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› DUQTMBDT AMF25 AMF20 Diesel Genset Controller User Manual

DUQTMBDT AMF25, AMF20

DUQTMBDT AMF25 AMF20 Diesel Genset Controller User Manual

Automatic Mains Failure (AMF) Control Module

1. INTRODUCTION

This manual provides essential information for the proper installation, operation, and maintenance of the DUQTMBDT AMF20 and AMF25 Diesel Genset Controllers. These modules are designed to monitor the mains supply and automatically start and stop a generator set, transferring the load between the mains and the generator as required. Please read this manual thoroughly before attempting to install or operate the controller.

2. SAFETY INFORMATION

Always observe the following safety precautions to prevent injury or damage to the equipment:

- Installation and maintenance should only be performed by qualified personnel.
- Ensure all power sources are disconnected before performing any wiring or maintenance.
- Verify correct wiring connections to prevent electrical shock or equipment malfunction.
- Do not operate the controller in environments exceeding its specified temperature and humidity limits.
- Always use appropriate personal protective equipment (PPE).

3. PRODUCT OVERVIEW

The DUQTMBDT AMF series controllers are advanced modules for managing diesel generator sets. They feature a user-friendly interface with an LCD display and push-buttons for easy configuration and monitoring.



Figure 3.1: Front Panel of the AMF25 Controller. This image displays the front interface of the AMF25 controller, featuring an LCD screen, navigation buttons (Mode, Page, Enter, Up, Down), and control buttons (Start, Stop, Horn Reset, Fault Reset). Indicator lights for power and generator status are also visible.



Figure 3.2: Angled View of the AMF20 Controller. This image shows an angled perspective of the AMF20 controller, highlighting its compact design and the layout of the front panel, including the display and control buttons.

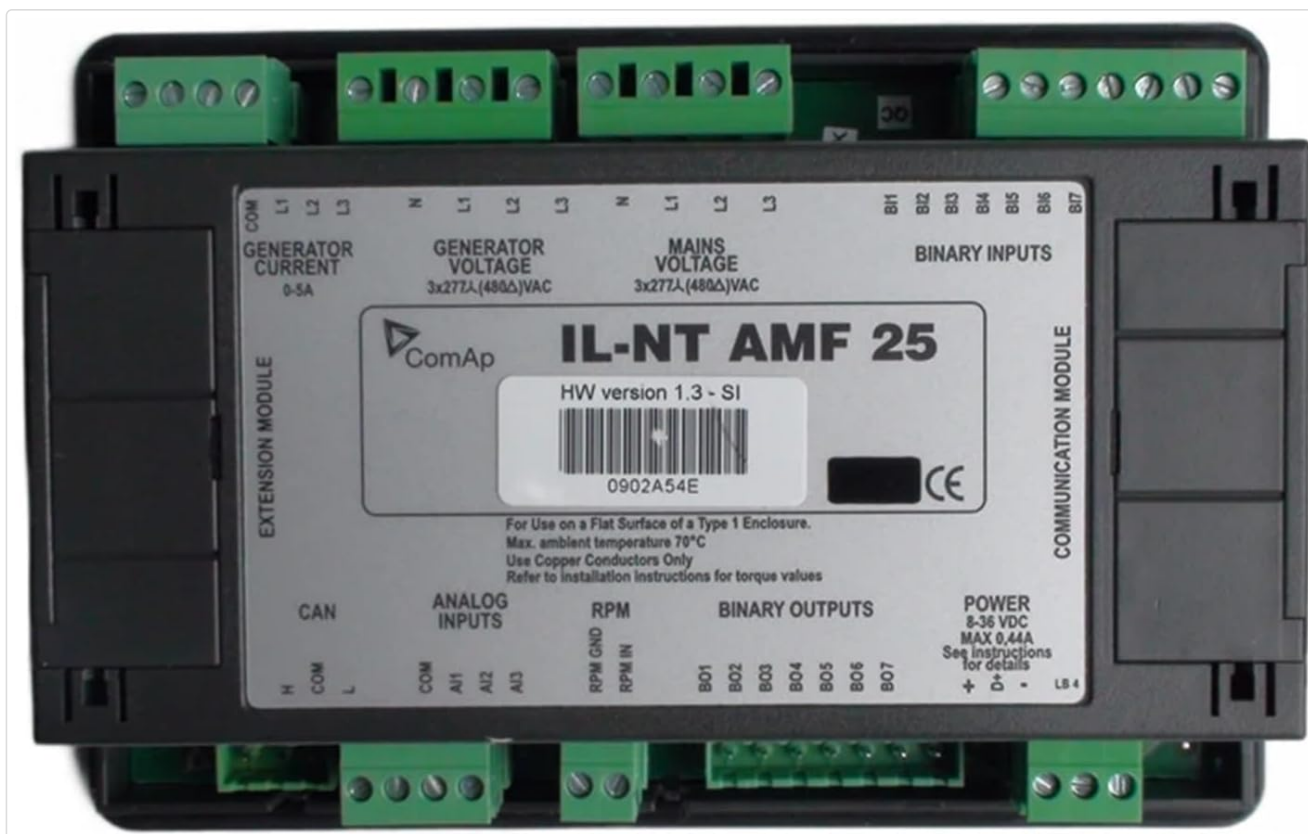


Figure 3.3: Rear View of the AMF25 Controller with Connection Terminals. This image illustrates the rear of the AMF25 controller, detailing the various connection terminals for generator current, generator voltage, mains voltage, binary inputs, analog inputs, RPM, binary outputs, and power supply. Labels for 'Extension Module' and 'Communication Module' are also visible.

4. SETUP AND INSTALLATION

Proper installation is crucial for the reliable operation of the genset controller. Refer to the wiring diagram provided with your specific model for detailed connection instructions.

4.1 Mounting

Mount the controller in a secure, vibration-free location, typically within a control panel. Ensure adequate ventilation and protection from moisture and extreme temperatures.

4.2 Wiring

1. **Power Supply:** Connect the DC power supply (typically 8-36 VDC) to the designated terminals. Observe polarity.
2. **Generator Voltage/Current:** Connect the generator voltage and current transformers (CTs) to the respective terminals. Ensure correct phasing.
3. **Mains Voltage:** Connect the mains (utility) voltage inputs.
4. **Engine Control:** Wire the engine start/stop, fuel solenoid, and pre-heat outputs to the generator engine.
5. **Inputs/Outputs:** Connect any required binary inputs (e.g., emergency stop, low oil pressure) and binary outputs (e.g., common alarm) as per your system design.
6. **Analog Inputs:** Connect analog sensors (e.g., oil pressure, coolant temperature) if applicable.

Warning: Incorrect wiring can cause severe damage to the controller, generator, or pose a risk of electric shock. Consult a qualified electrician.

5. OPERATING INSTRUCTIONS

The controller features various modes of operation and user-friendly controls.

5.1 Control Buttons

- **Start:** Initiates the generator start sequence.
- **Stop:** Shuts down the generator.
- **Mode:** Cycles through different operating modes (e.g., Manual, Auto, Test).
- **Page:** Navigates through display screens to view various parameters.
- **Up/Down Arrows:** Used for navigation within menus or adjusting settings.
- **Enter:** Confirms selections or enters sub-menus.
- **Horn Reset:** Silences the audible alarm.
- **Fault Reset:** Resets active fault conditions after the cause has been addressed.

5.2 Operating Modes

- **Manual Mode:** Allows manual control of the generator start and stop functions.
- **Auto Mode:** The controller automatically starts the generator upon mains failure and stops it upon mains return.
- **Test Mode:** For testing the generator without transferring the load, or with load transfer depending on configuration.

Refer to the on-screen menu for specific parameter adjustments and detailed operational sequences.

6. MAINTENANCE

Regular maintenance ensures the longevity and reliable performance of your genset controller.

- **Cleaning:** Periodically clean the controller's exterior with a soft, dry cloth. Do not use abrasive cleaners or solvents.
- **Connections:** Annually inspect all wiring connections for tightness and signs of corrosion. Re-tighten as necessary.
- **Firmware:** Check the manufacturer's website for any available firmware updates. Consult the update procedure before proceeding.
- **Environment:** Ensure the operating environment remains within specified temperature and humidity ranges.

7. TROUBLESHOOTING

This section provides solutions to common issues. For complex problems, contact technical support.

Problem	Possible Cause	Solution
Controller does not power on	No DC power supply; Incorrect wiring; Blown fuse	Check power source; Verify wiring; Replace fuse if necessary
Generator fails to start	Low fuel; Low battery; Engine fault; Incorrect mode	Check fuel level; Charge/replace battery; Clear engine faults; Select 'Auto' or 'Manual' mode

Problem	Possible Cause	Solution
Generator starts but no load transfer	Mains still present; Transfer switch fault; Incorrect settings	Verify mains status; Inspect transfer switch; Check load transfer settings
Alarm active, but no obvious fault	Sensor malfunction; Intermittent fault; Configuration error	Check sensor connections; Reset fault; Review alarm settings

8. SPECIFICATIONS

Key technical specifications for the DUQTMBDT AMF series controllers:

- **Brand:** DUQTMBDT
- **Model:** AMF20, AMF25
- **Item Weight:** 1.76 ounces (approx.)
- **Package Dimensions:** 1.18 x 0.79 x 0.39 inches (approx.)
- **Power Supply:** 8-36 VDC (typical)
- **Inputs:** Generator Voltage, Mains Voltage, Binary Inputs, Analog Inputs, RPM
- **Outputs:** Binary Outputs (e.g., Start, Stop, Fuel, Alarm)
- **Display:** LCD

9. WARRANTY AND SUPPORT

For warranty information, technical support, or service inquiries, please contact your vendor or the manufacturer directly. Keep your purchase receipt and product model number handy for faster assistance.

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