

# BRIGHTER & CLEARER ANYTIME, ANYWHERE

Great visibility in bright & dark environments from every direction

## LCD COUNTER/TIMERS

### LC series



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## Main Features

- Improved visibility with the wide viewing angle LCD
- Pre-scale setting range expanded (from 0.00001 to 999999)
- Modbus communication function added (RS485)
- Batch counter and batch timer setting functions improved
- Offset function for counter and timer
- Twin timer can be operated also in 1-stage output model
- OUT1 and OUT2 simultaneous output operation during twin timer operation in 2-stage output model
- Down-timer function added when timer SADD operation is set

## Specification

| Model                          | LC6   | LC4  | LC3  | LC7  |                             |
|--------------------------------|---|--|--|--|-----------------------------|
| Appearance                     |    |                                      |  |  |                             |
| W×H×D(mm)                      | 72 X 36 X 84  | 48 X 48 X 80   | 96 X 48 X 71   | 72 X 72 X 93   |                             |
| Power supply voltage           | 100 – 240 V a.c. 50 – 60 Hz (voltage fluctuation rate: ±10 %)   |  |  |  |                             |
| Power consumption              | • 2-stage setting : 12 VA max. • 1-stage setting : 11 VA max.   |  |  |  |                             |
| Character height               | counting unit (10.5 mm),<br>setting unit (6.7 mm)   | 6 digit : counting unit (10.8 mm),<br>setting unit (8 mm)<br>4 digit : counting unit (14 mm),<br>setting unit (8.5 mm) | counting unit (14.5 mm),<br>setting unit (10 mm)                                     | counting unit (17.2 mm),<br>setting unit (12.5 mm)                                   |                             |
| Max. counting speed            | 1 CPS / 30 CPS / 1 KCPS / 10 KCPS   |  |  |  |                             |
| Power outage compensation      | 10 years (using non-volatile memory)  |  |  |  |                             |
| Input                          | <ul style="list-style-type: none"> <li>• Selection of input method by external switch (voltage input / non-voltage input)</li> <li>• Counter: composed of CP1, CP2, RESET, BATCH-RESET</li> <li>• Timer: composed of START, INHIBIT, RESET</li> <li>• Voltage input : HIGH level (5 – 30 V d.c.), LOW level (0 – 2 V d.c.), input resistance (about 4.5 kΩ)</li> <li>• Non-voltage input : impedance during short-circuit (1 kΩ max.), residual voltage during short-circuit (2 V d.c. max.)</li> </ul> |  |  |  |                             |
| Min. input signal time         | 1 ms / 20 ms (START, INHIBIT, RESET input)  |  |  |  |                             |
| External power supply          | 12 V d.c. 100 mA max  |  |  |  |                             |
| ONE SHOT output                | 0.01 ~ 99.99 SEC  |  |  |  |                             |
| Control output                 | contact   | 1-stage setting  | OUT (SPST, 1a)   | OUT (SPDT, 1c)   | OUT (SPDT, 1c)              |
|                                |   | 2-stage setting  | OUT1 (SPST, 1a), OUT2 (SPDT, 1c) * OUT2 of LC6-P62M: SPST configuration              |  |                             |
|                                |   | capacity   | • SPDT: NC (250 V a.c. 5A), NO (250 V a.c. 2A) • SPST: 250 V a.c. 5A, resistive load |  |                             |
|                                | non-contact   | 1-stage setting  | NPN 2 circuits (OUT, BAT.O) * LC4-P61M/P41M models NPN 1 circuit configuration       |  |                             |
|                                |   | 2-stage setting  | -  | NPN 2 circuits (OUT1, OUT2)  | NPN 2 circuits (OUT1, OUT2) |
| capacity                       | Open collector, 30 V d.c. 100 mA max  |  |  |  |                             |
| Timer operation error          | Power start-in: ±0.01 % ±0.05 sec. max., Reset start-in: ±0.01 % ±0.03 sec. max.  |  |  |  |                             |
| Communication                  | protocol  | Modbus-RTU   |  |  |                             |
|                                | method  | RS485 (2-wire half-duplex)   |  |  |                             |
|                                | synchronization   | Asynchronous   |  |  |                             |
|                                | speed   | 2,400 / 4,800 / 9,600 / 19,200 / 38,400 bps  |  |  |                             |
|                                | effective distance  | Within 800 m max   |  |  |                             |
|                                | max. number of connections  | 31 (address:1 ~ 127)   |  |  |                             |
|                                | response waiting time   | 5 ~ 99 ms  |  |  |                             |
|                                | START BIT   | 1 bit (fixed)  |  |  |                             |
|                                | STOP BIT  | 1 bit (fixed)  |  |  |                             |
|                                | DATA BIT  | 8 bit  |  |  |                             |
| PARITY BIT                     | None / Odd / Even   |  |  |  |                             |
| Insulation resistance          | 100 MΩ min. (500 V d.c.) conductive part terminal – unfilled metal  |  |  |  |                             |
| Dielectric strength            | 2,000 V a.c. 60 Hz for 1 min (different live part terminals)  |  |  |  |                             |
| Noise Immunity                 | Square-wave noise by noise simulator (1 μs pulse every 16 ms) ±2 kV (among power terminals), ±500 V (among input terminals)   |  |  |  |                             |
| Vibration resistance           | 10 – 55 Hz, single amplitude 0.5 mm, 3-axis each direction, 2 h   |  |  |  |                             |
| Relay Life Expectancy          | electrical  | 50,000 times min.  |  |  |                             |
|                                | mechanical  | 10,000,000 times min.  |  |  |                             |
| Protection rating              | IP65 (product front)  |  |  |  |                             |
| Storage temperature            | -20 ~ 65 °C   |  |  |  |                             |
| Ambient temperature & humidity | -10 ~ 55 °C, 35 ~ 85 % RH (without condensation)  |  |  |  |                             |