

DUQTMBDT HGM6120N

DUQTMBDT SmartGen HGM6120N AMF Generator Auto Start Stop Controller User Manual

1. INTRODUCTION

This manual provides essential instructions for the installation, operation, maintenance, and troubleshooting of the DUQTMBDT SmartGen HGM6120N Automatic Mains Failure (AMF) Generator Auto Start Stop Controller. Please read this manual thoroughly before installation and operation to ensure correct usage and optimal performance of the controller.

2. PRODUCT OVERVIEW

The SmartGen HGM6120N is an advanced AMF generator controller designed for automatic start and stop control of diesel gensets. It features an LCD display for clear monitoring of generator parameters and operational status. This module integrates digital, intelligent, and network techniques, offering precise measurement, constant value adjustment, timing, threshold setting, and other functions.



Figure 2.1: Front view of the SmartGen HGM6120N controller, showing the LCD display and various control buttons for operation and navigation.

3. KEY FEATURES

- **Automatic Mains Failure (AMF) Function:** Automatically monitors mains power and initiates generator start/stop sequences.
- **Microprocessor Control:** Ensures precise and stable operation.
- **LCD Display:** Provides real-time display of generator parameters, alarms, and operational status.
- **Multiple Protection Functions:** Includes over/under voltage, over/under frequency, over current, low oil pressure, high engine temperature, and more.
- **Configurable Inputs/Outputs:** Flexible for various application requirements.
- **Event Log:** Records historical alarms and operational events.
- **Manual/Automatic Operation Modes:** Allows for flexible control based on user needs.

4. SETUP AND INSTALLATION

Proper installation is crucial for the safe and reliable operation of the HGM6120N controller. It should be mounted in a secure, dry, and vibration-free environment, typically within a control panel.

4.1 Wiring Connections

All wiring should be performed by qualified personnel in accordance with local and national electrical codes. Ensure the generator and mains power are disconnected before making any connections.



Figure 4.1: Rear view of the HGM6120N controller, illustrating the various terminal blocks for power input, generator voltage, mains voltage, auxiliary inputs/outputs, and communication ports (USB, Ethernet, RS485).

Refer to the detailed wiring diagram printed on the back of the unit for specific terminal assignments. Key connections include:

- **Power Supply:** Connect the DC power supply (typically 12V/24V) to the designated terminals.
- **Generator Voltage Inputs:** Connect the generator's phase voltages (U, V, W, N) to the corresponding terminals.
- **Mains Voltage Inputs:** Connect the mains power supply (R, S, T, N) to the designated terminals for AMF functionality.
- **Magnetic Pickup/Speed Sensor:** Connect for engine speed detection.
- **Engine Parameters:** Connect sensors for oil pressure, engine temperature, fuel level, etc.
- **Auxiliary Inputs/Outputs:** Utilize these for custom control and monitoring functions as per your system design.
- **Communication Ports:** USB and RS485 ports are available for configuration and remote monitoring.



Figure 4.2: Side view of the HGM6120N controller, highlighting the robust green terminal blocks for secure electrical connections.

4.2 Initial Power-Up

After all connections are verified, apply DC power to the controller. The LCD screen should illuminate, and the controller will perform a self-test. Follow the on-screen prompts or refer to the detailed programming manual for initial configuration settings.

5. OPERATING INSTRUCTIONS

The HGM6120N controller supports both manual and automatic operation modes.

5.1 Manual Mode

- Press the **Manual** button to enter manual mode.
- Press the **Start** button to manually start the generator.
- Press the **Stop** button to manually stop the generator.

5.2 Auto Mode (AMF)

- Press the **Auto** button to activate automatic mains failure mode.
- In this mode, the controller continuously monitors the mains power supply.
- If mains power fails or falls outside preset parameters, the controller will automatically initiate the generator start sequence.
- Once mains power is restored and stable, the controller will automatically transfer the load back to the mains and shut down the generator after a cooling period.

5.3 Parameter Monitoring

The LCD display provides real-time data. Use the navigation buttons (up/down arrows) to scroll through various parameters such as:

- Generator Voltage (L-L, L-N)
- Generator Frequency (Hz)
- Generator Current (A)
- Generator Power (kW, kVA, kVA_r)
- Engine Speed (RPM)
- Battery Voltage (V)
- Engine Oil Pressure
- Engine Temperature

- Fuel Level
- Mains Voltage (L-L, L-N)
- Mains Frequency (Hz)

6. MAINTENANCE

The HGM6120N controller is designed for minimal maintenance. However, regular checks can ensure its longevity and reliable operation.

- **Visual Inspection:** Periodically inspect the controller for any signs of physical damage, loose connections, or corrosion.
- **Cleaning:** Keep the controller's surface clean and free from dust and debris. Use a soft, dry cloth. Do not use abrasive cleaners or solvents.
- **Firmware Updates:** Check the manufacturer's website for any available firmware updates that may improve performance or add features.
- **Battery Check:** Ensure the generator's battery, which powers the controller, is in good condition and properly charged.

7. TROUBLESHOOTING

This section provides basic troubleshooting steps for common issues. For complex problems, consult a qualified technician.

Problem	Possible Cause	Solution
Controller does not power on	No DC power supply; Blown fuse; Loose connections	Check DC power input; Inspect and replace fuse; Verify all power connections are secure.
Generator fails to start in Auto mode	Mains power present; Generator fault; Low fuel/battery	Check mains power status; Inspect generator for faults (e.g., low oil, high temp); Ensure adequate fuel and battery charge.
Incorrect parameter readings	Sensor fault; Incorrect wiring; Calibration issue	Check sensor connections and functionality; Verify wiring against diagram; Consult programming manual for calibration.
Alarm displayed	Specific fault detected	Note the alarm code/message on the LCD and refer to the detailed programming manual for specific alarm definitions and corrective actions.

8. SPECIFICATIONS

The following are general specifications for the DUQTMBDT SmartGen HGM6120N controller:

Parameter	Value
Brand	DUQTMBDT
Model	HGM6120N
Item Weight	1.76 ounces
Package Dimensions	1.18 x 0.79 x 0.39 inches
Manufacturer	DUQTMBDT
ASIN	B0F4MKQK64

9. WARRANTY AND SUPPORT

For warranty information, technical support, or service inquiries, please contact your original point of purchase or the manufacturer directly. Keep your purchase receipt as proof of purchase for any warranty claims.

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