

LOGFSUS LOGFSUS

Control Panel ACO3 Genset Controller User Manual

Model: LOGFSUS ACO3

Brand: LOGFSUS

INTRODUCTION

This manual provides essential information for the installation, operation, and maintenance of the LOGFSUS ACO3 Control Panel, a Genset Controller designed for Diesel Generators with air-cooled systems. The ACO3 controller is engineered to monitor and manage generator functions, ensuring reliable performance and protection.

Key features include sensing input voltage (110/220/400VAC, 1 phase 2 wire), power input voltage (100-260VAC, 1 phase 2 wire), and various output and protection mechanisms. This controller is suitable for a wide range of operating temperatures and includes internal electromagnetic interference filtering.



Figure 1: Front view of the LOGFSUS ACO3 Control Panel. This image displays the main interface of the controller, featuring a digital display, mode selection buttons, start/stop buttons, fuel pump control, and fault reset button. Indicator lights and system status icons are also visible.

SETUP AND INSTALLATION

Proper installation is crucial for the safe and efficient operation of the ACO3 controller. Ensure all power is disconnected from the generator and associated systems before beginning installation.

- **Mounting:** Securely mount the ACO3 control panel in a suitable enclosure, protected from direct weather exposure, excessive vibration, and extreme temperatures. Ensure adequate ventilation.
- **Power Input Connection:** Connect the main power input to the controller. The ACO3 supports 100-260VAC, 1 phase 2 wire. Verify correct voltage and phase configuration before connection.
- **Sensing Input Connection:** Connect the generator's sensing inputs to the controller. The ACO3 supports 110/220/400VAC, 1 phase 2 wire. Ensure accurate wiring for voltage sensing.
- **Output Connections:** Connect the control outputs (e.g., fuel solenoid, starter motor, fault indicators) to the appropriate generator components. Refer to the generator's wiring diagram for specific connections. The controller provides a maximum output of 90 VDC at 240VAC input, with continuous current of 3A and intermittent 5A for 10 seconds.
- **Resistance Requirements:** Ensure connected loads and circuits meet the resistance requirements of Min. 15 ohm and Max. 100 ohm for optimal performance.
- **External Volts Adjustment:** If external voltage adjustment is required, connect a 1k ohm 1 watt trimmer for a $\pm 7\%$ adjustment range.
- **Grounding:** Ensure proper grounding of the control panel and generator system to prevent electrical hazards and ensure stable operation.



Figure 2: Rear view of the LOGFSUS ACO3 Control Panel module. This image illustrates the various terminal blocks and connection points for generator current, voltage, mains, binary inputs, analog inputs, binary outputs, and power supply. Proper wiring to these terminals is essential for functionality.

OPERATING INSTRUCTIONS

The ACO3 controller features an intuitive interface for managing your diesel generator.

1. **Power On:** Ensure all connections are secure and power is supplied to the controller. The display should illuminate.
2. **Mode Selection:** Use the **MODE** buttons (left and right arrows) to navigate through different operating modes or display screens.
3. **Starting the Generator:** Press the **START** button to initiate the generator start sequence. The controller will manage the pre-heat, cranking, and run cycles.
4. **Stopping the Generator:** Press the **STOP** button to shut down the generator. The controller will manage the cool-down and stop sequence.
5. **Fuel Pump Control:** The **FUEL PUMP** button can be used to manually control the fuel pump, typically for priming or testing purposes.
6. **Fault Reset:** In case of a fault, the controller will display an error. After addressing the underlying issue, press the **FAULT RESET** button to clear the alarm and allow for normal operation.
7. **Page Navigation:** Use the **PAGE** button and arrow keys (up/down) to scroll through various parameters and status information displayed on the screen, such as voltage, current, frequency, and engine hours.

MAINTENANCE

Regular maintenance ensures the longevity and reliability of your ACO3 control panel.

- **Cleaning:** Periodically clean the control panel's exterior with a soft, dry cloth. Do not use abrasive

cleaners or solvents. Ensure the display screen is free of dust and smudges for clear visibility.

- **Connection Check:** Annually inspect all wiring connections to the control panel for tightness and corrosion. Loose connections can lead to intermittent operation or damage.
- **Environmental Conditions:** Ensure the operating environment remains within specified temperature limits (-40°C to +60°C) and is free from excessive humidity or dust, which can degrade electronic components.
- **Software Updates:** Check with the manufacturer or authorized service provider for any available firmware or software updates that may improve performance or address known issues.

TROUBLESHOOTING

This section outlines common issues and their potential solutions. For complex problems, consult a qualified technician.

Problem	Possible Cause	Solution
Controller display is off.	No power input or faulty connection.	Check power input (100-260VAC) and ensure all power connections are secure. Verify power source.
Generator fails to start.	Fault condition, low fuel, or wiring issue.	Check for fault codes on the display and press FAULT RESET after resolving. Verify fuel level and fuel pump operation. Inspect starter motor and fuel solenoid wiring.
Incorrect voltage/frequency reading.	Improper sensing input connection or generator issue.	Verify sensing input wiring (110/220/400VAC). Check generator's AVR or speed governor. Ensure engine governing is within $\pm 4\%$.
Under Frequency Protection activated.	Generator speed is too low.	For 60Hz systems, ensure frequency is above 55Hz. For 50Hz systems, ensure frequency is above 45Hz. Adjust engine speed if necessary.
Intermittent operation.	Loose connections or EMI.	Inspect all terminal connections for tightness. Ensure proper grounding. The unit has internal EMI filtering, but external sources should be minimized.

SPECIFICATIONS

Detailed technical specifications for the LOGFSUS ACO3 Genset Controller.

Parameter	Value
Model	ACO3
Sensing Input Voltage	110/220/400VAC, 1 phase 2 wire
Power Input Voltage	100-260VAC, 1 phase 2 wire
Output Voltage (Max)	90 VDC at 240VAC input
Current (Continuous)	3 A
Current (Intermittent)	5A for 10 seconds
Resistance (Min.)	15 ohm

Parameter	Value
Resistance (Max.)	100 ohm
Voltage Build-up	Residual voltage at AVR terminal >5VAC
Voltage Regulation	<±1% with 4% engine governing
Operating Temperature	-40°C to +60°C
Storage Temperature	-65°C to +85°C
External Volts Adjustment	±7% with 1k ohm 1 watt trimmer
EMI Suppression	Internal electromagnetic interference filtering
Unit Power Dissipation (Max)	8 watt
Under Frequency Protection (60Hz system)	Presets knee point at 55Hz
Under Frequency Protection (50Hz system)	Presets knee point at 45Hz
Dimensions (L*W*H)	107mmL*82mmW*50mmH
Item Weight	1.76 ounces
Date First Available	May 1, 2024

WARRANTY AND SUPPORT

For specific warranty terms and conditions, please refer to the documentation provided with your purchase or contact the manufacturer directly. Warranty coverage typically includes defects in materials and workmanship under normal use.

For technical support, troubleshooting assistance beyond this manual, or to inquire about replacement parts, please contact LOGFSUS customer service. Keep your product model number (ACO3) and purchase details readily available when seeking support.

Manufacturer: LOGFSUS