ESR5 safety relay

Global safety relays for diverse machine applications

The Eaton ESR5 safety relays provide optimal safety and a high degree of reliability on plant machinery. Applications that meet the highest safety requirements in accordance with EN 954-1, EN ISO 13849-1 up to PL e and accordance with IEC 62061 up to SILCL 3 can be realized with the ESR5 safety relay.

Application description

Safety relays are intended to reliably monitor the signals from safety devices at all times and switch off quickly and reliably in an emergency. Single-channel and dual-channel versions are available for the construction of safety applications. The internal logic of the safety relay monitors the inputs (emergency stop, guard door, and so on) and activates the enable paths during a fault-free condition. Upon actuation of the safety device or in the event of a fault, the enable paths are switched off. Any faults that occur in the control circuit, such as ground fault, cross connection fault, or wire breakage, are also detected.

ESR5 features

- Use for the highest safety requirements in accordance with:
  - EN 954-1
  - EN ISO 13849-1
  - IEC 62061
  - EC 61508
- Suitable for global applications with UL® and cUL® certifications and TÜV Rheinland functional safety certifications
- Applicable for EN 60204 stop categories 0 or 1
- Coded plug-in screw terminals for fast and fault-free replacement
- Multi-voltage versions (24–230 Vac/Vdc) for a flexible range of applications
- Delayed and non-delayed contact expansions accommodate a wide variety of applications
- Accurate LED indication of supply voltage, inputs, and enable paths
- Compact body just 22.5 mm wide

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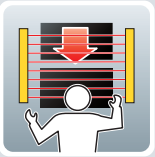
Target applications

The ESR5 is perfect for machines that require a single, simple safety function, and can also be combined to accommodate multiple functions or components (for example, emergency stop and two-hand control or a machine with multiple movable gates). This makes it a flexible solution for any machine.

Safety functions of the ESR5 range

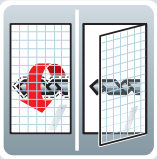
Stopping in an emergency (EMERGENCY-STOP disconnection)

Safely stopping a hazardous movement with Emergency-Stop devices



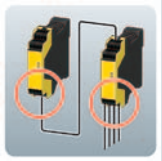
Safe operation with two-hand controls

Applied with hazardous machine movements such as pressing, punching and shearing



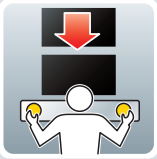
Monitoring of movable guards

Reliable detection of door, guard or flap positions



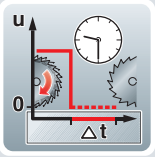
Delayed and non-delayed contact expansions

Increasing the number of enabling contacts



Monitoring open hazardous areas

Protecting hazardous areas with electro-sensitive protective equipment (ESPE) such as light curtains



Off-delayed shutdown

Delaying the shutdown time of enabling contacts

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