Safety relays
Sentry

The Sentry safety relays are powerful and easy to use safety relays, suitable for all common types of safety applications.

The Sentry series contains basic models for simple applications and easy output expansion, as well as highly flexible models with extremely accurate timer functions.

Sentry safety relays are used in both simple and more advanced safety solutions when safety devices need to be monitored according to the requirements of functional safety standards.

**Continuous operation**

**LEDs and display**
3-color LEDs allow for more status messages and simplify troubleshooting. Models with display offer preset configurations and extensive fault information.

**Advanced timer functions**
Timer functions with an accuracy of ± 1% minimize unnecessary downtime.

**Multi-reset**
The multi-reset function enables reset of up to 10 Sentry safety relays using just one reset button.

**Optimized logistics**

**Universal models**
A single safety relay for all common safety applications reduces stock and saves warehouse space.

**Multi-voltage**
Multi-voltage models offer more flexibility and less stock.

**Compact size**
All models are only 22.5 mm wide, even models with 2 NO + 2 NO outputs.

**Easy to install**

**Detachable terminal blocks**
Detachable terminal blocks speed up connection and replacement.

**Switch for reset selection**
Manual or automatic reset easily selectable by switch.

**Powerful outputs**
Powerful outputs allow to drive larger contactors and simplify installation by saving the use of an intermediary contactor.
Applications

Sentry

Monitoring of safety devices
Sentry safety relays make it easy to reach the required level of safety when monitoring safety devices like emergency stop buttons, door switches, light guards, etc.

Expansion of safety outputs
Sentry expansion modules are used to increase the number of safety outputs of a safety control module in order to control more machinery.
Features

Sentry

**Timer functions with an accuracy of ± 1%**
Several timer functions are available: On/Off-delay, time bypass and time reset.

On/Off-delay are used to postpone the activation/deactivation of the safety outputs with a preset time delay. This is used in e.g. Category 1 stops.

Time bypass activates the safety outputs for a maximum pre-defined time when the safety inputs are closed. Inching is an example of application.

Time reset activates the safety outputs for a maximum pre-defined time when the safety inputs are opened. Pre-reset is an example of application.

An accuracy of ± 1% allows a very precise time to be set in order to increase safety and minimize unnecessary downtime.

**Configurable models with display**
The models with display are configurable and the user can choose between preset configurations and a custom configuration that can be protected by password.

**Faster troubleshooting with display**
The display minimizes troubleshooting by giving extensive information about internal faults, I/O faults, system faults, function faults and a log of the last 10 errors.

**Switch for selection of the reset function**
All models can be used in automatic reset and some models allow to choose manual reset, either by switch or by configuration, which simplifies connection. In order to prevent mistakes, it is not possible to change reset function during operation by just flipping the switch.

**Powerful outputs**
The outputs have a switching capacity of up to 6A DC-13. This allows Sentry to drive larger contactors and saves the use of an intermediary contactor.

**Delayed outputs**
Some Sentry models have delayed outputs in order to e.g. give a machine time to apply breaking force before power is disconnected.
For models with 2 NO + 2 NO outputs, it is only the second pair of NO outputs that is delayed.
For models with 3 NO + 1 NC, all outputs are delayed.

**Single function or universal models**
Sentry SSR models are single function safety relays designed for a specific application such as 1 and 2 channel devices, OSSD devices or two-hand devices.
Sentry USR models are universal safety relays. They are capable of handling most types of applications and safety devices, i.e. 1 and 2 channel devices, OSSD-devices, two-hand devices and contact mats/bumpers/edges. This means that only one type of relay is necessary as a spare, which reduces stock and saves warehouse space.
### Safety relays

#### Sentry

**Ordering details**

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<thead>
<tr>
<th>Expansion of safety controller outputs</th>
<th>Safety devices</th>
<th>Test/Reset</th>
<th>Safety relay outputs</th>
<th>Timer function</th>
<th>Feature</th>
<th>Power supply</th>
</tr>
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<tbody>
<tr>
<td>1 channel</td>
<td>2 channels with equivalent contacts</td>
<td>Manual reset (all models have auto reset)</td>
<td>3 NO + 1 NC</td>
<td>Off-delay 0.5 s</td>
<td>Advanced timer function 0-999 s^-1</td>
<td>Configurable with display</td>
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<td>2 channels with equivalent contacts</td>
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<td>Start/Test</td>
<td>4 NO + 2 delayed NO</td>
<td>Off-delay 1.5 s</td>
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</tr>
<tr>
<td>OSSD outputs / PNP outputs</td>
<td>Contact mats, bumpers and safety edges</td>
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<td>4 NO + 1 NC</td>
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<td></td>
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### Accessories

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<th>Description</th>
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<tr>
<td>Terminal block for Sentry safety relays. One piece.</td>
<td>S30A</td>
<td>2TLA010090R0000</td>
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<td>Coding kit for terminal blocks. One kit for one Sentry relay.</td>
<td>S30B</td>
<td>2TLA010090R0100</td>
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a) These models can also be used for expansion of Pluto safe transistor outputs (-24 VDC)
b) No monitoring of two-channel fault, i.e. max Category 3 without fault exclusion.
c) The safety relay detects a short-circuit, not a change in resistance.
d) Off-delay, On-delay, Time bypass or Time reset.
e) BSR23 must be monitored by another device in order to reach higher than Category 1/PL c according to EN ISO 13849-1, for example a safety relay, a safety PLC or an Orion light guard (EDM function).
Technical data

Approvals (pending)

Conformity

2006/42/EC - Machinery
2014/35/EU - EMC
2011/65/EU - RoHS

Functional safety data

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Note! The relays must be cycled at least once a year.

Electrical data

- Operating voltage: +24 VDC (19.2-27.6 VDC) PELV/SELV
- Mains models: 85-265 VAC (50/60 Hz) or 120-375 VDC
- Response time at deactivation: 20 ms
- Maximum switching capacity:
  - DC13, DC1: Up to 6 A (except relays with 2 NO + 2 NO outputs that switch 3 A)
  - AC15, AC1: Up to 5 A (except relays with 2 NO + 2 NO outputs that switch 3 A)

Mechanical data

- Operating temperature: -10 °C – 55 °C
- Humidity range: 25% ... 90%
- Protection class: IP20 (enclosure/electrical cabinet must have at least an IP54)
- Mounting: 35 mm DIN rail (DIN 50022)
- Minimum space between relays in the enclosure: 0 mm

More information

For more information, e.g. the complete technical information, see product manual.

Dimension drawing

All dimensions in mm
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