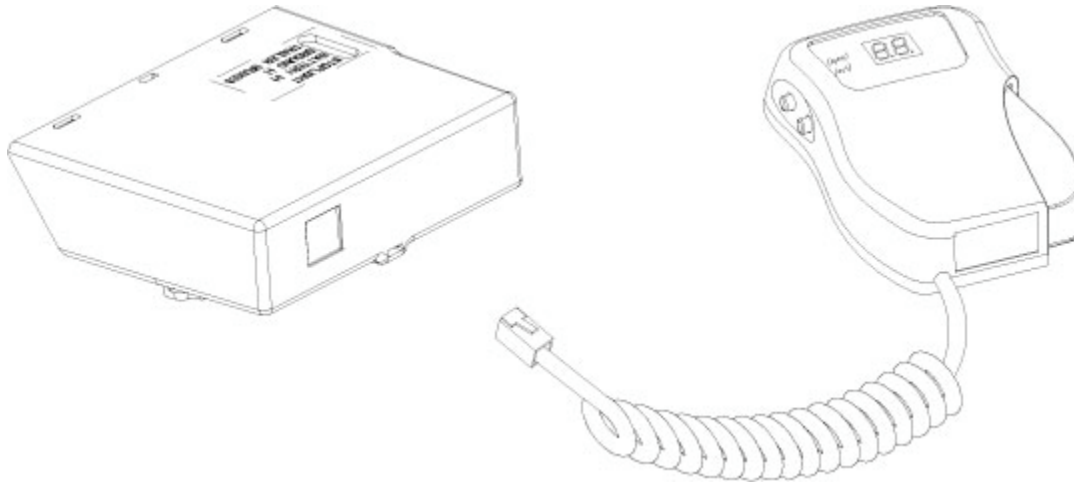




# INSTRUCTIONS FOR THE INSTALLATION AND OPERATION OF

## ELECTRONIC TRAILER BRAKE CONTROL FOR 2, 4, 6 & 8 BRAKE SYSTEMS



### THIS PACKAGE INCLUDES:

- (1) BRAKE CONTROL POWER MODULE
- (1) BRAKE CONTROL REMOTE MODULE
- (1) WIRE TAP
- (2) MOUNTING BRACKET
- (1) PLASTIC HOLDER/CLIP
- (3) HOOK & LOOP STRAPS
- (1) INSTRUCTION SHEET
- (1) WARRANTY CARD
- (2) SCREWS

### TOOLS REQUIRED:

Wire connector crimp tool  
Probe type circuit tester  
Wire cutter/stripper  
Screwdriver

### IMPORTANT:

Read and follow all instructions carefully.  
Keep the instructions in your tow vehicle  
for future reference.

### MATERIAL NEEDED:

**For vehicles without tow package**  
5506 or 74202 Wiring Kit or:  
10 ga. Wire  
30 amp auto-reset circuit breaker  
Assorted ring terminals &  
Butt connectors  
4" cable ties (6 – 10)

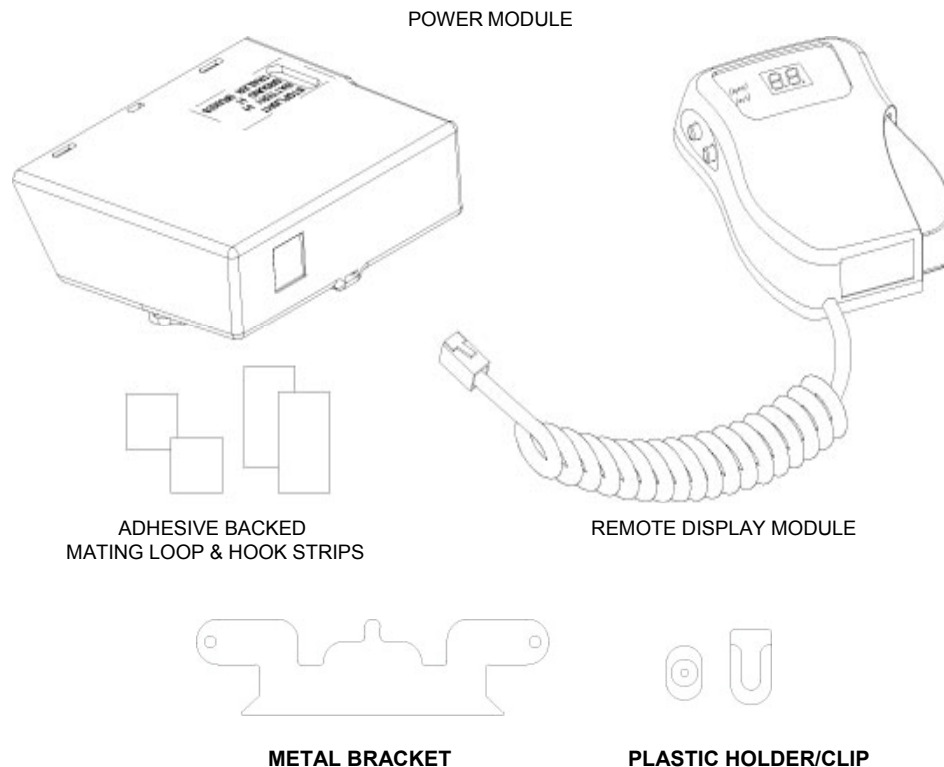
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**MOUNTING**

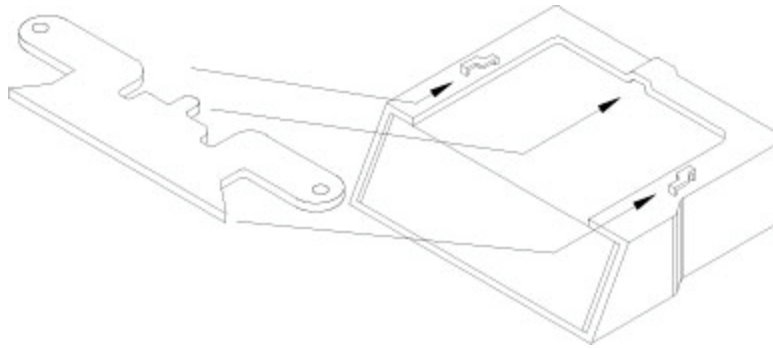
1. Determine suitable mounting locations inside the vehicle for the brake control Power and Remote Display Modules. The mounting locations need to be easily accessible for the plugging the units together and for operation by the driver, with the Remote Display Module being within reach at all times.  
 Note: The brake control units can be mounted in any position or angle and only needs to be accessible for plugging the remote Display unit. In addition the units should be placed in an area that will not interfere with operation of the vehicle.

**INSTRUCTIONS FOR MOUNTING WITH VELCRO**

- 2. Clean mounting surface, use a damp cloth with a mixture of rubbing alcohol and water, allow to dry.
- 3. Remove the backing from the 2" long loop strip and firmly apply to mounting surface of the vehicle. Remove the backing and align mating hook piece and firmly apply to the Power Module.  
 Note: For added security, cable tie(s) (not provided) can be used to secure the Power Module in place.

**INSTRUCTIONS FOR MOUNTING WITH BRACKET**

- 4. Attach metal bracket to backside of Power Module by sliding the bracket into the notches provided on bottom of Module.
- 5. Screw Power module into mounting surface making sure not to drill into exposed surfaces or to damage other vehicle components.
- 6. Remove strip from double-sided tape on plastic holder and clip and attach holder to accessible location for remote display module. Attach clip to backside of Remote Display Module.



**MOUNTING BRACKET INSTALLATION**

## **WIRING**

### **WARNING:**

**Always probe the wires with a circuit tester before attaching to the brake control. Incorrect wire installations can cause problems to the brake control and vehicle.**

**Grounding the brake control unit to any location other than the vehicle's negative terminal may cause the trailer wiring to operate intermittently or not at all.**

**Do not connect the brake control BATTERY wire to the fuse panel or into accessory wiring.**

**Connecting to the existing wiring may damage vehicle wiring and cause trailer brake failure.**

**When passing wire through sheet metal, always go through an existing grommet, add a grommet or use silicone rubber to insulate the wire from the hole.**

**Read and follow all warning and cautions on tow vehicle battery and consult owner's manual for other warnings and cautions for trailer towing.**

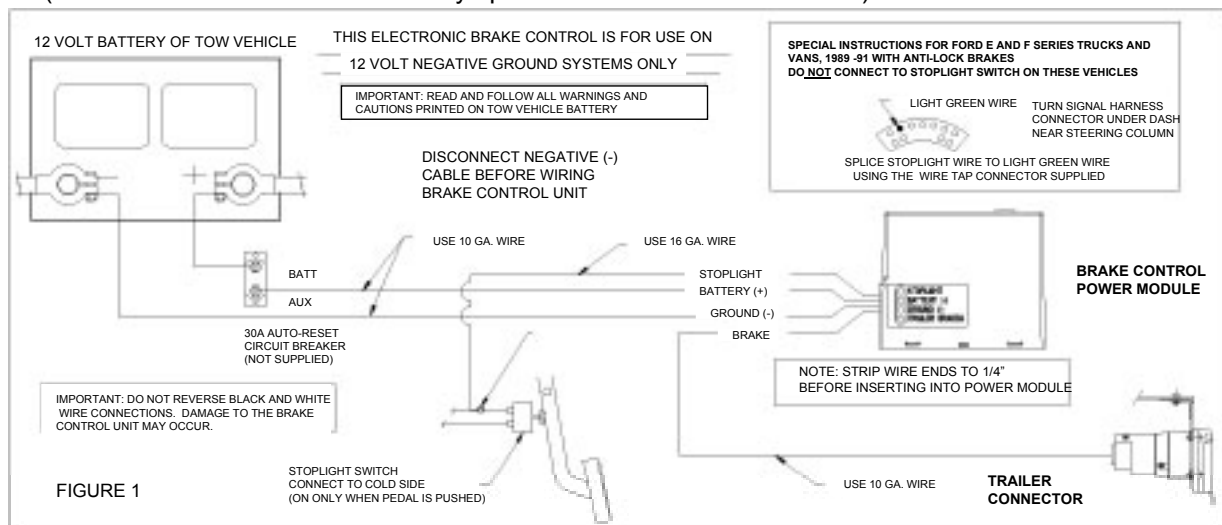
**Vehicle wire colors can be different from one vehicle to another, consult your vehicle owner's manual and always use your circuit tester and test the wire functions before attaching the brake control.**

**Use 10 GA. wire for the BATTERY (+), GROUND (-) and TRAILER BRAKE circuit and 16 GA. wire for the STOPLIGHT circuit.**

### **INSTALLATION FOR TOW VEHICLES WITHOUT FACTORY TRAILER TOWING PACKAGES:**

1. Disconnect the tow vehicle's negative (-) battery cable.
2. Install a 30 AMP auto-reset circuit breaker (not included) in the wire between the battery and the brake control "BATTERY (+)". Mount the circuit breaker as close to the positive (+) battery terminal as possible (see figure 1).
3. Route the BATTERY (+) and GROUND (-) wires from the brake control Power Module unit to the battery. Leave extra length of wire on both ends to allow for adjustment and to work with. Note: When routing wires, avoid anything that could damage the wire, such as sharp edges, moving parts or hot surfaces. It may be easier to temporarily lower the Power Module to attach wires.
4. Using appropriate terminals (not provided) attach the GROUND (-) wire to the negative battery terminal. Then attach the BATTERY (+) wire to the AUX on the circuit breaker. Note: Using different colored wires for the GROUND (-) and BATTERY (+) wires is helpful.
5. Secure wires in engine compartment with cable ties (not provided) and pull excess wire into the vehicle.
6. Route wires to the Power Module, cutting wire to fit & stripping 1/4 of the insulation off the wire ends. Using a flat head screwdriver, connect the GROUND (-) wire to the Power Module as shown (see figure 1). Note: Make sure all wire strands are completely inserted into then terminal block and are not contacting other wires, it may be helpful to add solder to the ends of the wire.

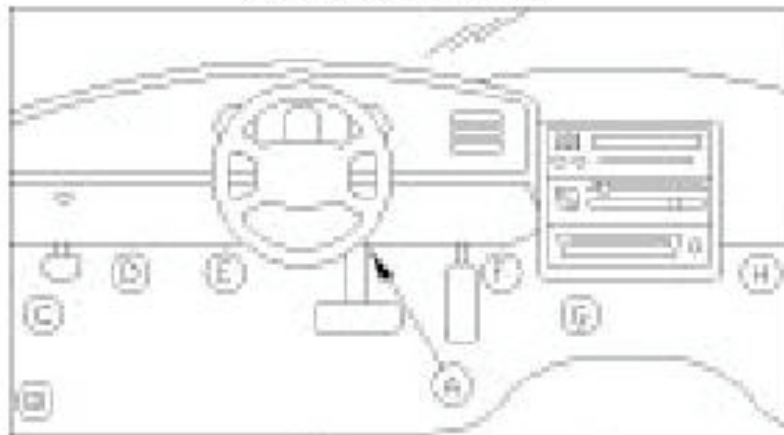
- Attach appropriate terminals (not provided) and attach the BATTERY (+) wire to the positive battery terminal and the "BATT" on the circuit breaker. Reconnect the tow vehicle's negative (-) battery cable (see vehicle owner's manual for any special reconnection instructions).



Determine which side of the stoplight switch is the cold side. For 1989-91 Ford E and F series trucks and vans: Locate the crescent shaped connector located on the steering column (turn signal harnesses). The connector has two rows of wires, one row has four wires (inside row) the other has seven probe the light green wire, second in from the row of seven (see figure 1). For late model Ford Truck and Sport Utility vehicles including Mercury Mountaineer: Warning: Ford added a wire to the stoplight switch on late model Trucks and Sport Utility Vehicles (starting in 1998 on some vehicles). This wire is Red with a Green stripe and is only hot when the brake pedal is depressed, in the off position the wire goes directly to ground which will destroy the brake control. Do not use this wire! For all other vehicles, to determine which side of the stoplight switch is the cold side. Use the chart as a reference and probe the terminals of the switch with a circuit tester until one is found that is only on when the brake pedal is depressed.

- After determining the correct stoplight switch wire, use the wire tap provided, splice the brake control's "STOPLIGHT" the wire to the cold side of the stoplight switch as determined.
- Route the TRAILER BRAKE 10 Ga. wire from the brake control Power Module to the trailer connector.
- Test the installation. Test Without Trailer connected: Push the brake pedal. A single decimal point "." should light up on the Remote Display Module. If the decimal point does not light or if "oL" is shown, go to the Trouble Shooting section.
- Secure all loose wires with cable ties so that they will not be damaged.

### COMMON TOW VEHICLE WIRING REFERENCE CHART



VEHICLE MANUFACTURER	REFERENCE STOPLIGHT SWITCH WIRE "A"	FACTORY TOW PLUG LOCATION(S)**
MAZDA "B SERIES" PICKUPS	GREEN OR LIGHT GREEN	D
DODGE TRUCKS, VANS & SPORT UTILITIES	WHITE OR WHITE/TAN STRIPE	D
CHEV/GMC TRUCKS, VANS & SUV'S	WHITE OR YELLOW	E
FORD TRUCKS, VANS & SPORT UTILITIES**	GREEN OR LIGHT GREEN	C,D,F,G,H
FORD WINDSTAR FORD AEROSTAR	RED	
HONDA ODYSSEY	WHITE/TAN STRIPE	
JEEP	WHITE/TAN STRIPE	
TOYOTA	GREEN W/WHITE STRIPE	
SEE NOTES		

\*Always probe the wires with a circuit tester before attaching to the brake control. Incorrect wire installations can cause problems to the brake control. Incorrect wire installations can cause problems to the brake control and vehicle.

\*\* Locations may vary.

\*\*\*Ford Explorer/Mountaineer towplug could be behind glove box. Location Code H

## **INSTALLATION FOR VEHICLES EQUIPPED WITH FACTORY TRAILER TOWING PACKAGES:**

**Note: Make sure that the tow vehicle's Brake Control Battery Feed circuit is capable of carrying enough current to supply trailer brake requirements (check tow vehicle manufacturer's instructions and trailer brake manufacturer's information). For applications with 6 or more brakes, a separate direct connection to the positive (+) battery terminal is required with a 30 amp auto-reset circuit breaker inline. Additional fuses, relays and wiring kit maybe needed to complete the installation, see your local hitch installer for information and parts.**

1. DAIMLER CHRYSLER: Consult your vehicle owner's manual and wire per vehicle manufacturer's instructions. 1995 – Current Dodge Rams/Dakotas and 1999 – Current Durangos: a factory tow package with a blue (or white) 4 pin plug located near steering column under the dash and it will mate to the brake control adapter harness (supplied by Dodge or bought separately). Plug the adapter into the OEM plug. Probe the adapter wires using a circuit tester to verify the functions (typically on Dodge vehicles the red wire is Battery (+), black wire is Ground (-), white wire with a tan stripe is Stoplight, & blue wire is for the Trailer Brakes). After probing, wire the brake control Power Module to the corresponding wires on the brake adapter.
2. FORD: Consult your vehicle owner's manual and wire per vehicle manufacturer's instructions. Ford vehicles with tow package: A factory tow package plug located under the dash mates to the brake control adapter harness (supplied by Ford or bought separately). Plug the adapter into the factory plug. Probe the adapter wires using a circuit tester to verify the functions (typically on Ford vehicles the green or light red wire is the Battery (+), White wire is Ground (-), green wire or light green wire is Stoplight, & blue wire is for the Trailer Brakes. After probing, wire the brake control Power Module to the corresponding wires on the brake adapter and plug the brake control adapter harness into the factory plug.
3. CHEVROLET/GMC: 99-Current Sierra and Silverado and 2000-Current Suburban, Tahoe & Yukon (new body styles). Consult your vehicle owner's manual and wire per vehicle manufacturer's instructions. Locate the vehicle's black Electric junction box in the interior, underneath the dash, left of the steering column, just above the carpet. Remove the cover and locate the vehicle plug for electric brake. This will be located in the top row, second from the left. Plug the brake control adapter (supplied by GM or bought separately) into vehicle plug. Plug the adapter into the vehicle's plug. Probe the adapter wires using a circuit tester to verify the functions. After probing, wire the brake control Power Module to the corresponding wires on the brake adapter and plug the brake control adapter harness into vehicle plug. Note: All of these vehicles come with a location for installation of an Electric Brake Adapter, but not all pickup trucks have complete connections to the battery and/or wiring to the rear of the vehicle for electric trailer brakes. For pickup vehicles with no power supply to or from the Electric brake control adapter, additional connections will be needed. Open the vehicle's hood and locate the black Electrical Center Box on the driver's side. Remove the box lid and cover exposing the vehicle's brake control feed wire support brace. Attach 10 ga wire to the wire and route rearward to the vehicle trailer connector. In the same location, locate the vehicle's battery (+) supply wire (red) attach 10 ga wire, & auto-reset circuit breaker and route to the battery (+) connection. Follow all battery warnings on vehicle. Reinstall the electrical Center Box cover, lid and support brace after installation.
4. Test the installation. Test Without Trailer connected: Push the brake pedal. A single decimal point "." should light up on the Remote Display Module. If the decimal point does not light or if "oL" is shown, go to the Trouble Shooting section.
5. Secure all loose wires with cable ties so that they will not be damaged.

## CONTROLS

### OUTPUT CONTROL

The Output Control establishes the maximum amount of power available to the trailer brakes. As the output is set higher the more power is available to the trailer brakes when the brake pedal or manual control is used. The Output should be adjusted during initial setup, when trailer load changes, when different trailers are used or to adjust for a change in road conditions. The Output setting is shown on the digital display when a trailer is connected and the brake pedal is pressed or the Manual control is actuated. If the Remote Display Module becomes unplugged from the Power Module the brake control settings will remain, but if battery power is lost, it will go back to default factory settings. The Output setting is shown as 0 through 10 with 0 being the minimum and 10 the maximum.

### SYNC CONTROL

The Sync control adjusts the trailer brake aggressiveness. The Trailer brakes become more aggressive as the setting is increased. The Sync setting is shown as 0 through 5 with 0 being the minimum and 5 the maximum. The Sync should be adjusted for individual driver preference or changing road conditions. The Sync adjustment has no effect on the manual control.

### MANUAL CONTROL

The Manual control only applies the trailer brakes and would be used during initial setup and in situations where it is desirable to reduce speed slowly. When the Manual control is squeezed, the control begins to apply the trailer brakes. The more the control is squeezed, the harder the brakes are applied until the maximum set by the Output Control is reached. The Manual control will activate the tow vehicle and trailer stoplights.

### DIGITAL DISPLAY

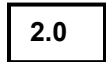
The Digital display shows the Output setting when the control is activated. It is used to setup and monitor the brake control and can be used when trouble shooting. If no Manual or pedal activation occurs after approximately 15 Minutes the Display unit will go into a sleep mode and nothing will be displayed until the brake is activated again.



**SINGLE DECIMAL**  
POWER CONNECTED  
NO TRAILER CONNECTED



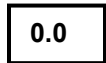
**OVER LOAD DISPLAY**  
SHORTED OR OVER LOADED  
BRAKE CIRCUIT  
**SEE TROUBLE SHOOTING GUIDE**



**OUTPUT CONTROL SETTING**  
CONTROL ACTIVATED



**SYNC CONTROL SETTING**  
SYNC CONTROL ACTIVATED



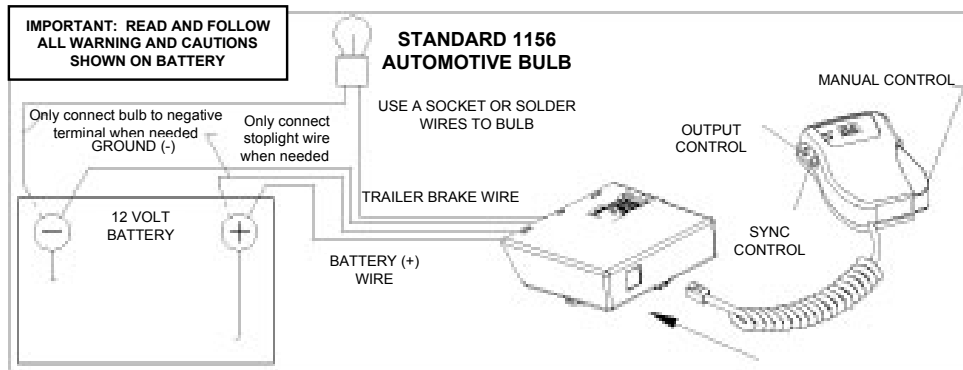
**TRAILER CONNECTED**  
NO BRAKE ACTIVATION



**OUTPUT DISPLAY**  
BRAKE PEDAL OR  
MANUAL ACTIVATED  
TRAILER CONNECTED

### SLEEP MODE

If the unit is not activated for approximately 15 minutes, it will go into a "sleep mode" to reduce the amount of current draw from the vehicle's battery when not in use. The sleep mode is instantly cancelled when the brake pedal is pushed or the manual control is activated.



## BENCH TEST

1. Refer to TROUBLE SHOOTING CHART after completing each test if problem occurs, correct and re-test. If problem continues, double check installation, electrical connectors, and vehicle for problems.
2. Disconnect Brake Control unit from vehicle and wire as shown above. Set the Output control to Maximum (10) and set the Sync control to Minimum (0). Note: If at any time during the bench test, the display shows "oL" make sure that the "Trailer Brake" wire is not shorted to Ground (-).
3. Test Standby Condition: Hold the "Stoplight" wire on the positive (+) battery terminal. The display should show a single "." (Decimal Point). This indicates correct wiring and that the control is ready. Disconnect the Stoplight wire from the battery.
4. Test Brake Pedal Activation: Firmly ground the light bulb to the negative (-) battery terminal. Reattach the Stoplight wire to the positive (+) battery terminal. The display should ramp up to "10" and the bulb should start out dim and slowly get brighter (unhook and reattach the "Stoplight" wire as many times as necessary to confirm this). Press and hold the Output control button, the display should start at the last setting and count up to "10" cycle back to "0" and go up again. Press and hold the Sync control button. The display should start at the last setting and count up to "5" cycle back to "0" and go up again. Reset the Sync control to "5" and the Output control to "10". Disconnect and reconnect the "Stoplight" wire. The bulb should light brightly and the display should read "10".
5. Test Manual Activation: With the Output control set at "10" slowly squeeze the manual control. The bulb should start to dim and get brighter and display would count up to 10 as the manual control is squeezed.
6. Defective Unit: After Bench testing and checking the installation and if the unit does not function as described, return it for service or replacement.

TROUBLE SHOOTING GUIDE TEST WITHOUT TRAILER FIRST				
CONDITION	DISPLAY	PROBABLE CAUSES	POSSIBLE SOLUTION	
WITHOUT TRAILER CONNECTED	DECIMAL POINT LIGHTS UP	DECIMAL ONLY	NORMAL OPERATION*	
	DECIMAL POINT DOES NOT LIGHT UP	BLANK	NO BATTERY POSITIVE CONNECTION OR IMPROPER OR NO NEGATIVE BATTERY CONNECTION OR CIRCUIT BREAKER OPEN	CHECK AND REPAIR WIRING CONNECTIONS.
	DISPLAY SHOWS '0.0' & COUNTS UP WHEN ACTIVATED OR SHOWS FLASHING '0L'		CONNECTION TO TRAILER CONNECTOR BRAKE TERMINAL IS MISWIRED, SHORTED OR THE TRAILER CONNECTOR IS CONTAMINATED WITH MOISTURE OR DIRT.	CHECK CONNECTIONS. CLEAN OR REPLACE CONNECTOR
	VOLTAGE APPEARS AT THE TRAILER BRAKE TERMINAL W/O ACTIVATION WHEN CHECKED WITH A VOLT METER		NORMAL CONDITION	NOTE: IF NO MANUAL OR PEDAL ACTIVATION OCCURS, THE DISPLAY UNIT WILL GO INTO A SLEEP MODE AND NOTHING WILL DISPLAY UNTIL THE BRAKES ARE
	POWER MODULE BUZZES		BATTERY AND TRAILER BRAKE WIRES ARE SWITCHED	CHECK AND REPAIR WIRING CONNECTIONS.
WITH TRAILER CONNECTED	WEAK OR NO TRAILER BRAKES, UNIT DOES NOT GO UP TO FULL OUTPUT SETTINGS, INCONSISTENT DISPLAY.	'2.0' DISPLAY '5.0' PRESET	BAD GROUND, EITHER BRAKE CONTROL UNIT OR TRAILER	CHECK AND SECURE ALL GROUND CONNECTIONS
	FLASHING '0L' WHEN ACTIVATED.	FLASHING '0L'	SHORT OR OVERLOAD ON THE TRAILER BRAKE CIRCUIT.	TEST WITHOUT TRAILER TO ISOLATE THE PROBLEM TO EITHER THE TOW VEHICLE OR THE TRAILER. CHECK ALL CONNECTIONS ON THE TRAILER BRAKE CIRCUIT AND REPAIR.
	NO BRAKE PEDAL ACTIVATION, MANUAL WORKS OKAY.	'0' OUTPUT SETTING	IMPROPER OR NO CONNECTION AT THE STOPLIGHT SWITCH	MAKE THE STOPLIGHT SWITCH CONNECTION AS SHOWN IN THE INSTALLATION INSTRUCTIONS
	BRAKES ARE ON ALL THE TIME. DISPLAY SHOWS OUTPUT SETTING.	'3.0' OUTPUT SETTING	WRONG WIRE USED AT STOPLIGHT SWITCH	CHECK AND CORRECT THE STOPLIGHT SWITCH CONNECTION AS SHOWN IN THE INSTALLATION INSTRUCTIONS.
	*SEE OUTPUT CONTROLS AND SLEEP MODE			

## SETUP

### WARNING

When adjusting the Sync or the Output control always pay attention to your surroundings & put the towing vehicle in park or neutral (apply parking brake if necessary) before adjusting brake control unit.

**Note: Output and Sync adjustments cannot be made while brake pedal is pressed or manual control is activated. Adjustments can be made while moving but the driver must make vehicle operation their priority to ensure that control of the vehicle is maintained. If road conditions dictate, park & make adjustments. A passenger can also make Output & Sync adjustments at the driver's request.**

Do not use brake control without the Remote Display Unit plugged into the Power Module, but if the remote Display unit is accidentally unplugged the Power Module will maintain the output and Sync settings that were set before it was unplugged.

If the Power Module is disconnected from the battery it will reset itself back to the factory Defaults when power is restored. Output and Sync may need to be adjusted.

If any problems occur during Setup refer to the Trouble Shooting section of these instructions.

### **Preliminary Adjustments**

With the trailer connected, adjust the Output setting to 2.0 by pressing and holding the Output control button on the Remote display unit as needed. Then adjust the Sync control to 2 by pressing and holding the Sync control button.

### **Test Drive**

In an open flat area, such as a large parking lot, drive forward and apply the trailer brakes using the Manual Control.

If the trailer brakes are weak, adjust the Output Control up.

If the trailer brakes lockup, adjust the Output Control down.

Repeat this step until firm braking is felt just short of lockup.

Once the Output is set, drive forward and press the brake pedal, the tow vehicle and trailer should be a smooth stop.

If the stop seems slow and more aggressive braking is desired, adjust the Sync control higher. If too aggressive, adjust the Sync lower.

Make several stops at various speeds and adjust the Sync until stops are smooth and firm. Slight adjustments of the Output control may also be desirable.