

Electric Vehicle Charger

# Important Safety Instructions

**SAVE THESE INSTRUCTIONS** - This manual contains important instructions for the Magne Charge™ Inductive Charger Model WM7200. Carefully read these instructions and the charging instructions in your electric vehicle owner's manual before charging your electrical vehicle.

The following symbols may be found in this manual or on labels affixed to your inductive charger:



**WARNING**

This symbol warns you of the presence of dangerous voltages and the risk of electrical shock. To help avoid serious injury, follow the accompanying instructions.



**WARNING**

This symbol warns you of other risks of injury. To help avoid serious injury, follow the accompanying instructions.

**NOTICE:**

This symbol alerts you to other important operating instructions. Follow the accompanying instructions to help avoid damage to the charger and to assure proper operation.



Warning

- Do not operate your charger with a damaged output cable or coupler paddle. Contact your Magne Charge™ Sales and Service Representative for service immediately.



Warning

- Turn off input power to your charger at the circuit breaker panel before cleaning the unit. Refer to the Maintenance section of this handbook for additional information.



Warning

- Do not attempt to repair or service your inductive charger yourself. There are no user serviceable parts inside. Contact your Magne Charge™ Sales and Service Representative for service.



Warning

- Only use this charger to charge electric vehicles equipped with Magne Charge™ inductive charge ports. See the vehicle owner's handbook to determine if the vehicle is equipped with a Magne Charge™ inductive charge port.



Warning

- Make certain the charger's output cable is positioned so it will not be stepped on, tripped over, or otherwise subjected to damage or stress.



Warning

- **VENTILATION** - Some electric vehicles require an external ventilation system to prevent the accumulation of hazardous or explosive gases when charging indoors.

**This charger does not support external ventilation systems and will not charge vehicles that require ventilation.** Check the vehicle owner's handbook to determine if your vehicle requires ventilation during indoor charging.

**NOTICE:** Do not block the air intake or exhaust vents (bottom side). Allow 46 cm (18 inches) of clearance directly underneath the unit to allow for proper cooling. Blocking these vents may result in an over-temperature condition which could significantly increase charge times.

**NOTICE:** When removing the charge coupler from the vehicle's charge port, use the handle rather than pulling on the output cable.

**NOTICE:** Do not operate your charger if it has received a sharp blow, been dropped, or otherwise damaged in any way. Contact your Magne Charge™ Sales and Service Representative for service immediately.

**NOTICE:** Perform the Charging Circuit Interrupting Device (CCID) test each time the circuit breaker trips or is intentionally opened (Refer to the Charging Circuit Interrupting Device section).


## Introduction

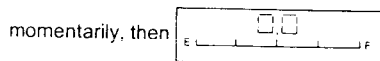
Welcome to the new and exciting world of electric vehicles. The Magne Charge™ Inductive Charger Model WM7200 is designed to operate in outdoor or indoor environments, and can be installed as a wall or floor mount unit. Your inductive charger is intended to be the primary charger for your electric vehicle. The charging operation is fully automatic and is described in the Operation section of this manual. Refer to your vehicle owner's handbook for charging time and additional information.

## Operation

The procedure describing how to charge your electric vehicle is listed below.

1. Perform the CCID test prior to operating the charger (Refer to the Charging Circuit Interrupting Device section).

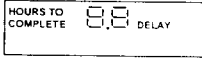
2. Remove the coupler paddle from its holster. The charger displays  momentarily, then



3. Open your vehicle's charge port access door (Refer to the vehicle owner's handbook).

4. Fully insert the coupler paddle into the charge port.

- Note that when properly inserted, the coupler paddle will snap into place with a solid click.
- Note that in some vehicles, it may be possible to lock the coupler paddle in the charge port. Refer to your vehicle owner's handbook for additional information.
- Note that the coupler paddle can be safely removed from the charge port at any time during charging. Your charger will automatically stop charging when the coupler paddle is removed.

5. Charging begins automatically. If  is displayed, refer to the Delay Timer section.

6. When the batteries are full, the "COMPLETE" and State of Charge segments will all be illuminated (Refer to the Charger Display section for all other displays).

7. Remove the charge coupler from the charge port. Make certain to firmly secure the coupler paddle back into its holster.

8. Close the charge port access door on your vehicle (Refer to the vehicle owner's handbook).

## Charging Circuit Interrupting Device (CCID)

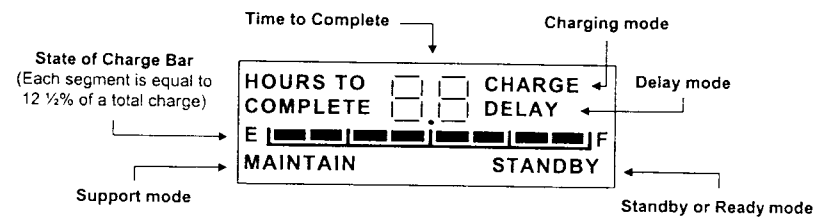
The CCID is a safety device that will disable utility power to your electric vehicle charger in the event that a loss of isolation is detected or if the grounding wire connected to the charger becomes disconnected.

How to test the CCID:

1. Press the reset button.
2. Press the test button. The reset button should pop out.
3. Press the reset button again to complete the test. If the CCID fails this test, do not use the charger. Contact your local Magne Charge™ Sales and Service Representative immediately.

## Charger Display

Note that not all of the displays may pertain to your vehicle. Refer to your vehicle owner's handbook for additional information.



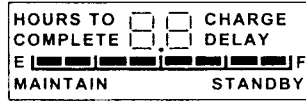
### Blank Display

Your charger power is turned off or the coupler paddle has not been removed from its holster.



### Display Test

Your charger is running a self test. All segments will be illuminated momentarily.



### Connect to Vehicle

Your charger is operational and is waiting for coupler paddle insertion.



### Standby Display

Your charger is in the standby mode (This is usually a momentary display).



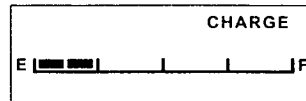
### Charging Display

Your charger is transferring power to the vehicle.



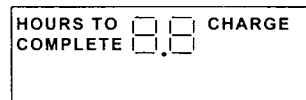
### Charging with State of Charge Information

Your charger is transferring power to the vehicle. Each segment represents 12 1/2% State of Charge. (This illustration indicates 25% State of Charge which is determined by the vehicle)



### Charging with Time to Complete Data

Your charger is transferring power to the vehicle. Estimated Time to Complete information is displayed to the nearest 1/10<sup>th</sup> of an hour.



### Charging with State of Charge and Time to Complete Data

Your charger is transferring power to the vehicle. Estimated Time to Complete information is displayed to the nearest 1/10<sup>th</sup> of an hour. Each segment represents 12 1/2% State of Charge. (This illustration indicates 50% State of Charge which is determined by the vehicle)



### Leveling or Support Mode

Your vehicle's battery pack is charged and your charger is either leveling (equalizing) the batteries or providing power to the auxiliary equipment in your vehicle.



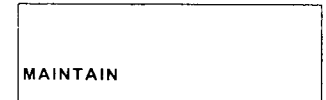
### Support Mode with Time to Complete Data

Your vehicle's battery pack has been charged and the display indicates the length of time to complete leveling (equalizing).



### Support Mode

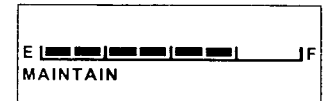
Your charger is transferring power to the vehicle and is providing power to the auxiliary equipment in your vehicle.



### Support Mode with State of Charge Information

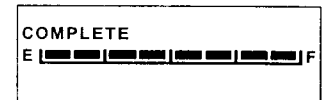
Your charger is transferring power to the vehicle and is providing power to the auxiliary equipment in your vehicle. Each segment represents 12 1/2% State of Charge.

(This illustration indicates 75% State of Charge which is determined by the vehicle)



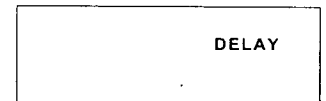
### Charge Complete Display

Your vehicle's battery pack is fully charged.



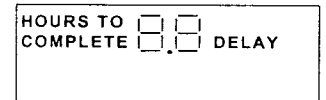
### Delayed Charging

Your charger is no longer transferring power to the vehicle because of a vehicle requested delay. Your vehicle's battery pack has not been fully charged. The word "DELAY" will flash.



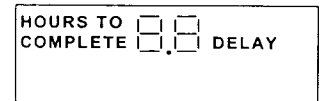
### Vehicle Requested Delay

Your charger has stopped transferring power to the vehicle because of a vehicle requested delay. The Time to Complete field represents the amount of time remaining until the delay is over. The word "DELAY" will flash.



### Charger Delay Timer

Charging has been delayed by the Delay Timer feature. The Time to Complete field represents the amount of time remaining until the delay is over. Refer to the Delay Timer section for additional information. The word "DELAY" will NOT flash.



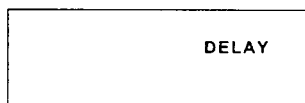
#### Charger Delay Timer OFF

The Delay Timer has just been pressed to turn OFF the timer. The word "CHARGE" will be displayed for one second. Refer to the Delay Timer section for additional information.



#### Charger Delay Timer ON

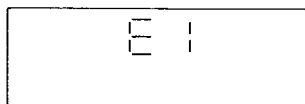
The Delay Timer has just been pressed to turn ON the timer. The word "DELAY" will be displayed for one second. Refer to the Delay Timer section for additional information.



The following displays are fault conditions. Refer to the Troubleshooting section of this manual for additional information.

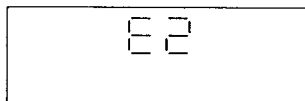
#### Check Charger

Your charger is no longer transferring power to the vehicle because of a charger fault (Refer to the Troubleshooting section).



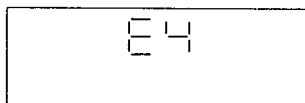
#### Check Vehicle

Your charger is no longer transferring power to the vehicle because of a vehicle fault (Refer to the Troubleshooting section).



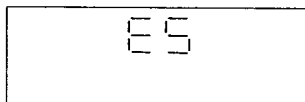
#### Ventilation Required Fault

Your vehicle requires external ventilation during charging. This charger does not support this function and will not charge the vehicle's battery pack (Refer to the Troubleshooting section).



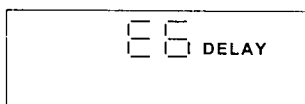
#### Input Power Brownout Fault

The utility power is below the normal operating voltage range (Refer to the Troubleshooting section).



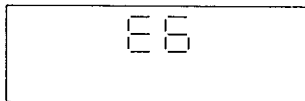
#### Charger Over-Temperature Fault

Your charger is no longer transferring power to the vehicle because of an over-temperature condition. Charging will resume once the temperature of the charger is within the operational limits. The word "DELAY" will flash (Refer to the Troubleshooting section).



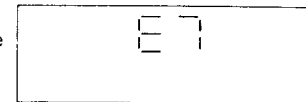
#### Charger Over-Temperature Fault Monitor

Your charger had experienced an over-temperature during the current charge session (Refer to the Troubleshooting section).



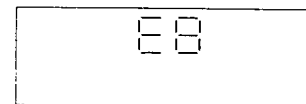
#### Delay Timer clock Battery Failure

The Delay Timer clock battery has failed. This message will appear for one second during the Display Test (Refer to the Troubleshooting section).



#### Vehicle Battery Pack Over-Voltage Fault

Refer to the Troubleshooting section.



## Delay Timer

Some utility power companies offer lower rates for charging during off-peak hours. The Delay Timer has been provided to allow you to take advantage of these lower rates. When this feature is enabled and the coupler paddle is inserted into the charge port, charging will be delayed until the current time of day is outside of the delay period. When disabled, charging will occur immediately upon coupler paddle insertion regardless of the time of day. Contact your local utility power provider for information regarding off-peak charging rates.

**NOTICE:** This charger also supports "Vehicle Delayed" charging. If your vehicle has the capability of initiating delayed charging, it is highly recommended that you use the vehicle's system in lieu of the charger's Delay Timer. Refer to the charging instructions in the vehicle owner's handbook for your vehicle's specific charging information.

**NOTICE:** In order for the Delay Timer to function properly, the Calendar Clock / Timer must be programmed correctly. Refer to the Calendar Clock / Timer section of this manual for programming instructions.

How to set the Delay Timer ON or OFF:

1. Remove the coupler paddle from the holster and wait for the Connect to Vehicle display to appear (Refer to the Charger Display section).
2. Press and release the delay button located on the bottom of the charger.
3. One of the following messages will be displayed:

**STANDBY** - This message will be displayed for 30 seconds if the Delay Timer has been turned OFF and the current time of day is inside of the delay period. After this time has elapsed, your vehicle can be charged immediately at any time (Refer to the Operation section).

**CHARGE** - The Delay Timer has been turned OFF. This message will be displayed for 1 second.

**DELAY** - The Delay Timer has been turned ON. This message will be displayed for 1 second.

4. If the Delay Timer is not in the desired charge mode, press and release the delay button to toggle between CHARGE and DELAY modes.
- Note that it is not necessary to reset the Delay Timer before each use. The charger will always remember whether you left it turned ON or OFF.
  - Note that the Delay Timer can be turned ON or OFF while you are charging.

## Calendar Clock / Timer

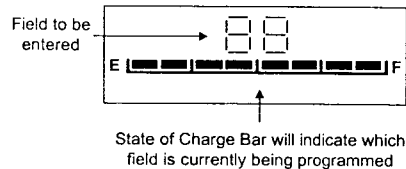
The Calendar Clock / Timer stores and maintains the date, time of day, and delay start and stop times. This information is needed by the charger in order to perform the delayed charging function (Refer to the Delay Timer section).

**NOTICE:** The Calendar Clock / Timer may drift over time. It is recommended that the time on this device be checked on an annual basis to verify its accuracy.

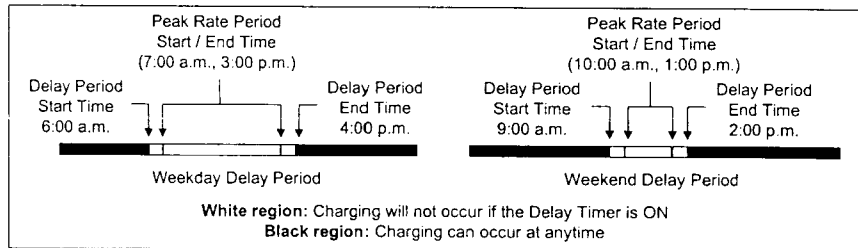
**NOTICE:** The Calendar Clock / Timer will not make any adjustments for daylight savings time. If your state has daylight savings time, you must reprogram the time of day so that the Delay Timer will function properly.

The following example illustrates how to program the Calendar Clock / Timer to the following values:

Date - June 03, 1998 (Wednesday)  
 Time of day - 2:05 p.m.  
 Delay period start time, weekday - 6:00 a.m.  
 Delay period end time, weekday - 4:00 p.m.  
 Delay period start time, weekend - 9:00 a.m.  
 Delay period end time, weekend - 2:00 p.m.



**NOTICE:** It is recommended that you set the delay period start time one hour before the peak rate period begins and the delay period end time one hour after the peak rate period ends. This will allow for any drift in time that may occur within the Calendar Clock / Timer. Refer to the figure below for more information.



### Step 1 - Entering the Calendar Clock / Timer Programming Mode

- Press and hold the delay button prior to removing the coupler paddle from the holster.
- Release the delay button 5 seconds after the coupler paddle has been removed.

**NOTICE:** Do not reinsert the coupler paddle into the holster until programming has been completed. Placing the coupler paddle back into the holster will exit the programming mode. This will return the charger back to its "normal" mode of operation.

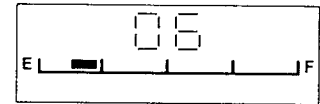
### Step 2 - Year (0-99)

- Press and hold the delay button until the correct year is displayed.
- Quickly press and release the delay button to switch to the next field.



### Step 3 - Month (1-12)

- Press and hold the delay button until the correct month is displayed.
- Quickly press and release the delay button to switch to the next field.



### Step 4 - Day of the Month (1-31)

- Press and hold the delay button until the correct day of the month is displayed.
- Quickly press and release the delay button to switch to the next field.



### Step 5 - Day of the Week

- Press and hold the delay button until the code corresponding to the correct day of the week is displayed.

Day codes:

1 - Sunday      2 - Monday      3 - Tuesday      4 - Wednesday  
 5 - Thursday    6 - Friday      7 - Saturday



- Quickly press and release the delay button to switch to the next field.

### Step 6 - Time of Day, Hours (0-23)

- Press and hold the delay button until the correct hour of the day (military time) is displayed.



How to convert the hour of day to military time.

If the hour of the day is:

12:00 a.m. - Subtract 12 from the hour of the day (00:00 military time).

1:00 a.m. to 12:00 p.m. - Do nothing (01:00 to 12:00 military time).

1:00 p.m. to 11:00 p.m. - Add 12 to the hour of the day (13:00 to 23:00 military time).

- Quickly press and release the delay button to switch to the next field.

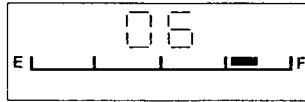
### Step 7 - Time of Day, Minutes (0-59)

- Press and hold the delay button until the correct minutes are displayed.
- Quickly press and release the delay button to switch to the next field.



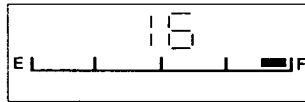
### Step 8 - Delay Period Start Time, Weekday (0-23)

- Press and hold the delay button until the correct hour of the delay period start time (military time) is displayed.
- Quickly press and release the delay button to switch to the next field.



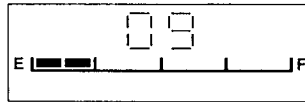
### Step 9 - Delay Period End Time, Weekday (0-23)

- Press and hold the delay button until the correct hour of the delay period end time (military time) is displayed.
- Quickly press and release the delay button to switch to the next field.



### Step 10 - Delay Period Start Time, Weekend (0-23)

- Press and hold the delay button until the correct hour of the delay period start time (military time) is displayed.
- Quickly press and release the delay button to switch to the next field.



### Step 11 - Delay Period End Time, Weekend (0-23)

- Press and hold the delay button until the correct hour of the delay period end time (military time) is displayed.
- Quickly press and release the delay button to switch to the next field.



## Maintenance

### Cleaning -



Warning

- Turn off your charger at the circuit breaker before cleaning.



Warning

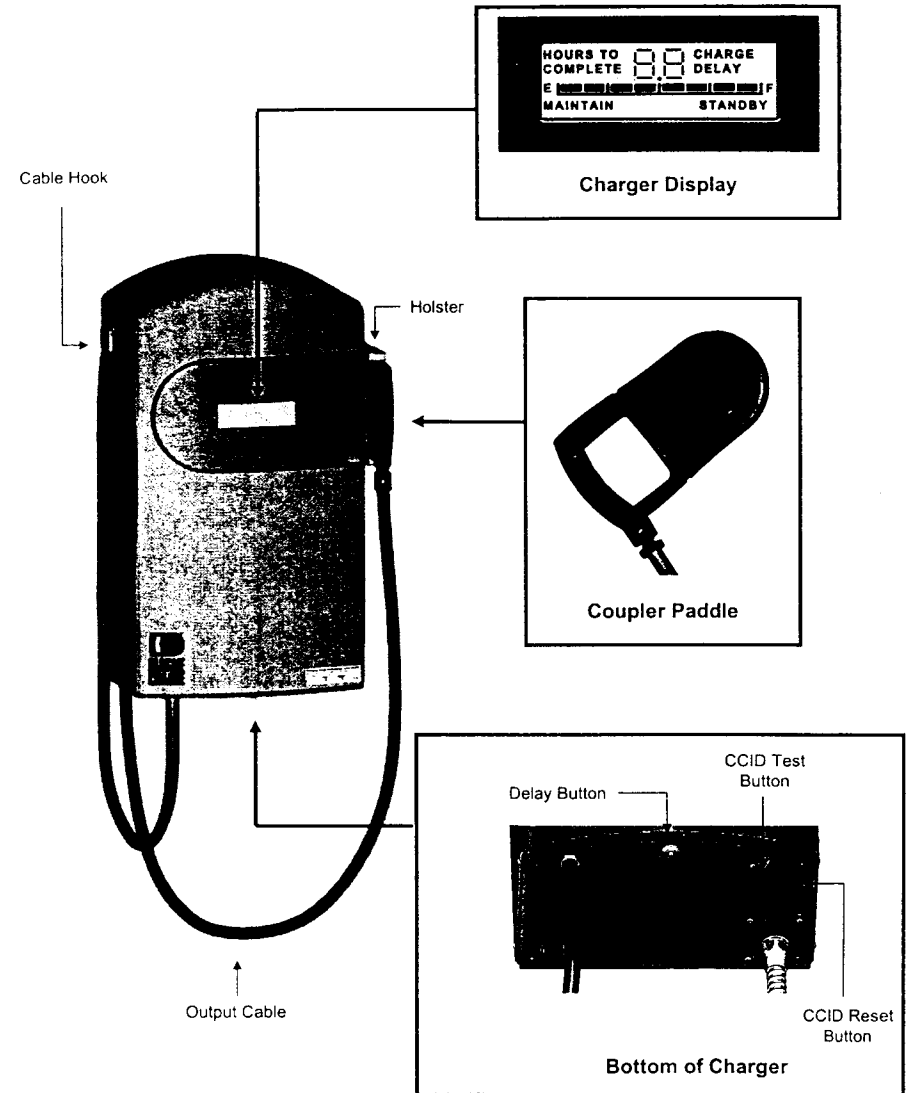
- To reduce the risk of electrical shock or equipment damage, do not allow any liquid to enter the unit while cleaning it.



Warning

- Clean your charger with a soft cloth lightly moistened with a mild detergent solution. Never use any type of abrasive pad, scouring powder, or flammable or non-flammable solvent such as alcohol or benzene.

## Features



# Troubleshooting

**CONDITION: The charger's display does not change when the coupler paddle is removed from the holster.**

*This indicates that your charger is not receiving power.*

- Check to see if your charger's CCID has tripped; if so, reset the CCID (Refer to the Charging Circuit Interrupting Device section).
- Check to see if the circuit breaker at the service panel servicing your charger has tripped; if so, reset the circuit breaker.
- Check to see if the display's amber backlight is on. If the display does not illuminate, contact your Magne Charge™ Sales and Service Representative for service.

**CONDITION: The charger displays "E1" or "E2" when attempting to charge the vehicle.**

*This indicates that the charger or the vehicle has detected a malfunction.*

- Remove the coupler paddle from charge port and replace it back into the holster to clear the fault.
- Insert the coupler paddle back into the charge port to resume charging.
- If an "E1" fault message persists, contact your Magne Charge™ Sales and Service Representative for service.
- If an "E2" fault message persists, contact your vehicle service representative.

**CONDITION: The charger displays "E4" when attempting to charge the vehicle.**

*This indicates that your vehicle requires an external ventilation system.*

- Contact your vehicle service representative for assistance.

**CONDITION: The charger displays "E5" when attempting to charge the vehicle.**

*This indicates that utility power is below the operational limits of the charger.*

- This fault will clear itself automatically once the utility power falls within the operational limits of the charger.
- If this fault persists, contact your Magne Charge™ Sales and Service Representative for service.

**CONDITION: The charger displays "E6 DELAY" or "E6" when attempting to charge the vehicle.**

*This indicates that the charger has exceeded its maximum operational temperature.*

- "E6 DELAY" indicates that an over-temperature condition has occurred. Charging will be suspended until the temperature of the charger falls within its operational limits. Note that the charger's fan will remain on to minimize the length of the delay.
- "E6" indicates that an over-temperature condition has occurred sometime during the charging session. The display will alternate between the "E6" error code and the current display.

**NOTICE:** Verify that the charger's air intake and exhaust vents located on the bottom of the unit are not blocked.

**NOTICE:** Allow of 46 cm (18 inches) of clearance directly underneath the charger to allow for proper airflow.

**CONDITION: The charger displays "E7" after removing the coupler paddle from the holster.**

*This indicates that the Calendar Clock / Timer battery has failed.*

- Contact your Magne Charge™ Sales and Service Representative for service.

**NOTICE:** The Delay Timer will be disabled when this fault code is displayed. The charger will function as if it is in the "CHARGE" mode (Refer to the Delay Timer section).

**CONDITION: The charger displays "E8" when attempting to charge the vehicle.**

*This indicates that an overvoltage fault has occurred in the vehicle.*

- Contact your vehicle service representative for service.



## Specifications

ITEM	CHARACTERISTIC
<b>Input</b>	
Voltage	208 - 240 VAC
Current	32 Amps (FLA)
Frequency	60 Hz
<b>Output</b>	
Power	6.6 kW (Max)
<b>Dimensions</b>	
Height	655 mm (26 in)
Width	403 mm (16 in)
Depth	311 mm (12 in)
Charge Coupler Cable Length	2.9 m (9 ft 7 in)
Weight	25 kg (55 lbs)
<b>Environment</b>	
Temperature	-18° C (0° F) to 50° C (122° F)
Indoor	Yes
Outdoor	Yes
<b>Installation Kits</b>	
Wall Bracket Kit	P/N 09351739
Floor Mount Kit	P/N 09351749

## FCC Information

The Magne Charge™ Inductive Charger Model WM7200 operates on a radio frequency subject to Federal Communications Commission (FCC) Rules.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

This product has been designed to protect against Radio Frequency Interference (RFI). However, there may be some instances when high powered radio signals or nearby RF producing equipment (such as digital phones, RF communications equipment, etc.) could affect operation. If interference to your charger is suspected, we suggest the following steps be taken before consulting your Magne Charge™ Sales and Service Representative for assistance:

1. Reorient or relocate nearby electrical appliances or equipment during charging.
2. Turn off nearby electrical appliances or equipment during charging.

Changes or modifications to this product by other than an authorized service facility could void authorization to use this equipment.

## General Information

**NOTICE:** Changes or modifications to this product by other than an authorized service facility could void the product warranty.

- This owner's manual includes the latest information available at the time of printing. General Motors Advanced Technology Vehicles (GM ATV) reserves the right to make changes to this product without further notices.
- If you have questions about the use of this product, contact your Magne Charge™ Sales and Service Representative.

# Limited Warranty

**ELECTRIC VEHICLE CHARGER PRODUCTS  
GM ADVANCED TECHNOLOGY VEHICLES**  
3050 West Lomita Boulevard  
Torrance, California 90509-2923  
1-800-482-6644

General Motors Advanced Technology Vehicles ("GM ATV") Group warrants this electric vehicle charger product to be free from defects in material, manufacture and design for a period of three (3) year(s)\* after date of first installation. If this product is defective in materials, manufacture or design during this warranty period, GM ATV will, at its option, repair or replace the product. Repair parts and/or replacement products may be either new or reconditioned at GM ATV's discretion. This limited warranty does not include service to repair damage from improper installation, improper connections with peripherals, external electrical fault, accident, disaster, misuse, abuse or modifications to the product not approved in writing by GM ATV. Any service repair outside the scope of this limited warranty shall be at applicable rates and terms then in effect.

**All other expressed and implied warranties for this product including the warranties of merchantability and fitness for a particular purpose, are hereby disclaimed. Some states do not allow the exclusion of implied warranties or limitations on how long an implied warranty lasts, so the above limitation may not apply to you.**

If this product is not as warranted above, your sole and exclusive remedy shall be repair or replacement as provided above. In no event will GM ATV, any of its authorized sales and service representatives, or its parent company be liable to customer or any third party for any damages in excess of the purchase price of the product. This limitation applies to damages of any kind including any direct or indirect damages, lost profits, lost savings or other special, incidental, exemplary or consequential damages whether for breach of contract, tort or otherwise or whether arising out of the use of or inability to use the product, even if GM ATV or an authorized GM ATV representative or dealer has been advised of the possibility of such damages or of any claim by any other party. Some states do not allow the exclusion or limitation of incidental damages for some products, so the above limitation or exclusion may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which may vary from state to state.

**To obtain warranty service:**

Call your nearest authorized service provider or GM ATV at the above number. You will receive information as to how service for the product will be provided.

If the product is installed at a location which is more than 75 miles from the nearest authorized service provider business location, you may be required to mail or ship the product to a designated service center or pay for a service technician to provide service at the installation site.

If you mail or ship the product in for service, you must insure the product, prepay all shipping charges, and properly pack it for shipment in its original shipping container or its equivalent. You are responsible for all loss or damage that may occur in transit.

\* You must provide proof of purchase of the product and the purchase date before any warranty service can be performed.

**GM ADVANCED TECHNOLOGY VEHICLES**

**Torrance, California 90509-2923**

**1-800-482-6644**



Listed  
EV Battery Charger  
7M60

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