

WHELEN[®]

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Installation Guide: Model MPC01 Multi-Purpose Controller

Automotive: Serial Communication

Safety First

This document provides all the necessary information to allow your Whelen product to be properly and safely installed. Before beginning the installation and/or operation of your new product, the installation technician and operator must read this manual completely. Important information is contained herein that could prevent serious injury or damage.

- **Proper installation of this product requires the installer to have a good understanding of automotive electronics, systems and procedures.**
- **If mounting this product requires drilling holes, the installer MUST be sure that no vehicle components or other vital parts could be damaged by the drilling process. Check both sides of the mounting surface before drilling begins. Also de-burr any holes and remove any metal shards or remnants. Install grommets into all wire passage holes.**
- **If this manual states that this product may be mounted with suction cups, magnets, tape or Velcro®, clean the mounting surface with a 50/50 mix of isopropyl alcohol and water and dry thoroughly.**
- **Do not install this product or route any wires in the deployment area of your air bag. Equipment mounted or located in the air bag deployment area will damage or reduce the effectiveness of the air bag, or become a projectile that could cause serious personal injury or death. Refer to your vehicle owner's manual for the air bag deployment area. The User/Installer assumes full responsibility to determine proper mounting location, based on providing ultimate safety to all passengers inside the vehicle.**
- **For this product to operate at optimum efficiency, a good electrical connection to chassis ground must be made. The recommended procedure requires the product ground wire to be connected directly to the NEGATIVE (-) battery post.**
- **If this product uses a remote device to activate or control this product, make sure that this device is located in an area that allows both the vehicle and the device to be operated safely in any driving condition.**
- **Do not attempt to activate or control this device in a hazardous driving situation.**
- **If this product contains strobe light(s), halogen light(s) or high-intensity LEDs, do not stare directly into these lights. Momentary blindness and/or eye damage could result.**
- **Use only soap and water to clean the outer lens. Use of other chemicals could result in premature lens cracking (crazing) and discoloration. Lenses in this condition have significantly reduced effectiveness and should be replaced immediately. Inspect and operate this product regularly to confirm its proper operation and mounting condition. Do not use a pressure washer to clean this product.**
- **It is recommended that these instructions be stored in a safe place and referred to when performing maintenance and/or reinstallation of this product.**
- **FAILURE TO FOLLOW THESE SAFETY PRECAUTIONS AND INSTRUCTIONS COULD RESULT IN DAMAGE TO THE PRODUCT OR VEHICLE AND/OR SERIOUS INJURY TO YOU AND YOUR PASSENGERS!**

For warranty information regarding this product, visit www.whelen.com/warranty

WARNING!

DISCONNECTING THE VEHICLE BRAKE LAMP CIRCUIT USING ANY SIRENS WITH RELAY OUTPUTS OR SWITCH CONTROLLERS COULD CAUSE VEHICLE OR PROPERTY DAMAGE, SERIOUS INJURY OR EVEN DEATH.

DISABLING THIS CIRCUIT IS A VIOLATION OF THE FEDERAL MOTOR VEHICLE SAFETY STANDARD FOR THE THIRD BRAKE LIGHT, AS WELL AS REAR BRAKE LIGHTS.

FUNCTIONS THAT BLACK OUT THE REAR BRAKE LIGHTS (SOMETIMES CALLED “BRAKE LIGHT CUT OUT”) MAY INTERFERE WITH THE BRAKE SHIFT LOCK MECHANISM, AND CAUSE THE VEHICLE TO MOVE UNEXPECTEDLY AND DANGEROUSLY.

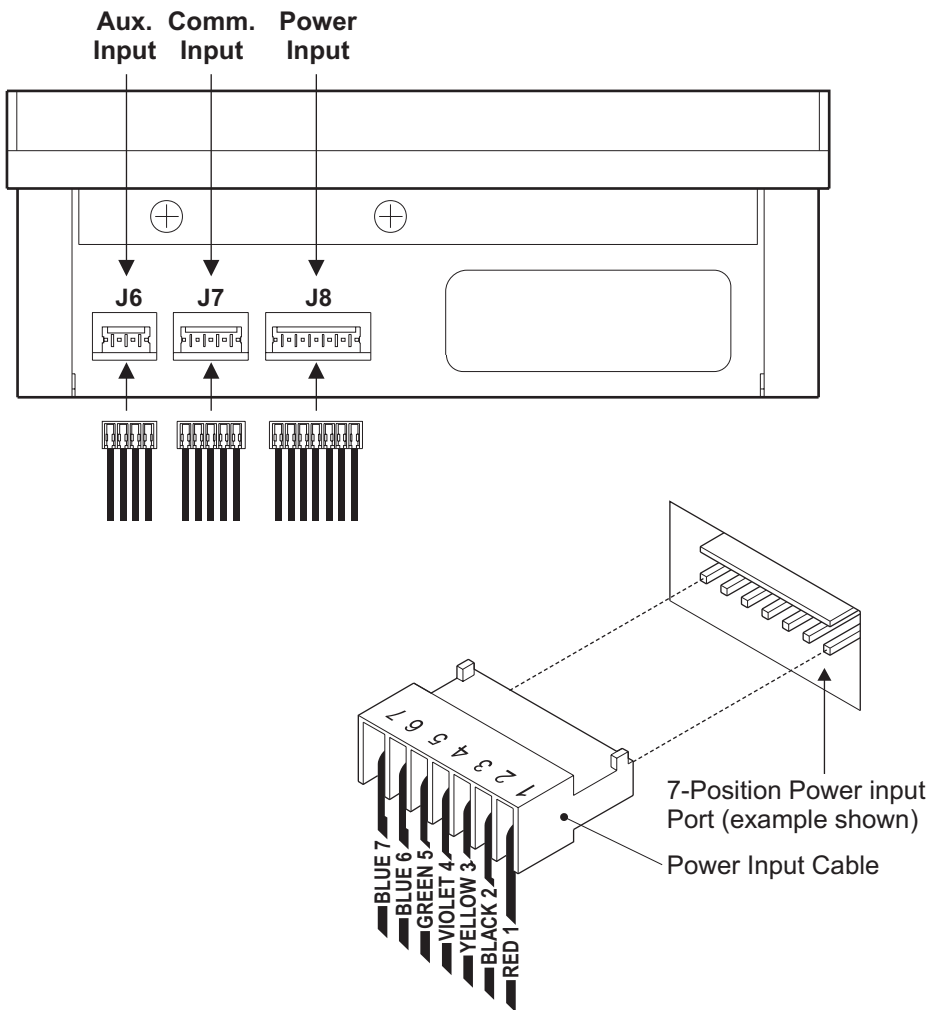
DISCONNECTING THE BRAKE LIGHTS IN ANY WAY IS AT YOUR OWN RISK AND IS NOT RECOMMENDED BY WHELEN.

Installation:

The MPC01, although technologically advanced, is simple to install. An aftermarket center console is recommended for the mounting location of the MPC01. This not only allows the driver to reach the MPC01 easily, but also keeps the MPC01 safely out of the path of the vehicle's SRS air-bag. Follow the console manufacturer's instructions for mounting information. The following steps will guide you through the installation process:

READ BEFORE INSTALLING: Do not install this product or route any wires in the deployment area of your airbag. Equipment mounted or located in the airbag deployment area will damage or reduce the effectiveness of the airbag, or become a projectile that could cause serious personal injury or death. Refer to your vehicle owners manual for the air bag deployment area. The User/Installer assumes full responsibility to determine proper mounting location, based on providing ultimate safety to all passengers inside the vehicle. Whelen Engineering Co. assumes no liability or responsibility for determining individual applications or exact installation location criteria.

Fig.1



Wire Guide for the MPC01 Communications Ports

Color Code & Function
by Pin Position

AUXILIARY INPUT		
PIN #	COLOR	FUNCTION
1	BROWN	AUX IN 1
2	RED	AUX IN 2
3	ORANGE	AUX OUT 1
4	YELLOW	AUX OUT 2

COMMUNICATION INPUT		
PIN #	COLOR	FUNCTION
1	BLUE	+RS485
2	GREY	-RS485
3	WHITE	AUDIO +
4	BLACK	AUDIO -
5	DRAIN	SHIELD

POWER INPUT		
PIN #	COLOR	FUNCTION
1	RED	+12V IN
2	BLACK	GROUND
3	YELLOW	BACK LIGHT
4	VIOLET	HORN RING
5	GREEN	HORN
6	BLUE	RADIO
7	BLUE	RADIO

Connecting The MPC01 Power Harness: RED (Power) / BLACK (Ground)

1. Insert the Power Input Harness into its port as shown in Fig. 1. Be sure that the RED wire is located in position 1.
2. Route the RED and BLACK wires toward the firewall. Follow the same path as the factory wire harness.
3. Continue to follow the factory harness through the firewall. To pass the RED and BLACK wires through, it may be necessary to drill a hole in the firewall. If so, be absolutely sure that there are no components that could be damaged by drilling. After the hole is drilled, insert a grommet to protect the wires.
4. Route the RED and BLACK wires along the factory harness towards the battery.
5. Install a 5 Amp fuse block (user supplied) on the end of the RED wire.

Note: *Remove the fuse from the fuse block before connecting any wires to the battery!*

6. Connect the fuse block wire to the POSITIVE (+) terminal on the battery. There must not be more than two (2) feet of wire between the fuse block and the battery. As the wire between the fuse and the battery is “unprotected”, do not allow this wire to come in contact with any other wires!

WARNING! ALL CUSTOMER SUPPLIED WIRES THAT CONNECT TO THE POSITIVE (+) TERMINAL OF THE BATTERY MUST BE SIZED TO SUPPLY AT LEAST 125% OF THE MAXIMUM OPERATING CURRENT AND BE FUSED “AT THE BATTERY” TO CARRY THAT LOAD.

7. Connect the BLACK wire to the factory ground, adjacent to the battery.

YELLOW (Back Light Control)

1. Route the YELLOW wire along the factory wire harness towards the firewall. Do not go beyond the firewall.
2. Connect the YELLOW wire to a +12VDC source that is activated with the vehicle's ignition switch.

GREEN and VIOLET (Horn Relay)

1. Route the GREEN and VIOLET wires along the factory wire harness and through the firewall at the same point as the RED and BLACK wires.
2. Locate your vehicle's horn relay and route the GREEN and VIOLET wires to this. If possible, follow the factory wire harness to this relay.
3. Cut one of the wires that connect the horn relay to a vehicle horn.
4. Connect the VIOLET wire to the wire coming from the horn relay.
5. Connect the GREEN wire to the wire coming from the horn.

BLUE (Radio Repeat)

Note: The two (2) remaining BLUE wires are used to connect your two-way radio's external speaker to the MPC01 for radio rebroadcast. This is an optional connection and does not effect the other operations of the MPC01.

Note: Radio rebroadcast will **NOT** work with amplified remote speakers! If your remote speaker is amplified (I.E.: contains a power amp circuit in the speaker assembly), do not enable the radio rebroadcast feature.

1. Locate the two wires that connect the external speaker to the two-way radio.
2. Cut one of these wires and splice one of the BLUE wires into this circuit.
3. Cut the remaining speaker wire and splice the remaining BLUE wire into this circuit.

Connecting the MPC01 Communication Cable:

1. Remove the rear seat (both sections) from the vehicle.
2. Insert the Communication Input Cable into its port as shown in Fig. 1. Be sure the BLUE wire is located in position 1.
3. Route the Communication Cable towards the rear of the vehicle.
4. Following the factory harness, route the Communication Cable towards the BL627 Siren Amplifier.

Note: In almost all applications, the BL627 will be mounted somewhere in the trunk. This manual assumes that the BL627 has (or will be) mounted in the trunk. If the BL627 has not yet been mounted, the mounting procedure for the BL627 is fully outlined in its own manual.

5. Strip approximately 1/4" of insulation off the ends of each wire.
6. Insert the wires into the Phoenix™ connector located on the back of the BL627 as shown in the wiring diagram (pg. 6).
7. Tighten the screws on the Phoenix connector (with a small, flat blade screwdriver) to secure the wires to the BL627.

Connecting the MPC01 Auxiliary Input Cable:

Note: The MPC01 Auxiliary Input Cable is made up of four color coded wires and provides two auxiliary Inputs and two auxiliary Outputs. The Auxiliary Input Cable is an optional connection and doesn't effect other operations of the MPC01.

1. Insert the Auxiliary Input Cable into its port as shown in Fig. 1.
2. The wires are coded as follows:

<u>WIRE</u>	<u>FUNCTION</u>	<u>DESCRIPTION</u>
BROWN.....	AUX.INPUT #1	GROUND ACTIVATED
RED.....	AUX.INPUT #2	GROUND ACTIVATED
ORANGE (GROUND)	AUX.OUTPUT #1	PROVIDES SWITCH RELAY
YELLOW (GROUND)	AUX.OUTPUT #2	PROVIDES SWITCH RELAY

Typical Input Connection: *K-9 Temperature Sensor, Burglar Alarm, etc.*

Typical Output Connection: *Gun Lock, Trunk Release, etc.*

(See Fig. 2 for better illustration of the use of the Auxiliary Input Cable)

When all of the necessary connections outlined in this manual have been completed and checked, the 5 Amp fuse can now be installed into the fuse block between the MPC01 and the battery.

To Adjust the Radio Repeat Levels:

Before using the MPC01, the Radio Repeat output volume must be adjusted to satisfactory operating levels. To adjust this level, a small, flat blade screwdriver is needed.

Radio Repeat Volume

Locate the Radio Repeat adjustment port (potentiometer) on the left, rear side of the MPC01 controller (Fig. 2). Set the volume level of the vehicle's two-way radio to its normal operating volume. Turn the Rotary Knob on the control head to RAD to activate Radio Repeat. Set the volume knob on the front of the MPC01 to approximately mid-level. Insert the screwdriver in the Radio Repeat adjustment port and turn in a clockwise direction to increase the sound to its maximum desired volume.

RADIO VOLUME
ADJUSTMENT SCREW

REAR VIEW

Fig.2

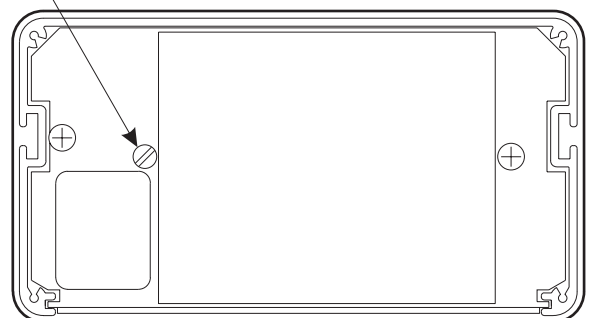


Fig.3

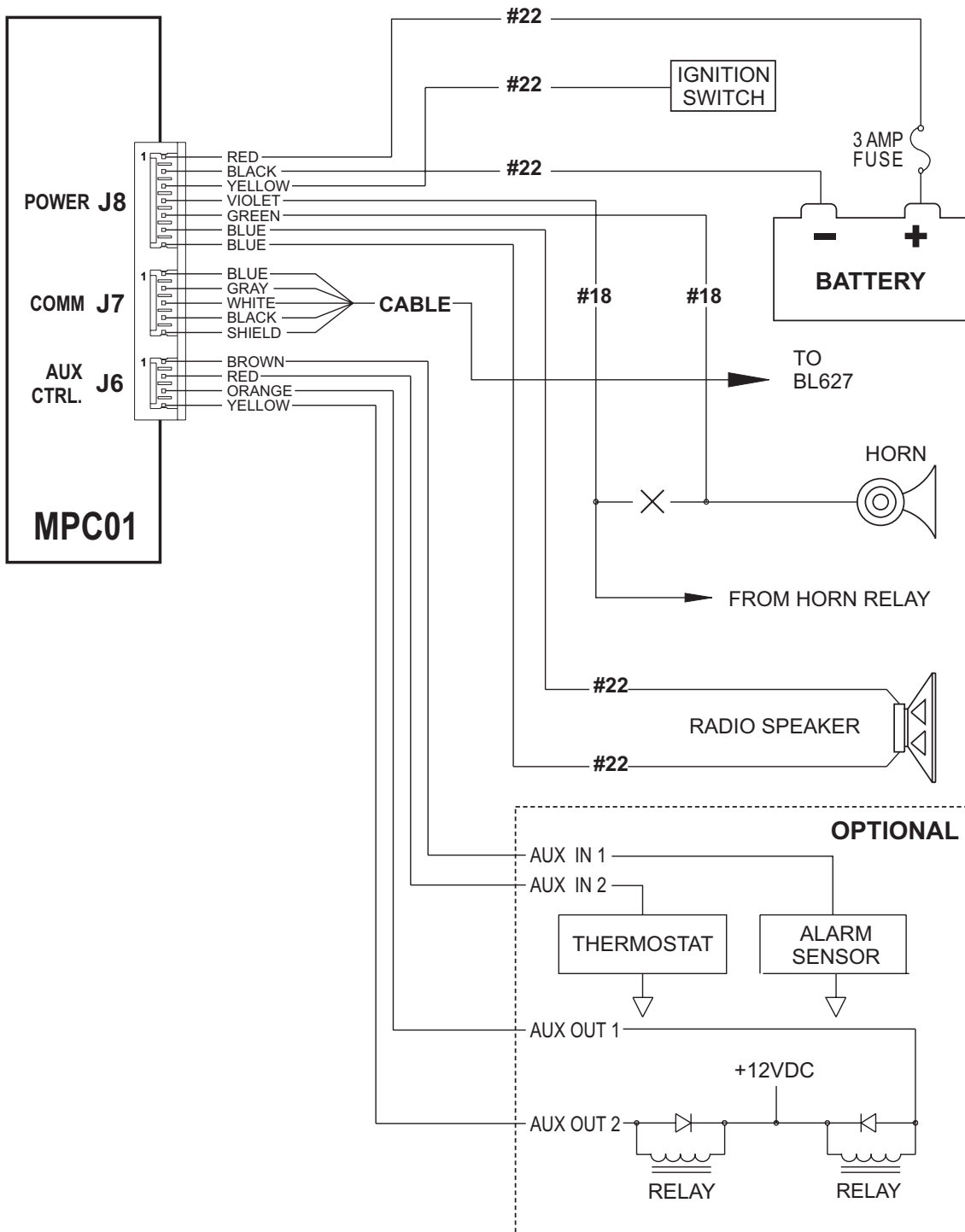
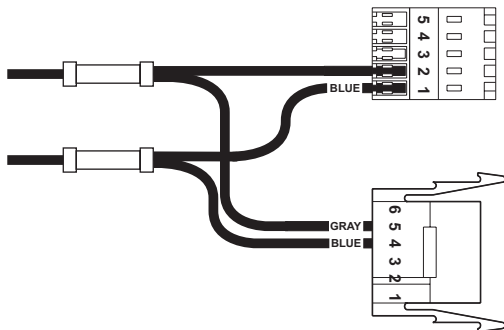


Fig.4



Installation of MGC__ with MPC__

1. Determine the location of both control heads.
2. Place MPC__ with 5-position communications cable.
3. Route Communications Cable towards MGC__, strip the insulation back to gain access to the BLUE and GRAY wires in the Communications Cable.
4. Splice the BLUE and GRAY wires from MGC__ with the BLUE and GRAY wires in the Communications Cable.
5. It is recommended to wrap entire splice with electrical tape.