The LDB-2 Ring/Loop Detector monitors an analog phone line for ringing or an in-use condition. A built-in relay can be activated when either of these conditions are detected. This is ideal for monitoring line status or for providing a visual indication of such.

When monitoring for ring, an internal pot can be adjusted to allow the relay closure to stay on steady, or follow standard ring cadence.

The LDB-2 comes complete with a 12 VDC power adapter, and can also provide 12V DC power through its auxiliary 12V DC output terminals.

**Features**

- Detects ring voltage and loop connect
- Screw terminal connections
- Wall mountable with foam tape (included) or screws (not included)
- Auxiliary 12V DC output
- Adjustable time-out for relay closure
- Two sets of relay contacts provided
- Selectable NO (normally open) or NC (normally closed) relay contacts
- Limited two year warranty

**Applications**

- Control a strobe light for ring indication
- Provide relay closures on ring and off-hook
- Trigger a security camera
- Trigger a tape recorder
- Phone “In Use” indicator

**Specifications**

- **Power:** 120V AC to 12V DC adapter provided
- **Dimensions:** 2.9” x 2.1” x 1.0” (74mm x 53mm x 25mm)
- **Shipping Weight:** 0.86 lbs (0.4 kg)
- **Environmental:** -15° F to 130° F(-26° C to 54° C) with 5% to 95% non-condensing humidity
- **Contact Rating:** .5A @ 125V AC/1A @ 30V DC
- **Maximum Current Draw Auxiliary 12V DC Output:** 350mA
- **Minimum Loop Current:** 15 mA
- **Minimum Ring Voltage:** 40Vrms
- **Ringer Equivalence:** 0.5 A REN
- **Connections:** 10 pin screw terminal block

[www.vikingelectronics.com](http://www.vikingelectronics.com)  
Information: (715) 386-8861
A. Mounting

The LDB-2 is designed to be wall mounted using the included foam tape or with screws as follows:

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>Unsnap the plastic cover (see Diagram A) and remove the top screw holding the circuit board.</td>
</tr>
<tr>
<td>Step 2</td>
<td>Loosen the bottom screw and rotate the circuit board to the left, exposing the two mounting holes in the base (see Diagram B).</td>
</tr>
<tr>
<td>Step 3</td>
<td>EScrew the base to the wall, etc. using (2) #6 flathead or sheetrock screws.</td>
</tr>
</tbody>
</table>

Note: Make sure the screw heads are fully driven into the base to avoid shorting the circuit board leads.

B. Wiring

**IMPORTANT:** Electronic devices are susceptible to lightning and power station electrical surges from both the AC outlet and the telephone line. It is recommended that a surge protector be installed to protect against such surges.

120V AC

[Diagram A]

Internal View of the LDB-2

12V DC Adapter Included

To C.O. Line or Analog PABX/KSU Extension

To Phone

Relay Contact (pins 5 & 6)

Auxiliary 12V DC Output

Relay Contact (pins 7 & 8)

C. Ring Detection Only

Connect the incoming line to terminal block positions 3 and 4. No connection to terminal block positions 1 and 2 is required. In this manner, the LDB-2 can monitor for ringing any place along the ringing line.

D. Ring and Loop Detection

If the application requires loop as well as ring detection, the LDB-2 must be placed between the phone line and the terminal device to be monitored. Connect the incoming line to terminal block positions 1 and 2 and connect the terminal device to positions 3 and 4, as shown in the diagram above.

E. Relay Contacts

Relay contacts are available at terminal block positions 5, 6 and 7, 8. If the contacts are driving an inductive load, be sure to place a suppression device at the load to snub any high voltage spikes.
F. Auxiliary 12V DC Output

12V DC is available for low current applications. The positive side is available at terminal position 10, and the negative side is at position 9. Once all the line and load connections have been made, plug in the 120 V AC wall adapter, and replace the cover.

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**Programming**

A. Adjustable Relay Closure Time Out

The time out POT (see diagram above) can be adjusted from 2 to 6 seconds. Turn the time out POT counter clockwise to decrease the closure time. Turn it clockwise to increase the closure time. When monitoring for ring, turning the time out POT fully counter clockwise will allow the relay closure to follow standard ring cadence, turning it fully clockwise will allow the relay closure to be maintained during the entire off time of the ring signal. When monitoring for loop, the relay closure will be maintained while off-hook and will time out following an on-hook.

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B. Relay Contact Selections

The relay contacts located at terminal positions 5,6 and 7,8 can be set for normally open (N/O ) or normally closed ( N/C) by repositioning JP1 and JP2 respectively.

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**Operation**

A. Ring Detection Only

With the LDB-2 in the ring detection mode, incoming ring will activate two relay contacts. The contacts can be independently configured to be either normally open or normally closed. Once ringing is detected it will remain activated for an adjustable time of 2-6 seconds. During the activation time, if ringing stops, the relay will remain activated for the balance of the set time.

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B. Ring and Loop Detection

With the LDB-2 in the ring and loop detection mode, incoming ring will activate two relay contacts. The contacts can be independently configured to be either normally open or normally closed. Once ringing is detected it will remain activated for an adjustable time of 2-6 seconds. During the activation time, if ringing stops, the relay will remain activated for the balance of the set time. Additionally, the LDB-2 will detect an off-hook condition. If the device goes off-hook at any time, either with or without ringing, the relay will activate and remain activated for the duration of the off-hook condition.
The following procedure is for equipment that has failed out-of-box (within 10 days of purchase)

1. Customer must contact Viking’s Technical Support Department at 715-386-8666 to obtain a Return Authorization (RA) number. The customer MUST have a complete description of the problem, with all pertinent information regarding the defect, such as options set, conditions, symptoms, methods to duplicate problem, frequency of failure, etc.

2. Packaging: Return equipment in original box or in proper packing so that damage will not occur while in transit. Static sensitive equipment such as a circuit board should be in an anti-static bag, sandwiched between foam and individually boxed. All equipment should be wrapped to avoid packing material lodging in or sticking to the equipment. Include ALL parts of the equipment. C.O.D. or freight collect shipments cannot be accepted. Ship cartons prepaid to: Viking Electronics, 1531 Industrial Street, Hudson, WI 54016

3. Return shipping address: Be sure to include your return shipping address inside the box. We cannot ship to a PO Box.

4. RA number on carton: In large printing, write the R.A. number on the outside of each carton being returned.

RETURNING PRODUCT FOR EXCHANGE

The following procedure is for equipment that has failed out-of-box (within 10 days of purchase):

1. Customer must contact Viking’s Technical Support Department at 715-386-8666 to determine possible causes for the problem. The customer MUST be able to step through recommended tests for diagnosis.

2. If the Technical Support Product Specialist determines that the equipment is defective based on the customer’s input and troubleshooting, a Return Authorization (R.A.) number will be issued. This number is valid for fourteen (14) calendar days from the date of issue.

3. After obtaining the R.A. number, return the approved equipment to your distributor, referencing the R.A. number. Your distributor will then replace the product over Viking using the same R.A. number.

4. The distributor will NOT exchange this product without first obtaining the R.A. number from you. If you haven’t followed the steps listed in 1, 2 and 3, be aware that you will have to pay a restocking charge.

RETURNING PRODUCT FOR REPAIR

The following procedure is for equipment that needs repair:

1. Customer must contact Viking’s Technical Support Department at 715-386-8666 to determine possible causes for the problem. The customer MUST have a complete description of the problem, with all pertinent information regarding the defect, such as options set, conditions, symptoms, methods to duplicate problem, frequency of failure, etc.

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