Installation instructions for the PC115A Pump Controller

It is the installer's responsibility to read, understand and comply with these instructions.

Thank you for your purchase of a RainFlo Pump Control.

Your commitment to saving water through the use of harvested rainwater is commendable, and is a very important step towards increasing your personal water sustainability.

To match your commitment to saving water we have committed to ensuring that the pump controllers we offer are of the highest quality available. This pump controller has been tested and certified ROHS compliant for your safety.

Parts included:

Qty-1: Pressure activated pump controller
Qty-1: Instruction manual

Overview:

The RainFlo PC115A provides automatic multifunction control for your water pump including start and stop control based on user demand (flow), demand-side pressure display via built-in pressure gauge, run-dry protection and a check valve (non-return valve) function. It provides direct control of water pumps up to 1.25 horsepower at 115V. As with most pump controllers, the system high pressure is based on the pump output. The pump start pressure (low pressure threshold and start trigger), is adjustable through a screw on the back side of the unit.

Pressure Gauge:

Your PC115A pump controller features a built-in pressure gauge located on the right side of the unit. As with many hydraulic devices, this gauge displays pressure in units called “bar”. One bar is approximately equal to atmospheric pressure at sea level. In terms of water pressure, 1 bar = 14.5037 PSI.

Pressure Gauge (bar)	Pressure (PSIG)
2.0	29.0 PSI
3.0	43.5 PSI
4.0	58.0 PSI
5.0	72.5 PSI
6.0	87.0 PSI
7.0	101.5 PSI

Important Notice:

Read carefully before proceeding with product assembly and commissioning operations. For the pump, refer to its manual.

The PC115A features an internal check valve which requires the unit to be installed with the water inlet facing downward and the output above (arrows near the pressure gauge facing up).

1. Applications and Operation:

The PC115A electronic controller commands the starting and stopping of single-phase electric water pumps whenever a tap or valve connected to the installation is opened or closed, respectively. When the pump is started, it keeps running as long as any connected tap remains open, supplying the network with the required flow at the related pressure.

2. Construction Characteristics:

- Inlet connection : 1”
- Outlet connection : 1”
- Non-water hammer check valve.
- Dry-running protection system.
- Pressure gauge.
- Manual start button (RESET).
- AUTORESET function for automatic start after a failure.
- Power supply LED (POWER).
- Pump switch-on LED (ON).
- Safety system activation LED (FAILURE).

3. Specifications:

- Power supply voltage: 1~115-125V
- Maximum current : 16 A
- Max pump power : 1100W(1.25 HP) at 1-115-125V
- Frequency : 50/60 Hz
- Protection class : IP 65 (*)
- Ambient temperature : 0 /+140° F
- Liquid temperature : 0 /+140° F
- Max flow rate : 44 GPM
- Adjustable starting pressure : 20 - 35 PSI
- Max operating pressure : 145 PSI

(*)Provided the cable glands and screws in cover have been suitably tightened

4. Handling and Inspection:

Handle with care. Dropping and impact can damage the product.
Before proceeding with installation, make sure the unit shows no visible signs of damage, otherwise contact your dealer.

5. Installation:

This device must be assembled and installed by personnel qualified in accordance with local laws, regulations and codes.

5.1 Water Connection (Fig.1)
The PC115A must always be installed with the arrows pointing upward, connecting the 1" threaded inlet to the pump's outlet and the 1" threaded outlet to the point of use.
Use flexible pipes for connection to the water network, protecting the appliance form any bending loads and vibrations, a ball valve to isolate the pump system from the network, and a foot valve to maintain prime for suction inlets (Fig.1).

⚠ **Before starting up the unit, fill the suction inlet with water as specified in the pump's manual.**

WARNING: The maximum operating height between the pump and the highest point in the system will depend on the pump start pressure setting. The maximum pressure of your pump must exceed the value of the start pressure setting. Both these limits are specified in the table below.

START PRESSURE	MAX. OPERATING HEIGHT	MAX. PUMP PRESSURE GREATER THAN
22 PSI	33 ft	44 PSI
29 PSI	49 ft	51 PSI
36 PSI	66 ft	58 PSI

5.2 Electrical Connection (Fig. 2)

⚠ **The connections must be made by a qualified electrician. Install a GFCI for protection against lethal electric shock. Be sure the circuit and device are properly grounded.**

Make sure that the voltage supply corresponds to the rated voltage. Remove the cover (faceplate) from the electronic board and make the electrical connection according to the instructions shown inside. This controller can also be used with a single-phase pump with electrical demand greater than 16A, or a three-phase pump, using an auxiliary remote control switch (115V coil). In this case the electrical connections must be made as shown in the diagram, Fig. 3.

WARNING: Power supply voltages other than those specified or improper connections can permanently damage the electronic components and will void the warranty.

⚠ **H07RN-F3G1.5 type cables (9 - 12 mm) or equivalent must be used in order to ensure IP 65 protection.**

6. Start Up:

1. Check that the pump is primed properly, then partially open a tap in the user circuit.
2. Turn on power to the controller; the power LED will light up (POWER).
3. The pump will start up automatically and within 20 to 25 seconds the system should reach approximately the maximum pressure delivered by the pump. While the pump is running, the

corresponding LED (ON) willremain illuminated.

4. Close the tap mentioned under step (1). After 10-12 seconds the pump will stop running, but the power supply LED (POWER) will remain lit. Any malfunctions occurring after these operations will be caused by improper priming or failure to prime.

7. Starting Pressure Adjustment: (P. Start):

The pump controller is factory set to start with a minimum pressure of 21.75 PSI (1.5 bar). This pressure can be increased up to 36.25 PSI (2.5 bar) by rotating the screw found at the back of the cone-shaped end of the device, (see Fig. 4).

To set the pump start pressure:

1. Read the pressure indicated by the gauge when the pump is started.
2. Disconnect the power supply.
3. Open a tap to discharge the pressure.
4. Adjust the screw clockwise to increase (or counter-clockwise to decrease) the start pressure.
5. Supply power to the the controller; if you are not satisfied with the adjustment, repeat the operations described above until you obtain the desired pressure value.

NOTE: The maximum pressure of the pump (closing contact pressure) and the minimum start pressure must comply with the values shown in the table under paragraph 5.1 otherwise the controller will go into FAILURE mode.

8. Automatic Reset Function:

If the device goes into failure mode, the automatic reset function will execute a series of automatic starts to attempt to restore operation without any manual intervention via the RESET button.
The system operates as follows: The appliance is in failure mode due to water failure, for example; after 5 minutes in this condition the system will do a 25-second RESET, attempting to prime the pump. If the system is able to prime the pump, the failure will disappear and the pump will be ready to operate. However, if the failure persists, the system will do another RESET after 30 minutes, and will continue in this manner systematically every 30 minutes for 24 hours. If the failure still persists after all these attempts, the system will remain in this condition until the problem has been resolved by manual intervention or when power is recycled.

9. Troubleshooting:

1.- THE PUMP DOES NOT STOP:

A) Water loss exceeding 0.8 gpm. Make sure that all the taps along the pipeline are closed and that there are no leaks.
B) The electrical connection is incorrect: refer to the instructions in Fig. 2.
C) Electronic board malfunction: replace the electronic board.

2.- THE PUMP DOES NOT START:

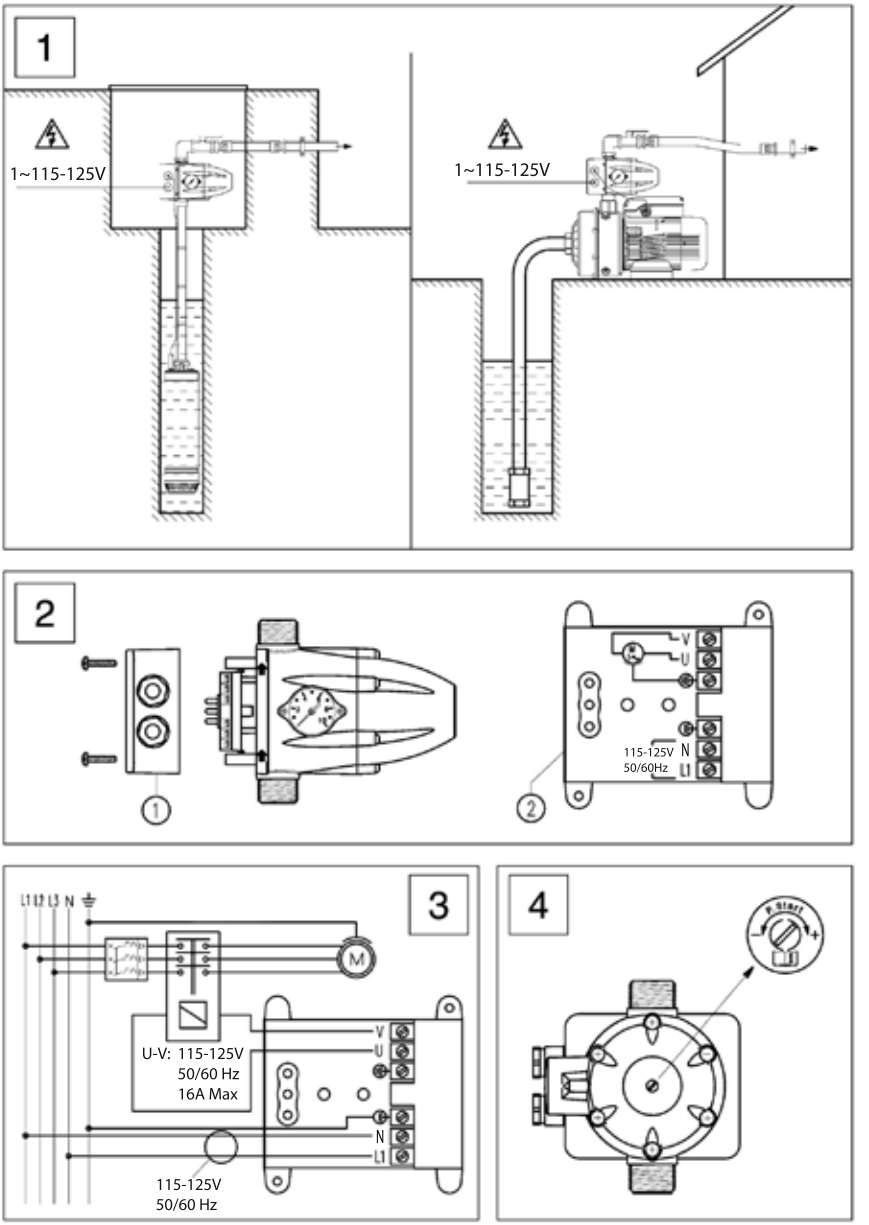
A) The pump is not primed; dry-run protection is active and the FAILURE LED is on: prime the water pipe and check by pressing the manual start button (RESET).
B) The pump has shut down: the safety system has stepped in and the FAILURE LED is on. If you press the manual start button (RESET) and the LED (ON) lights up; if the pump does not start test the output with another device such as a lamp.
C) Electronic board malfunction: disconnect the pump from the electrical mains and re-connect it; the pump should start, if it does not replace the controller.
D) No power supply: check the electrical connections, the POWER LED must be illuminated.
E) The pump delivers insufficient pressure, the safety system has stepped in and the corresponding LED (FAILURE) is illuminated: make sure that the pump pressure corresponds to the pressure value specified in the relevant table in section 5.1.
F) Air is entering the pump through the suction side: the pressure is well below normal, with

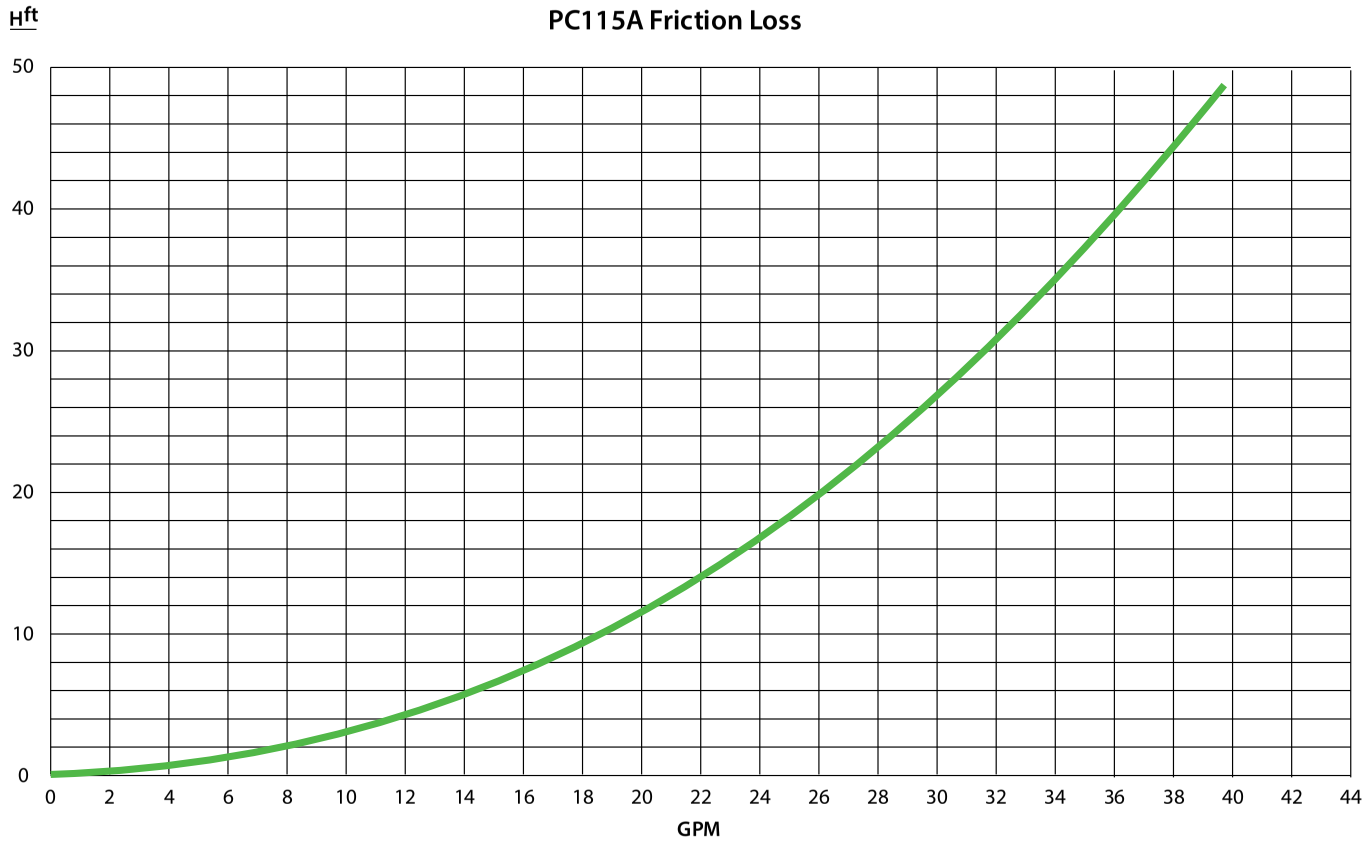
constant fluctuations. The safety system will engage and stop the pump, the FAILURE LED will light up. Check the seal and connections in the suction pipe.

3.- THE PUMP KEEPS STARTING AND STOPPING:

There is a small leak in the delivery pipeline: check for any leaking taps or running toilets.

10. Installation Illustrations:




Hft
PC115A Friction Loss
50
40
30
20
10
0
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
32
34
36
38
40
42
44
GPM

PC115A Pump
Controller

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