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Auto Engineering HGM6110N

SmartGen HGM6110N Generator Controller User Manual

Model: HGM6110N | Brand: Auto Engineering

1. INTRODUCTION

This manual provides comprehensive instructions for the installation, operation, and maintenance of the SmartGen HGM6110N Generator Controller. The HGM6110N is an Automatic Start Module (ASM) designed for remote generator start/stop functionality, suitable for various generator control and automation applications.

The HGM6100N series offers advanced features for seamless generator control, including a durable display, comprehensive monitoring capabilities, and wide compatibility with different AC power systems.

2. KEY FEATURES

- **Dual-Mode Functionality:** The HGM6110N is an Automatic Start Module (ASM) for remote generator start/stop. Other variants in the HGM6100N series (HGM6120N/6120NC/6120CAN) add mains AC monitoring and automatic mains/generator switching (AMF).
- **Advanced Display & Interface:** Features a 132x64 LCD with backlight and multilingual support (Chinese, English, Spanish, Russian, Portuguese, Turkish, Polish, French). The durable acrylic screen offers enhanced scratch resistance, and silica-gel panel/keys ensure reliable operation in extreme temperatures.
- **Comprehensive Monitoring & Control:** Measures and displays 3-phase voltage, current, frequency, and power parameters for both mains and generators.
- **Communication Protocols:** Supports MODBUS protocol via RS485 for remote monitoring, control, and communication. CANBUS port (on HGM6110CAN/6120CAN variants) enables connection to electronic injection systems (J1939) for real-time engine data monitoring and control functions.
- **Wide Compatibility:** Compatible with 3P4W, 3P3W, 1P2W, and 2P3W AC power systems (120V/240V, 50Hz/60Hz).

3. PRODUCT OVERVIEW



Figure 3.1: Front view of the SmartGen HGM6110N Generator Controller, showing the LCD screen, control buttons, and status indicators.



Figure 3.2: Rear view of the SmartGen HGM6110N Generator Controller, displaying the various wiring terminals for connections such as generator voltage, mains voltage, current inputs, and auxiliary outputs.

4. INSTALLATION AND SETUP

Proper installation is crucial for the reliable operation of the HGM6110N controller. It should be mounted in a secure, dry location, protected from excessive vibration and extreme temperatures. Ensure adequate ventilation around the unit.

4.1 Wiring Connections

Refer to the wiring diagram provided with your controller for specific connection points. Key connections typically include:

- **Power Supply:** Connect the controller to a stable DC power source (e.g., 12V or 24V battery).
- **Generator Inputs:** Connect generator voltage and current transformer (CT) inputs.
- **Engine Control:** Connect to the engine's start/stop solenoids, fuel solenoid, and pre-heat relays.
- **Sensors:** Connect engine sensors for oil pressure, water temperature, fuel level, and speed.
- **Auxiliary Inputs/Outputs:** Utilize programmable auxiliary inputs and outputs for custom control and monitoring.
- **Communication Ports:** If applicable, connect RS485 for MODBUS communication or CANBUS for J1939 engine data.

All wiring should be performed by qualified personnel, adhering to local electrical codes and safety standards. Ensure all connections are secure and properly insulated.

5. OPERATING INSTRUCTIONS

The HGM6110N controller is designed for user-friendly operation. The LCD display provides real-time status and parameter readings, while the push-buttons allow for navigation and control.

5.1 Control Modes

- **Manual Mode:** Allows for direct manual control of generator start and stop.
- **Auto Mode:** The controller will automatically start and stop the generator based on configured remote start signals or other programmed conditions.

5.2 Display Navigation

Use the navigation buttons (Up, Down, Left, Right, OK) to browse through different display screens, view parameters, and access settings menus. The LCD backlight ensures visibility in various lighting conditions.

5.3 Parameter Monitoring

The controller continuously monitors and displays critical parameters, including:

- Generator Voltage (L-N, L-L)
- Generator Current (A)
- Generator Frequency (Hz)
- Generator Power (kW, kVA, kVAr)
- Engine Parameters (Oil Pressure, Water Temperature, Engine Speed, Battery Voltage, Run Hours) -*Requires appropriate sensor connections.*

6. MAINTENANCE

The SmartGen HGM6110N controller is designed for durability and requires minimal maintenance. However, regular checks can help ensure its longevity and reliable performance.

- **Cleaning:** Periodically clean the display screen and panel with a soft, dry cloth. Avoid using abrasive cleaners or solvents.
- **Connections:** Annually inspect all wiring connections for tightness and signs of corrosion. Re-tighten as necessary.
- **Environment:** Ensure the operating environment remains within specified temperature and humidity ranges to prevent damage to electronic components.
- **Firmware Updates:** Check the manufacturer's website for any available firmware updates that may improve performance or add new features.

7. TROUBLESHOOTING

This section provides general guidance for common issues. For complex problems, consult a qualified technician or contact technical support.

Problem	Possible Cause	Solution
Controller does not power on	No power supply; Blown fuse; Loose connections.	Check DC power input; Inspect fuses; Verify all power connections are secure.
Generator fails to start in Auto mode	No remote start signal; Incorrect configuration; Engine fault.	Verify remote start signal; Check controller settings; Diagnose engine issues (fuel, battery, starter).
Inaccurate parameter readings	Incorrect sensor wiring; Sensor malfunction; Incorrect CT ratio setting.	Verify sensor connections; Test sensors; Check CT ratio configuration in controller settings.
Display is blank or flickering	Low power supply; Environmental factors; Internal fault.	Check power supply voltage; Ensure operating temperature is within limits; Contact support if problem persists.

8. SPECIFICATIONS

Parameter	Value
Model	HGM6110N
Brand	Auto Engineering
Package Dimensions	8.27 x 6.69 x 1.97 inches
Item Weight	1.76 pounds
Batteries Required	No
Included Components	1 (Controller Unit)
UPC	602838312739

9. WARRANTY AND SUPPORT

For warranty information, please refer to the documentation provided with your purchase or contact the manufacturer directly.

For technical support or inquiries, please contact Auto Engineering customer service.

Manufacturer: Auto Engineering

ASIN: B0DZ2FM5ML

