



Universal Rainwater Pumps

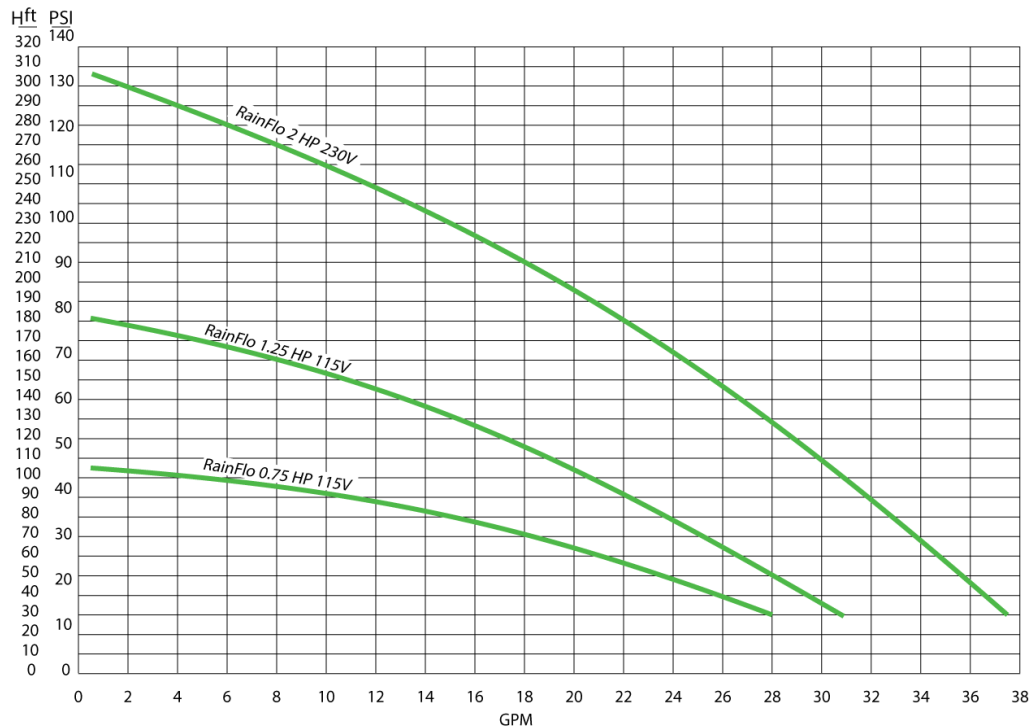
High performance multi-stage rainwater pumps for residential, commercial, and light-industrial rainwater collection systems.

Submersible and External Mounted Capability:

RainFlo universal pumps are specially designed for the unique requirements of rainwater collection systems. Equipped with a large threaded bottom inlet large for internal flow-based cooling and connection to a floating filter, these pumps can be installed vertically or horizontally and they can either be submersed inside a tank or mounted externally on the ground or other platform. Other features include a stainless steel base, adjustable float switch for run-dry protection, external capacitor housed in a wiring box with circuit breaker and master on/off switch for long life and ease of maintenance.



Pump Performance:



Durable, Dependable and High Performance:

Available in 0.75HP/115V, 1.25HP/115V and 2.0HP/230V models, construction consists of 304 stainless steel housings, dual Italian mechanical seals, American thermal protection, GE-Noryl diffuser and impellers, external starting capacitor and a 45 foot power cord. The pump is particularly quiet and durable from its solid construction. The water end is installed under the motor which keeps the motor cooled with the pumped water. The Noryl impellers and diffusers offer high abrasion resistance while the Italian double mechanical seals ensure long life and enhanced reliability.

The oil chamber is filled with non-toxic cooling oil. Ball bearings are self-lubricating and internal cast iron components are electrocoated with polybutadiene varnish to prevent corrosion which is sometimes associated with the typical lower pH of rainwater.

Installation may be oriented either vertical or horizontal so long as water is available at the intake to prevent a run-dry condition.

Specifications:

RainFlo Submersible Pumps			
Model No.	RF075-S	RF125-S & SC	RF200-S
Horsepower:	0.75	1.25	2.0
Nominal Voltage Range:	115V, 60Hz, 8.6A max.	115V, 60Hz, 14A max	230V, 60Hz, 9A max.
P1kW:	1.0	1.24	2.3
P2kW:	0.6	0.95	1.6
Impeller stages:	2	3	5
Maximum flow:	29 GPM	34 GPM	36 GPM
GPM at 50 psi (0 Head):	See Curve	17 GPM	29 GPM
GPM at 40 psi (0 Head):	8 GPM	22 GPM	31 GPM
Maximum head:	105' TDH	180' TDH	310' TDH
System pressure:	Up to 46 PSI	Up to 78 PSI	Up to 135 PSI
Inlet/Outlet size:	1-1/4" FPT	1-1/4" FPT	1-1/4" FPT
Weight:	36 Lbs.	41 Lbs.	46 Lbs.
Dimensions:	7" X 7" X 20" (incl. base)	7" X 7" X 22" (incl. base)	7" X 7" X 24" (incl. base)
Thermal protection:	Yes	Yes	Yes
Motor:	2-pole induction, Continuous duty	Same	Same
RPM:	3450	3450	3450
Cooling:	Water cooled/intake	Water cooled/intake	Water cooled/intake
Insulation class:	F	F	F
Protection:	IP68	IP68	IP68
Certifications:	CE	CE	CE
Warranty:	1 Year	1 Year	1 Year

Installation Instructions

Mounting location:

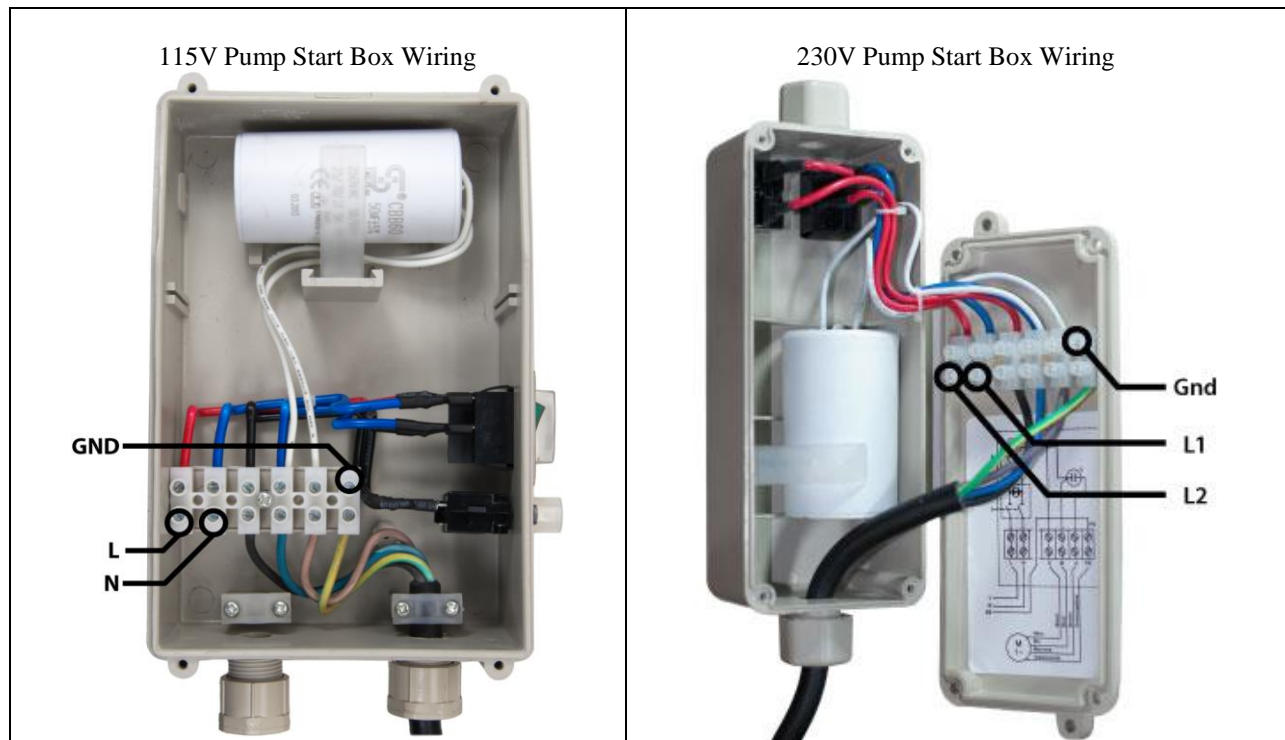
The pump may be mounted vertically or horizontally and may be fully or partially submersed or mounted externally on the ground or other sturdy platform. When mounted externally, the pump must be safely and securely mounted in a manner which prevents exposure to electrical connections and in a location which prevents damage and exposure to freezing temperatures.

Environmental considerations:

If the pump may be exposed to freezing temperatures, the pump must be fully drained and protected with a food-grade antifreeze. The pump start box offers water resistance but should be mounted in a location away from direct exposure to rain, humidity, snow, excessive heat and direct sunlight.

Pump to Start Box Wiring:

All electrical connections should be made by a licensed professional. The pump ships pre-wired to the pump start box as shown below. Excess wire between the pump and pump start box can be removed so long as the wires are re-connected properly.

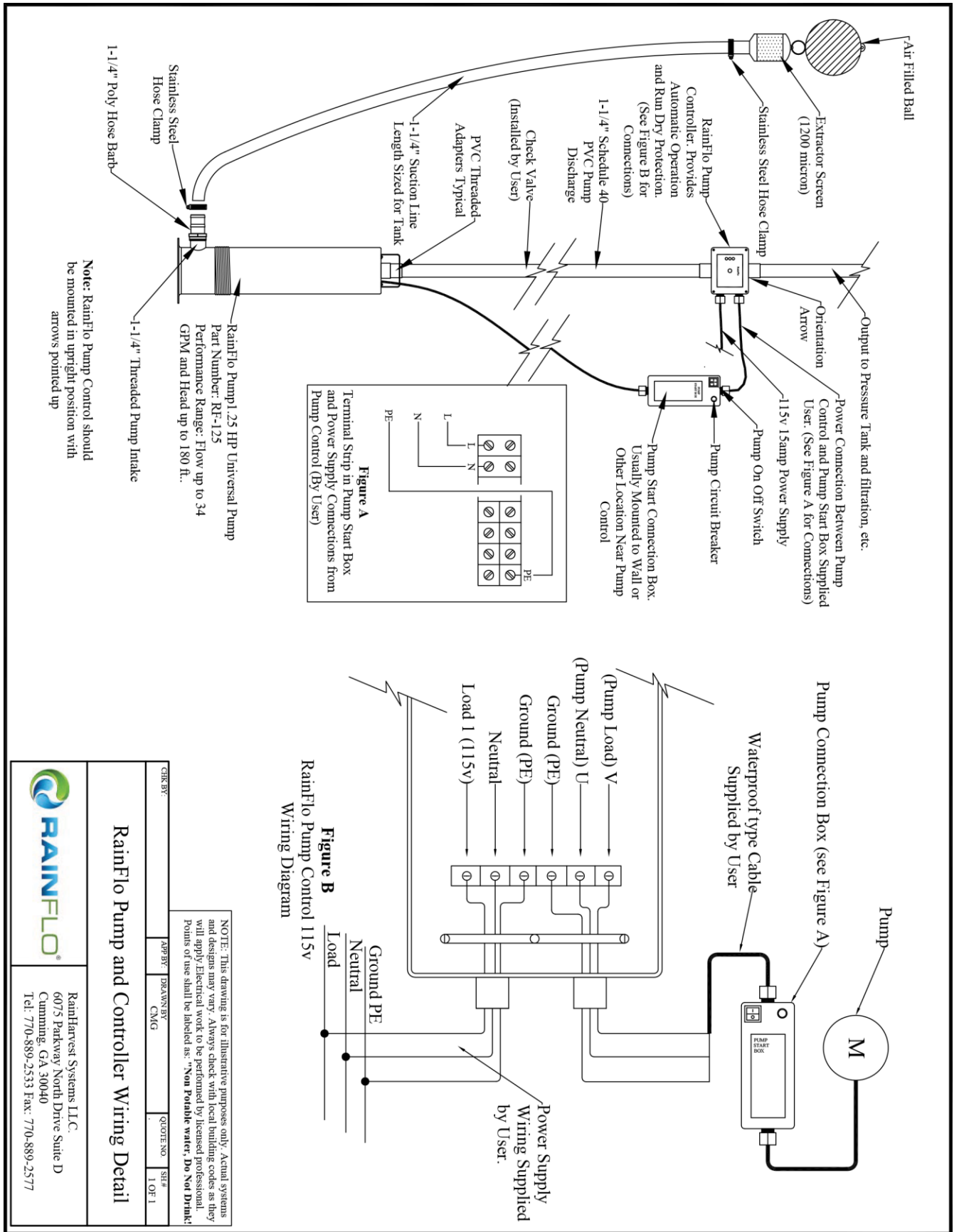


Pump Start Box to Pump Controller Wiring:

The pump start box serves as housing for the start capacitor and on/off control for maintenance and is not intended for regular pump starting and stopping operation. For regular pump control and run-dry protection, an intelligent pump control such as the RainFlo Pump Control or a pressure switch assembly should be used. The pump controller is wired between the main electrical power source and the Gnd/N/L(115V) or Gnd/L1/L2(230V) terminals inside the pump start box. Follow the wiring instructions for your particular pump control device. When wiring is complete, the plastic watertight fittings on each end of the pump start box should be hand-tightened and the cover re-secured. Do not over-tighten the fittings or they can possibly break.

For additional information, see schematic next page

Schematic Diagram



Dedicated Circuits for Rainwater Pumps

What is a Dedicated Circuit?

All electricity goes through a circuit breaker box. Your circuit breaker box has individual circuits and breakers that provide electricity to different parts of your home or business. To protect and prevent electrical hazards, certain appliances and equipment require their own circuit often referred to as a *dedicated circuit*.

Why does my pump need a dedicated circuit?

Typical electrical circuits may have several items plugged into the same circuit. Just like most motor-driven appliances like a furnace or air compressor, a water pump consumes increased electrical current as the pump motor starts. This start-up current can demand nearly all of the capacity for an electrical circuit and therefore requires its own dedicated circuit.

What wire gauge does my circuit need?

Your electrician should be able to determine this for you, given the input voltage and maximum amperage of the pump and pump controller. The electrician will also take the circuit (wire) length into consideration because longer circuits will experience voltage drop, or *line loss*, which must be compensated by increased wire gauge.

Experts say that voltage drop should never be greater than 3 percent.

Approximate line loss voltage drop for a typical single-phase 115V, 15 amp water pump:

	14 Gauge		12 Gauge		10 Gauge		8 Gauge		6 Gauge	
	V. drop	%	V. drop	%	V. drop	%	V. drop	%	V. drop	%
50 feet, 115V, 15A	3.79	3.30%	2.38	2.07%	1.50	1.30%	0.94	0.82%	0.59	0.51%
100 feet, 115V, 15A	7.58	6.59%	4.76	4.14%	3.00	2.61%	1.88	1.63%	1.19	1.03%
200 feet, 115V, 15A	15.15	13.17%	9.53	8.29%	5.99	5.21%	3.77	3.28%	2.37	2.06%

Excess line loss as indicated in **RED** will cause the circuit amperage to increase which can lead to poor performance, increased heat generation, damaged system components, tripped breakers, burned wiring and a potential fire hazard.

As a general rule, keep all wiring as short as possible to reduce line loss. If the pump is supplied with a power cord, any excess cord should be eliminated when the final wiring connections are made.

What kind of plug does my circuit need?

This will depend on the configuration of the pump system but most water pump systems require a junction box near the location of the pump controller. Pump controllers are often hard-wired into the junction box but can sometimes be connected using a plug. If mounted outside, a waterproof enclosure and possibly GFCI protected circuit may be required. Your electrician will advise you of the local electrical codes and requirements.