KOHLER Power Systems

TT-1720 2/17

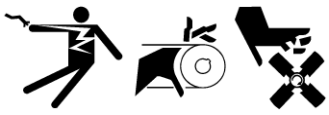
INSTALLATION INSTRUCTIONS

Original Issue Date: **2/17**
Model: **GM87448, 10 Amp Battery Charger**
Market: **Industrial**
Subject: **GM102253-KP1, Temperature Sensor Kit**

1 Introduction

The temperature sensor kit enables temperature compensation for the 10 amp battery charger and is recommended for optimal maintenance of flooded lead acid (FLA) batteries. This optional temperature sensor kit allows the battery charger to adjust output voltages based on the temperature of the attached battery.
Note: Temperature compensation only works with flooded lead acid batteries.

2 Safety Precautions

⚠ WARNING	**Accidental starting.** **Can cause severe injury or death.** Disconnect the battery cables before working on the generator set. Remove the negative (–) lead first when disconnecting the battery. Reconnect the negative (–) lead last when reconnecting the battery.
	

Disabling the generator set. Accidental starting can cause severe injury or death. Before working on the generator set or equipment connected to the set, disable the generator set as follows: (1) Move the generator set master switch to the OFF position. (2) Disconnect the power to the battery charger. (3) Remove the battery cables, negative (-) lead first. Reconnect the negative (-) lead last when reconnecting the battery. Follow these precautions to prevent starting of the generator set by an automatic transfer switch, remote start/stop switch, or engine start command from a remote computer.

(Decision-Maker® 550 Controllers)

Disabling the generator set. Accidental starting can cause severe injury or death. Before working on the generator set or equipment connected to the set, disable the generator set as follows: (1) Press the generator set off/reset button to shut down the generator set. (2) Disconnect the power to the battery charger, if equipped. (3) Remove the battery cables, negative (-) lead first. Reconnect the negative (-) lead last when reconnecting the battery. Follow these precautions to prevent the starting of the generator set by the remote start/stop switch.

(Decision-Maker® 3000 and 6000 Controllers)

⚠ WARNING	**Sulfuric acid in batteries.** **Can cause severe injury or death.** Wear protective goggles and clothing. Battery acid may cause blindness and burn skin.
	

Battery electrolyte is a diluted sulfuric acid. Battery acid can cause severe injury or death. Battery acid can cause blindness and burn skin. Always wear splashproof safety goggles, rubber gloves, and boots when servicing the battery. Do not open a sealed battery or mutilate the battery case. If battery acid splashes in the eyes or on the skin, immediately flush the affected area for 15 minutes with large quantities of clean water. Seek immediate medical aid in the case of eye contact. Never add acid to a battery after placing the battery in service, as this may result in hazardous spattering of battery acid.

Battery acid cleanup. Battery acid can cause severe injury or death. Battery acid is electrically conductive and corrosive. Add 500 g (1 lb.) of bicarbonate of soda (baking soda) to a container with 4 L (1 gal.) of water and mix the neutralizing solution. Pour the neutralizing solution on the spilled battery acid and continue to add the neutralizing solution to the spilled battery acid until all evidence of a chemical reaction (foaming) has ceased. Flush the resulting liquid with water and dry the area.

⚠ WARNING	**Explosion.** **Can cause severe injury or death.** **Relays in the battery charger cause arcs or sparks.** Locate the battery in a well-ventilated area. Isolate the battery charger from explosive fumes.
	

Battery gases. Explosion can cause severe injury or death. Battery gases can cause an explosion. Do not smoke or permit flames or sparks to occur near a battery at any time, particularly when it is charging. Do not dispose of a battery in a fire. To prevent burns and sparks that could cause an explosion, avoid touching the battery terminals with tools or other metal objects. Remove all jewelry before servicing the equipment. Discharge static electricity from your body before touching batteries by first touching a grounded metal surface away from the battery. To avoid sparks, do not disturb the battery charger connections while the battery is charging. Always turn the battery charger off before disconnecting the battery connections. Ventilate the compartments containing batteries to prevent accumulation of explosive gases.

Battery short circuits. Explosion can cause severe injury or death. Short circuits can cause bodily injury and/or equipment damage. Disconnect the battery before generator set installation or maintenance. Remove all jewelry before servicing the equipment. Use tools with insulated handles. Remove the negative (–) lead first when disconnecting the battery. Reconnect the negative (–) lead last when reconnecting the battery. Never connect the negative (–) battery cable to the positive (+) connection terminal of the starter solenoid. Do not test the battery condition by shorting the terminals together.

Battery gases. Explosion can cause severe injury or death. Incorrect use of the equalize charge state may lead to hazardous situations. Equalization is ONLY applicable for flooded lead acid (FLA) type batteries and will damage gel, absorbed glass mat (AGM), or nickel-cadmium (NiCad) type batteries. In the controller menu or SiteTech™ settings, verify that the battery topology is set correctly for the battery type used. Do not smoke or permit flames, sparks, or other sources of ignition to occur near a battery at any time.

⚠ WARNING	**Hazardous voltage.** **Can cause severe personal injury or death.** An ungrounded battery charger may cause electrical shock. Do not operate this battery charger with a two-blade adapter plug or extension cord. After securing the battery connections, plug the AC line cord into an AC outlet that is protected by a ground fault circuit interrupter (GFCI) breaker.
	

Grounding electrical equipment. Hazardous voltage can cause severe injury or death. Electrocution is possible whenever electricity is present. Ensure you comply with all applicable codes and standards. Electrically ground the generator set, transfer switch, and related equipment and electrical circuits. Turn off the main circuit breakers of all power sources before servicing the equipment. Never contact electrical leads or appliances when standing in water or on wet ground because these conditions increase the risk of electrocution.

3 Installation Procedure

Use the following procedure to install the temperature sensor and change the settings in SiteTech™.

3.1 Remove the generator set from service

1. Read and follow the safety precautions.
2. Before working on the generator set or connected equipment, disable the generator set. Refer to the safety precautions for preventing accidental starts and disabling the generator set.
    a. Remove the load from the generator set.
    b. Shut down the generator set.
    c. Disconnect the power to the battery charger.
    d. Remove the battery cables negative (–) lead first to disable the generator set.
    e. Never allow the ring terminals to touch each other.

3.2 Installation and connections

1. Plug the temperature sensor connector into the temperature sensor port on the battery charger. See Figure 1.
2. Connect the temperature sensor to the negative terminal on one of the battery(ies).
3. Use zip ties to secure the wiring harness. Make sure that the leads do not contact any hot surfaces or sharp edges.

1. Battery charger
2. Power cord
3. Communication port
4. Temperature sensor port
5. Temperature sensor and wiring harness
6. Negative (black) lead
7. Negative terminal
8. Positive terminal
9. Positive (red) lead

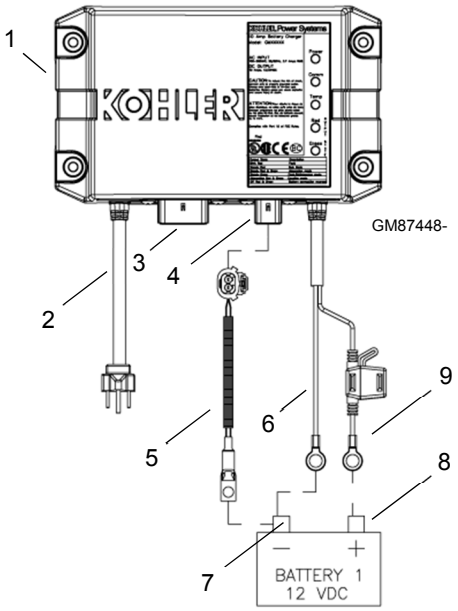


Figure 1 Battery Charger Overview

KOHLER CO., Kohler, Wisconsin 53044 USA
Phone 920-457-4441, Fax 920-459-1646
For the nearest sales and service outlet in the
US and Canada, phone 1-800-544-2444
KOHLERPower.com

Kohler Power Systems
Asia Pacific Headquarters
7 Jurong Pier Road
Singapore 619159
Phone (65) 6264-6422, Fax (65) 6264-6455

3.3 SiteTech™ Settings

1. Connect to the controller with SiteTech™ and change the settings shown in Figure 2.

1. Charger Starter Battery Topology = FLA (flooded lead acid)
   Note: If FLA is not available in the topology drop-down list, use VRLA with flooded lead acid batteries.
2. Charger Temperature Compensation Enable = Active
3. Charger Temperature Compensation Slope = Battery manufacturer's recommendations or default settings for FLA
   Note: If compensation slope information is not available, use the default SiteTech™ setting.

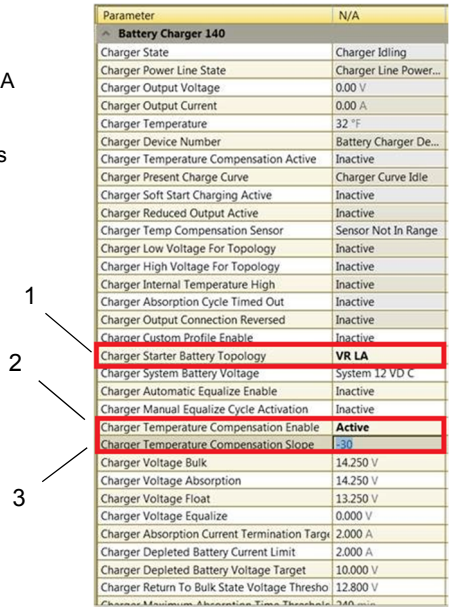


Figure 2 SiteTech™ Settings

3.4 Restore the Generator Set to Service

1. Reconnect the generator set engine starting battery, negative (–) lead last.
2. Reconnect power to the battery charger.