LION PRECISION LRD4100 LABEL SENSOR
INSTRUCTION SHEET M014-4850.014

Introduction:

The LION PRECISION LRD4100 LABEL SENSOR is an electronic sensor used to monitor label registration and/or count labels. The NPN and PNP type outputs will indicate the leading or trailing edge of the label. Output polarity is wire selectable.

Changes in the gap between the sensor and backing plate due to vibration will cause false triggering.

The sensor gap must be held constant for good detection of labels. Gaps between labels of less than 2.5 mm (0.1") may not be detected reliably. Metal labels or labels with no gap will not be detected.

Mounting the Sensor

Mount the sensor with the active end parallel to a mechanically stable, electrically conductive reference plate. The distance from the sensor to the plate must be 0.813 ±0.076mm (0.032 ±0.003") and parallelism must be within 0.051mm (0.002"). The mounting hardware must be stiff enough to maintain the above specs throughout the operating environment range. There must be electrical conductivity between the sensor body and reference plate.
Mount the sensor so label material completely covers the active area of the sensor. More mounting details available in the TechNotes section of www.lionprecision.com.

Connecting to the Sensor

Warnings:

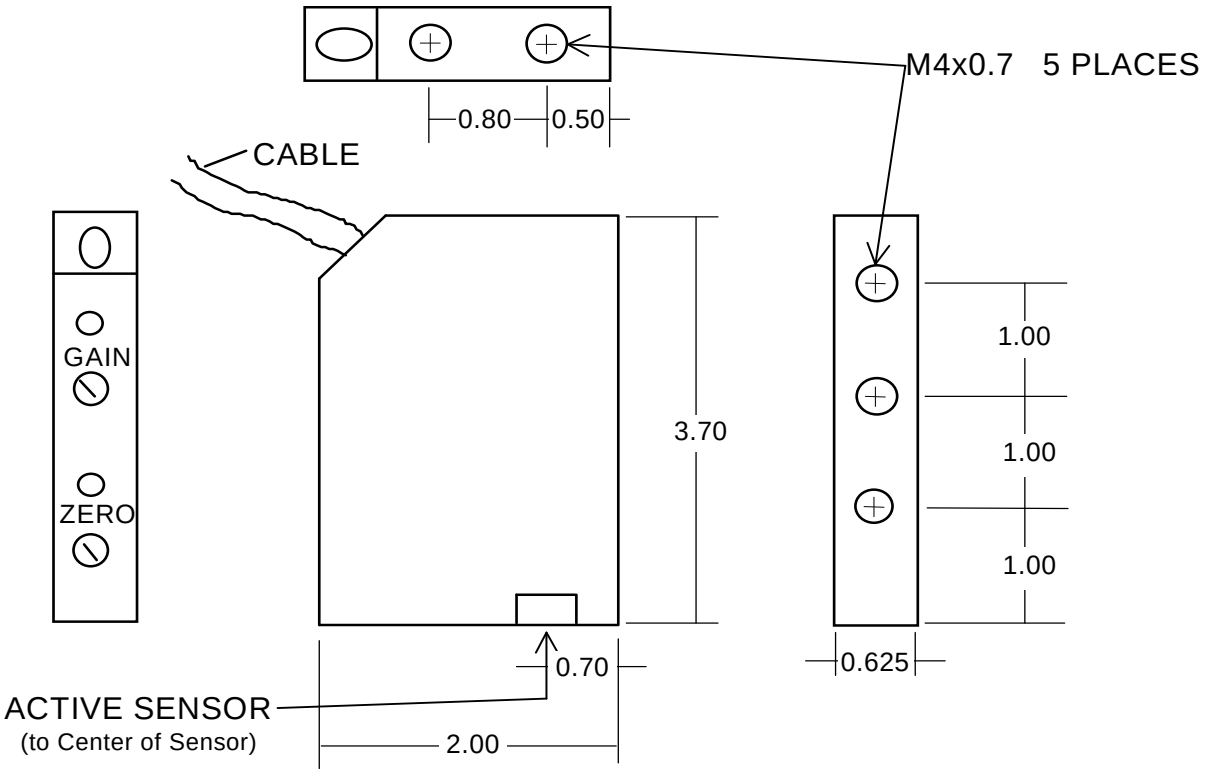
Sensor body is connected to Ground.
Sensors must not be attached to voltages in excess of 30VRMS or 60VDC
All external connections must be SELV (Safety Extra Low Voltage).
All power must be off when installing the sensor.
Brown wire must be connected to +V or Ground for reliable operation.
Use of the equipment in any other manner may impair the safety and EMI protections of the equipment.

WIRE COLOR	SIGNAL	Notes
RED	+V Power In	Vin (11-28V⎓) 50mA
BLACK	GND (Case)	
GREEN	NPN Output	Open Collector, 150mA sinking maximum, +90V maximum
BLUE	PNP Output	Open Collector, 150mA sourcing maximum, source from +Vin
BROWN	Output Polarity	Inverts output polarity. Polarity is also affected by direction of label/web movement (see figure 2). Must be connected to +V or GND.
SHIELD	Cable Shield	Ground connection is recommended but not required

Adjusting Gain and Zero

1. Remove all material from sensor.
2. Turn GAIN pot four (4) turns counter-clockwise.
3. Turn GAIN pot two (2) turns clockwise.
4. Turn ZERO 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 GAIN LED. If the GAIN LED flashes between gap and label, setup is complete. If LED fails to flash, turn GAIN pot clockwise while moving labels through, until the LED flashes then continue turning ½ turn. Sensor is now ready to run.

LABEL DETECTOR DIMENSIONAL DATA -- FIGURE 1



LRD SIGNAL OUTPUT DIAGRAM -- FIGURE 2