



Operation and Maintenance Manual

54V Lithium-Ion Battery Charger

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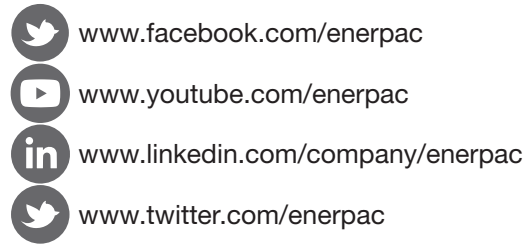
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To reduce the risk of injury, user must read and understand this document before use.

ABOUT US

Enerpac is a global market leader in high pressure hydraulic tools, controlled force products, portable machining, on-site services and solutions for precise positioning of heavy loads. As a leading innovator with over a 100 year legacy, Enerpac has helped move and maintain some of the largest structures on earth. When safety and precision matters, elite professionals in industries such as aerospace, infrastructure, manufacturing, mining, oil & gas and power generation rely on Enerpac for quality tools, services and solutions. For additional information, visit www.enerpac.com.

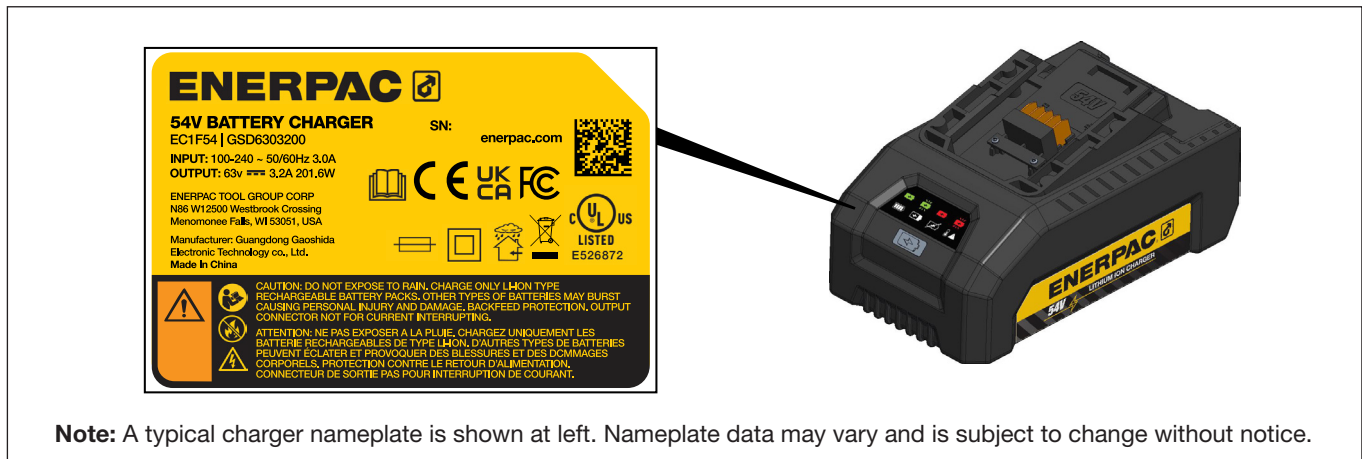


WARRANTY

Refer to the Enerpac Global Warranty document for terms and conditions of the product warranty. Such warranty information can be found at www.enerpac.com.

NAMEPLATE

Refer to the battery nameplate for the product model number, serial number and other applicable information.



AVAILABLE LANGUAGES

An electronic copy of this document is available online in multiple languages:

- EN** English - For other languages, visit www.enerpac.com.
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- ZH** 中文 - 如需其他语言, 请前往 www.enerpac.com.

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1.0 SAFETY

Read all instructions carefully. Follow all recommended safety precautions to avoid personal injury as well as damage to the product and / or damage to other property. Enerpac cannot be responsible for any damage or injury from unsafe use, lack of maintenance, or incorrect operation. Do not remove warning labels, tags, or decals. In the event that any questions or concerns arise, contact Enerpac or a local Enerpac distributor for clarification.

Save these instructions for future use.

This manual follows a system of safety alert symbols, signals, words, and safety messages to warn the user of specific hazards. Failure to comply with these warnings could result in death or serious personal injury, as well as damage to the equipment or other property.



The Safety Alert Symbol appears throughout this manual. It is used to alert you to potential physical injury hazards. Pay close attention to Safety Alert Symbols and obey all safety messages that follow this symbol to avoid the possibility of death or serious injury.

Safety Alert Symbols are used in conjunction with certain Signal Words that call attention to safety messages or property damage messages and designate a degree or level of hazard seriousness. The Signal Words used in this manual are WARNING, CAUTION and NOTICE.

WARNING Indicates a hazardous situation that, if not avoided, could result in death or serious personal injury.

CAUTION Indicates a hazardous situation that, if not avoided, could result in minor or moderate personal injury.

NOTICE Indicates information considered important, but not hazard related (e.g. messages related to property damage). Please note that the Safety Alert Symbol will not be used with the signal word.

1.1 Lithium-Ion Battery Charger Safety Precautions



Read this user manual carefully before using the battery charger. Failure to follow any of the instructions or warnings in this document could result in electrical shock, serious injury or death. In addition the battery and/or charger could become damaged, potentially rendering these items inoperable.

To avoid serious injury, risk of fire, explosion and danger of electric shock or electrocution:

- Carefully follow the instructions in this operating manual.
- Do not use the charger for any other purpose than what is presented in this manual.
- Confirm proper input voltage prior to connecting charger to AC power source.
- Charge only compatible Enerpac 54V batteries with the charger. Other brands or types of batteries may burst, possibly causing personal injury and damage and/or risk of electric shock.
- Do not cover the ventilation slots on the top of the charger. Keep the slots clear of dirt and debris.
- Do not place the charger on a soft surface, i.e. blanket, pillow, etc.
- Do not touch the uninsulated portion of output connector or uninsulated battery terminal.
- Do not allow small metal items or material such as steel wool, aluminium foil, or other foreign particles into the charger cavity.
- Always disconnect charger power cord from electrical outlet before removing debris or objects from the charger cavity and electrical contacts.
- Do not allow water or other liquids on or inside the charger.
- Do not use the charger in the rain or in other moist or wet environments. Do not immerse the tool, battery or charger in water or other liquid.
- Do not wear any metallic items such as watches, bracelets, etc. while inserting the battery into or removing the battery from the charger.
- Disconnect charger power cord from electrical outlet before cleaning the charger.
- Keep battery and charger away from unauthorized users.

- Do not attempt to disassemble, repair, adjust or modify the charger. It contains no user-serviceable or replaceable components. Take the charger to an Enerpac authorized service center if diagnosis or servicing is required.
- Immediately discontinue use of the charger if it emits an unusual smell, feels excessively hot, changes color, changes shape, or appears abnormal in any other way.

2.0 COMPLIANCE

2.1 Compliance Standards

The Enerpac 54V lithium-ion battery charger is certified to the following standards:

Type	Country	Standard
UL/CUL	USA & Canada	UL1012
EMC	Europe & Great Britain	EN60335-1;60335-2-29 BS.EN60335-1;60335-2-29
UKCA	Great Britain	BS.EN60335-1;60335-2-29
CE/LVD	Europe	EN60335-1;60335-2-29
FCC SDOC	USA & Canada	Part 15B

NOTICE For all shipments, a copy of the product EU Declaration of Conformity is enclosed with each shipment. A copy of the UK Self Declaration of Conformity is also enclosed.










2.2 FCC Compliance Information (USA Only)

This equipment has 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 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 the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

3.0 SYMBOLS & DEFINITIONS

The following symbols appear in this manual and/or on the product labelling.

Symbol	Definition
	Risk of electric shock. High voltage.
	Device shall not be exposed to high heat, fire/flame, or any heat source.
	Read instruction manual. Save instructions for future use.
	Do not expose device to rain, water or moisture.
	Do not dispose of device in trash.
	Current is alternating current (AC). Main/input power is AC
	Current is direct current (DC). Charger converts alternating current (AC) to (DC)
	Device is double insulated. Does not require earth ground.
	Device is fused.

4.0 PRODUCT DATA

4.1 Battery Charger Specifications

Model Number	Input Power			Output Power			Weight		Approximate Charging Time
	Volts AC	Hz	Amps (max)	Volts DC	Amps	Watts	lb	kg	Minutes
EC1F54*	100-240	50/60	3.0	63	3.2	201.6	2.4	1.1	60

* Model number on battery charger nameplate is for identification purposes only.

All battery chargers must be ordered with power cord. Refer to Section 4.2 for additional information.

4.2 Battery Charger Model Information

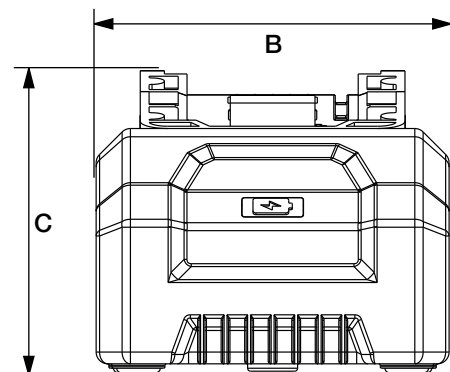
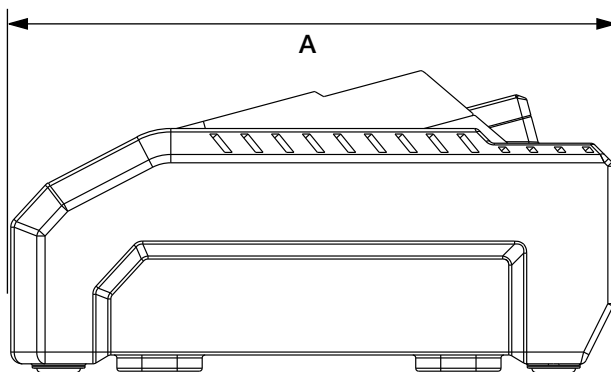
Region/Country	Model Numbers	
	Charger & Power Cord	Power Cord Only
North America 115V	EC1F541B	ECC541B
Europe 230V	EC1F542E	ECC542E
Australia 230V	EC1F542A	ECC542A
Japan 100V	(Not Available - See Notes)	ECC541N
United Kingdom 240V	(Not Available - See Notes)	ECC542U

Notes:

- Charger must be purchased separately if not included in the shipment with the battery or tool. Unit is auto-voltage sensing, 100-240 VAC, 50/60 Hz.
- North America, Europe and Australia: Charger and power cord includes one Enerpac EC1F54 battery charger and the AC power cord for use in the selected region. Charger not sold without power cord.
- Japan and United Kingdom: Order charger and power cord EC1F542A, EC1F541B or EC1F542E plus the power cord applicable for your region/country. Replace the power cord included with the charger with the power cord that was ordered separately (ECC541N or ECC542U).

4.3 External Dimensions

Item	Dimension		
	A	B	C
inch	8.1	4.7	4.1
mm	205	120	103



5.0 FEATURES & COMPONENTS

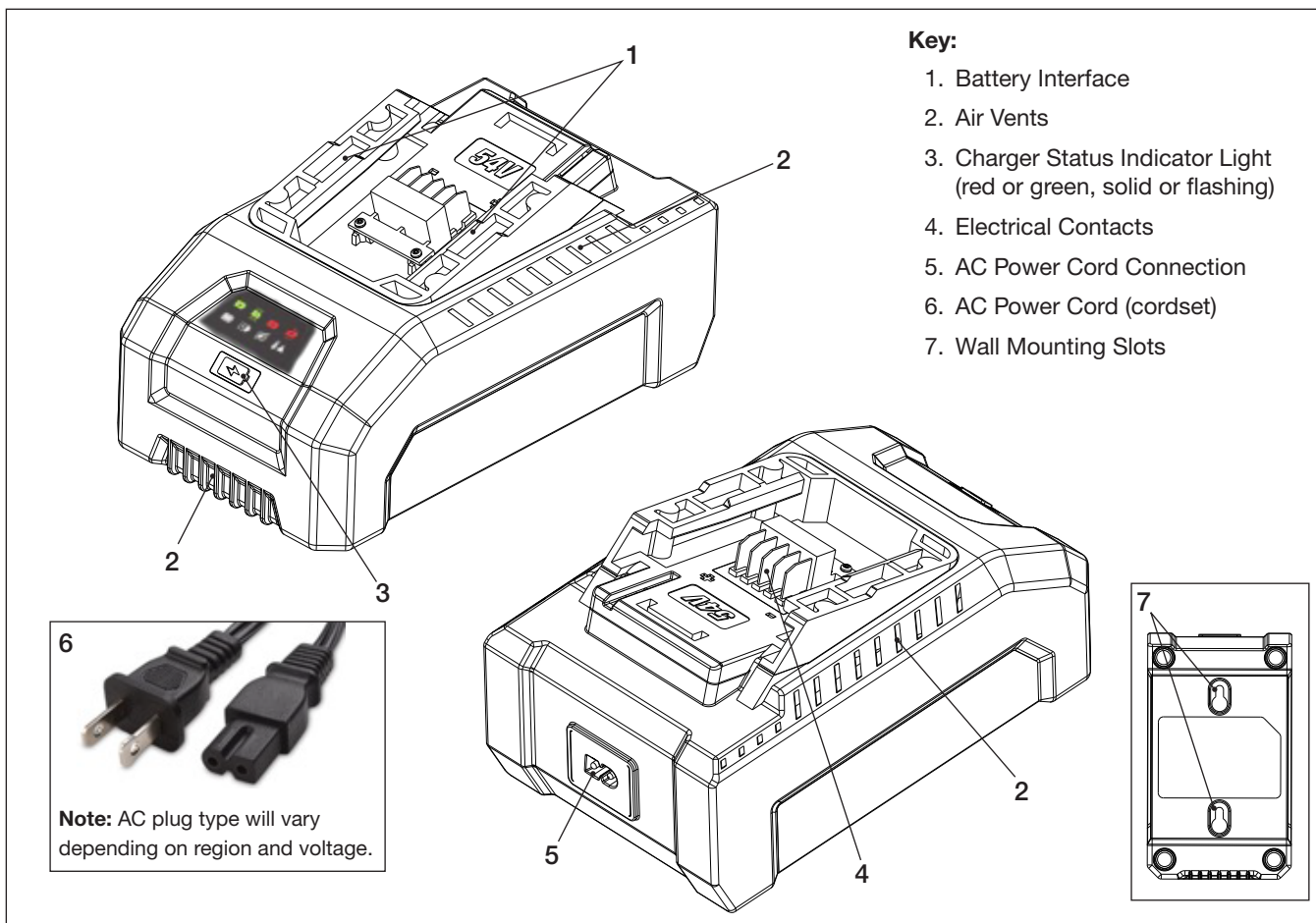


Figure 1: Features & Components, 54V Lithium-Ion Battery Charger

6.0 SETUP & USE

6.1 Receiving Instructions

Visually inspect all components for shipping damage. Shipping damage is not covered by warranty. If shipping damage is found, notify carrier at once. The carrier is responsible for all repair and replacement costs resulting from damage in shipment.

6.2 Setup

The charger is equipped with auto-voltage sensing circuitry and is usable at input voltages of 100-240 volts AC. Refer to Section 4.1 for complete input power specifications.

Connect one end of the power cord to the power input connector on the back of the charger. Connect the other end to an electrical outlet of the proper type and voltage.

6.3 Installing and Removing Battery

To install: slide the battery onto the charger battery interface and insert it fully into the charger, making sure that it latches in place.

To remove: press and hold the release buttons located on each side of the battery. Then, slide the battery off of the charger battery interface and remove it.

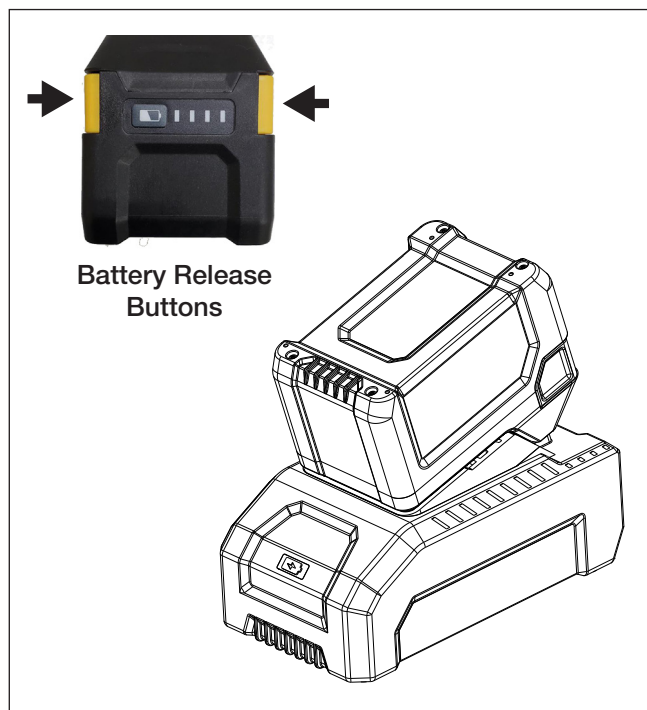


Figure 2: Battery Installed on Charger

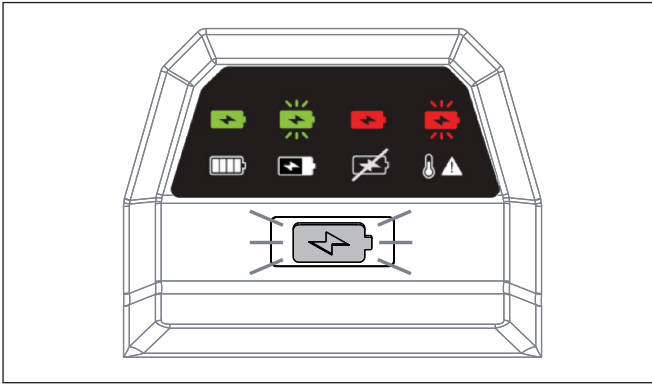


Figure 3: Charger Status Indicator Light

6.4 General Information

NOTICE Batteries must be purchased separately if they are not included in the shipment with the charger or cordless tool.

- Fully charge a new battery before its first use.
- During charging, make sure ambient temperature is between 32 and 113°F [0 and 45°C]. Charge the battery at room temperature if possible.
- A fully charged battery may remain inserted in the charger until it is needed. However, it is recommended that the charger power cord be disconnected from the electrical outlet after the battery is removed from the charger.
- Whenever possible, charge the battery before it becomes fully discharged by the cordless tool. This will help prevent premature battery failure.
- Refer to the separate battery manual for complete battery information and safety precautions.

6.5 Battery Charging

When the battery is inserted into the charger, the charger status indicator light will begin flashing green within a few seconds, indicating that charging mode is in progress.

When the battery is fully charged, the charger status indicator light will change from flashing green to solid green.

Approximately 1 hour will typically be required to charge the battery. Additional time may be required if the battery is fully discharged.

NOTICE If the battery becomes fully discharged while the cordless tool is in use, it should be placed in the charger within 12 hours and kept in the charger until fully charged. This will help prevent battery damage and premature battery failure.

6.6 Temperature Fault

If an overheated or cold battery is inserted into the charger, the charger status indicator light will immediately begin flashing red. This indicates that a temperature fault has occurred.

Allow the battery to remain in the charger. When the battery temperature changes to an acceptable temperature, the temperature fault will reset automatically. The charger status indicator light will change from flashing red to flashing green, indicating that charging is in progress.

Indicator Light		Status	
	Flashing Green	Battery Charging	
	Solid Green	Battery Fully Charged	
	Solid Red	Charging Fault	
	Flashing Red	Temperature Fault	

Figure 4: Charger Status Indicator Light Guide

6.7 Charging Fault

If the charger status indicator light glows solid red, a charging fault has occurred. A charging fault is triggered if the battery voltage fails to reach 30V or if the battery contacts are electrically shorted.

There is a 60 second time delay from when a charging fault is first detected until the solid red light is activated.

If a charging fault occurs, perform the following steps:

1. Disconnect the AC power cord from the electrical outlet.
2. Remove the battery from the charger. Inspect the electrical contacts on both battery and charger. If present, remove any loose dirt, objects or debris.
3. Reinsert the battery into the charger. Then, reconnect the AC power cord.
 - If the charger status indicator light begins flashing green and does not change to solid red within 60 seconds, the charging fault has been cleared.
 - If the charger status indicator light begins flashing green but changes to solid red after 60 seconds, the battery is damaged and requires replacement.

To help confirm a damaged battery, insert a different battery into the charger. If after a 60 second period the charger status indicator light does not change to solid red, it is an indication that the charger is functioning properly and that the original battery is damaged.

NOTICE If the cause of a charging fault cannot be determined, take the charger and battery to an Enerpac authorized service center for inspection and diagnosis.

7.0 CARE & MAINTENANCE

WARNING To avoid personal injury and the risk of fire and electric shock, remove the battery from the charger before beginning any cleaning or inspection procedures. Be sure the charger AC power cord is disconnected from the electrical outlet.

CAUTION Do not use solvents or detergents on the charger's plastic housing or plastic components. Certain household cleaners may cause damage and may cause a shock hazard.

- Keep the charger clean and free of debris. Do not allow foreign material to get into the charger's recessed cavity and electrical contacts.
- Check that the battery and/or charger contacts are not shorted by debris or foreign material.
- Wipe the charger only with a soft, dry cloth. Do not use solvents or water.

CAUTION Always wear eye and face protection before using compressed air for cleaning purposes.

- If necessary, brush or blow dust and debris out of the charger air vents using compressed air or a vacuum cleaner. Keep the air vents free of obstructions, sawdust and wood chips, dirt, etc. Do not spray, wash or immerse the air vents in water.

8.0 STORAGE

- If the battery will be stored for 3 months or longer, fully charge the battery before placing the battery and/or charger in storage.
- Store the charger at normal room temperature, in a clean, dry and secured area. Do not store the charger in moist or wet environments or in an area of excessive heat.
- If desired, the battery may be placed in the charger during storage (with AC power cord disconnected from electrical outlet).

9.0 DISPOSAL/END OF LIFE

When the charger has reached the end of its useful life, dispose of it as described in the following steps:

1. Remove the battery from the charger (if present).
2. Disconnect the charger AC power cord from the electrical outlet.
3. Take the charger to an approved industrial recycling facility for disposal.

WARNING Refer to the battery manual for important battery disposal instructions.

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