



Power Anytime, Anywhere

Tesla™ TI60 MPU-24

User Manual



Built Smart...Proven Tough

Tesla Industries, Inc.
109 Centerpoint Blvd.
New Castle, DE 19720
(302) 324-8910 Phone
(302) 324-8912 Fax
www.teslaind.com

5-3-2011

**NOTE: All users must read this entire manual prior
to operating the TI60 MPU-24.**

The TI60 MPU-24 is a limited maintenance-free and sealed unit. No repairs are authorized. Warranty will be voided if unit is tampered with in any way, or if unauthorized repairs are made. For technical support please contact:

TESLA™ INDUSTRIES INCORPORATED
109 CENTERPOINT BLVD.
CENTERPOINT INDUSTRIAL PARK
NEW CASTLE, DELAWARE 19720
PHONE: (302) 324-8910
FAX: (302) 324-8912
WEBSITE: www.teslaind.com
EMAIL: tesla1@teslaind.com



CAUTION

SHOCK HAZARD POTENTIAL

Improper use or failure to follow instructions in this user manual can result in unit damage and/or injury or death by electrical shock.

Any attempts to open or examine the inside of the TI60 MPU-24 via a tool or device (borescope, probe, etc.) can result in unit failure and/or injury by electrical shock. This MPU is maintenance free and should not be opened or disassembled for any reason.

Always protect the unit from short circuit.

Shipping Hazards: The TI60 MPU-24 contains sealed, dry cell rechargeable batteries that do not pose a shipping hazard.

No part of this manual may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or any information storage and retrieval system, without prior written permission from Tesla Industries, Inc.

Copyright © 2010 by Tesla Industries, Incorporated. All rights reserved.

Table of Contents

Section 1 – Product Overview	1
1.1 – Introduction	1
1.2 – Indication of Terms: Shall, Should, May	1
Section 2 – Safety Review	3
2.1 – Safety Notices	3
2.2 – Symbols	3
2.3 – Hazards	4
2.4 – Important Safety Precautions	5
2.5 – Extreme Environments	5
Section 3 – Unit Specifications	7
3.1 – General Specifications	7
3.2 – Physical Dimensions	8
3.3 – Airflow Ports	8
3.4 – Operating Position	9
3.5 – Temperature Specifications	10
3.6 – Environmental	11
Section 4 – Pre-Operation	13
4.1 – Unit Charging	13
4.2 – “Press for Capacity” button and LED Status Indicator	14
4.3 – Maintenance Check	15
4.4 – Pre-Installation Procedures	15
Section 5 – Operation	17
5.1 – Operating Procedures	17
5.2 – Engine Starting Power	17
5.3 – General	18
5.4 – Operating Limits and Restrictions	18
5.5 – Performance	18
5.6 – Transporting Unit	18
5.7 – Regulated DC Power Cable to Unit	19
5.8 – Regulated AC Power Cable to Unit	19-20
5.9 – Connect DC Power to Dillon M134 Minigun	20
5.10 - Connect DC Power to Dual Dillon M134 Miniguns	21
Section 6 – Post-Operation	23
6.1 – General	23
6.2 – After Use	23
6.3 – Power Cell Recharge	23-24

Section 7 – Unit Care and Maintenance	25
7.1 – Unit Care	25
7.2 – Normal Functional Test Procedures	26-27
7.3 – Unit Servicing	28
7.4 – Packaging and Shipping	28
Section 8 – FAQ	29-30
Section 9 – Optional Accessories	31
9.1 – Tesla AC Line Cords	31
9.2 – TI2006-903 Y-Cable	31
Abbreviations and Symbols	33
Appendix	35-39

Section 1 – Product Overview

1.1 – Introduction

This manual contains the complete operating instructions and procedures for the TI60 Micro Power Unit. The TI60 MPU-24 is intended to provide DC electrical ground power for aircraft flight line and maintenance ground support operations. The unit is designed to provide 24 volt DC electrical power output for aircraft engine starting and 24 or 28.5 volts DC electrical support for ground maintenance, avionics/electrical trouble shooting and testing. The observance of procedures, limitations and performance criteria is essential to ensure peak operating efficiency and to maximize operational capabilities and life of the TI60 Micro Power Unit.

The TI60's high capacity power cells and circuitry are encased in a rugged enclosure, and are designed to replace the original battery for the M134 Dillon Minigun. The internal circuitry incorporates an intelligent recharging system that allows the MPU to recharge from either the aircraft generator or from a standard 110 VAC or 220 VAC power source. The unit is also equipped with a built-in capacity meter that also serves as a recharge state indicator.



Figure 1.1.1 – TI60 MPU-24


1.2 – Indication of Terms Shall, Should and May


Within this technical manual the word “**shall**” is used to indicate a mandatory requirement for proper operation and warranty purposes. The word “**should**” is used to indicate a non-mandatory but preferred method of accomplishment. The word “**may**” is used to indicate an acceptable method of accomplishment.


Section 2 – Safety Review


2.1 - Safety Notices

Safety notices appear throughout this manual to alert the user to important information regarding proper installation, operation, maintenance and storage of the TI60 MPU-24. These notices, as illustrated below, contain a key word that indicates the level of hazard and a triangular icon that indicates the specific type of hazard.

 WARNING	Indicates a condition, operating procedure or practice, which if not adhered to could result in serious injury or death.
--	--

 CAUTION	Indicates a condition or operating procedure, which if not strictly adhered to could result in damage or destruction of equipment.
--	--

 DANGER	Indicates a condition, operating procedure or practice, which if not adhered to could result in serious injury or death.
---	--

 NOTE	Indicates a condition, operating procedure or practice, which is essential to highlight.
--	--

2.2 - Symbols

The following symbols will appear within the warning triangles to alert the user to the specific type of danger or hazard.



General Warning



Electrical Hazard



Explosion Hazard



Fire Hazard



Battery Warning



Guard from Moisture

Figure 2.2.1 – Different types of hazard and caution symbols

2.3 – Hazards



WARNING

SHOCK HAZARD POTENTIAL

Severe injury or death from electrical shock will occur if either the user or the TI60 MPU-24 is wet while operating the unit with the 120-240 VAC power source attached. Be sure to disconnect AC power from the AC source if the TI60 MPU-24 has come into contact with water. If either AC Input Circuit Breaker has tripped due to water infiltration, DO NOT try to reset it with the AC line voltage attached.



WARNING

SHOCK HAZARD POTENTIAL

Severe injury or death from electrical shock can occur when damp electrical plugs are connected to the TI60 MPU-24. Make sure the electrical outlet is switched off before making any connections. Failure to use proper grounding can cause potential shock hazard! In different countries, the 240 VAC 50 Hz power cord may require the use of a plug adapter to achieve plug style compatibility for operation. Use only adapters with proper grounding mechanism.

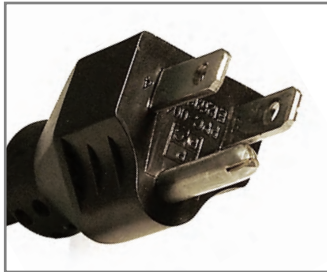


Figure 2.3.1 – Proper Ground Grounded Plug with Grounding Pin



Figure 2.3.2 – Proper Ground Adapter with Grounding Mechanism



Figure 2.3.3 – Improper Ground Ungrounded Plug

2.4 – Important Safety Precautions



WARNING

FIRE/EXPLOSION HAZARD POTENTIAL

Severe injury or death from fire or explosion can occur if electrical sparks are produced near fuel vapors. Power output is restricted to 24 VDC power cell output only. DO NOT CONNECT 120 or 240 VAC Power Supply. 120-240 VAC Power (charger or AC-DC converter) functions of unit shall not be operated during any aircraft fuel handling operation.

2.5 – Extreme Environments



CAUTION

UNIT DAMAGE POTENTIAL

The TI60 MPU-24 is equipped with a charger temperature switch that automatically disables AC and charging functions when the internal temperature reaches above 150°F (65°C). This protects the unit from overheating and damage. If the unit shuts down, move the unit into a cooler climate such as shade or air conditioning when possible. Perform a full function test prior to use after the unit has been allowed to cool.

Section 3 – Unit Specifications

3.1 – General Specifications

Electrical

DC Output Power:

- 750 peak starting amps
- 10 amps of continuous power @ 28.5 VDC (when plugged into AC power)
- 21.5 amp hours (541 watt hours) with AC power
- 11.5 amp hours (256 watt hours) of rechargeable battery power without AC

Recharge Rate From Full Discharge:

- 74 minutes @ 25 °C

AC Input Power:

- Operates and charges from single phase 95-260 VAC 50/60 Hz
- 5.5 Amps @ single phase 120 VAC 60 Hz
- 2.75 amps @ single phase 240 VAC 60 Hz

Physical Properties:

- Size: 9.25" L x 7.13" W x 7.5" H
234.95 mm x 181.1 mm x 190.5 mm
- Weight: 27.75 lbs (12.59 kg)

Operating Temperature:

- -40 °C to +60 °C / -40 °F to +140 °F (without AC power)
- -40 °C to +70 °C / -40 °F to +158 °F (with AC power)

Storage Temperature:

- -65 °C to +60 °C
- -85 °F to +140 °F

Cell Capacity:

- +40 degrees C 110% ± 05%
- +25 degrees C 100% ± 05%
- +00 degrees C 80% ± 05%
- -20 degrees C 65% ± 10%
- -40 degrees C 50% ± 10%

3.2 – Physical Dimensions

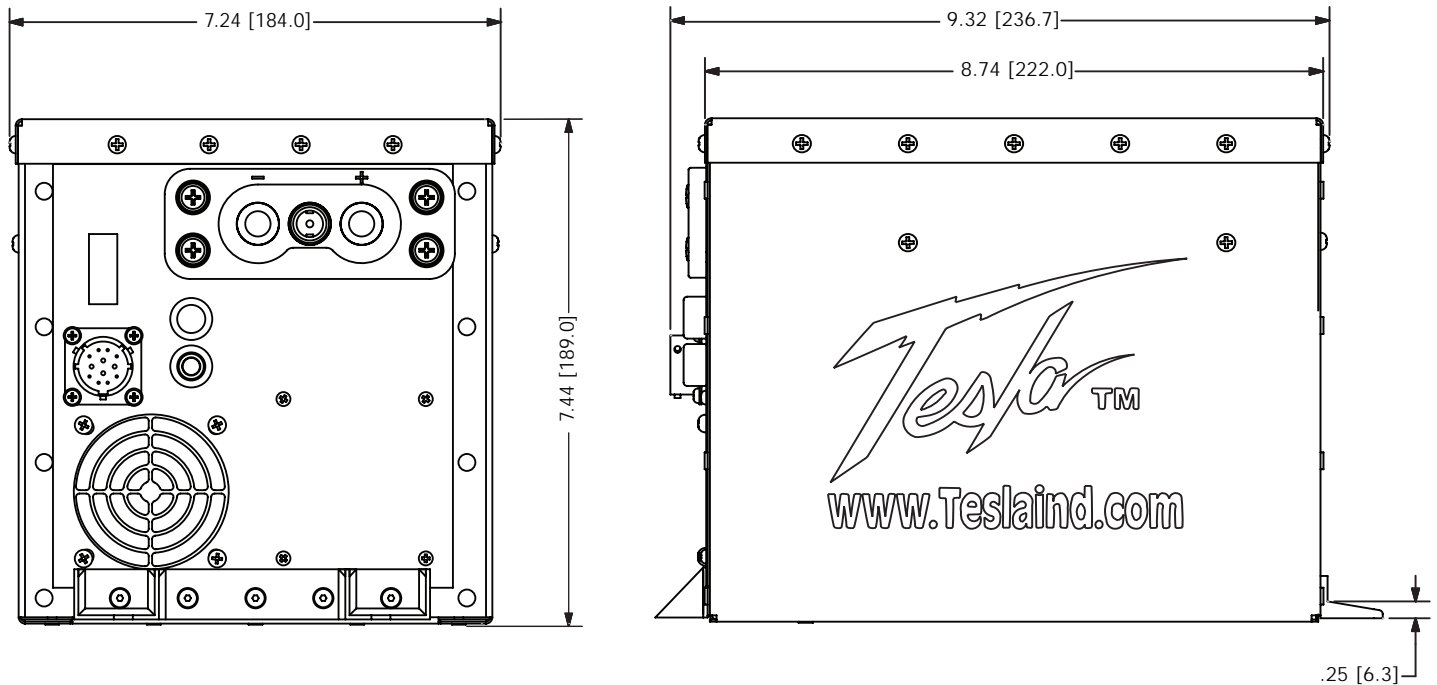



Figure 3.2.1 – TI60 MPU-24 physical dimensions

3.3 – Airflow Ports

 CAUTION	Damage may occur if the TI60 MPU-24's air intake or outlet ports are obstructed. Ensure that ports are clear at all times.
--	--

The internal cooling system of the TI60 MPU-24 has been designed to efficiently regulate unit temperature regardless of load. At room temperature (+77 °F) the exhaust air will not exceed the ambient temperature by more than 5 degrees. In more extreme temperatures (greater than 90 °F) the exhaust air will not exceed the ambient temperature by more than 10 degrees.

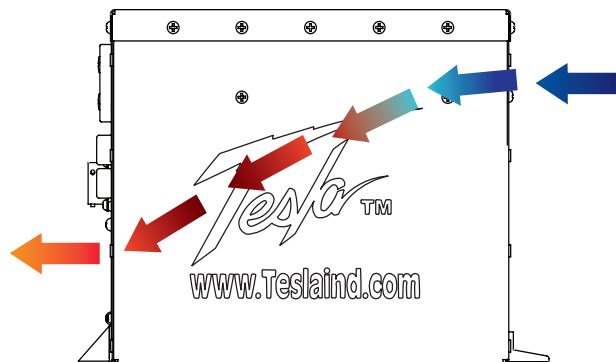
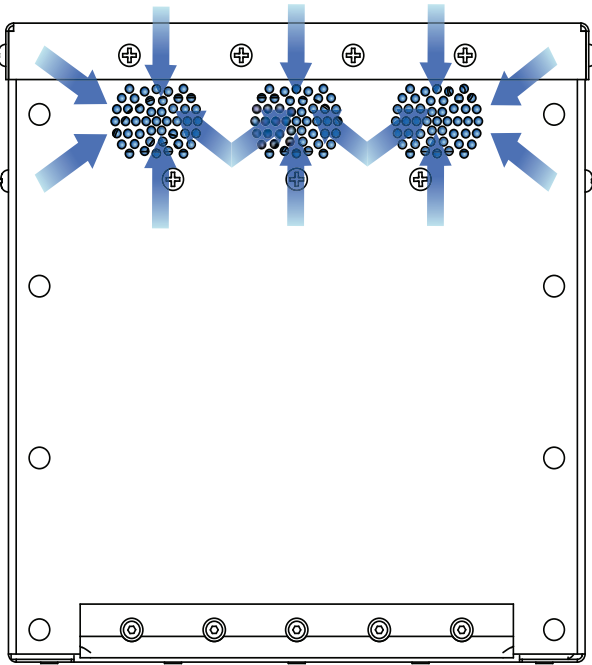


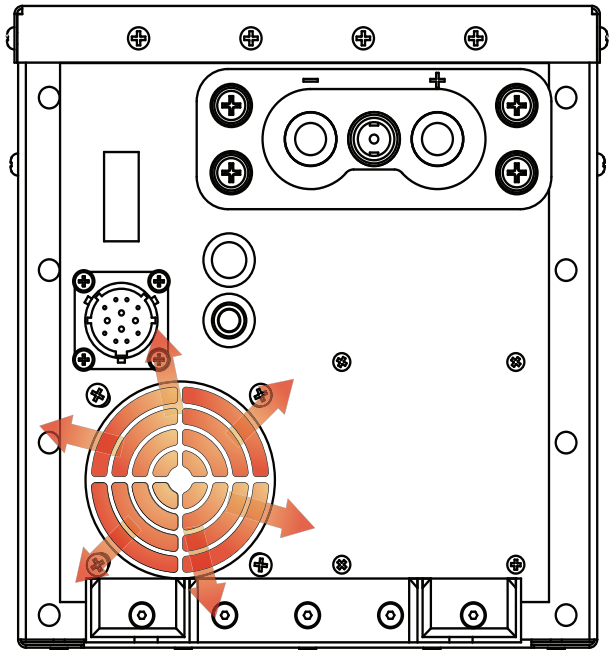
Figure 3.3.1 – Air intake and exhaust ports and internal air circulation

3.4 – Operating Position

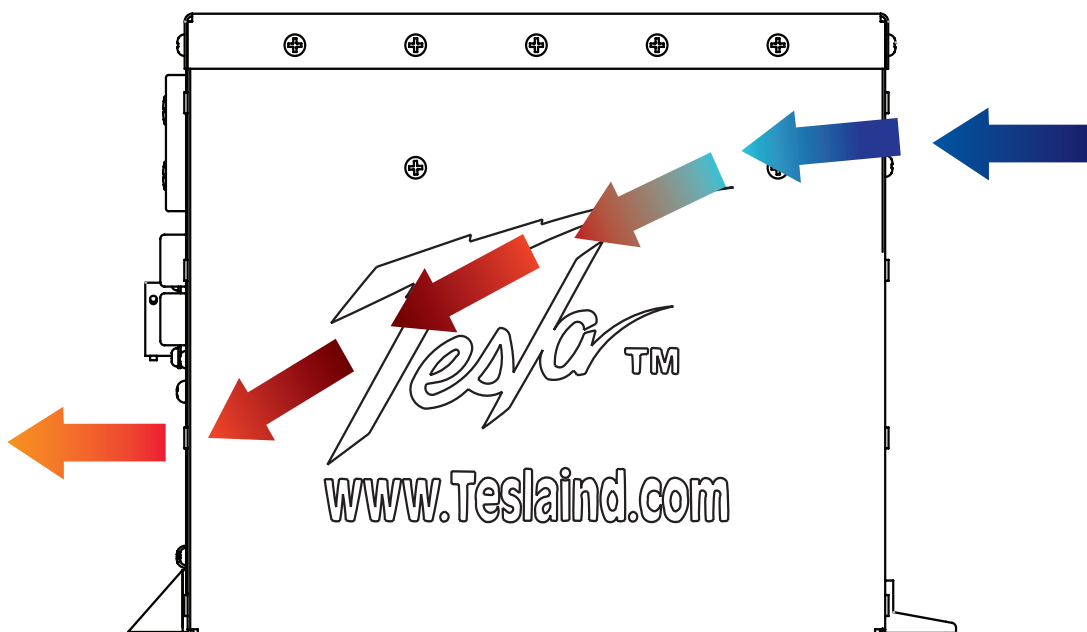
The TI60 MPU-24 should be operated in the horizontal position as shown. Make sure that the airflow is not obstructed from air intake and outlet.



Rear Inlet



Front Outlet



3.5 – Temperature Specifications

Cold/Heat Soaked Temperature

The ambient temperature that a unit is exposed to for one (1) hour or more establishes the unit's cold/heat soaked stabilization temperature. If the TI60 MPU-24's cold/heat soaked temperature is outside the normal operating temperature range, the unit must be stabilized prior to operation. For COLD SOAKED temperature stabilization, the unit must be placed in an environment with a temperature above +10 °C (+41 °F) for 3 hours or a temperature above +20 °C (+68 °F) for 2 hours. For HEAT SOAKED temperature stabilization, the unit must be placed in an environment with a temperature below +38 °C (+100 °F) for 1 hour.

Cell Storage Capacity

The graph below illustrates the TI60's available cell capacity as a function of temperature.

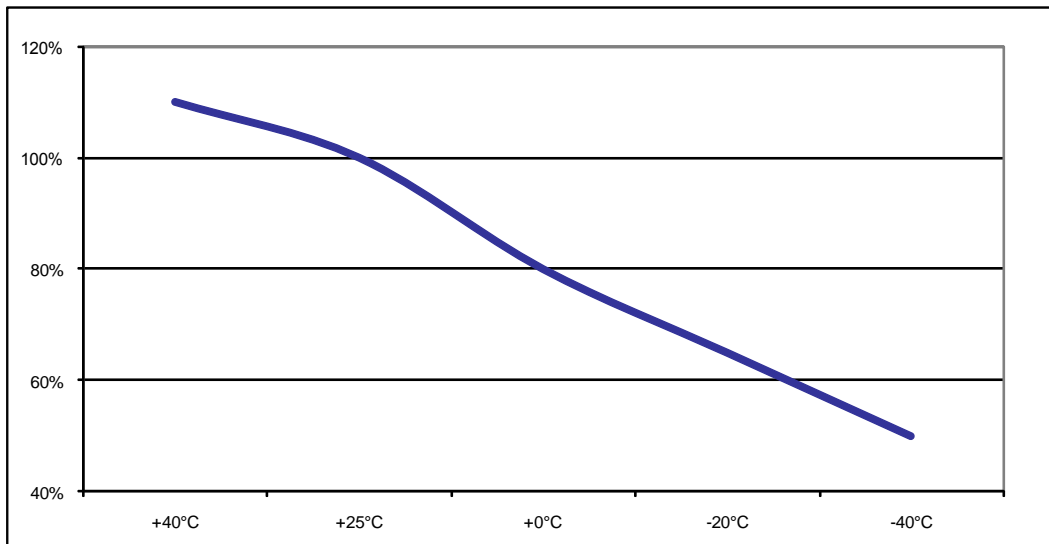


Figure 3.5.1 – Cell storage capacity versus ambient temperature

Heat soaked or cold soaked definition

Simple terms: A hunk of metal (or other thing) starts out at ambient temperature. It's exposed to another temperature that warms or cools the surface. As time goes on, the heat (or cold) evens out throughout the metal and the object is "heat soaked" (or cold soaked). If you take away the source of heat (or cold), the part will remain hot (or cold) for quite some time as it gives off the heat (or cold) that has "soaked" in the metal.

Note: The TI60 MPU-24 is equipped with a charger temperature switch that automatically disables AC and charging functions when the internal temperature reaches above 150 °F (65 °C). This protects the unit from overheating and damage. If the unit shuts down, move the unit into a cooler climate such as shade or air conditioning when possible. Perform a full function test prior to use after the unit has been allowed to cool.

3.6 – Environmental



WARNING

SHOCK HAZARD POTENTIAL

Operating any electrical equipment in the presence of moisture creates possible safety hazards and/or potential for equipment damage. Every effort has been made, within the scope of existing technology to prevent foreseeable safety hazards and make the TI60 MPU-24 moisture resistant to prevent damage or failure. If the TI60 MPU-24 is exposed to moisture, preventive measures and precautions shall be taken to:

- A. Prevent accumulation of moisture on AC and DC connectors/receptacles
- B. Minimize moisture entering forward inlet and outlet cooling fan vent ports

Unit inlet and outlet vent ports shall be covered from exposure. Damage may occur if the TI60 MPU-24 is operated after exposure to moisture. If moisture is suspected, **DO NOT CONNECT** the power cord. Move the unit to a non-humid location and allow it to dry for a minimum of one (1) hour before operating again. **DO NOT USE** the unit if the exterior and/or receptacles are damp.

Section 4 - Pre-Operation

4.1 – Unit Charging

Attaching AC Input Power

Before plugging the line cord into an AC outlet, attach and lock the mating plug to the AC Input Connector. Once accomplished, the unit can be plugged into an electrical outlet to begin charging. The Capacity Meter will immediately show the current charge state of the power cells. Make sure there is at least 2 to 3 inches of clearance in the front of the Air Exhaust Fan to provide for sufficient ventilation. If the unit is completely discharged, a minimum of 74 minutes will be required to fully recharge the unit.



Figure 4.1.1 AC Input Connector (outlined in blue)

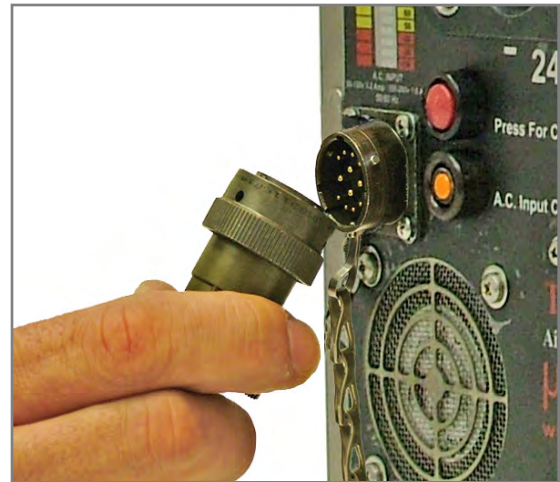
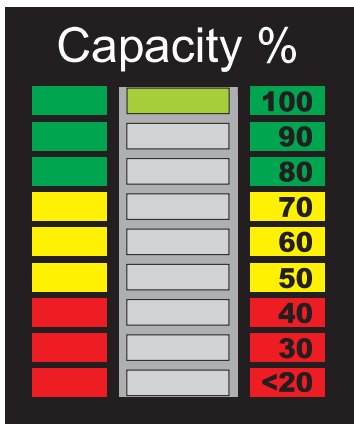


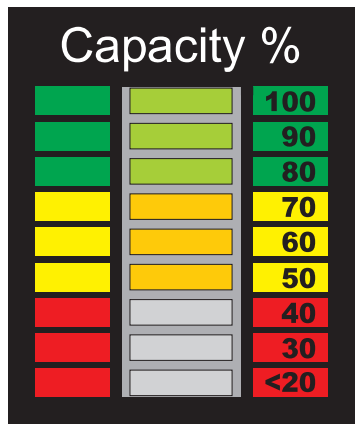
Figure 4.1.2 Attaching AC Line Cord

LED and Fan Activity

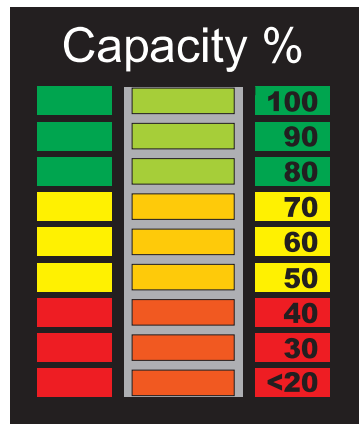
Initially, several LEDs will be illuminated on the Capacity Meter. As the unit charges, the LEDs will go out one by one. Under full charge, the Meter will show a single solid green LED. In addition, the fan will be running at reduced RPM. This indicates that the unit is in standby mode and ready for use.



Full Charge



Half Charge



No Charge

4.2 – “Press for Capacity” Button and LED Indicator

The “Press for Capacity” button is used to indicate the capacity of the power cells without applying AC input power. It allows the end user to check the status of the power cells. This lets the operator know if there is enough power to perform another engine start, or if the unit has to be connected to AC power to allow it to recharge.

- 1) Make sure that you wait at least 2 minutes after AC power is applied, or DC power is extracted from the unit, before you press the “Press for Capacity” button. This will ensure a correct reading.**
- 2) Without AC power input or DC power output, simply press the “Press for Capacity” button on the faceplate and hold for approximately 2 to 3 seconds.**
- 3) At this time the LED bar graph should light up indicating the status of the power cells.**
- 4) The fan should also operate at this time. If you do not hear the fan running, stop pressing the button and check for any obstructions to the fan.**

CAUTION Never press the “Press for Capacity” button while the unit is plugged into AC power for recharge, or plugged into aircraft for DC power output.

CAUTION Never press the “Press for Capacity” button for more than 5 seconds. This may cause a temperature sensor to temporarily disrupt “Press for Capacity” function. (If this sensor is tripped, allow ten minutes for unit to cool before operating “Press for Capacity” button.)

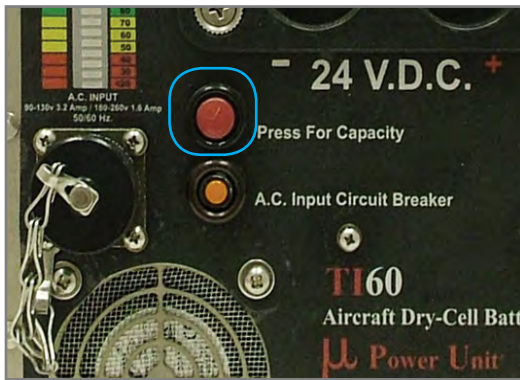
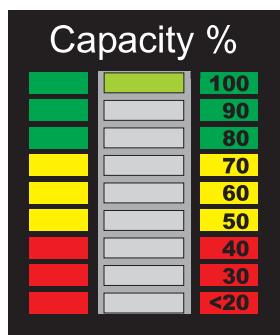


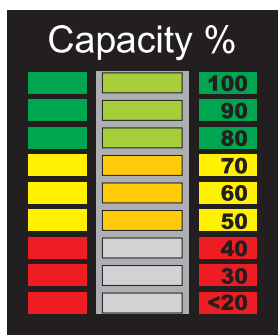
Figure 4.2.1 “Press for Capacity” button location (outlined in blue)



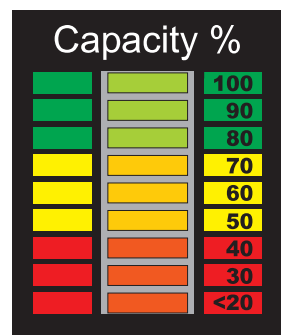
Figure 4.2.2 Pressing Button



Full Charge



Half Charge



No Charge

4.3 – Maintenance Check

Check the unit for dents, punctures, case distortion or misalignment, and cracked or loose connectors. Check cables for cuts, chafing or evidence of crushing. Check connectors for cracks, cuts distortion, excessive wear, broken or loose fasteners, and cables or strain relieves. If no external damage is evident, proceed to next step. Otherwise contact Tesla for further instructions.

4.4 – Pre-Installation Procedures

Removing Original Battery

Follow the aircraft's operator manual procedures to remove and dispose of the original aircraft battery properly and safely. Once the original battery has been removed from the battery compartment, proceed to the next step.

Check Unit Charge State

Before installing the TI60 MPU-24 into the aircraft, make sure the unit is fully charged. Remove the AC line cord from the AC Input Connector and wait two minutes. Then, push the "Press for Capacity" button to verify that the power cells are fully charged. Under a full charge the Capacity Meter will show a single green LED.




NOTE


If the unit is not fully charged after 74 minutes, the power cells may need to be replaced. Return the unit to Tesla Industries for evaluation and maintenance.

Section 5 – Operation Procedures

5.1 – Operating Procedures


This section deals with normal procedures, and includes all steps necessary to ensure safe and efficient operation of the TI60 MPU-24.


 **NOTE** When the TI60 MPU-24 is not in use, it should always remain plugged into a suitable AC power source to insure operational readiness at all times.

 **NOTE** If current demand exceeds 11 AMPS, converter output voltage will drop below 28.5 VDC and two or more LED status indicator bars will illuminate. If all LED status indicator bars illuminate, both the converter and power cells are supplying 24 VDC power output.

5.2 – Engine Starting Power

Operators should always ensure the unit is charged above 80% prior to ground support engine starting. However, circumstances may exist during use where unit recharge is not readily available and immediate external engine starting power is required. The following provides minimum states of charge necessary to provide ample power for an efficient engine start under specific current load demands.

 **NOTE** The ambient temperature may cause the unit’s protective “over-temperature” sensors to shut down the 120-240 AC functions (converter and charger) until the unit cools to normal operating temperatures. If the unit shuts itself down, get the unit into a cooler environment such as shade or air conditioning (if possible). Perform a full function check prior to continued use once the unit is allowed to cool. For continued use in extremely hot environments, it is advised to send the unit back to Tesla for recalibration for use in these environments.

 **NOTE** In the event that the temperature sensors do not shut the system down, extended use above specified limits may damage the unit. If the unit is operated when cold or heat soaked temperatures are exceeded, a full functional check should be accomplished prior to continued use.

ENGINE START PEAK CURRENT Requirements

300	peak starting amps
375	peak starting amps
450	peak starting amps
525	peak starting amps
600	peak starting amps
675	peak starting amps
750	peak starting amps

MINIMUM CHARGE

40% charged
50% charged
60% charged
70% charged
80% charged
90% charged
100% charged

5.3 – General

Correct operation of the TI60 MPU-24 includes both pre-use and operational checks of the unit. Knowledge of the operating limits, restrictions, performance, unit capabilities and functions is fundamental to correct and safe operation. The operator shall ensure compliance with the instructions in this manual that affect operational safety and the warranty of the unit.

5.4 – Operating Limits and Restrictions

The minimum, maximum and normal operating ranges result from careful engineering and evaluation of test data. These limitations must be adhered to during all phases of operation.

5.5 – Performance

Consideration must be given to changes in performance resulting from variations in ambient temperature, mode of operation, state of charge (with or without 120 or 240 VAC power), and aircraft DC bus system inefficiency (voltage drops).

5.6 – Transporting Unit

The TI60 has a rugged nylon carrying strap permanently attached to the top of the unit to provide easy transport and placement into the aircraft. Be sure to check for frays prior to moving unit.



Figure 5.6.1 Nylon Carrying Strap

5.7 – Regulated 28.5 VDC Output Ground Power

Connecting DC Power Cable To Unit

Ensure DC power cable plug is fully seated into the MPU's DC Battery Receptacle. Attaching a DC plug is quick and easy. Line up the plug with the receptacle. Push forward while rotating the T-handle one full turn clockwise. The unit is now ready to safely transfer power.

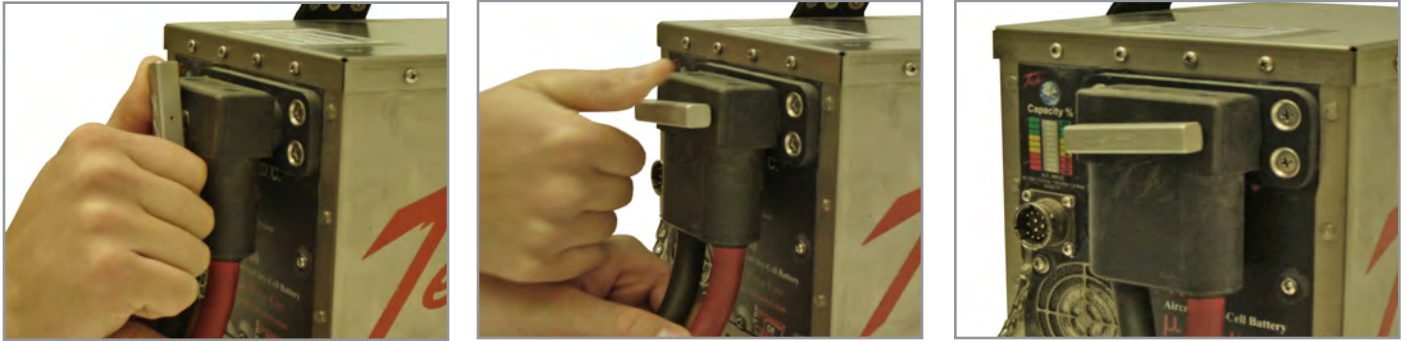


Figure 5.7.1 Attaching DC Power Cable to TI60 MPU-24

5.8 – Regulated AC Power

Plugging in with AC Power

When the TI60 MPU-24 is plugged into AC power, the output is 28.5 volts. This voltage allows the system to recondition and recharge the aircraft's battery(s). It is also an optimum voltage for powering avionics and lighting on most aircraft. The MPU's AC to DC converter produces continuous amps of DC power depending on the size of the system.

Ensure 120 or 240 VAC power cord is properly connected to an approved AC power supply. After approximately 5-8 seconds, unit's LED status indicator will illuminate indicating power cell state of charge. Cooling fan will operate. Ensure LED status indicator and cooling fan is operational prior to continuing.



Figure 5.8.1 Connecting TI60 to AC Power Supply

Connect DC Power To Aircraft (Low Power Demand)

Low power demand is defined by a requirement of 10 AMPS or less. Connect DC power to aircraft ground power receptacle. DC bus power should come on and aircraft voltmeter should indicate 28.5 VDC to 27 VDC (26.5 VDC minimum). If aircraft power demand is less than 10 amps converter output will remain at 28.5 VDC (only one GREEN LED status indicator bar will illuminate). If aircraft power demand exceeds 10 amps converter voltage output will decrease and two or more LED status indicator bars will illuminate.

Connect DC Power To Aircraft (High Power Demand)

High power demand is defined by a requirement of 11 AMPS or more. Connect to aircraft ground power receptacle. DC bus power should come on and aircraft voltmeter should indicate 27.5 VDC to 23.5 VDC (23 VDC minimum). If current demand is above 11 amps, converter output voltage will drop below 28.5 VDC and two or more LED status indicator bars will illuminate. At approximately 11 amps of current demand, converter output voltage will be regulated at 24 VDC output and the last (RED) LED status indicator bar will illuminate.



NOTE

When all LED status indicator bars illuminate, both the converter and power cells are supplying 24 VDC power output for current demands above 11 amps.

Engine Starting

UNPLUG AC POWER CORD BEFORE STARTING ENGINE WITH TI60 MPU-24

Prior to engine start, ensure power cell charge is sufficient to provide an efficient engine start. Users should follow ground power engine starting procedures as specified in the aircraft's operator manual.

5.9 - Connect DC Power To Dillon M134 Minigun

Removing Original Battery

Follow the operator's manual procedures to remove and dispose of the original minigun battery properly and safely. Once the original battery has been removed from the battery compartment, proceed to the next step.

Check Unit Charge State

Before connecting the TI60 MPU-24 to the minigun, make sure the unit is fully charged. Remove the AC line cord from the AC Input Connector and wait two minutes. Then, push the "Press for Capacity" button to verify that the power cells are fully charged. Under a full charge the Capacity Meter will show a single green LED.



NOTE

If the unit is not fully charged after 74 minutes, the power cells may need to be replaced. Return the unit to Tesla Industries for evaluation and maintenance.

5.10 - Connect DC Power To Dual Dillon M134 Miniguns

Using the optional TI2006-903 Y-Cable, the TI60 MPU-24 is capable of providing power to two Miniguns simultaneously. Connect the Minigun's DC wiring harness to the DC Receptacle at the end of the TI2006-903 Y-Cable. Connect the Y-Cable's DC Connector to the TI60 (refer to section 5.7). The unit is now ready to safely transfer power.

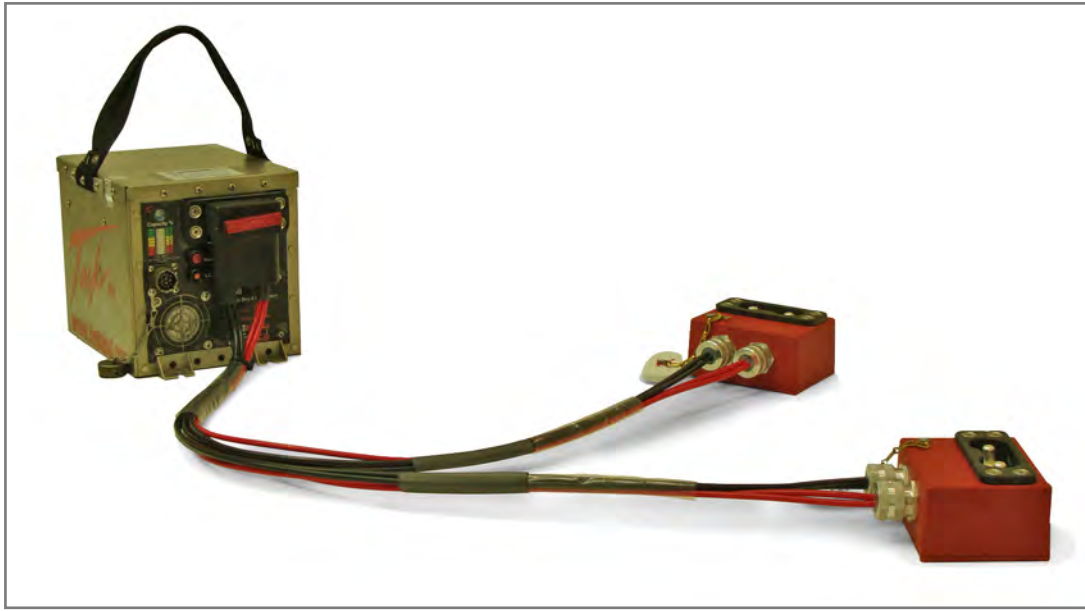


Figure 5.10.1 TI2006-903 connected to TI60 MPU-24

Section 6 – Post Operation

6.1 – General

Although the TI60 MPU-24 has been ruggedized and made weather resistant within the scope of unit's intended use, it is essential that good general care be taken to maintain unit in good operating condition and to maximize unit's operational life.

6.2 – After Use

Unit should be protected from environmental elements and man made hazards. Ideally unit should be secured in a building or shed. Most importantly, unit shall be fully covered if stored while exposed to environmental elements.

6.3 – Power Cell Recharge

When Installed in an operating aircraft, the TI60 MPU-24 will back-charge from the aircraft's DC power. Otherwise, the TI60 MPU-24 has an intelligent recharging system that will enable it to rapidly recharge when connected to an AC power source. If the unit's power cells become fully discharged, the unit should be recharged within 24 hours to ensure maximum life and performance. Under normal circumstances a minimum of 74 minutes will be required to fully recharge the unit.

 NOTE	Plug the TI60 MPU-24 into AC power to keep the cells charged whenever it is not in use, even if it is at Full Charge. The unit will not overcharge or overheat.
---	--

Connect AC Power Cord to Unit

Ensure **120 or 240 VAC power cord** is properly connected to an approved AC power supply. After approximately 5-8 seconds, ensure unit's LED status indicator illuminates indicating power cell state of charge and cooling fan is operating.

Any time the unit's power cells are fully discharged the unit shall be recharged within 24 hours to prevent performance degradation and ensure maximum life.



Figure 6.3.1 Connecting TI60 MPU-24 to AC Power Supply

! CAUTION Guard From Incorrect Power Source

The TI60 MPU-24's power cells may be damaged if recharged by NiCad or Lead Acid-type battery chargers. Power cells should only be charged by either the TI60 MPU-24's internal charger and the AC power cord furnished with the equipment, or when connected to aircraft's external DC power receptacle.



Figure 6.3.3 Proper and Improper Charging Methods

Section 7 – Unit Care and Maintenance



DANGER

Severe injury or death from electrical shock will occur if either the user or the TI60 MPU-24 is wet while operating the unit with an AC power source attached.



CAUTION

Damage may occur if an unapproved or modified AC line cable or input plug is attached to the MPU. Do not use any type of AC voltage converter.

7.1 - Unit Care

Avoid Prolonged Exposure to Extremely Damp Environments

Be sure to disconnect AC power from the AC source if the TI60 MPU-24 has come into contact with water. If the AC Input Circuit Breaker has tripped due to water infiltration, allow the unit to dry out before attempting to reset circuit breaker. Cover the unit to prevent water seepage. If the unit is operated in extremely damp conditions, it should be stored in an environmentally controlled building when not in use. Wipe unit clean periodically with a soft cloth to remove dust, dirt, etc.



Protect Cables from Damage

Do not cut, crush, or drag the input or output power cables when handling the TI60 MPU-24. Always inspect cables prior to use. If no damage is evident, proceed to the next step. If damage is evident, contact Tesla™ Customer Service. Do not attempt to use any other type of power cables other than the Tesla™ cables included with the TI60 MPU-24.



Figure 7.1.1 – Damaged cable

7.2 – Normal Function Test Procedures

This section deals with “normal function” test procedures, and includes all steps necessary to ensure that the TI60 MPU-24 is operating within specified parameters prior to use. A digital multimeter (an example is shown in Figure 7.2.1) capable of measuring DC and AC voltage and resistance will be required to perform some of the tests. These functional test procedures should become routine.



Figure 7.2.1 – Digital Multimeter

Check Unit for Evidence of Damage

Check for dents, punctures, case distortion or misalignment, and cracked or loose connectors. If no damage is evident, proceed to the next step. If damage is evident, contact Tesla™ Industries, Inc.

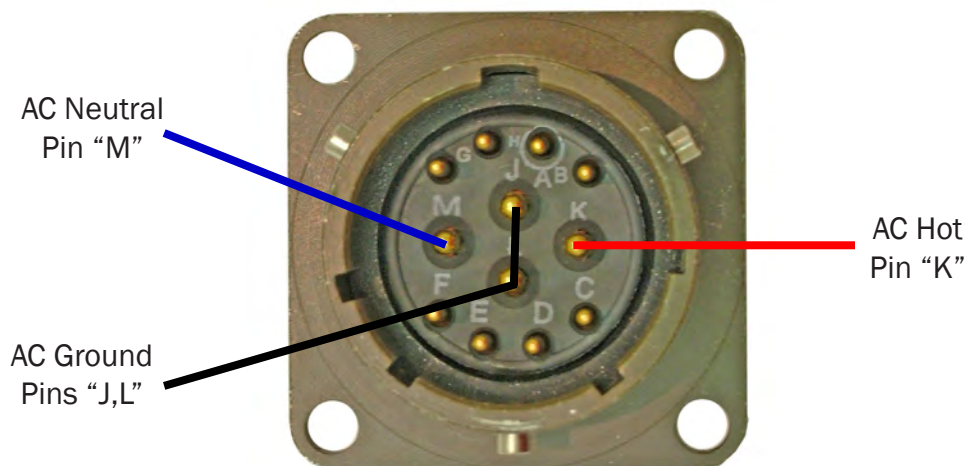


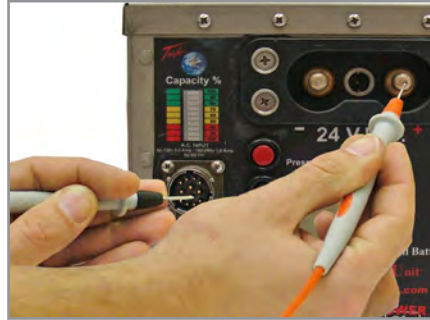
Figure 7.2.2 – AC Input Connector wiring diagram

Check Unit Internal Resistance (Test for Shorts)

This section deals with “normal function” test procedures, and includes all steps necessary to ensure that the TI60 MPU-24 is operating within specified parameters prior to use. A digital multimeter (an example is shown in Figure 7.2.1) capable of measuring DC and AC voltage and resistance will be required to perform some of the tests. It is essential to test for shorts to detect any problems with the unit. First, set the multimeter to the “resistance”. Next, test to see if both terminals are isolated from the chassis ground and the line ground using the steps below. In steps 2, 3, 5 and 6, a reading of greater than 10 megohms will assure no shorts exist. In steps 1 and 4, the multimeter should read less then 1 ohm.



1. Place the negative probe on the AC ground probe (J or L) and the positive probe on an exposed part of the metal case.



2. Move the positive probe to the DC positive post on the DC Output Connector.



3. Move the positive probe to the DC negative post on the DC Output Connector.



4. Move the positive probe to one of the four screws securing the DC Output Connector to the unit casing.



5. Move the negative probe to the DC negative post on the DC Output Connector.



6. Move the negative probe to the DC positive post on the DC Output Connector.

Check DC Voltage Reading at DC Receptacle Terminals

To verify that the power cells are fully charged, set the digital multimeter to measure DC voltage. Place the positive probe (red) on the positive post of the DC Output Connector, as shown in Figure 7.2.3. Next, place the negative probe on the negative post. The multimeter display should read approximately 28.5 VDC (± 0.5 VDC) when power cells are fully charged and the unit is plugged into an AC power source. When the unit is not plugged into an AC power source, the multimeter display should read 25.5 VDC.



Figure 7.2.3 – Testing DC Receptacle

7.3 – Unit Servicing

The TI60 MPU-24 is a maintenance-free, sealed unit. No repairs outside of Tesla™ are authorized. Warranty will be voided if unit is tampered with in any way including any damage to the WARRANTY VOID stickers located on the case (see Figure 7.3.1 below). If the unit requires maintenance, please contact Tesla's™ Customer Service Department at (302) 324-8910. A Repair Request Form can be found in the back of this manual.



Figure 7.3.1 – Warranty Void stickers on the TI60 MPU-24

7.4 – Packaging and Shipping

When returning the MPU, please ensure that it is properly packaged. The only method for transport is in a sturdy shipping crate (be sure to enclose the Repair Request Form). Seal the crate on all sides and return it to Tesla™ at the address listed below. Please contact Tesla's Customer Service Department at (302) 324-8910 with any questions or concerns.

TESLA™ INDUSTRIES, INCORPORATED
109 CENTERPOINT BLVD.
CENTERPOINT INDUSTRIAL PARK
NEW CASTLE, DELAWARE 19720
PHONE: (302) 324-8910 FAX: (302) 324-8912
Website: www.teslaind.com Email: Tesla1@teslaind.com

Section 8 – FAQ

1. Why should I buy a Tesla TI60 MPU-24?

A Tesla MPU has dramatic advantages over standard aircraft batteries. The advantages include power, durability, and longevity. A Tesla MPU will provide more power for testing avionics and starting than comparable competitors. The dry cells are more resistant to heat and vibration. A Tesla MPU does not experience thermal runaway. A Tesla MPU is equipped with a built in intelligent charger. To keep a Tesla MPU in perfect condition, plug it into a standard wall socket.

2. Do the cells have memory?

The cells have no memory. The user can plug the TI60 MPU-24 into AC for charging regardless of the unit's current state of charge. The intelligent charger will keep a fully charged battery by trickle charging. Keeping a fully charged TI60 MPU-24 plugged into AC when not in use will prolong the life of the batteries.

3. How are Micro Power Units used in Aviation Support?

There are many ways a MPU will benefit your operation. By using it for pre-flight testing, you will avoid depleting the aircraft's battery. You can start the aircraft's engine with the MPU as well. In the hangar, when connected to AC power, the MPU will provide 28.5 VDC for avionics testing and will also recondition and recharge the aircraft's battery.

4. How much power will my TI60 MPU-24 provide?

Depending on the system, the MPU will provide up to 10 continuous amps with AC line voltage and 750 peak starting amps directly from the internal cells.

5. Will a Tesla Turbo Start spool up a turbine engine?

Nothing will start a turbine engine faster or safer than the right Tesla Turbo Start. Not only will it eliminate hot starts, but it will extend the life of your starter, your engine and your battery while reducing maintenance. The Turbo Start senses the impedance from the starter/generator. It then provides the exact power required throughout the start-up curve.

6. How many engine starts will my MPU provide until it is depleted?

The MPU back-charges, almost instantly, once the aircraft is started and the generator is on line. This "power flywheel" feature enables the Turbo Start to recharge itself right from the aircraft it started in less than 30 seconds.

7. How do you prolong the life of the TI60 MPU-24's cells?

All you need to do is plug the unit in to the appropriate AC power outlet the system requires. AC power will recharge the system and keep the cells healthy. Users who regularly plug the system in can expect to get 5-7 years from their cells before they need to be replaced. Tesla cells do not have a memory like cell phone batteries. There is no need to fully discharge them. The recharging system will not overcharge the unit or produce excess heat.

8. Is it waterproof?

Water-resistant but not waterproof. See Page 25 Section 7.1 for further information.

9. Why does the cooling fan run continuously when the MPU is plugged into AC power? Why does the cooling fan slow down?

The cooling fan speed varies to regulate the temperature of the internal circuitry when plugged into an AC power source.

10. Can one person transport it?

Micro Power Units are designed to be handled by one person. The TI60 MPU-24 provides a rugged nylon strap attached to the top of the unit that helps easily transport and place into aircrafts. See Section 5.6 for more information.

11. Is the TI60 MPU-24 in the government purchasing system?

Yes. Tesla Industries is an approved vendor/supplier – our cage code is OVWE2. Most Tesla products are class IX, have a NSN (National Stock Number) designation and can be acquired through the DLA (Defense Logistics Agency).

12. How long does this unit stay charged?

Unit should never be allowed to discharge fully. In-field use, it receives a DC back charge directly from a running engine. When not in use, unit should be plugged into AC power (outlet) all the time. Tesla systems will retain 80% of their capacity after one year of storage.

13. How do I get my TI60 MPU-24 serviced?

Contact Tesla. We can be reached at 302-324-8910. Ask for customer service. You can also email us at tesla1@teslaind.com. Once we receive the unit at our facility, we will examine it. Systems that are protected under warranty will be repaired at no charge. If the warranty has expired, you will receive a quote for necessary repairs prior to work being done. Our turnaround time is 48 hours once repairs are authorized.

14. Can I make my own repairs to unit?

During the warranty period, the unit can only be repaired by Tesla Industries for the warranty to remain in effect. Regardless, we strongly recommend allowing Tesla to repair any unit as we will analyze the complete system and re-calibrate it.

15. What type of maintenance does the TI60 MPU-24 require?

Although the systems are maintenance free, please keep units plugged in while not in use. This will greatly extend the life of the cells. Also, keep the vent areas clean and free of debris. Keep units in a well ventilated area while charging. Keep the unit in a protected environment when not in use (maintenance facility, shed).

16. What is included with my TI60 MPU-24?

Customers receive an AC line cord for their home country and a full two year warranty.

17. Are there any HAZMAT issues or disposability problems?

There are none. Tesla will reclaim all battery cells for disposability purposes. Contact Tesla if you have questions.

Section 9 – Optional Accessories

9.1 – Tesla AC Line Cords

AC line cords come in several lengths or can be custom-ordered to fit your needs. Tesla™ specializes in outfitting cables with a variety of connectors and junction boxes. Contact Tesla's™ customer service department to find out more about our selection of cords.

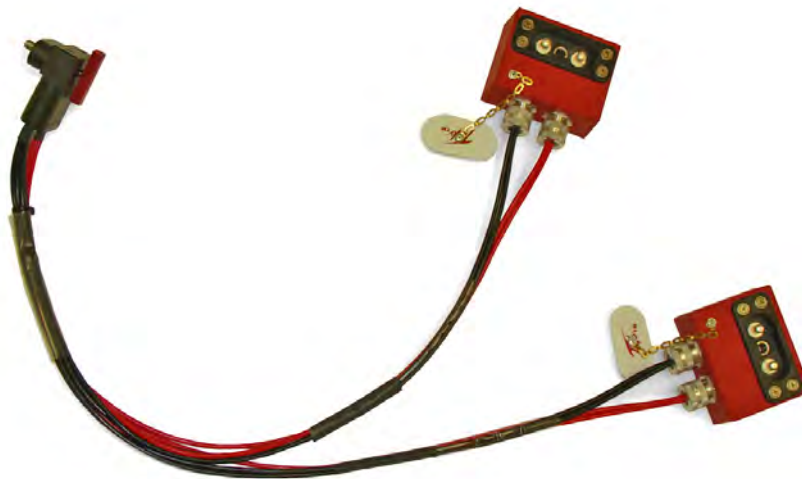
Universal Line Cords

- TI25000-111 North American Line Cord
105-125 VAC 60 Hz 6.50 amps max.
- TI25000-112 Italian Line Cord
10A/250V
- TI25000-113 European Line Cord
10A/250V-210-250 VAC 50/60 Hz 3.25 amps max.
- TI25000-114 Old British Line Cord
210-250 VAC 50/60 Hz 3.25 amps max.
- TI25000-115 England Line Cord
10A/250- 210/250 VAC 50/60 Hz 3.25 amps max.
- TI25000-120 Israel Line Cord
6/10A/250V



9.2 - TI2006-903 Y-Cable

Using the optional TI2006-903 Y-Cable, the TI60 MPU-24 is capable of providing power to two M134 Dillon Miniguns simultaneously.



Abbreviations and Symbols

Abbreviations and symbols are used within text, headings and titles. Unless otherwise indicated, the following list of abbreviations and symbols are used in this manual:

LIST OF ABBREVIATIONS AND SYMBOLS

Abbreviation	Definition
Amp	Ampere
AC	Alternating Current
C	Celsius
cont	Continuous
DC	Direct Current
F	Fahrenheit
Ft	Feet
FWD	Forward
GPU	Ground Power Unit
Hr	Hour
Hz	Hertz
Kg	Kilograms
KW	Kilowatts
°	Degree
LED	Light Emitting Diode
MAX	Maximum
MIN	Minimum
VAC	Volts, Alternating Current
VDC	Volts, Direct Current

APPENDIX A

OPTIONAL LINE CORDS FOR WORLDWIDE OPERATIONS

<u>COUNTRY</u>	<u>VOLTS</u>	<u>HZ</u>	<u>TESLA PART #</u>
Afghanistan	220	50	TI25000-004 Old British Line Cord
Algeria	220	50	TI25000-004 Old British Line Cord
American Samoa	240	60	TI25000-011 Australian Line Cord
Angola	220	50	TI25000-003 Continental European Line Cord
Anguilla (U.K.)	240	50	TI25000-005 United Kingdom Line Cord
Antigua	230	60	TI25000-005 United Kingdom Line Cord
Argentina	220	50	TI25000-011 Australian Line Cord
Aruba	115	60	TI25000-001 North American Line Cord
Australia	240	50	TI25000-011 Australian Line Cord
Austria	220	50	TI25000-003 Continental European Line Cord
Azores (Portugal)	220	50	TI25000-004 Old British Line Cord
Bahamas	120	60	TI25000-001 North American Line Cord
Bahrain	220	50	TI25000-005 United Kingdom Line Cord
Bangladesh	220	50	TI25000-004 Old British Line Cord
Barbados	115	50	TI25000-001 North American Line Cord
Belgium	220	50	TI25000-003 Continental European Line Cord
Belize (Br. Hond.)	110	60	TI25000-001 North American Line Cord
Benin	220	50	TI25000-004 Old British Line Cord
Bermuda	120	60	TI25000-005 United Kingdom Line Cord
Bolivia	220	50	TI25000-003 Continental European Line Cord
Botswana	220	50	TI25000-005 United Kingdom Line Cord
Brazil	110	60	TI25000-001 North American Line Cord
Bulgaria	220	50	TI25000-003 Continental European Line Cord
Burkina Faso	220	50	TI25000-003 Continental European Line Cord
Burma (Now Myanmar)	230	50	TI25000-005 United Kingdom Line Cord
Burundi	220	50	TI25000-003 Continental European Line Cord
Cambodia	220	50	TI25000-003 Continental European Line Cord
Cameroon	230	50	TI25000-003 Continental European Line Cord
Canada	120	60	TI25000-001 North American Line Cord
Canary Islands (Spain)	220	50	TI25000-003 Continental European Line Cord
Cape Verde, Rep. of	220	50	TI25000-003 Continental European
Cayman Islands	120	60	TI25000-001 North American Line Cord
Central African Republic	220	50	TI25000-003 Continental European Line Cord
Chad	220	50	TI25000-003 Continental European Line Cord
Channel Islands	240	50	TI25000-005 United Kingdom Line Cord
Chile	220	50	TI25000-002 Italian Line Cord
China, Peoples Republic of	220	50	TI25000-011 Australian Line Cord
Christmas Island (Australia)	240	50	TI25000-011 Australian Line Cord
Cocos Islands (Australia)	240	50	TI25000-011 Australian Line Cord
Columbia	220	60	TI25000-003 Continental European Line Cord
Congo, Republic of	220	50	TI25000-003 Continental European Line Cord
Cook Island (New Zealand)	240	50	TI25000-011 Australian Line Cord
Costa Rica	120	60	TI25000-001 North American Line Cord
Curacao Islands	110	60	TI25000-001 North American Line Cord
Cyprus	240	50	TI25000-005 United Kingdom Line Cord
Czech, Republic of	220	50	TI25000-003 Continental European Line Cord
Denmark	220	50	TI25000-300 Denmark Line Cord
Djibouti, Republic of	220	50	TI25000-003 Continental European Line Cord
Dominica	230	50	TI25000-005 United Kingdom Line Cord
Dominican Republic	110	60	TI25000-001 North American Line Cord

APPENDIX A (Cont.)

OPTIONAL LINE CORDS FOR WORLDWIDE OPERATIONS

<u>COUNTRY</u>	<u>VOLTS</u>	<u>HZ</u>	<u>TESLA PART #</u>
Ecuador	120	60	TI25000-001 North American Line Cord
Egypt	220	50	TI25000-003 Continental European Line Cord
El Salvador	115	60	TI25000-001 North American Line Cord
England	240	50	TI25000-005 United Kingdom Line Cord
Equatorial Guinea	220	50	TI25000-003 Continental European Line Cord
Estonia	220	50	TI25000-003 Continental European Line Cord
Ethiopia	220	50	TI25000-003 Continental European Line Cord
Fiji	240	50	TI25000-011 Australian Line Cord
Finland	220	50	TI25000-003 Continental European Line Cord
France	220	50	TI25000-003 Continental European Line Cord
French Guiana	220	50	TI25000-003 Continental European Line Cord
Gabon	220	50	TI25000-003 Continental European Line Cord
Gambia	220	50	TI25000-005 United Kingdom Line Cord
Georgia	220	50	TI25000-003 Continental European Line Cord
Germany	220	50	TI25000-003 Continental European Line Cord
Ghana	220	50	TI25000-005 United Kingdom Line Cord
Gibraltar	240	50	TI25000-005 United Kingdom Line Cord
Greece	220	50	TI25000-003 Continental European Line Cord
Greenland (Denmark)	220	50	TI25000-300 Denmark Line Cord
Grenada	230	50	TI25000-005 United Kingdom Line Cord
Guadeloupe	220	50	TI25000-003 Continental European Line Cord
Guam	110-120	60	TI25000-001 North American Line Cord
Guatemala	120	60	TI25000-001 North American Line Cord
Guinea	220	50	TI25000-003 Continental European Line Cord
Guinea-Bissau	220	50	TI25000-003 Continental European Line Cord
Guyana	110	50/60	TI25000-001 North American Line Cord
Haiti	110-120	50-60	TI25000-001 North American Line Cord
Honduras	110	60	TI25000-001 North American Line Cord
Hong Kong	220	50	TI25000-005 United Kingdom Line Cord
Hungary	220	50	TI25000-003 Continental European Line Cord
Iceland	220	50	TI25000-003 Continental European Line Cord
India	220-250	50	TI25000-004 Old British Line Cord
Indonesia	220	50	TI25000-003 Continental European Line Cord
Iran	220	50	TI25000-003 Continental European Line Cord
Iraq	220	50	TI25000-005 United Kingdom Line Cord
Ireland, Republic of	220	50	TI25000-005 United Kingdom Line Cord
Isle of Man	240	50	TI25000-005 United Kingdom Line Cord
Israel	230	50	TI25000-200 Israel Line Cord
Italy	220	50	TI25000-002 Italian Line Cord
Ivory Coast	220	50	TI25000-003 Continental European Line Cord
Jamaica	110	50	TI25000-001 North American Line Cord
Japan	110	50/60	TI25000-001 North American Line Cord
Jordan	220	50	TI25000-005 United Kingdom Line Cord
Kenya	240	50	TI25000-005 United Kingdom Line Cord
Korea, South	220	60	TI25000-003 Continental European Line Cord
Kuwait	240	50	TI25000-005 United Kingdom Line Cord

APPENDIX A (Cont.)

OPTIONAL LINE CORDS FOR WORLDWIDE OPERATIONS

<u>COUNTRY</u>	<u>VOLTS</u>	<u>HZ</u>	<u>TESLA PART #</u>
Laos	220	50	TI25000-001 North American Line Cord
Latvia	220	50	TI25000-003 Continental European Line Cord
Lebanon	220	50	TI25000-003 Continental European Line Cord
Lesotho	240	50	TI25000-004 Old British Line Cord
Liberia	120	60	TI25000-005 United Kingdom Line Cord
Liechtenstein	220	50	TI25000-006 Switzerland Line Cord
Lithuania	220	50	TI25000-003 Continental European Line Cord
Luxembourg	220	50	TI25000-003 Continental European Line Cord
Libya	230	50	TI25000-002 Italian Line Cord
Macao	220	50	TI25000-004 Old British Line Cord
Madagascar	220	50	TI25000-003 Continental European Line Cord
Maderia (Portugal)	220	50	TI25000-004 Old British Line Cord
Majorca	220	50	TI25000-003 Continental European Line Cord
Malawi	230	50	TI25000-005 United Kingdom Line Cord
Malaysia	240	50	TI25000-005 United Kingdom Line Cord
Maldives	230	50	TI25000-004 Old British Line Cord
Mali, Republic of	220	50	TI25000-003 Continental European Line Cord
Malta	240	50	TI25000-005 United Kingdom Line Cord
Martinique	220	50	TI25000-003 Continental European Line Cord
Mauritania	220	50	TI25000-003 Continental European Line Cord
Mauritius	230	50	TI25000-005 United Kingdom Line Cord
Mexico	127	60	TI25000-001 North American Line Cord
Monaco	220	50	TI25000-003 Continental European Line Cord
Mongolia	220	50	TI25000-003 Continental European Line Cord
Montseurrat	230	60	TI25000-005 United Kingdom Line Cord
Morocco	220	50	TI25000-003 Continental European Line Cord
Mozambique	220	50	TI25000-003 Continental European Line Cord
Namibia (W.S. Africa)	220-250	50	TI25000-004 Old British Line Cord
Nepal	220	50	TI25000-004 Old British Line Cord
Neth. Antilles	220	50/60	TI25000-003 Continental European Line Cord
Netherlands	220	50	TI25000-003 Continental European Line Cord
New Caledonia	220	50	TI25000-003 Continental European Line Cord
New Zealand	230	50	TI25000-011 Australian Line Cord
Nicaragua	120	60	TI25000-001 North American Line Cord
Niger	220	50	TI25000-003 Continental European Line Cord
Nigeria	230	50	TI25000-005 United Kingdom Line Cord
Norfolk Islands (Australia)	240	50	TI25000-011 Australian Line Cord
North Ireland	220	50	TI25000-005 United Kingdom Line Cord
North Mariana Islands (U.S.)	115	60	TI25000-001 North American Line Cord
Norway	220	50	TI25000-003 Continental European Line Cord
Okinawa	100-120	60	TI25000-001 North American Line Cord
Oman	240	50	TI25000-005 United Kingdom Line Cord
Pakistan	230	50	TI25000-004 Old British Line Cord
Panama	110	60	TI25000-001 North American Line Cord
Papua New Guinea	240	50	TI25000-011 Australian Line Cord
Paraguay	220	50	TI25000-003 Continental European Line Cord
Peru	110	50/60	TI25000-001 North American Line Cord
Philippines	115	60	TI25000-001 North American Line Cord
Piccairn Islands (U.K.)	240	50	TI25000-004 Old British Line Cord
Poland	220	50	TI25000-003 Continental European Line Cord
Portugal	220	50	TI25000-003 Continental European Line Cord
Puerto Rico	120	60	TI25000-001 North American Line Cord

APPENDIX A (Cont.)

OPTIONAL LINE CORDS FOR WORLDWIDE OPERATIONS

<u>COUNTRY</u>	<u>VOLTS</u>	<u>HZ</u>	<u>TESLA PART #</u>
Romania	220	50	TI25000-003 Continental European Line Cord
Russia	220	50	TI25000-003 Continental European Line Cord
Rwanda	220	50	TI25000-003 Continental European Line Cord
Saudia Arabia	220	50/60	TI25000-003 Continental European Line Cord
Scotland	220	50	TI25000-005 United Kingdom Line Cord
Senegal	220	50	TI25000-003 Continental European Line Cord
Seychelles	240	50	TI25000-005 United Kingdom Line Cord
Sierra Leone	230	50	TI25000-005 United Kingdom Line Cord
Singapore	230	50	TI25000-005 United Kingdom Line Cord
Slovakia	220	50	TI25000-003 Continental European Line Cord
Somalia	220	50	TI25000-003 Continental European Line Cord
South Africa	220-250	50	TI25000-004 Old British Line Cord
Spain	220	50	TI25000-003 Continental European Line Cord
Sri Lanka	230	50	TI25000-004 Old British Line Cord
St. Pierre & Miquelon (France)	115	60	TI25000-001 North American Line Cord
St. Kitts & Nevis	230	60	TI25000-005 United Kingdom Line Cord
St. Lucia	240	50	TI25000-005 United Kingdom Line Cord
St. Vincent	230	50	TI25000-005 United Kingdom Line Cord
Sudan	240	50	TI25000-005 United Kingdom Line Cord
Surinam	115	60	TI25000-003 Continental European Line Cord
Svalbard (Norway)	220	50	TI25000-003 Continental European Line Cord
Swaziland	230	50	TI25000-004 Old British Line Cord Set
Sweden	220	50	TI25000-003 Continental European Line Cord
Switzerland	220	50	TI25000-006 Switzerland Line Cord
Syria	220	50	TI25000-003 Continental European Line Cord
Tahiti	220	50	TI25000-003 Continental European Line Cord
Taiwan	110	60	TI25000-001 North American Line Cord
Tanzania	230	50	TI25000-005 United Kingdom Line Cord
Thailand	220	50	TI25000-003 Continental European Line Cord
Togo	220	50	TI25000-003 Continental European Line Cord
Tonga	115	60	TI25000-004 Old British Line Cord
Trinidad & Tobago	230	60	TI25000-005 United Kingdom Line Cord
Tunisia	220	50	TI25000-003 Continental European Line Cord
Turkey	220	50	TI25000-003 Continental European Line Cord
Uganda	220	50	TI25000-004 Old British Line Cord
United Arab Emir.	220	50	TI25000-005 United Kingdom Line Cord
United Kingdom & Ireland	240	50	TI25000-005 United Kingdom Line Cord
United States	120	60	TI25000-001 North American Line Cord
Uruguay	220	50	TI25000-011 Australian Line Cord
Venezuela	120	60	TI25000-001 North American Line Cord
Vietnam	220	50	TI25000-003 Continental European Line Cord
Virgin Islands	120	60	TI25000-001 North American Line Cord
Wales	220	50	TI25000-005 United Kingdom Line Cord
Western Samoa	230	50	TI25000-005 United Kingdom Line Cord
Yemen	220	50	TI25000-005 United Kingdom Line Cord
Yugoslavia	220	50	TI25000-003 Continental European Line Cord
Zaire, Republic of	220	50	TI25000-003 Continental European Line Cord
Zambia	220	50	TI25000-005 United Kingdom Line Cord
Zimbabwe	220	50	TI25000-005 United Kingdom Line Cord

APPENDIX A (Cont.)

UNIVERSAL LINE CORD KIT FOR WORLDWIDE OPERATIONS

NOTE: TESLA UNIVERSAL AC LINE CORD KIT, P/N: TI25000-U00, IS FOR UNITS ORIGINALLY BUILT WITH THE UNIVERSAL AC LINE CORD OPTION ONLY.

THE AC ADAPTER OPTION IS TESLA P/N TI16000-19 AND MUST BE ORDERED WITH THE ORIGINAL PROCUREMENT OF UNIT(S). UNIT(S) MAY BE RETURNED TO TESLA INDUSTRIES, FOR A NOMINAL COST, AND MODIFIED TO ALLOW OPERATION WITH THE UNIVERSAL AC LINE CORD KIT.

TESLA UNIVERSAL AC LINE CORD KIT, P/N: TI25000-U00, IS COMPRISED OF THE FOLLOWING FOUR PART NUMBERS:

TI25000-U01	NORTH AMERICAN LINE CORD
TI25000-U04	OLD BRITISH LINE CORD
TI25000-U03	EUROPEAN 10A/250V
TI25000-U05	ENGLAND 10A/250V

TESLA REPLACEMENT 8 FOOT DC POWER CORD, P/N: TI2006-501, IS AVAILABLE UPON REQUEST. (CUSTOM LENGTHS ARE ALSO AVAILABLE TO SUIT THE CUSTOMERS OPERATIONAL REQUIREMENTS.)

Repair Request Form

Please complete the information below to ensure prompt and accurate service. Include this form with the unit you are returning.
Thank you.

Date of return: _____

Company name & _____

Billing address: _____

Contact person: _____

Phone #: _____ Fax #: _____

Purchase Order #: _____

Email: _____

Model #: _____ Serial #: _____

Model #: _____ Serial #: _____

Shipping method to Tesla: _____

Description of shipping package: _____

Description of problem: _____

Return to Tesla™ Industries, Inc.

109 Centerpoint Boulevard, New Castle, DE 19720 Attention: Repair Department