ENFORCER®

Multi-Purpose Programmable Timer

SA-025Q

Installation Manual



RoHS

The SA-025Q Programmable Timer Module is suitable for a wide range of timed security and access control operations. Auto-sensing of input voltage and DIP switches for programming make installation easy.

- Timer can be set from 1 second to 60 minutes
- Can be triggered via an N.O. positive (+) trigger input signal or an N.C. negative (-) trigger device or by powering up the unit
- Relay can be programmed to activate at the start or at the end of the timing cycle
- Relay can also be set to activate for one second at the end of the timing cycle
- Relay can be programmed to pulse (flash) or be steady on
- Built-in reset function to manually reset timing cycle
- Form-C relay, contact rated 10A@24VDC/250VAC
- LED indicates relay is energized
- 12~24VDC operation (auto sensing)
- Current draw – Less than 1mA (standby) or 40mA (relay energized)
- Functions programmed via DIP switches – no jumpers to cut

Parts List

1x **Timer** 2x **Mounting tape** 1x **1kΩ resistor** 1x **Manual**

Specifications

Operating voltage		12~24 VDC (auto sensing)
Current draw	**Active**	40mA@12VDC, 80mA@24VDC
	Standby	<1mA@12VDC, <10mA@24VDC
Relay contact		1x Form C NO/NC/COM, 10A@24VDC/250VAC
LED Indicator		1x, Indicates relay is triggered
Operating humidity		5~95% non-condensing
Operating temperature		-40°~185° F (-40°~85° C)
Dimensions		$2^{11}/_{16}$"x$3^{1}/_{4}$"x$1^{1}/_{16}$" (68x83x27.5 mm)
Weight		3.2-oz (93g)

Wiring and DIP Switch Settings

The timer is programmed via a series of DIP switches as shown in Fig. 1. The wiring is as described below, but also refer to the *Sample Applications* on pg. 3.

1. **TRG** – N.O. positive (+) trigger input signal ***OR*** N.O. negative (–) trigger input signal (included 1kΩ resistor is required).
2. **(–)** – Ground input
3. **(+)** – 12~24VDC positive (+) input
4. **NO** – Relay output (N.O., normally open)
5. **COM** – Relay output (common)
6. **NC** – Relay output (N.C., normally closed)

NOTES

- The PCB text is abbreviated due to space.
- Normally, DIP switch 1 functions as an instant/delay control, but when turned ON, its function depends on how DIP switch 3 is set.

DIP Switch		Function
1 OFF	–	1 sec momentary output
1 ON	3 ON	Relay output latches on
1 ON	3 OFF	Relay output equals 1 sec

Fig. 1 – DIP Switch Settings

Switch	OFF	ON
1	Fixed 1 sec. Relay output time	Variable Relay output time
2	Relay energizes at start of timing cycle	Relay energizes at end of timing cycle
3	REPEAT timing cycle	SINGLE timing cycle
4	Timing in MINUTES	Timing in SECONDS
5	Timing controlled by TRG input	Timing controlled by Power Up
6	Counter begins at START of TRG	Counter begins at END of TRG

Setting the Timer

The relay output time can be programmed for either 1~60 seconds, or 1~60 minutes (depending on DIP switch 4), using the round, black thumbwheel.

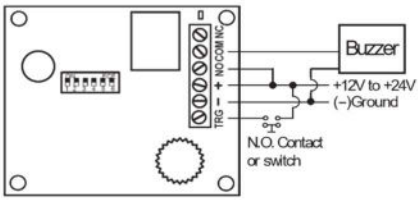
1. Set DIP switch 4 according to whether the timing should be measured in seconds or minutes (see Fig. 1).
2. Turn the thumbwheel clockwise to increase duration or counter-clockwise to decrease duration.
3. Test the duration and make adjustments as needed.

NOTE: Be sure to carefully test the duration to ensure that it is suitable for your needs.

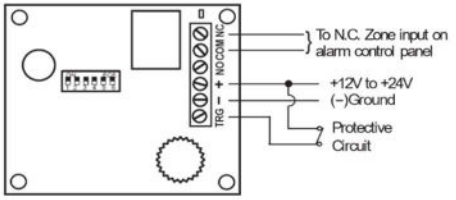
Sample Applications

Following are a few possible applications. You may want to experiment with the DIP switch settings.

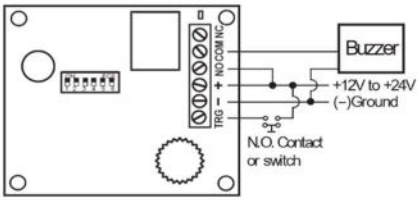
A. Momentary Trigger, No Delay



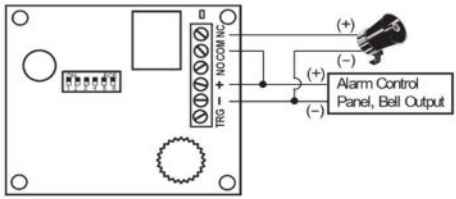
B. Momentary Trigger, No Delay



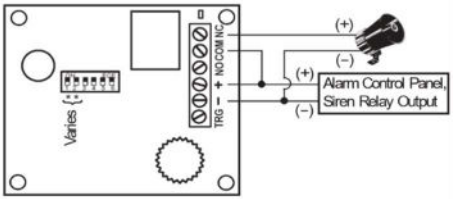
C. One-Time Momentary Trigger, No Delay



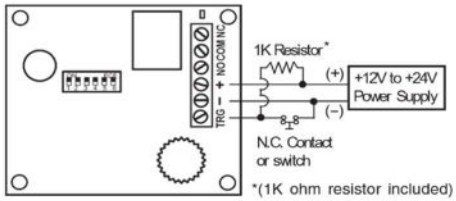
D. Latched Output, Delayed



E. Pulse/Flash Output, Instant/Delayed



F. Optional Negative or Closed-Circuit Trigger



A. **Momentary Trigger, No Delay** (for timed annunciator or supervisory circuit)

a. **DIP switch settings**

1	2	3	4	5	6
ON	OFF	ON	(ON or OFF)	OFF	OFF

b. **Action** – If the TRG terminal is momentarily connected to (+), the relay output immediately turns on and remains on for the duration set by the timer, after which it turns off regardless of whether the trigger is connected or disconnected.

NOTE: If the momentary trigger time is less than the timer's set duration, the relay is triggered only once. If longer than the timer time, the relay is activated again when the trigger is removed.

c. **N.O. vs. N.C.** – For a timed door annunciator, connect a buzzer/chime to the N.O. and COM outputs. For a closed-loop supervisory circuit, connect a dialer/transmitter to the N.C. and COM outputs.

B. **Momentary Trigger, No Delay** (for swinger eliminator)

a. **DIP switch settings**

1	2	3	4	5	6
ON	OFF	ON	(ON or OFF)	OFF (or ON)	ON

b. **Action** – If the TRG terminal is momentarily connected to (+), the relay output immediately turns on and stays on for as long as the TRG terminal is connected to (+). Once the TRG connection is broken, the relay output remains activated for the timer's set duration and then turns off.

Sample Applications (Continued)

c. **Triggered by powering up** – If DIP switch 5 is set to ON, the output works the same, but instead of triggering via the TRG terminal, the timer is triggered by powering it up. Once powered up, the relay remains activated for the time set by the timer or until power is removed, whichever comes first.

C. **One-Time, One-Second Momentary Trigger, No Delay**

a. **DIP switch settings**

1	2	3	4	5	6
OFF	OFF	ON	(ON or OFF)	OFF (or ON)	ON

b. **Action** – If the TRG terminal is momentarily connected to (+), the output activates for about 1 second. To reset, disconnect the TRG from (+) for at least 2 seconds. The timer has no effect.

c. **Triggered by powering up** – If DIP switch 5 is set to ON, the output works the same, but instead of being triggered by the TRG terminal, the timer is triggered by being powered up.

D. **Latched Output, Delayed**

a. **DIP switch settings**

1	2	3	4	5	6
ON	ON	ON	(ON or OFF)	OFF (or ON)	OFF

b. **Action** – If the TRG terminal is connected to (+) for the time set by the timer, the relay activates and remains activated. To reset the latched relay, connect the TRG terminal momentarily to (+) again.

c. **Triggered by powering up** – If DIP switch 5 is set to ON, the delay duration set by the timer starts when the timer is powered up. At the end of the delay, the relay latches on and remains on until the timer is disconnected from power.

E. **Pulsing or Flashing Output, Instant or Delayed**

a. **DIP switch settings**

1	2	3	4	5	6
ON or OFF	OFF (or ON)	OFF	(ON or OFF)	OFF (or ON)	OFF

b. **Action** – If the TRG terminal is connected to (+) momentarily, the timer starts pulsing/flashing after the time set. The pulse/flash output lasts until the TRG terminal is disconnected from (+).

c. **Triggered by powering up** – If DIP switch 5 is set to ON, the output works the same, but instead of triggering via the TRG terminal, the timer itself is triggered by being powered up.

d. **Instant/delay start** – If DIP switch 2 is set to ON, the timer waits for the set time after being triggered or powered up, then starts pulsing/flashing. If DIP switch 2 is set to OFF, the time starts pulsing/flashing as soon as it is triggered or powered up.

e. **Relay output time** – If DIP switch 1 is set to ON, the relay on/off duration follows the timer setting. If DIP switch 1 is set to OFF, the relay on duration is 1 second and the off follows the timer setting.

F. **Optional Negative or Closed-Circuit Trigger**

If a closed-circuit negative trigger is required, the included 1kΩ resistor must be installed as shown.

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