

LION PRECISION LRD3100 LABEL REGISTRATION AND DETECTION INSTRUCTION SHEET

M014-5760.09

Introduction:

The LION PRECISION LRD3100 LABEL REGISTRATION AND DETECTION SYSTEM is an electronic sensor used to monitor label registration and/or count labels. The sensor will output a signal as either the leading or trailing edge of the label passes through the sensor. The sensor is designed so setup adjustments are not usually required. If the geometry of the label varies greatly or if the gap between labels is greater than 3 mm (0.125") then an adjustment may be required. Gaps between labels of less than 2.5 mm (0.1") may not work correctly; labels with no gap and metal labels will not be detected at all.

Mounting the Sensor

Mount the sensor so the web passes through the gap of the sensor and rides against the mounting plate. The label must be aligned with the sensing area marked [_SENSOR_]. Mount the sensor perpendicular to the web. In the case where small labels (3.8cm/1.5") are used, the label must be centered under the sensing area.

Electrical Connections

- Be sure all unused wires are insulated from each other and any other conductive object.
- All power **must** be off when installing the sensor.
- **WARNING:** DC Ground is connected to sensor body.
- Brown wire must be connected to +V or Ground for reliable operation.

Power

Optimum performance is obtained with 24VDC but the sensor can be powered with 11–30VDC. Maximum current draw is 50mA. It is recommended but not required that the shield wire be connected to ground. The shield is connected to ground inside the sensor.

Output

The NPN and PNP outputs are both open-collector outputs. The NPN output can sink up to 150 mA and can be pulled-up to +90 Volts maximum. Damage to the sensor will occur if this output is connected directly to a power supply. The PNP output can source up to 150 mA. The PNP POWER IN must be connected to a power source for the desired high logic voltage.

Output Polarity

Output polarity determines whether the output signal will be low or high on the leading or trailing edge of the label.

Output polarity is determined by whether the output polarity connection (brown) is connected to GND or +V.

NOTE: Output polarity also depends on the direction that the labels are moving through the sensor. (See Figure 2).

WIRE COLOR	SIGNAL
RED	POWER IN (+Vin) +11-30VDC @ 50mA Max
BLACK	GND (CASE)
GREEN	NPN OUTPUT +90VDC/150mA Max
BLUE	PNP OUTPUT 150mA Max
WHITE	PNP POWER IN +Vin Max
BROWN	OUTPUT POLARITY GND or +V
SHIELD	CABLE SHIELD GND recommended

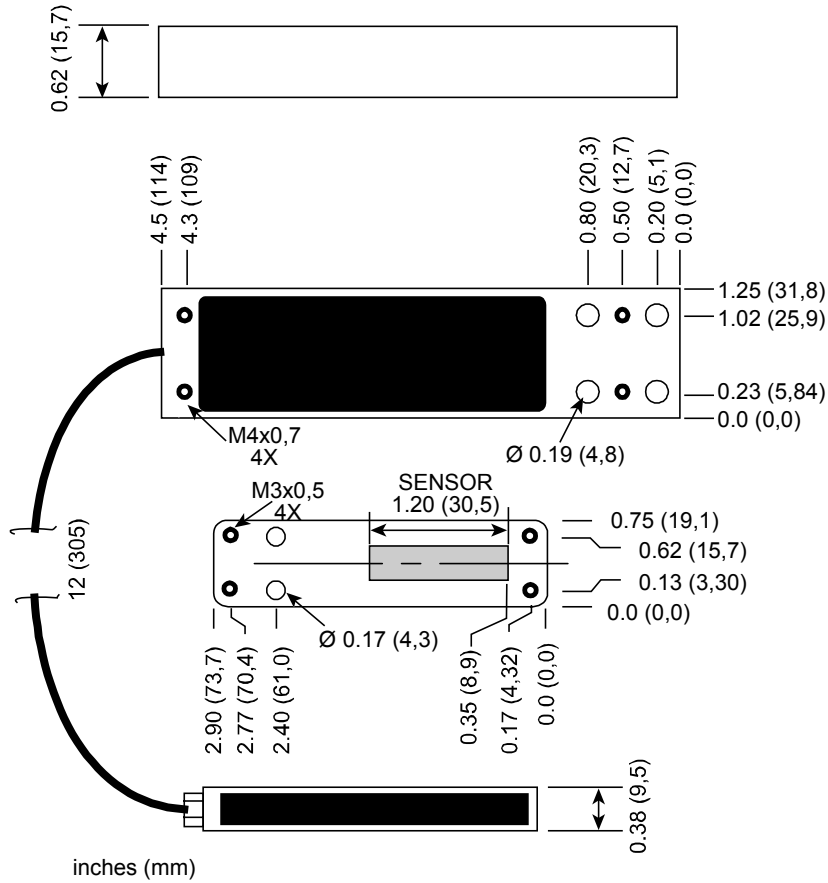
Warning: Brown wire must be connected to +V or Ground for reliable operation.

Adjusting Gain and Zero

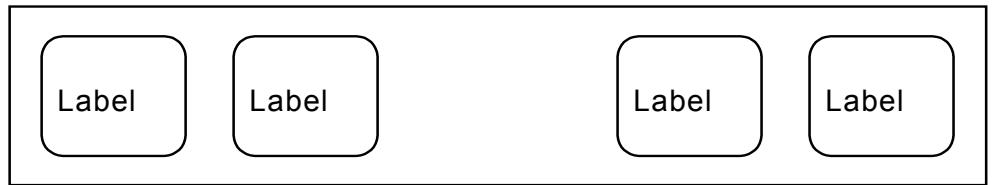
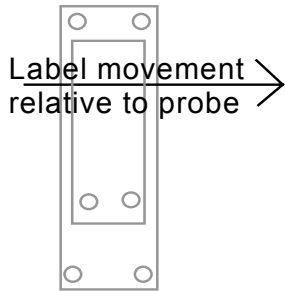
These adjustments are not usually required unless the sensor is powered with a voltage other than +24V.

1. Remove all material from sensor.
2. Turn Gain Adjust pot four (4) turns counter clockwise.
3. Turn Gain Adjust pot two (2) turns clockwise.
4. Turn Zero Adjust pot until Zero LED just turns on. (if LED is on, rotate counter clockwise, if LED is off rotate clockwise)
5. Insert material into sensor. Move material through sensor and observe the edge LED. If the Edge LED flashes between gap and label, setup is complete. If LED fails to flash, turn Gain Adjust pot clockwise while moving labels through, until the LED flashes and continue turning ½ turn. Sensor is now ready to run.

LRD DIMENSIONAL DATA -- FIGURE 1



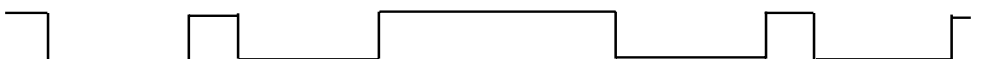
LRD SIGNAL OUTPUT DIAGRAM -- FIGURE 2



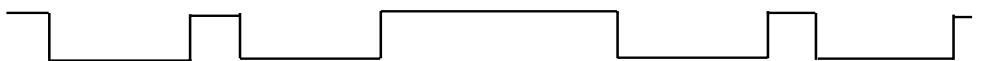
NPN output
POLARITY to GND



NPN output
POLARITY to +V



PNP output
POLARITY to +V



PNP output
POLARITY GND

