Timers
Asymmetrical Recycler
Types DCB01, PCB01


DCB01


PCB01

- **Time range 0.1 s to 100h**
- **4 knob selectable functions**
  - **Aa - Asymmetrical recycler ON first**
  - **Ab - Asymmetrical recycler OFF first**
  - **Sh - One shot time function**
  - **Dt - Two state delay on operate (2 relays versions only)**
- **Selection of time range by DIP switches**
- **Knob adjustable time setting Automatic start**
- **Output: 1 or 2 x SPDT relay**
- **For mounting on DIN rail in accordance with DIN/EN 50 022 or Plug-in**
- **22.5 mm Euronorm or 36 mm plug-in module housing**
- **Combined AC and DC power supply voltage**
- **LED indication for relay status and power supply ON**

Product Description

Combined function timer with asymmetrical recycler, one shot time and two state delay on operate functions. Individual selection of the time ranges from 0.1 s to 100 h.

For mounting on DIN-rail (DCB01) or Plug-in (PCB01).

Ordering key

DCB 01 C M24

- **Housing**
- **Function**
- **Type**
- **Item number**
- **Output**
- **Power Supply**

Type Selection

Mounting	Output	Housing	Supply: 24 VDC and 24 to 240 VAC	Supply: 24 to 240 VAC/DC
For DIN-rail	1 x SPDT	D-Housing	**DCB 01 C M24**	
	2 x SPDT			**DCB 01 D M24**
Plug-in	1 x SPDT	P-Housing	**PCB 01 C M24**	
	2 x SPDT			**PCB 01 D M24**

Time Specifications

Time ranges	
Selectable by DIP switches	0.1 to 1 s 1 to 10 s 6 to 60 s 60 to 600 s 0.1 to 1 h 1 to 10 h 10 to 100 h
Setting accuracy	≤ 5%
Repeatability	≤ 0.2%
Time variation	(with respect to full scale value)
Within rated power supply	≤ 0.2% - whole range
Within ambient temperature	≤ 500 ppm/°C
Reset	
Power supply interruption	≥ 200 ms

Output Specifications

Output		1 or 2 x SPDT relay
Rated insulation voltage		250 VAC (RMS)
Contact Ratings ($AgSnO_2$)		μ
Resistive Loads	AC 1	8 A @ 250 VAC
	DC 12	5 A @ 24 VDC
Small inductive loads	AC 15	2.5 A @ 250 VAC
	DC 13	2.5 A @ 24 VDC
Mechanical life		≥ 30 x 10^6 operations
Electrical life		≥ 10^5 operations (at 8 A, 250 V, cos φ = 1)
Operating frequency		< 7200 operations/h
Dielectric strength		
Dielectric voltage		2 kVAC (RMS)
Rated impulse withstand voltage		4 kV (1.2/50 μs)

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Supply Specifications

Power Supply		Overvoltage cat. III (IEC 60664, IEC 60038)
Rated operational voltage trough terminals:		
(DCB01C)	A1, A2:	24 VDC ± 15 % and
(PCB01C)	2, 10:	24 to 240 VAC +10% -15% 45 to 65 Hz
(DCB01D)	A1, A2:	24 to 240 VAC/DC
(PCB01D)	2, 10:	+10% -15%, 45 to 65 Hz
Voltage interruption		≤ 10 ms
Rated operational power		1.5 W

General Specifications

Power ON delay	≤ 100 ms
Power OFF delay	≤ 200 ms
Indication for	
Power supply ON	LED, green
Output relays ON	LED, yellow (flashing when timing)

General Specifications (cont.)

Environment		(EN 60529)
Degree of protection		IP 20
Pollution degree		3 (DCB01), 2 (PCB01) (IEC 60664)
Operating temperature		-20 to +60 °C, R:H: < 95%
Storage temperature		-30 to +80 °C, R:H: < 95%
Housing		
Dimensions	DCB01	22.5 x 80 x 99.5 mm
	PCB01	36 x 80 x 94 mm
Weight		Approx 100 g
Screw terminals		(DCB01)
Tightening torque		Max. 0.5 Nm according to IEC EN 60947
Approval		UL, CSA
CE Marking		Yes
EMC		Electromagnectic Compatibility
Immunity		According to EN 61000-6-2
Emission		According to EN 61000-6-3
Timer Specifications		According to EN 61812-1

Mode of Operation

Function Aa - Asymmetrical Recycler ON-time period first
The relay operates and the ON-time period (T1) begins as soon as the power supply is connected. After the ON-time period the relay releases for the OFF-time period (T2). This sequence continues until the power supply is interrupted for at least 200 ms.

Function Ab - Asymmetrical Recycler OFF-time period first
The OFF-time period (T1) begins as soon as the power supply is connected. After the OFF-time period the relay operates for the ON-time period (T2). This sequence continues until the power supply is interrupted for at least 200 ms.

Function Sh - One shot time function
The OFF-time period (T1) begins as soon as the power supply is connected. After the OFF-time period the relay operates for the ON-time period (T2). After the ON-time period the relay releases and does not operate until the power supply is interrupted for at least 200 ms and connected again.

Function Dt - Two state delay on operate (2 x SPDT versions)
The first time period (T1) begins as soon as the power supply is connected. At the end of the first time period the first relay operates and the second time period (T2) begins. At the end of the second time period the second relay operates. Both relays release when the power supply is disconnected.

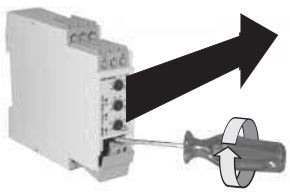
Function/Range/Time Setting

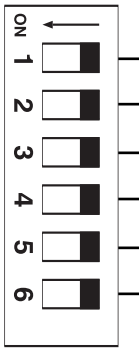
Upper knob:
Setting of function:
- Aa - asymmetrical recycler (ON first)
- Ab - asymmetrical recycler (OFF first)
- Sh - One shot time function
- Dt - Two-state delay on operate (2 x SPDT versions)

Centre knob:
Time T1 setting on relative scale: 1 to 10 with respect to the chosen range.

Lower knob:
Time T2 setting on relative scale: 1 to 10 with respect to the chosen range.

Selection of time ranges
Adjust the T1 time range setting the DIP-switches 1 to 3 and the T2 time range setting the DIP-switches 4 to 6 as shown on the left.
To access the DIP-switches open the plastic cover using a screwdriver as shown below.





T1 time range

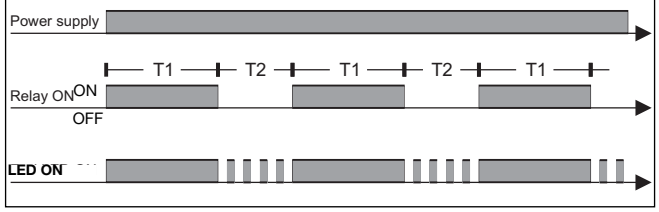
ON	ON	ON:	0.1 to 1 s
ON	ON	OFF:	1 to 10 s
ON	OFF	ON:	6 to 60 s
ON	OFF	OFF:	60 to 600 s
OFF	ON	ON:	0.1 to 1 h
OFF	ON	OFF:	1 to 10 h
OFF	OFF	ON:	10 to 100 h

T2 time range

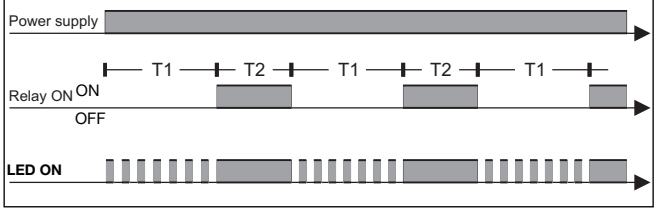
ON	ON	ON:	0.1 to 1 s
ON	ON	OFF:	1 to 10 s
ON	OFF	ON:	6 to 60 s
ON	OFF	OFF:	60 to 600 s
OFF	ON	ON:	0.1 to 1 h
OFF	ON	OFF:	1 to 10 h
OFF	OFF	ON:	10 to 100 h

Operation Diagrams

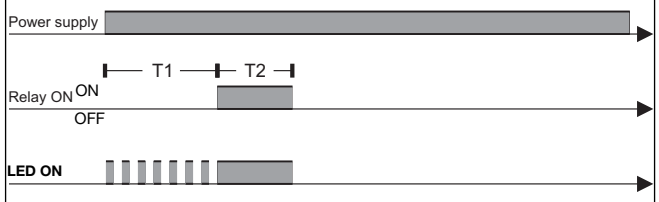
Function Aa - Asymmetrical Recycler - ON first



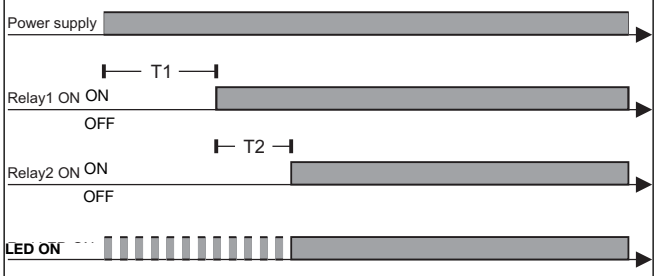
Function Ab - Asymmetrical Recycler - OFF first



Function Sh - One Shot

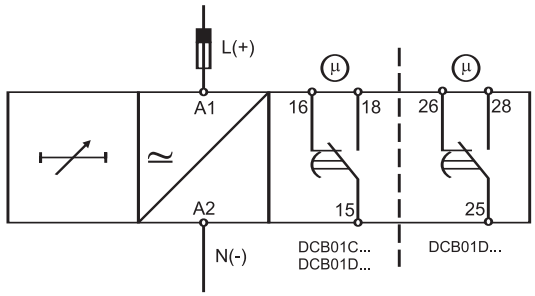


Function Dt - Two state Delay on operate (2xSPDT only)

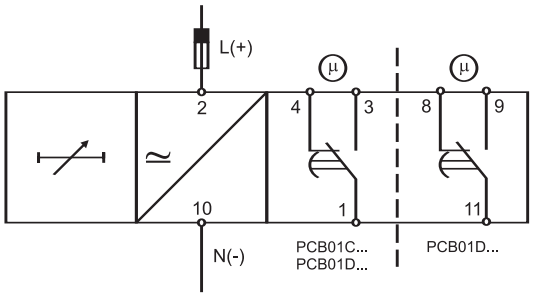


Wiring Diagrams

DCB01

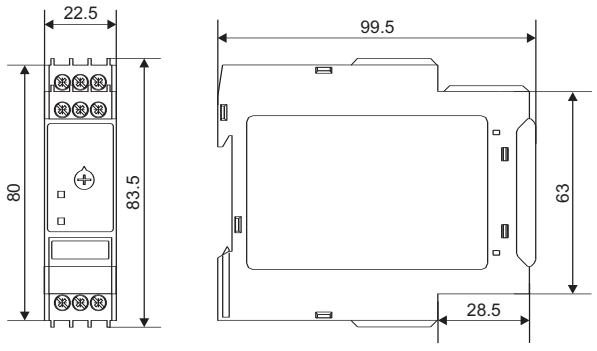


PCB01



Dimensions

DIN-rail



Plug-in