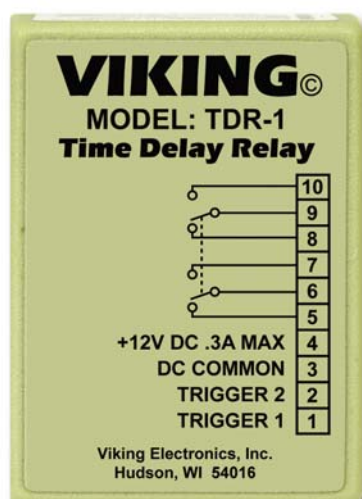# TECHNICAL
Practice
TELECOM SOLUTIONS FOR THE 21ST CENTURY

TDR-1
Time Delay Relay
December 15, 2011

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

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.

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.

Diagram A

(2) #6 Flathead Screws or Sheetrock Screws (not included)

Internal View of the TDR-1

Mounting Holes

Diagram B

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

B. Wiring

120V AC

12V DC Adapter Included

JP1 (Trigger 1)

DIP Switches

3 2 1

OFF

ON

Momentary Contact Closure or Logic Level Voltage Input

Trigger 1

DC Common (GND)

(GND)

One Viking model PS-2 power supply adapter can power up to (10) TDR-1s by cascading screw terminals 3 and 4.

12VDC In/Out

N/O
Common
N/C

N/O
Common
N/C

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. Set JP2 to (-) side.
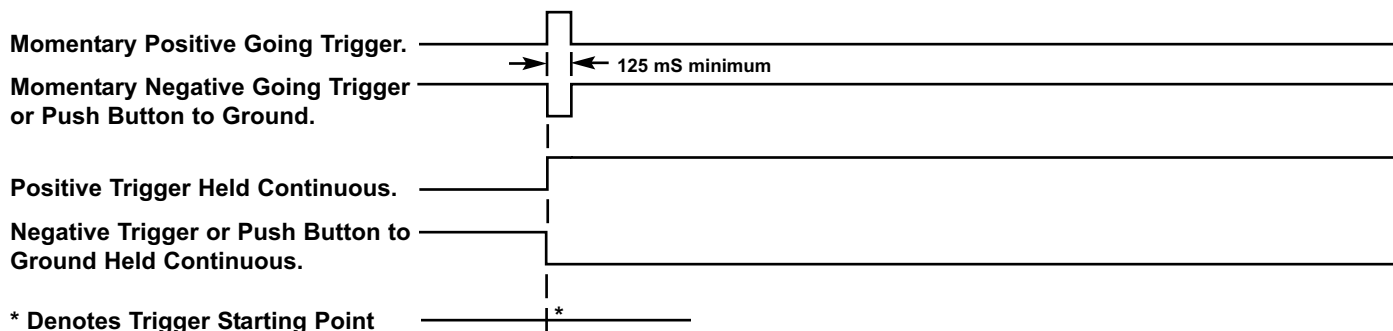
*Note: See section "**A. Trigger Inputs**" to set input one to proper polarity.*

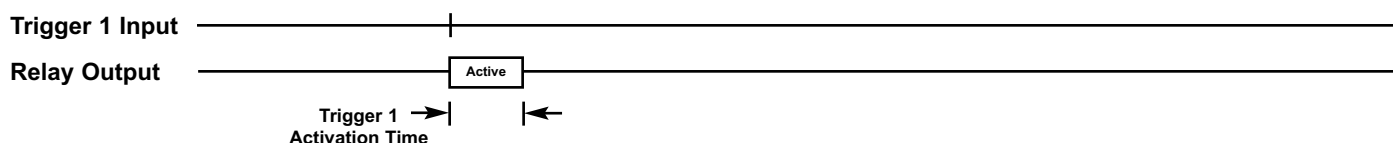| Switch 1	Switch 2	Switch 3	Trigger 1
OFF	OFF	OFF	1 sec
OFF	OFF	ON	2 sec
OFF	ON	OFF	4 sec
OFF	ON	ON	7 sec
ON	OFF	OFF	10 sec
ON	OFF	ON	15 sec
ON	ON	OFF	20 sec
ON	ON	ON	30 sec

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.

Momentary Positive Going Trigger.

125 mS minimum

Momentary Negative Going Trigger or Push Button to Ground.

Positive Trigger Held Continuous.

Negative Trigger or Push Button to Ground Held Continuous.

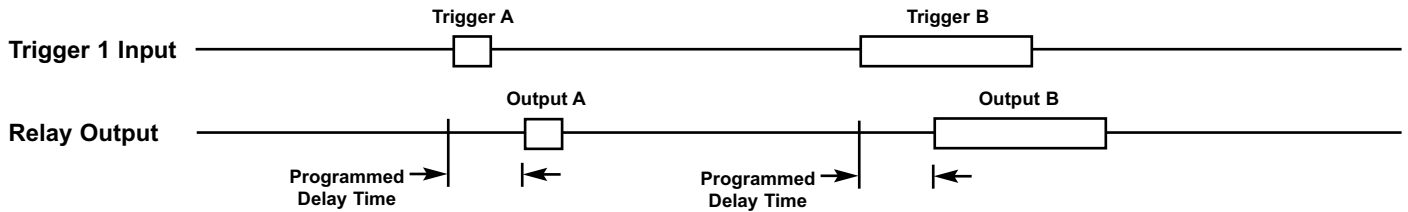* Denotes Trigger Starting Point

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.

Trigger 1 Input

Relay Output

Active

Trigger 1 Activation Time

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

Night Bell Over Paging Adapter

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

The **K-600F** requires no external power supply and provides a floating 600 ohm audio output. Paging In and Out terminals are provided to allow automatic switching between paging and warble audio when used with an existing paging installation. A set of N.O. / N.C. relay contacts are provided that switch in cadence with the ring signal. Volume and tone controls are also provided. For more information, see **DOD# 476**.

Model K-600F

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. For more information, see **DOD# 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. For more information, see **DOD# 408**.

Model LDB-2

Product Support Line...715.386.8666   *Fax Back Line...715.386.4345*