

Emergency stop - maximum requirements

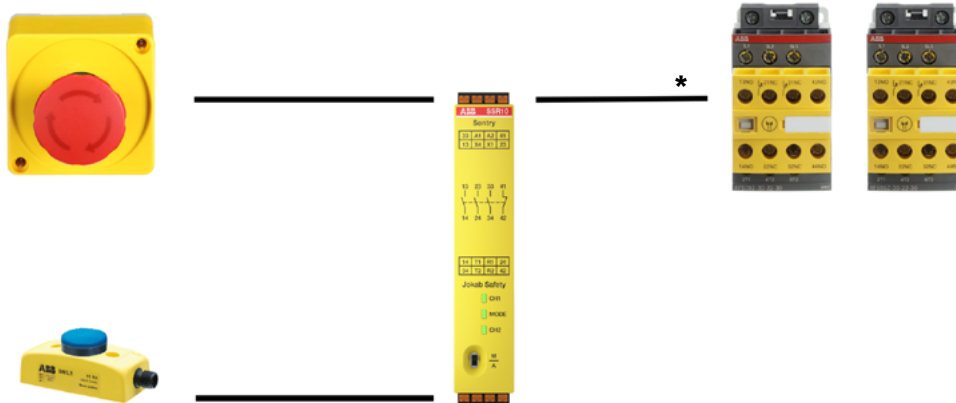
Emergency stop, Sentry and contactors

- Easy to reach the highest safety level
- Easy to install
- Simple solution



Application

Almost all machines requires an emergency stop. The emergency stop should be a complementary safety function, and not replace other safeguarding measures or safety functions. The standard EN ISO 13850 specifies the functional and design requirements on emergency stop function, and states that the minimum safety level should be PL c. But the requirements for each machine can differ, and should be derived from the risk assessment. Below is an example of an emergency stop function that fulfills the maximum requirements (PL e), using an emergency stop button with enclosure, supervised by a Sentry safety relay that cuts power to the machine using redundant AFS safety contactors. A reset button has also been added to prevent unintentional start of the machine. For an even simpler e-stop solution, please see [Emergency stop - minimum requirements](#).



*) Includes EDM (external device monitoring) to monitor the state of the contactors.

Restart of the machine

When using an emergency stop function, it is important to make sure that the machine does not start automatically once the emergency stop button has been released again. This often requires a reset button, as shown above. The relay can be set to automatic or manual reset depending on the risk assessment. If manual reset is chosen, a reset button is used. Once the safety relay has been reset the start signal of the machine can be given.

Functional safety level

This emergency stop solution fulfills Category 4, PL e according to EN ISO 13849-1 and up to SIL3 according to EN IEC 62061.



CEPY1-1001

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Emergency stop button with enclosure

Please note that ABB has a wide range of alternative buttons with or without enclosures to suit all needs.

Description	Type	Order code
Assembled Enclosure - 40mm Mushroom Emergency Stop - Twist Release - 2NC - Horizontally mounted	CEPY1-1001	1SFA619821R1001



Sentry SSR10P

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Sentry safety relay

Choose between standard screw terminals or push-in terminals

Description	Type	Order code
Safety relay with with relay outputs 3NO+1NC and screw terminals	Sentry SSR10	2TLA010050R0000
Safety relay with with relay outputs 3NO+1NC and push-in terminals	Sentry SSR10P	2TLA010050R0001



Smile 11 RA

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Reset button

Please note that ABB has a wide range of different reset buttons to choose from.

Description	Type	Order code
Reset button in Smile enclosure, 1xNO button, 1x Blue LED, 1x M12-5 male connector	Smile 11 RA	2TLA030053R0000



AFS09

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Safety contactors

The AFS contactors are dedicated for safety applications. See [product sheet](#) for range and selection.

Links

Product sheets

[Sentry flyer](#)
[AF contactors for safety applications](#)

Web pages

[Sentry SSR10](#)
[Sentry SSR10P](#)
[Pilot Devices enclosures and assembled stations](#)
[Smile 11 RA](#)
[Contactors for safety applications - Motor protection and control](#)

Connection diagrams

[Sentry connection diagrams with most safety devices](#)

Installation instruction

[Pilot Devices installation instruction](#)

Manuals

[Sentry SSR10](#)