MODEL LD - LARGE DISPLAY

- *2.25" & 4" HIGH RED LED DIGITS*
- *AVAILABLE IN 4 OR 6 DIGIT VERSIONS*
- *SINGLE OR DUAL COUNTER with RATE INDICATOR **
- *PROGRAMMABLE SCALING AND DECIMAL POINTS **
- *PROGRAMMABLE USER INPUT **
- *AC OR DC POWERED*
- *5 AMP FORM C RELAY **
- *ALUMINUM NEMA 4X CASE CONSTRUCTION*

** Programmable models only*

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GENERAL DESCRIPTION

The Large Display is a versatile display that can be configured as a single or dual counter with rate indication, scaling, serial communications and a relay output. There are also basic models that have a single counter with direction control only (no scaling or relay output).

The 4 & 6 digit displays are available in either 2.25" or 4" high red LED digits with adjustable display intensities. The 2.25" high models are readable up to 130 feet. The 4" high models are readable up to 180 feet. All versions are constructed of a NEMA 4X enclosure in light weight aluminum.

The 6-digit programmable models have two signal inputs and a choice of eight different count modes. These include bi-directional, quadrature and anti-coincidence counting, as well as a dual counter mode. When programmed as a dual counter, each counter has separate scaling and decimal point selection.

Rate indication is available on the programmable models only. The rate indicator has separate scaling and decimal point selection, along with programmable display update times. The meter display can be toggled either manually or automatically between the count and rate values.

The programmable models also come with a Form C relay output and jumper selectable RS232 or RS485 serial communications.

SAFETY SUMMARY

All safety regulations, local codes and instructions that appear in this and corresponding literature, or on equipment, must be observed to ensure personal safety and to prevent damage to either the instrument or equipment connected to it. If equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

CAUTION: Risk of Danger.
Read complete instructions prior to installation and operation of the unit.

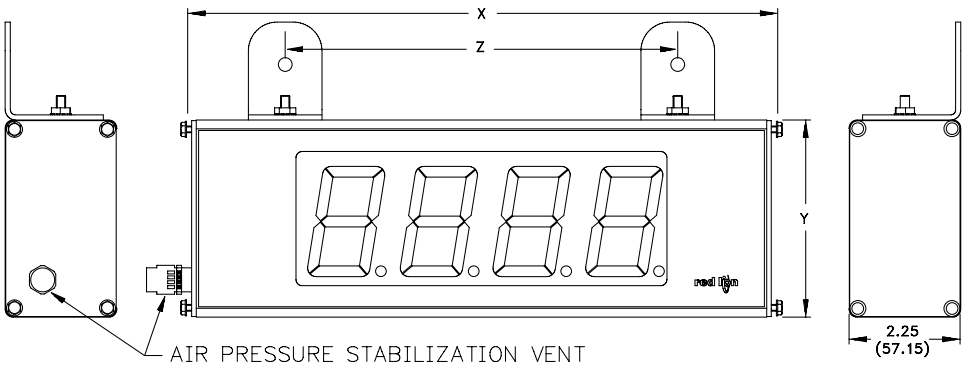
CAUTION: Risk of electric shock.

The protective conductor terminal is bonded to conductive parts of the equipment for safety purposes and must be connected to an external protective earthing system.

SPECIFICATIONS

1. **DISPLAY**: 2.25" (57 mm) or 4" (101 mm) intensity adjustable Red LED
2. **POWER REQUIREMENTS**:
   AC POWER:
   AC Input: 85 to 250 VAC 50/60 Hz, 14 VA
   DC Out: 11 to 16 VDC @ 50 mA (consult factory for higher current draw)
   DC POWER:
   DC Input: 11 to 16 VDC @ 400 mA max, 7 W
3. **COUNT INPUT(S)**:
   Counter(s) have DIP switch selectable pull-up (7.8 KΩ) or pull-down resistors (3.9 KΩ) that determine active high or active low input logic.
   Counters are DIP switch selectable for high or low frequency (Damping capacitor provided for switch contact bounce. Limits input frequency to 50 Hz and input pulse widths to 10 msec min.)
   Input A Trigger levels: V_{IL} = 1.25 V max; V_{IH} = 2.75 V min; V_{MAX} = 28 VDC
   Input B Trigger levels: V_{IL} = 1.0 V max; V_{IH} = 2.4 V min; V_{MAX} = 28 VDC
   Counter Overflow Indication: Display flashes "OLOL"
   LD200400, LD200600, LD400400, & LD400600:
   Count Speed: 35 KHz max. @ 50% duty cycle (no scaling)
   LD2006P0 & LD4006P0:
   Counter A & B Frequency:

COUNT MODE	MAX FREQUENCY
CNT UD	35K
RT-CNT	25K
QUAD X1; QUAD X2	22K
QUAD X4; DUAL CNT	16K
ADD/ADD; ADD/SUB	20K



PART NUMBER	X (Length)	Y (Height)	Z (Center)
LD2004xx	12 (304.8)	4 (101.6)	8 (203.2)
LD2006xx	16 (406.4)	4 (101.6)	12 (304.3)
LD4004xx	20 (508)	7.875 (200)	16 (406.4)
LD4006xx	26 (660.4)	7.875 (200)	22 (558.8)

4. **RATE INPUT**: **Models LD2006P0 & LD4006P0 only**
   Display Range: 0 to 99999
   Min Freq.: 0.01 Hz
   Max Freq.: See Frequency chart under Count Input specification
   Accuracy: ±0.01%
   Rate Overflow Indication: Display flashes "r OLOL"
5. **RESET/USER INPUT**:Function programmable for LD2006P0 &LD4006P0
   Reset/User Input: DIP switch selectable pull-up (7.8 KΩ) or pull-down resistor (3.9 KΩ) that determines active high or active low input logic.
   Trigger levels: V_{IL} = 1.0 V max; V_{IH} = 2.4 V min; V_{MAX} = 28 VDC
   Response Time: 5 msec typ.; 100 msec debounce (activation and release)
6. **COMMUNICATIONS (LD2006P0 & LD4006P0 only)**:
   RS485 SERIAL COMMUNICATIONS
      Type: RS485 multi-point balanced interface (non-isolated)
      Baud Rate: 300 to 19.2 k
      Data Format: 7/8 bits; odd, even, or no parity
      Bus Address: 0 to 99; max 32 meters per line
   RS232 SERIAL COMMUNICATIONS
      Type: RS232 half duplex (non-isolated)
      Baud Rate: 300 to 19.2 k
      Data Format: 7/8 bits; odd, even, or no parity
7. **MEMORY**: Nonvolatile E^2PROM retains all programming parameters and count values when power is removed.
8. **OUTPUT (LD2006P0 & LD4006P0 only)**:
   Relay: Form C contacts rated at 5 amps @ 120/240 VAC or 28 VDC (resistive load), 1/8 H.P. @ 120 VAC (inductive load)
9. **ENVIRONMENTAL CONDITIONS**:
   Operating temperature: 0 to 50 °C
   Storage temperature: -40 to 70 °C
   Operating and storage humidity: 0 to 85% max. RH (non-condensing)
   Altitude: Up to 2,000 meters
10. **CONNECTIONS**:
    Internal removable terminal blocks are used for power and signal wiring. Remove end plates with ¼" nut driver. For LD4 versions, all wiring is on right side of unit. For LD2 versions, power and signal wiring is on the right side and the optional relay output is on left side.
    Wire Strip Length: 0.4" (10 mm)
    Wire Gage: 24-12 AWG copper wire
    Torque: 5.3 inch-lbs (0.6 N-m) max.
11. **CERTIFICATIONS AND COMPLIANCES**:
    SAFETY
    UL Listed, File # E137808, UL508, CSA C22.2 No. 14-M95
       LISTED by Und. Lab. Inc. to U.S. and Canadian safety standards
       Type 4X Enclosure rating (Face only), UL50
    IEC 61010-1, EN 61010-1: Safety requirements for electrical equipment for measurement, control, and laboratory use, Part 1.
    IP65 Enclosure rating (Face only), IEC 529
    ELECTROMAGNETIC COMPATIBILITY
    Emissions and Immunity to EN 61326: Electrical Equipment for Measurement, Control and Laboratory use.

    Immunity to Industrial Locations:

Electrostatic discharge	EN 61000-4-2	Criterion A 4 kV contact discharge 8 kV air discharge
Electromagnetic RF fields	EN 61000-4-3	Criterion A 10 V/m
Fast transients (burst)	EN 61000-4-4	Criterion A[2] 2 kV power 1 kV signal
Surge	EN 61000-4-5	Criterion A[2] 1 kV L-L, 2 kV L&N-E power
RF conducted interference	EN 61000-4-6	Criterion A 3 V/rms

    Emissions:

Emissions	EN 55011	Class B

    Notes:
       1. Criterion A: Normal operation within specified limits.
       2. DC Power: Shaffner FN610-1/07 line filter installed on DC power cable to comply.
12. **CONSTRUCTION**: Aluminum enclosure, and steel side panels with textured black polyurethane paint for scratch and corrosion resistance protection. Sealed front panel meets NEMA 4X/IP65 specifications. Installation Category II, Pollution Degree 2.
13. **WEIGHT**:
    LD2004XX - 3.5 lbs (1.59 kg)
    LD2006XX - 4.5 lbs (2.04 kg)
    LD4004XX - 8 lbs (3.63 kg)
    LD4006XX - 10.5 lbs (4.76 kg)

TYPE	MODEL NO.	DESCRIPTION	PART NUMBER
Basic (No front panel keys)	LD	2.25" High 4-Digit Red LED Counter	LD200400
		2.25" High 6-Digit Red LED Counter	LD200600
		4" High 4-Digit Red LED Counter	LD400400
		4" High 6-Digit Red LED Counter	LD400600
Programmable (With front panel keys)	LD	2.25" High 6-Digit Red LED Count/Rate Indicator w/ Relay Output & RS232/RS485 Serial Communications	LD2006P0
		4" High 6-Digit Red LED Count/Rate Indicator w/ Relay Output & RS232/RS485 Serial Communications	LD4006P0