

CFW500



With embedded safety functions

Safety functions are resources used to reduce risk and to guarantee the safety of personnel and environment if there is a hazardous event due to a fault in operating machines. As safety has become a major concern for OEMs, WEG is launching **CFW500 with embedded Safety Functions - STO and SS1**. It is new concept of safety drive, extremely flexible, which provides machine builders a cost-effective solution to design protective measures to reduce the risk from unexpected and hazardous movement in industrial machines and processes.



Advantages



Safety functions integrated in the CFW500 drive, making easier to comply the machine and application safety requirements.



No electromechanical components, meaning faster responses and higher degree of productivity.



Less components, no need for additional wiring, saving space and installation costs.



Due to the high safety performance level SIL3 the CFW500 with Safety module may avoid the use of external Safety relays for cables and emergency pushbuttons monitoring.



Easier installation, commissioning and maintenance.

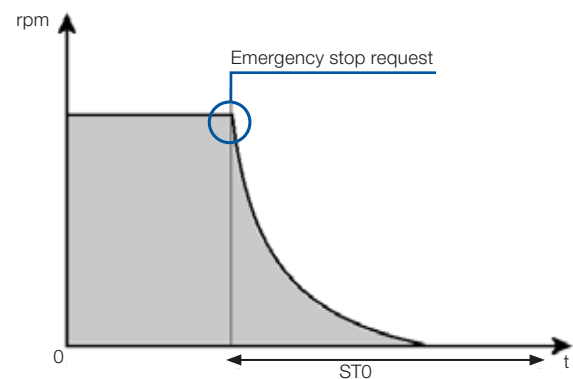
CFW500 with Safety Functions fulfils requirements for safety performance SIL 3 / PL e, according to IEC 61800-5-2, EN ISO 13849-1, EN 62061, IEC 61508 and IEC 60204-1.

Safety Functions Ready-to-go

STO (Safe Torque Off): Once activated, STO immediately switches off the drive output to the motor, by means of disabling the supply of torque-generating energy. STO is also used to prevent unexpected startups of machinery or for emergency stops, fulfilling stop category 0 (IEC 60204-1).

This function is applicable where the motor can be brought to a standstill in a sufficiently short time by the load torque or friction or where motor coast to a stop is not relevant to safety. STO has a wide range of use in machines with moving axes, handling equipment, conveyors, pumps and fans, extruders and mixers.

The advantage of the integrated STO safety function on CFW500 compared to standard safety technology using electromechanical switchgear is the elimination of separate components and the effort required to wire and service them. Because of the rapid electronic switching times, the function has a faster response than electromechanical components in a conventional solution.



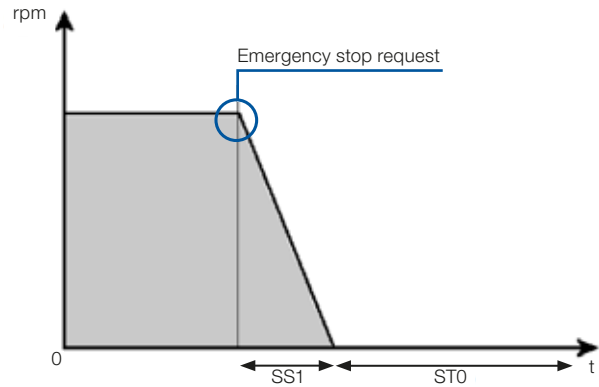
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SS1 (Safe Stop 1): Once activated, SS1 enables motor deceleration in order to stop the motor and then, after a delay time, automatically activates the STO function. SS1 can be used to implement a controlled stop with power available to the machine actuators to achieve the stop and then removal of power, fulfilling stop category 1 according to IEC 60204-1. This function is used when, in the event of a safety related fault, the drive must stop the motor and then enter the STO state.

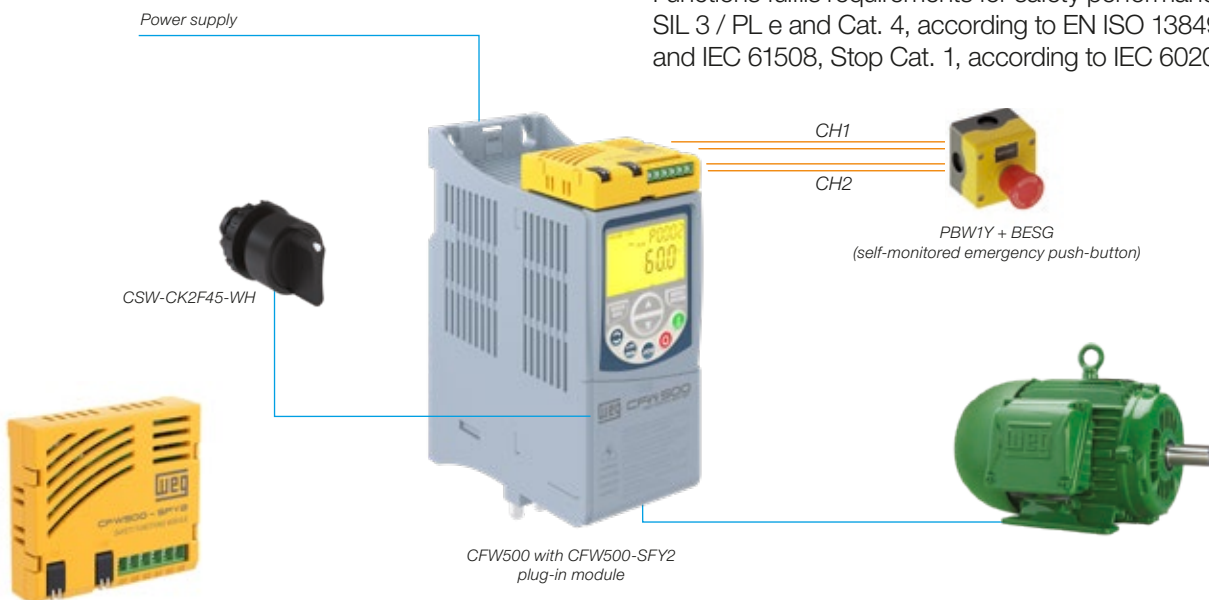
It is typically used to brake motors at high speeds as quickly as possible or to bring large centrifugal masses to a stop, like rolling mills where motion must be stopped before switching to a no-torque state. Some other applications include saws, conveyors, fans, mills, winders, extruders and mixers.

The stopping of a drive by means of SS1 function reduces the risk of danger, eliminates the need of external safety timers, increases machinery productivity and allows safety clearances in machines to be reduced. The reason is the active stopping of the drive as compared to the use of the STO function only.



Typical installation

This typical installation using CFW500 with Safety Functions fulfils requirements for safety performance SIL 3 / PL e and Cat. 4, according to EN ISO 13849-1 and IEC 61508, Stop Cat. 1, according to IEC 60204-1.



WEG Group - Automation Business Unit
Jaraguá do Sul - SC - Brazil
Phone: +55 47 3276 4000
automacao@weg.net
www.weg.net