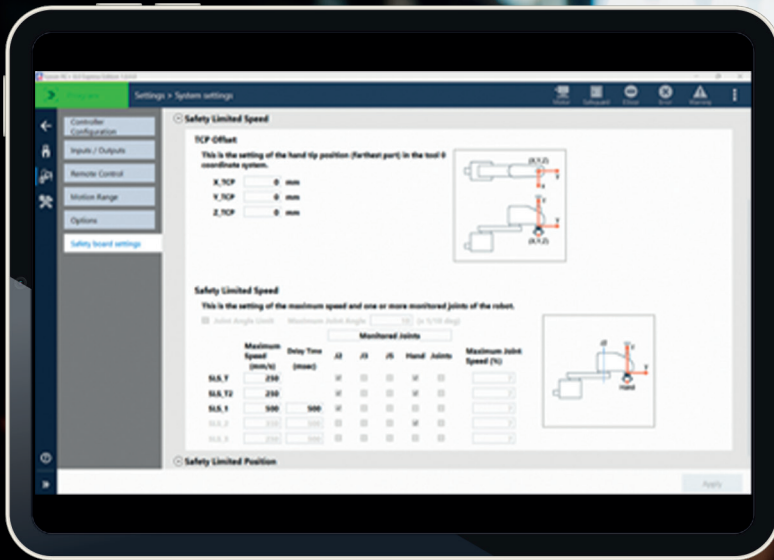


Increased robot safety and productivity



Safe and efficient robotic operations

Whether to increase operator safety or to reduce machine downtime and increase productivity, Epson's safety functions allow the machine to keep running while operators perform their tasks. Operators can work in synchronisation with the machine by reducing risks through safe speed and position monitoring.

Reducing machine downtime

Using Epson's safety functions, such as SLS and SLP, it is possible to keep the machine running while fulfilling even complex applications

Machine downsizing

Reduce the footprint of the machine by restricting the robot motion in the defined safety zones

More flexible machine layout

Use extended safety functions to make your machine more efficient. Create monitored areas instead of permanent restrictions with safety fences

Meeting the latest safety requirements

Epson robot systems are certified by TÜV Süd to meet the latest machine directives and harmonised industrial robot standards EN ISO 10218-1, ISO 13849-1 (PLd, Cat3) and NRTL certification

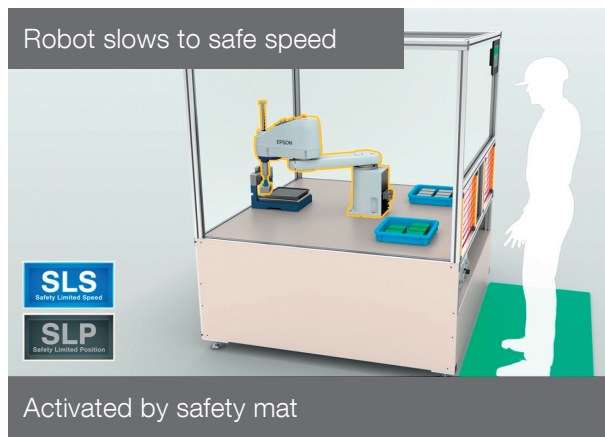
Increase your process flexibility and ensure safe robot motion

Synchronised working between robot and human. Monitor robot speed and position with SLS and SLP to increase the safety of the robot, as well as the flexibility of the production process. Completion with simple safety components (laser scanner, light curtain etc.) to fulfill even the highest safety requirements of complex applications.

Safety Limited Speed (SLS)

SLS is a function to monitor the speed of the robot to prevent the robot from exceeding the preset speed limitation.

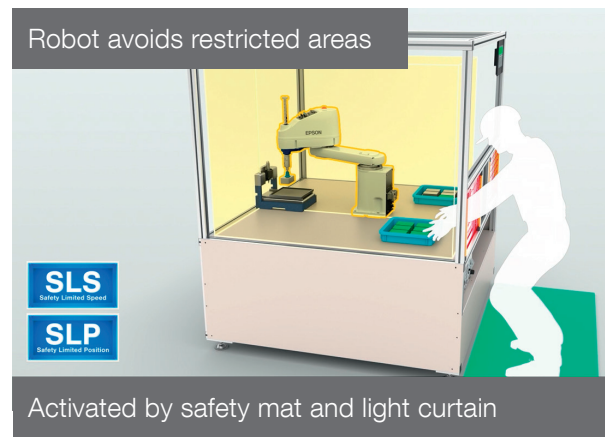
When triggering SLS via safety components like safety mats, light curtains, etc, the robot speed will be adjusted to a preset value to keep the worker safe while the machine is running.



Safety Limited Position (SLP)

SLP is a function to monitor the robot's position and the joint angles to prevent the robot from entering the preset restricted area.

The robot avoids the restricted area or uses a different motion path to let the worker do the task in the restricted area and allow easier quality control or material supply.



Safety function manager

Epson's safety function manager is embedded in the robot development software RC+. All related safety functions can be also monitored with RC+ Express.

Easily configure different safe zones like restricted areas, walls and monitored areas of the 2nd and 3rd axis, set the speed parameters for safe limited robot speed and configure the corresponding safety I/Os.

Check the limited positions and restricted areas with the embedded SLP Viewer or monitor them in the RC+ simulator to ensure a smoother and more flexible production process.

Safety functions for Epson robots

Safety function	Included in controller	Licensed (R12NZ901F2)	Performance level
Safety Torque Off (STO)	✓	–	SIL2, Cat3 PLD
Safe Stop 1 (SS1)	✓	–	SIL2, Cat3 PLD
Safety Limited Speed (SLS)	–	✓	SIL2, Cat3 PLD
Safety Limited Position (SLP)	–	✓	SIL2, Cat3 PLD
5 x Safety Inputs	✓	–	SIL2, Cat3 PLD
3 x Safety Outputs	✓	–	SIL2, Cat3 PLD

Epson's safety function increases robot safety and machine productivity. Please consider the necessary safety measures, machine declarations and risk assessment before using the machine.

Epson EMEA
Manufacturing Solutions
Schiesstraße 47-49
40549 Düsseldorf
Germany
E-mail: info.ms@epson.eu
Phone: +49 211 5422 9007
www.epson.eu/en_EU/robots



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