ZANDER AACHEN

SAFETY



SAFETY TIME CONTROL DEVICE

SCB

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Safe and time-delayed shutdown of machines and plants

The new safe time control device **SCB** is a safety relay in a very compact design measuring only 22.5 mm, which offers a number of functions for the safe and time-delayed shutdown of machines and plants. It fulfils the highest safety requirements cat. 4 / PI e / SIL 3 according to EN ISO 13849-1 and EN 62061 and is thus, ideal suited for machine tools and automatic machines. Additionally, the **SCB** also applies furnaces and ancillary equipment in continuous operation according to EN 50156-1.



- 2 safety relay outputs for switching high loads
- 2 safe semi-conductor outputs for applications with high switching cycles
- Different combinations of time-delayed and non-time-delayed outputs in one **SCB**
- On-delay or off-delay outputs
- 2 semi-conductor auxiliary outputs
- Automatic start or monitored manual start
- Simple, accurate and quick time setting via the push/rotary button and LED display
- Suitable for highest safety standards: PI e / Cat. 4 / SIL 3 according to EN ISO 13849-1 and EN62061; Furnaces and ancillary equipment for continuous operation according to EN 50156-1

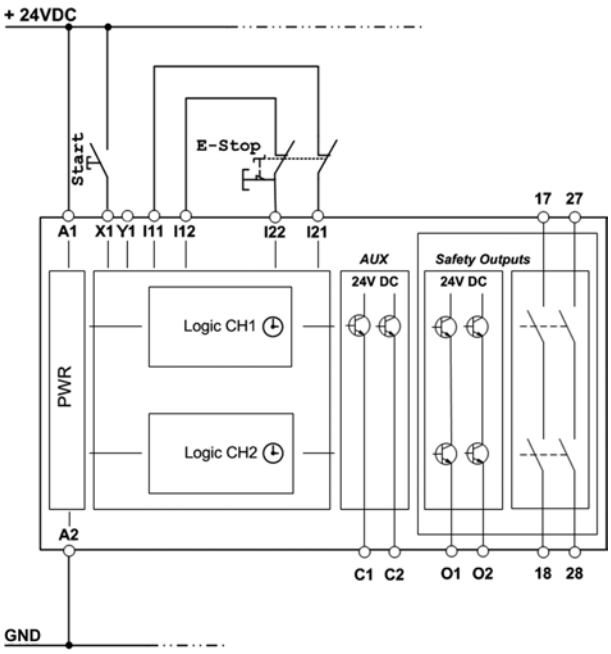
Variable function

Depending on the variant, the SCB has up to four independent safe outputs, which switch on or off time-delayed or non-time-delayed.
Cat. 4 / PL e / SILCL 3 according EN ISO 13849-1 and EN 62061 will always be achieved.

On-delay safety contacts:
Depending on the variant, the outputs of the SCB will switch on immediately or time-delayed if the safety circuit I11-I21 and I12-I22 are closed.

Off-delay safety contacts:
When a safety requirement (E-Stop) prevails, the non-delayed safety contacts will switch off immediately and the time-delayed safety contacts will switch off at the end of the parametrised delay time.

Auxiliary outputs:
Auxiliary output C1 is the instantaneous contact for the time-delayed safety contacts.
For example, if a safety requirement prevails, C1 switches off immediately and thereby indicates the forthcoming time-delayed shut-down of the safety output. Auxiliary output C2 indicates an occurred error which is detected by the SCB.



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Economical, because …



… detailed and clear monitoring.

The **SCB** has an detailed monitoring. Errors such as faulty sensors, short circuits or wrong wiring will be detected and indicated with an error number on the LED-display and via the auxiliary output.

This means:

- Avoiding downtime during troubleshooting
- Eliminates tedious process of troubleshooting
- Quick commissioning

… complete overview during every operating status!



… easy and accurate time setting

The SCB can be operated quickly and easily via the push/ rotary button on the front of the housing. By simply turning the switch, you can set the delay time in the parametrisation mode quickly and accurately in the range of 0.1 s / m / h to 9.9 s / m / h. Accurate time setting is possible by displaying the parametrised value via the in-built LED display. Thus, time-consuming re-alignment processes and time measurements can be avoided.

This means:

- Quick commissioning
- Easy and quick parameterizing of delay times
- Clearly structured monitoring of the parametrised delay time

… safety at once!

… developed for furnaces and ancillary equipment in continuous operation.
The SCB has been specially developed for furnaces and ancillary equipment in continuous operation, for which regular proof-tests cannot be conducted at sufficiently short intervals according to EN 50156-1.

Thanks to the internal structure of the SCB, the use of diverse contactor groups for connecting the safety-related actuators can be dispensed with.

This means

- Less downtime for your plant because of proof-test intervals as per EN 50156-1
- More place in the switch cabinet and reduced wiring effort

… ideally suited for furnaces and ancillary equipment in continuous operation!



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The right variant for your application.

The safety outputs of the **SCB** can connect in versatile combinations. Time-delayed or non-time-delayed and with on-delay or off-delay.

You can decide the configuration of your **SCB** by selecting one of the standard configurations saved in the device via the menu control.

We can also parametrise for you other combinations, like mixed on-delay and off-delay outputs or delayed auxillary outputs.



Order Number	Article	Delay	No. of safe semiconductor outputs	No. of safe relay contacts	Terminals
474460/1/2	SCB-04 non-*inverted switching auxiliary outputs*	0 - 99 s/min/h	2	2	Plug-in screw terminals
474465/6/7	SCB-04-01 *inverted switching auxiliary outputs*	0 - 99 s/min/h	2	2	Plug-in screw terminals
474480/1/2	SCB-03 non-*inverted switching auxiliary outputs*	0 - 99 s/min/h	3	0	Plug-in screw terminals
474485/6/7	SCB-03-01 *inverted switching auxiliary outputs*	0 - 99 s/min/h	3	0	Plug-in screw terminals
474490/1/2	SCB-02 non-*inverted switching auxiliary outputs*	0 - 99 s/min/h	0	2	Plug-in screw terminals
474495/6/7	SCB-02-01 *inverted switching auxiliary outputs*	0 - 99 s/min/h	0	2	Plug-in screw terminals
475460/1/2	SCB-04 non-*inverted switching auxiliary outputs*	0 - 99 s/min/h	2	2	Push-in twin spring connector
475465/6/7	SCB-04-01 *inverted switching auxiliary outputs*	0 - 99 s/min/h	2	2	Push-in twin spring connector
475480/1/2	SCB-03 non-*inverted switching auxiliary outputs*	0 - 99 s/min/h	3	0	Push-in twin spring connector
475485/6/7	SCB-03-01 *inverted switching auxiliary outputs*	0 - 99 s/min/h	3	0	Push-in twin spring connector
475490/1/2	SCB-02 non-*inverted switching auxiliary outputs*	0 - 99 s/min/h	0	2	Push-in twin spring connector
475495/6/7	SCB-02-01 *inverted switching auxiliary outputs*	0 - 99 s/min/h	0	2	Push-in twin spring connector

Please see our website for more details.

General technical data	
Electrical Data	
Operating voltage UB	DC 24 V (+10 % / - 15%) with ZPower (Order-No. 471280) 230 V possible
Power consumption	3,6 W (no load operation, increase in power consumption according to connected loads)
Inputs	
Number	1 two-channel input dc 24 v
Switching levels	Log. "0": 0 V up to 5 V; log. "1": 18 V up to Ub
Time domain	
0,1 - 9,9 s / m / h	Resolution: 0.1 s /m/h
10 - 99 s / m / h	Resolution: 1 s /m/h
Safety semiconductor outputs	
Switching capacity per output	2 X 24 V / U_B / 500 mA; PNP; short-circuit proof
Max. Pulse duration for selftest	< 3 ms
Safety relay outputs	
Switching capacity per contact / AC:	250V, 1000 V A, 4 A for resistive load, 250 V, 2 A for AC-15
Switching capacity per contact / DC:	50 V, 200 W, 4 A for resistive load, 24 V, 3 A for DC-13
Auxiliary outputs C1, C2	
Switching capacity per output	C1: U_B / 500 mA; C2: U_B / 50 mA (depending on variants)
Environmental data	
Ambient temperature / storage temperature	0 °C to 55 °C / -20 °C to 85 °C
Rated impulse withstand voltage, Creepage / clearance	6 kV (Din VDE 0110-1)
Rated insulation voltage	250 V (Between relay circuit and SELV/PELV circuit) 50 V (For SELV/PELV circuit)
Overvoltage category / Degree of soiling	III (DIN VDE 0110-1) / 2 (DIN VDE 0110-1)
Mechanical Data	
Dimensions (W X H X D)	22,5 x 99 x 114 mm
Degree of protection	IP20
Assembly	Mounting rail as per EN 60715 TH35
Weight	approx. 145 g

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