

## Professional BusPro-620s Instruction Manual

The BusPro-620s is an automated 12-Volt Battery Charging System that will charge and maintain up to six batteries at a time. The BusPro-620s delivers a voltage recommended by battery manufacturers for the longest life and greatest performance of your batteries.

# CONGRATULATIONS!

You have made a purchase of Auto Meter's BusPro-620s designed to charge 12 Volt batteries. The system is fully automated with LED's indicating unattended viewing status.

## BusPro-620s

Charges ----- 12 Volt Batteries  
Input-----220 VAC @ 2.5 Amps  
Charging output mode----- 5 Amps Max.  
Maintenance output mode-----0 to 2.5 Amp variation as needed  
Leads ----- 6 ft. 18 GA.  
Size -----26" W 8" H 3.25" D  
Weight -----31 lbs.  
*Optional AC-8 Jumper Leads* ----- Set of six

## CONTENTS

Safety Instructions-----	3
Personal Safety -----	4
Setting Up the BusPro-620s -----	5
Inspecting The Battery-----	6
Hooking up the Clamps -----	7
Reading the Indicator Lights -----	6-7
Disconnecting the BusPro-620s -----	8
Hookup Potential (3 units together and optional leads)-----	9
What to Expect from your BusPro-620s -----	10

# SAFETY INSTRUCTIONS

## **WARNING:**

Lead Acid Batteries are Dangerous! During use and charging they may generate EXPLOSIVE Hydrogen Gas. This means YOU MUST carefully read all of the safety and operating instructions before using the BusPro-620s. Be sure you understand all of the safety instructions in this manual and on the BusPro-620s before attempting to connect, charge, or work with a lead acid battery.

## **GENERAL SAFETY RULES FOR SAFE OPERATION**

Batteries are dangerous. Auto Meter provides the following **Warnings** for your safety:

1. Use the BusPro-620s only on 12 Volt LEAD ACID AND GELLED ELECTROLYTE (GEL-CELL) Batteries. DO NOT attempt to use on other types of batteries (Dry Cell, Nickel Cadmium, Nickel Metal Hydride, etc.) commonly found in small home appliances. This may cause the batteries to burst, resulting in damage or injury to person and/or property.
2. DO NOT use the BusPro-620s on batteries that are in use or that are installed. Remove batteries from the vehicle and take to a properly installed BusPro-620s location.
3. DO NOT use attachments with the BusPro-620s that are not approved or sold by Auto Meter. Non-approved attachments may result in injury, electric shock, or fire and voids the warranty.
4. When disconnecting the power cord from the wall, grasp the plug and pull. Never pull the cord, it may damage the plug and/or the cord.
5. Place the power cords in a location where they will not be stepped on, tripped over, or subjected to stress or abuse of any kind.
6. Never operate the BusPro-620s if any portion of its housing, cords or attachments appear to be damaged in any way. If damage has occurred, have it inspected and serviced by Auto Meter.
7. If the BusPro-620s has been dropped, received a sharp blow, or abused in any way, have it inspected and repaired by Auto Meter if necessary.
8. Do not use an extension cord to operate the BusPro-620s. An inadequate extension cord could result in fire or explosion due to a large number of batteries being charged and will not provide the AC amperage rating needed by the BusPro-620s.
9. Each BusPro-620s Station has its own AC fuse. Other than this fuse replacement, Auto Meter should be contacted for trouble shooting and instructions on how to repair or replace parts and charging stations. Any unauthorized repair, tampering or incorrect assembly may result in fire or electric shock and voids the warranty. Check with Auto Meter for instructions.
10. To prevent injury during cleaning or maintenance, disconnect all batteries and move them away from the unit. Unplug the BusPro-620s from the wall outlet (grasping the plug). Use a slightly dampened cloth to clean the housing and lead sets. Do not use solvents or soaps.

## SAFETY INSTRUCTIONS Cont.

11. NEVER attempt to charge a frozen battery. Allow the battery to return to room temperature before connection.
12. ALWAYS use the BusPro-620s in an open and well-ventilated area. The area should be dry and free of trash, debris and combustibles.
13. **WARNING!** Explosive Hydrogen gas may be present around batteries.
14. Do not use the BusPro-620s in direct sunlight or adverse weather conditions such as rain or snow.
15. Mount the BusPro-620s on a secure wall location at least two feet above the batteries being charged. This prevents acid drips and spills from landing on the BusPro-620s during battery filling or specific gravity testing. This also prevents battery fumes from reaching the BusPro-620s.
16. Do not place small objects or tools on the top edge of the mounted BusPro-620s unit.
17. NEVER use the BusPro-620s in or on any boat or watercraft. You must remove the battery from the boat or watercraft and charge the battery at the properly installed location of the BusPro-620s unit.
18. DO NOT install the BusPro-620s where it will be exposed to moisture, inclement weather nor around combustibles, flammable liquids or vapors and trash.

### PERSONAL SAFETY PRECAUTIONS

1. Wear protective goggles or a full-face shield.
2. Wear protective clothing. Leave no exposed skin.
3. Have plenty of fresh water and hand soap available for use if acid should contact your eyes, skin or clothing.
4. Have someone close by in the event you need emergency assistance when working with a battery.
5. Remove all metal objects (pens, tools, jewelry, etc.) from your body. These items can create a direct short between the battery terminals and can cause serious burns.
6. DO NOT carry tools or metal objects within the vicinity of a battery. These items can fall on the battery terminals creating a high current short. This could result in a fire, burns, explosion, etc.
7. DO NOT touch your face, eyes or other body parts with out first washing your hands. Battery acid can burn and irritate eye and skin tissue.
8. DO NOT allow any source of ignition in the area of a battery. Keep all flame and spark producing devices out of the area and NEVER SMOKE near a battery.
9. Use the one hand rule! Keep one hand in your pocket whenever you make an electrical connection. This reduces the risk of electrical shock to the user.



# 1

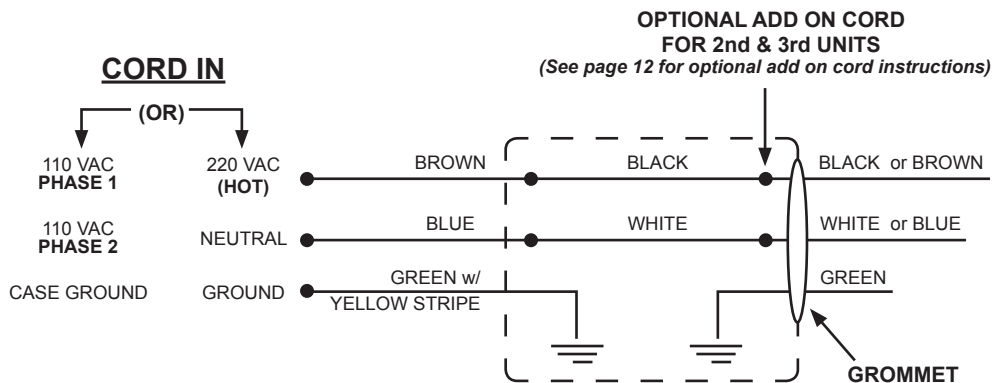
## SETTING UP THE *BusPro-620s*

The BusPro-620s Charger has two mounting keyholes. YOU MUST mount the BusPro-620s to a wall that provides a secure surface. This will keep it out of the way and prevent damage due to accidents. If needed, you may leave the two screws slightly extended from the wall to allow easy removal through the keyhole slots.

**Caution:** In determining placement of the BusPro-620s Charger check the following:

- Make sure the batteries can be placed at least two feet away. For example, If the batteries are placed on the floor make sure the BusPro-620s Charger is mounted securely at least **two feet** above, but no more than the working length of the leads.
- Make sure the room has plenty of ventilation.
- Make sure no sparks or flames can occur near the charging area.
- Mount the BusPro-620s Charger away from vehicle repair or service area.
- Never start or run an engine near the batteries being charged. It takes very little to ignite explosive gases given off by a lead-acid battery. **Remember:** You may be charging several batteries at a time. This compounds the need for a strict safety program.

The BusPro-620 comes without a plug. The user is responsible for proper installation of the appropriate plug for the 220 VAC receptacle to be used. Have a qualified electrician install it for you. The BusPro-620 is designed to work with various 220 VAC receptacles. Whether you have a single 220 VAC hot wire or two 110 VAC hot wires the BusPro-620s will work with both. You cannot damage the BusPro-620s by hooking it up to a 110 VAC supply, but it will not perform. The following is given for the benefit of the installer:



**WARNING!** Do not alter the cord on the BusPro-620s Charger. Any alterations will void the warranty.

**See page 9 for hooking up three BusPro-600 units together.**

## What To Expect From The *BusPro-620s*

The Professional BusPro-620s Charger is equipped with sophisticated circuitry that will:

- **Check Each Battery's Condition** The BusPro-620s will indicate bad batteries that are sulfated or have bad cells. This allows the battery to be replaced without unnecessary charging.
- **Fully Charge Six 12 volt Batteries** (5 Amps. each). With the optional Jumper Lead Kit the BusPro-620s can charge up to twelve batteries at 2.5 Amps each.
- **Maintain Each Battery** The BusPro-620s provides a separate charging station for each battery. With the optional kit, each station can maintain two batteries.
- **Provide Worry Free Attention** The BusPro-620s has safe circuitry that automatically adjusts the volt/current relationship in order to maintain the battery at full charge. If the voltage drops below 12.5 volts, the BusPro-620s will automatically charge the battery with up to 5 Amps. When the battery reaches the threshold again the unit goes into maintenance mode.
- **Maximize Battery Life** The BusPro-620s Charger is designed to maximize the life of a serviceable lead acid battery. A serviceable battery is a battery that is not defective or damaged. The BusPro-620s is fully compatible with gelled electrolyte (gel-cell) batteries (sometimes used in place of liquid electrolyte batteries in many heavy duty applications). **DO NOT USE WITH DRY CELL, NICKEL CADMIUM, and NICKEL METAL HYDRIDE OR SIMILAR BATTERIES.**
- **Increase Multiple Battery Charging Capability** The BusPro-620s provides the opportunity to charge more batteries with less time spent charging defective batteries that need to be replaced.
- **Provide Valuable Protection** The BusPro-620s maintains batteries while they are uninstalled. Maintaining a battery increases its life and protects its capacity.
- **Maintain Batteries Not In Use.** Some examples are automobiles under long term repair, farm machinery and fleet vehicles in repair or storage. The Bus Pro-620s is ideal for rental equipment not in use or for charging and maintaining batteries for replacement. The BusPro-620s can be used to re-charge, check and maintain all starting and deep cycle batteries. Each Bus Pro-620s can charge, check and maintain up to six batteries. With the optional Jumper Lead Kit twelve batteries can be charged or maintained.
- **Provide Easy Care** The BusPro-620s is designed for easy care and maintenance. Occasional cleaning of the leads and housing will help keep the unit looking new, and give you many years of satisfaction. **CLEANING PROCEDURE:** Unplug the BusPro-620s and use a slightly dampened cloth to clean the housing and lead sets. **DO NOT** use solvents or soaps.
- **Provide Long Lasting Performance** The BusPro-620s Charger Tester has been designed and manufactured to provide superior performance. Quality is built in and assured with circuit burn-in, computerized testing and inspection.
- **Fuse Protected** Each charging station is protected by a replaceable AC fuse.

# 5

## DISCONNECTING THE *BusPro-620s*

The BusPro-620s charger is safely maintaining the battery at a full charge when the green light is on. Simply remove the clamps and set them on the working surface clear from the other batteries and clamps. You can now load-test the battery.

**Note:** When the clamps are accidentally disconnected while charging is in effect the BusPro-620s will shut the individual station off. Both indicator lights will go out. Simply reconnect the battery.

**Note:** The BusPro-620s is designed to send a 5 amp charge only when the circuitry determines the clamps have been attached correctly and the battery is in need of charging. Under normal operation the clamps will not cause any sparks if the black (-) and red (+) come in contact or if any clip comes in contact with another.

**Caution: *BATTERIES ARE DANGEROUS!*** Be sure to practice these proper safety rules when connecting and disconnecting batteries from the BusPro-620s:

- Wear safety Glasses.
- Make sure no sparks occur such as an engine starting etc.
- Make sure no tools or metal objects are in the vicinity of the batteries
- Connect clips to a clean, properly inspected battery
- Do not disconnect a battery while charging. Wait for the green light (OK) or flashing red (Defective).
- Handle clips carefully and set them from safely aside other batteries and clamps.

## 2

## INSPECTING THE BATTERY

**Remove and inspect the battery** before connecting it to a BusPro-620s Charger. A clean battery and battery terminals insure proper operation of the BusPro-620s Charger and the vehicle charging system.

- Check for dirty or loose terminals.
- Check for any cracks or distortion in the battery case.
- Make sure the battery is the correct group size and capacity for the vehicle.
- Make sure the battery is clean between battery posts to avoid self discharge.
- Check the electrolyte level.

**Inspecting the electrical system** If the battery and terminals have a white or bluish crust on them, the charging system may be having problems. Use one of Auto Meter's BVA Analyzers to test the charging and starting system. These problems should be corrected before the battery is installed.

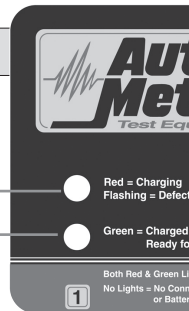
## 4

## READING THE INDICATOR LIGHTS

The Professional Bus Pro-620s has two lights for each charging station.

**RED LIGHT**

**GREEN LIGHT**



**No Light = Check the following:**

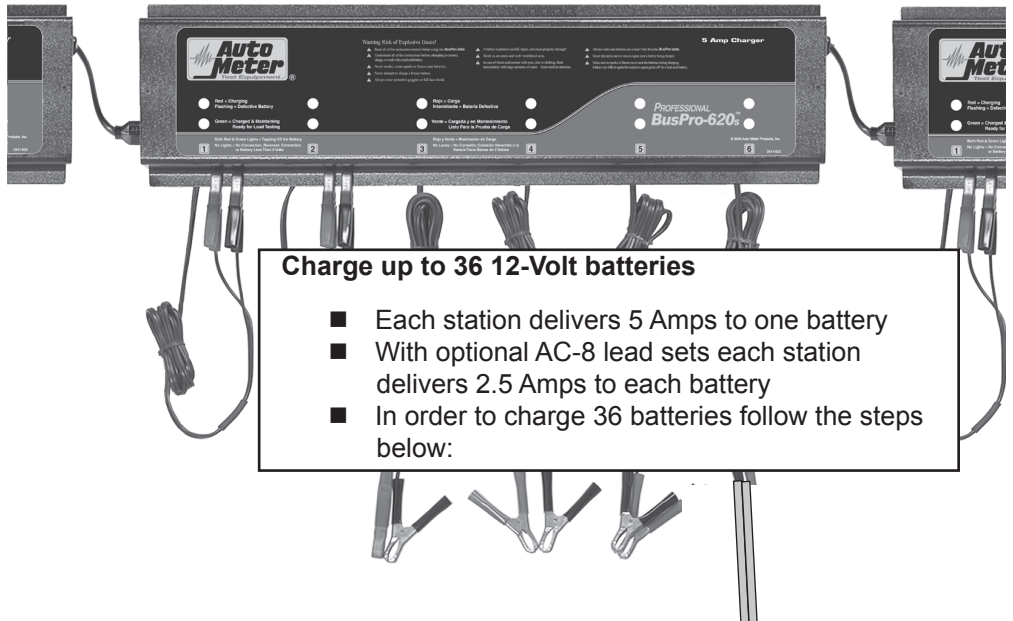
- Connections reversed. Make sure the red spring clip is connected to the positive (+) battery post and the black spring clip is connected to the negative (-) battery post.
- Bad connection at one or both battery posts.
- No AC power.
- The battery voltage is below 1 volt.

**Red light = Charging** - The Professional Bus Pro-620s is delivering up to a 5 Amp charge.

**Red Light Flashing = Defective Battery:** The BusPro-620s is designed to detect either a sulfated battery or a bad cell. Make sure the battery posts and clamps are clean. If the red light continues to flash the battery should be replaced.



# BusPro-620s HOOKUP POTENTIAL



## Charge up to 36 12-Volt batteries

- Each station delivers 5 Amps to one battery
- With optional AC-8 lead sets each station delivers 2.5 Amps to each battery
- In order to charge 36 batteries follow the steps below:

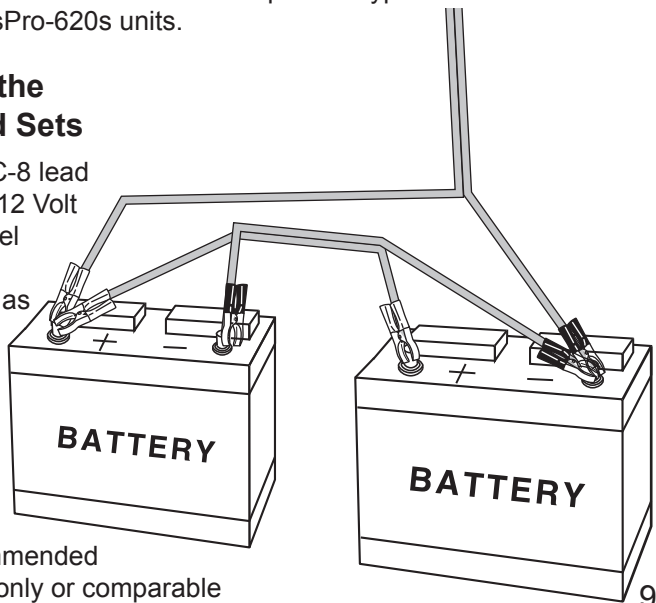
## Step 1 Hooking Up 3 Bus-Pro-620s Chargers

Hook 3 units together by plugging the next unit into the AC cord (If cord must be added See PG. 5). Make sure the power source supplied to the first BusPro-620s is adequate. A typical outlet will only supply 3 BusPro-620s units.

## Step 2 Using the Optional Lead Sets

Using optional AC-8 lead sets hookup two 12 Volt batteries in parallel to each station of the BusPro-620s as shown.

**Note:** If red light flashes detach one battery to determine which battery is defective. Recommended for maintenance only or comparable batteries in size and state of charge.

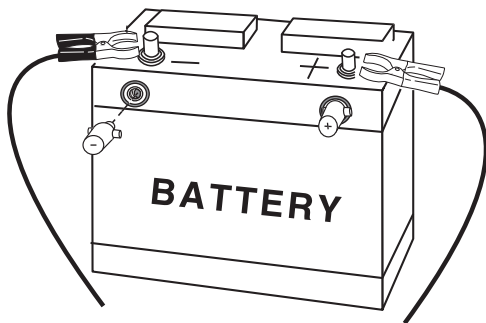


# 3

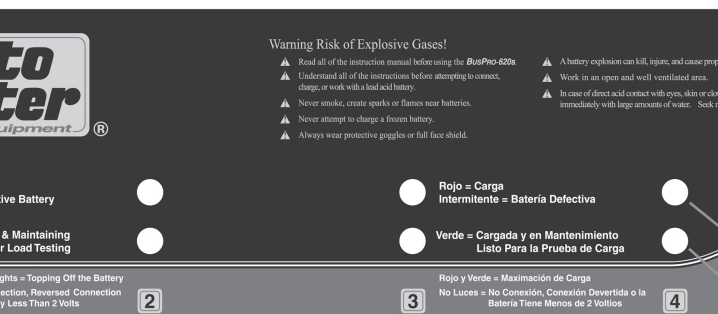
## HOOKING UP THE CLAMPS

Each charging station has a lead set with a red positive (+) and a black negative (-) clamp. If the BusPro-620s has been installed correctly, at least two feet above the work station, the clamps should lie on a clean dry surface.

- Connect the RED clamp to the positive (+) terminal post. Turn or wiggle the clip on the battery post to insure a good connection.
- Connect the BLACK clamp to the negative (-) battery post.



**NOTE:** Side mounted and threaded steel post batteries will require Lead Post Adapters. Using steel bolts and connecting clamps to threaded steel posts is not safe, and will inhibit accurate results.



**RED LIGHT**  
**GREEN LIGHT**

**Red & Green light = Finishing Full Charge. "Ready for Load Test":** The battery is at least 70% charged and ready to load test and return to service. Continued charging will take the battery to full charge.

### Note:

Some batteries will pass and accept a charge, but will not be able to pass a load test. All batteries should be load-tested after charging.

**Green light = Charged and Maintaining:** The BusPro-620s is safely adjusting the voltage/current relationship to maintain the battery at a full charge. The battery can be load tested. If the battery voltage drops below 12.5 volts, the BusPro-620s shifts automatically into (Red Light) Charging Mode.

## ADD ON CORD INSTRUCTIONS

### OPTIONAL ADD ON CORD FOR 2nd and 3rd UNITS

- Remove Cover
- Drill 13mm hole through circle on decal at the opposite end from the cord. Insert supplied grommet (zip tied to black and white wires) into hole. Route new cord through grommet. Connect hot wire (**220 VAC hot or 110 VAC Phase 1**) from new cord to black wire inside unit, connect (**neutral or 110 VAC Phase 2**) wire from new cord to white wire inside unit. Connect wires with appropriate size wire nuts and tape, connect ground to transformer mounting stud.

**NOTE: Wiring in a cord for a 2nd unit must be performed by a qualified electrician.**

