

Overview

The Quick Charger (96 volt) can be used either for motorcycle quick charging or off-board power pack charging of Zero Motorcycles beginning with the 2013 model year. Each Quick Charger provides an additional 1kW of charging capability. To satisfy the requirements of the electrical infrastructure in various countries, the Quick Charger kits include different cords approved for use in each region. See the kit contents information below for details.

Zero Motorcycles recommends that only one charger be plugged into one circuit at a time including the motorcycle's integrated charger. Plugging multiple chargers into a single circuit risks drawing too much current, and this may trip the circuit breaker. Care should also be taken not to plug chargers into circuits with other high-powered electrical appliances.

Motorcycle quick charging - When used with your motorcycle's integrated charging system, the Quick Charger approximately doubles the amount of electrical energy flowing to the motorcycle's power pack(s) during charging. As a result, the charge time of a Zero Motorcycle is reduced by around 50%. Multiple Quick Chargers can be used concurrently when connected by a Quick Charger Y-Adapter (sold separately) to reduce the charge time even further. This adapter (p/n 10-05739) is shown in Figure 2.

Off-board power pack charging - The Quick Charger can be used to charge power pack modules when removed from the motorcycle. The ZF2.8 Power Pack Module, used with the Zero FX and Zero XU motorcycles, requires the Power Pack Module Charging Adapter (sold separately) when the power packs are charged off-board. Please note that these adapters are different for model year 2013 and model year 2014 and newer.



Figure 1. Quick Charger (96 volt)



Figure 2. Quick Charger Y-Adapter



Figure 3. Power Pack Module Charging Adapter

KIT CONTENTS:

PART NUMBER	QTY	PART NAME (REGIONAL USAGE)
10-06919	1	Quick Charger Kit - 96 volt (North America and Europe - plug adapter required for Europe)
40-05129	1	Charger 96v Delta-Q
60-01769	1	Charge Cord 3M for North America
10-06920	1	Quick Charger Kit - 96 volt (United Kingdom and Hong Kong)
40-05129	1	Charger 96v Delta-Q
56-06177	1	Charge Cord 4M for United Kingdom and Hong Kong
10-08050	1	Quick Charger Kit - 96 volt (South Africa)
40-05129	1	Charger 96v Delta-Q
56-08001	1	Charge Cord for South Africa

Motorcycle Quick Charging - SDS Platform

The scalable quick charging feature allows up to four Quick Chargers (three for 2013 Zero S or DS motorcycles) to be connected to the motorcycle in addition to the existing integrated charger. Use of multiple Quick Chargers in combination with the integrated charger can reduce the charging time by up to 70%.

To charge using the Quick Charger:

1. Ensure that the key switch is in the OFF position.
2. Locate the accessory charging connector (A) at the rear of the motorcycle above the motor as shown in Figure 4. and remove the protective cover. The first time you take off this cover, you will need to carefully cut the retaining zip tie and remove it.
3. Plug in the motorcycle to start charging using the integrated on-board charger, and confirm that the motorcycle is charging normally as signaled by the green blinking Charging Indicator on the dash.

NOTE: Plug in the on-board charger of the motorcycle FIRST to avoid potential charging start-up errors.

4. Plug the Anderson connector of the Quick Charger into the accessory charging connector as shown in Figure 5.
5. Connect the Quick Charger to a GROUNDED outlet.
6. When the motorcycle's power pack is fully charged, which is reported on the dash as 100% state of charge, disconnect all charger(s) and reinstall the protective cover before riding the motorcycle.

NOTE: Failure to reinstall the accessory charging connector's protective cover can lead to moisture accumulating in it. This may result in various reported error conditions.

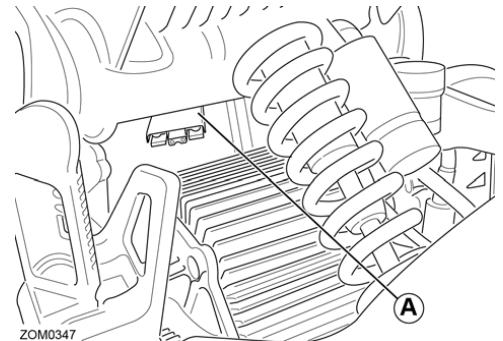


Figure 4. Accessory charging connector location

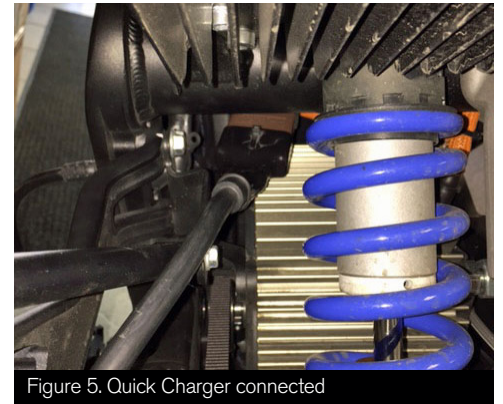


Figure 5. Quick Charger connected



Figure 6. Fully charged

IMPORTANT: When using an extension cord, avoid excessive voltage drops by using a grounded, 3-wire, 12-AWG cord no longer than 25ft (7.6m).

The cord should be rated to support up to 15 amps.

Motorcycle Quick Charging - XMX Platform

The scalable quick charging feature allows up to three Quick Chargers (one for the ZF2.8 models) to be connected to the motorcycle in addition to the existing integrated charger. Use of multiple Quick Chargers in combination with the integrated charger can reduce the charging time by up to 75%.

To charge using the Quick Charger:

1. Ensure that the key switch is in the OFF position.
2. Remove the five fasteners securing the flexible protective cover on right side of motorcycle below power packs and remove cover as shown in Figure 7. Locate the accessory charging connector.
3. Plug in the motorcycle to start charging using the integrated on-board charger, and confirm that the motorcycle is charging normally as signaled by the green blinking Charging Indicator on the dash.

NOTE: Plug in the on-board charger of the motorcycle FIRST to avoid potential charging start-up errors.

4. Plug the Anderson connector of the Quick Charger into the accessory charging connector as shown in Figure 8.
5. Connect the Quick Charger to a GROUNDED outlet.
6. When the motorcycle's power pack is fully charged, which is reported on the dash as 100% state of charge, disconnect all charger(s) and reinstall the flexible protective cover before riding the motorcycle.

NOTE: Failure to reinstall the flexible protective cover can lead to moisture accumulating in the accessory charging connector. This may result in various reported error conditions.

If the Quick Charger will be used regularly, the flexible protective cover can be cut as shown in Figure 8 to create an access hole. See dashed line B. Do not cut across top of flap and do not completely remove flap.

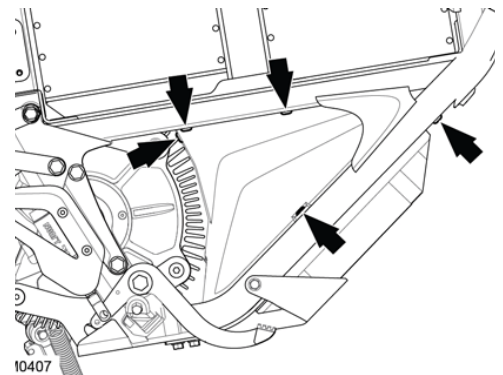


Figure 7. Zero FX right protective cover

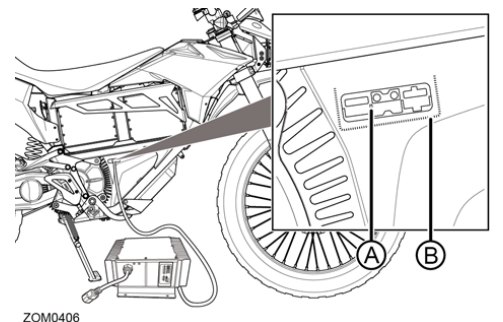


Figure 8. Quick Charger connected



Figure 9. Fully charged

IMPORTANT: When using an extension cord, avoid excessive voltage drops by using a grounded, 3-wire, 12-AWG cord no longer than 25ft (7.6m). The cord should be rated to support up to 15 amps.

Off-Board Power Pack Charging

The Quick Charger can be used to charge power pack modules when removed from the Zero FX and Zero XU motorcycle. Off-board charging requires the use of the Power Pack Module Charging Adapter. The adapter for 2014 and newer motorcycles is brown (p/n 10-07601) as shown in Figure 10. For 2013, the adapter is black (p/n 10-05741) as shown in Figure 11.

IMPORTANT: The two adapters are not interchangeable. Take care to use the correct adapter with the correct power pack. They are keyed differently and should not be forced into the incorrect power pack, which would damage the power pack.

To charge a power pack off board using the Quick Charger:

1. Remove power pack from the motorcycle and place on a flat surface. See owner's manual for removal procedures.
2. Ensure that the Quick Charger is unplugged, then attach the Power Pack Module Charging Adapter to the brown connector of the Quick Charger.
3. Plug the adapter into the Power Pack as shown in Figure 12.
4. Connect the Quick Charger to a GROUNDED outlet.
5. When the motorcycle's power pack is fully charged, which is reported on the Quick Charger as 100% state of charge, disconnect the charger and reinstall into the motorcycle.

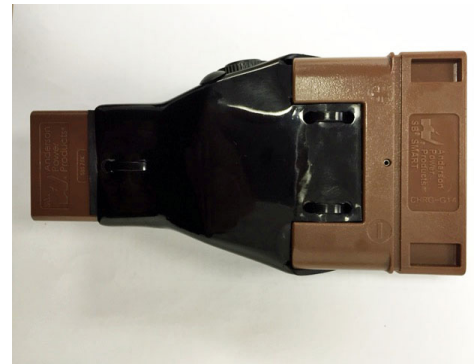


Figure 10. Adapter for 2014 and newer motorcycles



Figure 11. Adapter for 2013 motorcycles



Figure 12. Adapter plugged into power pack

IMPORTANT: When using an extension cord, avoid excessive voltage drops by using a grounded, 3-wire, 12-AWG cord no longer than 25ft (7.6m). The cord should be rated to support up to 15 amps.

Quick Charger User's Guide

Connect ONE Quick Charger only to each 15 amp circuit or the circuit may become overloaded. Charger may be hot during charging and hand protection should be used if handling during charging.

A. Ammeter

The Ammeter LED is an amber indicator that indicates the approximate scale of current output and should gradually ramp down from "IIIIII" to "I". If flashing, the internal charger temperature is high.

B. 80% Charge

The 80% Charge LED is an amber indicator. If it is on solid, the bulk charge phase is complete, 80% charged. Charger is now in absorption phase. Two issues may cause the indicator to flash:

- The charger and BMS are balancing the battery cells.
- The BMS is cutting off the charge because one or more battery cells have reached maximum voltage.

C. 100% Charge

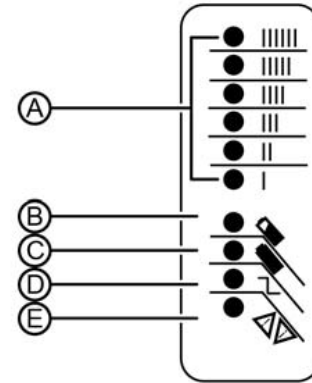
The 100% Charge LED is a green indicator. If it is on solid, the charging is complete and the Quick Charger will enter maintenance mode. If it is flashing, the absorption phase is complete and the charger is in finish phase.

D. AC On

The AC On LED is an amber indicator. If it is on solid, the AC power is good. If it is flashing, the AC voltage is low. Check for proper voltage. If an extension cord is being used, verify that it is rated for 15 amps.

E. Fault

The Fault LED is a red indicator that indicates there is a charger error. Count the number of red flashes between pauses and refer to the table below.



Red Flashes	Cause	Solution
*	Battery high voltage	Reset charger by interrupting AC power for 15 seconds.
**	Battery low voltage	Reset charger by interrupting AC power for 15 seconds.
***	Charge timeout caused by power pack not reaching required voltage. Charger output was reduced due to high temperatures.	Check connections. Operate charger at a lower ambient temperature.
****	Check power pack. Battery could not be trickle charged up to minimum voltage	Contact dealer to have them check power pack.
*****	Over temperature - charger shut down due to high internal temperature.	Ensure sufficient cooling air flow and reset charger by interrupting AC power for 15 seconds.
*****	Charger internal fault	Reset charger by interrupting AC power for 15 seconds. If fault persists, return to dealer.