



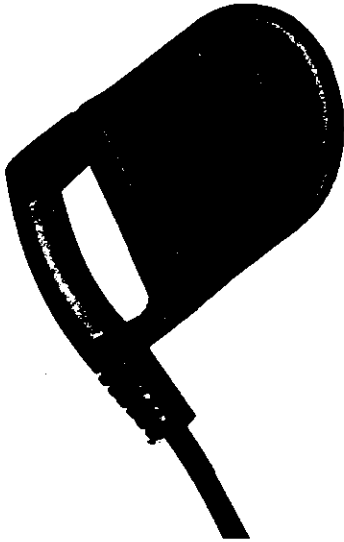
EXHIBIT 8

OWNER'S MANUAL

FCC ID: NZM0603TR

PRELIMINARY

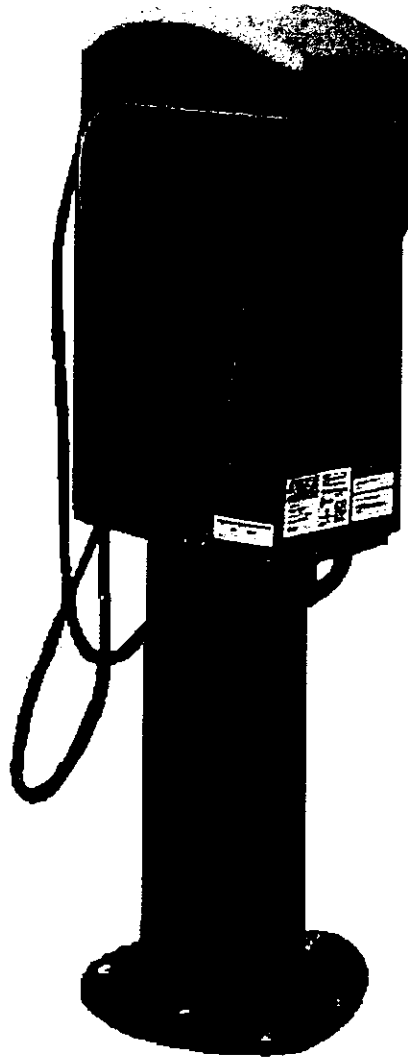
Smart M.



WM7200

Inductive Charger

Owner's Manual



Electric Vehicle Charger

PRELIMINARY

**MAGNE
CHARGE** TM
Smart Power for Electric Vehicles

PRELIMINARY

FCC ID: NZM0603TR

GM ADVANCED TECHNOLOGY VEHICLES

Torrance, California 90509-2923

1-800-482-6644



Listed
EV Battery Charger
7M60

MagneCharge™ is a trademark of GM ATV

P/N 16256709
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PRELIMINARY

Important Safety Instructions

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

(Carefully read these instructions before installing this charger.)

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



This symbol alerts the installer to important operating and maintenance (servicing) instructions.



This symbol alerts the installer to the presence of dangerous voltages which may constitute a risk of electrical shock.

Note to Installer: Make certain you leave these instructions with the owner of this unit.

Note to Owner: Keep these instructions for your MagneCharge™ Sales and Service Representative to reference in the future.

The Inductive Charger Model WM7200 should only be installed by an authorized electrician in accordance with all local electrical codes and ordinances and the instructions contained in this installation guide. Before beginning the installation process, please read this installation guide completely, including the important safety instructions.



Disconnect the power to the charger branch circuit at the service panel before installation.

Caution

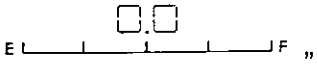
Caution: Do not install the charger in a location that exposes it to extreme heat.

Introduction

Welcome to the new and exciting world of electric vehicles. The MagneCharge Inductive Charger Model SCM7200 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 handbook. Refer to your vehicle owner's handbook for charging times and additional information.

Operation

The charging procedure is described in this section. The charger also supports additional functions, such as "vehicle delayed charging:" which is an optional feature on some vehicles. Refer to charging instructions in the vehicle owner's handbook for your vehicle's specific charging information.

1. Perform the CCID test prior to operating the SCM. (See CCID section in this manual)
2. Remove the coupler paddle from its holster.
3. The charger displays "  " momentarily during the display test.
4. After the completion of the display test the charger will display "  "
5. Open your vehicle's charge port access door (refer to the vehicle owner's handbook).
6. Fully insert the coupler paddle into the charge port.

Note: When properly inserted, the coupler paddle will snap into place with a solid click.

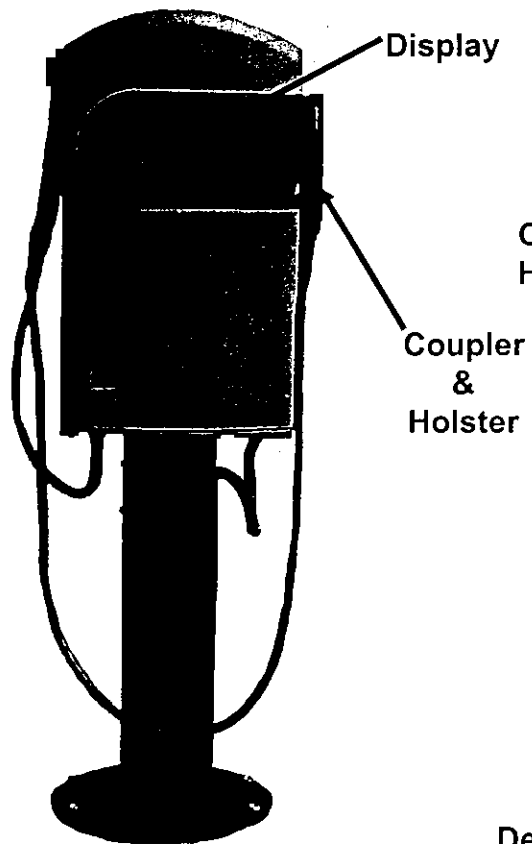
Note: In some vehicles it may be possible to lock the coupler paddle in the charge port. Refer to your vehicle owner's handbook for additional information.

Note: 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.

7. Charging begins automatically.

Features

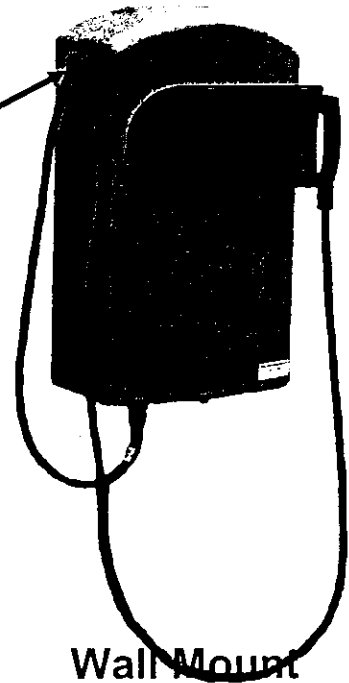
FCC ID: NZM0603TR



Floor Mount

Cable
Hook

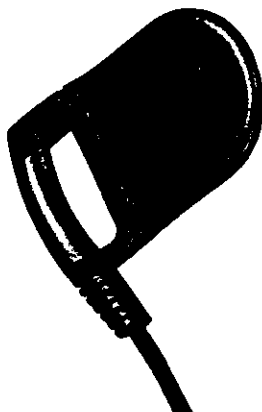
Display
Coupler
&
Holster



Wall Mount

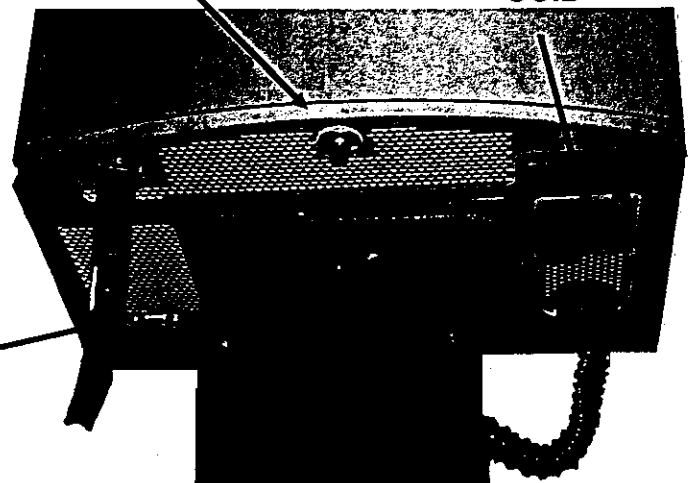
Delay
Enable
Button

Charging Circuit Interrupt Device.
"CCID"



Coupler
Paddle

Optional
Interface



Bottom View

Charger Display

FCC ID: NZM0603TR

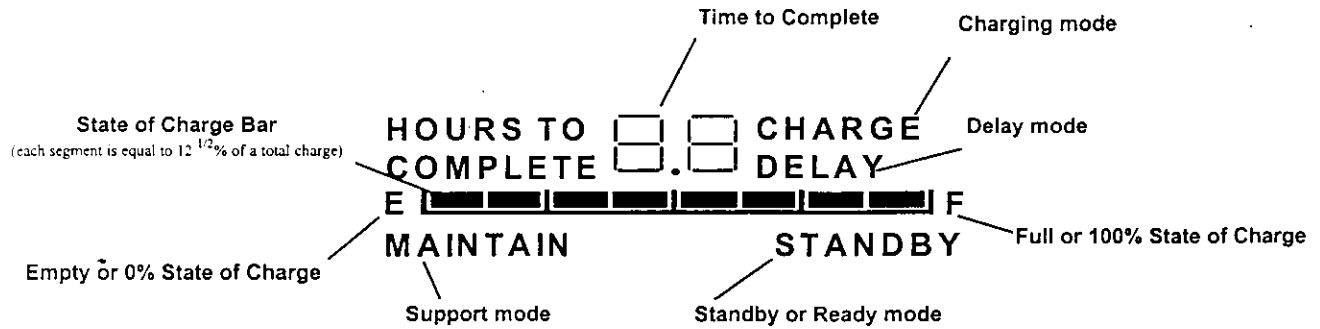
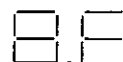
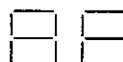


Figure1 - Charger Display

Table 1 Charger Display Messages

Condition Indicated	Message Displayed
Blank Display Charger power is turned off	Blank display
Display Test When the coupler paddle has been removed from the holster, all segments of the display are illuminated momentarily.	HOURS TO 00 CHARGE COMPLETE 00 DELAY E F MAINTAIN STANDBY
Connect to Vehicle Charger is waiting for coupler paddle insertion (No status bar segments illuminated)	00 E F
Standby Display Charger is in the Standby mode (This display is usually a momentary display).	STANDBY
Charging Display The vehicle is charging.	CHARGE
Charging Display with State of Charge Information. The vehicle is charging and the State of Charge (SOC) is displayed in increments of 12 1/2% State of Charge (SOC).	CHARGE E F This illustration indicates 100% SOC which is determined by the vehicles.
Charging with Time to Complete Data The vehicle is charging and the estimated Time to Complete (TTC) is displayed to the nearest 1/10 th hour.	HOURS TO 00 CHARGE COMPLETE 00

Table 1 Charger Display Messages
(continued)

Charging with State of Charge and Time to Complete Information The vehicle is charging and the charger displays the SOC and estimated TTC.	HOURS TO CHARGE COMPLETE  E  F
Leveling or Support Mode Refer to your vehicle's Owner's Manual for this function.	COMPLETE E  F MAINTAIN
Support Mode with Time to Complete Refer to your vehicle's Owner's Manual for this function.	HOURS TO CHARGE COMPLETE  E  F MAINTAIN
Support Mode Refer to your vehicle's Owner's Manual for this function.	MAINTAIN
Support Mode with State of Charge Information Refer to your vehicle's Owner's Manual for this function.	E  F MAINTAIN
Charge Complete Display The normal charge completion display.	COMPLETE E  F
Delayed Charging Charger has been commanded OFF by the optional external interface or charging has been terminated by the vehicle even though the battery pack charging has not been completed.	DELAY (DELAY flashes once per second)
Vehicle Requested Delay The vehicle has requested delayed charging. The Hours to Complete displays the length of the delay.	HOURS TO CHARGE COMPLETE  DELAY (DELAY flashes)
Utility Timer Delay Charging is delayed by the Utility Timer feature. You may turn this delay ON or OFF by depressing the DELAY ENABLE button (white button) located on the bottom of the charger.	HOURS TO CHARGE COMPLETE  DELAY (DELAY does not flash)

Charger Display

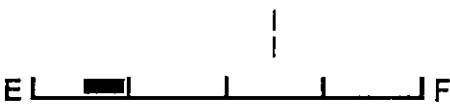
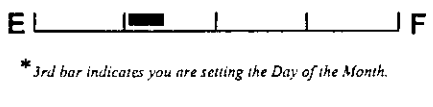
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Table 1 Charger Display Messages (continued)

Delay Timer	
Utility Delay Timer OFF User just pressed the Delay-Enable switch (white button) to turn "OFF" the Delay timer.)	CHARGE (Display for 1 second when the Delay Enable Switch has been depressed)
Utility Delay Timer ON User just pressed the Delay-Enable switch (white button) to turn "ON" the Delay timer.)	DELAY (Display for 1 second when the Delay Enable Switch has been depressed)
FAULT MESSAGES	
Check Charger This fault message indicates that a charger fault has occurred and charging has been terminated (See Trouble-shooting section of this manual).	E 1
Check Vehicle This fault message indicates that a vehicle fault has occurred and charging has been terminated (See Trouble-shooting section of this manual).	E 2
Ventilation Required Fault Vehicle attempting to charge has been identified as a vehicle requiring external ventilation system. Charger will not initiate battery charging (See Trouble-shooting section of this manual).	E 4
Input Power Brown out Fault Utility power is below normal operating voltage (See Trouble-shooting section of this manual).	E 5
Charger Over-Temperature Fault Charger has stopped delivering power due to an over-temperature problem. Charger will resume charging when the temperature of the charger cools within operational limits (See Trouble-shooting section of this manual).	E 6 DELAY (Display flashes for once per second)
Charger Over-Temperature Fault Monitor Charger had an over-temperature fault sometime during the current charge session (See Trouble-shooting section of this manual).	E 6
Delay Timer Clock Battery Failure. This fault message will appear for one (1) second during the Display Test. (See Trouble-shooting section of this manual)	E 7
Vehicle's Battery Pack Over-voltage Fault (See Trouble-shooting section of this manual)	E 8

How to Set the Calendar Clock / Timer

PRELIMINARY

Step	Timer Function	Calendar / Clock Function to Set	Display
1	Year (0-99)	1. Press and hold the Delay Enable Button (white button) while removing the coupler paddle from the holster. 2. Hold the button until the first bar on the SOC gauge is illuminated, then release. 3. Press and hold the white button until the last two digits of the desired year are displayed, then release the button. 4. Press and release the white button. The Year is now entered into the charger and the display advances to selection (Month).	<i>*Digit indicates Year (00 -99)</i>  <i>*1st bar indicates you are setting the Year.</i>
2	Month (1-12)	5. Press and hold the white button until the desired Month is displayed, then release the button. 6. Press and release the white button. The Month is now entered into the charger and the display advances to next selection (Day of Month).	<i>*Digit indicates Month (1 -12)</i>  <i>*2nd bar indicates you are setting the Month.</i>
3	Day of Month (1-31)	7. Press and hold the white button until the desired Day of the Month is displayed, then release the button. 8. Press and release the white button. The Day of the Month is now entered into the charger and the display advances to next selection (Day of the Week).	<i>*Digit indicates Day of the Month (1 -31)</i>  <i>*3rd bar indicates you are setting the Day of the Month.</i>
4	Day of Week 1=Sunday 2=Monday 3=Tuesday 4=Wednesday 5=Thursday 6=Friday 7=Saturday	9. Press and hold the white button to select the desired Day of the Week, then release the button. 10. Press and release the white button. The Day of the Week is now entered into the charger and the display advances to next selection (Hour).	<i>*Digit indicates Day of the Week (1 -7)</i>  <i>*4th bar indicates you are setting the Day of the week.</i>
5	Hour Military (0 to 23)	11. Press and hold the white button to adjust Hour display, then release the button. 12. Press and release the white button. The Hour is now entered into the charger and the display advances to next selection (Minute). Slide Coupler Paddle into the holster.	<i>*Digit indicates Hour (0 -23)</i>  <i>*5th bar indicates you are setting the Hour of Day.</i>

How to Set the Calendar Clock / Timer

FCC ID: NZM0603TR

PRELIMINARY

6	Minute (0 to 59)	13. Press and hold the white button to adjust the Minute display, then release the button. 14. Press and release the white button. The Minutes is now entered into the charger and the display advances to next selection (Delay).	*Digit indicates Minutes (0 -59) E F *6th bar indicates you are setting the Minutes.
7	Weekday Start of Delay Hour Military(0 to 23)	15. Press and hold the white button to adjust the Start of Delay (HOUR), then release the button. 16. Press and release the white button. The Weekday Start of Delay (HOUR) is now entered into the charger and the display advances to next selection (Weekday End of Delay Hour).	*Digit indicates Hour (0 -23) E F *7th bar indicates you are setting the Weekday Start of Delay Hour
8	Weekday End of Delay Hour Military (0 to 2300)	17. Press and hold the white button to adjust the Weekday End of Delay (Hour) then release the button. 18. Press and release the white button. The End of Delay (Hour) is now entered into the charger and the display advances to next selection (Weekend Start of Delay Hour).	*Digit indicates Hour (0 -23) E F *8th bar indicates you are setting the Weekday End of Delay Hour
9	Weekend Start of Delay Hour Military (0 to 23)	19. Press and hold the white button to adjust the Weekend Start of Delay (Hour) then release the button. 20. Press and release the white button. The Weekend Start of Delay (Hour) is now entered into the charger and the display advances to next selection (Weekend End of Delay Hour).	*Digit indicates Hour (0 -24) E F *1st and 2nd bars indicates you are setting the Weekend Start of Delay
10	Weekend End of Delay Hour Military (0 to 23)	21. Press and hold the white button to adjust the Weekday End of Delay (Hour) then release the button. 22. Press and release the white button. The Weekday End of Delay (HOUR) is now entered into the charger and the display advances to next selection (Year).	*Digit indicates Hour (0 -23) E F *3rd and 4th bars indicates you are setting the Weekend End of Delay

Note: Some Utility Companies offer lower rates for charging during off-peak hours. The Utility Delay Timer Feature has been provided to allow you to take advantage of those lower rates. However if you want to charge immediately, you may always disable the Utility Timer Delay. Contact your local utility company to find out if they offer lower rates during off-peak hours, then follow the directions below.

How to Set the Delay Timer

FCC ID: NZM0603TR

1. Remove the coupler from the holster again and wait for the "Connect to Vehicle" display. (Refer to the Charger Display section.)
2. Now press and release the Delay Enable Button located on the bottom of the charger.
3. The charger will respond by displaying one of the following two messages for about one second:
 - CHARGE - This means that the Utility Delay Timer Feature is now Off.
 - DELAY - This means that the Utility Delay Timer Feature is now On.
4. Each additional press of the Delay Enable Button will toggle the Utility Delay Timer Feature On or Off, and the charger will always remember whether you left it turned On or Off. You can always change it again some other time.

Note: If you plug the charger into the vehicle charge port during the Utility Delay Period with the Delay Feature turned On, then charging will be delayed, but charging will begin automatically when the delay period expires.

Note: You can also turn the Utility Delay Timer Feature On or Off while you are charging. If the current time of day is inside of the delay period that you have defined for that day, then charging will stop and start each time you turn the Delay Feature On or Off by pressing the Delay Enable button.

Note: If on any given day you find that charging is delayed, but you want to charge immediately, then turn the Utility Delay Timer Feature Off, and leave it Off until the vehicle receives the desired amount of charge. You may then want to turn the Utility Delay Timer Feature back On to take advantage of the reduced rates for the days that follow.

Troubleshooting

FCC ID: NZM0603TR

*To clear the charger display of any fault message place the coupler paddle into the holster.

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

1. Check to see if the display's backlight is on. When the coupler is removed from the holster the display's background should be illuminated with a faint orange light. If the display does not illuminate call your local *MagneCharge™ Sales and Service Representative*. **Note:** *During the daylight hours the orange back light will not be seen unless the display is shielded from the day light.*
2. Check to see if your charger's CCID has tripped (refer to the Features section); if so, reset the CCID. *If the CCID trips do not use your charger. Call your local MagneCharge™ Sales and Service Representative.*
3. Check to see if the circuit breaker at the service panel has been tripped; if so, reset the circuit breaker. *Call your local MagneCharge™ Sales and Service Representative.*

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

This indicates your charger has detected a fault condition in the charger or vehicle.

1. This fault can be cleared by placing the coupler back into the holster and removing it again.
2. Remove coupler from holster and insert into your vehicle's charging inlet.
3. If the charger fails to operate or the E1 fault message persists, *Call your MagneCharge™ Sales and Service Representative.*
4. If the charger fails to operate or the E2 fault message persists, *Call your vehicles service representative.*

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

This indicates your vehicle is requires ventilation to charge.

1. The vehicle has been identified as a vehicle that requires an external ventilation system to charge. *Call your vehicle's Sales and Service Representative to resolve this problem.*

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

This indicates utility power may be below the operational limits of the charger

1. Push the RESET Button on the CCID. (see **Features** section for the location of the Reset button)
2. This fault will clear automatically when utility power returns to normal.
3. If this fault persists, *Call your MagneCharge™ Sales and Service Representative for assistance.*

Troubleshooting

FCC ID: NZM0603TR

CONDITION: The charger displays “E6 DELAY” or “E6” and when attempting to charge the vehicle.

This indicates the charger has over-heated.

1. “E6 DELAY” indicates the charger has delayed the charging of the vehicle’s battery pack. This allows the charger to cool to normal operating temperature before continuing charging. The charger’s cooling fan will stay on to cool the charger.
2. “E6” will alternate with other displays after an over-temperature condition. This is to inform the user that an over-temperature condition has occurred during the charging session.
 - Do not install the charger in a location that exposes it to extreme heat.
 - Insure that the charger air intake and exhaust vents are not clogged and have at least 46 cm (18in) of clearance.

If this condition persists call your local MagneCharge™ Sales and Service Representative

CONDITION: The charger displays "E7" when attempting to charge the vehicle.

This indicates the charger's Delay Timer Clock battery has failed.

1. The charger will function normally, except the Utility Delay Timer will be disabled.

Call your local MagneCharge™ Sales and Service Representative for service..

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

This indicates a fault has occurred in the charger or vehicle.

Call the vehicle's service representative for service.

Maintenance



Warning

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



2. Turn charger off at the circuit breaker before cleaning.
3. Clean your charger with a soft cloth lightly moistened with mild detergent solution. Never use any type of abrasive pad, scouring power or flammable or non-flammable solvent such as alcohol or benzene.

Specifications

FCC ID: NZM0603TR

INDUCTIVE CHARGER - MODEL SCM7200:

ITEM	CHARACTERISTICS
Input	
Voltage	208 - 240 VAC
Current	32 Amps (FLA)
Frequency	60 Hz
Output	
Power	6.6 kW (Max)
Dimensions	
Height	655.2 cm (25.8 in.)
Width	403.3 cm (15.8 in.)
Depth	310.8 cm (12.4 in.)
Charge Coupler Cable Length	2.6 m (9 ft. 7 in.)
Weight	25 Kg (55.2 lbs.)
Environment	
Temperature	-18° C (0°F) to 50° C (111°F)
Indoor	Yes
Outdoor	Yes
Optional Equipment	
*Wall Bracket Kit	P/N 09351739
*Floor Mount Kit	P/N 09351749
**External Interface Control Kit(Optional)	P/N 09351759

*A wall mount bracket or floor mount pedestal must be purchased to properly install the charger.

CCID Test Procedure

The CCID is Ground Fault Circuit Interrupter "GFCI" designed for charging electric vehicles.

1. Depress the CCID TEST button See "FEATURES" section of this manual.	An audible "CLICK" is heard. <i>If the coupler paddle has been removed from the holster the display's "Orange" back light will turn off and the E5 will be displayed until the couple paddle is re- inserted into the holster.</i>
2. Depress the CCID RESET button	Power is restored to the unit. <i>If the coupler is not in the holster the SCM's display will indicate a power up display and the orange back light will be on. If power has not been restored to the charger do not attempt to use or repair the charger. Call your local MagneCharge™ service representative.</i>
3. End of CCID TEST	The charger is ready for use.

FCC Information

FCC ID: NZM0603TR

The MagneCharge™ 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 MagneCharge™ 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.

Notices

1. This Owner's manual includes the latest information available at the time of printing. GM ATV reserves the right to make changes to this product without further notices.
2. Changes or modifications to this product by other than an authorized service facility could void the product warranty.
3. If you have questions about the use of this product, contact your MagneCharge™ Sales and Service Representative.

Limited Warranty

FCC ID: NZM0603TR

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 ("GMATV") Group warrants this electric vehicle charger product to be free from defects in material, manufacture and design for a period of 3 year(s)* after date of first installation. If this product is defective in materials, manufacture or design during this warranty period, GMATV will, at its option, repair or replace the product. Repair parts and/or replacement products may be either new or reconditioned at GMATV'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 GMATV. 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 GMATV, or any of its authorized sales and service representatives, 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 GMATV or a GMATV authorized sales and service representative 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 GMATV 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 representative's 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.