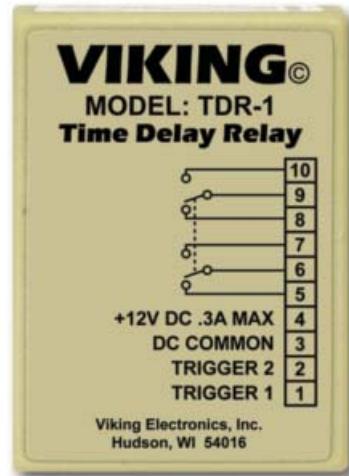


Versatile Time Delay Relay

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.



Features

- 1 Double Pole, Double Throw (DPDT) 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

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Information: (715) 386-8861

Applications

- Controlled closure times
- Delayed closures
- Convert closures between Normally Open (N.O.) and Normally Closed (N.C.)

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

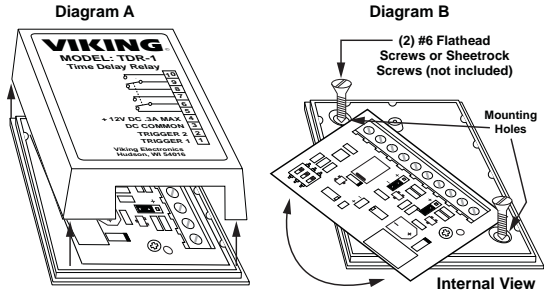
Installation

⚠ 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.

A. Mounting

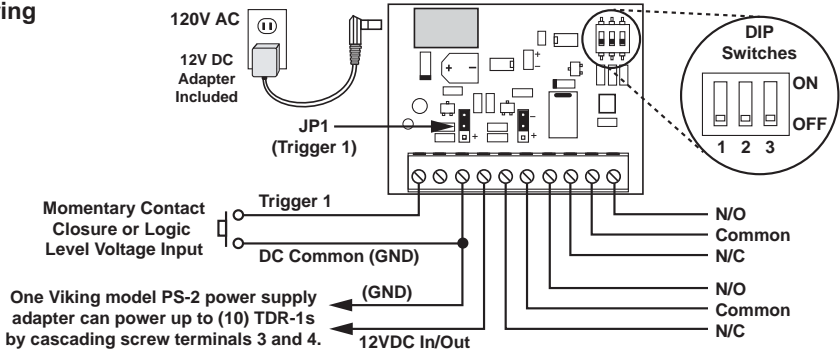
The TDR-1 is designed to be wall mounted using the included foam tape or with screws as follows:

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



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

B. Wiring



Programming

A. Trigger Inputs

Referring to the diagram in **Installation**, section **B** (above), 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

Referring to the diagram in **Installation**, section **B** (above), choose the DIP switch setting for the desired activation time using the chart shown to the right.

Note: See **Operation** section **A. Trigger Inputs** (page 3) 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. Set JP2 to (-) side.

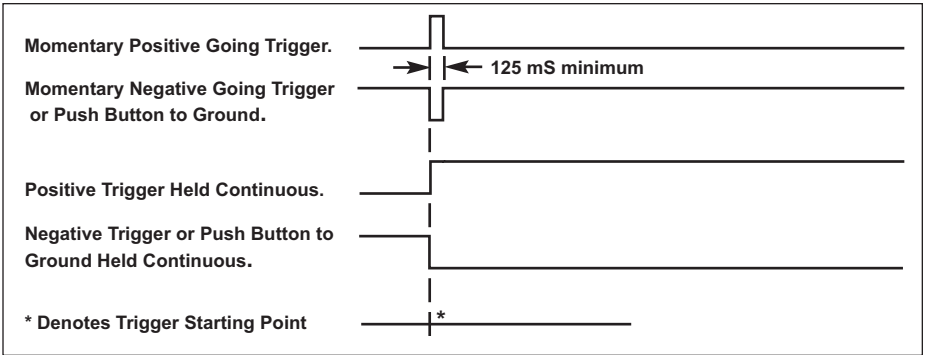
Note: See **Operation** section **A. Trigger Inputs** (below) to set **Trigger 1** polarity.

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

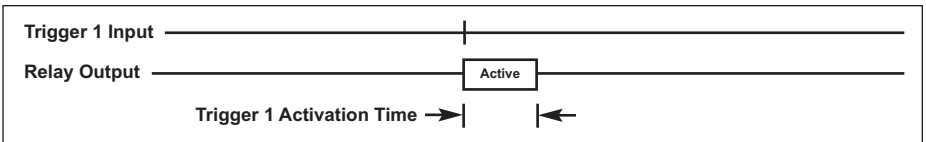
A. Trigger 1 Input

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.



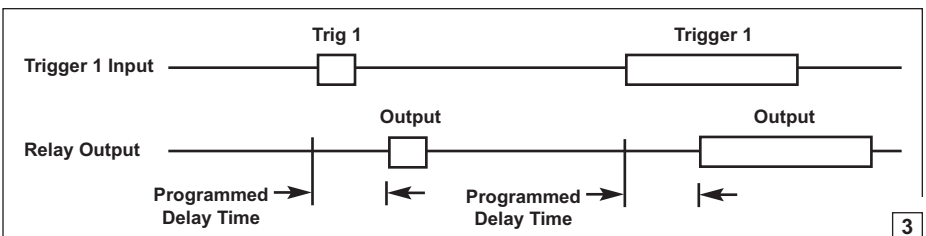
B. Time Delay Relay Mode

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**.



Warranty

IF YOU HAVE A PROBLEM WITH A VIKING PRODUCT, 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 Product Manual 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 Viking product 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.**

TWO YEAR LIMITED WARRANTY

Viking warrants its products to be free from defects in the workmanship or materials, under normal use and service, for a period of two years from the date of purchase from any authorized Viking distributor. 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. This warranty does not cover non-EWP products that have been exposed to wet or corrosive environments. This warranty does not cover stainless steel surfaces that have not been properly maintained.

NO OTHER WARRANTIES. VIKING MAKES NO WARRANTIES RELATING TO ITS PRODUCTS OTHER THAN AS DESCRIBED ABOVE AND DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTIES OR MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.

EXCLUSION OF CONSEQUENTIAL DAMAGES. VIKING SHALL NOT, UNDER ANY CIRCUMSTANCES, BE LIABLE TO PURCHASER, OR ANY OTHER PARTY, FOR CONSEQUENTIAL, INCIDENTAL, SPECIAL OR EXEMPLARY DAMAGES ARISING OUT OF OR RELATED TO THE SALE OR USE OF THE PRODUCT SOLD HEREUNDER.

EXCLUSIVE REMEDY AND LIMITATION OF LIABILITY. WHETHER IN AN ACTION BASED ON CONTRACT, TORT (INCLUDING NEGLIGENCE OR STRICT LIABILITY) OR ANY OTHER LEGAL THEORY, ANY LIABILITY OF VIKING SHALL BE LIMITED TO REPAIR OR REPLACEMENT OF THE PRODUCT, OR AT VIKING'S OPTION, REFUND OF THE PURCHASE PRICE AS THE EXCLUSIVE REMEDY AND ANY LIABILITY OF VIKING SHALL BE SO LIMITED.

IT IS EXPRESSLY UNDERSTOOD AND AGREED THAT EACH AND EVERY PROVISION OF THIS AGREEMENT WHICH PROVIDES FOR DISCLAIMER OF WARRANTIES, EXCLUSION OF CONSEQUENTIAL DAMAGES, AND EXCLUSIVE REMEDY AND LIMITATION OF LIABILITY, ARE SEVERABLE FROM ANY OTHER PROVISION AND EACH PROVISION IS A SEPARABLE AND INDEPENDENT ELEMENT OF RISK ALLOCATION AND IS INTENDED TO BE ENFORCED AS SUCH.

Product Support: (715) 386-8666

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