SPECIFIC ENERGY

Lift Station Guardian

The Smart Lift
Station Controller.

Unmatched reliability

- Triple redundancy of pump starts
- Reduce/eliminate SSO's
- Automated standard control system
- Over 1M operating hours
- Proven reliability

Reduce pump ragging

- Automated pump reversal
- Pump clog detection
- SMS Alerts/Alarms

Automatic Lift Station maintenance

- Float tests
- Force main scouring
- Pump Snoring
- Odor Control
- Variable start levels

Compute flow from level

Flow is calculated from level sensor data during fill cycles, determining wet well shape. Irregular shapes are common due to pipework and sloped sumps.

Reports

- Monthly Pump Report Cards
- Maintenance Reports
- Planning Reports

Standard Lift Station Panel Reference Design Included

Stop reinventing the wheel!

- Reduce upfront engineering
- Standard Bill of Materials (BOM) (sensors, VFDs, switches, PLC)
- Easily integrate new sites
- Shop Factory Acceptance Testing (FAT)

Included components

- Industrial PC (2GB RAM, Intel CPU, 64GB SSD)
- Temperature rating: 0ºC to 70ºC
- Required power: 120VAC, 4.5A or 12-32VDC
- DIN rail mountable
- Antenna with magnetic base
- Coax antenna cable

Required instrumentation

- High Float Switch
- Low Float Switch
- Submersible Wet Well Level Transducer
- Discharge Pressure Sensor
- VFD for power/speed

Installation process

- Users work with Specific Energy and a Specific Energy approved panel builder to establish requirements of the project
- Panel builder constructs panel to Specific Energy Lift Station Guardian Reference Design specifications and the project requirements
- Panel builder installs the Specific Energy Tagger in the panel and performs FAT testing
- Panel builder ships the completed LSG panel with required equipment to the project site where a third-party field integration technician can install, wire, and startup the Lift Station Guardian

Alarms

- Fully Configurable Alarm System
- Text Message or Email Alarms

Support & service

- Unlimited engineering support during regular business hours during service contract term
- Configurable, automatic text message alarms with available alarm history
- Free automatic software upgrades
- Unlimited data logging
- 24/7 Emergency support available via technical support hotline

Electrical

VFD Portion

- Input Power: 480VAC or 240VAC 3-phase
- Power Consumption: Varies based on VFD sizing

Control Portion

- Input Power: 120VAC (provided by step-down transformer pulling power from VFD Portion)
- Power Consumption: 3A
- Digital Inputs: 24VDC Source
- Digital Outputs: Dry Contact (electromechanical relays used between PLC and VFDs)
- Analog Inputs: 24VDC Source, 4-20mA

Maintenance

- Pump Clog Detection
- Proactive Clog Prevention (Pump Reversal)
- Float Testing
- Pump Snoring
- Force Main Scouring
- I&I Tracking
- Motor Protection Interlocks
- Automated Odor Control
- Variable Start Level
- Pump Health Tracking

## Inputs/Outputs

Required

- High Float Switch
- Low Float Switch
- Submersible Wet Well Level Transducer
- Discharge Pressure Sensor
- UPS Power Status
- HOA "On" Per Pump
- HOA "Auto" Per Pump
- Pump Start Per Pump

Optional

- Seal Failure Per Pump
- Thermal Overload Per Pump
- Generator Status
- Phase Fault
- Flow Meter

Platform

- Operate Pumps within their Preferred Operating Ranges
- Run the Optimal Combination of Pumps and Speeds
- Rapid Commissioning from Mobile Devices
- Remote Monitoring and Configuration
- Accurate Inflow and Outflow
- Flexible Data Exportation
- Can tie into Existing SCADA Systems
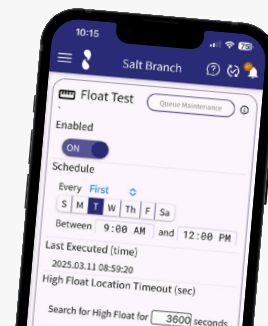
✓ **Secure Authentication**

Strong password enforcement

Two-factor authentication

Passwords securely stored as SHA-256 hashes

Passkeys supported

✓ **Monitoring and Updating**

We follow the NIST Cybersecurity Framework

Access logging and monitoring

Regular security audits

Devices automatically receive the latest security update

✓ **Data Protection**

Specific Energy uses the Google Kubernetes Engine environment for data storage and protection. This is a multi-layered, redundant environment focusing on secure configuration, access controls, and vulnerability scanning to protect data.

✓ **Defense**

Strict firewalls on all devices

Device protection with encrypted RSA-2048 public/private key pairs

Exclusive use of encrypted protocols

Find out more ✉ **Email info@specificenergy.com** ➤ **www.specificenergy.com**