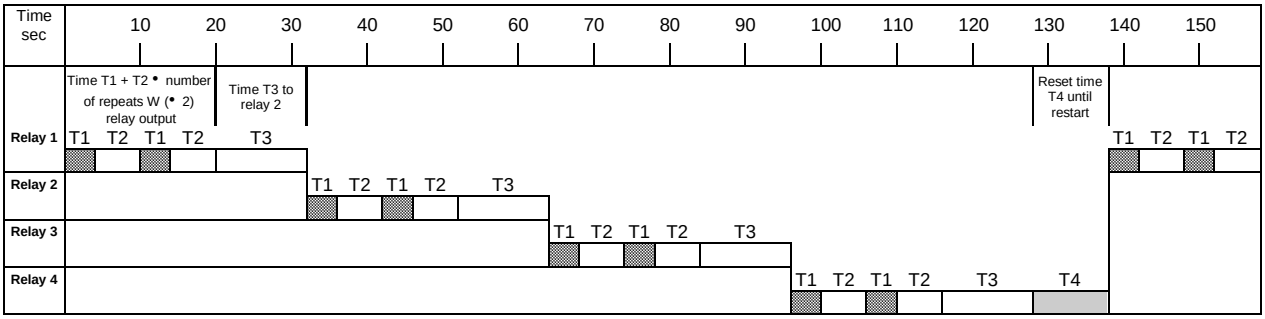
General

The stepping relay SD04 and SD08 is an electronic control unit using a programmable logic controller (PLC) for periodic clock circuits with relay to 4 or 8 relay outputs, each with one contact as required when tapping larger silo systems, filtration systems, dry towers or when cleaning dust filter bags.
Each relay output can be pulsed one to four times with the work time T1 and the pause time T2 before the next output is controlled after the relay time T3. After the times T1, T2, and T3 on the last relay have elapsed, the stepping relay begins again with T1 on the first relay after the reset time T4.
All time ranges can be switched to seconds, minutes or hours, which means short and long work, pause, repeat and reset times can be optimally adapted to local requirements.
An input for the remote control from a switch room or similar is also available.

FUNCTION SEQUENCE

When applying voltage, circuit breakers to ON and control LOC ON (on PLC). Relay 1 begins with work time T1 and pause time T2. This pulsing (T1 + T2) can be set in the settings of the PLC to 1 to 4 repeats per relay output. Relaying time T3 follows the last pause time T2 on relay 1. After T3 has elapsed, relay 2 with the times T1 and T2 starts to pulse, etc. up to the last relay. After relaying time T3 on the last relay has elapsed, the reset time T4 follows. The programm cycle then starts from the beginning again with work time T1 on relay 1.
The times of unused relays are not dropped.

The following is a recorded timing diagram for a stepping relay SD04 with 4 relays and settings as follows:
Set times: T1=3s / T2=7s / repeats 2x /T3=12s / T4=10s /



The calculated time for a cycle is:

Total time = ((T1 + T2 time) • repeats + relaying time) • number of relays + reset time

T = ((3 s+ 7 s) • 2 + 12s) • 4 + 10s =138 sec

Interim calculation: = 10S 20s 32s 128s 138s

By default, the stepping relay with the following times is delivered:

Work time:	T1 = 5 sec - possible setting times	0.01 sec up to 99.99 hrs
Pause time	T2 = 1 sec - possible setting times	0.01 sec up to 99.99 hrs
Repeats (W):	W = 1 - possible up to	1 to 4 repeats of the same relay output
Relaying time:	T3 = 1 sec - possible setting times	0.01 sec up to 99.99 hrs
Reset time:	T4 = 10 sec - possible setting times	0.01 sec up to 99.99 hrs

Versions available:

Item No.	Operating voltage	Design
SDxx	230 V AC	PLC with display in wall-mounted enclosure (IP65), ready for operation, pre-mounted with circuit breaker
SDxx-UC	24V AC/DC	PLC with display in wall-mounted enclosure (IP65), ready for operation, pre-mounted with circuit breaker
SDxx-03	12-24 V DC	PLC with display in wall-mounted enclosure (IP65), ready for operation, pre-mounted with circuit breaker
SDSxx	230V AC	PLC with display on cabinet mounting rail, ready for operation, pre-mounted with circuit breakers
SDSxx-UC	24V AC/DC	PLC with display on cabinet mounting rail, ready for operation, pre-mounted with circuit breakers
SDSxx-03	12-24V DC	PLC with display on cabinet mounting rail, ready for operation, pre-mounted with circuit breakers
SDSExx	230V AC	PLC with display on cabinet mounting rail, external display, ready for operation, pre-mounted with circuit breakers
SDSExx-UC	24V AC/DC	PLC with display on cabinet mounting rail, external display, ready for operation, pre-mounted with circuit breakers
SDSExx-03	12-24V DC	PLC with display on cabinet mounting rail, external display, ready for operation, pre-mounted with circuit breakers
xx	Number of relays	
04	04	With 4 relay outputs
08	08	With 8 relay outputs

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