



TECHNICAL Practice

TELECOM SOLUTIONS FOR THE 21ST CENTURY

TDR-1

Time Delay Relay

July 21, 2003

Versatile Time Delay Relay



Viking's model **TDR-1** is a time delay relay device designed to be easily configured to fit a wide variety of applications. The **TDR-1** has (2) different modes of operation:

- 1) In the Time Delay Mode, the **TDR-1** can be programmed to produce one of 8 closure times. The Trigger 1 input can be programmed to accept either a dry contact closure or positive/negative going logic level voltage.
- 2) The Delay on Operate mode delays an input trigger by a programmed interval. Eight delay times are available, from 1 to 30 seconds.

Phone...715.386.8861

Features

- 1 Double Pole, Double Throw relay output
- 8 selectable closure times
- DIP switch programming
- Accepts positive or negative going logic level voltage or contact closure
- Selectable time delay
- Screw terminal connections
- LED relay status indicator

<http://www.vikingelectronics.com>

Applications

- Controlled closure times
- Delayed closures
- Convert closures between N/O and N/C

info@vikingelectronics.com

Made in the U.S.A.

Specifications

Power: 120V AC to 12V DC adapter provided
Dimensions: 74mm x 53mm x 25mm (2.9" x 2.1" x 1.0")
Shipping Weight: 0.4 kg (0.86 lbs)
Environmental: 0° C to 32° C (32° F to 90° F) with 5% to 95% non-condensing humidity
Input: Logic level voltage (+ 5 VDC) or contact closure
Relay: 1A@30VDC, 0.3A@110 VDC, 0.5A@125VAC
Connections: 10 position cage clamp terminal strip

Warranty

IF YOU HAVE A PROBLEM WITH A VIKING PRODUCT, PLEASE CONTACT: VIKING TECHNICAL SUPPORT AT (715) 386-8666

Our Technical Support Department is available for assistance Monday 8am-4pm and Tuesday through Friday 8am-5pm central time. So that we can give you better service, before you call please:

1. Know the model number, the serial number and what software version you have (see serial label).
2. Have your Technical Practice in front of you.
3. It is best if you are on site.

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 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. Packing: 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 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 the counter at no charge. The distributor will then return the product to 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.**

WARRANTY

Viking warrants its products to be free from defects in the workmanship or materials, under normal use and service, for a period of one year from the date of purchase from any authorized Viking distributor or 18 months from the date manufactured, whichever ever is greater. If at any time during the warranty period, the product is deemed defective or malfunctions, return the product to Viking Electronics, Inc., 1531 Industrial Street, Hudson, WI., 54016. Customer must contact Viking's Technical Support Department at 715-386-8666 to obtain a Return Authorization (R.A.) number.

This warranty does not cover any damage to the product due to lightning, over voltage, under voltage, accident, misuse, abuse, negligence or any damage caused by use of the product by the purchaser or others.

Viking's sole responsibility shall be to repair or replace (at Viking's option) the material within the terms stated above. VIKING SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE OF ANY KIND INCLUDING INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING DIRECTLY OR INDIRECTLY FROM ANY BREACH OF ANY WARRANTY EXPRESSED OR IMPLIED, OR FOR ANY OTHER FAILURE OF THIS PRODUCT. Some states do not allow the exclusion or limitation of incidental or consequential damages, so this limitation may not apply to you.

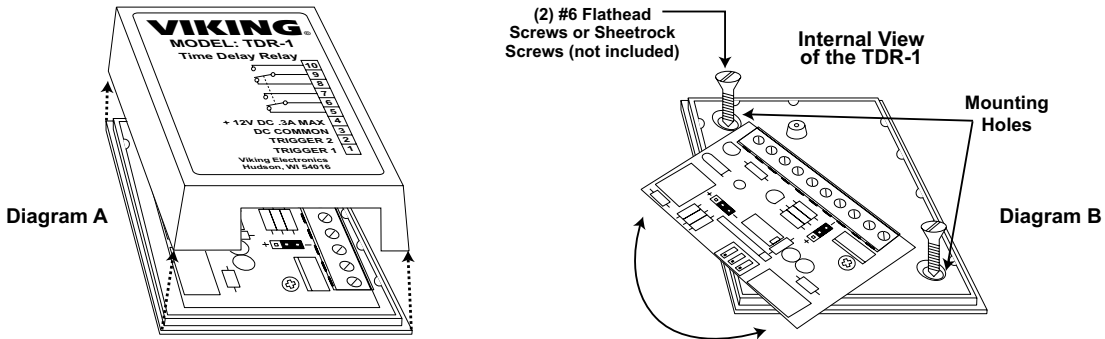
THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY EXCLUDED BEYOND THE ONE YEAR DURATION OF THIS WARRANTY. Some states do not allow limitation on how long an implied warranty lasts, so the above limitation may not apply to you.

Installation

A. Mounting

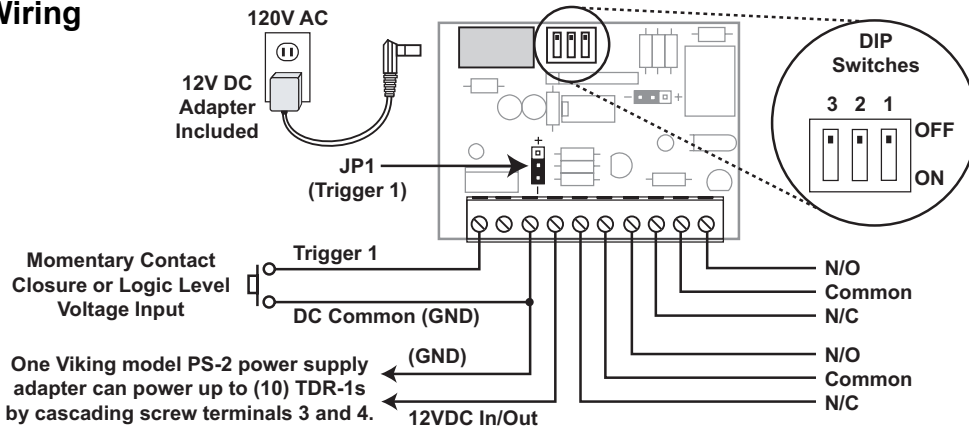
The TDR-1 is designed to be wall mounted using the included foam tape or with screws as follows:

Step 1.	Unsnap the plastic cover (see Diagram A).
Step 2.	Loosen the screw and rotate the circuit board to the left, exposing the two mounting holes in the base (see Diagram B).
Step 3.	Screw the base to the wall, etc. using (2) #6 flathead or sheetrock screws.



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. Contact Panamax at (800) 472-5555 or Electronic Specialists Inc. at (800) 225-4876.

Programming

A. Trigger Inputs

Referring to the diagram in **Installation**, section **B**, configure shunt **JP1** to set up the trigger input for the proper input polarity. For a positive going input, put the shunt on the (+) side. For a negative going input or dry contact closure, leave the shunt on the (-) side (factory default).

B. Time Delay Relay Mode

Choose the DIP switch setting for the desired activation time using the chart shown to the right.

Note: See section "A. Trigger Inputs" to set proper input polarity.

Switch 1	Switch 2	Switch 3	Trigger 1
OFF	OFF	OFF	.5 sec
OFF	OFF	ON	1 sec
OFF	ON	OFF	2 sec
OFF	ON	ON	4 sec
ON	OFF	OFF	7 sec
ON	OFF	ON	10 sec
ON	ON	OFF	15 sec
ON	ON	ON	20 sec

C. Delay on Operate Mode

To put the **TDR-1** into the "Delay on Operate Mode", strap Trigger 2 to ground by wiring terminal 2 to terminal 3. Refer to the chart to the right to set the dip switches for the desired delay time.

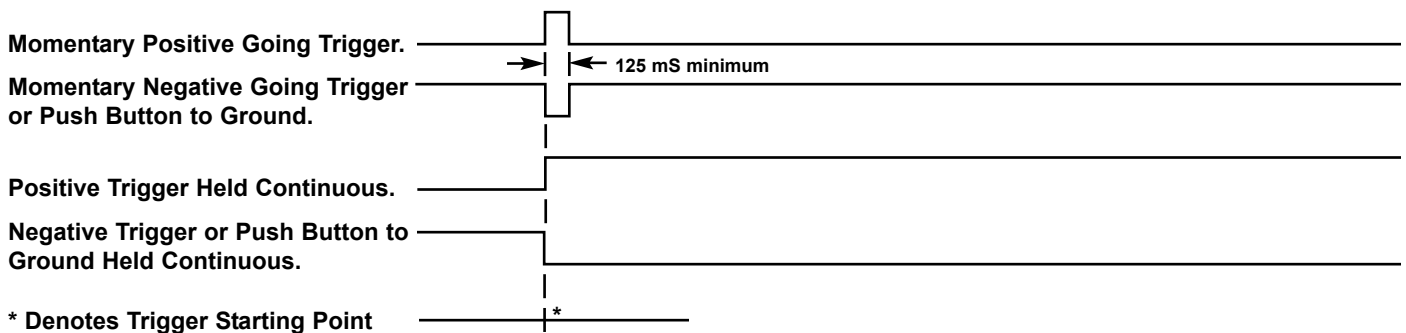
Note: See section "A. Trigger Inputs" to set proper input polarity.

Switch 1	Switch 2	Switch 3	Trigger 1
OFF	OFF	OFF	1 sec
OFF	OFF	ON	2 sec
OFF	ON	OFF	4 sec
OFF	ON	ON	7 sec
ON	OFF	OFF	10 sec
ON	OFF	ON	15 sec
ON	ON	OFF	20 sec
ON	ON	ON	30 sec

Operation

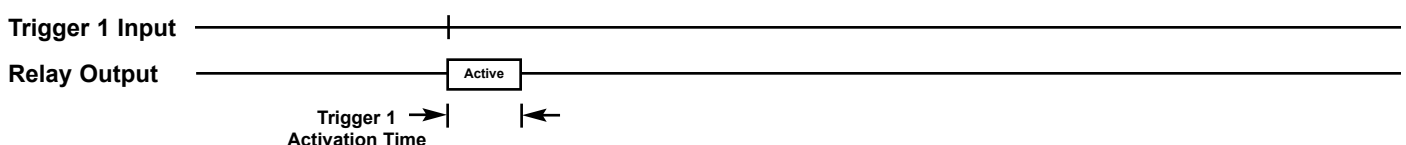
A. Trigger 1 Input

The Trigger 1 input can be set up to accept a contact closure to ground or to a positive/negative going logic level voltage. The trigger may be a momentary pulse or continuous trigger. If the trigger is held, it will not re-trigger the input until it has been cleared. Examples are shown below.



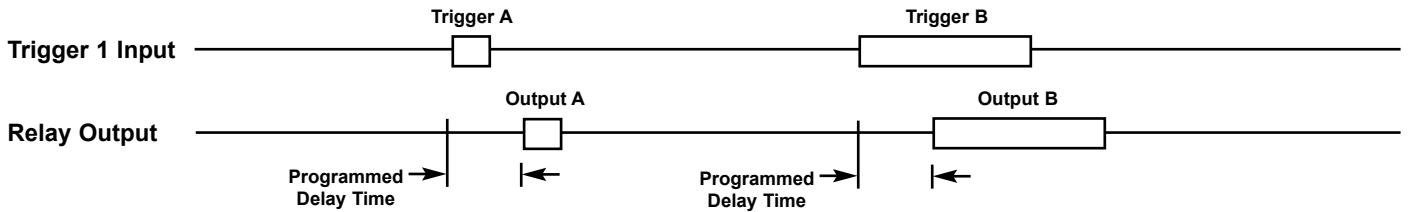
B. Time Delay Relay Mode

When the **TDR-1** receives a valid Trigger 1, the relay will activate for the programmed time. The **TDR-1** does not look at Trigger 1 again until the relay activation time is over.



C. Delay on Operate Mode

The **TDR-1** mimics any closure it sees at trigger 1, delayed by the amount of time programmed using the DIP switches as shown in **Programming**, section **B**.



Other Contact Closure Products

Contact Closure and Warble from a Ringing Line

The **K-600D** eliminates the installation of multiple bells, relays and power supplies, whenever night bells, loud ringing or emergency tones are required. The **K-600D** provides an existing paging amplifier with a pleasant electronic warble tone each time it receives ring voltage from a C.O. line or analog PABX/KSU extension.

The **K-600D** requires no external power supply and provides a floating 600 ohm audio output. Auxiliary N.O./N.C. relay contacts are provided during ring signal for muting, switching or operation of external signaling devices. Volume and tone controls are also provided.

Need More Information on the K-600D?
Call (715) 386-4345 and select 475.



Model K-600D

Control Relay Contacts Remotely



Model RC-2A

The **RC-2A** Remote Controller provides single remote relay operation from any standard Touch Tone telephone. The controller is designed to be installed either locally or remotely. For local installations the **RC-2A** can be installed in series on any analog line, such as **Viking's** Doorboxes.

For off-premise applications, the **RC-2A** can be installed on a line shared by a key system, PABX, single line phone or on a dedicated line. The **RC-2A** will answer C.O. lines or analog PABX/KSU station ports (after the programmable number of rings) and allow remote relay operation. A field programmable security code may also be programmed to prevent unauthorized usage.

Need More Information on the RC-2A?
Call (715) 386-4345 and select 160.

Loop and Ring Detect Relay Closure

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.

Need More Information on the LDB-2?
Call (715) 386-4345 and select 408.



Model LDB-2

Product Support Line...715.386.8666

Fax Back Line...715.386.4345

Due to the dynamic nature of the product design, the information contained in this document is subject to change without notice. Viking Electronics, and its affiliates and/or subsidiaries assume no responsibility for errors and omissions contained in this information. Revisions of this document or new editions of it may be issued to incorporate such changes.