

# Timers

## Star Delta Timer

### Type DAC51

CARLO GAVAZZI



- Time range (Star): 0.1 to 600 s
- Time range (Star to Delta): 50 to 130 ms
- Knob selection of star time range
- Knob adjustable time setting
- Automatic start
- Repeatability:  $\leq 0.2\%$
- Output: 5 A SPDT relay with neutral centre position
- For mounting on DIN-rail in accordance with DIN/EN 50 022
- 17.5 mm Din-rail housing (DIN 43880)
- LED indication for relay status and power supply ON

### Product Description

Star-delta control relay with two adjustable time ranges: Star function (0.1 to 600 s) and star to delta function (50 to 130 ms). Housing 17.5 mm wide suitable for DIN-rail mounting. Fits in M36 cover.

### Ordering key

**DAC 51 C M24**

Housing \_\_\_\_\_  
 Function \_\_\_\_\_  
 Type \_\_\_\_\_  
 Item number \_\_\_\_\_  
 Output \_\_\_\_\_  
 Power Supply \_\_\_\_\_

### Type Selection

Mounting	Output	Housing	Supply: 24 to 240 VAC/DC
For DIN-rail	SPDT relay with neutral centre position	Mini-D	<b>DAC 51 C M24</b>

### Time Specifications

<b>Time ranges (star)</b> Knob selectable	0.1 to 1 s 1 to 10 s 6 to 60 s 60 to 600s
<b>Star to delta delay</b> Neutral centre position	50 to 130 ms between star and delta position
<b>Setting accuracy</b>	$\leq 5\%$
<b>Repeatability</b>	$\leq 0.2\%$
<b>Time variation</b> Within rated power supply Within ambient temperature	$\leq 0.05\%$ $\leq 0.2\%$
<b>Reset</b> Time and relay	Power supply interruption $\geq 200$ ms

### Output Specifications

<b>Output</b>	SPDT relay with neutral centre position
<b>Rated insulation voltage</b>	250 VAC (RMS)
<b>Contact Ratings (AgSnO<sub>2</sub>)</b>	$\mu$
Resistive loads	AC 1 5 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
<b>Mechanical life</b>	$\geq 30 \times 10^6$ operations
<b>Electrical life</b>	$\geq 10^5$ operations (at 5 A, 250 V, $\cos \varphi = 1$ )
<b>Operating frequency</b>	$< 7200$ operations/h
<b>Dielectric strength</b>	
Dielectric voltage	2 kVAC (RMS)
Rated impulse withstand voltage	4 kV (1.2/50 $\mu$ s)

### Supply Specifications

<b>Power supply</b> Rated operational voltage through terminals A1 and A2 M24:	Overvoltage cat. III (IEC 60664, IEC 60038) 24 to 240 VAC/DC +10% -15%, 45 to 65 Hz	<b>Rated operational power</b> AC Supply 5 VA DC Supply 1.5 W
<b>Voltage interruption</b>	$\leq 10$ ms	



## General Specifications

<b>Power ON delay</b>	≤ 100 ms
<b>Power OFF delay</b>	≤ 100 ms
<b>Indication for</b> Power supply ON Output relays ON	LED, green LED, yellow (flashing when timing)
<b>Environment</b> Degree of protection Pollution degree Operating temperature Storage temperature	(EN 60529) IP 20 3 (IEC 60664) -20 to 60 °C, R.H. < 95% -30 to 80 °C, R.H. < 95%
<b>Housing</b> Dimensions Material	17.5 x 81 x 67.2 mm PA66
<b>Weight</b>	85 g
<b>Screw terminals</b> Tightening torque	Max 0.5 Nm according to IEC EN 60947
<b>Approval</b>	UL, CSA
<b>CE Marking</b>	Yes
<b>EMC</b> Immunity Emission	Electromagnetic Compatibility According to EN 61000-6-2 According to EN 61000-6-3
<b>Timer Specifications</b>	According to EN 61812-1

## Mode of Operation

The output relay is normally in the neutral centre position. When the power supply is applied, the relay switches to star position (pin 16) and does not release until the power supply is interrupted for at least 200 ms.

At the end of the set time period, the relay returns to the neutral centre position and the set delay between star and delta position starts.

At the end of the star to delta delay (adjustable from

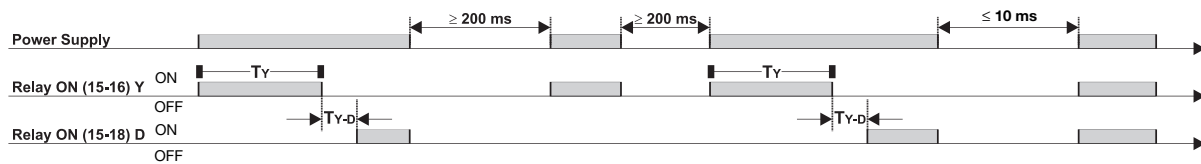
50 to 130 ms), the relay switches in delta position (pin 18) and does not release until the power supply is interrupted for at least 200 ms.

If the power supply is interrupted for more than 200 ms before the star time period has expired, the relay does not operate and the time circuit is set to zero. The relay is ready for a new time period.

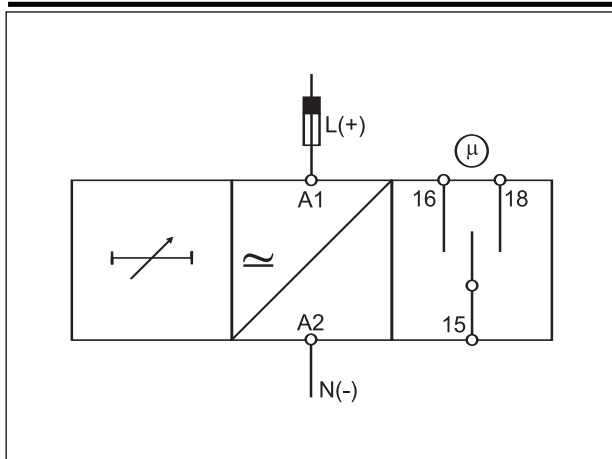
## Time Setting

**Upper knob:** Setting of star time range  
**Lower knob:** Star to delta time setting (50 to 130 ms)  
**Centre knob:** Star time setting on relative scale: 1 to 10 with respect to the chosen range.

## Operation Diagram



## Wiring Diagram



## Dimensions

