

# 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:  $\leq 0.2\%$
- 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	<b>S 103 156 924</b>
Circular	DPDT	0.1 s - 10 h	<b>S 103 166 924</b>

## Time Specifications

<b>Time ranges</b> 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
<b>Setting accuracy</b>	$\leq 5\%$
<b>Repeatability</b>	$\leq 0.2\%$
<b>Time variation</b> Within rated power supply and ambient temperature	$\leq 0.05\%/V$ $\leq 0.2\%/^{\circ}C$
<b>Reset</b> Manual reset of time and/or relay Pulse duration Power supply interruption	Interconnect pins 5 & 2 $\geq 100$ ms $\geq 200$ ms

## Output Specifications

<b>Output</b>	S 103 156 924 SPDT relay S 103 166 924 DPDT relay
<b>Rated insulation voltage</b>	250 VAC (rms) (cont./elect.)
<b>Contact ratings (AgNi)</b>	$\mu$ (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
<b>Mechanical life</b>	$\geq 30 \times 10^6$ operations
<b>Electrical life</b>	AC 1 $\geq 10^5$ operations (at max. load)
<b>Operating frequency</b>	$\leq 7200$ operations/h
<b>Insulation voltage</b>	
Rated insulation voltage	$\geq 2.0$ kVAC (rms) (cont./elect.)
Rated impulse withstand volt.	4 kV (1.2/50 $\mu$ s) (cont./elect.) (IEC 60664)

## Supply Specifications

<b>Power supply AC connection</b> Rated operational voltage Through pins 2 & 10  or pins 2 & 10 (interconnect pins 6 & 10) Voltage interruption Rated insulation voltage Rated impulse withstand volt.	Overvoltage cat. III (IEC 60664) 115-230 VAC, -15 to +15% 50/60 Hz, -5/+5 Hz 24 VAC, -15 to +15% 50/60 Hz, -5/+5 Hz $\leq 40$ ms None 4 kV (1.2/50 $\mu$ s) (pin 2 & 10)	<b>Power supply DC connection</b> Rated operational voltage Through pins 2 & 10 924 (interconnect pins 6 & 10) Voltage interruption Rated insulation voltage Rated impulse withstand volt.	Overvoltage cat. III (IEC 60664) 24 VDC, -15 to +15% (pin 2 positive) $\leq 40$ ms None 1 kV (1.2/50 $\mu$ s) (pin 2 & 6)
		<b>Rated operational current</b> AC supply  DC supply	75 mA @ 230 VAC 40 mA @ 115 VAC 55 mA @ 24 VAC 35 mA @ 24 VDC



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



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**

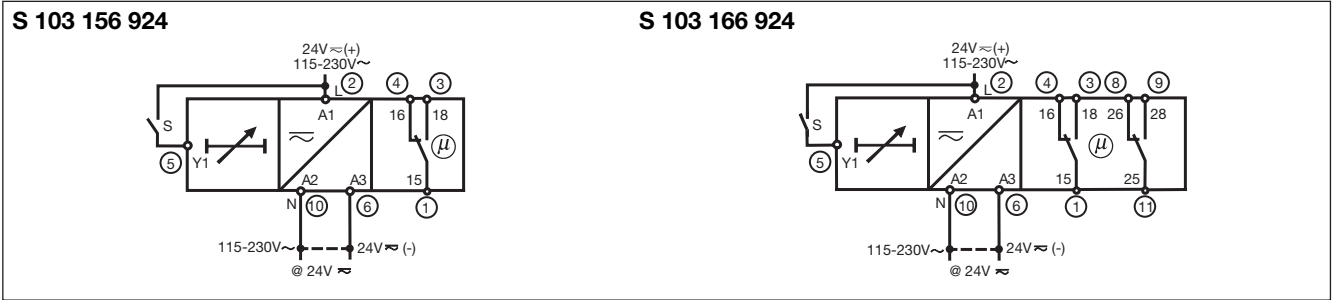
The relay operates and the time period starts when pins 5 and 2 are interconnected. At the end of the set delay the relay releases. The relay will operate again when pins 5 and 2 are interconnected. For autostart connect pins 5 and 2 before power supply is applied. A recovery period of 200 ms should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



Operation Diagram

