inertia estimator

1. Activate enable input if it is present.
2. Select the function generator: Profile position [Load presets]
3. Select the reference: Relative, forward and backward, multiple sequence
4. Set the parameters:

Profile target position	0.0600	m
Profile velocity	0.500	m/s
Profile acceleration	1.000	m/s ²
Profile deceleration	1.000	m/s ²
Profile interval	100	ms

Tuning end option: Deceleration ramp and previous state
Tuning end deceleration: 9.549 m/s²

Buttons: Start, Stop, Disable, End

Position: -0.0927 m Drive status: Operation Enable
Drive information: No error.

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

Trigger settings window:

Sampling time: 1 ms
Trigger mode: Normal
Trigger linked to channel: 1
Trigger value: 0.000
Pre-trigger: 10 %
 Show trigger
 Single trigger mode
 Trigger on rising edge
 Trigger on falling edge
Buttons: Run, Stop, Clear, Close
Status: Trigger stopped

The bottom part of the image shows the same oscilloscope window with a different configuration.

Channels | Loops settings | Function generator | Fast tuning | Gains calculation | Tuning current | Resonance estimator | Inertia estimator

Channel 1: Enable, VoltageElectricAngleCosine, Scale: 0.5, Mode: Normal, Update offset: -0.000

Channel 2: Enable, VoltageElectricAngleSine, Scale: 0.5, Mode: Normal, Update offset: -0.000

Channel 3: Enable, FeedbackVelocity, Scale: 100 mm/s, Mode: Normal, Update offset: []

Channel 4: Enable, RequestedVelocity, Scale: 100 mm/s, Mode: Normal, Update offset: []

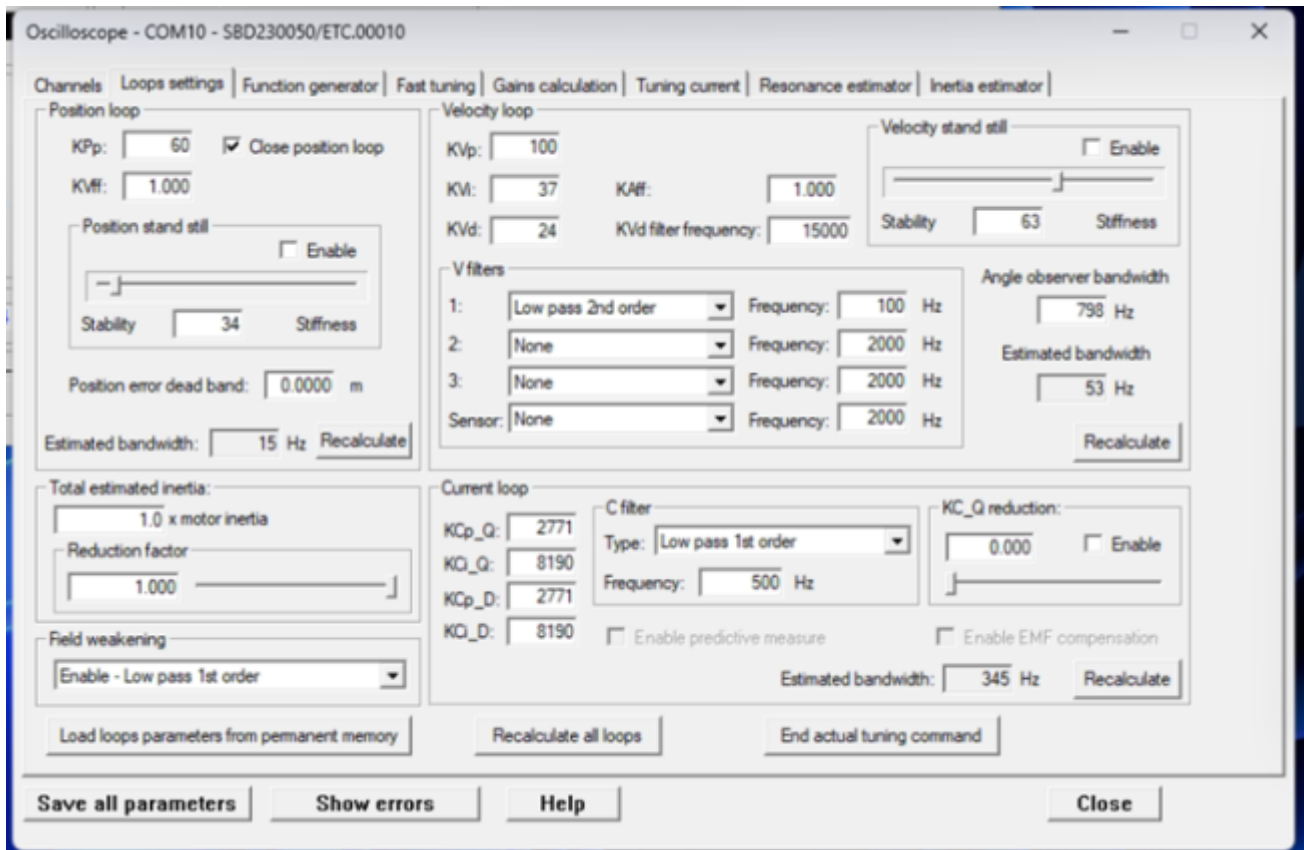
X axis channel: Time, Scale: 100 ms, Update offset: 0.000000

Buttons: Autoscale, Switch to view mode, Load, Save, View screen..., View memory..., View trigger..., View options...

Cursors:
 X1 [] ms Y1 []
 X2 [] ms Y2 []
X2 - X1 [] ms Y2 - Y1 []
Track mode: Track Y cursor reference: VoltageElectricAngleCosine
Buttons: Write cursors

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

4) Example of loop settings



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

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

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