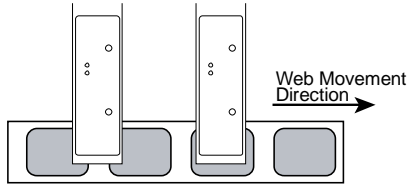
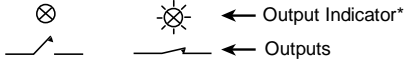


Output and Mechanical Detail

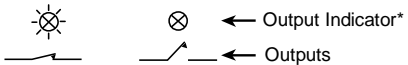
Light/Dark switching is affected by the direction of label movement and the Output Polarity connection. Output descriptions below are for web direction indicated in the illustration and **are reversed** for web movement in the other direction.



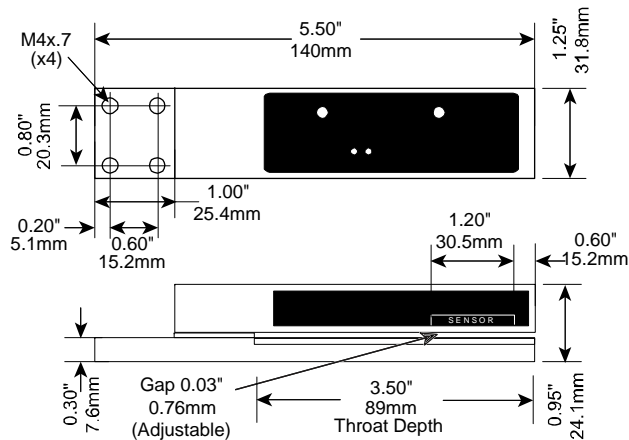
Dark Switching
Output Polarity = GND



Light Switching
Output Polarity = +V



*Some models label this indicator as "Edge"

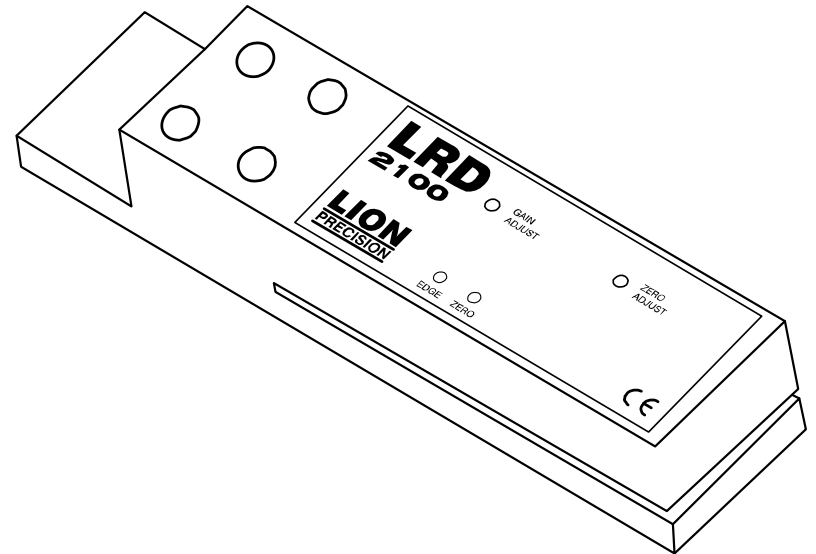


Specifications

Power supply	Voltage	11-28 V _{DC} (reverse polarity protected)
	Current	50mA
Response time	on or off	20 μ s max
	Switching Frequency	10kHz max
Output	Output Current (sinking or sourcing)	150mA max (overload protected)
	Switching output	PNP (sourcing) or NPN (sinking), Dark or light switching
Temperature	Operating Range	40°F to 140°F (4°C to 60°C)
Protections	Supply	Inverse Polarity Protection
	Switching output	Short Circuit and Overload Protection

Two-Year Warranty details at: www.lionprecision.com/warranty.html

User's Guide for the LRD2100 and LRD2100C Label Sensors from Lion Precision



Lion Precision
563 Shoreview Park Road
St. Paul, MN 55126
651-484-6544

www.lionprecision.com

Document Number: M014-4660.025

LION
PRECISION

Warnings:

Sensor body is connected to Ground.

Sensors must not be attached to voltages in excess of 30VRMS or 60VDC

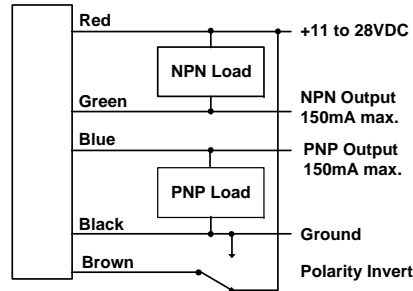
All power must be off when installing the sensor.

Use of the equipment in any other manner may impair the safety and EMI protections of the equipment.

LRD2100 Wiring

Wire Color	Connection	Notes
Red	Vin (11-28V $\overline{\text{---}}$)	50mA max.
Black	Ground	Connected to sensor body
Green	NPN Output	150mA max.
Blue	PNP Output	150mA max.
Brown	Output Polarity (light/dark switching)	+V or Ground See detail on back

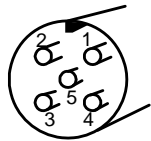
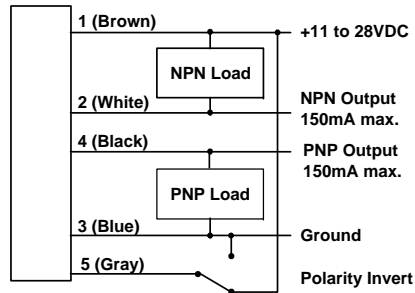
Warning: Brown wire must be connected to +V or Ground for reliable operation.



LRD2100C Wiring

Wire Color	Connection	Notes
1 (Brown)	Vin (11-28V $\overline{\text{---}}$)	50mA max.
2 (White)	NPN Output	150mA max.
3 (Blue)	Ground	Connected to sensor body
4 (Black)	PNP Output	150mA max.
5 (Gray)	Output Polarity (light/dark switching)	+V or Ground See detail on back

Warning: Gray wire (pin 5) must be connected to Vin or Ground for reliable operation.



Connector on rear of sensor

Setup Procedure

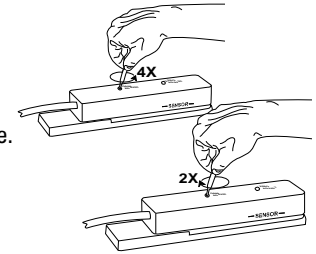
These sensors are extremely stable and should not require re-adjustment after the initial setup. Re-adjustment will only be required for significant changes in label shape or thickness, or changes in power supply voltage.

1. Remove all material from sensor.

2. Center GAIN ADJUST

Turn GAIN ADJUST four (4) turns counter clockwise.

Turn GAIN ADJUST two (2) turns clockwise.



3. Set ZERO ADJUST

Set ZERO ADJUST to the point where the ZERO light just begins to come on.

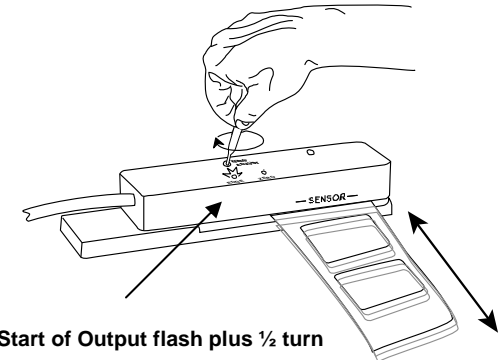
It is not important whether the light is on or off. What is important is that the light is very near the point where it changes from off to on.

4. Set GAIN ADJUST

For most labels, GAIN will need no further adjustment. If the sensor performs erratically, use the following GAIN adjustment procedure.

Insert material into sensor.

While moving labels through the sensor, Set GAIN ADJUST to the point where the OUTPUT light (EDGE on some models) starts to flash. Then continue turning $\frac{1}{2}$ turn clockwise.



5. Sensor is now ready.

Lights During Operation:

The Output light (Edge on some models) indicates the sensor output. It will be in one state (on or off) during the label and the other state during the gap depending on the direction of the label movement and the connection of the Polarity Invert wire (see next page for details).

The Zero light is for setup only and is meaningless during operation.

Notes:

1) For best results, web should ride against sensor baseplate, not "float" in the gap.

2) Some inks, usually black, have a high carbon content. These inks behave like metal and may not work reliably with the LRD2100. Use the LRD6110 instead.