

Operator's Manual

UNIVERSAL MULTI-UNIT CHARGER STANDARD & RAPID

WARNING

TO PREVENT FIRE OR ELECTRIC SHOCK HAZARD DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE



The lightning flash and arrowhead within the triangle is a warning sign alerting you of "dangerous voltage" inside the product.

CAUTION

**RISK OF ELECTRIC SHOCK
DO NOT OPEN**

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The exclamation point within the triangle is a warning sign alerting you of important instructions accompanying the product.

See Marking On Bottom/Back Of Product

TABLE OF CONTENTS

	<u>Page</u>
IMPORTANT SAFETY INFORMATION	3
SPECIFICATIONS	7
DESCRIPTION	8
INSTALLATION	9
INDICATORS	10
OPERATION	13
DEFINITIONS	14
TROUBLESHOOTING CHART	15
ACCESSORIES AND REPLACEMENT PARTS	17
WARRANTY	19

NOTE: The Universal Chargers BML 161 51/022 & /024 have been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

NOTICE!

This manual covers Ericsson and General Electric products manufactured and sold by Ericsson Inc.

This manual is published by **Ericsson Inc.**, without any warranty. Improvements and changes to this manual necessitated by typographical errors, inaccuracies of current information, or improvements to programs and/or equipment, may be made by **Ericsson Inc.**, at any time and without notice. Such changes will be incorporated into new editions of this manual. No part of this manual may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, for any purpose, without the express written permission of **Ericsson Inc.**

Copyright© May 1995, Ericsson Inc.

IMPORTANT SAFETY INFORMATION

1. ***SAVE THIS MANUAL*** - It contains important safety and operating instructions for Universal Multi-Unit Charger.
2. Before using the battery charger, read all instructions and cautionary markings on (1) the battery charger, (2) the battery, and (3) the product using the battery.
3. ***CAUTION*** - To reduce the risk of injury, charge only Ericsson battery packs using the proper battery sleeve. Charging any other battery pack or batteries may cause the battery to burst and cause personal injury or damage.
4. Do not expose charger to rain or snow.
5. Do not use auxiliary equipment not recommended or sold by the manufacturer. To do so may result in a risk of fire, electric shock, or injury to persons.
6. To reduce risk of damage to electric plug and cord, pull by the plug rather than the cord when disconnecting the charger.
7. Make sure the cord is located so that it will not be stepped on, tripped over, or otherwise subjected to damage or stress.
8. An extension cord should not be used unless absolutely necessary. Use of an improper extension cord could result in a risk of fire and electric shock. If an extension cord must be used, make sure:
 - a. That pins on the plug of the extension cord are the same number, size, and shape as those on the charger's plug;
 - b. That the extension cord is properly wired and in good condition;
and

IMPORTANT SAFETY INFORMATION

- c. That the wire size is large enough for the AC ampere rating of the charger as specified in Table 1.

**TABLE 1
RECOMMENDED MINIMUM SIZE FOR
EXTENSION CORDS**

LENGTH OF EXTENSION CORD (ft.)	25	50	100	150
AWG SIZE OF EXTENSION CORD	18	18	18	16

9. Do not operate charger with damaged cord or plug - replace them immediately.
10. Do not operate charger if it has received a sharp blow, been dropped, or otherwise damaged in any way; return it to a qualified service shop.
11. Do not disassemble the charger; return it to a qualified service shop when service or repair is required. Incorrect reassembly may result in a risk of electrical shock or fire.
12. To reduce risk of electric shock, unplug the charger from the outlet before attempting any maintenance or cleaning.

IMPORTANT SAFETY INFORMATION

13. **GROUNDING AND AC POWER CORD CONNECTION** - To reduce the risk of electrical shock use only a properly grounded outlet. The charger is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. Be sure the outlet is properly installed and grounded in accordance with all local codes and ordinances.
14. **DANGER** - Never alter the AC cord or plug. If it will not fit in the outlet, have a proper outlet installed by a qualified electrician. Improper connection can result in risk of an electric shock .
15. The Rapid Charger 120 Vac line cord has a grounding plug that looks like the plug illustrated in Figure 1. A temporary adapter, which looks like the adapter illustrated in sketches B and C, may be used to connect this plug to a two-pole receptacle as shown in sketch B if a properly grounded outlet is not available. The temporary adapter should be used only until a properly grounded outlet can be installed by a qualified electrician.
16. **DANGER** - Before using an adapter as illustrated, be certain the center screw of the outlet plate is grounded. The green- color rigid ear or lug extending from the adapter must be connected to a properly grounded outlet--make certain it is grounded. If necessary, replace the outlet cover plate screw with a longer screw that will secure adapter ear or lug to outlet plate and make ground connection to grounded outlet.
17. Care should be taken when placing the charger in service to insure proper top and bottom ventilation. A minimum of 1/4" is required between the bottom of the charger and the surface on which it sits.

IMPORTANT SAFETY INFORMATION

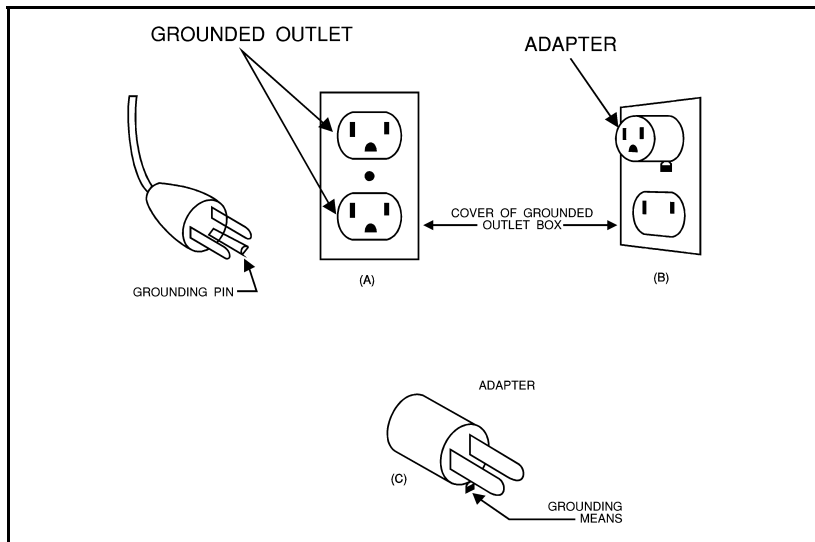


Figure 1 - Grounding Methods

NOTE

Due to the temperature characteristics of nickel-cadmium batteries, the batteries will not accept a full charge at temperature extremes. For maximum capacity, recharge the battery pack at a room temperature of 65° to 85° Fahrenheit, whenever possible.

SPECIFICATIONS

VOLTAGE SOURCE

120 volt switch position	96-144 Vac, 50/60 Hz
230 volt switch position	176-264 Vac, 50/60 Hz

POWER CONSUMPTION

Rapid Charger	170 watts
Standard Charger	30 watts

FUSE RATING

Rapid Charger	F1 - 5 Amp 250 volt
Standard Charger	F1 - 315 mA, 250 volt F2 - 600 mA, 250 volt

RECHARGE TIME

Rapid Charger	1 hour
Standard Charger	14 hours

OPERATING

TEMPERATURE RANGE

+ 5° to +45°C
(+ 41° to + 113°F)

DIMENSIONS (H x W x D)

Height	4.6 inches (117 mm)
Width	12.4 inches (315 mm)
Depth	18.2 inches (461 mm)

WEIGHT

Rapid Charger	15.8 lb. (7.1 kg)
Standard Charger	15.2 lb. (6.8 kg)

DESCRIPTION

The Universal Multi-unit Charger is designed to charge Ericsson personal radio battery packs. The charger is available either as a Standard or Rapid Charger and is capable of charging up to six battery packs at one time.

The Standard Multi-unit Charger is capable of fully charging battery packs in 14 hours and Rapid Desk Charger charges most battery packs in one hour or less. The use of interchangeable battery sleeves permits charging different battery pack families at the same time (i.e. two M-RK and four M-PD sleeve inserts in the same charger).

Both the Standard and Rapid Multi-unit Chargers may be powered by either a 120 Vac (50/60 Hz) or 230 Vac (50/60 Hz) power source. Power source selection is made by switching the Voltage Selection switch to the proper source voltage and using the correct power cable (see Accessories and Replacement parts).

Battery Pack sleeves are available for the following Ericsson personal radios:

<u>RADIO TYPE</u>	<u>SLEEVE NUMBER</u>
M-PA, M-PD, MTL, PLS, & TPX	BML 161 51/001
PCS	BML 161 51/002
M-RK	BML 161 51/003
MONOGRAM	BML 161 51/004

CAUTION

Recharging any battery pack or batteries other than the ones your equipment was designed to charge may result in damage to equipment, leakage, or explosion.

The Multi-unit Charger may be located on a desk or other flat surface or mounted on a vertical wall in a convenient location. Ensure either a 120 or 230 Vac 50/60 Hz power source is located near the charger. Check the charger's voltage selection switch and verify it matches the source voltage. When locating it on a flat surface be sure to allow 1/4" clearance around the top and bottom covers to provide adequate ventilation.

When mounting the Universal Multi-charger on a wall be sure the wall is strong enough to support the charger and a full compliment of radios.

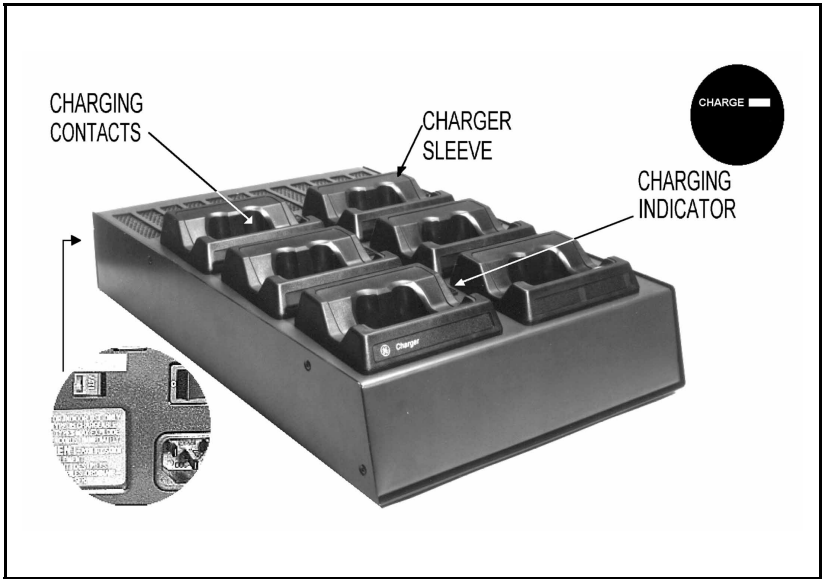
Hollow walls - It is not recommended that the charger be mounted directly to the wall due to the possible weight (26 lbs max) involved. We suggest mounting the charger on an 18" x 18" plywood panel secured to the wall studs. The following steps describe the process for installing the panel and mounting the charger.

1. Locate the studs, studs are normally 16" apart, measured center-to-center.
2. Position the top of the panel at the desired height and drill pilot holes through the panel into the studs. Secure the panel to the studs using four 2 1/2" long screws.
3. Using the template, locate keyhole slots for the Multi-charger mounting screws. Install the four No. 8 x 1 1/2" mounting screws and mounting spacers (provided). Install charger on mounting spacers by pressing down on the charger allowing the mounting spacers to seat into the charger keyhole slots. The weight of the charger will hold it firmly to the wall.

Solid walls - To install the charger on a brick or concrete wall, first insert four wood dowels or fiber, plastic or masonry mounting anchors. Use the following procedure:

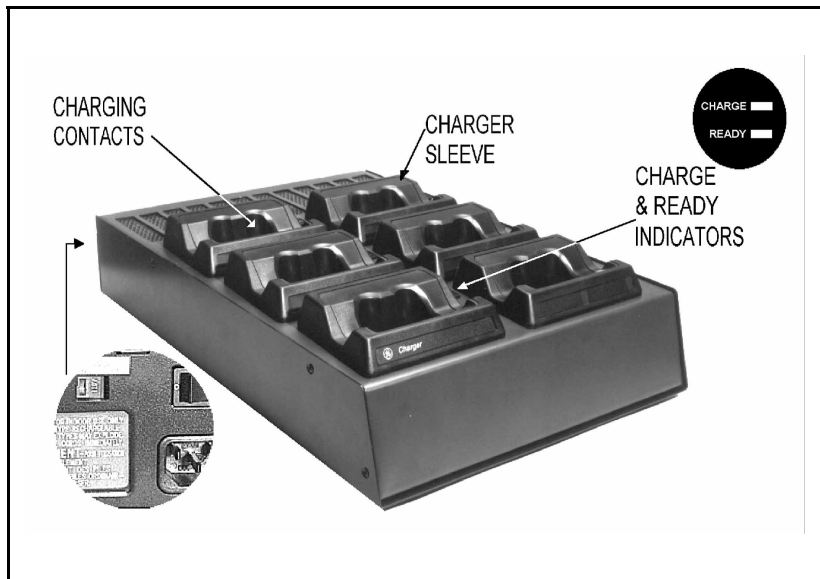
1. Using the mounting template provided, locate and mark the charger keyhole mounting points. Drill the holes to match the anchor's diameter and depth using a carbide drill. Insert the anchor into the holes.
2. Screw the four No. 8 x 1 1/2" screws and mounting spacers (provided) into the anchors.
3. Install the charger on the mounting spacers by pressing down on the charger allowing the mounting spacers to seat into the charger keyhole slots. The weight of the charger will hold it firmly to the wall.

INDICATORS



STANDARD MULTI-UNIT CHARGER

CHARGE (RED) ***CONTINUOUS:*** Indicates battery is charging at the selected charging rate



RAPID MULTI-UNIT CHARGER

WARNING

If both CHARGE and READY indicators are blinking fast, immediately unplug the charger and return it for service. If left in this condition, the battery may be severely overcharged causing personal injury or damage.

STAND-BY

Both indicators are **OFF**. Battery not installed.

CHARGE (RED)

CONTINUOUS: Indicates battery is charging at the selected charging rate.

BLINKS SLOWLY: Indicates a BATTERY FAULT condition which is preventing an acceptable rapid charge. This condition may result if the battery is too hot or cold, weak or dead, or defective. If the blinking CHARGE indicator does not turn to a continuous RED after 15 minutes, remove and reinsert the battery.

Weak or Dead Battery - The CHARGE indicator goes to continuous RED after the battery has an acceptable pre-charge (typically less than 10 minutes).

Cold or Hot Battery - The CHARGE indicator stays in a blinking RED condition until the battery temperature reaches acceptable limits **and the battery is removed and reinserted to clear the fault condition.**

Defective Battery - The CHARGE indicator stays in a blinking RED condition after clearing the fault by removing and reinserting the battery .

**READY
(GREEN)**

CONTINUOUS: Indicates charging is complete and charger has switched to trickle charge.

**PROBLEM
(RED/GREEN)**

BLINKING FAST: When both indicators are blinking fast, either the output has a short circuit or an abnormal output condition exists.

OPERATION

Using The Desk Charger

CAUTION

For indoor use only. To reduce risk of injury, charge only nickel cadmium type rechargeable batteries. Other types of batteries may explode causing personal injury or damage. Replace defective cords immediately.

1. Plug in the charger and turn it on using the ON/OFF power switch located in the rear.
2. **Turn the radio OFF** and place it into the proper charging sleeve with the speaker facing the front of the charger. If only charging a battery pack, properly insert the battery pack into the charger as indicated on the battery pack making sure the ON-OFF switch on the battery pack is in the OFF position (M-RK, Monogram or Prism HP battery packs do not have an ON/OFF switch).
3. **STANDARD MULTI-UNIT CHARGER:** The CHARGE (red) indicator will light indicating the battery is being charged. The proper charge current for long or short case battery packs is selected by the insert micro switch. To charge the battery to maximum capacity, let the battery pack charge for at least 14 hours.
4. **RAPID MULTI-UNIT CHARGER:** The CHARGE (red) indicator will light indicating the battery is being charged. (If the CHARGE indicator is blinking slowly - the charger is in the pre-charging mode. The charger should switch to normal charge within 10 minutes). When the READY (green) indicator lights - charging is complete and the charger is in trickle charge mode.

NOTE

On occasion when charging a new battery or a battery which has been out of use for a few months, the charger will prematurely switch to the trickle charge before the battery has been fully charged. If this happens, allow the battery to continue trickle charging overnight. Then remove and reinsert the battery and observe that the battery goes through a normal rapid charge before putting it into service.

To Remove A Battery Pack

Simply reach into the cutouts provided in the sides of the charging insert and lift the battery pack out.

DEFINITIONS

Dead Battery	Battery pack with low voltage due to long term self discharge or extreme discharge.
Hot Battery	Battery Pack excessively warmed by charging or environmental temperature conditions.
Cold Battery	Battery pack excessively cooled by an environmental condition.
Defective Battery	Battery pack with one or more of the internal cells shorted.

TROUBLESHOOTING CHART

	SYMPTOM		CHECK FOR
1.	RED LED indicator does not light.	1. 2. 3. 4. 5.	Power cable not plugged in securely. Power switch not turned on. Battery pack not properly installed in charger. Defective charger. Return to a qualified service shop for repair. Charging contacts on the battery or charger are dirty. Clean with soft eraser.
2.	Pre-charge too long RED LED blinks slowly for over 10 minutes. (Rapid charger only)	1.	Defective battery with shorted cells.
3.	Red charge LED ON for several seconds then starts to blink slowly. (Rapid Charger only)	1. 2.	Hot battery (above 45° C). Cold battery (below 0° C). Remove battery and re-insert after temperature has stabilized.
4.	RED and GREEN LED's blink rapidly (Rapid Charger only).	1.	Defective charger, return charger to a qualified service shop.

ACCESSORIES AND REPLACEMENT PARTS

Accessories and replacement parts may be obtained from your local dealer or by calling the Ericsson Inc. After Market Services 24-Hour Toll Free Number **1-800-368-3277 (USA only)** or FAX **1-800- 833-7592**. Please provide the description and part number when ordering [e.g. PCS sleeve, BML 161 51/002] .

The following pages illustrate and identify the accessories and replacement parts available. NOTE: Complete chargers must be ordered using applicable package number.



120 Vac Line Cord
BML 161 51/043

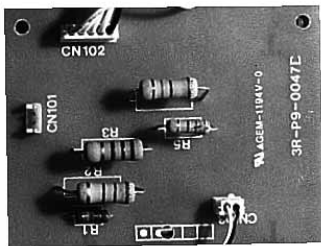


230 Vac Line Cord
BML 161 51/044

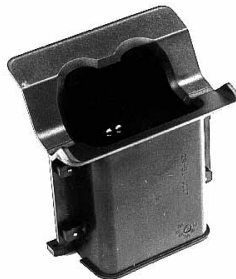
NOTE

Only an authorized or certified electronic technician should attempt to disassemble or service the charger.

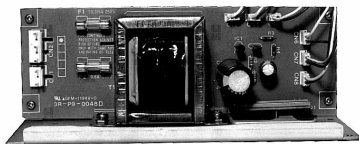
Refer to Universal Multi-unit Charger Maintenance Manual if it is necessary to change the charger sleeve or to replace printed wiring boards, components or assemblies.



Standard Charger Control Board
F29/4R-A9-0096



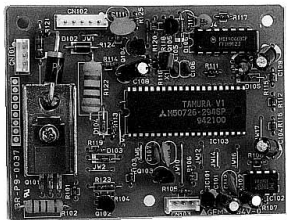
Charger Sleeve
See Pg. 8 for sleeve numbers



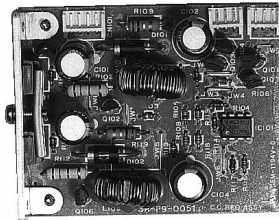
STD Charger Power Supply
F29/4R-A9-0095



Rapid Charger Power Supply
F29/4R-A9-0091



Rapid Charger Control Board
F29/4R-A9-0083



Rapid Charger Constant Current
F29/4R-A9-0092

WARRANTY

- A Ericsson Inc. (hereinafter "Seller") warrants to the original purchaser for use (hereinafter "Buyer") that Equipment manufactured by Seller shall be free from defects in material, workmanship and title, and shall conform to its published specifications. With respect to any Equipment not manufactured by Seller (except for integral parts of Seller's Equipment to which the warranties set forth above shall apply). Seller gives no warranty, and only the warranty, if any, given by the manufacturer shall apply. Batteries are excluded from this warranty but are warranted under a separate Nickel-Cadmium Battery Warranty.
- B Seller's obligations set forth in Paragraph C below shall apply only to failures to meet the above warranties (except as to title) occurring within the following periods of time from date of sale to the Buyer and are conditioned on Buyer's giving written notice to Seller within thirty (30) days of such occurrence.
1. for fuses, incandescent lamps, vacuum tubes and non-rechargeable batteries, operable on arrival only
 2. for parts and accessories (except as noted in B.1) sold by Seller's Service Parts Operation, ninety (90) days.
 3. for all other Equipment of Seller's manufacture, one (1) year.
- C If any Equipment fails to meet the foregoing warranties, Seller shall correct the failure at its option (i) by repairing any defective or damaged part or parts thereof, or (ii) by making available at Seller's factory any necessary repaired or replacement parts. Any repaired or replacement part furnished hereunder shall be warranted for the remainder of the warranty period of the Equipment in which it is installed. Where such failure cannot be corrected by Seller's reasonable efforts, the parties will negotiate an equitable adjustment in price. Labor to perform warranty service will be provided at no charge only for the Equipment covered under Paragraph B.3, and only during the first three (3) months following the date of sale to the Buyer. Thereafter, labor will be charged at prevailing rates. To be eligible for no-charge labor, service must be performed by an Authorized Service Center or other Servicer approved for these purposes either at its place of business during normal business hours, for mobile or personal equipment, or at the Buyer's location, for fixed location equipment. Service on fixed location equipment more than thirty (30) miles from the Service Center or other approved Servicer's place of business will include a charge for transportation. Equipment located off-shore is not eligible for no-charge labor.
- D. Seller's obligation under Paragraph C shall not apply to any Equipment, or part thereof, which (i) has been modified or otherwise altered other than pursuant to Seller's written instructions or written approval or, (ii) is normally consumed in operation or, (iii) has a normal life inherently shorter than the warranty periods specified in Paragraph B, or (iv) is not properly stored, installed, used, maintained or repaired. or, (v) has been subjected to any other kind of misuse or detrimental exposure, or has been involved in an accident.
- E The preceding paragraphs set forth the exclusive remedies for claims (except as to title) based upon defects in or nonconformity of the Equipment, whether the claim is in contract, warranty, tort (including negligence), strict liability or otherwise, and however instituted. Upon the expiration of the warranty period, all such liability shall terminate. The foregoing warranties are exclusive and in lieu of all other warranties, whether oral, written, expressed, implied or statutory. **NO IMPLIED OR STATUTORY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE SHALL APPLY. IN NO EVENT SHALL THE SELLER BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL, SPECIAL, INDIRECT OR EXEMPLARY DAMAGES.**

This warranty applies only within the United States.

1-800-528-7711 (Outside USA, 804-528-7711)

Ericsson Inc.

Private Radio Systems

Mountain View Road

Lynchburg, Virginia 24502

1-800-528-7711 (Outside USA, 804-528-7711)

AE/LZT 123 1871 R1A

Printed in U.S.A.