

## Safety Relays

### 3TK28 Safety Relays



Screw Terminals



Screw Terminals  
DIP Switches Displayed

### SIRIUS 3TK2826 Safety Relays - the highest flexibility in the smallest space

The 3TK2826 has selectable parameters. It is used as an evaluation unit for the typical safety chain (detection, evaluation, switch-off). At the input side, safety sensors (i.e. EMERGENCY-STOP pushbuttons), at the output side contactors or valves are connected to switch off the "dangerous function". The 3TK2826 monitors the sensor and actuator functions and is responsible for the safe switch-off of the outputs (enabling circuits).

Selectable parameters include: Cross-fault detection, Evaluation, Connection type, Debouncing time, start type sensor input, Start type cascading input, Start-up test and Start-up after power failure. Selection is via a DIP switch.

Characteristics	Customer Benefits
<ul style="list-style-type: none"> <li>Connection of all conventional sensor types</li> <li>Numerous functions embedded in one device</li> <li>Status displays</li> <li>Extended diagnostic options</li> </ul>	<ul style="list-style-type: none"> <li>Employment possible in all safety applications</li> <li>Reduced inventory &amp; inventory costs</li> <li>Application flexibility</li> <li>Reduced number of devices</li> <li>Configuration without the need to specify the safety functions in advance</li> <li>Sensor and actuator states are indicated on the device</li> <li>Fast localization of faults</li> <li>High system availability</li> </ul>
<b>Certifications</b> <ul style="list-style-type: none"> <li>Category 4 in acc. with EN954-1</li> <li>SIL 3 in acc. with IEC61062</li> <li>UL / CSA</li> </ul>	<ul style="list-style-type: none"> <li>Worldwide acceptance</li> </ul>
<ul style="list-style-type: none"> <li>Signaling of switch-off faults in the actuator circuit</li> <li>Floating outputs</li> <li>Wide voltage ranges</li> <li>Storage of the sensor status in case of voltage failures</li> </ul>	<ul style="list-style-type: none"> <li>For Cat. 2 in acc. With EN954-1, only one contactor is required in the switch-off circuit</li> <li>Electrical isolation</li> <li>High current carrying capacity</li> <li>Potential independent</li> <li>Reduced number of devices</li> <li>Application flexibility</li> <li>Reduced inventory &amp; inventory costs</li> <li>With the "Automatic start-up after voltage recovery" function, the machine's start-up is prevented if the switch-on conditions were not given prior to the voltage failure and the release was not initiated</li> </ul>

### Safety Relay with Selectable Parameters

Maximum Achievable category EN 954-1	Rated control supply voltage (U <sub>s</sub> )	Width mm	Switch-off delay second(s)	With Screw Terminals			With Spring Loaded Terminals		
				Order No. Preferred type		Weight approx. kg	Order No. Preferred type		Weight approx. kg
4	DC 24 V	45	0	3TK2826-1BB40		0.370	3TK2826-2BB40		0.370
			0.05 - 3	3TK2826-1BB41		0.370	3TK2826-2BB41		0.370
			0.5 - 30	3TK2826-1BB42		0.370	3TK2826-2BB42		0.370
			5 - 300	3TK2826-1BB44		0.370	3TK2826-2BB44		0.370
4	24 - 240 V AC / DC	45	0	3TK2826-1CW30		0.400	3TK2826-2CW30		0.400
			0.05 - 3	3TK2826-1CW31		0.400	3TK2826-2CW31		0.400
			0.5 - 30	3TK2826-1CW32		0.400	3TK2826-2CW32		0.400
			5 - 300	3TK2826-1CW34		0.400	3TK2826-2CW34		0.400

# Safety Systems - Safety Integrated

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#### Technical Specifications

Type	3TK2826- ...
Regulations	EN 60204-1, EN 1760-1, EN 954-1, IEC 61508
Categories according to EN 954-1	4
Safety Integrity Level (SIL), in conformity with EN 61508	SIL 3
Test certificates	TÜV
Stop category according to EN 60204-1	0 <sup>1)</sup>
Overvoltage category	II
Rated insulation voltage $V_i$	300 V
Rated impulse strength $V_{imp}$	4 kV
Rated control supply voltage $V_s$	24 V DC and 24 V to 240 V AC/DC
Safe isolation between enabling circuits and electronics in conformity with IEC 60947-1, Annex N	Up to 300 V AC
Operating range	0.85 to 1.15 $V_s$ in the case of 3TK2826- *BB4*
Rated power	3 W
Short-circuit protection	<ul style="list-style-type: none"> <li>• Non-floating outputs</li> <li>• Relay outputs</li> <li>• Outputs short-circuit-proof</li> <li>• DIAZED fuses, operating class gl/gG, 4A or 6A quick-acting</li> </ul>
Operating frequency	Max. 2000 1/h
Response time	Typically 50 ms plus the defined debounce time
Release time (stop category 0) in the case of EMERGENCY STOP	Typically 50 ms plus the defined debounce time
Mains buffering	> 10 ms
Recovery time in the case of EMERGENCY STOP/power failure	At least 250 ms/at least 4 seconds
Minimum EMERGENCY STOP command time	30 ms
START button command time	0.2 to 5 seconds
Max. permissible safety shutdown mat/cable resistance	1000 $\Omega$
Permissible ambient temperature $T_u$ operation/stroage	-25 to +60 °C/-40 to +80 °C

