# **TIMER** LE4S

## INSTRUCTION MANUA

**(€ c<b>%**us



Thank you for choosing our Autonics product. Please read the following safety considerations before use.

## ■Safety Considerations

XPlease observe all safety considerations for safe and proper product operation to avoid hazards ★ Symbol represents caution due to special circumstances in which hazards may occur.

▲ Caution Failure to follow these instructions may result in personal injury or product dar

- 1. Fail-safe device must be installed when using the unit with machinery that may cause serious injury or substantial economic loss. (e.g. nuclear power control, medical equipment, ships, vehicles, railways, aircraft, combustion apparatus, safety equipme
- crime/disaster prevention devices, etc.)
  Failure to follow this instruction may result in fire, personal injury, or economic loss

- 2. Install on a device panel to use.
  Failure to follow this instruction may result in electric shock or fire.
  3. Do not connect, repair, or inspect the unit while connected to a power source. Failure to follow this instruction may result in electric shock or fire.
- 4. Check 'Connections' before wiring.
- Failure to follow this instruction may result in fire.

  5. Do not disassemble or modify the unit.
  Failure to follow this instruction may result in electric shock or fire.

#### **⚠** Caution

- 1. When connecting the power/sensor input and relay output, use AWG 20(0.50mm²) cable or over and tighten the terminal screw with a tightening torque of 0.74 to 0.90N·m. Failure to follow this instruction may result in fire or malfunction due to contact failure.

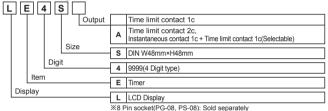
  2. Use the unit within the rated specifications. Failure to follow this instruction may result in fire or product damage.

  3. Use dry cloth to clean the unit, and do not use water or organic solvent. Failure to follow this instruction may result in electric shock or fire.

- 4. Do not use the unit in the place where flammable/explosive/corrosive gas, humidity, direct sunlight, radiant heat, vibration, impact, or salinity may be present.
  Failure to follow this instruction may result in fire or explosion.

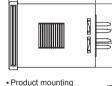
  5. Keep metal chip, dust, and wire residue from flowing into the unit.
- Failure to follow this instruction may result in fire or product damage

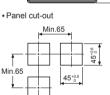
# Ordering Information



# Dimensions











LE4S

3 START

RESET

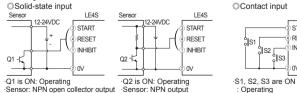
IS2 IS3 NH INHIBIT

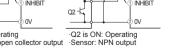
(unit: mm)

# Specifications

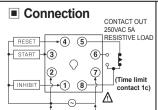
Model				LE4S		
Power supply				24-240VAC~ 50/60Hz, 24-240VDC==		
Display method				LCD Display (backlight)		
Allowabl	e vol	tage	range	90 to 110% of rated voltage		
Power consumption				24-240VAC~: max. 4.5VA, 24-240VDC=: max. 2W		
Return time				Max. 100ms		
Min. input signal (START,INHIBIT,RESET)				1ms, 20ms (selectable)		
Input (START,INHIBIT,RESET)			ESET)	<no-voltage input=""> Impedance at short-circuit: max. 1 kΩ, Residual voltage: max. 0.5VDC, Impedance at open-circuit: min. 100kΩ</no-voltage>		
Control	Con		Туре	Time limit SPDT(1c)		
output	Con	lact	Capacity	250VAC∼ 5A resistive load		
Repeat Setting Voltage Temperature error			ltage·	Max. ±0.005% ±0.03sec (Signal Start) Max. ±0.01% ±0.05sec (Power ON Start)		
Environr	nont	Ambient temp.		-10 to 55 ℃, storage: -25 to 65 ℃		
Ellallolli	пеп	Ambient humi.		35 to 85%RH		
Insulation resistance			ce	Over 100MΩ (500VDC megger)		
Dielectric strength				2,000VAC 50/60Hz for 1 minute		
Vibration		Mechanical		0.75mm amplitude at frequency of 10 to 55Hz in each X, Y, Z direction for 1hour		
		Malfunction		0.5mm amplitude at frequency of 10 to 55Hz in each X, Y, Z direction for 10 minutes		
Shock		Mechanical		300m/s² (30G) X, Y, Z directions for 3 times		
SHOCK		Malfunction		100m/s² (10G) X, Y, Z directions for 3 times		
. tolay		hanical	Min. 10,000,000 times			
		Electrical		Min. 100,000 times (250VAC 5A resistive load)		
Approval				(€ : <b>¾</b> ():		
Unit weig				Approx. 98g		
<b></b> ≪Enviro	nmer	t res	istance is r	ated at no freezing or condensation.		

# Input Connections





: Operating
Please use reliable contact
enough to flow 5VDC 1mA \*Be sure that it is not insulated between power input and input terminal block



SOURCE

descriptions (catalog, homepage).

Factory Default								
NO.	NO. Parameter							
1	Output operation mode	oUt.ñ	ond					
2	Time Range	t.rnG	99.99s					
3	Time Up/Down	U-d	UP					
4	Min. input signal	I n.E	20					
5	Backlight	ЬLU	on					
6	Key Lock	Lott	L.oFF					
7	Setting time	-	50.00s					
	NO. 1 2 3 4 5	NO. Parameter  Output operation mode  Time Range  Time Up/Down  Min. input signal  Backlight  Key Lock	NO. Parameter  1 Output operation mode oUt.5  2 Time Range t.cn0  3 Time Up/Down U-d  4 Min. input signal i.n.t  5 Backlight bLU  6 Key Lock LoCt					

\*The above specifications are subject to change and some models may be

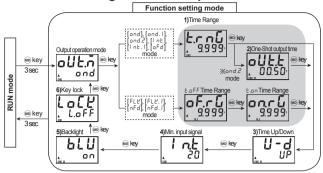
discontinued without notice. XBe sure to follow cautions written in the instruction manual and the technical

#### Front Panel Identification



- Time progressing display: It displays the current time.
- Time setting display:It displays the setting time.
   Time unit:It displays the time unit.
- Operation mode: It displays the current operation mode Output display: It displays the status of output contact.
- ⑥ UP/DOWN:It displays time progressing UP(▲), DOWN(▼).
   ⑦ Key lock display:It displays the status of key lock. ® key: Used for initializing time progressing and output return.
- Mo key: Used for advancing to function setting mode, setting time change checking. (i) (iii) key: Used for advancing to setting time change mode and moving to
- 1) & key:Used for changing the set value.

# Function Setting Mode Descriptions



#### 1) Time Range

-			
Parameter	Time range specification		
9.999s(9.999s)	0.010 sec	to	9.999 sec
99.99s(99.99s)	0.01 sec	to	99.99 sec
999.9s(999.9s)	0.1 sec	to	999.9 sec
9999s(9999s)	1 sec	to	9999 sec
99m59s (99m59s)	0 min 01 sec	to	99 min 59 sec
999.9m(999.9m)	0.1 min	to	999.9 min
9999m)	1 min	to	9999 min
99 <sup>h</sup> 59 <sup>m</sup> (99h59m)	0 hour 01 min	to	99 hour 59 min
99.99 <sub>h</sub> (99.99h)	0.01 hour	to	99.99 hour
999.9h(999.9h)	0.1 hour	to	999.9 hour
9999h(9999h)	1 hour	to	9999 hour

է.Ի ոն 9.999 oF.rG 9.999 onrG 9.999

#### 2) One-Shot output time setting

It will be activated when selecting ON Delay 2[ and .2] output operation mode (One-Shot-output mode). (Time setting: 0.01 sec to 99.99 sec)

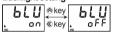
# 3) Time progress UP/DOWN setting



U - d | ≪ key U - d | UP[UP]: Time progressed from 0 to setting time. DOWN[dn]: Time progressed from setting time to 0.

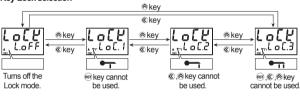


Set the minimum input signal of RESET, START and INHIBIT Min. input signal: Choose 1ms and 20ms



Set Backlight (ON[on], OFF[oFF]).

## 6) Key Lock selection



# Time Setting

Output operation mode : OND, OND  $\rm II,\ OND\ II,\ INT,\ INT\ I,\ OFF\ D$ 



①Press 

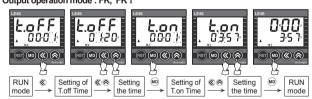
key in RUN mode, time set digits will flash.[Fig. 1]

②Change setting time by press ℰ or ℰ keys.[Fig. 2,3,4]

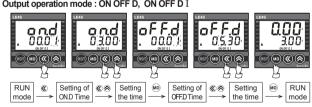
«key:Shift the setting digits.

«key:Shift the flashing position value. As press ⊗ key once, it will increase by 1digit, number will increase faster by press ⊗ key for over 2sec.

# ③When the setting is completed, it will be saved and return to RUN mode by pressing @ key.[Fig. 5] Output operation mode : FK, FK I



Output operation mode : ON OFF D, ON OFF D I



XIt is able to change the setting time during the time progressing, but be sure about the time

progressing while changing of the time.

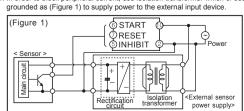
\*\*To pressing sekey while setting time is shorter than min. setting time, setting value will be flickering three times and it will be returned to setting mode again, not to RUN mode.

\*If there is no additional key operations after entering into setting mode, it will be return to RUN mode (Setting value is not saved.)

\*Min. Setting time: 0.01 sec.
(In case of OND,OND I and OND II modes, it is able to set 0 since no min. setting time is applied.)

# Cautions during Use

 Follow instructions in 'Cautions during Use'. Otherwise, It may cause unexpected accidents.
 When supplying or turning off the power, use a switch or etc. to avoid chattering.
 Install a power switch or circuit breaker in the easily accessible place for supplying or discondi 4. In order to block peripheral current, use isolation transformer which of secondary part is not

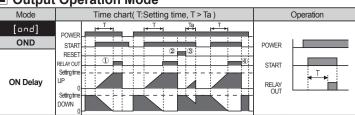


- 5. Do not connect two or more timers with only one input contact or transistor simultaneously 6. Keep away from high voltage lines or power lines to prevent inductive noise
- In case installing power line and input signal line closely, use line filter or varistor at power line and shielded wire at input signal line.

  Do not use near the equipment which generates strong magnetic force or high frequency noise.

  7. This unit may be used in the following environments.
- (Indoors (in the environment condition rated in 'Specifications') ②Altitude max. 2,000m ③Pollution degree 2
- 4 Installation category II

# Output Operation Mode

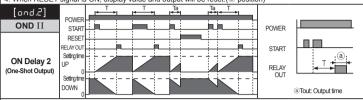


nal is ON at status of power on. rogressed up to the setting time. Display value will be HOLD.(① position)

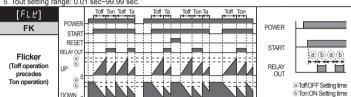
ining operation is progressed up to the setting time. Display value will be ON, display value and output will be reset. (② position) while START signal is ON, "STEP 1"will be restarted. (③ position) OFF, display value and output will be reset. (④ position) When RESET signal is ON, If RESET signal is OFF whill When START signal is OFF. OND I **POWER** 

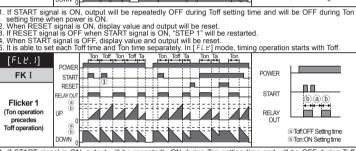


an START signal is ON at status of power on.
g operation is progressed up to the setting time. Display value will be HOLD.(① position) is applied repeatedly, only the initial signal is recognized.(② position) , display value and output will be reset.(③ position)



Timing operation starts when START signal is ON at status of power on.
Time limit output will be ON and goes OFF during Tout setting time when timing operation is progressed up to the setting time. Display value will be HOLD.(① position)
When RESET signal is ON, display value and output will be reset.
If START signal is applied while time is progressing, Timing operation will be reset and started again.(② position)
Tout setting range: 0.01 sec-99.99 sec.



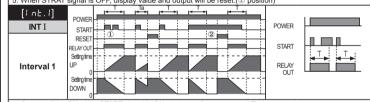


If START signal is ON, output will be repeatedly ON during Ton setting time and will be OFF during Tof

setting time when power is ON. Even though START signal is applied repeatedly, only the initial signal is recognized. ( $\P$  position) When START signal is ON, display value and output will be reset. If START signal is ON, it will be restarted it is able to set each Toff time and Ton time separately. In [FLE.1] mode, timing operation starts with Ton.



Output will be ON when START signal is ON at status of power on and Tim Output will be OFF when timing operation is progressed up to the setting til When RESET signal is ON, display value and output will be reset.(① positi operation starts. Display value will be HOLD.



Output will be ON when START signal is ON at status of power on and Timing operation starts.
Output will be OF when timing operation is progressed up to the setting time. Display value will be HOLD.
Even though START signal is applied repeatedly, only the initial signal is recognized.

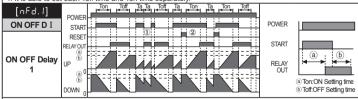
If START signal is ON after timing operation is progressed up to the setting time, Output will be ON and setting time will be reset and then timing setting starts.

When RESET signal is ON, display value and output will be reset.

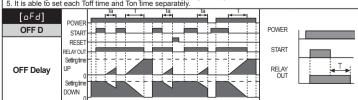
When RESET signal is ON, display value and output will be reset.

[nFd] **POWER** ON OFF D

N when power is on, Output will be ON when timing operation is progressed up to the Ton setting time(Ongnal is OFF, output will be ON when timing operation is progressed up to the Toff setting time (OFF-Delay). sapplied repeatedly, output is ON and display value will be reset. (① position) graal is ON, display value and output will be reset. When RESET signal is OFF while ON, it will be operating as On-Delay.(② position) If START signal is ON when po Delay). IF START signal is OFF Delay). IF START sig 2. If START signal is 3. When RESET si START signal is 0 4. It is able to set ea



If START signal is ON when power is on, timing operation starts. Output will be ON when timing operation is progressed up to the Ton setting time(on-Delay). IF START signal is OFF, output will be ON when timing operation is progressed up to the Toff setting time (OFF-Delay). Coutput will be ON when START signal is ON and goes OFF during setting time and display value will be reset.(i) position). Output will be OFF when START signal is OFF and goes ON during setting time and display value will be reset.(i) position). When RESET signal is ON, display value and output will be reset. When RESET signal is OFF while START signal is ON, it will be operating as On-Delay.(ii) position). It is able to set each Toff time and Ton time separately.



1. If START signal is ON when power is on, output will be ON.
2. When START signal is OFF, timing operation starts. Output will be OFF when timing operation is progressed up to the setting time. Display value will be HOLD.
3. When RESET signal is ON, display value and output will be reset.

\*Reset: Up mode -> Display value is\*O\*, Output is\*OFF\*.

DOWN mode -> Display value is\*setting time\*, Output is\*OFF\*.

# Major Products

ON OFF Delay

# Autonics Corporation

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