



# Model 2001TRBP and 2001TRBP KIT

Transformer Rectifier

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## *Description and Specifications Manual*

## Limited Warranty

This product is subject to and covered by a limited warranty, a copy of which can be found at [www.fedsig.com/SSG-Warranty](http://www.fedsig.com/SSG-Warranty). A copy of this limited warranty can also be obtained by written request to Federal Signal Corporation, 2645 Federal Signal Drive, University Park, IL 60484, email to [info@fedsig.com](mailto:info@fedsig.com) or call +1 708-534-3400.

This limited warranty is in lieu of all other warranties, express or implied, contractual or statutory, including, but not limited to the warranty of merchantability, warranty of fitness for a particular purpose and any warranty against failure of its essential purpose.



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## **Safety Messages**

### **⚠ WARNING**

It is important to follow all instructions shipped with this product. This device is to be installed by trained personnel who are thoroughly familiar with the country's electric codes and will follow these guidelines as well as local codes and ordinances, including any state or local noise control ordinances.

Listed below are important safety instructions and precautions you should follow:

#### **Important Notice**

Federal Signal reserves the right to make changes to devices and specifications detailed in the manual at any time in order to improve reliability, function, or design. The information in this manual has been carefully checked and is believed to be accurate; however, no responsibility is assumed for any inaccuracies.

#### **Publications**

Federal Signal recommends the following publications from the Federal Emergency Management Agency for assistance with planning an outdoor warning system:

- The "Outdoor Warning Guide" (CPG 1-17)
- "Civil Preparedness, Principles of Warning" (CPG 1-14)
- FEMA-REP-1, Appendix 3 (Nuclear Plant Guideline)
- FEMA-REP-10 (Nuclear Plant Guideline).

#### **Planning**

- If suitable warning equipment is not selected, the installation site for the siren is not selected properly, or the siren is not installed properly, it may not produce the intended optimum audible warning. Follow Federal Emergency Management Agency (FEMA) recommendations.
- If sirens are not activated in a timely manner when an emergency condition exists, they cannot provide the intended audible warning. It is imperative that knowledgeable people, who are provided with the necessary information, be available at all times to authorize the activation of the sirens.
- When sirens are used out of doors, people indoors may not be able to hear the warning signals. Separate warning devices or procedures may be needed to effectively warn people indoors.
- The sound output of sirens can cause permanent hearing damage. To prevent excessive exposure, carefully plan siren placement, post warnings, and restrict access to areas near sirens. Review and comply with any local or state noise control ordinances as well as OSHA noise exposure standards, regulations, and guidelines.
- Activating the sirens may not result in people taking the desired actions if those to be warned are not properly trained about the meaning of siren sounds. Siren users should follow FEMA recommendations and instruct those to be warned of the correct actions to be taken.

- After installation, service, or maintenance, test the siren system to confirm that it is operating properly. Test the system regularly to confirm that it will be operational in an emergency.
- If future service and operating personnel do not have these instructions to refer to, the siren system may not provide the intended audible warning, and service personnel may be exposed to death, permanent hearing loss, or other bodily injuries. File these instructions in a safe place and refer to them periodically. Give a copy of these instructions to new recruits and trainees. Also give a copy to anyone who is going to service or repair the siren.

### **Installation and Service**

- Electrocution or severe personal injury can occur when performing various installation and service functions such as making electrical connections, drilling holes, or lifting equipment. Therefore, only experienced and qualified electricians should install this product in compliance with national, state, and any other applicable codes, ordinances, and regulations. Perform all work under the direction of the installation or service crew safety foreman.
- The sound output of sirens is capable of causing permanent hearing damage. To prevent excessive exposure, carefully plan siren placement, post warnings, and restrict access to areas near the sirens. Sirens may be operated from remote control points. Whenever possible, disconnect all siren power, including batteries, before working near the siren. Review and comply with any local or state noise control ordinances as well as OSHA noise exposure regulations and guidelines.
- After installation or service, test the siren system to confirm that it is operating properly. Test the system regularly to confirm that it will be operational in an emergency.
- If future service and operating personnel do not have these instructions to refer to and are not properly trained, the system may not provide the intended audible warning, and service personnel may be exposed to hazards that could result in death, permanent hearing loss, or other bodily injuries. File these instructions in a safe place and refer to them periodically. Give a copy of these instructions to recruits and trainees. Also give a copy to anyone who is going to service or repair the siren.

### **Operation**

Failure to understand the capabilities and limitations of your siren could result in permanent hearing loss, other serious injuries, or death to persons too close to the sirens when you activate them or to those you need to warn. Carefully read and thoroughly understand all safety notices in this manual and all operations-related items in all instruction manuals shipped with the equipment. Thoroughly discuss all contingency plans with those responsible for warning people in your community, company, or jurisdiction. A well-written contingency plan document is recommended.

### Hazard Classification

Federal Signal uses signal words to identify the following:

#### **DANGER**

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

#### **WARNING**

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

#### **CAUTION**

CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

#### **NOTICE**

NOTICE is used to address practices not related to physical injury.

***Read and understand the information contained in this manual before attempting to deploy or service the siren.***

Pay careful attention to notices located on the equipment.

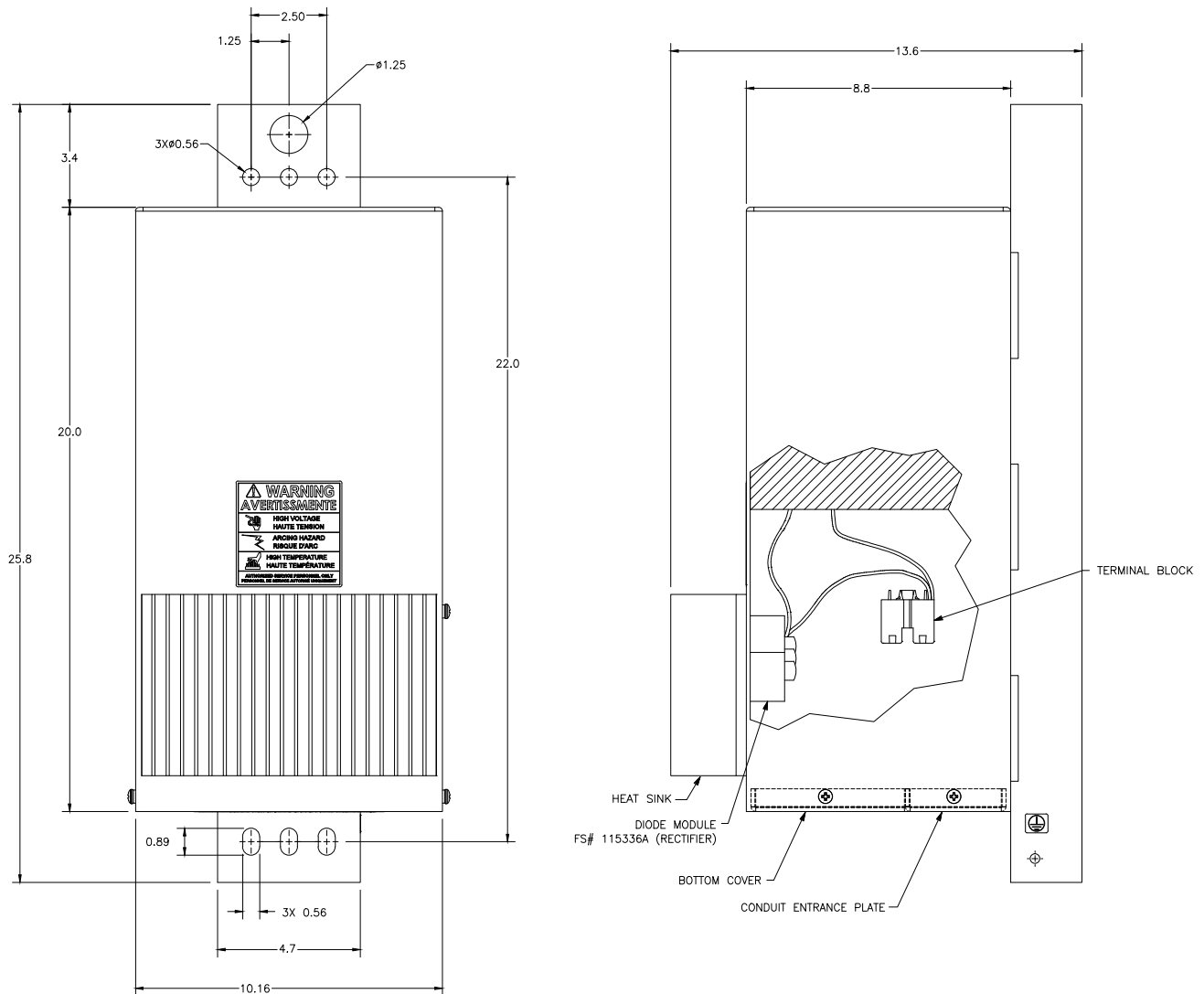
# General Description

## Overview

The 2001TRBP is a high-power transformer rectifier for powering outdoor warning sirens. The 2001TRBP consists of an aluminum encased transformer with a mounting bracket. The 2001TRBP can be used as the only source of power for mechanical sirens (AC operation). The 2001TRBP transformer operates from 208, 220, or 240 Vac. The transformer output is 46 Vdc at 130 A and 115 Vac at 10 A. The 46 Vdc is to power the mechanical siren, and the 115 Vac is used to power the siren control board, heaters, and chargers if battery equipped.

The 2001TRBP includes a transfer relay contactor kit, which allows primary operation from AC and battery backup when AC fails. The transfer relay kit includes 48 Vdc contactor, buss bars, snubber, and screws for the attaching contactor to the back plate inside Federal Signal Control Cabinet.

**Figure 1 Models 2001TRBP Transformer Rectifier**



### Features

The 2001TRBP transformer rectifier has the following features.

- High-powered transformer rectifier for powering mechanical sirens from nominal 220 Vac (2001TRBP)
- Provides primary system power (46 Vdc) for DC sirens
- Provides 115 Vac for a siren controller, chargers, and heaters
- Includes transfer relay contactors (Typically mounted in DCFCB or DCFCTBD cabinets)
- Enclosed in a weather-resistant rainproof enclosure

### Specifications

**Table 1 Electrical Requirements for the Transformer/Rectifier**

Rated Capacity	6.5 KVA
Rated Frequency	50-60 Hz
Input Voltage	208/220/240 Vac (+/- 10%), single phase
Input Current	40/38/36 A
Output Voltage	46 Vdc at 130 A dc 115 Vac at 10 A ac
Max. continuous runtime	60 minutes
Max. duty cycle	50%

**Table 2 Contactors**

Contact Rating	200 A at 48 Vdc
Coil	48 Vdc, 110 ohms
Contactors Fusing	200 A (fast)

**Table 3 Environmental**

Operating Temperature	30°C to +65°C (-22°F to 149°F)
Humidity	0-98% Non-Condensing

**Table 4 Physical**

Dimensions (H x W x D)	25.8 x 10.2 x 13.6 inches (65.5 x 25.9 x 34.5 cm)
Weight	186 lb (84 kg)
Enclosure	Rainproof



## Unpacking the Kit

Ensure that the parts listed are included in the package. If you are missing any parts, contact Customer Support. See Getting Service.

**Table 5 2001TRBP Kit Contents\***

Description	2001TR Part Number	Service Part Number
48 Vdc Contactor	131A182C	Q131A182C
Fused wire	1461132A	
Snubber	20000216	
Pan Head screw (2)	7011A069-08	
Brass washer	70700520	
2 position buss bar	8402109A	
Buss bar rt angle	8402138A	

\***NOTE:** The 2001TRBP Kit is for installations that already have an existing transformer.

**Table 6 2001TRBP Contents**

Description	2001TRBP includes	2001TRBP Service Part Number
Transformer rectifier	120246F	Q120246F
48 Vdc Contactor	131A182C	Q131A182C
Fused wire	1461132A	
Snubber	20000216	
Pan Head screw (2)	7011A069-08	
Brass washer	70700520	
2 position buss bar	8402109A	
Buss bar rt angle	8402138A	
Diode Rectifier	115336A	Q115336A

## Installation

**⚠ DANGER**

***Electrocution or severe personal injury can occur when making electrical connections, drilling holes, or lifting equipment. Therefore, experienced electricians, per national and local electrical codes, acting under the direction of the installation crew safety foreman, should perform the installation.***

For electrical connections to controllers, see product manual DCB, DCFCB, and DCFCTB Models (part number 255360).

## Locating the Transformer

Mount the transformer assembly as close as possible to the control unit to keep cabling distances as short as possible.

See Figure 1 and Table 4 for the size and weight of the 2001TRBP transformer. Mount the 2001TRBP to a structure that can support the transformer.

**⚠ CAUTION**

**INSTALLATION PRECAUTIONS:** *The 2001TRBP transformer must be permanently mounted. All wiring must be run in a sealed conduit. The transformer may become hot during extended use and should be installed so that it is not likely to be contacted by people.*

## Electrical Connections

**⚠ WARNING**

**Install the siren electrical system in compliance with local electrical codes and NEC recommendations. Federal Signal also recommends that all user-installed conduit connections enter from the bottom of the cabinet. Disconnect all power and read all warnings at the beginning of this manual and before making connections.**

Figure 2 Schematic Diagram 2001TRBP

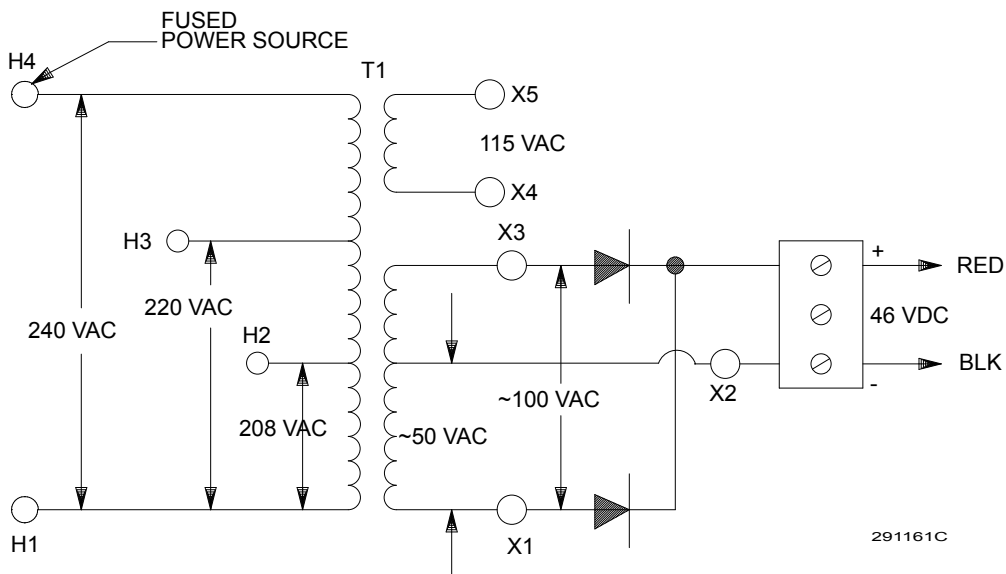
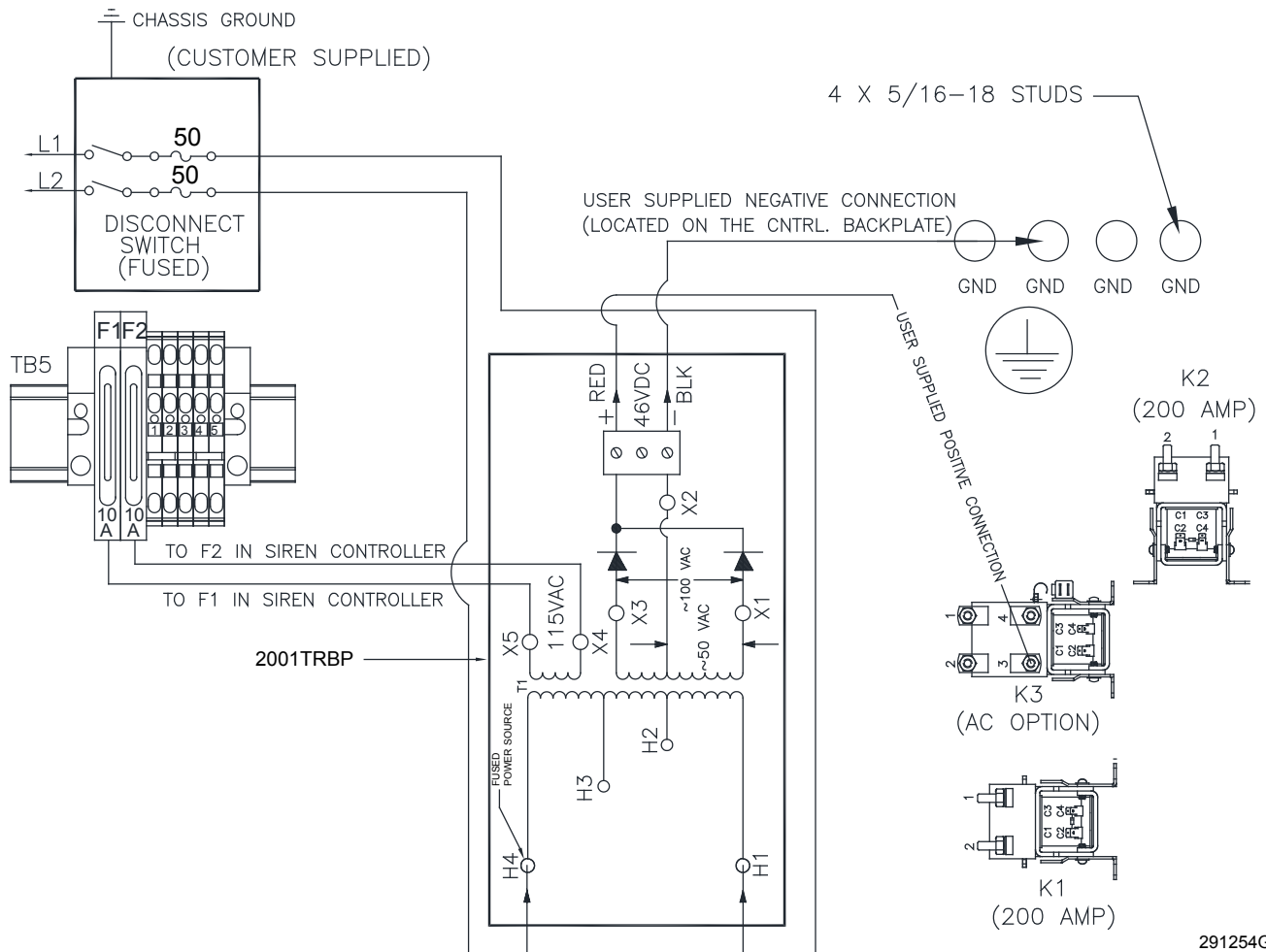


Figure 3 Transformer Rectifier Wiring to Control Cabinet



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## Troubleshooting

**NOTE:** It is normal for the 46 Vdc output of the transformer to have 20-30 V<sub>RMS</sub> of AC ripple without load. With load, the AC ripple significantly decreases.

If the 46 Vdc output of the transformer is about half of 46 Vdc, the typical cause is a defective Diode Rectifier or Transformer. Lightning or a power surge may have damaged the Diode Rectifier or Transformer.

1. Turn off AC power to the transformer. Verify AC power has been turned off.
2. Disconnect wires X1 and X3 from the Diode Rectifier and carefully protect the wires from shorting.
3. Connect voltmeter to X1 and X3. Turn on AC power and measure X1 and X3. Should measure about 100 Vac.
4. Turn off AC power to the transformer. Verify AC power has been turned off.
5. Connect voltmeter to X1 and X2. Turn on AC power and measure X1 and X2. Should measure about 50 Vac.

## Getting Service

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6. Turn off AC power to the transformer. Verify AC power has been turned off.
7. Connect voltmeter to X3 and X2. Turn on AC power and measure X3 and X2. Should measure about 50 Vac.

If the voltages above are incorrect, the entire transformer part number Q120246F-AL will need to be replaced.

If the voltages above are correct, the Diode Rectifier part number Q115336A will need to be replaced.

## Getting Service

If you are experiencing any difficulties, contact Federal Signal Customer Care at 800-548-7229 or 708-534-3400 extension 367511 or Technical Support at 800-524-3021 or 708-534-4790 or e-mail at [techsupport@fedsig.com](mailto:techsupport@fedsig.com). For instruction manuals and information on related products, visit <http://www.fedsig.com>.