

SM-Safety Option Module

Drive Based Functional Safety PLC

For Unidrive SP and Digitax ST Drives & Servos



Improving safety, enhancing productivity

Control Techniques' SM-Safety option module provides an intelligent, programmable solution to meet the IEC 61800-5-2 functional safety standard. It fits within the drive helping to reduce cabling and requires no cabinet space or external power supply.

Safety that allows you to do more

Until now, the integrity required to meet safety requirements has limited the functionality of many machines. Usually simple logic is applied, such as, if a guard is open, the machine stops. When combined with robust processes to quantify risk, Control Techniques' SM-Safety module can free designers to create new and innovative solutions. Machines can intelligently interact with people while increasing human protection and safety resulting in enhanced machine productivity.

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Standard Safety Functions

The following safety functions defined by IEC 61800-5-2 are available with SM-Safety:

Safe Torque Off	STO	Prevents torque from being generated by the motor. This function is integrated within the drive itself as standard
Safe Stop 1	SS1	Ensures that the motor decelerates in the expected way
Safe Stop 2	SS2	Ensures that the motor decelerates in the expected way and that zero speed is then held
Safe Limited Speed	SLS	Prevents the motor from exceeding a specified speed limit
Safe Limited Acceleration	SLA	Ensures that a specified acceleration and deceleration rate is not exceeded
Safe Limited Position	SLP	Monitors absolute position to ensure the motor operates within specified limits
Safe Brake Control	SBC	Provides a safe output signal to control an external safety brake
Safe Operating Stop	SOS	Ensures the motor holds zero speed, resisting external forces such as a hanging load on a crane
Safe Direction	SDI	Ensures that the motor can only move in a specified direction
Safe Limited Increment	SLI	Ensures that incremental moves do not exceed a specified distance
Safe CAM	SCA	Ensures that the motor only operates with a specific area or position range
Safe Speed Monitor	SSM	Provides an indication when the motor speed is below a given limit



Flexible programming environment

CTSafePro

CTSafePro unlocks the full safe PLC functionality within the SM-Safety module. It allows users to combine elements to develop their own safety function blocks to meet the specific needs of more advanced applications.



RoHS
Compliant

Safety Standards

The module is designed to meet the following safety standards:

- **IEC and EN 61508:** Functional safety of safety-related electric, electronic and programmable electronic systems
- **IEC and EN 62061:** Safety of machinery, Functional safety of safety-related electrical, electronic and programmable electronic control systems
- **ISO and EN ISO 13849-1:** Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design
- **IEC and EN 61800-5-2:** Adjustable speed electrical power drive systems - Part 5-2: Safety requirements - Functional