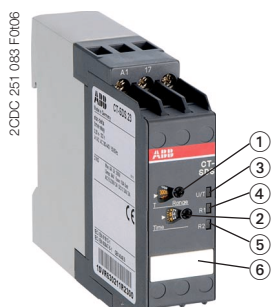


# Electronic timer CT-SDS.22

## Star-delta change-over with 2 n/o contacts

### Data sheet



- ① Rotary switch for the preselection of the time range
- ② Potentiometer with direct reading scale for the fine adjustment of the time delay
- ③ U/T: green LED -  
┌───┐  
| control supply voltage applied |  
└───┘  
| timing |
- ④ R1: yellow LED -  
┌───┐  
| output relay 1 energized |
- ⑤ R2: yellow LED -  
┌───┐  
| output relay 2 energized |
- ⑥ Marker label

### Features

- Rated control supply voltage 24-48 V DC, 24-240 V AC
- Single-function timer with star-delta change-over
- One device includes 7 time ranges (0.05 s - 10 min)
- 2 n/o contacts
- 3 LEDs for status indication
- Width of 22.5 mm
- Sealable transparent cover (optional accessory) for protection against unauthorized changes of time values
- Integrated marker label

### Approvals

- Ⓢ cULus
- Ⓜ GL
- Ⓜ GOST
- Ⓢ CB scheme
- Ⓢ CCC pending
- Ⓜ RMRS pending

### Marks

- Ⓒ CE
- Ⓢ C-Tick pending

### Order data

Type	Rated control supply voltage	Time range	Output	Order code
CT-SDS.22	24-48 V DC, 24-240 V AC	0.05 s - 10 min	2 n/o contacts	1SVR 630 210 R3300

### Order data - Accessories

#### Adapter for screw mounting on panel

Type	Width in mm	Order code
ADP.01	22.5	1SVR 430 029 R0100

#### Sealable transparent cover

Type	Width in mm	Order code
COV.01	22.5	1SVR 430 005 R0100

# Electronic timer CT-SDS.22

## Star-delta change-over with 2 n/o contacts

### Data sheet

#### Marker label

Type	Width in mm	Order code
MAR.01	22.5	1SVR 366 017 R0100

#### Application

The CT-S range timers are designed for use in industrial applications. They operate over an universal range of supply voltages and a large time delay range, within compact dimensions. The easy-to-set front-face potentiometers, with direct reading scales, provide accurate time delay adjustment.

#### Operating mode

The CT-SDS.22 has 2 n/o contacts and includes 2 separated timing circuits: an adjustable motor starting delay, the time the star contactor is energized, and an 50 ms fixed open transition delay before the delta contactor is energized. A rotary switch, on the front of the unit, allows selection of one of 7 time ranges from 0.05 s - 10 min. The fine adjustment of the time delay is made via an internal potentiometer, with a direct reading scale, on the front of the unit.

Timing is displayed by a flashing green LED labelled U/T.

#### Function diagram(s)

##### Remarks

##### Legend:

□ Control supply voltage not applied / Output contact open

■ Control supply voltage applied / Output contact closed

##### Terminal designations on the device and in the diagrams:

The 1st n/o contact is designated 17-18. The 2nd n/o contact is designated 17-28. Control supply voltage is applied to terminals A1-A2.

##### Function of the yellow LEDs:

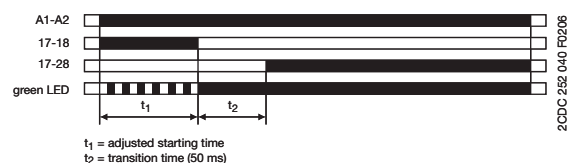
The two yellow LEDs are designated R1 and R2. LED R1 shows the status of the 1st n/o contact (17-18) and LED R2 shows the status of the 2nd n/o contact (17-28). LED R1 or R2 glows as soon as the corresponding output relay energizes and turns off when the corresponding output relay de-energizes.

##### △ Star-delta change-over

This function requires continuous control supply voltage for timing.

Applying control supply voltage to terminals **A1-A2**, energizes the star contactor connected to terminals **17-18** and begins the set starting time  $t_1$ . The green LED flashes during timing. When the starting time is complete, the first output contact de-energizes the star contactor.

Now, the fixed transition time  $t_2$  of 50 ms starts. When the transition time is complete, the second output contact energizes the delta contactor connected to terminals **17-28**. The delta contactor remains energized as long as control supply voltage is applied to the unit.



# Electronic timer CT-SDS.22

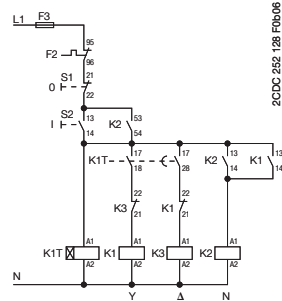
## Star-delta change-over with 2 n/o contacts

### Data sheet

#### Example(s) of application

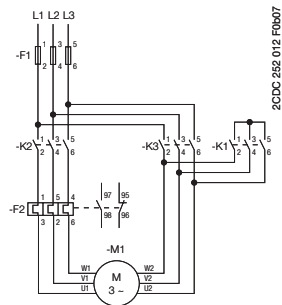
##### Star-delta change-over

Control circuit diagram

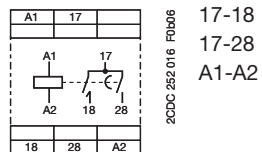


##### Star-delta change-over

Power circuit diagram



#### Connection diagram(s)



1. n/o contact

2. n/o contact

Rated control supply voltage  $U_s$   
24-48 V DC or 24-240 V AC





# Electronic timer CT-SDS.22

## Star-delta change-over with 2 n/o contacts

### Data sheet

#### Technical data

Data at  $T_a = 25\text{ °C}$  and rated values, if noting else indicated

<b>Input circuits - Supply circuit</b>		1SVR 630 210 R3300		
Rated control supply voltage $U_s$	A1-A2	24-48 V DC		
	A1-A2	24-240 V AC		
Rated control supply voltage tolerance	24-48 V DC	-15...+10 %		
	24-240 V AC	-15...+10 %		
Typical current / power consumption		24 V DC	230 V AC	115 V AC
	24-48 V DC	12 mA / on request	- / -	- / -
	24-240 V AC	- / -	50 mA / on request	33 mA / on request
Rated frequency	DC; 50/60 Hz			
Frequency range AC	47-63 Hz			
Power failure buffering time	min. 20 ms			
<b>Timing circuit</b>		1SVR 630 210 R3300		
Kind of timer	Single-function timer	Star-delta change-over		
Time ranges 0.05 s - 10 min	0.05-1 s, 0.15-3 s, 0.5-10 s, 1.5-30 s, 5-100 s, 15-300 s, 0.5-10 min			
Recovery time	< 80 ms			
Accuracy within the rated control supply voltage tolerance	$\Delta t < 0.004\ %/\Delta U$			
Accuracy within the temperature range	$\Delta t < 0.03\ %/^{\circ}\text{C}$			
Star-delta transition time	fixed, 50 ms			
Star-delta transition time tolerance	$\pm 2\ \text{ms}$			
<b>Indication of operational states</b>		1SVR 630 210 R3300		
Control supply voltage / timing	U/T: green LED	 : control supply voltage applied		
Control supply voltage / timing	U/T: green LED	 : timing		
Relay status	R1: yellow LED	 : output relay 1 energized		
Relay status	R2: yellow LED	 : output relay 2 energized		
<b>Output circuits</b>		1SVR 630 210 R3300		
Kind of output	17-18	Relay, 1. n/o contact		
	17-28	Relay, 2. n/o contact		
Contact material	Cd-free			
Rated operational voltage $U_o$	250 V			
Minimum switching voltage / Minimum switching current	12 V / 10 mA			
Maximum switching voltage / Minimum switching current	see load limit curves / see load limit curves			
Rated operational current $I_o$ (IEC/EN 60947-5-1)	AC12 (resistive) at 230 V	4 A		
	AC15 (inductive) at 230 V	3 A		
	DC12 (resistive) at 24 V	4 A		
	DC13 (inductive) at 24 V	2 A		
Mechanical lifetime	30 x 10 <sup>6</sup> switching cycles			
Electrical lifetime	0.1 x 10 <sup>6</sup> switching cycles (AC12, 230 V, 4 A)			

# Electronic timer CT-SDS.22

## Star-delta change-over with 2 n/o contacts

### Data sheet

<b>Output circuits</b>		1SVR 630 210 R3300
Short-circuit resistance, maximum fuse rating (IEC/EN 60947-5-1)	n/c contact	6 A fast-acting
	n/o contact	10 A fast-acting
<b>General data</b>		1SVR 630 210 R3300
Duty time		100 %
Repeat accuracy (constant parameters)		$\Delta t < \pm 0.2 \%$
Dimensions (W x H x D)		22.5 x 78 x 100 mm (0.89 x 3.07 x 3.94 inches)
Electrical connection - all circuits		Screw connection
Wire size	fine-strand with wire end ferrule	2 x 0.75-2.5 mm <sup>2</sup> (2 x 18-14 AWG)
	fine-strand without wire end ferrule	2 x 0.75-2.5 mm <sup>2</sup> (2 x 18-14 AWG)
	rigid	2 x 0.5-4 mm <sup>2</sup> (2 x 20-12 AWG)
Stripping length		7 mm (0.28 inches)
Tightening torque		0.6-0.8 Nm
Weight		0.105 kg (0.23 lb)
Mounting position		any
Minimum distance to other units		
normal operation mode	horizontal	none
	vertical	none
Mounting		DIN rail (EN 60715) snap-on mounting without any tool
Degree of protection enclosure / terminals		IP50 / IP20
<b>Environmental data</b>		1SVR 630 210 R3300
Ambient temperature range	operation	-25...+60 °C
	storage	-40...+85 °C
Damp heat, cyclic (IEC/EN 60068-2-30)		6 x 24 h cycle, 55 °C, 95 % RH
Vibration, sinusoidal (IEC/EN 60068-2-6)		40 m/s <sup>2</sup> , 20 cycles, 10...58/60...150 Hz
Shock, half-sine (IEC/EN 60068-2-27)		100 m/s <sup>2</sup> , 11 ms, 3 shocks, all directions
<b>Standards / Directives</b>		1SVR 630 210 R3300
Product standard		IEC 61812-1, EN 61812-1 + A11, DIN VDE 0435 part 2021
EMC Directive		89/336/EEC
Low Voltage Directive		73/23/EEC
RoHS Directive		2002/95/EEC

# Electronic timer CT-SDS.22

## Star-delta change-over with 2 n/o contacts

### Data sheet

<b>Electromagnetic compatibility</b>		1SVR 630 210 R3300
Interference immunity		IEC/EN 61000-6-1 IEC/EN 61000-6-2
electrostatic discharge (ESD)	IEC/EN 61000-4-2	Level 3 (6 kV / 8 kV)
electromagnetic field (HF radiation resistance)	IEC/EN 61000-4-3	Level 3 (10 V/m)
fast transients (Burst)	IEC/EN 61000-4-4	Level 3 (2 kV / 5 kHz)
powerful impulses (Surge)	IEC/EN 61000-4-5	Level 4 (2 kV A1-A2)
HF line emission	IEC/EN 61000-4-6	Level 3 (10 V)
Interference emission		IEC/EN 61000-6-3 IEC/EN 61000-6-4
electromagnetic field (HF radiation resistance)	IEC/CISPR 22, EN 55022	Class B
HF line emission	IEC/CISPR 22, EN 55022	Class B
<b>Isolation data</b>		1SVR 630 210 R3300
Rated insulation voltage $U_i$	output circuit 1 / output circuit 2	300 V
	input circuit / output circuit	500 V
Rated impulse withstand voltage $U_{imp}$ (type test) (IEC 60664-1, VDE 0110)	between all isolated circuits	4 kV; 1.2/50 $\mu$ s
Power-frequency withstand voltage test (Test voltage, routine test)	between all isolated circuits	2.0 kV; 50 Hz, 1 s
Basic insulation (IEC/EN 61140)	input circuit / output circuit	500 V
Protective separation (IEC/EN 61140; VDE 0106 part 101 and part 101/A1)	input circuit / output circuit	250 V
Pollution degree	(IEC/EN 60664, VDE 0110, UL 508)	2
Overvoltage category	(IEC/EN 60664, VDE 0110, UL 508)	III

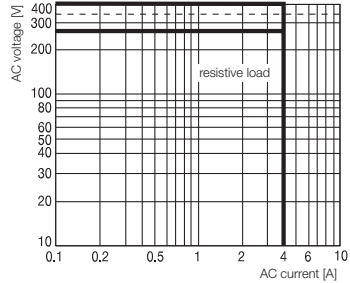
# Electronic timer CT-SDS.22

## Star-delta change-over with 2 n/o contacts

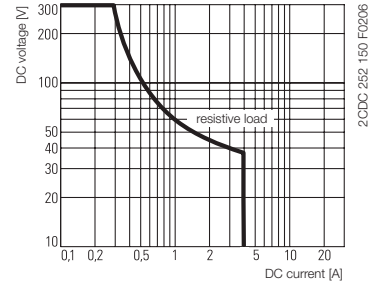
### Data sheet

#### Technical diagrams

##### Load limit curve

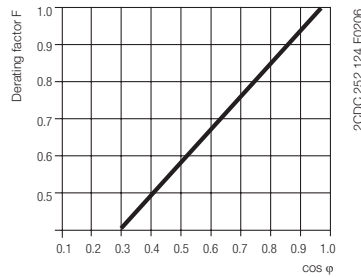


AC load (resistive)



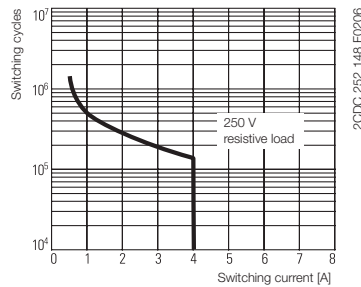
DC load (resistive)

##### Derating factor F



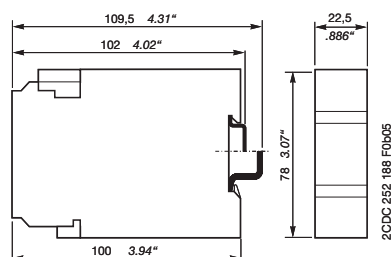
for inductive AC load

##### Contact lifetime



#### Dimensions

in mm



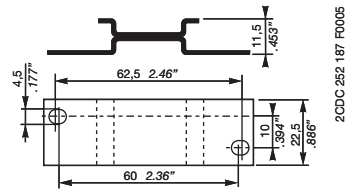
# Electronic timer CT-SDS.22

Star-delta change-over with 2 n/o contacts

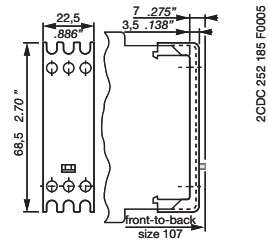
Data sheet

## Dimensions accessories

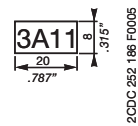
in mm



ADP.01 - Adapter for screw mounting on panel



COV.01 - Sealable transparent cover



MAR.01 - Marker label



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