FSO-12 and FSO-21 with the revision H firmware (4.03) have two new functionalities.

The functionality of the SLS function have been improved related to the following case where:
1. the SLS function is activated from the higher speed than the SLS limit speed
2. FSO will force the drive to decelerate to the SLS limit speed
3. Drive trips during the deceleration ramp, which is forced by FSO
4. **IMPROVED FUNCTIONALITY:**
   FSO will detect that the drive stops the modulation during this deceleration ramp and activate STO with appropriate indications.

This improvement is realized by adding two new parameters into the SLS parameter group:

- **SLSx.05**: Modoff behavior selection for SLS function
  - A) Modoff delay time
  - B) Monitoring active
  - C) Monitoring active and modoff delay time
  - D) Monitoring and modoff delay time disabled

- **SLSx.06**: SLS ramp modoff delay time [ms]
  Delay for the modoff reaction for SLSx.05 selection A) and C)

As a default setting, the SLSx.05 is set to selection A) *Modoff delay time* and SLSx.06 is set to 0 ms, which means that the FSO will activate STO immediately when the modulation is lost during the deceleration ramp, which is forced by the SLS function.

If the user prefers to keep the reaction, which is in the older firmware versions of the FSO, firmware’s A to G, user must set the SLSx.05 parameter to the selection D) *Monitoring and modoff delay time disabled*. In this case, FSO will not activate STO in case that the modulation is lost during this deceleration.
For the further information, see user manual of the FSO Safety functions module.
https://library.abb.com/

FSO-12 functional safety option modules user's manual,
code: 3AXD50000015612, rev.F.

FSO-21 functional safety option modules user's manual,
code: 3AXD50000015614, rev.E.