Servo drives

Safety technology

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Documentation
Instructions

Intelligent and safe

- Safety category 3 PL d, SIL 2
- Extensive safety functions
- Minimum response times
- Independent of the control system
- Straightforward integration in the machine

Whether for machine tools, printing or packaging machines, or assembly, handling and robotics applications – protecting people from uncontrolled machine movements is a top priority.
Clear guidelines issued by the EU

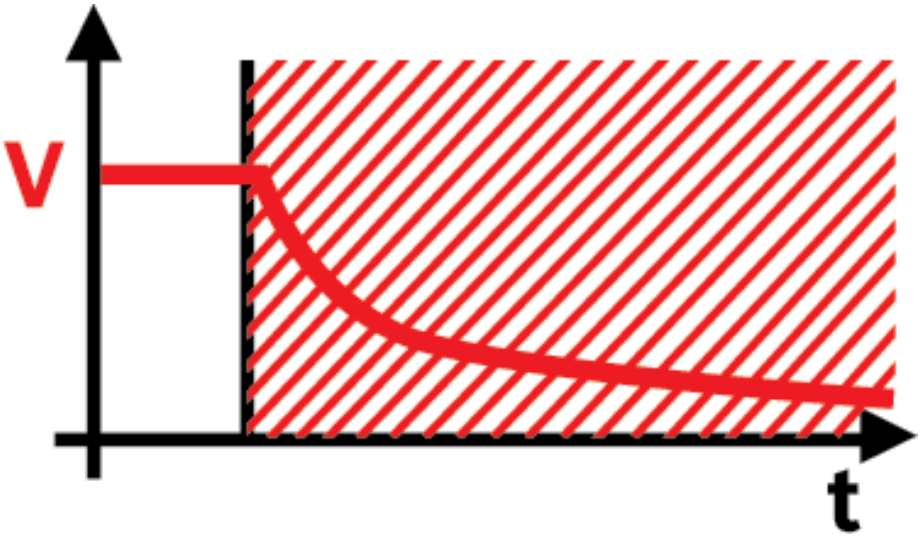
All machine manufacturers are obliged to carry out a hazard evaluation and risk analysis prior to design. This is stipulated in the European Machinery Directive 2006/42/EC. Moreover, any potential hazards detected must be eliminated step by step. Safety should be integrated in the machinery and meet the "state of the art".
How safe can you get

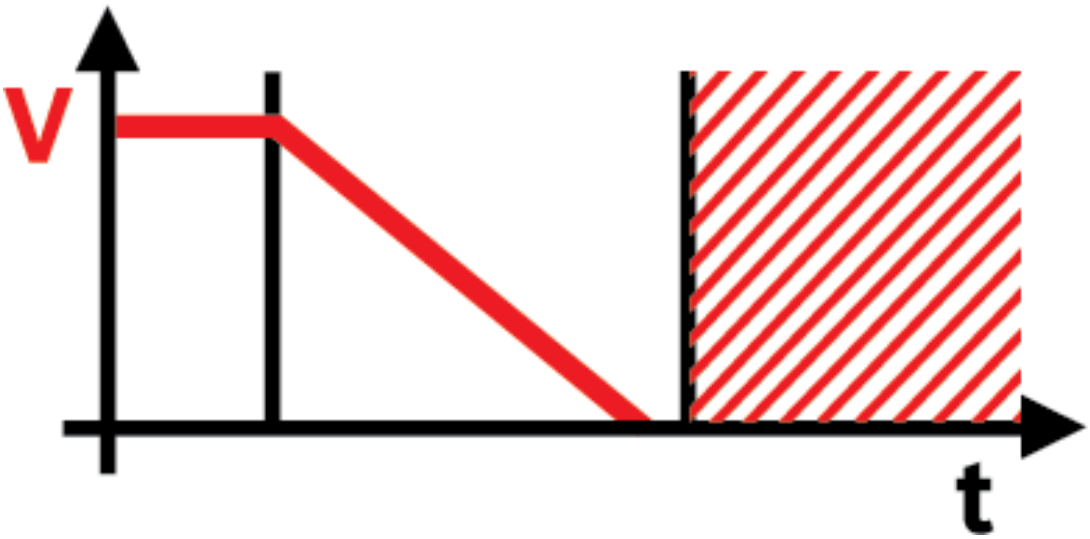
IndraDrive is redefining the state of the art because it integrates safety directly in the drive, resulting in ultra-short response times. IndraDrive therefore demonstrates what safety technology today can and must deliver – IndraDrive is faster because the movement is monitored directly where it is generated. This is the critical advantage, especially when it comes to monitoring direct drives or other high-dynamic drives, for example.
Minimum reaction times despite maximum drive dynamics

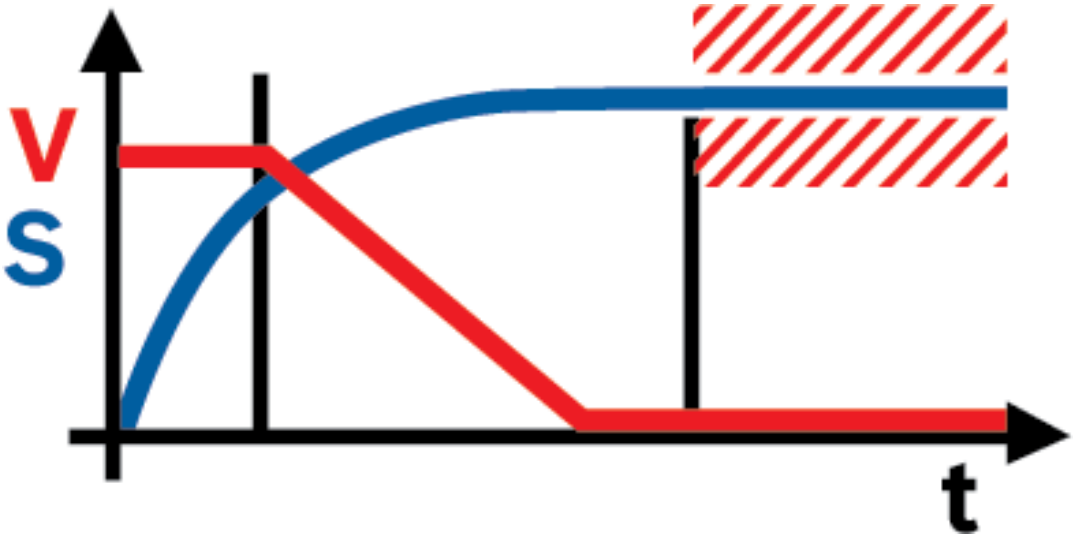
With the new IndraDrive generation from Rexroth, a variety of safety functions are available right inside the drive – without any detours through the control. This increases reliability, saves on additional monitoring components, and reduces installation cost and effort.
This is all made possible by redundant software and hardware components in the drive. The non-contact monitoring of all set limit values enables very short response times of less than 2 ms. As soon as a fault is detected, all the drives are automatically stopped depending on the stop category selected (0, 1 or 2).
Safety functions inside the drive effectively protect people and machines

High reliability due to certified integrated safety functions
Extremely fast reaction times (< 2 ms) on actuation by internal monitors
No need for additional measuring systems or evaluation devices
Online dynamic sampling of the inputs and shutoff paths while work is in progress
PROFIsafe interface with reduced configuration and installation effort and safe, decentralized I/Os
Reduced certification effort and short series start-up times

Technical data







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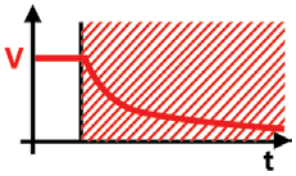
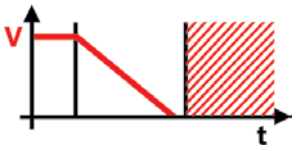
Safe Torque Off (STO)



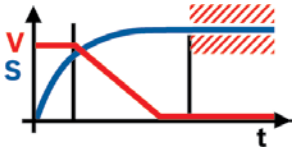
Safe Torque Off, stop category 0 in accordance with EN 60204-1: Safe drive torque cutoff

Safe Stop and Safe Drive Interlock (SS1)



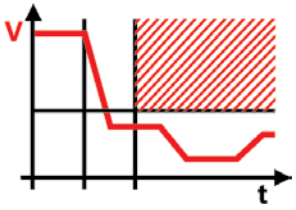
Safe Stop and Safe Drive Interlock (SS1) Safe Stop 1 Stop category 1 in accordance with ICE 60204-1: Safely monitored stop, control or drive controlled with safe drive torque cut off

Safe Operating Stop (SS2, SOS)



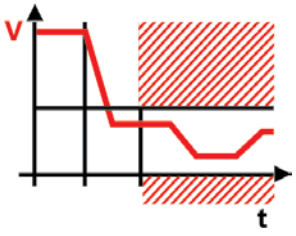
Stop category 2 in accordance with ICE 60204-1: Safely monitored stop with safely monitored standstill at controlled torque

Safely Limited Speed (SLS)



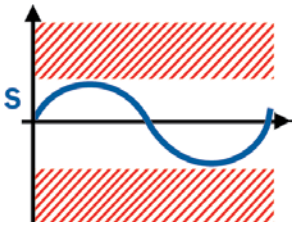
Safely Limited Speed – If enable signal is given a safely limited speed is monitored in special operating mode

Safely Monitored Direction (SDI)



A safe direction (clockwise, counterclockwise) is also monitored in addition to safe motion

Safely Monitored Position (SMP)



A safely limited position range is also monitored in addition to safe motion

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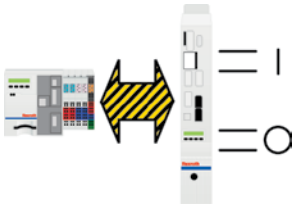
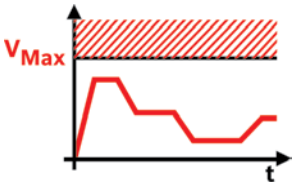
Safe Inputs/Outputs (SIO)



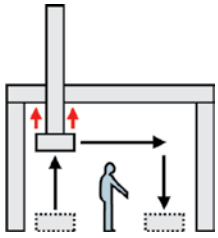
Dual-channel safety peripherals can be connected to the drive and made available to the controller via the safety bus

Safe Maximum Speed (SMS)



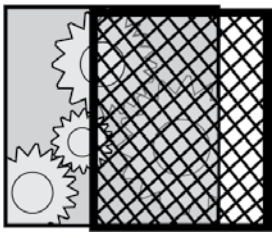
The maximum speed is safely monitored irrespectice of the mode of operation

Safe Braking and Holding System (SBS)



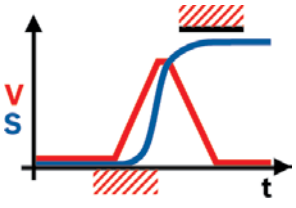
The safe braking and holding system controls and monitors two independent brakes

Safe Door Locking (SDL)



When all the drives in one protection zone are in safe status, the safety door lock is released

Safely Limited Increment (SLI)



If enable signal is given a safely limited increment is monitored in special operating mode

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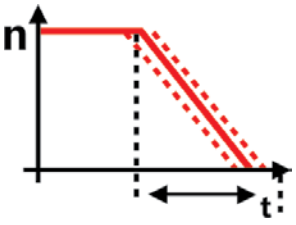
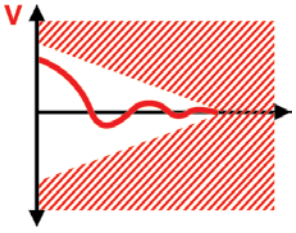
Safely Monitored Deceleration (SMD)



Safely monitored deceleration ramp when stopping with predeternining characteristics

Safely Limited Position (SLP)



Monitoring of safe software limit switches

Safe Communication (SCO)

Selection/deselection of safety functions and transfer of process data (e.g. actual position values) via sfety bus

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