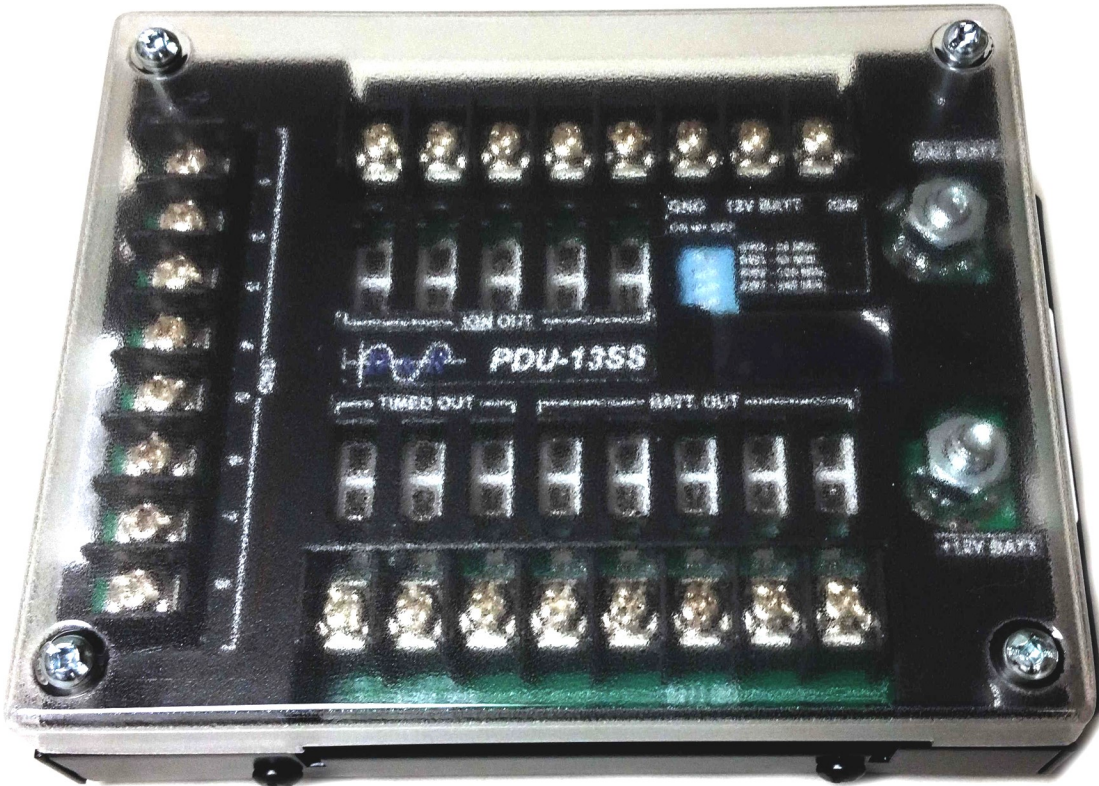


## Automotive Power Distribution Unit

Model:

PDU-13SS



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# Product Overview

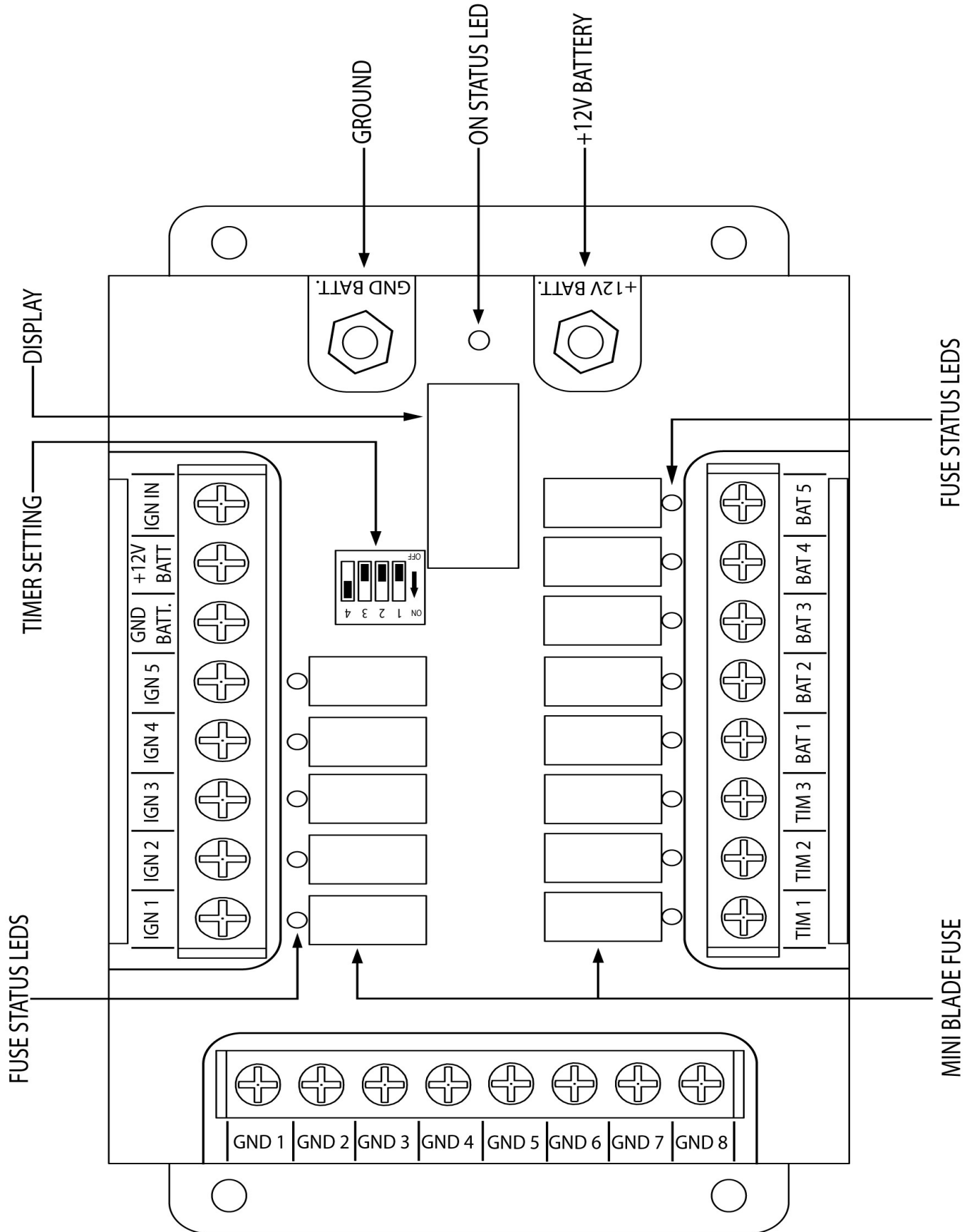


Figure 1: PDU-13SS

# Introduction

The PDU-13SS is designed to provide automotive emergency and public service vehicle equipment installers with a solid state, single point power distribution system for installed electrical devices. The installation is fast, reliable and safe. It offers programmable low battery voltage shutdown, programmable timed shutdown, power distribution and equipment protection. The PDU-13SS provides a direct, easily traceable route to the input power source avoiding interfering with the vehicles factory wiring harnesses. All circuits are individually fused and each output has a FUSE OK LED indicator for ease of troubleshooting.

## Features

- Low Battery Voltage Shutdown at 11.5VDC
- Programmable Timed Shutdown: 30 min, 60 min, 120 min, 240 min
- Vehicle Battery Voltage Monitoring
- Each output has an LED fuse status indicator
- ZERO Current consumption in Standby Mode
- Timed Shutdown Mode
- 13 Outputs (5 battery, 5 Ignition and 3 timed)

## Technical Specifications

Voltage Range: 11-18 VDC

Maximum Current Load: 20A maximum per output  
100A total maximum current per PDU

Stand-by Current: 0A

Low Voltage Disconnect: Factory default set at 11.5VDC (10 second delay)

**NOTE:** *Battery manufacturers recommend to not program low voltage disconnect below 11.5 VDC unless the vehicle is equipped with a second battery.*

Programmable Timed Shutdown: 30 min, 60 min, 120 min, 240 min

Fuse Type: MINI blade fuse

Operating Temperature: -40° C to +65° C (-40F to +149F)

Dimensions: L 6.2" X W 4.5" X H 1.5"

Weight: 1.15 Lbs

## Warning

1. The use of emergency warning devices does not ensure the safety of the operator. The operator is responsible to ensure safe operation of the vehicle regardless of whether the warning device is in operation or not
2. The effectiveness of this or any warning device is highly dependent on proper installation and maintenance. **Read the manufactures instructions before installing and follow all recommendations.**
3. When in use the operator must ensure that the warning signal is visible and not obstructed by vehicle components (i.e. open trunk lid), people or other obstructions
4. This device is intended for use by authorized personnel only. It is the responsibility of the user to ensure that all local, state, provincial and federal laws are being complied with. D&R assumes no liability for any loss resulting from the use of this device.
5. The device must be installed so as not to reduce the output performance of vehicle systems.
6. Placement of control switches must be so as to provide convenient reach for the operator without losing eye contact with the road.
7. Emergency warning devices require high electrical voltages and/or currents. Properly connect and ground all circuits. Shorting or improper grounding of this device may caused personal injuring, vehicle damage and/or device damage.
8. All operators should be properly trained in the operation of this device to ensure both operator and public safety
9. Any device used inside a vehicle, may cause severe personal injury if not properly mounted and secured. Objects used in the vehicle may become airborne during a collision or other sudden changes in vehicle speed or direction, such as braking, acceleration or turns.
10. Be sure to mount unit through the steel of the vehicle. Avoid mounting through plastic or other non-structural materials.
11. **POINT OF INSTALLATION MUST NOT INTERFERE WITH DEPLOYMENT OF VEHICLE AIR BAGS.**
12. D&R Electronics recommends that this and any of our other products be installed by qualified personnel.
13. Good wiring practices and thorough knowledge of vehicle power systems is required by the installer of this and any other product.
14. Looms, grommets, cable ties or other installation hardware should be used to anchor and protect wiring.
15. All wire sizes must meet the minimum sizes specified by the manufacturer.
16. Splices should be minimized and made in a fashion so as to protect from moisture which could cause corrosion thereby reducing conductivity.
17. The exact number of available connections varies by application. Refer to the specifications and typical output fusing combinations to ensure that the safety and reliability of this product is not compromised.

## Maintenance

The PDU-13SS does not require user maintenance except for the individual fuse replacements.

## Warning



**Do not attempt to open or repair.**

**Contact your local distributor or D&R Electronics for repair.**

# Mechanical Installation

**NOTE the PDU-13SS is not weather tight.** Do not mount it in the engine compartment, on the exterior of the vehicle or an area where there is moisture, dirt or other contaminants. Ensure that the mounting location is flat and the device is secured to solid vehicle body parts.

1. Determine an appropriate mounting location.
2. Confirm there is adequate access and clearance for the wiring and all connections.
3. Secure the PDU with 4 self-tapping mounting screws (not supplied).

# Electrical Installation

## 12V Battery

Using appropriate size wire connect to the positive battery terminal fuse at the battery side with a fuse or circuit breaker value chosen based on the total installation loads.

## Ground

Using appropriate size wire connect to the negative battery terminal or a suitable chassis ground.

## Ignition Sense

Connect this terminal to the vehicle ignition switch using 18 gauge wire.

## Battery Sense

Connect this terminal directly to the positive of the battery using a 18 gauge wire fused with a 5A fuse. *This connection must be made in order for the PDU-13SS to work.*

## Ground Sense

Connect this terminal to the negative side of the battery or a suitable chassis ground. *This connection must be made in order for the PDU 13SS to work.*

## Outputs

The PDU offers the following outputs. (5) 20A Ignition outputs, (3) 20A timed outputs, and (5) 20A directly from the battery outputs (these outputs are available even when the PDU is dormant).

NOTE: Once the IGNITION is OFF , the DISPLAY will stay ON until the timer expires.

# Wiring Diagram

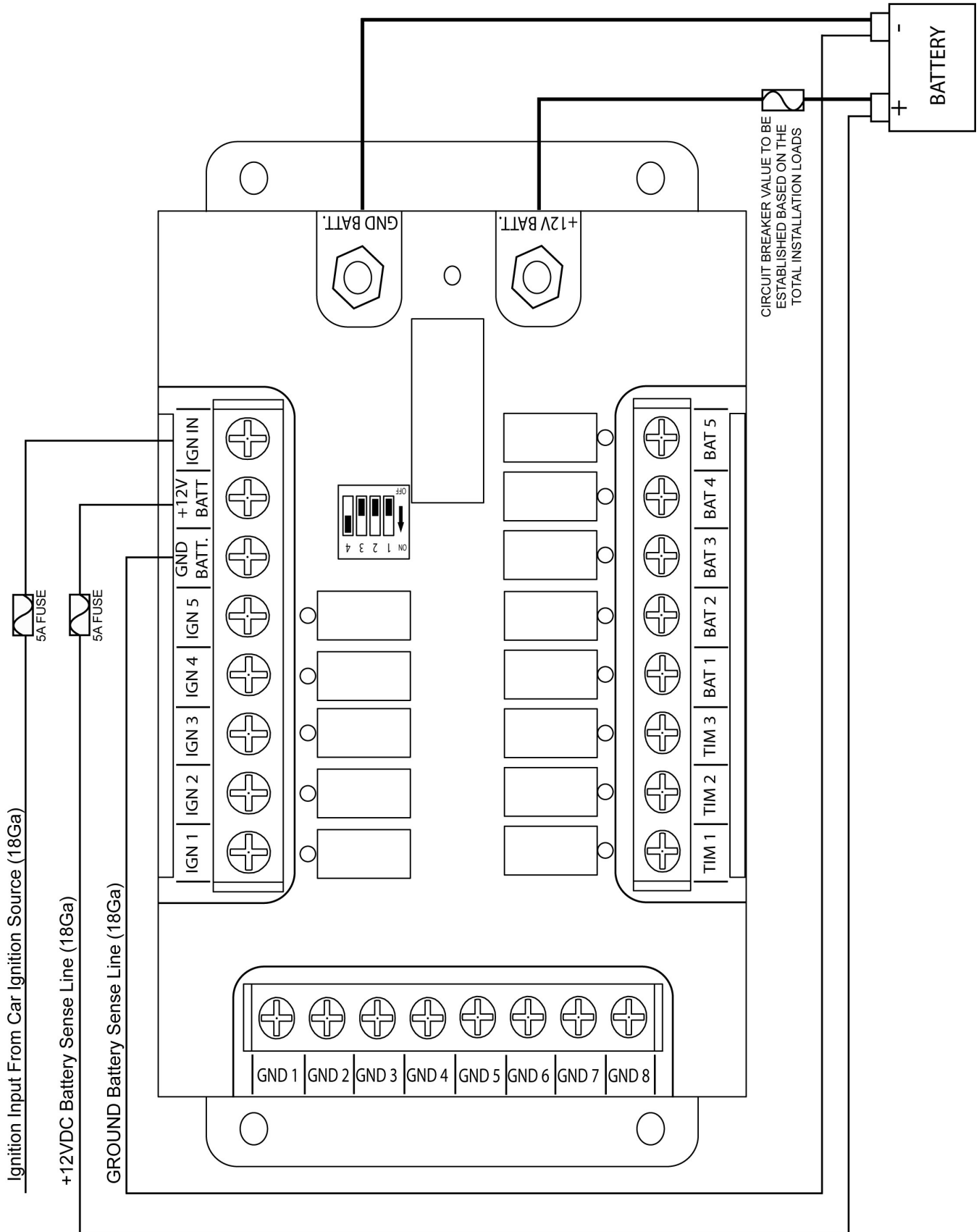


Figure 2: PDU-13SS Wiring

Table 1: Recommended Input Power Feed Wire Size

Max. Total Load Current Amps	Wire Size (AWG) vs Wire Length (3% drop)				
	<5 ft.	5-10 ft.	10-15 ft.	15-20 ft.	25-30 ft.
25	#10	#6	#6	#4	#2
50	#6	#4	#2	#2	#0
75	#6	#2	#1	#0	#3/0
100	#4	#2	#0	#2/0	#4/0

Table 2: Recommended Circuit Load Wire Size

Max. Total Load Current Amps	Wire Size (AWG) vs Wire Length (3% drop)				
	1-5 ft.	5-10 ft.	10-15 ft.	15-20 ft.	25-30 ft.
5	18	18	18	16	14
10	18	16	14	14	12
15	18	14	12	12	10
20	16	14	12	10	8

## Modes of Operation

### Standby Mode

In Standby Mode the PDU is dormant with zero consumption. The PDU awakes by turning the Ignition ON. The PDU will go dormant again once Ignition is turned OFF and the timer runs out.

### Low Battery Voltage Shutdown Mode

The PDU provides a battery protection by turning off the outputs when the voltage value drops under 11.5V.

### Timed Shutdown Mode

The PDU allows the user to set the time remaining after the ignition switch is turned off. The display will indicate the time remaining until the timer runs out.

### Vehicle Battery Voltage Monitoring

The vehicle battery voltage is continuously monitored.

# Setting up the PDU-13SS

## Low Voltage Shutdown Setup

The PDU-13SS factory default LOW VOLTAGE SHUTDOWN value is set to 11.5 VDC for all outputs.

**Note:** - *When the vehicle battery voltage drops below the pre-set voltage all the outputs will turn off.*

## Timed Shutdown Setup

The time delay for the timed outputs is user selectable and is set by a 4 position miniature switch that is accessible through the top cover of the *PDU-13SS*. The delay time can range from 30 minutes to 240 minutes. This function is triggered by turning the vehicle ignition “OFF”.

When the selected time has elapsed power to all timed outputs will be shut “OFF”. If during the timing cycle the ignition is turned back on the timer will reset and the time cycle will re-start when the ignition is turned off again.

To set the time delay follow these steps:

1. Locate the dip switch on the PDU-13SS.
2. Refer to the attached label or Table 1 below to determine the switch settings.
3. Use a pen tip or other suitably small tool to set the switches. This will select the time increments to the output off time delay.

<b>TIME</b>	<b>SW-1</b>	<b>SW-2</b>	<b>SW-3</b>	<b>SW-4</b>
<b>30 MIN.</b>	OFF	OFF	OFF	ON
<b>60 MIN.</b>	OFF	OFF	ON	OFF
<b>120 MIN.</b>	OFF	ON	OFF	OFF
<b>240 MIN.</b>	ON	OFF	OFF	OFF



# Package Contents

QTY	Part Number	Description
1	PDU-13SS	PDU-13SS unit w/ 13 out, display, timer, voltage adjustment
1	212-0024-13SS	Manual PDU-13SS unit
1		Designator sheet for PDU-13SS to record all setup installation data

NOTE: MINI fuses, spade terminals and lugs are available for purchase.

# NOTES

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## WARRANTY

D & R Electronics warrants its new products to be free from defects in material and workmanship, under normal use and service for a period of one year on parts replacement. This warranty applies only to original purchasers acquiring the product directly from D&R Electronics, or its authorized dealers. Warranty will not be recognized without proof of purchase or bill of sale. This warranty is not transferable. The warranty begins on the date of delivery to the first user/purchaser. This warranty shall not apply to products which must be repaired due to normal wear and tear, negligence, improper installation, abuse, misuse, or which have been altered or modified at a facility other than D & R Electronics, or its authorized depot centers. Units proved to be defective within the warranty period, based on an examination by D&R Electronics, will be replaced or repaired at D & R Electronics' option. This warranty does not cover travel expenses or labor charges for removal or installation. Lamps, flash tubes, batteries or other items considered consumables are not covered under warranty. This warranty is in lieu of all other express warranties. D&R Electronics makes no warranties, expressed or implied, other than the express warranties contained herein.

## PRODUCT RETURN POLICY

In order to provide you with faster service, product returns for repair or replacement, must have a **Return Goods Authorization Number (RGA number)**. Please contact our company to obtain a RGA number before you return the product to D & R ELECTRONICS. Write the RGA number clearly on the package. Be sure you use sufficient packing materials to avoid damage to the product being returned while in transit. D & R ELECTRONICS assumes no responsibility or liability for expenses incurred for the removal and/or the installation of products requiring service and/or repair. Repairing or replacing product is at the discretion of D & R ELECTRONICS.

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