

# Onan

## Service Manual

### HA Control

#### Automatic Load Demand Control (Spec D) B+ Switching Controls

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# Safety Precautions

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Before performing maintenance or service on your HA controlled generator set system, read all related manuals and become thoroughly familiar with your system components. Safe and efficient operation can be achieved only if the equipment is properly operated and maintained. Many accidents are caused by failure to follow simple and fundamental rules or precautions.

This manual includes the following symbols to indicate potentially dangerous conditions to personnel and equipment. Read the manual carefully and know when these conditions exist. Then take the necessary steps to protect personnel and the equipment.

**⚠ DANGER** *This symbol is used to warn of immediate hazards which will result in severe personal injury or death.*

**⚠ WARNING** *This symbol refers to a hazard or unsafe practice which can result in severe personal injury or death.*

**⚠ CAUTION** *This symbol refers to a hazard or unsafe practice which can result in personal injury or product or property damage.*

This controller has components with high AC voltages which present potential hazards that can result in severe personal injury or death. For this reason, service personnel should periodically review the following safety precautions and also the safety precautions listed in other equipment manuals.

- During normal operation, keep the controller cabinet closed.
- When performing service or maintenance to your system components, tag the controller with a warning sign to inform others not to operate.
- Before performing maintenance or making adjustments, move the controller switch to MANUAL position and the generator set switch to STOP position. Then disconnect generator set starting batteries to prevent an accidental start-up.
- If adjustment must be made while the system is operating, use extreme caution due to the danger of electrical shock hazards, hot manifolds, moving parts, etc.
- Jewelry is a good conductor of electricity and should be removed when working on the electrical equipment.
- Remove electric power before removing protective shields or touching electrical equipment. Use rubber insulative mats placed on dry wood platforms over floors that are metal or concrete when around electrical equipment. Do not wear damp clothing (particularly wet shoes) or allow skin surfaces to be damp when handling electrical equipment.
- Except for allowable adjustments, do not tamper with, alter, or otherwise try to bypass interlock control circuits of your generator set system. Non-prescribed control modifications present potentially hazardous conditions that can result in severe personal injury or equipment damage.
- Follow all state and local electrical codes. Have all electrical installations performed by a qualified licensed electrician. Tag open switches.
- Keep your generator set system equipment and their surrounding areas clean and free from obstructions. Remove any debris and keep the area clean and dry.
- Provide appropriate fire extinguishers and install them in convenient locations. Consult your local fire department for the correct type of extinguisher to use. Do not use foam on electrical fires. Use extinguisher rated ABC by NFPA.
- Do not work on equipment when mentally or physically fatigued.
- Onan suggests copying and posting these suggestions in potential hazard areas of the vessel. Most important, exercise caution and use common sense.

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