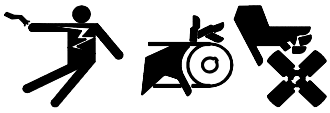
Safety Precautions

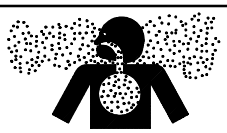
⚠ WARNING



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.

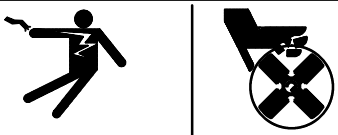
⚠ WARNING



Carbon monoxide.
Can cause severe nausea, fainting, or death.

The exhaust system must be leakproof and routinely inspected.

⚠ WARNING



Hazardous voltage. Moving rotor.
Can cause severe injury or death.

Operate the generator set only when all guards and electrical enclosures are in place.

Prestart Checklist

To ensure continued satisfactory operation, perform the following checks or inspections before or at each startup, as designated, and at the intervals specified in the service schedule. In addition, some checks require verification after the unit starts.

Air Cleaner. Check for a clean and installed air cleaner element to prevent unfiltered air from entering the engine.

Air Inlets. Check for clean and unobstructed air inlets.

Battery. Check for tight battery connections. Consult the battery manufacturer's instructions regarding battery care and maintenance.

Exhaust System. Check for exhaust leaks and blockages. Check the muffler and piping condition and check for tight exhaust system connections.

Inspect the exhaust system components (exhaust manifold, exhaust line, flexible exhaust, clamps, muffler, and outlet pipe) for cracks, leaks, and corrosion.

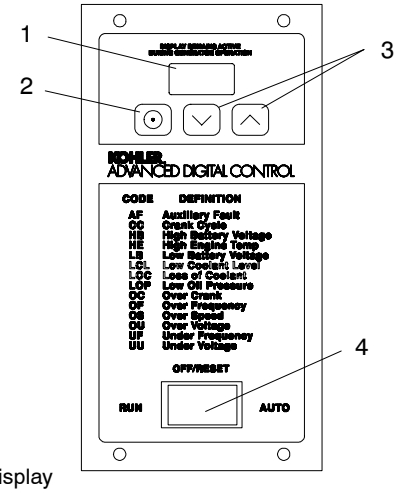
- Check for corroded or broken metal parts and replace them as needed.
- Check for loose, corroded, or missing clamps and hangers. Tighten or replace the exhaust clamps and/or hangers as needed.
- Check that the exhaust outlet is unobstructed.
- Visually inspect for exhaust leaks *(blowby)*. Check for carbon or soot residue on exhaust components. Carbon and soot residue indicates an exhaust leak. Seal leaks as needed.

Oil Level. Maintain the oil level at or near, not over, the full mark on the dipstick.

Operating Area. Check for obstructions that could block the flow of cooling air. Keep the air intake area clean. Do not leave rags, tools, or debris on or near the generator set.

Generator Set Operation

Figure 1 illustrates the user interface on the Advanced Digital Control (ADC 2100) generator set controller.



GM28707A-C

1. LED display
2. Select button (use for setup and adjustment only)
3. Up and down arrow buttons (use for setup and adjustment only)
4. Generator set master switch

Figure 1 ADC 2100 Controller User Interface

Controls and Indicators

The controller has a LED display, keypad, generator set master switch.

The LED display indicates generator set status. The display is activated by a start or run command and remains active until the generator set master switch is moved to the OFF/RESET position or power to the controller is removed. If the factory-installed continuous power mode jumper has been disconnected, the LED display turns off 48 hours after generator set shutdown.

The buttons on the controller keypad are used only for system configuration and adjustment. The controller is factory-set and should not require configuration or adjustment under normal operating conditions. Only trained technicians are authorized to make adjustments.

Starting Generator Set

The following procedures describe the actions required to start the generator set.

The controller attempts to start the generator set three times (three crank cycles, 15 seconds crank and 15 seconds off). If the generator set does not start in three attempts, the system shuts down on an overcrank fault.

Local Starting

Move the generator set master switch to the RUN position to immediately start the generator set.

Auto (Automatic) Starting

Move the generator set master switch to the AUTO position to allow startup by the ATS or the remote start/stop switch. (A remote start/stop switch can be connected to controller leads 3 and 4.

Stopping Generator Set

The following procedures describe the actions required to stop the generator set.

Local Stopping

1. Run the generator set at no load for at least 2 minutes to ensure adequate engine cooldown.
2. Move the generator set master switch to the OFF/RESET position. The engine stops.

Automatic Stopping

With the generator set master switch in the AUTO position and an automatic transfer switch (ATS) or other automatic device connected to controller leads 3 and 4:

1. The ATS or other device disconnects the load from the generator set.
2. If the ATS is equipped with an engine cooldown time delay, the generator set continues to run for a preset engine cooldown time. There is no engine cooldown time delay on the ADC controller.
3. The ATS or other device opens the connection between controller leads 3 and 4. The generator set shuts down.

Fault Shutdowns

The generator set shuts down automatically and the controller displays a fault code. The generator set cannot be restarted until the fault condition is corrected and the controller is reset. The controller resets automatically after a battery voltage fault condition is corrected.

The shutdown switches on the generator set automatically reset when the problem is corrected. The high engine temperature switch automatically resets when the generator set cools. However, the fault does not clear until the controller is reset.

The controller displays a fault code but the generator set does not shut down.

Resetting Controller after a Fault Shutdown

Always identify and correct the cause of a fault shutdown before resetting the controller. Use the following procedure to reset the generator set controller after a fault shutdown.

1. Move the generator set master switch to OFF/RESET.
2. Disconnect the generator set from the load using the line circuit breaker or ATS.
3. Identify and correct the cause of fault shutdown.
4. Start the generator set by moving the generator set master switch to RUN. Test operate the generator set to verify that the cause of the shutdown has been corrected.
5. Move the generator set master switch to OFF/RESET.
6. Reconnect the generator set to the load using the line circuit breaker or ATS.
7. Move the generator set master switch to the AUTO position for startup by remote transfer switch or remote start/stop switch. The controller's LED display remains off until an engine start command is received.