



Data Flow Systems

SCADA SOLUTIONS SINCE 1981
MELBOURNE, FL WWW.DATAFLOWSYS.COM

SCADA Solutions Since 1981

DATA FLOW SYSTEMS

SCADA System Overview



SCADA SYSTEM SECURITY

The HT3 SCADA Software program is password protected to prevent unauthorized access to the system. All passwords are **MD5 encrypted** for optimum security protection.

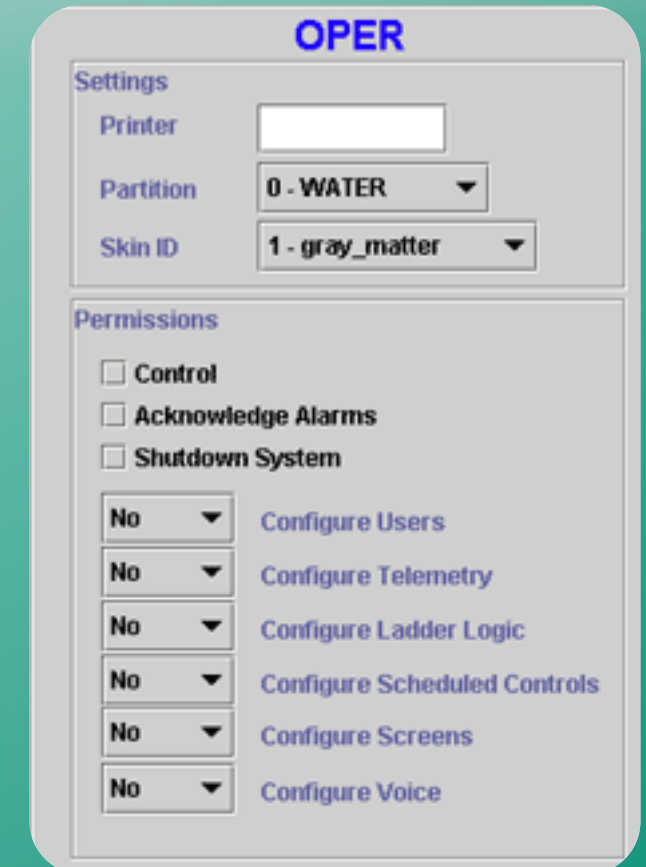
The login parameters let the system administrator specify a user's capabilities

Once logged in, actions within HT3 are limited by the permissions assigned to that particular login account.

With this level of security, access to system functions and operator displays can be limited, or restricted altogether.



A login dialog box with a light gray background. It contains two text input fields: 'Login:' and 'Password:'. Below the password field are two checkboxes: 'Enable audio' (checked) and 'Beep only' (unchecked). At the bottom are two buttons: 'OK' and 'Clear'.



A dialog box titled 'OPER' in blue text. It is divided into two sections: 'Settings' and 'Permissions'. The 'Settings' section includes a 'Printer' text field, a 'Partition' dropdown menu set to '0 - WATER', and a 'Skin ID' dropdown menu set to '1 - gray_matter'. The 'Permissions' section has three checkboxes: 'Control', 'Acknowledge Alarms', and 'Shutdown System', all of which are unchecked. Below these are six rows, each with a 'No' dropdown menu and a corresponding configuration option: 'Configure Users', 'Configure Telemetry', 'Configure Ladder Logic', 'Configure Scheduled Controls', 'Configure Screens', and 'Configure Voice'.

The Hyper SCADA Server has it all! It includes all of the necessary software required to implement a fully operational SCADA System right out of the box. Although **third-party software is supported**, they're not required The Hyper SCADA Server includes...


- DFS' HT3 SCADA Software Program
- Browser-based Client HMI Software
- Virtually unlimited number of Development Client Licenses
- Alarm, Report and Trending Software
- Process Logic Building Software
- Graphical Screen Building Tools
- Historical Database built on SQL
- Support for the industry standard Modbus Communications Protocol

All you need to add is the Master Radio and RTUs.



SCADA SYSTEM ARCHITECTURE

Every SCADA project has unique requirements. These requirements can change as time passes. The Hyper SCADA Server offers the user flexibility and accommodates growth. Whether implementing a small system, or a highly complex, multi-client, multi-site SCADA System, the Hyper SCADA Server will accommodate your needs. This flexibility allows you to meet your current needs, and is easily expandable as the SCADA requirements grow.

The image features several white, parallel diagonal lines on the right side, extending from the bottom towards the top right corner, set against a teal background.

HSS001 HYPER SCADA SERVER

The HSS001 is the **baseline model** of a line of state-of-the-art network-based SCADA system servers offered by Data Flow Systems. Its compact design and impressive features The HSS001 is housed in a **13" X 13" X 7" NEMA 4X fiberglass enclosure**.

With support for up to **four independent radio frequencies**, up to **2,020 Remote Terminal Units (RTUs)**, and several communication protocols, our SCADA servers are ready to **operate right out of the box**.

The Hyper SCADA Server offers the **power and speed of networking, stability and reliability** that you expect in a server and the versatility to expand without costly license upgrades. All SCADA Software upgrades are provided free of charge for the life of the system.



The HSS002-1's backplane can handle more network interface modules than the baseline HSS001 and accommodates an upgrade to Hot-Standby Redundancy.

Supporting up to **seven independent radio frequencies**, up to **3,584 Remote Terminal Units (RTUs)**, and several communication protocols, our SCADA servers are ready to operate a SCADA system right out of the box. Every Hyper SCADA Server is delivered with the capacity to support **645,120 physical "hard-wired" I/O points**, plus an unlimited number of "virtual" points.

The Hyper SCADA Server offers the power and speed of networking, stability and reliability. The HSS002-1 is housed in a **30" X 24" X 8" NEMA 12 steel enclosure**, leaving room for the redundancy upgrade.





The **HSS002-2** is the top-of-the-line model of a line of state-of-the-art network-based SCADA system server. **24"W x 30"H x 8"D Steel Enclosure**

Includes **dual Hyper Server Modules** that provide **Hot- Standby** Redundancy and feature **automatic switch-over** without human involvement. The secondary **server mirrors the entire database every 10 minutes**. A back-up of entire database is stored to a primary workstation computer daily.

Supporting up to **seven independent radio frequencies**, up to **3,584 Remote Terminal Units (RTUs)**, and several communication protocols, ready to operate a SCADA system right out of the box. Every Hyper SCADA Server is delivered with the capacity to support **645,120 physical "hard-wired" I/O points, plus an unlimited number of "virtual" points.**



HYPER SERVER MODULE HSM003
IS A CORE COMPONENT OF THE
HYPER SCADA SERVER.

Hyper Server Module (HSM003)

- ▶ The HSM003 features an embedded Linux-based computer, HT3 SCADA software, an **SQL database server** engine, all housed on a plug-in module card manufactured by DFS.
- ▶ The HSM003 provides a communication interface with master transceiver radio(s) and network-based Remote Terminal Units (RTUs) via ancillary modules. A **Gigabit Ethernet Network** Interface facilitates connectivity with workstation computers and **VPN-secured Internet access**. **Two built-in modems** enable independent voice-based alarm dialing and remote inquiries by telephone or dial-up computer.

Hyper Server Module (HSM003)

Features

Gigabit Ethernet Network Interface

2 on-board voice modems

Voice alarm call-out

Dial out (911) / Dial in (411)

Communications Watch Dog

DFS Backplane interface

Local voice alarm annunciation

Full system-backup capabilities

Button for manual CPU shutdown

LEDs indicate CPU activity and system status

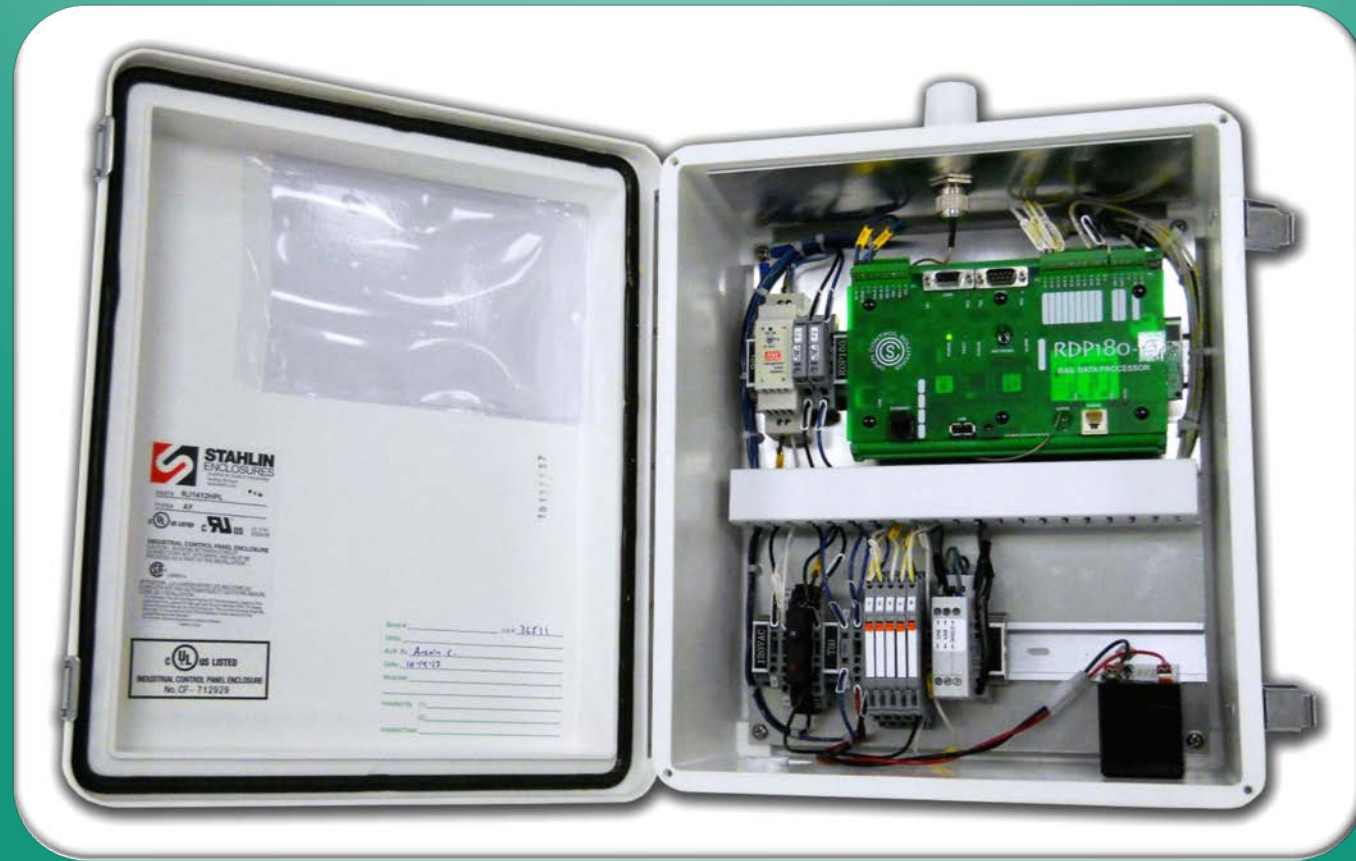
Card-edge configuration straps for system level configurations

Reset and redundancy functions

Internet browser-based user interface

Linux operating system

[HT3 SCADA software](#)



RDP 180 CELLULAR RTU

RDP 180 CELLULAR RTU

Around the Clock Data Delivery

Secure (private tunnel) cellular networks provided by Verizon are utilized to deliver the data and alarms that you require 24/7/365.

INSTALLATION BY END - USER IS SIMPLE

RDP180 – C, Cellular RTU

Enclosure:

W 15.50" x H 13.28" x D 7.69"

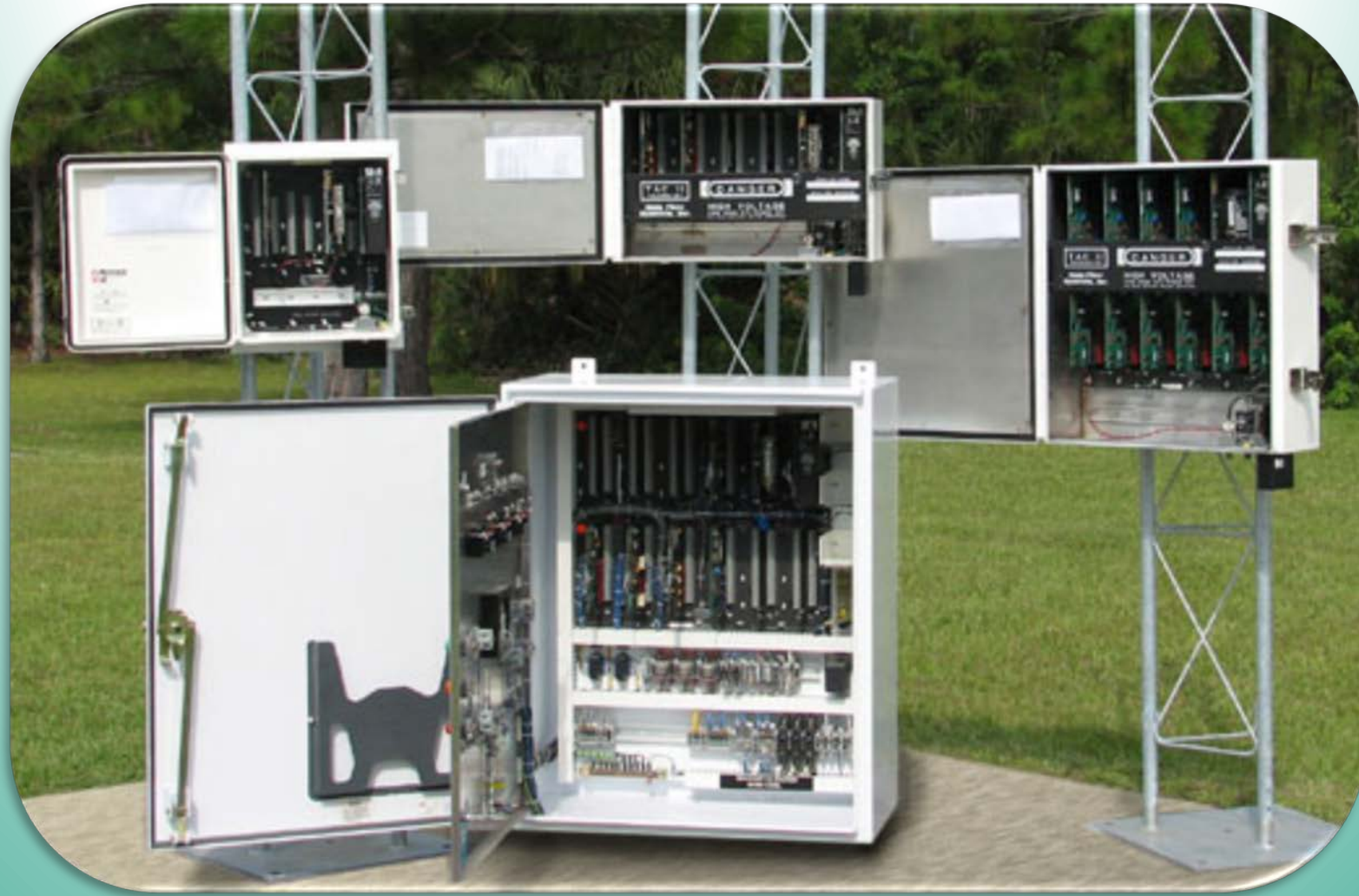
NEMA 4X Rated Non - Metallic

Hinged with Locking Hasp

Input / Output Schedule:

- (1) RTU Power Monitor (Interposing Relay)
- (8) Discrete Input (Interposing Relay)
- (2) Discrete Output (Dry Contacts)
- (1) Analog Input (0 - 5VDC or 4 - 20A)





THE 200 SERIES RTU BASE CHASSIS, A PASSIVE MODULAR BACKPLANE (MBP), IS EXPANDABLE TO FIFTEEN (15) SLOTS FOR PLUG-IN RTU I/O MODULES. THE 200 SERIES RTU IS **AVAILABLE IN FOUR MODELS, RTU202, RTU204, RTU210, AND RTU216**, EACH OFFERING A VARIETY OF **MIXED DIGITAL AND ANALOG INPUT AND OUTPUT** RTU I/O MODULES FOR AN EXTREMELY VERSATILE SOLUTION.



Solar RTU

RTU MODULES



Programmable Logic Controller



The PLC800 includes the features needed for today's operational requirements: Industrial Ethernet, full Linux OS, RS-232, RS-485, full Modbus support, and ladder logic programming. The new USB port facilitates program updates, enhances customer support, and enables a planned data-logging application.

The PLC800 with PMT can hook up to any compatible PC, or Panel PC, to permit the user/integrator to create custom screens with many of the same great features provided on our Hyper SCADA server.



Our best seller

The all-in-one pump controller

TCU001

- * Pump Controller-based RTU
- * Integrated SCADA Communication
Easy to Understand, Install & Use
 - * Incredible Built-in Features
 - Intuitive Pump Motor Protection
 - * Free Factory Support for Life

TCU800

HMI Touch Screen Control
Easy to Operate
Stored Event Report History
Convenient USB Upload
Optional VFD I/O connections





WARNING

Arc Flash Hazard.
Appropriate PPE Required.
Failure To Comply Can Result in Death or Injury.
Refer to NFPA 70 E.

TELEMETRY CONTROL UNIT TCU800

1 HOA 2 HOA 3 HOA

LEVEL: 8.50 FT

M1 M2 M3

LAGD

LAGD

LEAD

LEAD

LOW

TX

RX

DF

Data Flow Sys.
MELBOURNE, FL

WARNING

ANGER

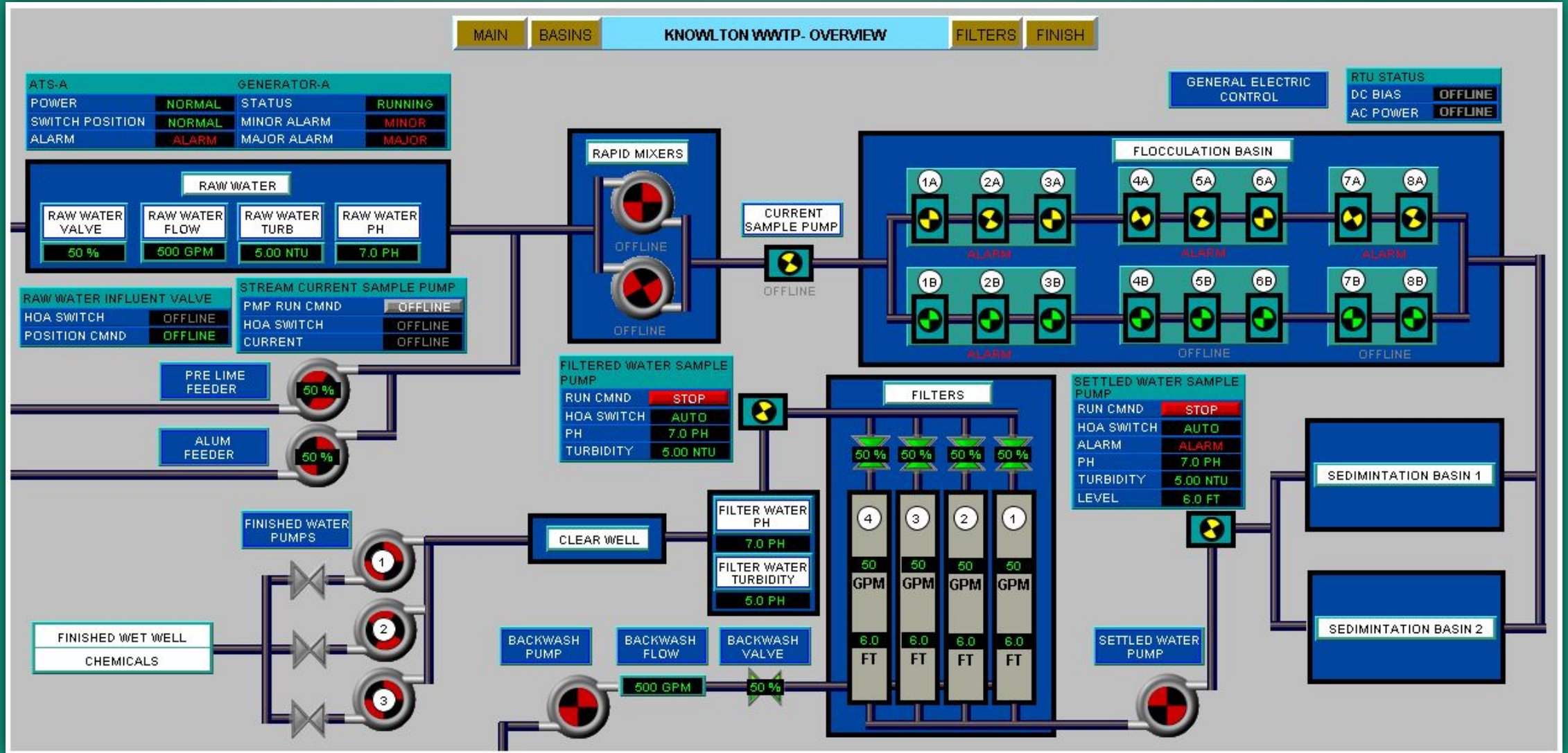
ELECTRICAL
HAZARD



SCADA SOFTWARE



Plant Process



HT3

DATA FLOW SYSTEMS, INC.



PUMP 1 ← **LIFT STATION #1** → **PUMP 2**

AUTO **AUTO**

Run Hrs **101.0** Run Hrs **111.0**

OVERVERRIDE **DISABLE** OVERVERRIDE **DISABLE**

Force Main 8 PSI **Potable 57 PSI**

AB VOLTAGE 487 V **AC VOLTAGE 484 V**

LEVEL 35.6 **1.0** **4.6 FEET**

LOCATION AND CONTACT INFO
9040 S.W
51st Street
2:41 PM

HOME SCREEN **MORE DETAIL** **STATION DISABLE** **PANEL INTRUSION**

Diagram showing the piping for wells 1 through 6. Each well has a flow meter and pressure sensors. The flow meters are labeled with well numbers and their respective flow rates.

- WELL 1**: FLOW -500 GPM, HI PRS NORMAL, LO PRS NORMAL
- WELL 3A (2)**: FLOW -375 GPM, HI PRS NORMAL, LO PRS NORMAL
- WELL 3B**: FLOW 1 GPM, HI PRS NORMAL, LO PRS NORMAL
- WELL 4**: FLOW -1 GPM, HI PRS NORMAL, LO PRS NORMAL
- WELL 5**: FLOW -2 GPM, HI PRS NORMAL, LO PRS NORMAL
- WELL 6**: FLOW -375 GPM, HI PRS NORMAL, LO PRS NORMAL

STORAGE TANK

- TANK LEVEL **140.7 FT**
- DC BIAS **NORMAL**
- AC POWER **NORMAL**

WELL AUTO ALTERNATION

- ENABLE / DISABLE **ENABLE**
- INDEX **INDEX**
- LEAD **6**
- LAG **1**
- LAG 2 **2**
- LAG 3 **4**
- LAG 4 **0**
- STANDBY **0**

WELL ASSIGNMENTS

	1	2	3	4	5	6	SETPOINT
ALL OFF							144.0 FT
LEAD	●	●	●	●	●	●	142.0 FT
LAG	●	●	●	●	●	●	140.0 FT
LAG 2	●	●	●	●	●	●	138.0 FT
LAG 3	●	●	●	●	●	●	136.0 FT
LAG 4	●	●	●	●	●	●	134.0 FT
STANDBY	●	●	●	●	●	●	

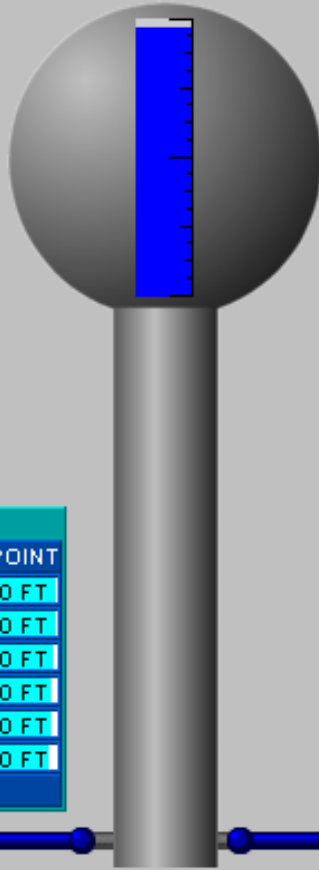
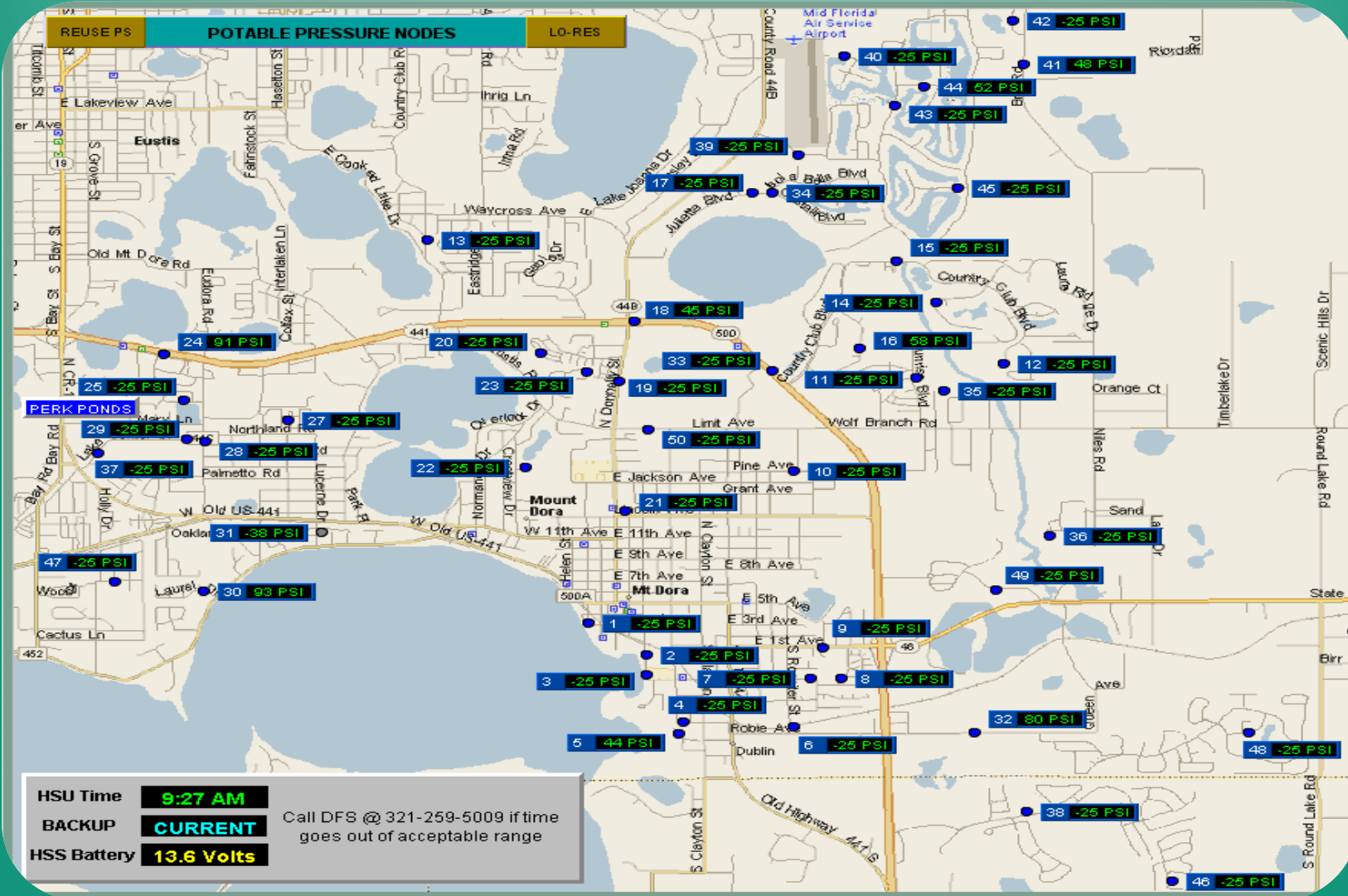
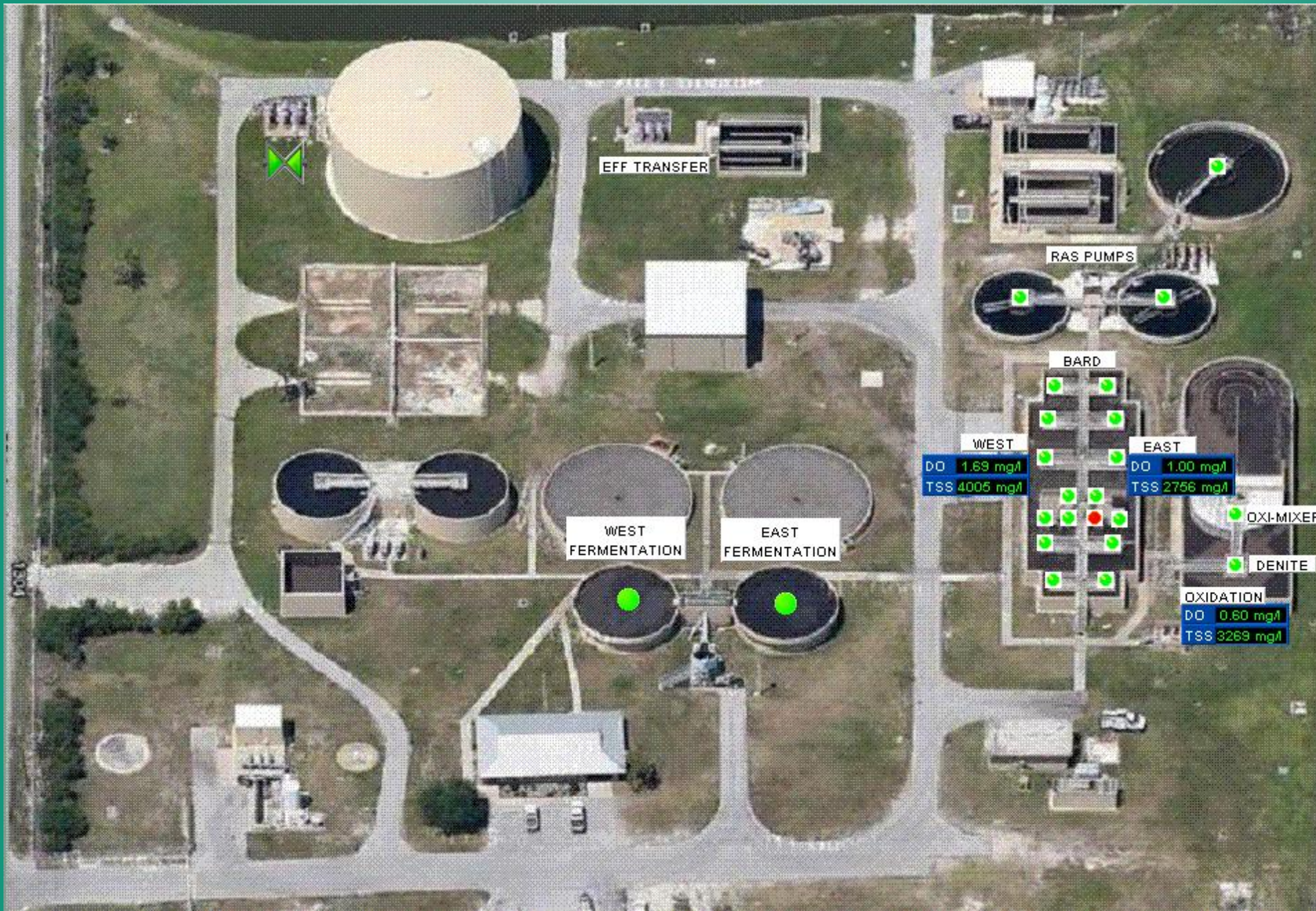
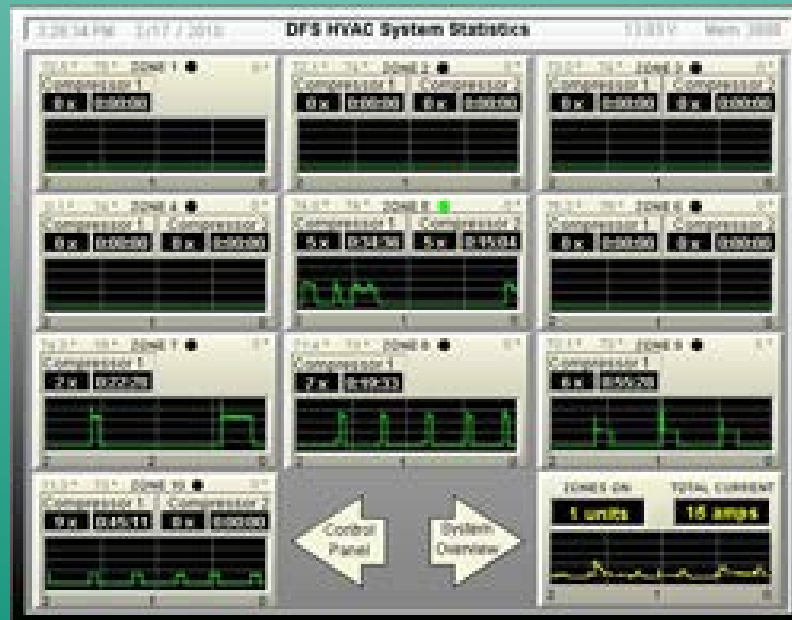


Diagram showing the distribution piping from the storage tank to various reservoirs. Each reservoir has a position indicator showing its current level relative to a setpoint.

- 402 MIDWAY #2 ROC**: POSITION -1 %
- 404 HOLLEY NAVARRE N ROC**: POSITION -1 %
- 401 NAVARRE BEACH**: POSITION 100 %
- 403 MIDWAY #3 ROC**: POSITION 29 %
- 405 HOLLEY NAVARRE S ROC**: POSITION 52 %
- 406 SSRUS ROC**: POSITION -25 %
- 400 GATORS ROC**: (No position indicator shown)









*Slash Pumping Energy Costs * Lower Pump Run Times*
** Cut Down on Maintenance*
*Decrease Force Main Pressure * Rental & Savings-*
funded Programs
Start Saving Cash Today!

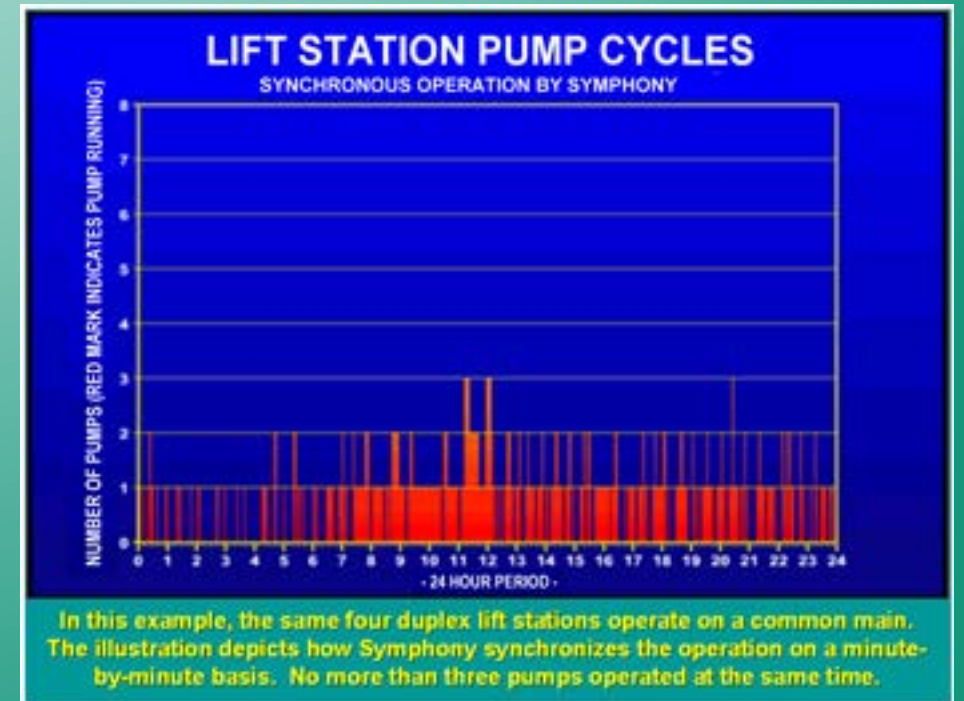
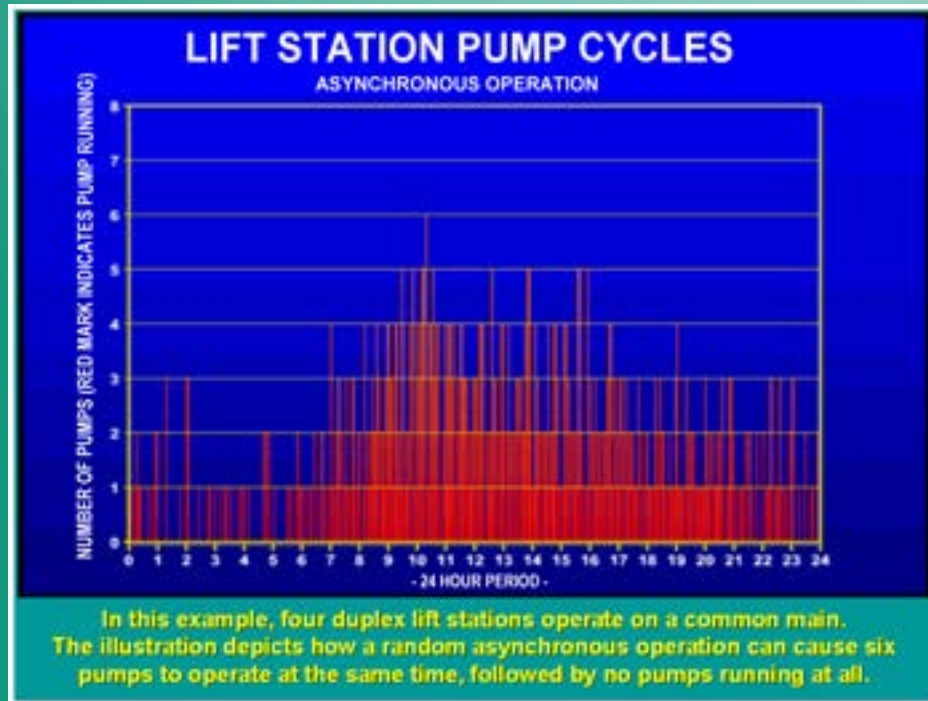


"Symphony - Harmonious pump & flow management" is a patented technology that is available only from Data Flow Systems, Inc. (DFS). Symphony utilizes SCADA to **coordinate the system-wide operation** of sewer lift stations for the purpose of **reducing force main pressures and equalizing flow into a wastewater treatment plant**. The result is a significant **reduction in energy costs** and a solution to daily peak-flow problems.



Pump Management

Asynchronous vs. Synchronous Pumping



Your SCADA... Anytime... Anywhere...



HT4
MOBILE

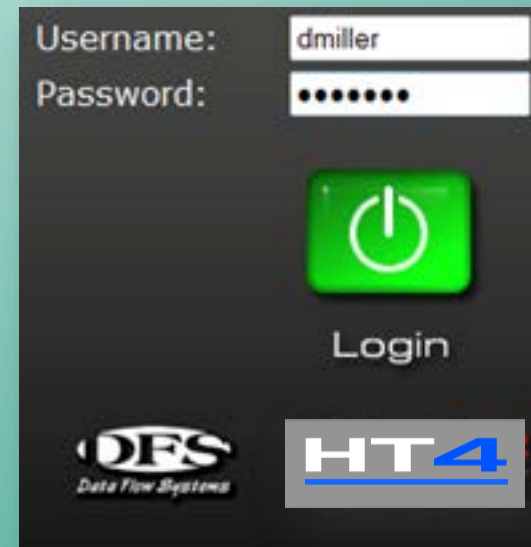
The power of SCADA

in your hand

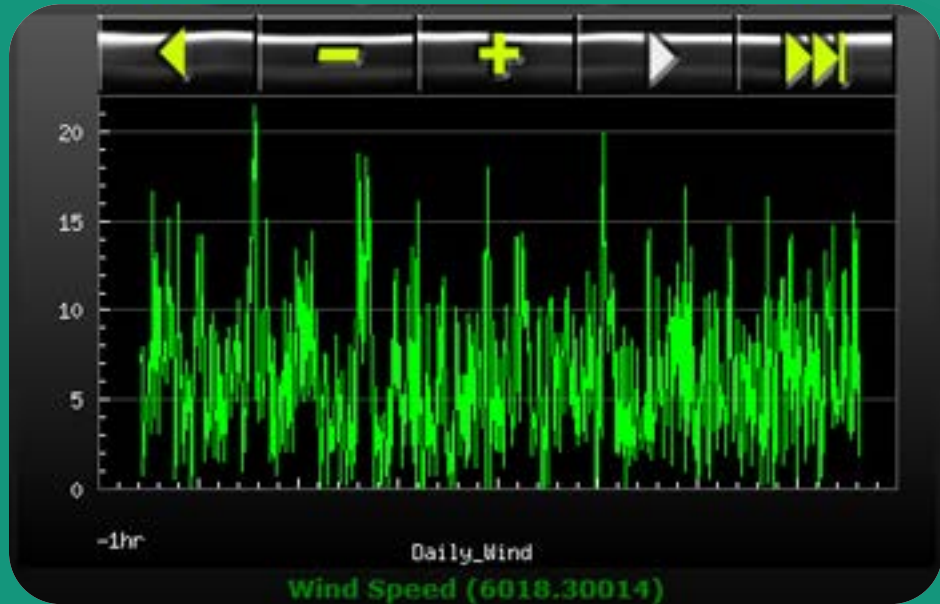
Customers have long wanted to access their system when on the go. With the emergence of wireless networking, mobile Internet devices and smart phones that can browse the Internet, today's technology makes that possible.



- * Utilize [Any Carrier's Smartphone](#)
- * Control in the Palm of Your Hand
- * View and Acknowledge Alarms
- * Run Data Trends and Reports
- * Secure Login and Session Timeout
- * [Wi-Fi and Cellular](#) Connectivity



Trends

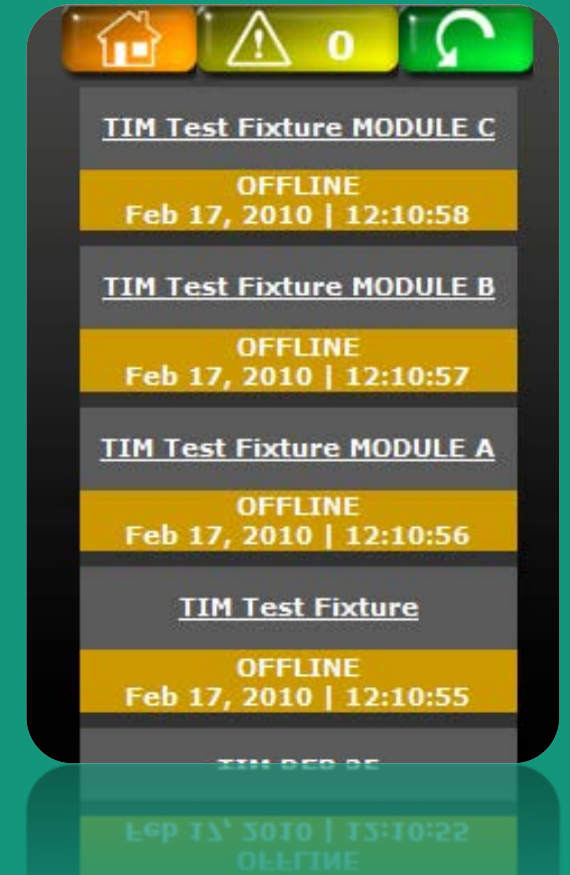


HT4

MOBILE

- Alarms
- Screens
- Trends
- Stations
- Help
- Options

Alarm conditions





Activity Report

PUMP Report

From 00:00 10/10/10 To 00:00 10/10/10 Time Filter 00:00 - 24:00

October 10, 2010

Point Name	Address	Min Ontime	Max Ontime	Total Ontime	Avg Ontime	Times On
Symphony TCU 11						
Any Pump	3011A11	00:01:23	00:08:04	10:09:25	00:03:32	172
Symphony TCU 12						
Any Pump	3012A11	00:00:50	01:42:46	13:00:14	00:26:09	25
Symphony TCU 13						
Any Pump	3013A11	00:04:52	00:10:45	05:49:50	00:06:43	52
Symphony TCU 14						
Any Pump	3014A11	00:01:55	00:18:11	05:36:49	00:04:22	77
Symphony PCU 17						
Any Pump	3017A43	00:02:28	00:07:58	10:08:19	00:04:13	143

End of Report

Standard **reports**, including Analog, Derived Flow, Detail, Min Max Average, Pulse, Pump Activity, and Snapshot.

 This panel features a top navigation bar with three icons: a home icon, a warning icon with the number "8", and a refresh icon. Below the icons, the title "TCU (Station 1186)" is displayed. The main section is titled "Digital Outputs" and contains seven rows, each with a label and a toggle switch set to "OFF":

- Alarm Horn Disable
- Alarm Horn Override
- Alarm Light Disable
- Alarm Light Override
- Analog Updating
- Aux Out Disable
- Aux Out Override On

Status and trends for every point configured is available through the Mobile's Stations menu.



A System Statistics dashboard

Current refresh rate: 25 seconds

Change refresh rate?

YES NO

Current session timeout: 300 seconds

Change session timeout?

YES NO

Refresh rate is the interval at which new data is retrieved from your system. The default refresh rate is 30 seconds.

Session timeout is the maximum length of time the Mobile will stay logged in if there is no activity.

Home > Help > Alarms

HT3 Mobile Help

[<< Prev](#) [Next >>](#)

Alarms

The alarms page is sorted first by their color coded alarm level (see legend below) and then by the time the alarm occurred (most recent alarms are listed first).

Alarm level color codes:

- **Red** - active and unacknowledged
- **Green** - cleared and unacknowledged
- **Yellow** - active and acknowledged

All of the **help files** required to use the Mobile App. are accessible in the field on the device being used.