

WET WELL MOUNTED PUMP STATION  
**FORMULA<sup>®</sup>**  
**X**



Operator  
Friendly

Lowest Life  
Cycle Costs

Advanced  
Technology

*excellence by*



**Smith & Loveless Inc.**



[www.smithandloveless.com](http://www.smithandloveless.com)

# EXCELLENCE

The FORMULA X<sup>®</sup> Wet Well Mounted Pump Station embodies the Smith & Loveless design philosophy of pump station excellence. The combination of proven Smith & Loveless Pumps and advanced factory-built station technology demonstrates why the FORMULA X<sup>®</sup> sets industry standards. Additionally, the pump station's life-cycle-costs are proven to be second to none. The moment you slide open the split station enclosure, the quality is evident in its pumps, controls, construction and durability. And Smith & Loveless backs up this new station with the longer, enhanced FORMULA X<sup>®</sup> Warranty. When you look inside and examine the details of the FORMULA X<sup>®</sup>, you will discover the excellence of this pump station achievement.

***Proven S&L Pump***

***Enhanced Warranty***



***Advanced Control Options***

***Factory Assembled & Tested***



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Smith & Loveless Inc.





Smith & Loveless combines imaginative engineering with skilled manufacturing to deliver the very finest in above grade wastewater pump stations. In the FORMULA X® Wet Well Mounted Pump Station, all of the pumps, motors and controls are housed above the station base inside a sliding fiberglass enclosure. This above grade design keeps the equipment separate from the wet well, a permit-required confined space.

Smith & Loveless prides itself on providing pump stations with the industry's longest life cycles, while keeping operation and maintenance costs to a minimum. This pump station excellence is demonstrated in tens of thousands of installations.

#### Smith & Loveless Pump Station Advantages

- ❑ Single-source responsibility from a company with more than 60 years of engineering and manufacturing expertise.
- ❑ Quality Smith & Loveless pumps that provide proven reliability.
- ❑ Pump Stations are factory-assembled and tested prior to job site delivery.
- ❑ All mechanical equipment is located above the base plate, allowing simple inspection and without confined space concerns.
- ❑ High operating efficiencies result in lower power costs.

excellence by

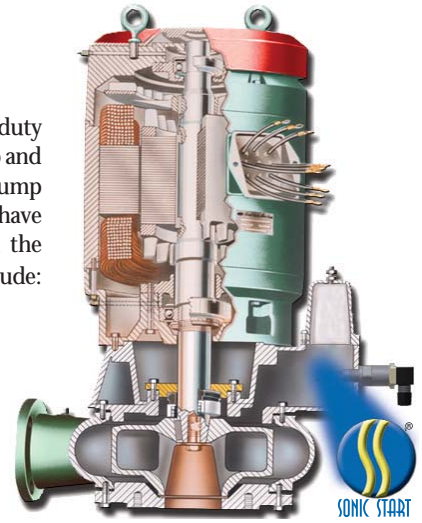


Smith & Loveless Inc.

## Pump Excellence: the S&L Non-Clog Pump

In the FORMULA X®, we have taken the heavy-duty Smith & Loveless Non-Clog Vacuum Primed Pump and wrapped it in a new contemporary above grade pump station design. More than 20,000 of these pumps have been installed since Smith & Loveless developed the vacuum primed concept. Distinguishing features include:

- ❑ Solid stainless steel oversized shaft
- ❑ Oversized bearings for long life
- ❑ Tapered shaft for easy impeller removal
- ❑ Bronze seal housing for heat dissipation and corrosion resistance
- ❑ Higher pump efficiencies
- ❑ Class F insulation for long motor life
- ❑ Designed specifically for vacuum priming
- ❑ **SONIC START®** Prime Sensor



Smith & Loveless Vacuum Primed Pump  
with SONIC START®

## Design Parameters (2 Pump Configuration)

- ❑ Sizing 4" and 6" piping
- ❑ 1.5 HP to 50 HP per pump
- ❑ Up to 1,300 GPM
- ❑ Up to 158' TDH
- ❑ Standard wet well sizing 4' through 6' and larger with concrete cap
- ❑ 4" & 6" heavy, cast-iron, vertical non-clog pumps

## A Simple Priming Process

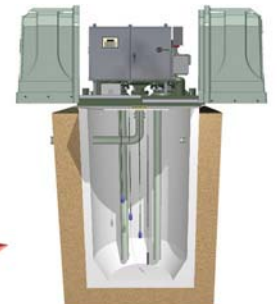
The Smith & Loveless Vacuum Priming System is a simple, proven process that includes just three (3) basic components: a **SONIC START®** prime sensor, a **solenoid valve** and a **vacuum pump**. From a totally non-primed condition, the system primes the pump in about sixty (60) seconds under standard rated conditions. Once the Smith & Loveless Pump is primed, it is designed to stay primed indefinitely.

Employing frequency modulation, **SONIC START®** prime sensing replaces the traditional electrode. Because it is not prone to foul even in applications with excessive grease or chemicals, **SONIC START®** eliminates all traditional routine maintenance tasks associated with vacuum priming and delivers hassle-free pumping.

Another exciting new feature is **CONSTANT PRIME®**. This optional control setting continually senses whether or not the pump is primed. If loss of prime occurs, the vacuum prime sequence will continuously maintain prime. This ensures instant pump start-up when the pump is called to run.



The heavy-duty vacuum pump and large port solenoid valve shown above are typical for each wastewater pump. The **SONIC START®** prime sensor is at right.



The **FORMULA X®** pressure transducer monitors the wet well level, and is backed by a complete float switch system.

## Station Features: Experience the Excellence of Our Station Design

Armed with an array of state-of-the-art standard components and features, the **FORMULA X®** Wet Well Mounted Pump Station delivers superior convenience and automation throughout the entire station's exterior and interior design.

### Operator & Environment Friendly Enclosure

- ❑ Sleek, split enclosure for convenient access to station and controls.
- ❑ Natural, green tone fiberglass with improved UV resistance properties.
- ❑ Simple enclosure removal within seconds without the use of tools or hoisting equipment.
- ❑ This provides 360-degree access to complete station.

"No-lift" enclosure design will meet OSHA's maximum allowable lift requirements for the foreseeable future.



*The padlockable station enclosure opens in seconds, without any lifting, for immediate access to pumps and controls, which reside safely above grade and away from the corrosive wet well environment.*



### Rugged Interior & Base For Durable, Day-After-Day Performance

- ❑ Each pump's front head is bolted to the station base with a simple, gas-tight adapter, allowing the suction pipe connection to be pulled up through the base without having to enter the wet well.

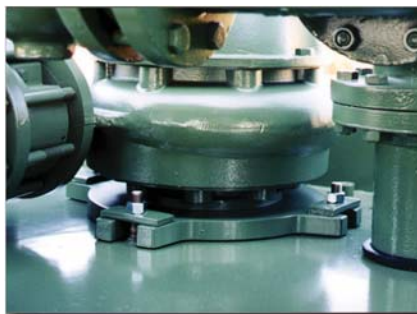
- ❑ 1/2" thick heavy-duty base provides long-term durability, stability, strength and pump support.

- ❑ Proven Smith & Loveless **VERSAPOX®** epoxy coating uniformly covers the entire base, providing excellent protection.

- ❑ **XTRATHANE®** coating system on the top of the base, piping and pumps is UV resistant and protects the station's appearance, giving the entire station a shine that keeps it looking good year in and year out.

- ❑ Abrasion-resistant 6-8 mil thick **XTRAGUARD™** coating weighs in with powerful additional protection for the bottom of the base.

Split, aluminum wet well access cover allows one side to be opened, providing a stable platform when making wet well observations.



*The simple gas-tight adapter connects with each pump's front head in standard arrangements.*



Factory Built and Tested Prior to Shipment



Safe and Easy Access to Level Sensors



PROTRONIX® II, PUMPLOGIX™ or Relay Logic Controls



No-Lift Enclosure with Easy Removal



Simpler, Standard Piping with Optional Pump Flow Sensor



# Multiple Control System Options

Smith & Loveless now offers three control system options and packages for the FORMULA X®: PROTRONIX® II, PUMPLOGIX™ and Relay Logic. Control Systems are programmed, tested and operational at startup. By opening one-half of the rolling FORMULA X® enclosure, an operator can quickly determine the status of the station by reading the controller interface. Individual running time meters and a high-water alarm with silence switch are standard.

< Each Controller is Available with 3 Feature-Filled Packages >

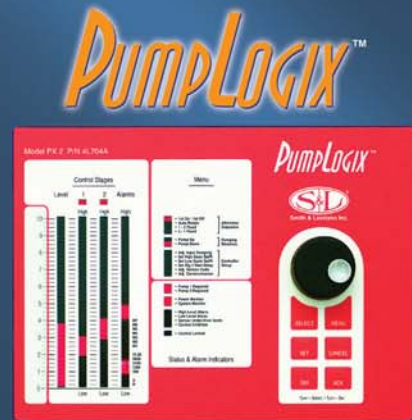


## PROTRONIX® II

The PLC-based PROTRONIX® II Control System interfaces with the station's wet well level submersible transducer system. An easy-to-use touch screen interface automatically controls more than just the operation of the pumps. Through isolated digital and analog input and output ports, it also controls the vacuum priming system, alarm functions, panel display and optional monitoring packages.

Special features include:

- 5.7" 256-Color LCD Color Touch Screen HMI
- "Sleep" Feature to Prolong Screen Life
- Minimum of Nine (9) Menu Screens Available
- Three Float Backup System



## PUMPLOGIX™

The PUMPLOGIX™ controller is an easy-to-see and easy-to-set automatic pump control and alarm monitoring system. The bright interface makes operation a simple process. The graphical display shows the wet well level, pump on/off setpoints and the high and low alarm setpoints. With the PUMPLOGIX™ controller's sealed front cover, there are no programming switches to move or jumpers to lose. The interface makes setup, adjustment and confirmation of the controller's operating parameters a breeze.

Special features include:

- User-Friendly Graphical Interface
- Ultrabright LED's
- Three Float Backup System

## Relay Logic

Smith & Loveless also provides standard relay logic controls, conveniently color coded and labeled for easy identification. Easy to operate and easy to repair, relay logic – with float switch level controls – is the powerful base control system.

### Available with All Three Packages:

- All Components are UL Listed or Recognized
- Protected by Lightning Arrestor & Surge Suppression
- CONSTANT PRIME®/On-Demand Priming Selection

## Control Panel Enclosure













The FORMULA X® uses a NEMA Type 4 steel enclosure with hinged, lockable doors. It sets high industry standards as all of the components within the control panel are UL listed or recognized. The complete station control panel is available with a standard UL 508 certification label. A stainless steel NEMA 4X enclosure is also available.





## Backed by an Enhanced Warranty Program\*

For more than 60 years, Smith & Loveless has set the standard in the industry for warranty coverage. Once again, we lead the way with the enhanced FORMULA X® Warranty. With this package, you not only get the standard warranty, you also get the unparalleled, exclusive Smith & Loveless Warranty, which covers the following:

ITEM	10-Year FORMULA X® Warranty	5-Year FORMULA X® Warranty
<b>Pump Assembly</b>		
Motor		
Adapter		
Impeller		
Volute		
Front Head		
Fiberglass Enclosure		
Fiberglass Components, Tracks & Rollers		
<b>Base</b>		
Base		
<b>Electronic Control System (when applicable)</b>		
HMI (Human-Machine Interface) Display Controller		
Pressure Transducer		
<b>Mechanical Seals</b>		
Ceramics		
Carbons		

\*Starts on the day your equipment ships, and it covers items - replacement or repair - listed above. It is based on a monthly linear pro-ration from date of shipment.



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