



***Mobile Communications***

---

**PCS BATTERY  
CHARGER  
19A705656P3 & P4**

---

**Maintenance Manual**

## TABLE OF CONTENTS

SPECIFICATIONS . . . . .	iii
DESCRIPTION . . . . .	1
INSTALLATION . . . . .	2
Planning The Installation . . . . .	2
Equipment Required . . . . .	3
Mounting The Equipment . . . . .	3
Power Cable . . . . .	4
OPERATION . . . . .	8
CIRCUIT ANALYSIS . . . . .	8
TROUBLESHOOTING CHART . . . . .	9
PARTS LIST . . . . .	10
19A705656P3 (Portable Charger) . . .	10
19A705656P4 (Mobile Charger) . . .	12

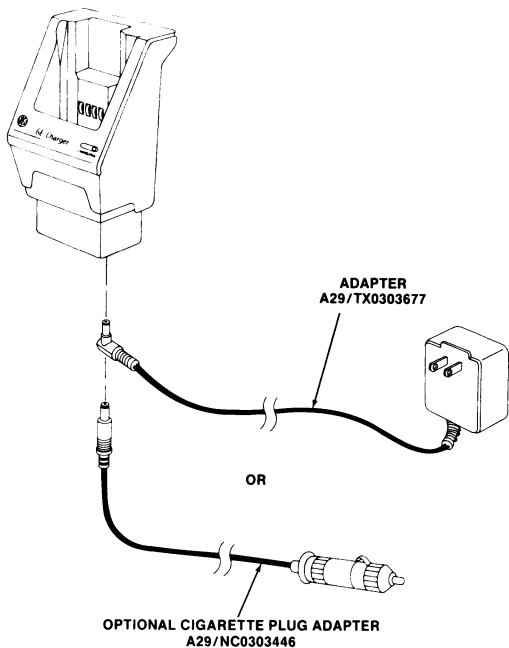
## **SPECIFICATIONS\***

<b>VOLTAGE RANGE</b>	AC - 120 volts $\pm 10\%$ , 50/60 Hz DC - 13.6 volts $\pm 20\%$
<b>FUSE RATING</b>	AC power supply - not fused DC power cords - 1/2 Amp, fast blow
<b>CHARGE CURRENT</b>	
P3 & P4 ( $\pm 20\%$ )	STD capacity battery - 155 mA HI capacity battery - 195 mA

### **NOTE**

Charge current is specified at nominal supply voltage (120 Vac or 13.6 Vdc) and with fully charged battery.

\*These specifications are intended primarily for the use of the serviceman.



**Figure 1 - Portable Unit And Adaptors**

## DESCRIPTION

The General Electric charger is capable of fully charging the PCS series battery packs in 14 hours. The 19A705656P3 is a portable unit and the 19A705656P4 is a mobile unit. The portable charger unit (P3) may be powered by a 120 Vac power source through the use of the "wall cube" power supply adaptor or 13.6 Vdc through the use of the optional fused cigarette lighter plug power cable adaptor (see figure 1). The mobile charger unit (P4) is mounted in the vehicle and powered by the 13.6 Vdc fused direct-connect power cable. Mounting plate, mounting bracket, and hardware kit are provided for installation to the vehicle.

CHARGER	INCLUDES
19A705656P3	<ul style="list-style-type: none"><li>● Charger Assembly</li><li>● 120 volt AC "Wall Cube" power supply</li></ul>
19A705656P4	<ul style="list-style-type: none"><li>● Charger assembly</li><li>● 13.6 volt DC fused direct-connect power cable</li><li>● Mobile mounting plate (installed), bracket, and mounting hardware</li></ul>

# **INSTALLATION (19A705656P4)**

## **PLANNING THE INSTALLATION**

**Before starting, plan the installation so that it will be:**

- **Safe for the operator and passengers in the vehicle**
- **Convenient for the operator to use**
- **Neat**
- **Protected from water damage**
- **Easy to service**
- **Out of the way of auto mechanics**
- **Out of the way of passengers**

**It is suggested that you take advantage of the experience of one of the many authorized General Electric Service Stations located throughout the United States by having them install the equipment.**

## EQUIPMENT REQUIRED

The equipment required to install the mobile charger unit is:

- Electric drill
- No. 27 (9/64-inch) drill bit
- Phillips and flat-blade screwdrivers

## MOUNTING THE EQUIPMENT

### CAUTION

Be careful to avoid damaging some vital part (fuel tank, transmission housing, etc.) of the vehicle when drilling mounting holes. Always check to see how far the mounting screws will extend below the mounting surface before installing.

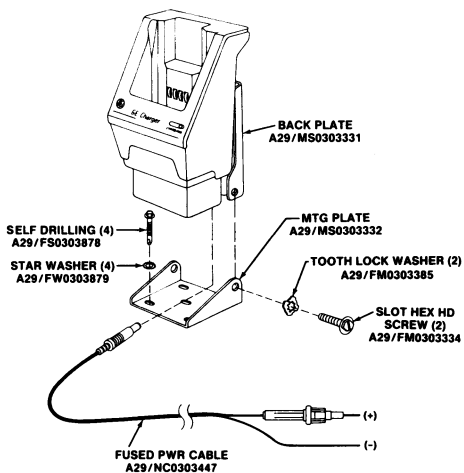
1. Select a mounting location with sufficient room for inserting and/or removing the portable radio unit. The charger should be mounted in a vertical position.
2. Use the mounting plate as a template to locate the mounting holes for one of the typical mounting configurations shown in Figures 2-4.

3. Attach the mounting plate to the mounting surface with (4) #10 self tapping screws and (4) #10 lock washers.
4. Attach the charger assembly (with back plate attached) to the mounting plate with (2) 1/4 inch hex head machine screws and (2) 1/4 inch tooth lock washers.

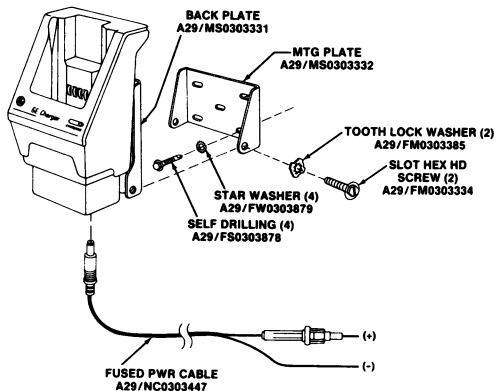
## POWER CABLE

The power cable is supplied for negative ground systems. Connect the plug end of the power cord to the power socket on the underside of the charger. Connect the fused lead to an appropriate positive (+) 13.6 Vdc power source (vehicle battery or an accessory on the vehicle fuse block). Connect the other lead to a known ground (-). Be sure all wire runs are neat and do not interfere with vehicle operation.

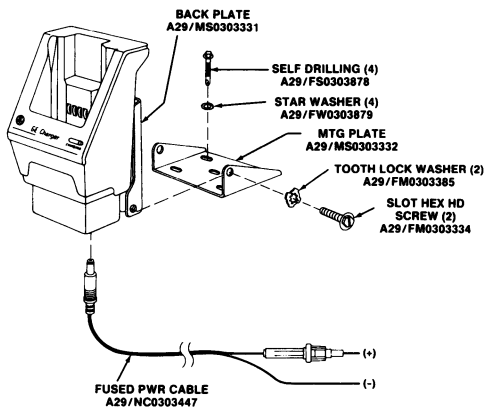




**Figure 2 - Typical Mounting Configuration**



**Figure 3 - Typical Mounting Configuration**



**Figure 4 - Typical Mounting Configuration**

## **OPERATION**

When operating the portable charger, first connect the plug end of the power cable into the power jack located on the underside of the charger. If the "wall cube" power supply is to be used, connect the other end into a 120 Vac power source. If the optional fused cigarette lighter plug is to be used, plug into the vehicle cigarette lighter.

Before operating the mobile charger unit, the installation should have been completed. See installation section.

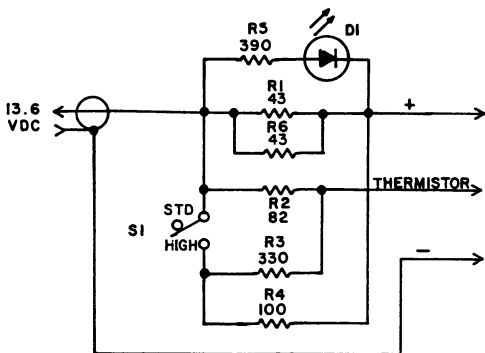
Slide the portable radio (with the battery to be charged) into the charger until the battery seats. The front of the radio should be facing toward the front of the charger. A red LED indicator visible from the front of the charger will light when a battery is properly inserted in the unit and charge current is flowing. To charge the battery to full capacity let the battery stay in the charger for 14 hours.

## **CIRCUIT ANALYSIS**

Power (13.6 Vdc) is applied to the circuit board through J1. D1 (LED) provides an indication the unit is charging. Current through D1 is limited by R5. R1 and R6 are 2 watt resistors which provide the main current path for charging the battery. Batteries with higher than standard capacity, when inserted in the charger, activate S1 so that additional charging current is available through R4.

## TROUBLESHOOTING CHART

<b>SYMPTOM</b>	<b>CHECK FOR</b>
1. LED indicator does not light.	<ol style="list-style-type: none"><li>1. Power cable plugged securely in J1.</li><li>2. The battery inserted securely.</li><li>3. Blown fuse.</li><li>4. Defective "wall cube" or cigarette adaptor (portable unit only).</li><li>5. Defective LED.</li></ol>
2. Battery does not recharge in 14 hours.	<ol style="list-style-type: none"><li>1. Defective battery pack.</li><li>2. Defective charging resistors.</li></ol>



## SCHEMATIC DIAGRAM

19A705656P3 & P4

**PCS PORTABLE CHARGER**  
**19A705656P3**  
**ISSUE 1**

<b>SYMBOL</b>	<b>GE PART NO.</b>	<b>DESCRIPTION</b>
		<b><u>CONNECTORS</u></b>
J1	A29/NC0301119	Power socket, printed circuit board mount, right angle.
		<b><u>DIODES</u></b>
D1	A29/SE0300449	LED, red, SPR3431.
		<b><u>RESISTORS</u></b>
R1	A29/RK1433600	Metal film: 43 ohms $\pm 5\%$ , 2w.
R2	A29/RF1823300	Carbon film: 82 ohms $\pm 5\%$ , 1/4 w.
R3	A29/RF2333300	Carbon film: 330 ohms $\pm 5\%$ , 1/4 w.
R4	A29/RK2103501	Metal film: 100 ohms $\pm 5\%$ , 1 w.
R5	A29/RF2393300	Carbon film: 390 ohms $\pm 5\%$ , 1/4 w.
R6	A29/RK1433600	Metal film: 43 ohms $\pm 5\%$ , 2 w.
		<b><u>SWITCHES</u></b>
S1	A29/VS0304032	Micro switch.
		<b><u>MISCELLANEOUS</u></b>
	A29/NC0303446	Cigarette plug power cable.
	A29/TX0303677	Adaptor, 120 Vac-12 Vdc, 400 mA.
	A29/ES0301681	Heat sink tube, 2 mm.
	A29/WC0303141	Wire, PVC, 24 AWG, red.
	A29/WC0303142	Wire, PVC, 24 AWG, black.
	A29/BP0303398	Printed circuit board.
	1R16P1	Fuse: 1/2 amp, fastblow.

**PARTS LIST**  
**19A705656P3 (Portable Charger)**

**MECHANICAL PARTS**  
**19A705656P3**  
**ISSUE 1**

<b>SYMBOL</b>	<b>GE PART NO.</b>	<b>DESCRIPTION</b>
	<b>A29/FM3001862</b>	Machine screw, M3 x 8. (Secures outer sleeve to inner sleeve, quantity 4).
	<b>A29/FS0300476</b>	Screw, M3 x 10. (Secures printed circuit board, quantity 3).
	<b>A29/PP0303329</b>	Outer sleeve.
	<b>A29/PP0303383</b>	Inner sleeve.
	<b>A29/PP0303333</b>	Bumper. (Quantity 4).
	<b>A29/MC0303337</b>	Terminal plate, nickel plated.

**MECHANICAL PARTS LIST**

**19A705656P3 (Portable Charger)**



**PCS MOBILE CHARGER**  
**19A705656P4**  
**ISSUE 1**

SYMBOL	GE PART NO.	DESCRIPTION
<u><b>CONNECTORS</b></u>		
J1	A29/NC0301119	Power socket, printed circuit board mount, right angle.
<u><b>DIODES</b></u>		
D1	A29/SE0300449	LED, red, SPR3431.
<u><b>RESISTORS</b></u>		
R1	A29/RK1433600	Metal film: 43 ohms $\pm 5\%$ , 2w.
R2	A29/RF1823300	Carbon film: 82 ohms $\pm 5\%$ , 1/4 w.
R3	A29/RF2333300	Carbon film: 330 ohms $\pm 5\%$ , 1/4 w.
R4	A29/RK2103501	Metal film: 100 ohms $\pm 5\%$ , 1 w.
R5	A29/RF2393300	Carbon film: 390 ohms $\pm 5\%$ , 1/4 w.
R6	A29/RK1433600	Metal film: 43 ohms $\pm 5\%$ , 2 w.
<u><b>SWITCHES</b></u>		
S1	A29/VS0304032	Micro switch.
<u><b>MISCELLANEOUS</b></u>		
	A29/NC0303446	Cigarette plug power cable.
	A29/TX0303677	Adaptor, 120 Vac-12 Vdc, 400 mA.
	A29/ES0301681	Heat sink tube, 2 mm.
	A29/WC0303141	Wire, PVC, 24 AWG, red.
	A29/WC0303142	Wire, PVC, 24 AWG, black.
	A29/BP0303398	Printed circuit board.
	1R16P1	Fuse: 1/2 amp, fastblow.

**PARTS LIST**  
**19A705656P4 (Mobile Charger)**

**MECHANICAL PARTS**  
**19A705656P4**  
**ISSUE 1**

<b>SYMBOL</b>	<b>GE PART NO.</b>	<b>DESCRIPTION</b>
	A29/FM0303334	Machine screw, hex head: 1/4 inch. (Used to secure bottom plate to back plate, quantity 2).
	A29/FW0303385	Lock washer, tooth: 1/4 inch. (Used to secure bottom plate to back plate, quantity 2).
	A29/FW0303850	Captive washer: 1/4 inch. (Used to secure bottom plate to back plate, quantity 2).
	A29/MS0303332	Bottom plate.
	A29/FM0301550	Machine screw, M3 x 12. (Secures back plate to the inner and outer sleeves, quantity 4).
	A29/FW0300570	Spring washer, M3. (Used to secure back plate to the inner and outer sleeves, quantity 4).
	A29/FS0300476	Screw, M3 x 10. (Secures printed circuit board, quantity 3).
	A29/MS0303331	Back plate.
	A29/PP0303329	Outer sleeve.
	A29/PP0303383	Inner sleeve.
	A29/PP0303333	Bumper. (Quantity 4).
	A29/MC0303337	Terminal plate, nickel plated. (Quantity 4).
	A29/FS0303878	Screw, self tapping, slotted hex head: No. 10 x 1. (Used to secure back plate to bottom plate, quantity 4).
	A29/FW0303879	Lockwasher: No. 10. (Used to secure back plate to bottom plate, quantity 4).

**MECHANICAL PARTS LIST**

19A705656P4 (Mobile Charger)

## NOTES



**Ericsson GE Mobile Communications Inc.**  
Mountain View Road • Lynchburg, Virginia 24502

**Printed in U.S.A.**