



Digital Dual Timer

The 1096 features a large, easy to read LCD display with programmable time ranges from 0.001 seconds to 9999 hours in 6 on/off delay or repeat cycle timing functions. On time and off time are set independently. Three power supply options are available, a wide range of 100 to 240 VAC/DC, a 12 to 24VDC and a 24 VAC only version. A battery back-up maintains memory up to 7 years. Output is an SPDT relay or open collector transistor.

ORDERING DATA

ORDERING CODE **1096 - 1 - P - 3 - A**

BASIC MODEL NUMBER	1096
INPUT VOLTAGE	1 100 thru 240VAC/DC 2 12-24VDC 3 24VAC
TIME RANGE	P (user selectable ranges) 0.01 seconds to 9,999 hours T1 & T2 are independently programmable
TIMING FUNCTION	3 Programmable Pulse A Pulsed On Delay/Off Delay One Cycle Pulse B Repeat Cycle, Start Off Pulse C Repeat Cycle, Start On Total A Maintained On Delay/Off Delay One Cycle, time totalizing Total B Repeat Cycle Start Off, time totalizing Total C Repeat Cycle Start On, time totalizing
OUTPUT	A Relay SPDT C Open Collector Transistor (100mA,30VDC)

APPLICABLE ACCESSORIES

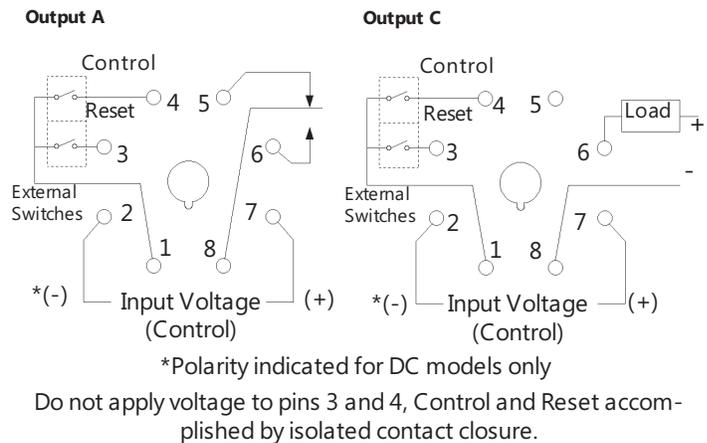
See accessory section for details

8 pin socket	RP-320
8 pin reversible socket	RP-321
8 pin cable socket	RP-323
Panel mount clip	RP-325 (one included)
Protective cover	RP-326

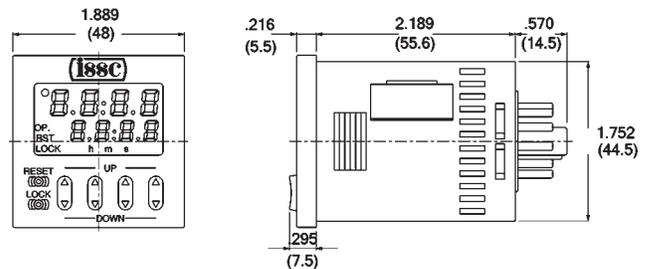
SPECIFICATIONS

INPUT	VOLTAGE: 100 to 240VAC or 12 to 24VDC or 24VAC
	FREQUENCY: 50/60 Hz (AC models)
	POWER CONSUMPTION: 2.5VA (AC models), 2.5W (DC models)
	TRANSIENT PROTECTION: MOV
OUTPUT	TYPE: Electromechanical relay or transistor
	MECHANICAL LIFE: 10,000,000 operations (Relay only)
	ELECTRICAL LIFE: Relay...100,000 operations minimum (at full rated load) Transistor...10,000,000 operations minimum
	RATING: Relay...5A @ 250VAC (resistive) Transistor...100mA, 30VDC maximum
TIMING	TYPE: Multifunction
	REPEAT ACCURACY: ± 0.005% of setting
	TIMING RANGE: 0.01 secs to 9,999 hours RESET TIME: 20 ms
PHYSICAL	OPERATING TEMP: -10° to 50° C (14° to 122°F)
	TIMING VARIATION VS. TEMPERATURE: ±.005%
	MOUNTING: Plug-In or Panel mount
	TERMINATION: 8 pin socket HOUSING: Polycarbonate

WIRING



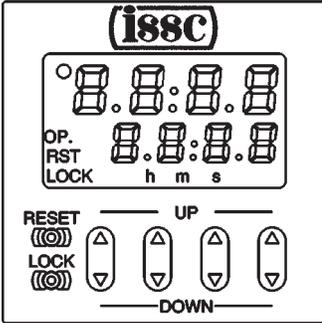
DIMENSIONS Inches (millimeters)



PROGRAMMING

See page 36 for complete programming instructions

1094/1096 PROGRAMMING



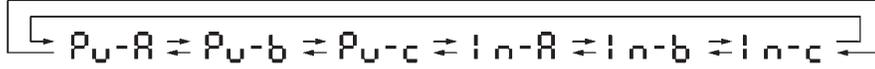
1) Setting or changing the operational mode

1. When the UP or DOWN key at the first digit is pressed with the set/lock switch pressed, the mode is changed over to the setting mode.

Ex: Setting mode display

P_u-R

2. The operational mode in the setting mode is changed over sequentially in the left or right direction by pressing the up or down key at the first digit, respectively.



Pulse input OFF-start One operation Pulse input OFF-start Repeating operation Pulse input ON-start Repeating operation Integrating input OFF-start One operation Integrating input OFF-start Repeating operation Integrating input ON-start Repeating operation

3. The operational mode displayed at present is set by pressing the RESET key, and the display returns to the normal condition.

2) Checking the operational mode

When the UP or DOWN key at the second digit is pressed with the set/lock switch pressed, the operational mode can be checked.

The display returns to the normal condition after indicating the operational mode for about two seconds. (While the display indicates the operational mode for about two seconds, the other indicators continue to operate normally.)

3) Setting the lock

When the UP or DOWN key at the fourth digit is pressed with the set/lock switch pressed, all keys on the unit are locked.

The timer does not accept any of UP, DOWN and RESET keys.

To release the lock setting, press the UP or DOWN key at the fourth digit again with the set/lock switch pressed.

* Operational mode, adding and subtracting and minimum input signal range cannot be set at T₁ and T₂, respectively.

4) Changing over the T₁/T₂ setting display

The T₁/T₂ setting display is changed over by pressing the SET/LOCK switch. (This operation gives no effect on the other operations. The set time and elapsed time (residual time) at T₁ are linked with those at T₂.)

• Changing the set time

1. It is possible to change the set time with the up and down keys even during time delay with the timer. However, be aware of the following points.

1) If the set time is changed to less than the elapsed time with the time delay set to the addition direction, time delay will continue until the elapsed time reaches full scale, returns to zero, and then reaches the new set time. If the set time is changed to a time above the elapsed time, the time delay will continue until the elapsed time reaches the new set time.

2) If the time delay is set to the subtraction direction, time delay will continue until "0" regardless of the new set time.

2. When the set times at T₁ and T₂ are set to 0, the output becomes ON only while the signal input is carried out. However, while the reset input is carried out, the output becomes OFF.

DIP switches

Item	DIP switch	
	OFF	ON
1		
2	Refer to table 1	
3	Refer to table 1	
4	20 ms	1 ms
5	Addition	Subtraction
6	Refer to table 2	
7	Refer to table 2	
8	Refer to table 2	

* The 8-pin type does not have the stop input, so that the dip switch can be changed over between reset and signal inputs. The signal range of the lock input is fixed (minimum 20 ms).

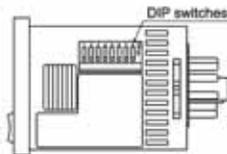


Table 1: Setting the timer range (Timer T₁)

DIP switch No.			Timer range
1	2	3	
ON	ON	ON	0.01 s to 99.99 s
OFF	OFF	OFF	0.1 s to 999.9 s
ON	OFF	OFF	1 s to 9999 s
OFF	ON	OFF	0 min 01 s to 99 min 59 s
ON	ON	OFF	0.1 min to 999.9 min
OFF	OFF	ON	0 h 01 min to 99 h 59 min
ON	OFF	ON	0.1 h to 999.9 h
OFF	ON	ON	1 h to 9999 h

Table 2: Setting the timer range (Timer T₂)

DIP switch No.			Timer range
6	7	8	
ON	ON	ON	0.01 s to 99.99 s
OFF	OFF	OFF	0.1 s to 999.9 s
ON	OFF	OFF	1 s to 9999 s
OFF	ON	OFF	0 min 01 s to 99 min 59 s
ON	ON	OFF	0.1 min to 999.9 min
OFF	OFF	ON	0 h 01 min to 99 h 59 min
ON	OFF	ON	0.1 h to 999.9 h
OFF	ON	ON	1 h to 9999 h

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Dip switches :

1, 2 and 3
4

5
6, 7 and 8

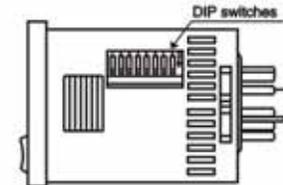
* Set dip switches before installation!

Control the counter's 7 function options.

Sets minimum input signal length (reset, signal and stop).

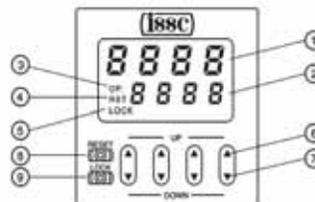
Sets maximum count speed (30Hz or 5kHz).

Control the 5 input options.



Set value is set using the toggle keys on the front of the timer.

- ① Counter display
- ② Set value display
- ③ Controlled output indicator
- ④ Reset indicator
- ⑤ Lock indicator
- ⑥ UP keys
Changes the corresponding digit of the set value in the addition direction (upwards).



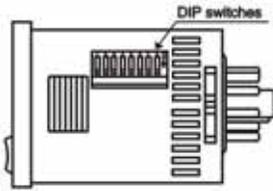
- ⑦ DOWN keys
Changes the corresponding digit of the set value in the subtraction direction (downwards).
- ⑧ RESET switch
Resets the counting value and the output.
- ⑨ LOCK switch
Locks the operation of all keys on the counter.

Each key is for the corresponding digit in the display.

DIGITAL DIN PANEL MOUNT TIMER PROGRAMMING INSTRUCTIONS

1094 PROGRAMMING

Timing Function and Timing Ranges:



Dip switches :

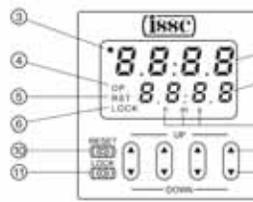
- 1, 2 and 3
- 4
- 5
- 6, 7 and 8

Control the timers 8 function options.
Sets minimum input signal length (reset, signal and stop).
Sets direction of time delay (addition or subtraction).
Control the time ranges
(0.001 s to 9.999 s thru 0.1 h to 999.9 h).

* Set dip switches before installation!

Setting the Time:

- ① Elapsed time display
- ② Set time display
- ③ Time delay indicator
- ④ Controlled output indicator
- ⑤ Reset indicator
- ⑥ Lock indicator
- ⑦ Time units display



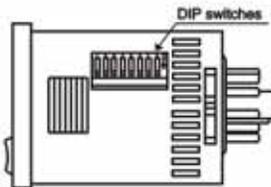
- ⑧ UP keys
Changes the corresponding digit of the set time in the addition direction (upwards)
- ⑨ DOWN keys
Changes the corresponding digit of the set time in the subtraction direction (downwards)
- ⑩ RESET switch
Resets the elapsed time and the output
- ⑪ LOCK switch
Locks the operation of all keys on the unit

Time is set using the toggle keys on the front of the timer.

Each key is for the corresponding digit in the display.

1096 PROGRAMMING

Timing Ranges:



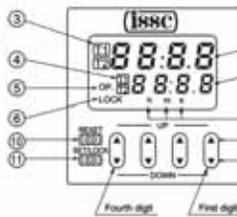
Dip switches :

- 1, 2 and 3
- 4
- 5
- 6, 7 and 8

Control the time ranges for T1
(0.001 s to 9.999 s thru 0.1 h to 999.9 h).
Sets minimum input signal length (reset, signal and stop).
Sets direction of time delay (addition or subtraction).
Control the time ranges for T2
(0.001 s to 9.999 s thru 0.1 h to 999.9 h).

* Set dip switches before installation!

- ① Elapsed time display
- ② Set time display
- ③ T₁/T₂ operation indicator
- ④ T₁/T₂ setting value selectable indicator
- ⑤ Controlled output indicator
- ⑥ Lock indicator
- ⑦ Time units display



- ⑧ UP keys
Changes the corresponding digit of the set time in the addition direction (upwards)
- ⑨ DOWN keys
Changes the corresponding digit of the set time in the subtraction direction (downwards)
- ⑩ RESET switch
Resets the elapsed time and the output
- ⑪ Set/lock switch
Changes over the display between T₁/T₂ settings, sets the operational mode, checks the operational mode and locks the operation of each key (such as up, down or reset key).

Timing function representations:

