

Autonics

TIMER LE4SA

INSTRUCTION MANUAL



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

■ Safety Considerations

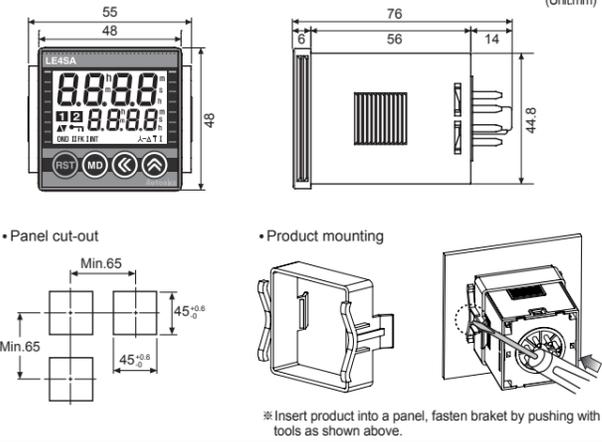
- Please keep these instructions and review them before using this unit.
- Please observe the cautions that follow:
 - Warning** Serious injury may result if instructions are not followed.
 - Caution** Product may be damaged, or injury may result if instructions are not followed.
- The following is an explanation of the symbols used in the operation manual.
 - Caution** Injury or danger may occur under special conditions.
- Warning**
 - 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 equipment, crime/disaster prevention devices, etc.) Failure to follow this instruction may result in fire, personal injury, or economic loss.
 - Install on a device panel to use. Failure to follow this instruction may result in electric shock or fire.
 - 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.
 - Check 'Connections' before wiring. Failure to follow this instruction may result in fire or explosion.
 - Do not disassemble or modify the unit. Failure to follow this instruction may result in electric shock or fire.
- Caution**
 - 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.
 - Use the unit within the rated specifications. Failure to follow this instruction may result in fire or product damage.
 - 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.
 - 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.
 - 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

| | | |
|----------|---------|---|
| L | Output | Time limit contact 1c |
| E | Size | A Time limit contact 2c, Instantaneous contact 1c + Time limit contact 1c(Selectable) |
| 4 | Digit | S DIN W48mm×H48mm |
| S | Item | 4 9999(4 Digit type) |
| A | Display | E Timer L LCD Display |

*8 Pin socket(PG-08, PS-08): Sold separately

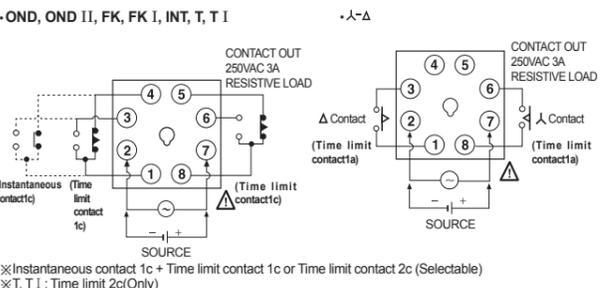
■ Dimensions



■ Specifications

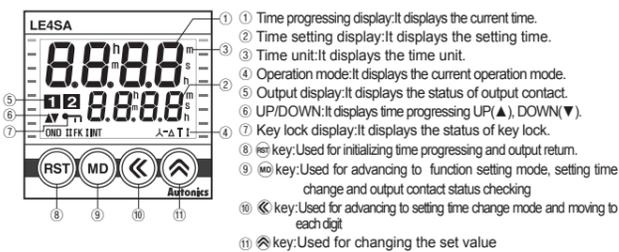
| | | |
|---|---|--|
| Model | | LE4SA |
| Power supply | 24-240VAC~ 50/60Hz, 24-240VDC= | |
| Display method | LCD Display(Backlight) | |
| Allowable voltage range | 90 ~ 110% of rated voltage | |
| Power consumption | 24-240VAC~: Max. 4VA, 24-240VDC=: Max. 1.6W | |
| Return time | Max. 100ms | |
| Control output | Contact | Time limit DPDT(2c), Time limit SPDT(1c)+Instantaneous contact SPDT(1c): Selectable |
| | Capacity | 250VAC~ 3A resistive load |
| Repeat Setting-Voltage-Temperature error | Max. ±0.01% ±0.05 sec | |
| Ambient temperature | -10 ~ 55°C (at non-freezing status) | |
| Storage temperature | -25 ~ 65°C (at non-freezing status) | |
| Ambient humidity | 35 ~ 85%RH | |
| Insulation resistance | Min. 100MΩ(500VDC megger) | |
| Dielectric strength | 2,000VAC 50/60Hz for 1 minute | |
| Vibration | Mechanical | 0.75mm amplitude at frequency of 10 ~ 55Hz in each of X, Y, Z directions for 1 hour |
| | Malfunction | 0.5mm amplitude at frequency of 10 ~ 55Hz in each of X, Y, Z directions for 10 minutes |
| Shock | Mechanical | 300m/s ² (30G) X, Y, Z directions for 3 times |
| | Malfunction | 100m/s ² (10G) 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) |
| Approval | CE, c, US | |
| Weight | Approx. 98g | |

■ Connection

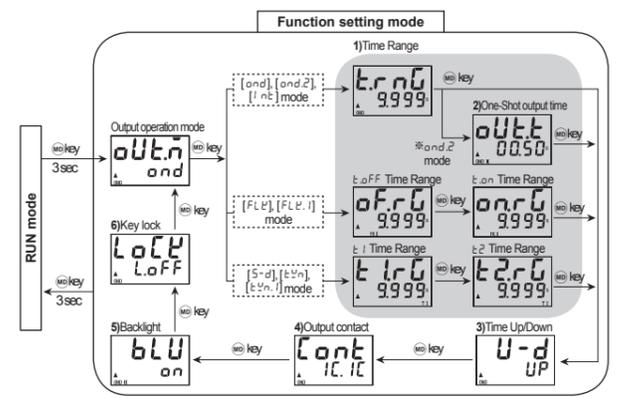


*The above specifications are subject to change and some models may be discontinued without notice.
*Be sure to follow cautions written in the instruction manual and the technical descriptions (catalog, homepage).

■ Front Panel Identification



■ Function Setting Mode Descriptions



1) Time Range

| Parameter | Time range specification |
|---------------|--------------------------------|
| 9.999(9.999s) | 0.010 sec ~ 9.999 sec |
| 99.99(99.99s) | 0.01 sec ~ 99.99 sec |
| 999.9(999.9s) | 0.1 sec ~ 999.9 sec |
| 9999(9999s) | 1 sec ~ 9999 sec |
| 99.99(99m59s) | 0 min 01 sec ~ 99 min 59 sec |
| 999.9(999.9m) | 0.1 min ~ 999.9 min |
| 9999(9999m) | 1 min ~ 9999 min |
| 99.99(99h59m) | 0 hour 01 min ~ 99 hour 59 min |
| 999.9(999.9h) | 0.01 hour ~ 99.99 hour |
| 9999(9999h) | 0.1 hour ~ 999.9 hour |
| 9999(9999h) | 1 hour ~ 9999 hour |

2) One-Shot output time setting

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

3) Time progress UP/DOWN setting

UP[UP]: Time progressed from 0 to setting time.
DOWN[dn]: Time progressed from setting time to 0.

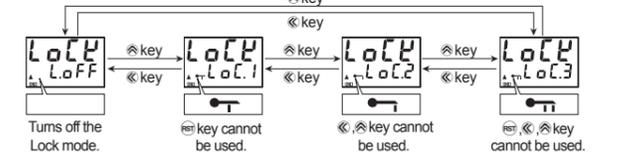
4) Output contact setting

Set the relay contact (No.1, 3, 4 pin) to Instantaneous or Time limit.
[IC, IC]: Instantaneous 1c, Time limit 1c, [2C]: Time limit 2c.
It is fixed to Time limit 2c in star-delta, Twin and Twin 1 modes.
*If key press on RUN mode, [IC, IC] or [2C] will be displayed depend on the status of output contact on time setting display.

5) Backlight setting

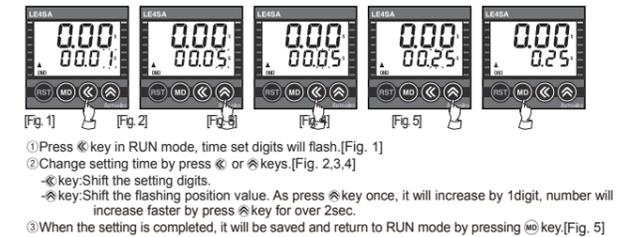
Set Backlight (ON[on], OFF[off]).

6) Key Lock selection

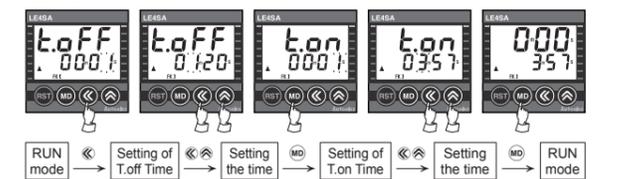


■ Time Setting

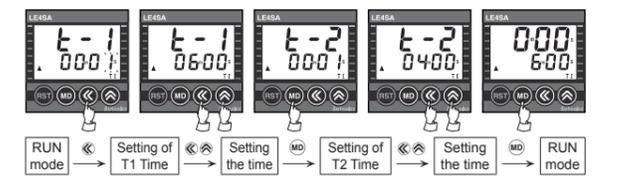
• Output operation mode : OND, OND II, INT



• Output operation mode : FK, FK I



• Output operation mode : △-△, T, T I

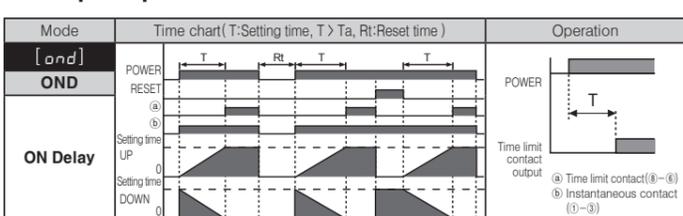


*Setting time changes can be made during timing operation. Make sure that timing operation is continuously progressed while changing the setting time.
*If pressing key while setting time is shorter than min. setting time, setting value will be flickering three times and it will be returned to setting 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 and OND II modes, it is able to set 0 since no min. setting time is applied.)

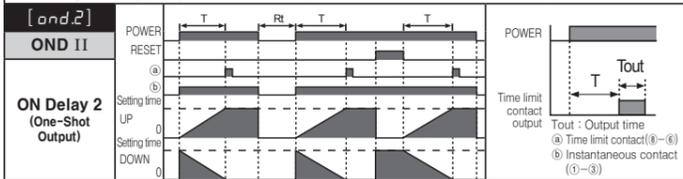
■ Factory Default

| NO. | Parameter | Default |
|-----|-----------------------|---------------|
| 1 | Output operation mode | oUt.n |
| 2 | Time Range | t.r.nG 99.99s |
| 3 | Time Up/Down | U-d UP |
| 4 | Output contact | Cont IC, IC |
| 5 | Backlight | bLU on |
| 6 | Key Lock | LoCk LoC.1 |
| 7 | Setting time | - 50.00s |

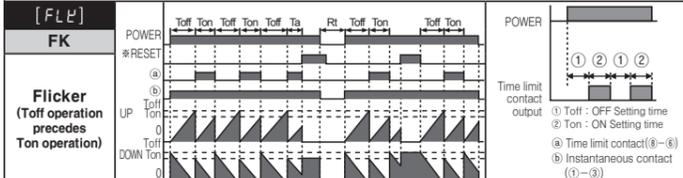
■ Output Operation Mode



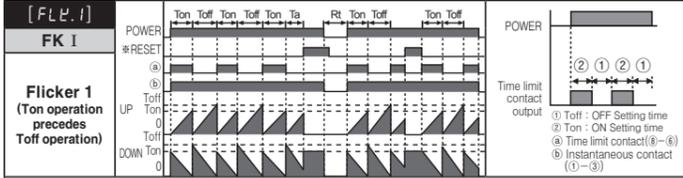
- Timing operation starts when power is ON.
- Time limit output will be ON when timing operation is progressed up to the setting time. Display value will be HOLD.
- If selecting time limit 1c + instantaneous 1c mode, instantaneous output will be ON when power is ON and goes OFF when power is OFF.
- If pressing RESET key, display value and time limit output will be reset.



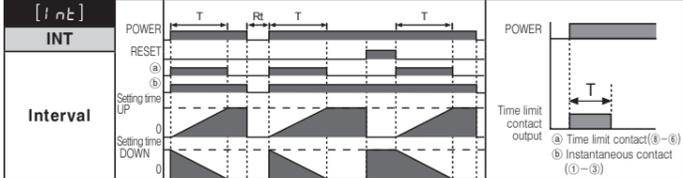
- Timing operation starts when power is ON.
- Time limit output will be ON during TOUT setting time and goes OFF when timing operation is progressed up to the setting time. Display value will be HOLD.
- If selecting time limit 1c + instantaneous 1c mode, instantaneous output will be ON when power is ON and goes OFF when power is OFF.
- If pressing RESET key, display value and time limit output will be reset.
- Time setting range: 0.01 sec~99.99 sec.



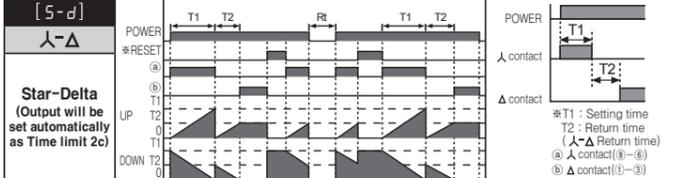
- Control output will be repeatedly OFF during Toff setting time and will be ON during Ton setting time when power is ON.
- If selecting time limit 1c + instantaneous 1c mode, instantaneous output will be ON when power is ON and goes OFF when power is OFF.
- If pressing RESET key, display value and time limit output will be reset.
- It is able to set each Toff time and Ton time separately. In [FLP.1] mode, timing operation starts with Toff.



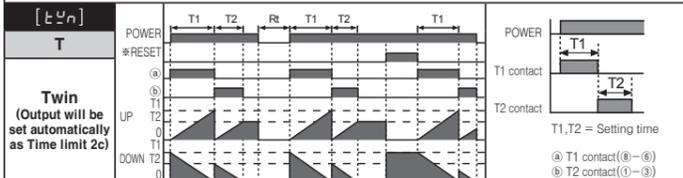
- Control output will be repeatedly ON during Ton setting time and will be OFF during Toff setting time when power is ON.
- If selecting time limit 1c + instantaneous 1c mode, instantaneous output will be ON when power is ON and goes OFF when power is OFF.
- If pressing RESET key, display value and time limit output will be reset.
- It is able to set each Ton time and Toff time separately. In [FLP.1] mode, timing operation starts with Ton.



- Time limit output will be ON when power is ON and Timing operation starts.
- Time limit output will be OFF when timing operation is progressed up to the setting time. Display value will be HOLD.
- If selecting time limit 1c + instantaneous 1c mode, instantaneous output will be ON when power is ON and goes OFF when power is OFF.
- If pressing RESET key, display value and time limit output will be reset.



- △ contact will be ON when power is ON and Timing operation starts.
- △ contact will be OFF when timing operation is progressed up to the T1 setting time. Timing operation will be reset and started again.
- △ contact will be ON when timing operation is progressed up to the T2 switching time. Display value will be HOLD.
- If pressing RESET key, display value and △-△ contacts will be reset.
- It is able to set each T1 and T2 time separately.



- T1 contact will be ON when power is ON and Timing operation starts.
- T1 contact will be OFF and T2 contact will be ON when timing operation is progressed up to the T1 setting time. Timing operation will be reset and started again. T2 contact will be OFF when timing operation is progressed up to the T2 setting time. Display value will be HOLD.
- If pressing RESET key, display value and T1, T2 contacts will be reset.
- It is able to set each T1 and T2 time separately.



- Timing operation starts when power is ON.
- T1 contact will be ON when timing operation is progressed up to the T1 setting time. Timing operation will be reset and started again.
- T2 contact will be ON when timing operation is progressed up to the T2 setting time. Display value will be HOLD.
- If pressing RESET key, display value and T1, T2 contacts will be reset.
- It is able to set each T1 and T2 time separately.

*Reset: Up mode -> Display value is '0', Output is 'OFF'.
DOWN mode -> Display value is 'setting time', Output is 'OFF'.

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

■ Major Products

- Photoelectric Sensors
- Fiber Optic Sensors
- Door Sensors
- Door Side Sensors
- Area Sensors
- Proximity Sensors
- Pressure Sensors
- Rotary Encoders
- Connector/Socket
- Switching Mode Power Supplies
- Control Switches/Lamps/Buzzers
- I/O Terminal Blocks & Cables
- Stepper Motors/Drivers/Motion Controllers
- Graphic/Logic Panels
- Field Network Devices
- Laser Marking System (Fiber, Co₂, Nd: YAG)
- Laser Welding/Cutting System
- Temperature Controllers
- Temperature/Humidity Transducers
- SSRs/Power Controllers
- Counters
- Timers
- Panel Meters
- Tachometer/Pulse (Rate)Meters
- Display Units
- Sensor Controllers

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