Product Release Brief

STOBER extended Safety SX6 (FsoE) for SI6 and SC6

Product Management, System Support

October 2024

Version 1

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This product release brief serves as a guide for the STÖBER sales team to introduce the extended safety functionalities of the SX6 for the SC6 and SI6 drive controllers. There you will find all the information you need to support sales.

The product will be available from November 12, 2024. From this date, offers can be created and orders accepted.

This document contains information valid at the time of product launch. Changes during the product's lifetime are not updated in this document.

1. Intension SX6

The SX6 safety module is new in the STOBER portfolio. It expands the functional spectrum of the two drive controllers SC6 and SI6 to include numerous safety functions that are controlled via EtherCAT® (Fail Safe over EtherCAT®, FSoE).

With the SX6 safety module, STOBER offers a solution that meets the increasing requirements for functional safety in industrial applications and enables precise and reliable control of complex drive systems.

The advantages summarized:

- FsoE Certified Product
- Extended safety functions up to SIL 3, PL e, Categorie 4
- Compatible with the SC6 and SI6 drive controllers
- No safety encoder necessary
- Free choice of servo motors and cables
- Elimination of standstill/speed monitors
- Easy project planning and commissioning
- Simple, fast service concept

2. Product launch and application

2.1. Schedule

- In CW38
  - Preliminary report for SPS 2024 with a list of all innovations presented on the trade show (including the presentation of the SX6)

- From CW43
  - Product presentation by system support within the technical meetings

- From CW45 active campaign
  - Sending out three consecutive newsletters
  - Press kit with reports on SX6
  - LinkedIn-Posts
    - Announcement about SPS on September 17, 2024
    - Highlights for SPS October 30, 2024
    - Level up Your Safety on November 5, 2024

- Available from November 12, 2024
  - Website: Products & Current Topics
  - Option to choose in SAP
  - STOBER-Configurator (GOC)
  - Manuals:
    - Manual SX6 safety technology (Version 01)
    - Manual SC6 drive controller (Version 09)
    - Manual multi-axis drive system with SI6 and PS6 (Version 13)
    - One Pager safety module SX6

2.2. Documentation and resources

- Manual SX6 safety technology (available via Download-Center)
- Manual SC6 drive controller (available via Download-Center)
- Manual multi-axis drive system with SI6, PS6 (available via Download-Center)
- STÖBER Configurator (GOC)
- Website
- SAP-Configurator
- Sales presentation
- One Pager SX6 Extended Safety
- One Page Selling Brief
- Safety certificate (As soon as available via Download-Center/Certificates)
- Catalogue Drives & automation (As soon as available via Download-Center)
- Catalogue STOBER compact (As soon as available via Download-Center)

3. Technical Data

3.1. Safety standard

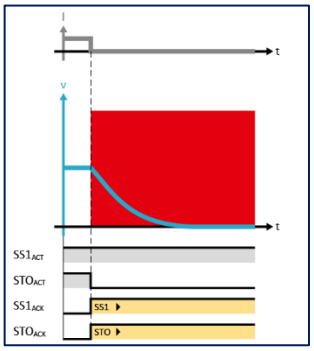
The SX6 corresponds to Performance Level e (PL e) with Category 4 according to DIN EN ISO 13849-1 and Safety Integrity Level 3 (SIL 3) according to DIN EN 61508 and DIN EN 61800-5-2.

3.2. Security features

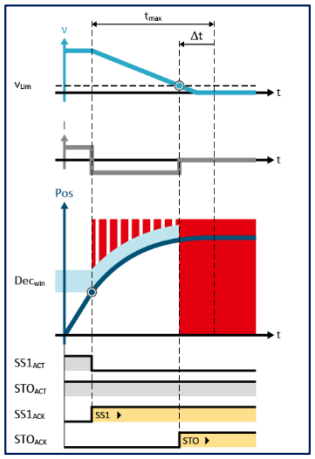
Safe stopping

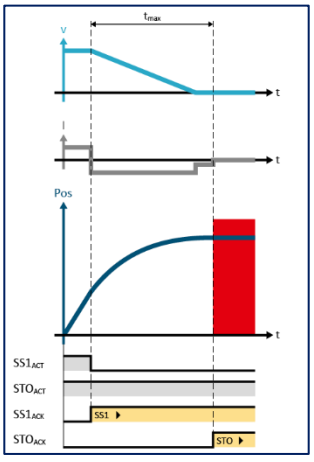
The SX6 enables the classic stop functions Safe Torque Off (STO), Safe Stop 1 (SS1) and Safe Stop 2 (SS2). A special highlight: With multi-axis controllers, the STO function can be activated individually for each axis.

- STO – Safe Torque Off
  (Safe shutdown of the drive controller)
  - Safely switches off the energy supply to the motor
  - Ideal for a safe restart lock

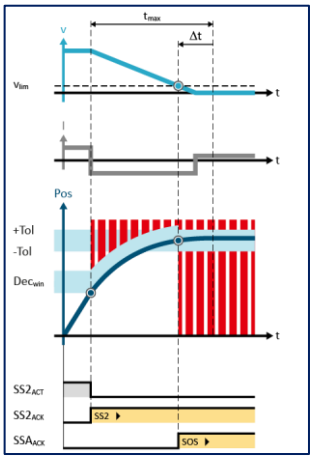


- SS1 – Safe Stop 1
  (Monitored braking with transition to STO)
  - Fallback level
  - Detects errors when braking
  - Ideal for small safety distances





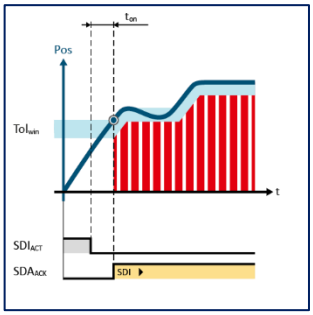
- SS2 – Safe Stop 2
  (Monitored braking with transition to SOS)
  - Detects errors when braking
  - Ideal for coupled axes and fast restart



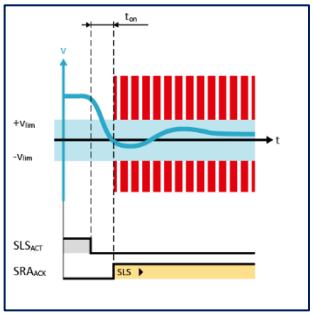
Safe limiting

Safely Limited Speed (SLS) and Safe Speed Range (SSR) ensure that the projected speed limits are always adhered to

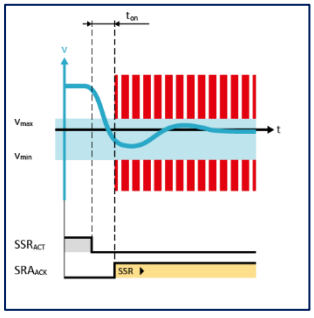
- SDI – Safe Direction
  (Monitoring and blocking a direction of movement)
  - Parameterizable tolerance band
  - Ideal for limit switch monitoring



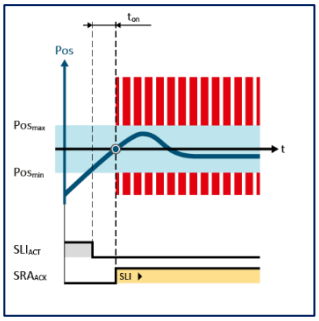
- SLS – Safely Limited Speed
  (symmetric Monitoring for max. permissible speed)
  - Optionally with dynamic tolerance
  - Ideal for monitoring and commissioning



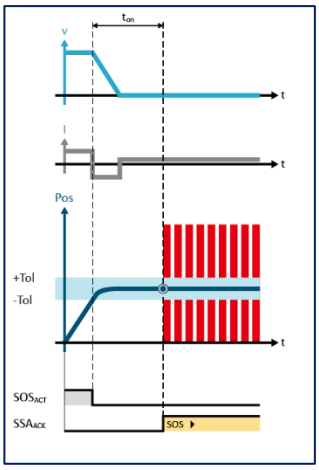
- SSR – Safe Speed Range
  (freely selectable upper and lower speed limits)
  - Optionally with dynamic tolerance
  - Ideal for speed range monitoring



Safe position monitoring



- SLi – Safe Limited Increment
  (freely selectable upper and lower speed limits)
  - Asymmetrical movement limits
  - Ideal for variable position monitoring



- SOS – Safe Operating Stop (monitored standstill)
  - Drive remains in control
  - Ideal for quick restart when loading and unloading

Safe brake management

- SBC – Safe Brake Control (safe brake management)
  - Optional for one or two brakes and independent of the type of brake
  - Short circuit and cable break monitoringIdeal for axles subject to gravity
  - Ideal for axles subject to gravity

Monitoring

- Safe limiting → SLS-M, SSR-M
- Safe position monitoring → SOS-M, SDI-M, SLI-M

Ideal for variable safety reactions in complex systems as well as for permanent monitoring

A response time of 10ms in the event of a limit violation is guaranteed.

3.3. Fail Safe over EtherCAT®

The SX6 is controlled via the secure Fail Safe over EtherCAT® (FSoE) protocol and uses the existing EtherCAT® infrastructure - this significantly reduces the cabling effort. The secure communication runs according to the black channel principle and is transmitted together with the functional EtherCAT® communication over the same connection.

3.4. Connections

A detailed explanation of the respective connections can be found in the One Page Selling Brief or the SI6 and SC6 catalogs.

The One Page Selling Brief can be found in Chapter **Fehler! Verweisquelle konnte nicht gefunden werden.**.

3.5. Encoder Compatibility

The encoders that are available with the SI6 and SC6 drive controllers are supported. Precise optical encoders, robust resolvers or economical inductive encoders can be selected (an FMA encoder attachment is not necessary).

On the interface side, the following interfaces are supported:

- EnDat 2.1 digital
- EnDat 2.2 digital
- EnDat 3
- SSI
- HTL, TTL
- Resolver

3.6. Drive controller and motor compatibility

The extended safety functions of the SX6 will be available for the SI6 and SC6 drive controllers. In a further development step, this will also be developed for the SB6 to ensure a common safety platform within Generation 6.

In terms of motors, linear and rotary synchronous servo motors are supported.

4. Prices

Type	Id.-Nr.	BVP
SX6A	5050185 (only available installed in the drive controller)	429,00 €

5. Media

5.1. Manuals / Catalogue

Manual SX6 safety technology (Version 01)

ID: 443336 (DE), 443337 (EN), 443338 (FR)

Manual SC6 drive controller (Version 09)

ID: 442789 (DE), 442790 (EN), 442791 (FR), 443272 (PL)

Manual multi-axis drive system with SI6 and PS6 (Version 13)

ID: 442727 (DE), 442728 (EN), 442729 (FR)

One Pager safety module SX6:

ID: 443470 (DE)

From the next regular revision, the **Drives & Automation** and **STOBER compact** catalogs will contain the chapters on the SX6 safety module.

Drives & automation

STOBER compact

5.2. Internet / Intranet

- STÖBER Configurator (GOC)

- Website (Updated November 12th)
  - Safety technology product pages in the electronics sector
  - Additional application on the pillar page for safety technology in the “Current Topics” block

- Social Media
  - LinkedIn post for market launch (see schedule, chapter 2)
  - Campaign with recurring posts rolled out following the market launch

- Online-Marketing
  - Google-Ads (SEA) starting with market launch

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