

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	DAC 51 C M24

Time Specifications

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

Output Specifications

Output	SPDT relay with neutral centre position
Rated insulation voltage	250 VAC (RMS)
Contact Ratings (AgSnO ₂) Resistive loads AC 1 DC 12 Small inductive loads AC 15 DC 13	μ 5 A @ 250 VAC 5 A @ 24 VDC 2.5 A @ 250 VAC 2.5 A @ 24 VDC
Mechanical life	$\geq 30 \times 10^6$ operations
Electrical life	$\geq 10^5$ operations (at 5 A, 250 V, $\cos \varphi = 1$)
Operating frequency	< 7200 operations/h
Dielectric strength Dielectric voltage Rated impulse withstand voltage	2 kVAC (RMS) 4 kV (1.2/50 μ s)



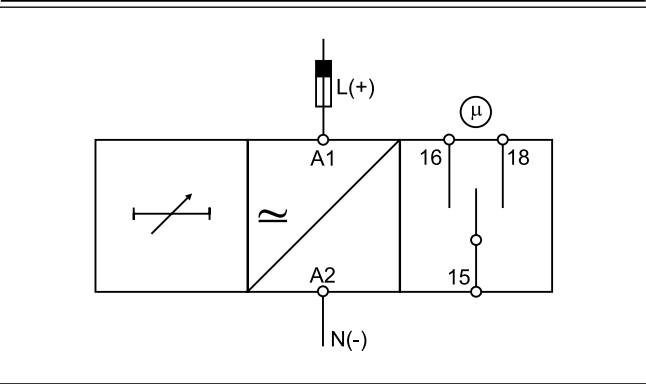
Supply Specifications

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

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.	

Wiring Diagram



General Specifications

Power ON delay	≤ 100 ms
Power OFF delay	≤ 100 ms
Indication for	
Power supply status	LED, green
Output status	LED, yellow (flashing when timing)
Environment	(EN 60529)
Degree of protection	IP 20
Pollution degree	3 (IEC 60664)
Operating temperature	-20 to 60 °C, R.H. < 95%
Storage temperature	-30 to 80 °C, R.H. < 95%
Weight	85 g
Screw terminals	
Tightening torque	Max 0.5 Nm according to IEC EN 60947
Approval	UL
CE Marking	Yes
EMC	
Immunity	Electromagnetic Compatibility
Emission	According to EN 61000-6-2
	According to EN 50081-1
Timer Specifications	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 the star period starts.

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.

Operation Diagram

