SIL 3 compliant safety relays
Reliable shutdown during an emergency
In the process industry, safety shutdown systems, such as those used in back-up systems, are critically important to maintaining a safe state of the process when unacceptable or dangerous conditions are detected.

Our solution here is Weidmüller’s new SAFESERIES safety relay, which is certified by TÜV Nord in accordance with EN 61508 for the safety integrity level SIL3. This relay is equipped with a wide-range voltage input on the monitoring circuit from 24 V AC/DC to 230 V AC/DC. This allows it to be used individually for applications such as back-up systems or in overflow tank safety systems. The safety relay also features special circuitry in the input circuit. This makes the module immune to the test pulses that typically occur in circuits of this type.

**SIL3 compliant safety relays**

Reliable shutdown during an emergency

State analysis made easy
Status indicators for the safety and monitoring circuits are displayed directly on the device – so the troubleshooting process is easier.

Proven technology – global accreditation
This device can be used around the world because it has been certified by the internationally recognised TÜV NORD Group.
In the process industry, safety shutdown systems, such as those used in back-up systems, are critically important to maintaining a safe state of the process when unacceptable or dangerous conditions are detected.

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**Improved integration in DCS systems**
Special circuitry makes the SIL circuit immune to test pulses that are commonly used by DCS systems.

**Use for back-up systems**
The wide-range voltage input in the monitoring circuit enables back-up systems with high DC voltages to be controlled.

**Signals with optimal protection**
Our VARITECTOR SPC series of lightning and surge protection products feature SIL certification from TÜV NORD. They offer optimal signal protection for safety-critical circuitry.

**Easy to replace the fuse**
The fuse is accessible externally so that it can be quickly replaced on-site.
SIL3 relay
• With and without monitoring circuit
• Wide-range voltage input in monitoring circuit
• Externally accessible fuse
• TÜV certified “Safety Approved”

Technical data

Temperatures
- Operating temperature: -25 °C…+50 °C
- Storage temperature: -40 °C…+85 °C

General specifications
- Approvals: CE, TÜV “Safety Approved”
- Gas corrosion resistance: Yes (only Order No.: 1304040000)
- Insulation coordination: EN 50178
- Rated voltage: 300 V
- Clearance and creepage distances: 5.5 mm
- Overvoltage category: II
- Contamination degree: 2
- Output, safety circuit:
  - Max. permitted switching current: 5 A
  - Switching voltage: 250 V AC / 30 V DC
  - Min. switching power: 10 mA / 12 V DC
  - Rated voltage: 8 A
  - Rated voltage: 2500 VA
  - Switch-off time: typ. 14 ms
  - Switch-on time: typ. 7 ms
- Contact base material: AgNi0,15
- Internal (5x20) mm safety fuse: 5 A slow acting

Output, monitoring circuit
- Max. permitted switching current: 30 mA
- Switching voltage: 24 V DC
- Min. switching power: 1 mA / 1 V DC
- Status indicator LED yellow
- Contact base material: Ag Ni, 5 µm Au
- Status indicator LED yellow
- Power consumption: 23 mA @ 24 V DC, 4.4 mA 230 V DC

Input safety circuit
- Rated control voltage: 24 V DC ±20 %
- Guaranteed input current at (24 V DC - 10%) : 35 mA
- Power consumption: 42 mA
- Status indicator LED yellow
- Applied standards:
  - Functional safety: EN 61508
  - Insulation coordination: EN 50178
  - EMC: EN 61000, EN 61326-3-2

Dimensions
- Clamping range (nominal / min. / max.) mm²: 1.5 / 0.13 / 2.5
- Height x Width x Depth mm: 117.2 x 22.5 x 114

Ordering data

<table>
<thead>
<tr>
<th>Type</th>
<th>VPE</th>
<th>Order No.</th>
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</thead>
<tbody>
<tr>
<td>SCS 24VDC P1SIL3DS M</td>
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<tr>
<td>SCS 24VDC P1SIL3DS</td>
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<td>1303890000</td>
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<tr>
<td>SCS 24VDC P1 SIL3DS MG3</td>
<td>1</td>
<td>1304040000</td>
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</table>

The SCS 24VDC P1SIL3DS safety relay is used in areas that require a functionally safe shutdown. This component fulfils the requirements of EN 61508, SIL 3.
SAFE SERIES SIL relays
Functional safety for process applications

When dealing with the core elements of a system with a large risk potential, it is especially critical to have the best system solution in place. Our SIL relays reliably switch off your systems in critical situations – and they have all been accredited. Let’s connect.

Whether for a burner control system, secure emergency shut down or, for example, for pump controllers – our safety relay guarantees safe conditions and encompasses highly superior and significant features.

Their integration into distributed control systems (DCSs) is even better, with an input filter which makes the SIL circuit immune to the test impulse which is typically used by a DCS. You will also benefit from simple maintenance: the fuses are accessible from the outside and can easily be changed. You can see the status of the safety and the monitoring devices clearly on the displays mounted directly to the device.

All devices are accredited though certification by the internationally recognised TÜV-NORD group – for secure process applications around the globe. Let’s connect.

Safe control of back-up systems
Equipped with wide range input voltages in the monitoring circuit from 24 V AC/DC to 230 V AC/DC, the relay is designed for individual use, e.g. in back-up systems or the overfill prevention devices of tank farms.

Safe monitoring of furnace firing systems
The feed-in of fuel must be interrupted as soon as a boiler plant reaches any safety criterion limits. The SAFE SERIES offers you a safety switch-off for the feed-in of fuel to furnace firing systems up to safety integrity level (SIL) 3.
When dealing with the core elements of a system with a large risk potential, it is especially critical to have the best system solution in place. Our SIL relays reliably switch off your systems in critical situations—and they have all been accredited. Let’s connect.

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Technical data and ordering data can be found beginning on page T.84

**Safe use in corrosive environments**

The SIL3 relay is also available with a G3 coating, which makes it especially suitable for use in aggressive environmental conditions.

**Check out our Weidmüller customer magazine WIN! for more information. No. 11 (pages 11–13)**

**Signals under optimal protection**

The VARITECTOR SPC series of surge protection devices with SIL certification by TÜV Nord provides the best protection of signals in safety circuits for the process industry.

**Safe activation and deactivation**

This universal device can be used for either the energise-to-safe or de-energise-to-safe operation modes, as you wish. This makes it suitable, e.g. for pump controllers or extinguishing systems.
### Preliminary technical data

#### Technical data

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>Temperatures</strong></td>
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<tr>
<td>Operating temperature</td>
<td>-25 °C...+50 °C</td>
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<tr>
<td>Storage temperature</td>
<td>-40 °C...+85 °C</td>
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<tr>
<td><strong>General specifications</strong></td>
<td></td>
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<tr>
<td>Approvals</td>
<td>CE, TÜV “Safety Approved”</td>
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<tr>
<td>Insulation coordination (EN 50 178)</td>
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<tr>
<td>Rated voltage</td>
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<tr>
<td>Clearance and creepage distance input-output</td>
<td>&gt; 5.5 mm</td>
</tr>
<tr>
<td>Clearance and creepage distance output-output</td>
<td>&gt; 5.5 mm</td>
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<tr>
<td>Dielectric strength input-output</td>
<td>1.2 kV eff / 1min</td>
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<tr>
<td>Dielectric strength output-output</td>
<td>1.2 kV eff / 1min</td>
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<tr>
<td>Dielectric strength to mounting rail</td>
<td>1.2 kV eff / 1min</td>
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<tr>
<td>Overvoltage category</td>
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<tr>
<td>Contamination degree</td>
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<tr>
<td><strong>Output, safety circuit</strong></td>
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</tr>
<tr>
<td>Contact design</td>
<td>1 x energized to safe (NO contact)</td>
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<tr>
<td>Max. switching current, internal fuse</td>
<td>5 A</td>
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<tr>
<td>Max. switching current, external fuse</td>
<td>5 A</td>
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<tr>
<td>Max. switching voltage</td>
<td>250 V AC</td>
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<tr>
<td>Min. switching power</td>
<td>10 mA / 12 V DC</td>
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<td>Max. permitted switching current</td>
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<td>Max. switching power</td>
<td>2000 VA</td>
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<td>Switch-off time</td>
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</tr>
<tr>
<td>Switch-on time</td>
<td>&lt; 5.5 ms (DTS), &lt; 5 ms (ETS)</td>
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<tr>
<td>Contact base material</td>
<td>AgNi0,15</td>
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<td>External fuse</td>
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<td>Short-circuit-proof</td>
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<td><strong>Input safety circuit</strong></td>
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<tr>
<td>Rated control voltage</td>
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<tr>
<td>Typical input current at 24 V DC</td>
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<tr>
<td>Response voltage / drop-out voltage DC coil</td>
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<tr>
<td>Status indicator</td>
<td>17 V / 12.5 V (DTS)</td>
</tr>
<tr>
<td><strong>Test inputs</strong></td>
<td></td>
</tr>
<tr>
<td>Rated control voltage</td>
<td>24 V DC</td>
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<tr>
<td>Status indicator</td>
<td>LED red, flashing</td>
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<tr>
<td>Number of test inputs</td>
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<tr>
<td><strong>Applied standards</strong></td>
<td></td>
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<tr>
<td>Functional safety</td>
<td>EN 61508</td>
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<tr>
<td>Insulation coordination</td>
<td>EN 50178</td>
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<td>EMC</td>
<td>EN 61000, EN 61326-3-2</td>
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<td><strong>Dimensions</strong></td>
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<tr>
<td>Clamping range (nominal / min. / max.)</td>
<td>1.5 / 0.13 / 2.5</td>
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<tr>
<td>Height x Width x Depth</td>
<td>117.2 x 22.5 x 114 mm</td>
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<td>SCS 24VDC P2SIL3DSES</td>
<td>1</td>
<td>1319270000</td>
</tr>
</tbody>
</table>
SAFESERIES SIL relays
- Positively-driven contacts
- Dual-channel construction
- Use according to EN 50156
- TÜV certified “Safety Approved”

Preliminary technical data

### Technical data

#### Temperatures
- Operating temperature: -25 °C…+55 °C
- Storage temperature: -40 °C…+85 °C

#### General specifications
- Approvals: CE, TÜV “Safety Approved”
- Insulation coordination (EN 50178)
- Rated voltage: 300 V
- Clearance and creepage distance input-output: > 5.5 mm
- Clearance and creepage distance output-output: > 6.5 mm
- Dielectric strength input-output: 1.2 kV eff / 1 min
- Dielectric strength output-output: 1.2 kV eff / 1 min
- Dielectric strength to mounting rail: 1.2 kV eff / 1 min
- Overvoltage category: III
- TÜV certified “Safety Approved”

#### Output release circuit
- Contact design: 2 NO positively driven (EN 50205)
- Rated current: 5 A
- Switching voltage AC: 250 V AC
- Min. switching power: 10 mA / 12 V DC
- Max. switching current, external fuse: 5 A
- Switching voltage AC: max 250 V AC
- Max. permitted switching current: 6 A
- Switch-off time: 20 ms (C1/C2 bridged, switched via A1/A2)
- Switch-on time: 55 ms (C1/C2 bridged, switched via A1/A2)
- Contact base material: AgSnO
- External fuse: 5 A slow-acting

#### Acknowledgement output (EN50205 Type B)
- Contact design: 1 NC positively driven (EN 50205 Type B)
- Rated current: 1 A
- Switching voltage AC: 250 V AC
- Switching current: 50 mA
- Switching voltage: max 240 V AC

#### Input
- Rated control voltage: 24 V DC ± 10%
- Guaranteed input current at (24 V DC - 10%): > 35 mA
- Cross-connection detection
- Status indicator: LED green, power; LED yellow for signal
- Reduction in response time: typically 50 ms; without bridge via C1/C2: typically 20 ms

#### Monitoring circuit
- Inputs: 2
- Start circuit: 2

#### Start circuit
- Operating voltage: 24 V DC ± 15 %
- Current: 35 mA

#### Applied standards
- Functional safety: EN 61508 , EN ISO 13849-1 Ple
- Insulation coordination: EN 50178
- Equipment for furnaces: EN 50156
- Dimensions: Clamping range (nominal / min. / max.): 1.5 / 0.13 / 2.5 mm²
- Height x Width x Depth: 117.2 x 22.5 x 114 mm

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The feed-in of fuel must be interrupted as soon as a boiler plant reaches any safety criterion limits. The safety relay SCS 24VDC P2SIL3ES enables you to carry out a safety shutdown of the fuel supply, to safety level SIL 3.
Weidmüller - Partner in Industrial Connectivity

As experienced experts we support our customers and partners around the world with products, solutions and services in the industrial environment of power, signal and data. We are at home in their industries and markets and know the technological challenges of tomorrow. We are therefore continuously developing innovative, sustainable and useful solutions for their individual needs. Together we set standards in Industrial Connectivity.

Let's Connect!