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› Pilipane FC Series 7.5KW Variable Frequency Drive User Manual

Pilipane 9100-1T3-00750G

Pilipane FC Series 7.5KW Variable Frequency Drive User Manual

Model: 9100-1T3-00750G

1. INTRODUCTION

This manual provides essential information for the safe and efficient installation, operation, and maintenance of the Pilipane FC Series 7.5KW Variable Frequency Drive (VFD). This device is designed to convert single-phase AC power to three-phase AC power, enabling precise speed control for various industrial motors. Please read this manual thoroughly before using the product to ensure proper function and to prevent damage or injury.



Figure 1: Pilipane FC Series 7.5KW VFD in an industrial environment.

2. SAFETY INFORMATION

WARNING: Improper installation or operation can lead to serious injury or death. Only qualified personnel should install, operate, or maintain this equipment.

- Always disconnect all power sources before performing any work on the VFD or connected equipment. Wait at least 10 minutes after disconnecting power for capacitors to discharge.
- Ensure proper grounding of the VFD and the motor.
- Do not open the VFD cover unless instructed by this manual or by qualified service personnel.
- Protect the VFD from moisture, dust, corrosive gases, and direct sunlight.
- Verify that the input voltage matches the VFD's specifications.
- Install the VFD in a well-ventilated area to prevent overheating.

3. PRODUCT FEATURES

The Pilipane FC Series VFD incorporates advanced design and technology to provide reliable and efficient motor control:

- **Intelligent and Durable Motherboard:** Features a three-proof paint treatment for dust-proof, stable, and long-lasting performance.
- **User-Friendly Design:** Equipped with a humanized keyboard for convenient operation and a clear digital display for easy parameter adjustments and monitoring.
- **Enhanced Safety:** A double-layer board design ensures a reasonable structure and significantly reduces the failure rate.
- **Robust Construction:** Utilizes a high-quality industrial flame-retardant ABS plastic shell, offering heat resistance, flame retardancy, and impact resistance for improved safety.
- **Efficient Heat Dissipation:** Features a super large all-aluminum base fan hot plate combined with powerful imported fans for superior cooling and rapid heat dissipation.



- Humanized keyboard design, convenient operation and clear display
- Adopt high-quality industrial flame-retardant ABS plastic shell, heat-resistant and flame-retardant

Figure 2: Key features such as the user-friendly keyboard and durable ABS plastic shell.



The motherboard is intelligent and efficient, with full-featured three-proof paint treatment, dust-proof, stable and durable

Double-layer board design, reasonable structure and safety, greatly reducing the failure rate



Good heat dissipation, super large all-aluminum base fan hot plate combined with imported powerful fan

Figure 3: Internal view highlighting the intelligent motherboard, double-layer board design, and efficient heat dissipation system.

4. SPECIFICATIONS

| Parameter | Value |
|--------------------------------|---------------------------------|
| Model | 9100-1T3-00750G |
| Input Voltage | AC 1PH 220V \pm 15% 50Hz-60Hz |
| Output Voltage | AC 3PH 0V-380V |
| Output Current | 16A |
| Output Frequency Range | 0Hz-650Hz |
| Matching Motor Power | 7.5KW (10HP) |
| Voltage Type | AC220V to AC380V (boost) |
| Output Voltage Adjustment Mode | PWM control |

| | |
|--------------------------|---|
| Control Method | Current |
| Filter | Built-in filter |
| Protection Level | IP20 |
| Machine Size (L x W x H) | Approx. 220 x 170 x 150mm / 8.7 x 6.7 x 5.9in |



Figure 4: Side view of the VFD, illustrating its compact form factor.

5. INSTALLATION AND SETUP

Proper installation is crucial for the safe and reliable operation of the VFD. It is recommended that installation be performed by a qualified electrician.

5.1 Mounting

- Mount the VFD vertically on a flat, non-flammable surface in an enclosure that provides adequate ventilation.
- Ensure sufficient clearance around the VFD for airflow, especially above and below the unit for heat dissipation.
- Avoid mounting near sources of vibration, high temperature, or electromagnetic interference.

5.2 Wiring

- Connect the single-phase AC 220V input power to the designated input terminals (typically R, S).
- Connect the three-phase motor to the output terminals (typically U, V, W).
- Ensure all wiring is correctly sized for the rated current and properly terminated.
- Connect the ground terminal of the VFD to a reliable earth ground.
- Refer to the wiring diagram provided on the unit or in the full technical manual for specific terminal connections.

6. OPERATION

The VFD features a control panel for setting parameters and operating the connected motor.

6.1 Control Panel Overview



Figure 5: Front view of the VFD, showing the control panel and warning label.

- **Display:** Shows operating status, frequency, current, voltage, and parameter values.
- **PRG/ESC:** Program/Escape button for entering/exiting parameter setting mode.
- **SHIFT:** Used to shift cursor position during parameter setting.
- **UP/DOWN Arrows:** Used to adjust parameter values or navigate menus.
- **FWD/REV:** Forward/Reverse buttons for motor direction control.
- **JOG:** Jog operation button for momentary motor movement.
- **STOP/RESET:** Stops the motor or resets fault conditions.

6.2 Basic Operation Steps

1. **Power On:** Apply single-phase AC 220V power to the VFD. The display will light up.
2. **Parameter Setting (if necessary):** Use the PRG/ESC button to enter parameter mode. Use UP/DOWN

arrows to select parameters and adjust values. Refer to the detailed parameter list in the full technical manual.

3. **Start Motor:** Press the FWD (Forward) or REV (Reverse) button to start the motor.
4. **Adjust Speed:** Use the UP/DOWN arrows to adjust the output frequency, thereby controlling the motor speed.
5. **Stop Motor:** Press the STOP/RESET button to stop the motor.

The VFD supports various control methods including Low frequency and large torsion, Sensorless control, Standard V/F control, and Multi-speed adjustable settings. It also features built-in RS485 communication for external control.

7. APPLICATIONS

The Pilipane FC Series VFD is suitable for a wide range of industrial applications requiring precise motor speed control and single-phase to three-phase power conversion. Common applications include:

- Crushers
- Grinders
- Water Pumps
- Textile Machines
- Wood Cutters
- Exhaust Fans and Blowers



Figure 6: The VFD is versatile for various industrial motor applications.

8. MAINTENANCE

Regular maintenance helps ensure the longevity and optimal performance of your VFD.

- **Cleaning:** Periodically clean the VFD's exterior and cooling fins to prevent dust accumulation, which can hinder heat dissipation. Use a soft, dry cloth. Do not use liquids or solvents.
- **Fan Inspection:** Check the cooling fans for proper operation and ensure they are free from obstructions. Replace noisy or malfunctioning fans.
- **Terminal Check:** Periodically inspect wiring terminals for tightness. Loose connections can cause overheating or intermittent operation.
- **Environmental Check:** Ensure the operating environment remains within specified temperature and humidity ranges and is free from corrosive substances.

9. TROUBLESHOOTING

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

| Problem | Possible Cause | Solution |
|------------------------|--|---|
| VFD does not power on | No input power; Blown fuse; Internal fault | Check power supply and fuses; Consult service personnel |
| Motor does not start | Incorrect wiring; Parameter settings; Overload | Verify wiring; Check motor parameters; Reduce load |
| Motor runs erratically | Poor connections; Motor issues; Interference | Check all connections; Inspect motor; Shield control wiring |
| Overheat fault | Insufficient ventilation; Clogged fans; Overload | Ensure proper airflow; Clean fans/fins; Reduce load or check motor sizing |

10. WARRANTY AND SUPPORT

For warranty information, technical support, or service inquiries, please refer to the documentation included with your purchase or contact your vendor. Keep your purchase receipt as proof of purchase.