

# TIMER LE4S

M A N U A L



Thank you very much for selecting Autonics products.  
For your safety, please read the following before using.

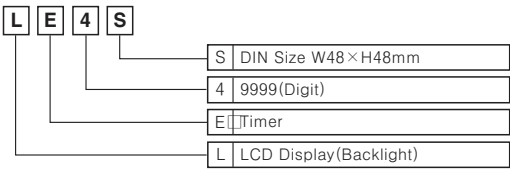
## Caution for your safety

- Please keep these instructions and review them before using this unit.
- Please observe the cautions that follow:
  - Warning** Serious injury may result if instructions are not followed.
  - Caution** Product may be damaged, or injury may result if instructions are not followed.
- The following is an explanation of the symbols used in the operation manual.
  - Warning**: Injury or danger may occur under special conditions.

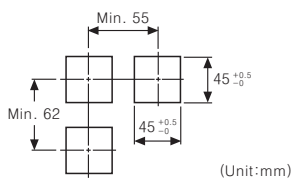
- In case of using this unit with machineries(Nuclear power control, medical equipment, vehicle, train, airplane, combustion apparatus, entertainment or safety device etc), it requires installing fail-safe device or contact us for information on type required.**  
It may result in serious damage, fire or human injury.
- This unit must be mounted on panel.**  
It may give an electric shock.
- Do not repair or checkup when power on.**  
It may give an electric shock.
- Do not disassemble and modify this unit, when it requires. If needs, please contact us.**  
It may give an electric shock and cause a fire.
- Lithium battery is used for memory retention in this product, therefore do not disassemble or burn up. Please contact Autonics to replace battery.**  
It may cause explosion.

- Caution**
- This unit shall not be used outdoors.**  
It might shorten the life cycle of the product or give an electric shock.
  - When wire connection, No.20AWG(0.50mm<sup>2</sup>) should be used and screw bolt on terminal block with 0.74N·m to 0.90N·m strength.**  
It may result in malfunction or fire due to contact failure.
  - Please observe specification rating.**  
It might shorten the life cycle of the product and cause a fire.
  - Do not use the load beyond rated switching capacity of Relay contact.**  
It may cause insulation failure, contact melt, contact failure, relay broken, fire etc.
  - In cleaning the unit, do not use water or an oil-based detergent.**  
It might cause an electric shock or a fire.
  - Do not use this unit at place where there are flammable or explosive gas, humidity, direct ray of the sun, radiant heat, vibration, impact etc.**  
It may cause explosion or a fire.
  - Do not inflow dust or wire dregs into inside of this unit.**  
It may cause a fire or mechanical trouble.

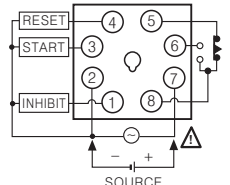
## Ordering information



## Panel cut-out

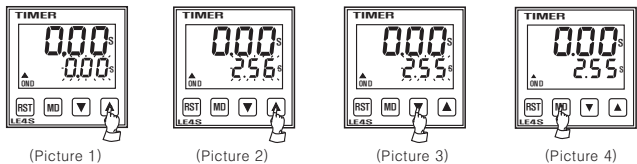


## Connection



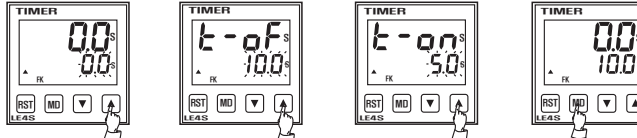
## The time setting

- Output operation mode : [ON D], [ON D I], [ON D II], [INT], [INT I], [ON OFF D], [ON OFF D I], [OFF D]



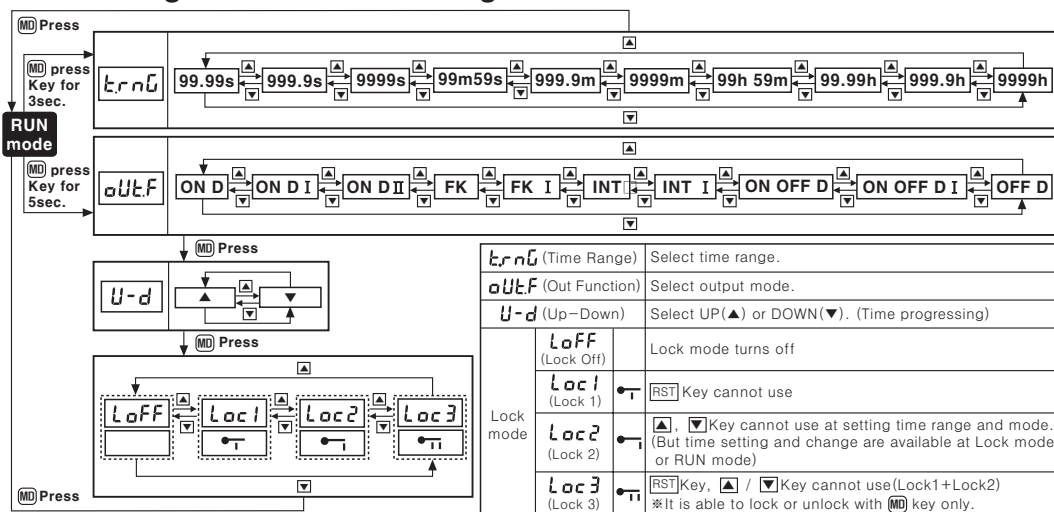
- Display of setting time will be flickering when press  $\downarrow$  or  $\uparrow$  Key at RUN mode. (Picture 1)
  - And then set the setting time with  $\downarrow$  or  $\uparrow$  Key. If press  $\downarrow$  Key once, it will increase as number of pressing, but if keep pressing more than 2sec., it will increase faster. (Picture 2)  
If press  $\uparrow$  Key once, it will decrease as number of pressing, but if keep pressing more than 2sec., it will decrease faster. (Picture 3)
  - When complete the setting, it will be saved and return by pressing  $\downarrow$  key. (Picture 4)
- \*It is able to change the setting time during the time progressing, but be sure about the time progressing while changing of the time.
- \*If set the value is 0, "Err" will be displayed. ("Err" will be removed by pressing  $\downarrow$  /  $\uparrow$  key)
- \*If no key touched for 30sec., it will return to RUN mode.

- Output operation mode : [FK], [FK I]



- (RUN mode)  $\downarrow$  (T-OFF Time setting)  $\downarrow$  (T-ON Time setting)  $\downarrow$  (RUN mode)
- Set by  $\downarrow$  /  $\uparrow$  Key Set by  $\downarrow$  /  $\uparrow$  Key
- \*It is able to change the setting time during the time progressing, but be sure about the time progressing while changing of the time.

## Time range and function setting



\*The above specifications are changeable without notice anytime.

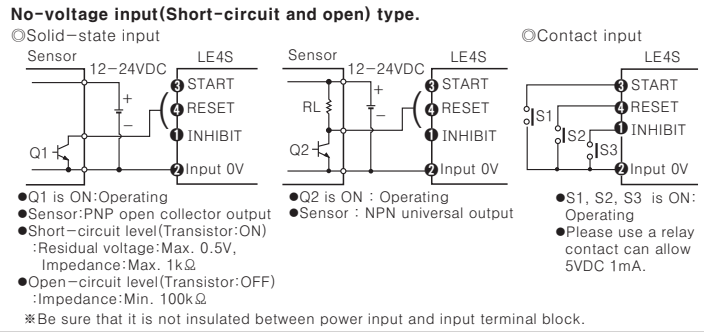
## Specifications

Model	LE4S	
Power supply	24-240VAC 50/60Hz, 24-240VDC	
Display method	LCD Display(Backlight)	
Allowable voltage range	90 to 110% of rated voltage	
Power consumption	Max. 2.8VA(240VAC 50/60Hz), Max. 1.2W(240VDC)	
Return time	Max. 300ms	
Min. input signal	START input RESET input Min. 20ms	
Input	START input RESET input INHIBIT input • No-voltage input Short-circuit impedance: Max. 1k $\Omega$ , Residual voltage: Max. 0.5V Open-circuit impedance: Min. 100k $\Omega$	
Control output	Con-tact Capacity Type 250VAC 3A resistive load Time limit SPDT(1c)	
Output mode	10 kinds of operating mode(See operation mode)	
Ambient temperature	-10 to 55°C (at non-freezing status)	
Storage temperature	-25 to 65°C (at non-freezing status)	
Ambient humidity	35 to 85%RH	
Repeat error		
Setting error	Signal Start : Max. $\pm 0.005\% \pm 0.03\text{sec}$	
Voltage error	Power Start : Max. $\pm 0.01\% \pm 0.08\text{sec}$	
Temperature error		
Memory retention	10 years at 25°C and when LCD and input key turns OFF. 40 days at 25°C and when LCD and input key turns ON continually	
Insulation resistance	Min. 100M $\Omega$ (at 500VDC)	
Dielectric strength	2000VAC 50/60Hz for 1 minute	
Noise strength	$\pm 2\text{kV}$ the square wave noise (pulse width: 1 $\mu\text{s}$ ) by the noise simulator	
Vibration	Mechanical	0.75mm amplitude at frequency of 10 to 55Hz in each of X, Y, Z directions for 1hour
	Malfunction	0.5mm amplitude at frequency of 10 to 55Hz in each of X, Y, Z directions for 10 minutes
Shock	Mechanical	300m/s <sup>2</sup> (30G) in X, Y, Z directions for 3 times
	Malfunction	100m/s <sup>2</sup> (10G) in X, Y, Z directions for 3 times
Relay life cycle	Mechanical	Min. 10,000,000 times
	Electrical	Min. 100,000 times(250VAC 3A resistive load)
Weight		Approx. 126g

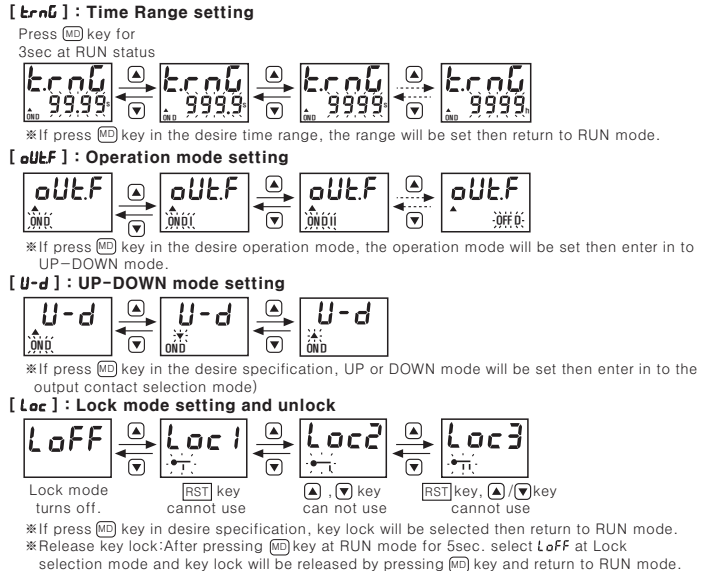
## Front panel identification

- Time progressing display: It displays the current time.
- Time setting display: It displays the setting time.
- Time unit: It displays the time unit. (h:hour)(m:min)(s:sec)  
\*When the time is progressing, it is flickering by turn(0.5sec.)
- Operation mode: It displays the current operation mode. (Ex: ON D=ON delay)
- Output display: It displays the status of output contact.
- UP/DOWN: It displays time progressing UP( $\uparrow$ ), DOWN( $\downarrow$ ).
- Key lock display: It displays the status of key lock.
- RESET key: Used for initializing time progressing and output return.
- MODE key: Used for time setting and function setting.
- DOWN( $\downarrow$ )key, UP( $\uparrow$ )key: Used for changing time and mode move.

## Input connection



## Mode setting



## Time Range

○If press  $\downarrow$  key for 3sec, it is moved to the time range mode.

Time range specification	Time range specification
99.99s	0.01sec ~ 99.99sec
999.9s	0.1sec ~ 999.9sec
9999s	1sec ~ 9999sec
99m59s	0min01sec ~ 99min 59sec
999.9m	0.1min ~ 999.9min
9999m	1min ~ 9999min
99h59m	0hour01min ~ 99hour 59min
99.99h	0.01hour ~ 99.99hour
999.9h	0.1hour ~ 999.9hour
9999h	1hour ~ 9999hour

## Operation mode

○If press  $\downarrow$  key for 5sec, it is moved to output mode.

NO	Indication	LE4S
1	ON D	ON DELAY
2	ON D I	ON DELAY1
3	ON D II (+1)	ON DELAY2(One-shot out)
4	FK (+2)	FLICKER
5	FK I (+2)	FLICKER1
6	INT	INTERVAL-DELAY
7	INT I	INTERVAL-DELAY1
8	ON OFF D	ON-OFF DELAY
9	ON OFF D I	ON-OFF DELAY1
10	OFF D	OFF DELAY

(+1) One-shot output is fixed as 0.5sec. (ON D II mode)  
(+2) When selected [FK] [FK I], T-ON and T-OFF time can be set separately.

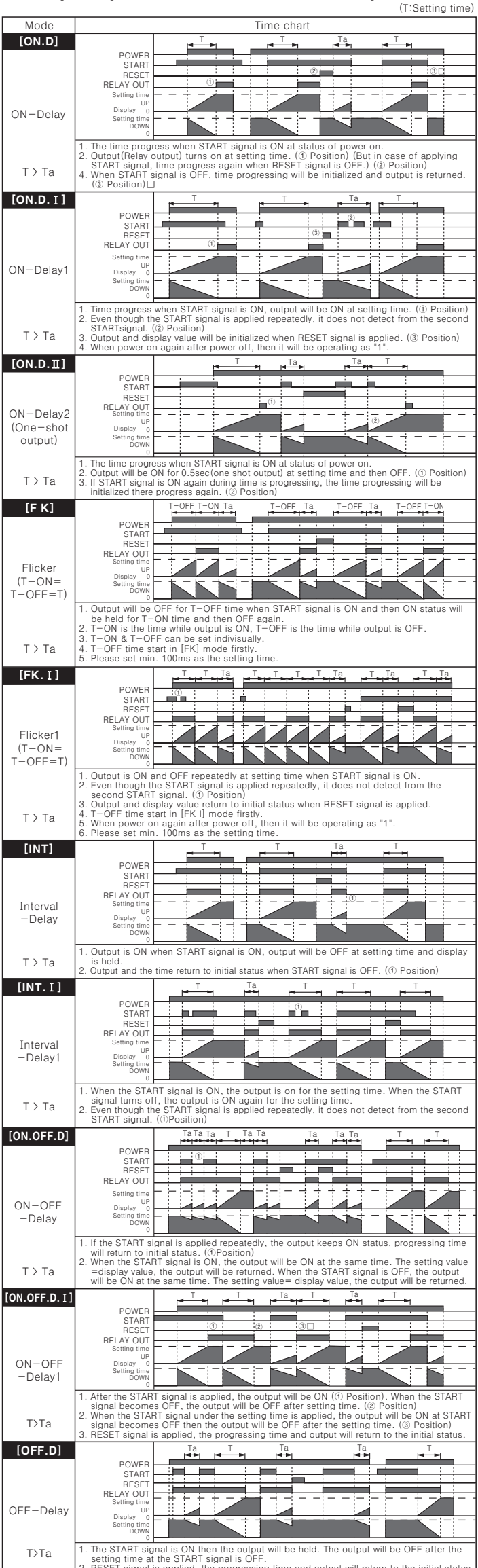
## Factory specification

- OUT MODE : ON delay
- UP/DOWN mode : UP
- Output contact : Time limit 1c
- Timer Range : 99.99sec
- Lock key : LoFF(Lock mode turns off)

## The setting and status when cut power off

- LCD display and output will be OFF when power off.
- If press any keys in front, previous setting mode and setting time will be displayed.  
\*After LCD is ON, if no key touched for 30sec., then LCD will be OFF.
- Enable to set each mode and setting time of each mode in above status.  
(But LCD backlight and external signal input, relay output are disable)
- When supply power again, the mode and setting value changed in above status will be saved, the time progressing value will be initialized.

## Output operation in each mode(Output mode)



## Caution for using

- Power connection
    - AC Power : It is able to connect power to the terminals(2 to 7) without distinguish the polarity.
    - DC Power : Be sure the polarity of  $\ominus$ - $\oplus$ ,  $\oplus$ - $\ominus$
    - It can be operating stably due to free power voltage type. (Please connect the power line separate from high voltage line in order to avoid inductive noise)
  - Input signal line
    - Shorten the cable distance between the sensor and this product.
    - Please shielded wire for input signal needed to be long.
    - Please wire input signal line separated from power line.
  - When test dielectric voltage and insulation resistance of the control panel with this unit installed.
    - Please isolate this unit from the circuit of control panel.
    - Please make all terminals of this unit short-circuited.
  - Do not use this unit at below places because of product damage
    - Place where there are severe vibration or impact.
    - Place where strong alkalis or acids are used.
    - Place where there are direct ray of the sun
    - Place where strong magnetic field or electric noise are generated.
  - Installation environment
    - It shall be used indoor
    - Altitude Max. 2000m
    - Pollution Degree 2
    - Installation Category II.
- \*It may cause malfunction if above instructions are not followed.

## Main products

- COUNTER
- TIMER
- TEMPERATURE CONTROLLER
- PANEL METER
- TACHO/LINE SPEED/PULSE METER
- DISPLAY UNIT
- PROXIMITY SENSOR
- PHOTOELECTRIC SENSOR
- FIBER OPTIC SENSOR
- PRESSURE SENSOR
- ROTARY ENCODER
- SENSOR CONTROLLER
- POWER CONTROLLER
- STEPPING MOTOR & DRIVER & CONTROLLER
- LASER MARKING SYSTEM(CO<sub>2</sub>, Nd:YAG)

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