red lion

MODEL LD - LARGE SERIAL SLAVE DISPLAY

- 2.25" or 4" HIGH RED LED DIGITS
- DISPLAYS UP TO 6 DIGITS OF SERIAL ASCII DATA
- DUAL DISPLAY BUFFER ALLOWS ALTERNATING DISPLAYS
- SELECTABLE RS232 OR RS485 SERIAL INTERFACE
- CONNECTS DIRECTLY TO RED LION PRODUCTS WITH SERIAL
- PROGRAMMABLE USER INPUT
- AC OR DC POWERED
- ALUMINUM NEMA 4X/IP65 CASE CONSTRUCTION

CE

GENERAL DESCRIPTION

The Large Serial Slave Display is a versatile display that accepts serial ASCII data from a host device and displays the received characters. The displayable data includes numeric, 7-segment alphabetic and certain punctuation characters.

The 6-digit displays are available in either 2.25" or 4" high red LED digits with adjustable display intensity. The 2.25" high models are readable up to 130 feet. The 4" high models are readable up to 180 feet. Both versions are constructed of a NEMA 4X/IP65 enclosure in light weight aluminum.

The Serial Slave has two internal display buffers, allowing two separate display values or messages to be viewed. The main (primary) display typically shows dynamic data (count, rate, process, etc.), usually received directly from another meter. The secondary display typically shows a fixed message or value, such as a system or machine identifier, or a target production value. The main and secondary displays can be toggled either manually or automatically at a user selected toggle speed. Both displays are retained in memory when power is removed from the unit.

For single meter remote display applications, the Serial Slave can be connected directly to a Red Lion (or compatible) meter with RS232 or RS485 serial communications. The slave can display the meter value on its main display without requiring a PC or other serial interface.

Multiple slaves are connected using an RS485 serial bus. If unique meter addresses are assigned, specific data can be displayed by a single slave on the bus. When multiple slaves are assigned the same address, common data can be displayed by multiple units in different locations.

The serial interface is plug jumper selectable for RS232 or RS485 connections. Serial communications parameters are fully programmable, with baud rates up to 38.4Kbps. Special command characters allow display selection and display intensity adjustment through the serial input. In addition to the serial input, a programmable User Input is provided to perform a variety of meter functions.

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

CAUTION: Risk of electric shock.

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.

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**: 6-digit 2.25" (57 mm) or 4" (101 mm) adjustable intensity 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
   DC Power:
     DC Input: 11 to 16 VDC @ 400 mA max, 7 W
3. **SERIAL INPUT:** (Jumper Selectable RS232 or RS485):
   RS485 SERIAL COMMUNICATIONS
     Type: Multi-point balanced interface (non-isolated)
     Baud Rate: 300 to 38400
     Data Format: 7/8 bits; odd, even, or no parity
     Bus Address: 0 to 99; max 32 meters per line
   RS232 SERIAL COMMUNICATIONS
     Type: Half duplex (non-isolated)
     Baud Rate: 300 to 38400
     Data Format: 7/8 bits; odd, even, or no parity
4. **USER INPUT** (Programmable Function Input):
   Active low logic, internal 7.8 KΩ pull-up resistor to +12V.
   Trigger levels: V_{IL} = 1.0 V max; V_{IH} = 2.4 V min; V_{MAX} = 28 VDC
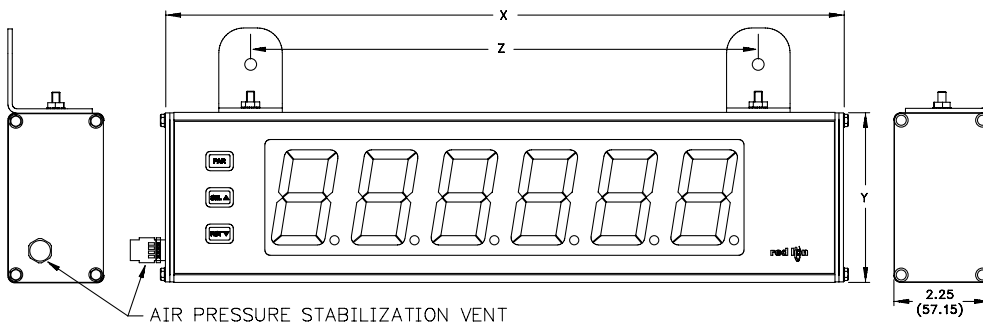   Response time: 5 msec typ; 100 msec debounce (activation & release)

DIMENSIONS In inches (mm)

AIR PRESSURE STABILIZATION VENT

2.25 (57.15)

PART NUMBER	X (Length)	Y (Height)	Z (Center)
LD2SS6P0	16 (406.4)	4 (101.6)	12 (304.8)
LD4SS6P0	26 (660.4)	7.875 (200)	22 (558.8)

5. **MEMORY**: Nonvolatile E^{2}PROM retains all programming parameters, main and secondary displays when power is removed.

6. **CERTIFICATIONS AND COMPLIANCES**:
   SAFETY
   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
   Type 4X Enclosure rating (Face only), UL50
   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 instaled on DC power cable to comply.

7. **CONNECTIONS**:
   Internal removable terminal blocks used for power and signal wiring.
   Remove end plates with ¼" nut driver.
   For LD2 and LD4 versions, all wiring is on the right side of the unit.
   Wire Strip Length: 0.4" (10 mm)
   Wire Gage: 24-12 AWG copper wire
   Torque: 5.3 inch-lbs (0.6 N-m) max

8. **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

9. **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.

10. **WEIGHT**:
    LD2SS6P0 - 4.5 lbs (2.04 kg)
    LD4SS6P0 - 10.5 lbs (4.76 kg)

MODEL NO.	DESCRIPTION	PART NUMBER
LD	2.25" High 6-Digit Red LED Serial Slave Display, RS232/RS485 Serial Communications	LD2SS6P0
	4" High 6-Digit Red LED Serial Slave Display, RS232/RS485 Serial Communications	LD4SS6P0