

# LRP Quadra Charger

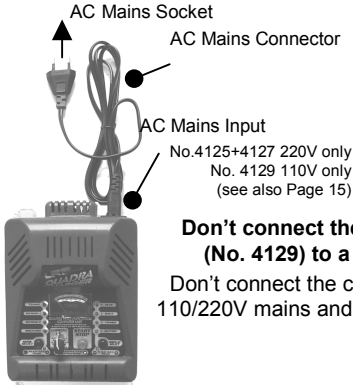
No. 4125 (12V/220V only - Euro-Connector)  
 No. 4127 (12V/220V only - GB-Connector)  
 No. 4129 (12V/110V only - US/Japan-Connector)

Dear Customer,  
 thank you for purchasing this LRP product. Please read these instructions carefully in order to gain maximum performance.

## Connection

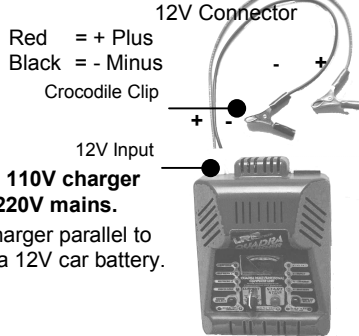
### 110V-220V Mains

Plug the AC connector into the AC mains input and a mains socket.



### Connection to a 12V Car Battery

Plug the 12V connector into the 12V input and connect the crocodile clips to a car battery. (minimum 36Ah)



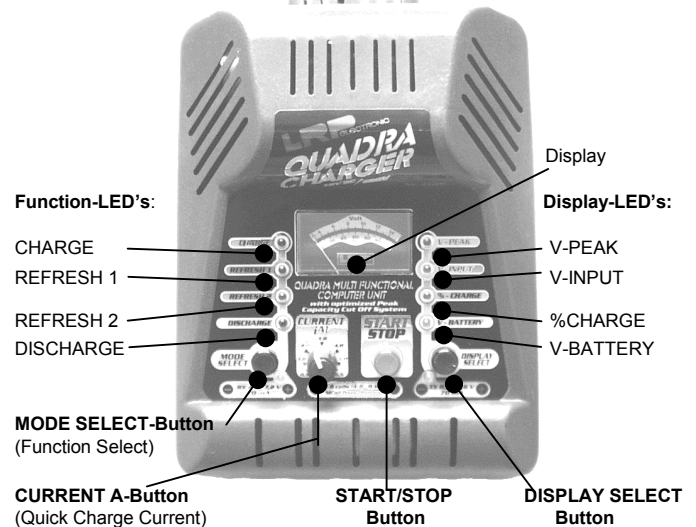
**Don't connect the 110V charger (No. 4129) to a 220V mains.**  
 Don't connect the charger parallel to 110/220V mains and a 12V car battery.

## Automatic Function Check

- After being plugged in a short automatic function check is run for the cooling fan and all LED's except the RX- and TX-LED.
- The CHARGE-LED is red. The charger is ready to use.
- The display shows the DC-Input Voltage (V-INPUT) being usually 11-15V (also when in use with the mains supply).

1

## Functions and Displays



- **MODE SELECT-Button (Function Select)**  
 Press button to select the different functions (only when no function is in use). The LED of the chosen function is on.  
 CHARGE – Slow and Quick Charge  
 REFRESH 1 – Single Charge/Discharge Cycle  
 REFRESH 2 – Triple Charge/Discharge Cycle  
 DISCHARGE – with 4 Ampere
- **CURRENT A-Button**  
 to adjust the quick charge current (POWER-Output only)
- **START/STOP-Button for:**  
 QUICK CHARGE, REFRESH and DISCHARGE-Functions
- **DISPLAY SELECT-Button** - Press to select different display functions

2

## Displays

Press the DISPLAY SELECT-Button to select different display functions. The LED indicates the chosen function.

- **V-PEAK (Volt):**  
 Displays and stores the highest battery voltage during quick charge and the lowest voltage during discharge.
- **V-INPUT (Volt):**  
 Displays the charger's DC-Input Voltage. This is important when charging with a 12V-DC car battery.
- **%-CHARGE:**  
 Displays the battery capacity in per cent.  
 Quick Charge: 0% to 100-120% charged capacity  
 Discharge: 100% to 0% remaining capacity
- **V-BATTERY (Volt):**  
 Displays the actual voltage of the battery being charged.

## Battery Connection

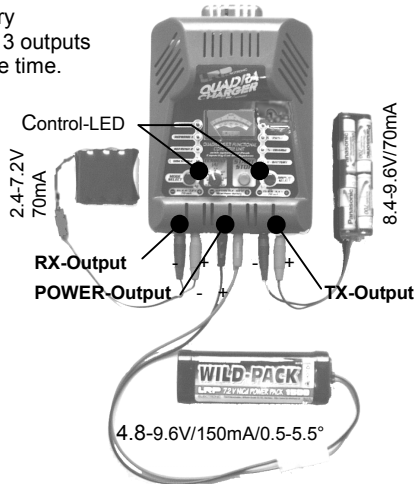
- Connect a Ni-Cad battery to the proper output. All 3 outputs can be used at the same time.

- Watch for right polarity:  
 Red = + Plus.  
 Black = - Minus

3 outputs are available:

1. RX-Output
2. POWER-Output
3. TX-Output

For best results use the proper output (see pages 4/5).



3

## Slow Charge (Trickle)

- The slow charge mode is not limited in time and not stopped automatically. Please refer to the battery manufacturer's information regarding charging time.
- The slow charge mode is recommended for Ni-Cad batteries that are not suitable for quick charge or to refresh old Ni-Cads.

3 different outputs are available for different Ni-Cad types.

### 1. RX-Output

- 2-6 Ni-Cad cells with 2.4-7.2V, 70mA charge current  
 Recommended for RC-receiver packs, Walkman-Ni-Cads (2-3 cells/ 2.4-3.6V) and any kind of Ni-Cad battery with 50-700mAh.  
 – Connect Ni-Cad battery – the slow charge starts automatically.  
 – The small Control-LED is on to indicate the charge.  
 – No function when reverse connected, the Control-LED is off.

### 2. POWER-Output (Ni-Cad-Power-Battery)

- 4-8 Ni-Cad cells with 4.8-9.6V, 150mA charge current  
 Recommended for RC-receiver packs, RC-power packs, electric tools and any kind of Ni-Cad battery with 500-4600mAh.  
 – Connect Ni-Cad, select CHARGE with the MODE SELECT-Button.  
 – Slow charge starts automatically with a peep tone.  
 – The Ni-Cad battery voltage is displayed (V-BATTERY).  
 – The CHARGE-LED is red.  
 – When reverse connected, the Ni-Cad is discharged.

### 3. TX-Output

- 7-8 Ni-Cad cells with 8.4-9.6V, 70mA charge current  
 Recommended for RC-transmitter packs and any kind of Ni-Cad battery with 500-1100mAh.  
 – Connect Ni-Cad battery – the slow charge starts automatically.  
 – The small Control-LED is on to indicate the charge.  
 – The TX-Output is mainly for the use with the mains supply.  
 – When used with a 12V car battery be sure that it is fully charged to have as high as possible input voltage. Otherwise the charge current might drop too low.  
 – No function when reverse connected, the Control-LED is off.

4

### Recommended Slow Charge Times

The charge times are for completely discharged Ni-Cad batteries.

#### Power-Output – 150mA

Battery Capacity	Slow Charge Time
500 mAh	About 4.5 hours
1000 mAh	About 9 hours
1500 mAh	About 14 hours
2000 mAh	About 16 hours

#### RX- and TX-Output – 70mA

Battery Capacity	Slow Charge Time
50 mAh	About 1 hour
250 mAh	About 5 hours
700 mAh	About 14 hours
1000 mAh	About 20 hours
1200 mAh	About 24 hours

The charge times are for:  
4-8 cells at the POWER-Output  
2-6 cells at the RX-Output  
7-8 cells at the TX-Output

### Important Information

- All charge outputs can be used at the same time.
- Bad mains/empty car battery:  
Quick charging at the POWER-Output has top priority when all 3 outputs are in use. If the available input voltage is dropping too low, the charge current of the RX- and TX-Outputs is reduced. Their Control-LED's are flashing then.
- When slow charging the cooling fan stays off.
- Watch out for good connections. Bend connectors into shape after some time.

5

### Trickle Charge when Quick Charge is finished

- When the battery is fully quick charged the QUADRA-CHARGER continues with a reduced 0.15 Ampere trickle rate to keep up voltage and capacity of the battery. Different cell capacities are equalized.
- The CHARGE-LED is green.
- The trickle charge mode is not limited in time.
- Repeated triple peep tones indicate the end of the quick charge. The battery can be disconnected.

### Switch Slow Charge – Quick Charge

It can be switched from slow to quick charge and reverse by pushing the red START/STOP-Button.

### Charge Stop

- Disconnect the charged Ni-Cad battery from the charger.
- Right after being fully charged and heated up, a battery should not be reconnected to a charger.

### Please Pay Attention

- Please allow the QUADRA-CHARGER to cool down for 10 minutes between 2 quick charges.
- **Quick charge only Ni-Cad batteries suitable for quick charge.**
- The Ni-Cad battery should be cooled down to room temperature before being charged.
- It does not matter if the Ni-Cad battery is partly charged already when connected to the QUADRA-CHARGER. Only the %-CHARGE Display might be misled a little in the beginning.  
Under all circumstances the QUADRA-CHARGER realizes when the Ni-Cad battery is fully charged and shuts off automatically.
- Using a 12V car battery, its state of charge should be controlled after some time. The voltage shown on the V-INPUT-Display should be at least 11.5V.
- The internal cooling fan has to work during quick and discharge. It turns off automatically 10 minutes after the end of quick and discharge.

7

### Quick Charge at the POWER-Output

- Connect a Ni-Cad Battery to the POWER-Output.
- Select CHARGE with the MODE SELECT-Button.
- Adjust the quick charge current with the CURRENT A-Button. If not specified different from the battery manufacturer, the quick charge current should be 2-2.5 times higher than the battery capacity:

Battery Capacity	Rec. Quick Charge Current
700 mAh = 0.7 Ah	1.4 – 1.8 A
1200 mAh = 1.2 Ah	2.4 – 3.0 A
1700 mAh = 1.7 Ah	3.4 – 4.3 A
2000 mAh = 2.0 Ah	4.0 – 5.0 A

- Push the red START-Button. The quick charge starts with the adjusted current. The CHARGE-LED flashes red.
- The cooling fan is working. Using the various display functions, the charge process can be supervised.

### Full Charge - Super-Delta-Peak-Charge-Stop-Automatic

- The QUADRA-CHARGER realizes when the Ni-Cad is fully charged and stops the quick charge automatically with 3 peep tones.
- The CHARGE-LED is green when the quick charge is finished.
- The fully charged battery should be hand warm at the end.
- The V-PEAK-Display shows the highest reached battery voltage.
- The %-CHARGE-Display shows the charged capacity. A fully charged battery normally shows 100-120%.

### Super-Delta-Peak-Automatic (Quick Charge)

When being quick charged the battery's voltage is increasing until it is fully charged. When being fully charged, the battery voltage starts to drop. This effect is used to stop the quick charge automatically when the full battery capacity is reached. The LRP-Super-Delta-Peak-Automatic is more reliable than normal Delta Peak methods, since more parameters are considered. The LRP-Automatic is therefore independent from an unstable mains voltage or bad battery quality. With the LRP-Automatic more energy/capacity can be charged into a battery.

6

### Interrupting the Charge or Discharge

- This can be done by simply disconnecting the Ni-Cad battery from the QUADRA-CHARGER. The slow charging process is restarted by reconnecting the Ni-Cad battery again.
- The quick charge or discharge can be restarted by pushing the red START/STOP-Button.

A warning signal indicates that a quick charge, discharge or refresh function has been interrupted by disconnecting the battery.

### Interrupting the Mains or 12V Power Supply

- A peep tone signals a power supply problem.
- The TX- and RX-Outputs are switched off. A special electronic prevents a connected battery from being discharged.
- The POWER-Output switches back to stand by mode. If a Ni-Cad battery is connected to the POWER-Output a small current will be drawn to supply the charger.
- When the power supply is restored the slow charge is restarted.
- Restart the quick or discharge by pushing the red START/STOP-Button.

### Internal Safety Timer (Quick Charge only)

- The quick charge of batteries with a too high capacity or of batteries not being suitable for quick charge will be stopped by the cell specific internal safety timer. Only the strongly reduced trickle charge current will continue.
- The safety timer will also be activated if the quick charge current is adjusted too low. Then the battery will not be fully charged in time. Therefore adjust the recommended quick charge currents (see page 6).
- The CHARGE-LED is red when the safety timer is activated.
- Normally the quick charge is finished before the safety timer is activated, therefore this has absolutely no negative influence.
- Hint: a fully charged battery should be hand warm at the end.

8

### Slow Charging of Transmitter Ni-Cad Batteries

- Transmitter Ni-Cad batteries can be slow charged by the TX-Output and the transmitter's charging socket.

### Quick Charging of Transmitter Ni-Cad Batteries

- Always take the transmitter battery out of the transmitter when using the quick charge mode.  
In case of defects the transmitter might be damaged by heat or battery acid.
- Don't quick charge by the transmitter's charge socket.  
The transmitter electronic could be damaged by too high charging currents (>1A).  
The charge stop automatic of the QUADRA-CHARGER could be misled by the transmitter electronic.
- Therefore connect transmitter batteries always direct to the QUADRA-CHARGER.

### Memory Effect

The Memory Effect is a physical phenomenon. Ni-Cad batteries have a kind of memory. The way a Ni-Cad is stored, charged and discharged has a massive influence on its power output and capacity.

- If you charge a only half discharged Ni-Cad its power and capacity will be less than if it was completely discharged before.  
Therefore discharge Ni-Cads completely once in a while. RC-Power Ni-Cads should be discharged after every use.
- A Ni-Cad has more power if it was charged shortly before use. For best RC performance a Ni-Cad should be warm.
- **Only RC-Power Ni-Cads:** a Ni-Cad has its best power output when being charged with a high charge current (see page 6).  
For best RC performance a Ni-Cad should be warm before use.  
Please pay attention to the battery manufacturer's recommendations to avoid over load.
- TX, RX and similar Ni-Cads are normally charged with a low current.

### REFRESH 1

After some time Ni-Cad batteries should be treated with the REFRESH 1 process. Especially Ni-Cads that were stored in a charged condition for a longer period of time will regain most of their old strength. The Memory Effect will be overcome.

The battery passes an automatic CHARGE-DISCHARGE-Cycle.

- Connect the Ni-Cad to the POWER-Output.
  - Adjust a quick charge current (see page 6).
  - Select REFRESH 1 with the MODE SELECT-Button.
  - Push the red START-Button.
  - The REFRESH 1-LED flashes red.
1. BASIC DISCHARGE  
If some capacity is still left, the Ni-Cad will first be discharged.  
The DISCHARGE-LED is red – the REFRESH 1-LED flashes red.
  2. PRE-CHARGE  
The Ni-Cad will be pre-charged with 0.15A for 2 minutes.  
The CHARGE LED is red – the REFRESH 1-LED flashes red.
  3. QUICK CHARGE  
The Ni-Cad will be quick charged with the adjusted current.  
The CHARGE LED is red – the REFRESH 1-LED flashes red.
  4. DISCHARGE – The Ni-Cad will be discharged with 4A.  
The DISCHARGE-LED is red – the REFRESH 1-LED flashes red.
  5. CYCLE-END  
After the complete cycle is finished, the REFRESH 1-LED is green.  
The charger indicates with repeated triple peep tones that the Ni-Cad is completely discharged and can be disconnected.
- The start of every single step is indicated by a peep tone.
  - The REFRESH-Function can be stopped anytime with the START/STOP-Button. Beginning with the BASIC DISCHARGE the REFRESH-Function can be started again from the beginning by pushing the START/STOP-Button a second time.

### Battery Maintenance

- Follow the instructions of the battery manufacturer.
- For best results and life time we recommend to discharge RC-Power Ni-Cad batteries completely after use with the QUADRA-CHARGER.

### Discharge

Improve the fitness of your RC-Power Ni-Cads and avoid the Memory Effect by discharging them after every use. RX, TX and similar Ni-Cads should be discharged once in a while to prevent the Memory Effect.

- Connect the Ni-Cad to the POWER-Output.
- Select DISCHARGE with the MODE SELECT-Button.
- Push the red START-Button.
- The discharge with 3-4 Ampere starts.
- The DISCHARGE-LED flashes red, the cooling fan is working.
- When the Ni-Cad is discharged down to 0.5V/cell, the process is automatically stopped. A triple peep tone is heard.  
The QUADRA-CHARGER recognizes how many cells are connected and stops automatically the discharge at 0.5V/cell .
- The DISCHARGE-LED is now green. Repeated peep tones indicate that the discharge is finished, the battery can be disconnected.
- The discharge can be stopped and restarted with the START/ STOP-Button at any time.
- The V-PEAK-Display shows and stores the lowest reached voltage.
- The %-CHARGE-Display starts with 100% and drops to 0% at the end.

### REFRESH 2

Use REFRESH 2 when a Ni-Cad is losing its performance and DISCHARGE or REFRESH 1 don't bring any improvement. Chemical changes of older Ni-Cads can be regenerated within certain limits.

The battery passes automatically 3 CHARGE-DISCHARGE-Cycles.

1. Select REFRESH 2.
  2. Start the function same as REFRESH 1 (Connection/Charge Current).
  3. Cycle 2 starts automatically after Cycle 1.
  4. Cycle 2, the REFRESH 2-LED flashes twice.  
Same function like Cycle 1, pre-charge, charge, discharge.
  5. Cycle 3, the REFRESH 2-LED flashes three times.  
The functions pre-charge, charge, discharge will run down a 3<sup>rd</sup> time.
  6. End REFRESH 2  
After cycle 3 is finished, the REFRESH 2-LED is green.  
The charger indicates with repeated triple peep tones that the Ni-Cad is completely discharged and can be disconnected.
- The start of every single step is indicated by a peep tone.
  - The REFRESH-Function can be stopped anytime with the START/STOP-Button. Beginning with the BASIC DISCHARGE of Cycle 1 the REFRESH-Function can be started again from the beginning by pushing the START/STOP-Button a second time.

### Trouble Shooting Guide

- **Short Circuit at the POWER-Output:**  
Charger peeps, makes noises – unplug, use only isolated connectors.
- **Reverse Polarity at the POWER-Output:**  
No function, the LED's are not flashing - unplug immediately, use only polarity proof connectors.  
Displays: V-Battery = 0, V-PEAK = 0, V-Input = 11-15V.
- **Mains or 12V supply interrupted:** Function-LED's are not flashing.  
Displays: V-Battery = 0, %-Charge = 0, V-Input < 10V.
- **Temperature Protection activated:**  
Functions-LED's stop to flash and start to light continuously red.
- **Internal fuse between the 2 panels broken:**  
No function, let exchange by an expert, charger can be broken.

Technical Data	
AC-Input Voltage	200/240V AC 50/60Hz (No. 4125/4127) 105/125V AC 50/60Hz (No. 4129)
Power Input	Stand By 3W max. Input 90W
DC-Input Voltage	12V DC (11.5-13.8V)
Current Input	Max. 6A Car Battery 12V, min. 36Ah
Suitable for	Rechargeable Nickel-Cadmium (Ni-Cad) Batteries
Internal Fuse	5 x 20 mm, 6.3 AT (only use identical type for exchange)
Temperature Protection	Double
Short Circuit Protection	Electronic Shut Off
Reverse Polarity Protection	Electronic Shut Off

#### POWER-Output

Voltage	4.8 – 9.6V (4-8 Cells)
Suitable Capacities	250 – 5000mAh
Slow Charge Current (Trickle)	0.15 Ampere
Quick Charge Current	0.5 – 5.5 Ampere Super Pulse
Charge Stop Automatic	Super-Delta-Peak
Security Timer (Quick Charge only)	Protection when charging batteries being not suitable for quick charge (60 minutes)

#### RX-Output

Voltage	2.4 – 7.2V (2-6 Cells)
Suitable Capacities	250-1200mAh
Slow Charge Current (Trickle)	0.07 Ampere (70mA)

#### TX-Output

Voltage	8.4 – 9.6V (7-8 Cells)
Suitable Capacities	250-1200mAh
Slow Charge Current (Trickle)	0.07 Ampere (70mA)

13

#### Safety Instructions

- **Don't open the case when connected to a mains – Danger to Life**
- Not suitable for children under 14 years.
- Please allow the QUADRA-CHARGER to cool down for 10 minutes between 2 quick charges.
- For quick charge take batteries out of their device.
- Never charge batteries being in devices that are switched on.
- Always observe the charging process.
- Disconnect the QUADRA-CHARGER from the 110/220/240V mains or 12V supply when the charging process is finished. Don't leave the charger connected to the mains or car battery when not observed.
- Don't bring the QUADRA-CHARGER in touch with water.
- Never cover the cooling openings. Allow sufficient air ventilation. Use the charger only on a hard and temperature resistant surface. Never place the charger on carpets or blankets.
- Use only in a horizontal position.
- The cooling fan must work during quick charge and discharge. A broken or blocked fan leads to defects caused by over temperature.
- Connect batteries only to sockets belonging together. Don't cross connect any sockets not belonging together. Short circuits cause danger.
- When using a 12V car battery, make sure that the Ni-Cad doesn't get in electrical contact with metal car parts (motor/bonnet/fender).
- New chargers might smell a little in the first hours of use.

#### Mains Connection (see Product Sticker)

1. QUADRA-CHARGER No. 4125 (Europe) + No. 4127 (GB)  
These versions are only suitable for 200-240V mains and 12V. They do not work properly when connected to 110V.
2. QUADRA-CHARGER No. 4129 (USA + Japan)  
This version is only suitable for 105-125V mains and 12V. Never connect to 220V since over voltage causes danger.

15

Adjustable Quick Charge Currents				
Cells	Voltage (V)	Capacity (mAh)	Charge Current (A)	Typical Use <i>Use only Ni-Cad Batteries</i>
4	4.8	250-3800	0.5-4.0	Rx-/Receiver Pack, Power Pack
5	6.0	250-4200	0.5-4.5	Rx-/Receiver Pack, Power Pack
6	7.2	250-5000	0.5-5.5	Racing-Pack for Cars, Boat
7	8.4	250-4600	0.5-5.0	Racing-Pack for Cars, Boat, Plane
8	9.6	250-2100	0.5-3.0	Tx-/Transmitter Pack, Boat, Plane

If not told different by the battery manufacturer, the quick charge current should be 2-2.5 times higher than the battery capacity (see page 6).

#### Attention

- **Charge only rechargeable Ni-Cad batteries. Don't charge any other battery types.**  
Other battery types might get over charged and damaged.
- **Quick charge only Ni-Cad batteries suitable for quick charge.**  
Other batteries might get damaged by quick charge.
- The Ni-Cad should be at room temperature before being charged.
- Only charge Ni-Cad batteries with 2-8 cells of the identical type (manufacturer, capacity, voltage) together in one pack.
- In case the complete battery pack or single cells get far too hot, stop the charging process.
- Make sure that all connections are correct and can handle 6A.
- Never charge 2 battery packs parallel.
- Follow the instructions of the battery manufacturer.
- **Due the super pulse charge current, the Ni-Cad battery can make a buzzing noise when being charged. This is absolutely normal and doesn't hurt.**

14

#### Repair and Warranty

LRP electronic, Wilhelm-Enssle-Str. 134, D-73630 Remshalden, Germany  
Tel: Int+49 - 7181 4098-0, Fax: Int+49 - 7181 4098-30

In case of problems contact your hobby shop or **LRP-importer**. Hobby shops are not authorized to replace chargers thought to be defective.

LRP guarantees this charger to be free from defects for 90 days from the original date of purchase verified by sales receipt. **Warranty is** only accepted if claimed by the customer and if the original sales receipt is included.

Chargers sent in for repair that operate perfectly will be charged with a service fee. Unfortunately we can't give any cost estimates in advance.

This warranty doesn't cover: suitability for specific operation, incorrect installation, components worn by use, application of reverse or improper voltage, shipping, tampering, misuse like any soldering inside the unit, poor installation, replacing/cutting of wires and connectors, connection to electrical components not mentioned in the instructions, mechanical damage, and immersion of water.

Our warranty liability shall be limited to repairing the unit to our original specifications. Because we have no control on the installation or use of this product, in no case shall our liability exceed the original cost of this unit. We can't accept any liability for any damage resulting from using this product. By the act of installing or operating this charger, the user accepts all resulting liability.

#### In case of repair or warranty claims, please fill out and send in

Name : \_\_\_\_\_

Street: \_\_\_\_\_

Post Code + City: \_\_\_\_\_

Phone: \_\_\_\_\_

Problem: \_\_\_\_\_

Warranty Claim:  Yes  No

Date of Purchase: \_\_\_\_\_

Important: Original Sales Receipt has to be included

Herewith I appoint LRP electronic or their service agents to repair the enclosed charger. I accept above warranty conditions.

Signature \_\_\_\_\_

16

