## Safety Systems - Safety Integrated Safety Relays 3TK28 Safety Relays



**Screw Terminals** 

# 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 detetion, 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.



Screw Terminals
DIP Switches Displayed

Characteristics	Customer Benefits
Connection of all conventional	■ Employment possible in all safety applications
sensor types	
Numerous functions embedded	■ Reduced inventory & inventory costs
in one device	Application flexibility
	Reduced number of devices
	Configuration without the need to specify the
	safety functions in advance
Status displays	Sensor and actuator states are indicated on
	the device
<ul> <li>Extended diagnostic options</li> </ul>	■ Fast localization of faults
	■ High system availability
Certifications	■ Worldwide acceptance
Category 4 in acc. with EN954-1	
SIL 3 in acc. with IEC61062	
UL / CSA	
<ul><li>Signaling of switch-off faults in</li></ul>	For Cat. 2 in acc. With EN954-1, only one contactor
the actuator circuit	is required in the switch-off circuit
<ul> <li>Floating outputs</li> </ul>	<ul> <li>Electrical isolation</li> </ul>
	<ul> <li>High current carrying capacity</li> </ul>
	■ Potential independent
Wide voltage ranges	Reduced number of devices
	Application flexibility
	Reduced inventory & inventory costs
Storage of the sensor status in	With the "Automatic start-up after voltage recovery"
case of voltage failures	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
l	

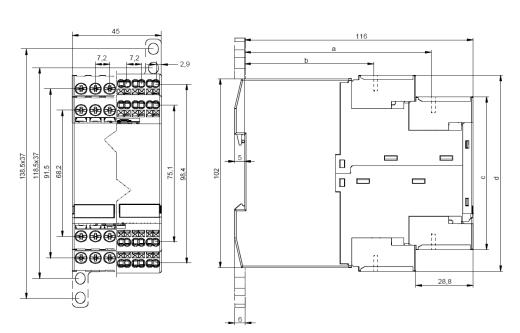
#### Safety Relay with Selectable Parameters

Maximum	Rated	Width	Switch-off	With Screw	Terminals	With Spring	g Loaded Terminals	5
Achievable	control		delay		Weight			Weight
category	supply			Order No.	approx	Order No.		approx.
EN 954-1	voltage (U <sub>s</sub> )	mm	second(s)	Preferred type	kg	Preferred type		kg
			0	3TK2826-1BB40	0.370	3TK2826-2BB40		0.370
4	DC 24 V	45	0.05 - 3	3TK2826-1BB41	0.370	3TK2826-2BB41		0.370
4	DC 24 V	40	0.5 - 30	3TK2826-1BB42	0.370	3TK2826-2BB42		0.370
			5 - 300	3TK2826-1BB44	0.370	3TK2826-2BB44		0.370
			0	3TK2826-1CW30	0.400	3TK2826-2CW30		0.400
4	24 - 240 V	45	0.05 - 3	3TK2826-1CW31	0.400	3TK2826-2CW31		0.400
4	AC / DC	40	0.5 - 30	3TK2826-1CW32	0.400	3TK2826-2CW32		0.400
			5 - 300	3TK2826-1CW34	0.400	3TK2826-2CW34		0.400

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### **Technical Specifications**

Туре	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 1)
Overvoltage category	II
Rated insulation voltage V <sub>i</sub>	300 V
Rated impulse strength V <sub>imp</sub>	4 kV
Rated control supply voltage V₅	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 V₅ in the case of 3TK2826- *BB4*
Rated power	3 W
Short-circuit protection	
Non-floating outputs	Outputs short-circuit-proof
Relay outputs	<ul> <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 Ω
Permissible ambient temperature Tu operation/stroage	-25 to +60 °C/-40 to +80 °C



a 94 — b 65 — c 82,6 84,4
c 82.6 84.4
d 105,9 107,7