

Liquid Level Controllers

LLC-2Y

ALL PUMPS

For both pump up and down control.
Variable On/Off set points.

LLC-1

NDP-15/20/25/32, DP-10/15 & *NDP-40/50/80

Pump up and down versions available.
6" to 12" differential On/Off.
**In conjunction with power valve.*

LLC-1010

DP-10/15, NDP-40/50/80 & SolidPRO®

Pump down only. 6" differential
On/Off set points.

LLC-3

NDP-5/15 & DP-10

For both pump up and down control.
Variable On/Off set points.

LLC-4

NDP-20/25/32

Utilized unit. Pump down only.
6" differential On/Off (similar to LLC-1)

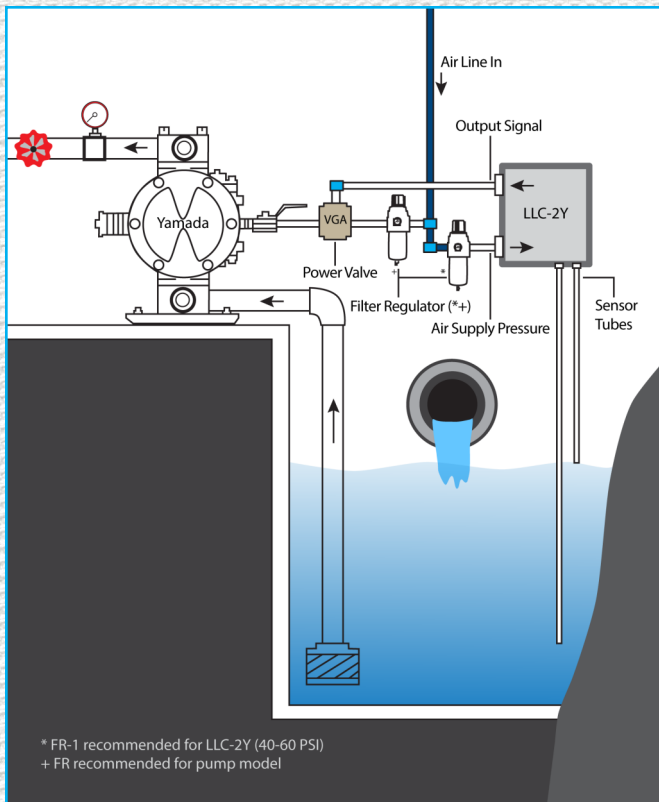
Note: Due to Yamada's continued commitment to product improvement, specifications may change without notice.



LLC-2Y

The Yamada LLC-2Y Liquid Level Controller is a totally pneumatic system designed to automatically start and stop Yamada Air-Operated Double Diaphragm Pumps when the liquid level within a tank, sump, etc. reaches predetermined levels.

An extremely versatile controller, the LLC-2Y can be used in both single and dual pump applications with any size or model Yamada Pump. Used in a single pump configuration, it automatically controls either the filling or emptying of a tank or other vessel. When connecting to two separate pumps, it will control both the filling and emptying of the tank. This dual pump capability is particularly useful for waste water storage, contaminated water clean-up and other applications where liquids are regularly transferred into and out of a single vessel.



Key Advantages

- **Totally Pneumatic Operation:** Compressed air to operate the pump is all that is required.
- **Broad Control Capabilities:** The LLC-2Y can be utilized with any Yamada Pump to control and maintain a liquid level anywhere from a few inches to dozens of feet within a tank, sump, etc.
- **Wide Range of Applications:** Connected to a single pump, it is ideal for either filling or emptying a tank or vessel. Connected to two pumps, it can be used to control both the filling and emptying.

Specifications

| | |
|--------------------------------------|--|
| Operating style | Air operated style |
| Setting | NC/NO (Changeable) |
| Operating pressure range | 20 - 130 PSI |
| Pilot pressure | Same as operating pressure |
| Ambient and fluid temperature | Max 50°C |
| Lubrication | Not required |
| Impact/Vibration resistance | 150/50 m/s ² |
| Dimensions | 8.5" L x 7.0" W x 4.5" D |
| High / Low Dip Tubes | Two 1/4" nylon tubes, cut to length (20' supplied *) |
| Air Supply Connections | 3/8" |
| Design Case | Weather proof enclosure |
| Weight | 4 lbs. |

*Additional tubing available



LLC-2Y Principles of Operation

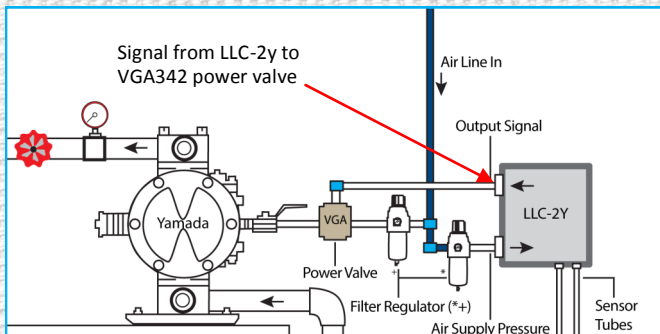
The LLC-2Y consists of a sophisticated air logic control valve housed in an impact resistant weather proof fiberglass reinforced plastic enclosure. As the liquid level within the tank rises or falls, the subtle changes in pressure are transmitted through high and low level dip tubes to the air logic control valve. When the liquid level reaches a predetermined level (tubing is cut in the field to the preferred HIGH and LOW level points), the power valve supplying air pressure to the pump is turned ON or OFF as required.

The LLC-2Y can be utilized to control and maintain liquid levels in virtually any un-pressurized vessel. Its liquid level control span ranges from a few inches to dozens of feet. For added convenience, it may be mounted up to 20 feet away from the pump.*

* NOTE: The greater the distance from the liquid, the longer the reaction time for the pump to activate.

Power Valve – VGA342-04NA

The VGA342-04NA Power valve is used in conjunction with the LLC-2Y. This 3-way air actuated solenoid valve enables the pump to receive an increased volume of air to drive the pump towards it's desired capacity.



| Liquid Level | Single Pump Configuration | | Dual Pump Configuration |
|---|---------------------------|----------|--|
| | Emptying | Filling | |
| Below both high and low dip tubes | Pump Off | Pump On | Filling pump on. Emptying pump off |
| Below high dip tube, above low dip tube | Pump Off | Pump On | Filling pump on. Emptying pump on. |
| Above both high and low dip tubes | Pump On | Pump Off | Filling pump off. Emptying pump on. |
| Below high dip tube, above low dip tube | Pump On | Pump Off | Filling pump off. Emptying pump on. |

Installation:

1. Air supply IN (both LLC-2Y & power valve)
2. Control air supply OUT (to power valve)
3. Air supply from power valve to pump
4. High level sensor tube*
5. Low level sensor tube*

* NOTE: Mount sensor tubing a minimum of 2 - 3" below the pre-determined level.



LLC-1 and LLC-1010

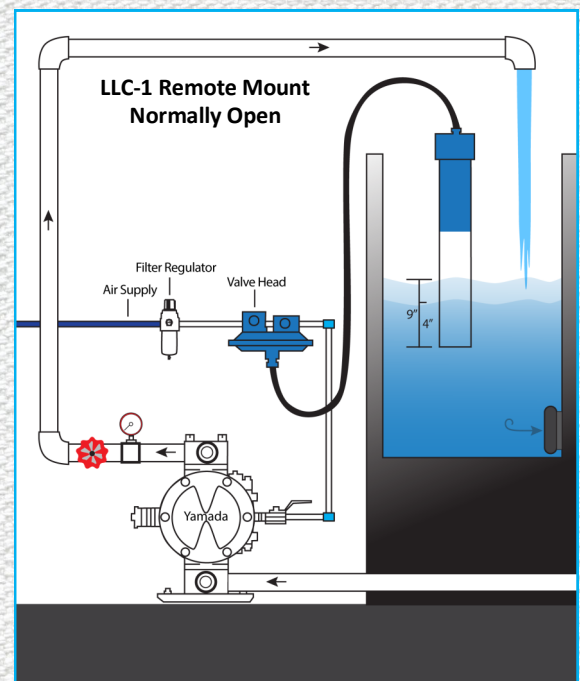
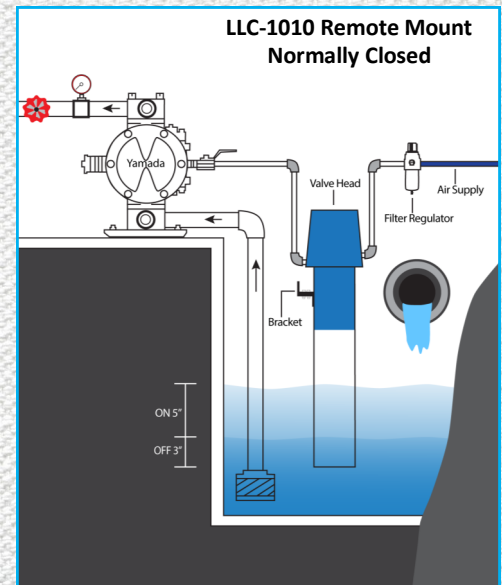
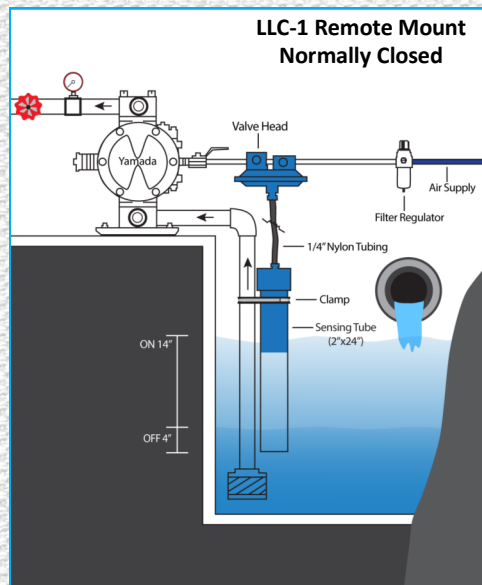
Yamada Liquid Level Controllers, LLC-1 and LLC-1010, are designed for controlling the liquid level in fluid reservoirs 12 inches or deeper. The reliable controllers can be utilized for either filling or emptying operations and are available for all models of Yamada Pumps. These liquid level controllers are pneumatically operated (no electricity required).

Operation:

The LLC-1 and LLC-1010 consist of a sensing tube (installed in the fluid) and valve head which is connected to the compressed air supply line in series with the pump. As the liquid rises in the sensing tube, air pressure within the tube increases. This increase in pressure is transmitted to a diaphragm (non-wetted) in the valve head (via a nylon tube for remote mount), activating an air pilot valve which OPENS or CLOSSES the main valve, turning the air supply to the pump ON or OFF. A Normally Closed (air line closed) configuration would typically be used for an emptying application, such as a sump. A Normally Open (air line open) configuration would be used for a filling application, such as maintaining a tank level.

Benefits:

- Totally Pneumatic Operation: Compressed air to operate the pump is all that is required.
- On/Off reliability
- Energy efficient: Pneumatic operation
- Versatile: Good for emptying sumps or filling tanks
- Close differential at 5" - 6"
- Wide differential at 10" - 12"
- Floatless



LLC-1 and LLC-1010

Specifications:

Filtered compressed air at 40 to 105 PSI, Temperature Range 35 to 180°F, and Buna N diaphragm standard (non-wetted). PTFE is also available, consult Yamada.

LLC-1:

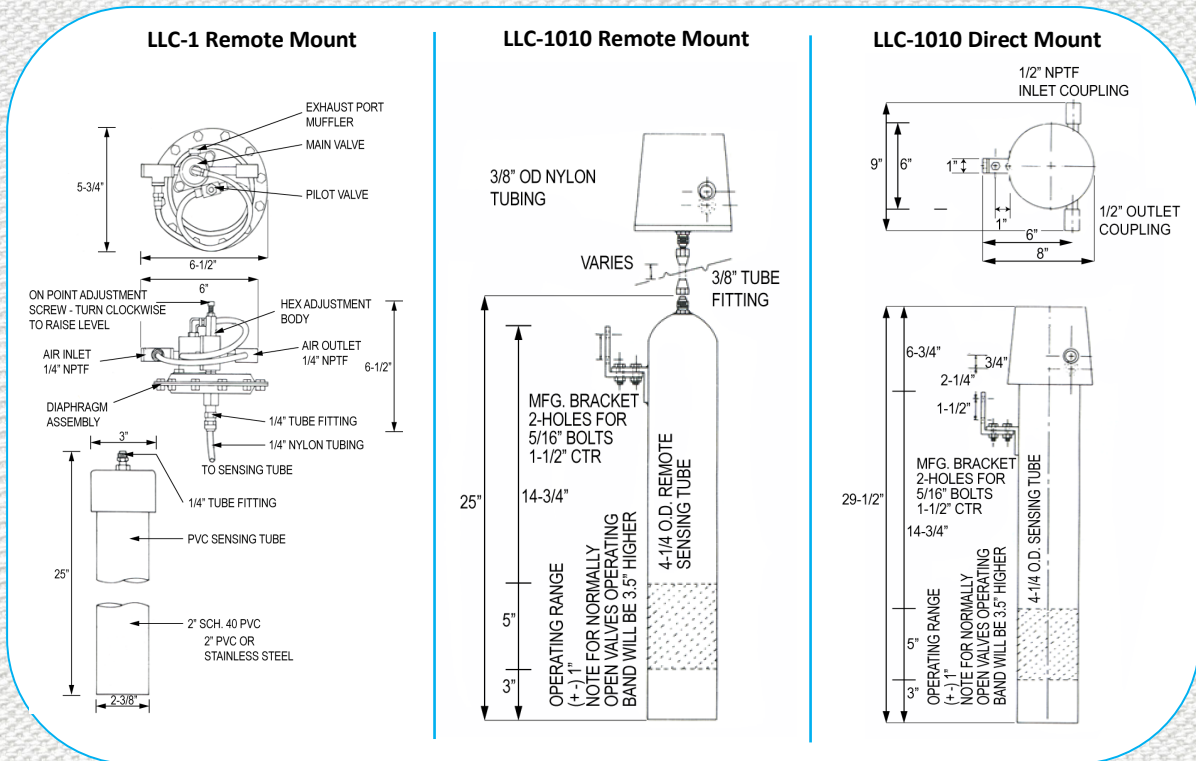
Valve size: 1/4" NPT
 Maximum Flow: 35 SCFM
 Tubing: 25 feet of 1/4" Nylon Tubing (remote mount)

LLC-1010:

Valve size: 1/2" NPT
 Maximum Flow: 195 SCFM
 Tubing: 25 feet of 3/8" Nylon (remote mount)
 Bracket included

| Model | For Pump Models | Valve Configuration | Differential | Dip Tube |
|-------------|---|---------------------|---------------|------------------|
| LLC-1NCWD | NDP-5/10/25 32/40/50/80 & DP-10/15 Series Pumps (1/4" to 3") | NC | Wide (10-12") | PVC |
| LLC-1SNCWD | | NC | Wide (10-12") | Stainless |
| LLC-1NCCD | | NC | Close (5-6") | PVC |
| LLC-1SNCCD | | NC | Close (5-6") | Stainless |
| LLC-1NOCD | | NO | Close (5-6") | PVC |
| LLC-1SN0CD | | NO | Close (5-6") | Stainless |
| LLC-1010 | DP and NDP-40/50/80 Series Pumps (1-1/2" to 3") | NC | Close (5") | Steel |
| LLC-1010P | | NC | Close (5") | PVC |
| LLC-1010R | | NC | Close (5") | Remote Steel |
| LLC-1010RP | | NC | Close (5") | PVC |
| LLC-1010RSS | | NC | Close (5") | Remote Stainless |

NC = Normally Closed | NO = Normally Open | P = Polypropylene | R = Remote
 SS = Stainless Steel | WD = Wide Differential | CD = Closed Differential

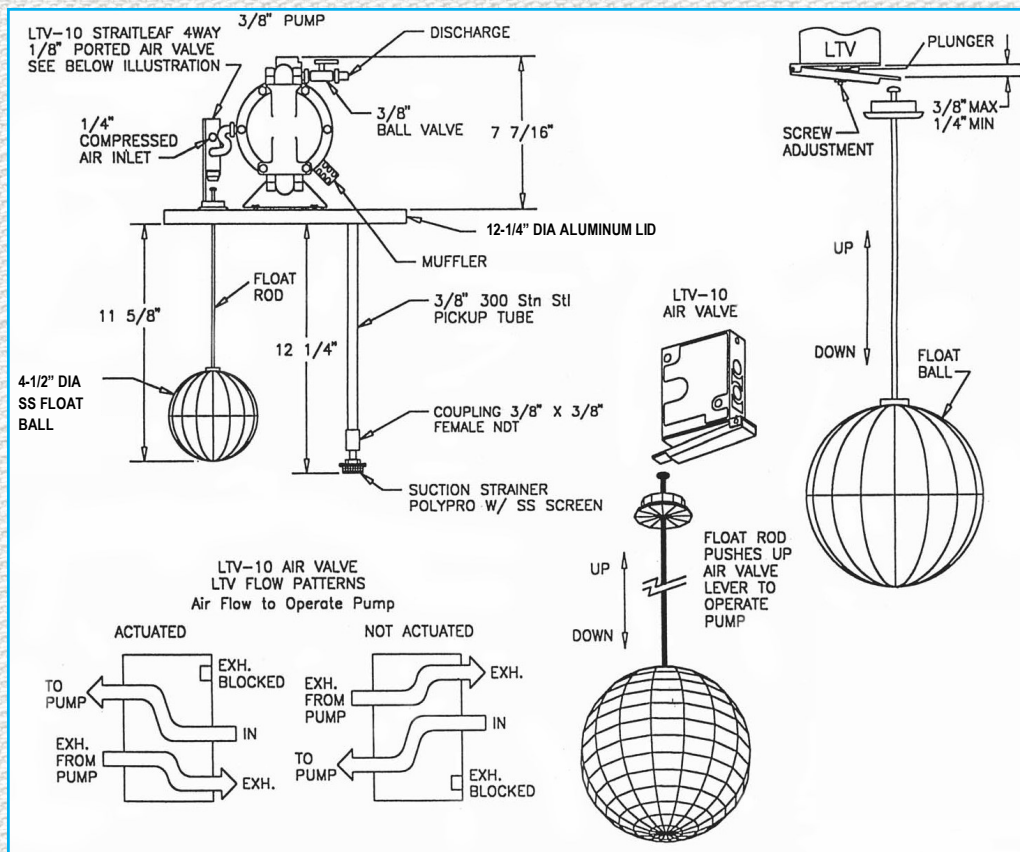


LLC-3 Sump Pump

This traditional "float type" system is designed for a 5 gallon pail or sump of equal depth. The pump is controlled by an internal float which actuates an air valve. As the liquid level in the sump rises, the pump automatically starts and operates until the liquid level drops below a predetermined level.

The LLC-3 includes a DP-10BAN (3/8"), Aluminum pump with Buna N diaphragms, complete float assembly (actuator and float ball with stem), filter-regulator gauge assembly, and suction pipe. All components are mounted on a 5 gallon pail cover. The system operates on air supply pressures from 20 to 100 PSI and can execute up to 6 GPM.

The LLC-3 is perfect as a drain run-off relay-pumping station. Also available with the NDP-5 (1/4") and NDP-15 (1/2") series pumps.



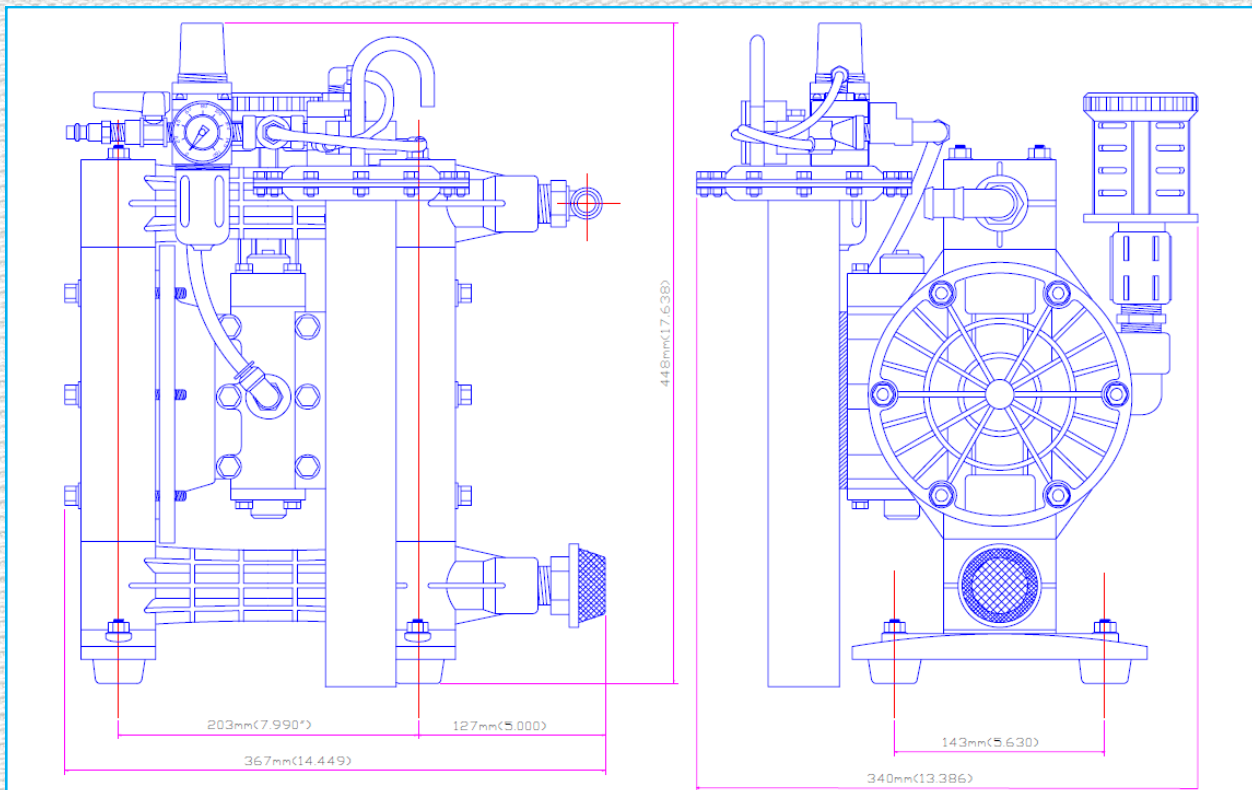
LLC-4 Floatless Sump Pump

The LLC-4 is perfect for lowering into a tank or pit to pump out the last bit of liquid that the centrifugal pump could not remove.

This air-powered sump pump is ideal for shallow sump applications. Its crisp on/off liquid level control works automatically, keeping liquid levels within the sump between 5 and 7 inches from the sump floor at all times.

The LLC-4 consists of a Yamada NDP-20BPH (3/4") polypropylene pump with Hytrel® diaphragms, level control, inlet strainer, manual bypass valve, compressed air ball valve, and filter regulator gauge assembly. It executes up to 28 GPM and is capable of 200 feet head with 90 PSIG. The system will operate on air supply pressures between 20 and 100 PSI and will fit in sumps as small as 14-15 inches.

Available with any NDP-20/25/32 (3/4", 1" & 1-1/2") series pump. Consult Yamada for pricing.



Liquid Level Controllers

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