Timers
Multi-function
Type S 103

CARLO GAVAZZI

- **Time ranges: 0.1 s to 10 h**
- **4 selectable functions: - Delay on operate**
  - Interval timer
  - Interval timer, delay on release
  - Recycler
- **Easy time and function setting**
- **Knob-adjustable time setting**
- **Automatic and manual start functions**
- **Repeatability: ≤ 0.2%**
- **Output: 5 A SPDT or DPDT relay**
- **Plug-in module, S-housing**
- **LED-indication for relay and power supply ON**
- **24 VAC/DC and 115 to 230 VAC power supply**
- **Cadmium-free contacts**
- **Timer in accordance with IEC 61812-1**

Product Description

Multi-function, multi-voltage timer with 6 selectable time ranges from 0.1 s up to 10 h for standard 11-pin circular sockets. Used as a general timer in industrial applications.

Ordering Key

S 103 156 924

Housing
Type/function
Output
Power supply

Type Selection

Plug	Output	Time range	Supply: 24 VAC/DC & 115-230 VAC
Circular	SPDT	0.1 s - 10 h	**S 103 156 924**
Circular	DPDT	0.1 s - 10 h	**S 103 166 924**

Time Specifications

Time ranges	
Selectable by DIP-switch	0.1 - 1 s 1 - 10 s 0.1 - 1 m 1 - 10 m 0.1 - 1 h 1 - 10 h
Setting accuracy	≤ 5%
Repeatability	≤ 0.2%
Time variation	
Within rated power supply	≤ 0.05%/V
and ambient temperature	≤ 0.2%/°C
Reset	
Manual reset of time and/or relay	Interconnect pins 5 & 2
Pulse duration	≥ 100 ms
Power supply interruption	≥ 200 ms

Output Specifications

Output	S 103 156 924	SPDT relay
	S 103 166 924	DPDT relay
Rated insulation voltage		250 VAC (rms) (cont./elect.)
Contact ratings (AgNi)		µ (micro gap) (IEC 60947-5-1/IEC 60337)
Resistive loads	AC 1	5 A/250 VAC
	DC 1	5 A/24 VDC
Small inductive loads	AC 15	5 A/250 VAC
	DC 13	2 A/24 VDC
Mechanical life		≥ 30 x 10^6 operations
Electrical life	AC 1	≥ 10^5 operations (at max. load)
Operating frequency		≤ 7200 operations/h
Insulation voltage		
Rated insulation voltage		≥ 2.0 kVAC (rms) (cont./elect.)
Rated impulse withstand volt.		4 kV (1.2/50 µs) (cont./elect.) (IEC 60664)

Supply Specifications

Power supply AC connection	Overvoltage cat. III (IEC 60664)
Rated operational voltage	
Through pins 2 & 10	115-230 VAC, -15 to +15% 50/60 Hz, -5/+5 Hz
or pins 2 & 10	24 VAC, -15 to +15%
(interconnect pins 6 & 10)	50/60 Hz, -5/+5 Hz
Voltage interruption	≤ 40 ms
Rated insulation voltage	None
Rated impulse withstand volt.	4 kV (1.2/50 µs) (pin 2 & 10)

Power supply DC connection	Overvoltage cat. III (IEC 60664)
Rated operational voltage	
Through pins 2 & 10 924	24 VDC, -15 to +15%
(interconnect pins 6 & 10)	(pin 2 positive)
Voltage interruption	≤ 40 ms
Rated insulation voltage	None
Rated impulse withstand volt.	1 kV (1.2/50 µs) (pin 2 & 6)
Rated operational current	
AC supply	75 mA @ 230 VAC 40 mA @ 115 VAC 55 mA @ 24 VAC
DC supply	35 mA @ 24 VDC

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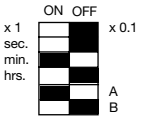
General Specifications

Power ON delay	≤ 200 ms
Power OFF delay	≤ 200 ms
Indication for	
Power supply ON	LED, green (flashing during timing)
Output ON	LED, yellow
Environment	
Degree of protection	IP 20
Pollution degree	2 (IEC 60664)
Operating temperature	-20° to +50°C (-4° to +122°F)
Storage temperature	-50° to +85°C (-58° to +185°F)
Weight	100 g
Approvals	UL, CSA
CE-marking	Yes
EMC	Electromagnetic Compatibility
Immunity	Acc. to EN 50082-2
Emission	Acc. to EN 50081-1
Timer specifications	Acc. to IEC 61812-1

Function and Time Setting



DIP-switch selector

Shown example: min. x 0.1, function 2

Accessories

Socket◊	S 411
Hold down spring◊	HF
Mounting rack	SM 13
Socket cover	BB 4

Mode of Operation

Functions selectable by DIP-switch

Function 1
Delay on operate
The time period starts when pins 5 and 2 are interconnected. At the end of the set delay the relay will operate and will not release until pins 5 and 2 are interconnected again, or power supply is interrupted. The time period will autostart when pins 5 and 2 are constant connected.

Function 2
Interval timer
The relay operates and the time period starts when pins 5 and 2 are interconnected. At the end of the set delay the relay releases. The relay will operate again when pins 5 and 2 are interconnected. For autostart connect pins 5 and 2 before power supply is applied. A recovery period of 200 ms should be allowed before reapplying power supply.

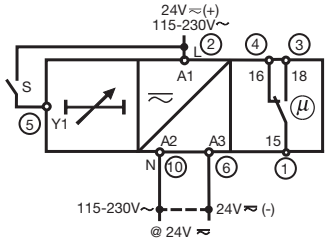
Function 3
Interval timer
Delay on release
Power supply must be constantly applied. When interconnecting pins 5 and 2 the relay will operate. When pins 5 and 2 are disconnected, the time period starts, and when the set time period has expired, the relay releases. If pins 5 and 2 are connected again before the time period has expired, the time is reset and the time period restarts when the interconnection between pins 5 and 2 is interrupted.

Function 4
Recycler
ON-time period first
When power supply is applied the relay operates and the time period starts. At the end of the first set time period, the relay releases for the set time period. This sequence continues with equal ON- and OFF-time periods until power supply is interrupted.

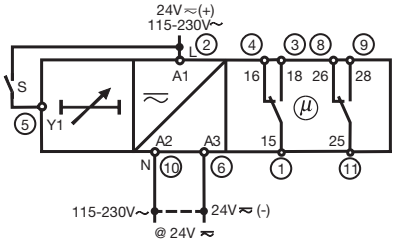
Recycler
OFF-time period first
When pins 5 and 2 are interconnected the recycler func-

Wiring Diagrams

S 103 156 924



S 103 166 924



Operation Diagram