

Timers Multi-function Type S 1221

CARLO GAVAZZI



- 6 selectable delay on operate functions
- 6 selectable interval timer functions
- 20 selectable time ranges: 0.15 s to 220 hrs
- Knob-adjustable time within range
- Oscillator-controlled time circuit
- Repeatability deviation: $\leq 1\%$
- Direct connection for NPN sensor
- Output: 10 A SPDT relay or 8 A DPDT relay
- Plug-in type module
- S-housing
- LED-indication for relay and power supply on
- AC or DC power supply

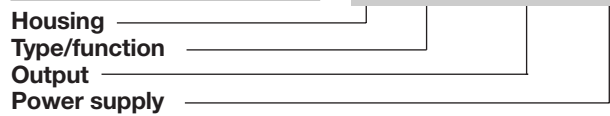
Product Description

Multi delay on operate and multi interval, plug-in time relay with 20 selectable time ranges up to 220 h and 12 selectable modes of operation. Extensively applicable

due to the combination and variety of voltages, functions and time ranges.

Ordering Key

S 1221 156 024



Type Selection

Plug	Output	Time range	Supply: 24 VAC	Supply: 115 VAC	Supply: 230 VAC	Supply: 24 VDC
Circular	SPDT	0.15 s-220 h	S 1221 156 024	S 1221 156 115	S 1221 156 230	S 1221 156 724
	DPDT	0.15 s-220 h	S 1221 166 024	S 1221 166 115	S 1221 166 230	S 1221 166 724

Time Specifications

Time ranges Selectable by DIP-switch	0.15 s - 1.5 s 0.3 s - 3 s 0.6 s - 6 s 1.2 s - 12 s 2.5 s - 25 s 5 s - 50 s 10 s - 100 s 20 s - 200 s 40 s - 400 s 1.3 m - 13 m 2.6 m - 26 m 5 m - 50 m 10 m - 100 m 20 m - 200 m 40 m - 400 m 1.4 h - 14 h 2.8 h - 28 h 5.5 h - 55 h 11 h - 110 h 22 h - 220 h	Accuracy 0 to +10% on max. min. actual time \leq set time
		Repeatability deviation $\leq 1\%$
		Time variation Within rated power supply and ambient temperature $\leq 0.05\%/V$ $\leq 0.2\%/^{\circ}C$
		Reset Time and relay Intercon. pins 5 & 7 pin 5 pos., 24 VDC, 6 mA ≥ 10 ms Pulse duration Power supply interruption Min. 200 ms Sensor supply output 24 VDC, 15 mA pin 6 & 7 pin 6 pos.

Output Specifications

	S 1221 156	S 1221 166
Output	SPDT relay	DPDT relay
Basic electrical insulation	250 VAC (rms) (contact/electronics)	250 VAC (rms) (contacts/elec., contact/contact)
Contact ratings (AgCdO)	μ (micro gap)	μ (micro gap)
Resistive loads	AC 1 10 A/250 VAC (2500 VA) DC 1 1 A/250 VDC (250 W) or 10 A/25 VDC (250 W)	8 A/250 VAC (2000 VA) 0.4 A/250 VDC (100 W) 4 A/25 VDC (100 W)
Small inductive loads	AC 15 2.5 A/230 VAC DC 13 5 A/24 VDC	2.5 A/230 VAC 5 A/24 VDC
Mechanical life	≥ 30 x 10 ⁶ operations	≥ 30 x 10 ⁶ operations
Electrical life	AC 1 ≥ 2.5 x 10 ⁵ operations (at max. load)	≥ 2.5 x 10 ⁵ operations (at max. load)
Operating frequency	≤ 7200 operations/h	≤ 7200 operations/h
Insulation voltages		
Rated insulation voltage	≥ 2.0 kVAC (rms) (contact/electronics)	≥ 2.0 kVAC (rms) (contact/electronics)
Rated transient protection volt.	4 kV (1.2/50 μs) (contact/electronics) (IEC 60664)	4 kV (1.2/50 μs) (contact/electronics) (IEC 60664)

Supply Specifications

Power supply AC types	Installation cat. III (IEC 60664)
Rated operational voltage through pins 2 & 10	230 230 VAC ± 15%, 45 to 65 Hz 115 115 VAC ± 15%, 45 to 65 Hz 024 24 VAC ± 15%, 45 to 65 Hz
Drop-out tolerance	≥ 40 ms
Rated insulation voltage	≥ 2.0 kVAC (rms) (supply/elec.)
Rated transient protection volt.	4 kV (1.2/50 μs) (line/neutral)
Power supply DC type	Installation cat. III (IEC 60664)
Rated operational voltage 724	24 VDC ± 15% (pin 2 pos.)
Rated insulation voltage	None
Rated transient protection volt.	4 kV (1.2/50 μs)
Consumption	
AC supply	2.5 VA
DC supply	1.5 W

General Specifications

Power ON delay	≤ 200 ms
Power OFF delay	≥ 200 ms
Indication for	
Power supply ON	LED, green
Output ON	LED, red
Environment	
Degree of protection	IP 20 B
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	
AC types	200 g
DC types	125 g
Approvals	CSA

Mode of Operation

Function 1

Interval timer - man. start - no restart - man. time reset

The relay operates when interconnecting pins 5 and 7. When disconnecting pins 5 and 7, the time period starts. At the end of set time period, the relay releases. Interconnection of pins 5 and 7 for at least 10 ms during the time period, causes the time to reset. No restart when time period has expired.

Function 2

Like function 1, but with manual start.

Function 3

Interval timer - man. start - man. restart - no time reset

The relay operates and the time period starts when interconnecting pins 5 and 7 for at least 10 ms. At the end of set time period, the relay releases regardless of the connection between pins 5 and 7. Renewed connection between pins 5 and 7 causes the relay to operate and a new time period starts.

Function 4

Delay on operate - man. start - no restart - man. time reset

The time period starts when disconnecting pins 5 and 7. At the end of the set time period, the relay operates. When interconnecting pins 5 and 7 for at least 10 ms during the time period, the time is reset and a new time period starts when pins 5 and 7 are disconnected. No restart when the time period has expired.

Function 5

Delay on operate - man. start - man. restart - time reset

Otherwise like function 4.

Function 6

Delay on operate - man. start - man. restart - no time reset

The time period starts when connecting pins 5 and 7. At the end of the set time period, the relay operates. When connecting pins 5 and 7 after the time period, the relay releases and a new time period starts.

Mode of Operation (cont.)

Function 7

Interval timer - aut. start - no restart - man. time reset

The relay operates and the time period starts when power supply is applied. At the end of the set time period, the relay releases. When interconnecting pins 5 and 7 for at least 10 ms during the time period, the time is reset and a new time period starts when pins 5 and 7 are disconnected.

No restart when the time period has expired.

Function 8

Like function 2, but with automatic start after applying power supply.

Function 9

Like function 3, but with automatic start after applying power supply.

Function 10

Delay on operate - aut. start - no restart - man. time reset

The time period starts when power supply is applied. At the end of the set time period, the relay operates. When interconnecting pins 5 and 7 for at least 10 ms during the time period, the time is reset and a new time period starts when pins 5 and 7 are disconnected.

No restart when the time period has expired.

Function 11

Like function 5, but with automatic start after applying power supply.

Function 12


Like function 6, but with automatic start after applying power supply.


Function/Time Setting


Selection of function


DIP-switch selector (1 - 4).


1 2 3 4


 1. Interval timer - man. start - man. time reset - no restart


 2. Interval - man. start - man. restart and time reset


 3. Interval timer - man. start - man. restart - no. time reset


 4. Delay on operate - man. start - man. time reset - no restart


 5. Delay on operate - man. start - man. restart and time reset


 6. Delay on operate - man. start - man. restart - no time reset


 7. Interval timer - aut. start - man. time reset - no restart

 8. Interval timer - aut. start - man. restart and time reset

 9. Interval timer - aut. start - man. restart - no time reset

 10. Delay on operate - aut. start - man. time reset - no restart


 11. Delay on operate - aut. start - man. restart and time reset


 12. Delay on operate - aut. start - man. restart - no time reset


Selection of time range


DIP-switch selector (5 - 9).


5 6 7 8 9


 0.15 s - 1.5 s


 0.3 s - 3 s


 0.6 s - 6 s


 1.2 s - 12 s


 2.5 s - 25 s


 5 s - 50 s


 10 s - 100 s


 20 s - 200 s


 40 s - 400 s


 1.3 m - 13 m


 2.6 m - 26 m


 5 m - 50 m


 10 m - 100 m


 20 m - 200 m


 40 m - 400 m

 1.4 h - 14 h

 2.8 h - 28 h

 5.5 h - 55 h

 11 h - 110 h

 22 h - 220 h

Time setting

Knob-adjustable on scale in per cent of max. time.

DIP-switches for selecting function and time are placed behind a small removable front plate on the time relay.

Accessories

Sockets◇

Hold down spring◇

Mounting rack

Socket covers

Front mounting bezel

Potentiometer lock

S 411

HF

SM 13

BB 4

FRS 2

PL 3

All 3-wire sensor types with NPN open collector output.

For further information refer to "Accessories". For other AC/DC voltages refer to "General Information".

Wiring Diagrams

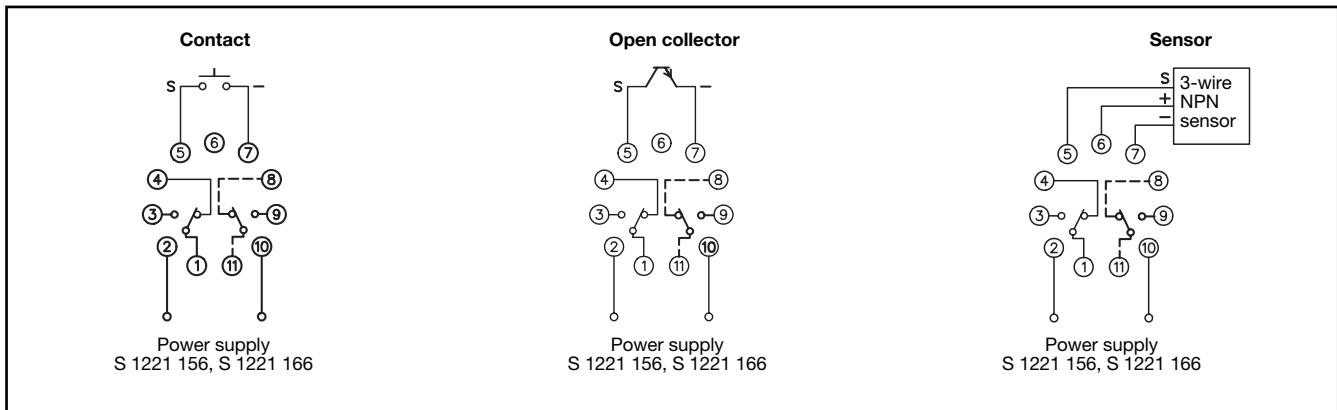


Diagram Operation

