

WALRUS® *IC Series*

*Inverter Control Pump
Instruction Manual*



ISO 9001 Certified

Walrus America Inc

Congratulations on your purchase of Walrus IC Series Inverter Control System. Please read all instructions carefully before installing your new system. The system has been designed and manufactured to give trouble free, reliable operation. Upon receiving, please check the following:

- a. No shipping damage.
- b. Product specs match name plate data (such as pressure, voltage, HP, etc).
- c. All push buttons on control panel function normally.

1. Functions and Features

- a. The system provides constant pressure at the pressure set point.
- b. Pump protected from dry-run.
- c. Automatically maintain the set pressure when there is pipeline leak.
- d. Single or parallel unit operation.
- e. Automatically cut-in when there is water demand and cut-off when no water consumes.

2. Installation

2.1 Installation site

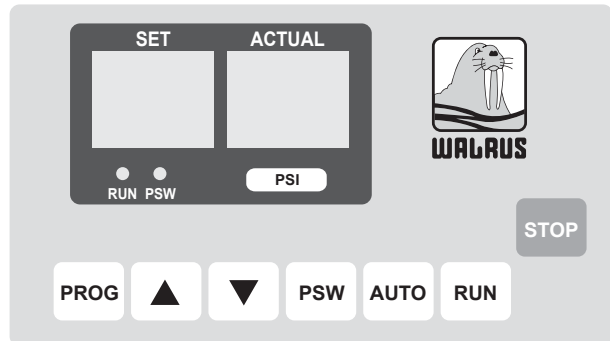
- a. Choose a site dry and with good ventilation. The ambient temperature is at 36°F-104°F.
- b. Recommend to install inside. If you have to install outside, please provide a pump house with water proof and frost free to protect from weather
- c. No vibration and unusual electrical surge.
- d. Easy access for maintenance.

2.2 Cautions of installation

- a. Avoid suck in any solid particles; especially bounding glue or chips from pipe work.
- b. Please hook up with NFB (No Fuse Breaker) to protect motor and control panel.
- c. It has to be properly grounded to avoid electrical shock.
- d. Make sure the power supply is correctly connected at 1-phase 230V, 3-phase 230V or 3-phase 460V.

- e. Never run pump dry; and keep the pumped liquid below 104°F. Make sure your system is always connected to an adequate, reliable source of clean water.

3. Control Panel



3-1 Status indicators

.RUN

Light on indicates pump running at the auto operation mode and always maintain at the set pressure (signal transmitted by transducer).

.PSW

Light on indicates pump running at manual operation mode (signal transmitted by pressure switch).

.SET

The number on the screen indicates the set pressure.

.ACTUAL

The number on the screen indicates the actual operating pressure.

3-2 Functional buttons

.PROG

Press to memorize the new setting.

.▲

Press to increase pressure (00-99).

.▼

Press to reduce pressure (00-99).

.PSW

Press for manual operation. The lights of RUN and PSW will both turn on.

.AUTO

Press for auto operation. The light RUN will turn on. It is only necessary to press it after the pump was run at manual mode.

.RUN

Press to turn on the pump at the auto operation mode which is also the factory default setting.

.STOP (red)

Press to force the pump to stop. Under normal operation, the pump will stop automatically when the tap is closed.

4. Start Up the Pump

4-1. Connect the power.

4-2. Check if the voltage and wiring are correct before you switch on the pump. The voltage should be kept at $\pm 10\%$ of the rated voltage on the nameplate

4.3 Priming

Do not start the pump until it has been primed. Follow the following priming instruction:

4.3.1 Booster systems and systems where the liquid level on the suction side is above the pump inlet:

4.3.1.1 Close the isolating valves either side of the pump.

4.3.1.2 Remove the priming plug, fig. 1.

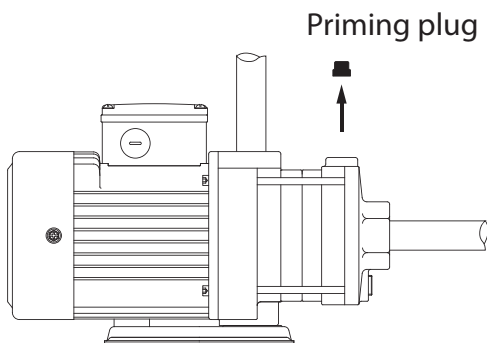


Fig. 1

4.3.1.3 Slowly open the suction valve and keep it open until a steady stream of liquid runs out the priming port.

4.3.1.4 Close the valve, replace the priming plug and tighten it.

4.3.1.5 Open the suction valve.

4.3.1.6 Press RUN to start the pump. The pump will operate at the auto mode.

4.3.1.7 Make sure the motor runs the same direction as the rotating direction sticker (on the motor fan cover).

4.3.1.8 Slowly open the discharge valve until it is fully open.

4.3.2 Pumping from tanks and wells where the liquid level on the suction side is below the pump inlet:

4.3.2.1 Close the discharge isolating valve.

4.3.2.2 Remove the priming plug, fig. 2.

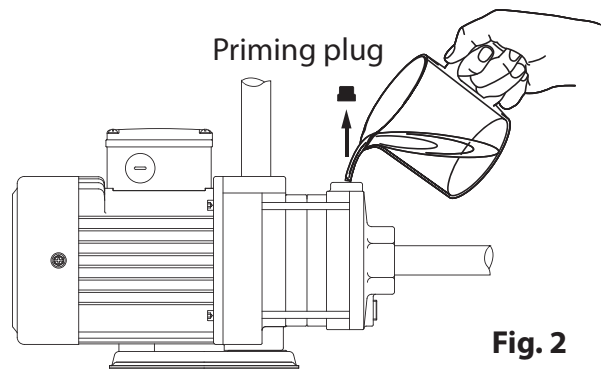


Fig. 2

4.3.2.3 Pour water through the priming port. Make sure that the suction pipe and pump are completely filled with liquid and vented.

4.3.2.4 Replace the priming plug and tighten it.

4.3.2.5 Press RUN to start the pump. The pump will operate at the auto mode.

4.3.2.6 Make sure the motor runs the same direction as the rotating direction sticker (on the motor fan cover).

4.3.2.7 Slowly open the discharge valve until it is fully open.

4.4 If there is no discharge flow after a few minutes, please turn off the pump and repeat the Process of 4.3 Turn the pump on and off several times until it is working normally.

5. Adjustment

5-1. Pressure adjustment.

. When you press RUN to start up the pump, the SET pressure indicates the factory default pressure. It is also the max. constant pressure the pump will work. It can be set lower by pressing ▼ until the SET screen shows the number you desire, and then press PROG to memorize the new setting.

. You can not increase the SET pressure unless you have positive incoming pressure from your water source. For example, you

have 10 psi incoming pressure and the default pressure is 50 psi, you can adjust the SET pressure up to 60 psi as max. Make sure your positive incoming pressure is very stable because the pump performance will be affected once your incoming pressure is fluctuated.

. To increase SET pressure, please press ▲ to the number you desire, and then press PROG to memorize the new setting.

5-2. Switch to manual operation mode.

. When the auto mode is malfunctioned, you can switch to manual operation mode to keep the pump running.

(p.s not available for 2T or 4T models)

. Press PSW (the light of RUN and PSW will both turn on) and then press PROG to switch to manual mode.

. You can press ▲ or ▼ to reset the SET pressure. Then, press PROG to memorize your new setting.

. You can press ▲ or ▼ to change the above pressure setting, and then press PROG to memorize it.

5-3 Switch to auto operation mode.

. When the pump is in the manual mode and you want to switch back to auto mode.

. Press Auto (the light of RUN will turn on), and then press PROG to switch to auto mode.

5-4. For other adjustments, please contact us for more information.

Remarks:

. After finishing any adjustment of the above, please be sure to press PROG to default the new setting. If you do not press PROG, the pump will resume to the previous setting when the power turns off.

. The pump is protected against dry run. When pump is run dry, the indicator will display "OL".

The default is set to stop for 10 minutes and the pump will attempt to run 2 minutes and stop for 10 minutes. The stop-and-run cycle will be continued until the water supply is normal. It is highly recommended to shut off the pump when the water supply has problem as continue to run the pump dry will cause serious damage. When you want to force pump to stop, please press STOP; and to resume operation, please press RUN.

. Please always run the pump at auto mode for best performance. The manual mode is used for emergency when the auto mode is malfunctioned.

6. Trouble Shooting

6.1 For pump and motor:

(Before proceeding any action, please switch off the power.)

Cause	Remedy
6.1.1 Motor does not run.	a. Check if voltage is correct. b. Check if water supply is adequate. c. Check if rotor spins freely. d. If problem occurs when working at PSW mode, please check conductivity of silver contact on the pressure switch. If it is oxidized, please clean it. e. If the problem is unsolved, please contact our distributor or us.
6.1.2 Motor keeps running when no water is consumed.	a. Check if faucet is completely shut off. b. Check if there is any leak in the system. c. Check if check valve function normally. d. Check if water supply is adequate.

6.2 For Inverter controller:

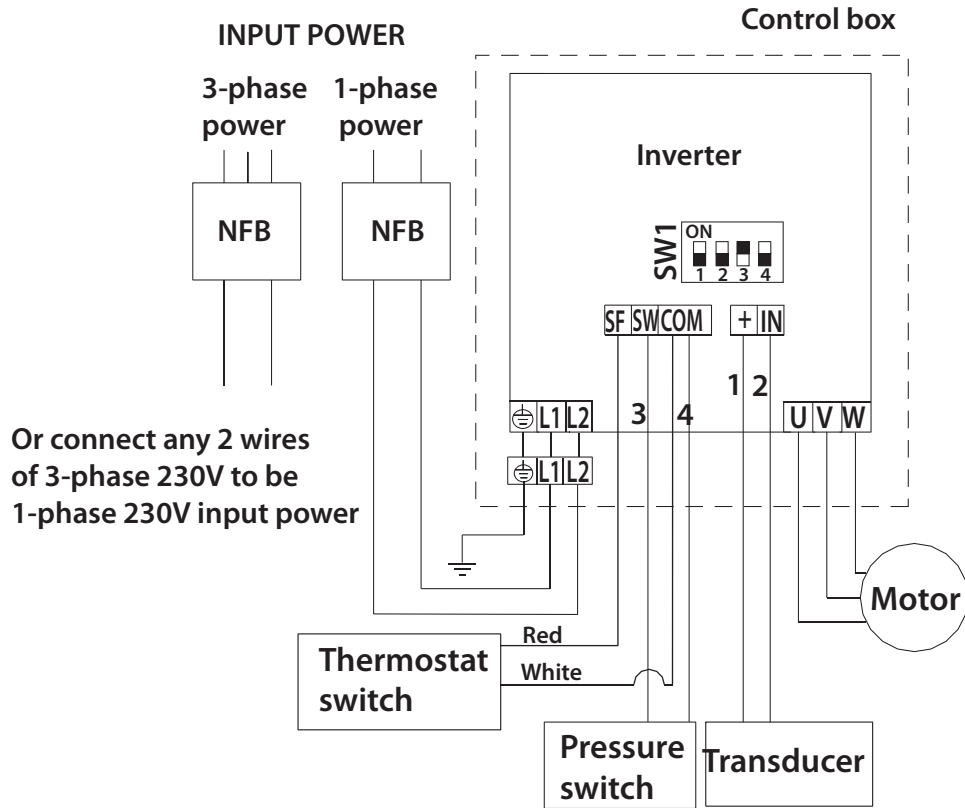
Cause	Remedy
6.2.1 SF display: Warning of error setting - operation is prohibited.	a. Check SF switch and reset it to "ON" position. b. If the problem remains unsolved, please contact our distributor or us.
6.2.2 OPE1 display: Warning that pump is under wrong operating mode.	a. The terminal connection for AUTO mode (panel control) should be like this: <div style="text-align: center; margin: 10px 0;"> </div> b. for MANUAL mode (terminal control),it has to be connected like this: <div style="text-align: center; margin: 10px 0;"> </div> b-1. Connect FWD and COM to start the operation. b-2. Disconnect FWD and COM to stop the operation. c. Switch back to AUTO mode: Disconnect FWD and reconnect the terminal as indicated in a. Then press AUTO to run the pump back to AUTO mode.
6.2.3 OL display: Warning of dry run.	a. Check if water supply is adequate; otherwise, push "STOP" to stop the pump and switch off the power.
6.2.4 EEP1/EEP2 display: Warning of "Memory" disorder.	a. Reset and then press "PROG", then restart the pump. b. If the problem remains unsolved, please contact our distributor or us.

**6.2.5 PF01/PF02/PF03/PF04 display:
Faulty signal from inverter:**

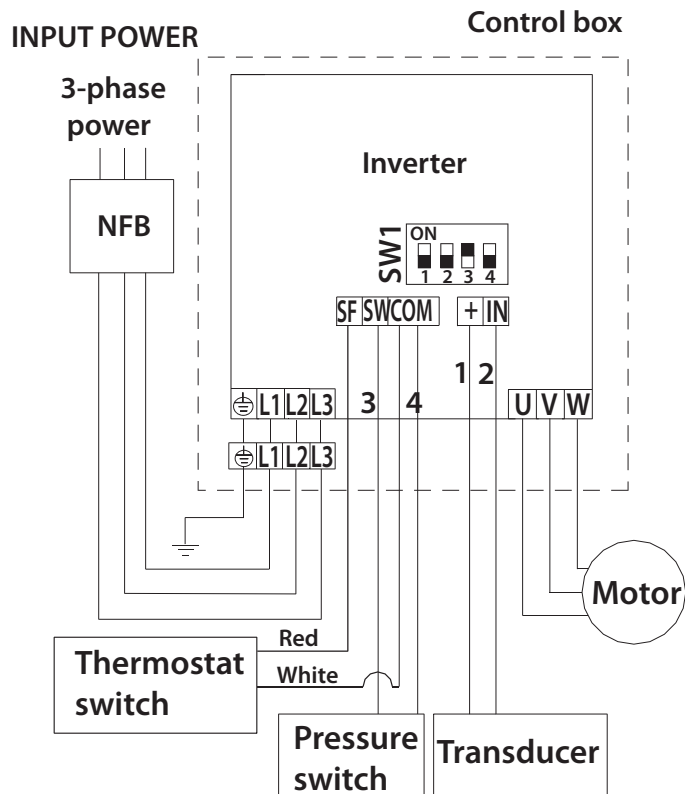
Display	Description	Remedy
PF01	Fault occurs in acceleration.	a. Switch off the power and restart. b. If the problem remains unsolved, please contact our distributor or us.
PF02	Fault occurs in normal operation.	
PF03	Fault occurs in deceleration.	
PF04	Fault occurs in stand by.	

7. Wiring diagram

7.1 Single-phase 230V inverter



7.2 3-phase inverter



Limited Warranty

Products manufactured by Walrus Pumps Co (Walrus) are warranted to the first user only to be free of defects in material and workmanship for a period of 12 months from date of installation, but no more than 24 months from date of shipment. Walrus' liability under this warranty shall be limited to repairing or replacing at our election, without charge, FOB Walrus' distribution center or authorized service agent. Walrus will not be liable for any cost of removal, installation, transportation or any other charges that may arise in connection with warranty claim.

The warranty period commences on the date of original purchase of the equipment. Proof of purchase and installation date, failure date, and supporting installation data must be provided when claiming repairs under warranty.

This warranty is subject to due compliance by the original purchaser with all directions and conditions set out in the installation and operating instructions. Failure to comply with these instructions, damage or breakdown caused by fair wear and tear, negligence, misuse, incorrect installation, inappropriate chemicals or additives in the water, inadequate protection against freezing, rain or other adverse weather conditions, corrosive or abrasive water, lightning or high voltage spikes or through unauthorized persons attempting repairs are not covered under warranty.

Walrus will not be liable for any incidental or consequential damages, losses, or expenses, arising from installation, use, or any other causes. There are no express or implied warranties, including merchantability or fitness for a particular purpose, which extend beyond those warranties described or referred to above.

Certain states do not permit the exclusion or limitation of incidental or consequential damages or the placing of limitations on the duration of an implied warranty, therefore, the limitations or exclusions herein may not apply. This warranty sets forth specific legal rights and obligations, however, additional rights may exist, which may vary from state to state.

Supersedes all previous publications



WALRUS®

Walrus America Inc

9808 Whithorn Drive, Houston, TX 77095
Web: www.walruspumps.com

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