Hydrological, Meteorological, Oceanic, Geotechnical & Aviation

Real-Time Monitoring, Warning & Control Systems, Equipment, Data Products & Services
Since 1975 over 60,000 Sutron stations installed worldwide...

Each monitoring, alerting and control system is unique with one universal goal:

Get All the Data

Sense It Now.  Send It Now.  See It Any Time, Anywhere.

Even Now!

That’s why all Sutron-manufactured components and integrated systems are modular with customization tools for full-spectrum solutions plus

1. Open Architecture that works with most manufacturers’ equipment
2. Easy to expand and upgrade design
3. Back-up: logging, telemetry, sensing, data management
4. Multiple data options: web-hosting, distribution, storage, displaying alerting, converting, processing, formatting, forecasting
5. Made in the USA to exacting ISO quality standards

Tell us what you have and tell us what you want. We’ll make sure you Get All the Data.

Data Collection
- Data Loggers
- Logging Transmitters
- Logging Sensors
- Sensors
- Packaged Hydro-Met Solutions (e.g., WMO-Compliant Met Stations, NOAA-Authorized Tide Stations, etc.)

Communications
- Satellite Transmitters: Iridium, all Geostationary Worldwide
- Satellite Antennas & Receivers
- Web-Based Communications & Networks, IP-Accessible
- All Cellular, GSM/GPRS, CDMA, PSTN Dial-Up
- Radio: LOS, Repeaters
- Ethernet (Serial, Direct Connect, Multiplexer)

Field-Tested Applications &Turn-Key Systems
- Integrated Water Resource Management
- Oceanic: Coastal Inundation, Tides, Storm Surge & Tsunami Warning/Forecasting
- Meteorological: Aviation, Climatological, Synoptic, Agricultural, Forecasting
- Flood Events Monitoring & Forecasting
- Water Quality & Groundwater Monitoring
- Geotechnical: Dam Safety, Bridge, Mining, Oil & Gas

Field & Base Station Data Management
- Real-time Web-Hosting
- Real-time data, quality-verified & delivered automatically
- Data products on demand, on-schedule, any language required
- Alarm & warning capabilities, real-time calculations, custom Web output
- Web Cam Images
- Data ingestion, storage, processing, tools, visualization, forecasting & fusing of data
Sutron Builds the Highest Quality Hydro-Met Data Loggers, Transmitters & Sensors

Data Loggers

Xpert & Xlite Data Loggers
- True 32 bit multi-tasking operating systems allowing up to 8 types of telemetry simultaneously
- Almost unlimited analog and digital I/O expansion
- More processing power, storage and communications capabilities than any other field data loggers

8310 & 7310 Data Loggers
- Most economical option with up to 2 simultaneous communications
- User-requested environmental monitoring features to support field station installation, operation & maintenance
- Hardened design with more measurements, processing and data dependability including built-in solar regulator

Logging Sensors

Constant Flow Bubble Gauge & Data Logger
Single & Dual Orifice
- Self-contained, precision device combining all bubbler components in one NEMA-4 enclosure (compressor, data logger, sensor, desiccant)
- Dual orifice uses 2 water level sensors to measure in 2 separate locations or within the same body of water for backup data or to measure density

Total Precipitation Gauge & Data Logger
- Highly accurate (<.02°) precision weighing bucket gauge for unattended precipitation measurement at remote sites

Radar Level Gauge & Data Logger
- Non-contact water measuring device with built-in logger

Stage Discharge Recorder
- The shaft encoder that never forgets
**Integrate into existing or new stations & systems or use as economical all-in-one stand-alone stations.**

**SatLink2 Data Logger & Geostationary Satellite Transmitter**
- First transmitter certified by NESDIS for the new GOES V2 standards
- Certified for GOES, GOES International, INSAT/METEOSAT, METEOSAT 2ND Gen (MSG), GMS/MTSAT, FY2C, ARGOS/SCD
- Logger has 16 measurements, SDI-12, dedicated tipping bucket input, 4 analog inputs, USB port, powerful mathematics editor

**GPRS-Link Data Logger with Cost Efficient, Flexible 2-Way GPRS Communications**
- Compact (5.3” wide) with multi-sensor input
- Support for primary and secondary master stations via GPRS
- Service plans available.

**CDMA-Link Data Logger with Cost Efficient, Flexible 2-Way CDMA Communications**
- To be released summer of 2012
- Compact (5.3” wide) with multi-sensor input
- Support for primary and secondary master stations via CDMA
- Service plans available.

**Iridium-Link Data Logger with 2-Way Iridium Communications**
- Extremely compact (5.3” wide) logger/transmitter providing complete 2-Way communications with remote stations anywhere in the world
- Support for up to 16 measurements: SDI-12/RS485, 5 Analog inputs, 2 digital inputs & user-specified equations & alarm detection
- Sutron, an authorized Iridium Value Added Reseller, provides Iridium service plans.

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**Data Collection: Logging Transmitters**

All Logging Transmitters are available with or without enclosures.
Sutron Loggers, Logging Transmitters and Logging Sensors Are Compatible with All Standard Sensors That Measure...

- Surface Water - Reservoirs, Lakes, Rivers, Streams, etc.
- Groundwater / Aquifer
- Water Quality
- WMO-Compliant Meteorological Parameters
- Climatological Parameters
- COOP, GCOS Met Measurements
- Precipitation
- 1hr, 3hr, Storm Total Rainfall Estimates
- Snow, Snow Melt, Ice, Icing
- Real-Time Stream Flow, Stage, Depth, Discharge
- Solar Energy
- Evapotranspiration
- Agricultural-Meteorology
- Dam Safety & Geotechnical Parameters
- Flood & Floodway
- Currents, Tides, Coastal, Oceanic Parameters, Wave Height
- Storm Surge, Coastal Inundation
- Storm Water
- Aviation Weather
- Plezometers
- Motion Sensors
- Tank Levels
- Humidity, Dewpoint,
- Air Temperature, Water Temperature, Sea Surface Temperatures
- Visibility, Dust, Air Quality
- Real-Time Lightning
- Fog
- Surface Observations

Water Quality

Up to 16 measurements simultaneously
- Luminescent Dissolved Oxygen (LDO)
- Dissolved Oxygen (Clark Cell)
- Conductivity
- pH
- Turbidity (4-Beam)
- Turbidity (Self-Cleaning)
- Temperature
- Chlorophyll a
- Rhodamine WT
- Total Dissolved Gas (TDG)
- Li-Cor Ambient Light
- Blue-Green Algae
- Depth/Vented Level
- ORP
- Ion-Specific Electrodes
#1 Worldwide in Real-Time Communications

Highly Economical & Uniquely Reliable Telemetry for All Data Collection Platforms

Alarms & Warnings
- Voice alarms & messages
- Text alarm messages to mobile devices & email
- Internet alarm communications & reports
- Sirens, public announcements, LED Displays for big screens
- Public data access using the Internet & SMS
- Public data internet & SIP Trunk for phone
- Email, pop-up windows
- Web Cam Imagery

Telemetry Paths: 1, 2, 3, 4 Simultaneously!

Choose GOES communications solely (1 option) or a combination of GOES, Iridium®, GSM/GPRS & LOS (4 options). Multiple station communications provide data safety through redundancy, which can also be strengthened through back-up logging by integrating Sutron’s Logging Transmitters and Logging Sensors into the station.

Iridium Advantages
- Data messaging, alarms, 2 way communications, & web solutions
- Total Global Coverage: Reliable everywhere, even sites where no other communication is available.
- Cost-effective, secure & combines low-latency pole-to-pole coverage with SBD equipment.
- Extremely Cold Environments: Sutron has provided IRIIDIUM stations for Antarctica, Greenland & USACE’s Cold Regions Research/Engineering Lab.
- Easy Iridium Decoding: Systems can be configured with Iridium as a replacement for - or in addition to - a SatLink-V2 Transmitter. Iridium data can be provided in GOES format for easy decoding.
- Low-Earth Orbit Satellites provide benefits other satellites cannot, i.e., no significant transmission delays, lower transmit power for longer battery life, & total global coverage.
- Sutron is the only Iridium® VAR in the remote environmental data collection arena.

GPRS, GSM, CDMA
Extremely Flexible & Budget-Priced
Robust, reliable, broad-based GSM/GPRS & CDMA communication systems send data in text & image formats. The GSM modem can include an optional integrated GPS so the station keeps time accurately & eliminates the need for 2 separate antennas. The Sutron antenna is integrated to receive GPS signals as well as Quadband RF signals.
- Server & Station Loggers programmed for event-triggered information & alarms for events such as gusts, squalls, rainfall limits, water level rise, etc.
- The System also responds to SMS requests for current data.
- Provides automatic programmable SMS alarms for any parameter needed.

Voice Communications
- Standard & user-customized voice phrases
- Any language - user programmable
- Easy to configure & add to
- Voice reports, polling, on-demand data, scheduled reports

Geostationary Satellites Worldwide
Sutron has provided software to decode GOES messages since 1981. Sutron’s SatLink2 is the only DCP Satellite Transmitter certified for transmission on All Geostationary Satellites Worldwide:

GOES, GOES International, INSAT/METSAT, METEOSAT 2nd Gen. (MSG), GMS/MTSAT, FY2C, ARGOS/SCD New
LRIT Provides DCS Data & GOES Imagery

*Sutron is the undisputed Industry Leader in LRIT Systems Software & End-to-End Solutions*

- Simultaneously distribute LRIT data to multiple LRGS systems
- Simple user interface to modify configuration & view status using a monitor/keyboard. (If requested, remote status connect enabled via SSH.)
- Windows-based Software: XRIT Ingester to capture & archive LRIT data, MacroPro to post-process data, & iDAP to display & process images
- Software to display & process infra-red, visible, & water vapor images also available

Satellite Receive Site Supply, Installation & Integration

Complete Ground Station Capability

- Advanced Data Solutions on Linux™, Windows™ or Solaris™
- DOMSAT, GOES, LRIT, NOAA.PORT, Internet, File, etc.
- EUMETSAT, INSAT, ARGOS/SCD, METEOSAT, MSG
- SHEF, CSV, Human Readable, XML, USGS-STD, et al

What’s Included

- All Receive Site & Server Hardware
- Activation of modems & satellite equipment.
- Seamless distribution of real-time data to PCs, smart phones, etc.
- Development of a custom web page just for your data on SutronWIN or matching of your current web pages to fit into your own site.
- We provide a Google map or static map
- Automatic limit checking for monitored parameters
- Derived parameters to determine if alarms or warnings need to be issued.
- Automatic alarm generation when limits are triggered. Authorized staff can generate alarms to be sent on demand via SMS or e-mail.

Typical Digital Readout Ground System (DRGS)

3.8 Meter Prime Focus Antenna, Integrated feed/LNA/Downconverter (LNB), Digital Satellite Receiver with a Network Connection, PCs to run Software Pilot Tracking & Software Demodulators

Typical Communications Features

- Web-based networks with or without web-camera
- 100%-reliable automated dial-out notification, call-out & alarm system with user-selected parameters
- Scaleable & will integrate with existing station equipment
- Dynamic real-time web-reports (graphical & tabular) rainfall/water levels, alarm status, trending tables, diagnostics, etc.
- Remote data logger access via smart phone, PC, & the internet
- Complete system remote diagnostics & configuration
- Multiple LOG files to share data with different agencies & users
- Base Station Software to automatically collect & process data, generate alarms, etc.
Data Management: *Dependably Collect, Back-Up, Receive, Process, Analyze, Display & Store Your Data*

No other provider offers more ways to collect, store, process & display DCP Data. Our Database Management provides true next-generation solutions to data handling problems, regardless of format or source.

Supports Worldwide Data Ingest & Decodes Multiple Data Formats...

- Extracts time-tagged engineering-unit samples from any DCP, fixed format or delimited, and from Numerous Issuing Centers:
  
<table>
<thead>
<tr>
<th>CEP</th>
<th>JMA</th>
<th>DOMSAT</th>
<th>ECMWF*</th>
</tr>
</thead>
<tbody>
<tr>
<td>MeteoFrance</td>
<td>DRGS</td>
<td>UMKO</td>
<td>DWD</td>
</tr>
<tr>
<td>NOAAPORT</td>
<td>NAM</td>
<td>CWB</td>
<td>LRIT</td>
</tr>
<tr>
<td>RAP</td>
<td>GFS</td>
<td>WW3</td>
<td>WRF</td>
</tr>
</tbody>
</table>

- Presents data in SHEF, SHEFIT, Human-Readable, EMIT-ASCII and many other formats (also Kisters ZRXP, Comma-Separated Value (CSV), Excel, USGS STDMMSG, HTML, XML, PI Historian)

- Data retrieval ingests data directly into the database without using intermediate files.

- Runs on any platform (100% pure Java)

Field & Base Station Software

- Sutron Software is presently operating in most of the offices of the USACE, USGS, USBR, & users of geostationary satellite data globally.

- **US Bureau of Reclamation’s HYDROLOGIC DATABASE (HDB):** Since 2002 Sutron’s ILEX Division has been responsible for BUREC’s HDB. Sutron’s Administrator in Boulder, CO provides full-time HDB support.

- **Real-Time Data, Quality-Verified & Delivered Automatically**

- **Data Products On-Schedule (User-Set) & On-Demand**

- **Any language requested (English is the default language.)**

- **Auto-poll software for multiple stations**

- **Open, real-time data processing with multiple storage options**

- **All RTU communications & instant desktop SCADA**

- **Alarm & warning capabilities, real-time discharge calculations, custom Web output w/embedded graphics & much, much more**

Time Series Database

- **Standard SQL DBMS:** PostgreSQL (full-featured open source database), Oracle, DSS, MySQL, RiverWare, Custom, etc.

- **Accommodates Vast Amounts of Hydro-Met Data** limited only by the underlying DBMS (terabytes).

- **Efficient, Fast Storage & Retrieval:** Flexible schema allows database to grow without adversely affecting speed of storage & retrieval.

- **Easy to Use Table Structures:** Add your own custom applications by using our API or accessing the tables directly.

- **Handles Any Computation:** The Computation Engine allows specifying of ‘Algorithms’ that are applied to specific ‘Computations’ on specific time-series data.

Primary Database Back-Up

- **Avoids vulnerability of all data in one central place**

- **Keeps collecting data if primary station elements fail**

- **Accuracy checks, diagnostics etc. for Stations, System, Sensors**

- **Additional notifications & distribution options (voice, web, SMS, email, etc.)**

- **Additional data processing, limit setting, raw data access, etc.**

- **Back-up alarm notification for Critical Gages for Federal/State/Municipal governments**

- **Back-up data storage (one year)**

- **Collects Data from Satellites (GOES, Iridium, etc.), Modems, IP-Accessible Stations, Cellular, Radio, Direct Connect**
SutronWIN: Water/Weather Information Network
Web Hosting, Data Processing, Delivery, Display, Storage & Alarms

Features

- All Satellite Transmitter Data Decoded (including other manufacturers' equipment)
- Compatible with existing, upgraded & new systems & all Hydro-Met Applications & Stations
- Real-time data access from anywhere in the world
- GOOGLE map showing location of each Hydro-Met Station
- Dynamic bubble showing current data, date & time when clicked & showing alerts in green, red or yellow
- Data downloads & reports in tabular or graphical format
- DERIVED PARAMETERS: Combine parameters (e.g. add with coefficients), Stage/Flow Rating Calculation, Periodic Averages, Incremental Precip, etc. Interactive discharge calculations.
- LIMIT CHECKING: Value & rate-of-change limits. Separate limits can be set for warning/critical levels.
- ALARM NOTICE: via Sirens, Web, Email & SMS Text Message
- WEB-CAM: On-demand images & video from your site
- VOICE: Standard & User-Customized (additional cost)
- PRICING: Affordable. Whether 1 station or 100, only a 1-time setup fee & a low recurring fee/station. Please ask for a customized quotation.
- BACKUP ON-LINE DATA COLLECTION, STORAGE & ANALYSIS, NO ADDITIONAL COST.
- YOUR OWN CUSTOMIZED WEB PAGES using your own logo, design, etc.
- STORAGE: We will store all GOES data, in addition to your station data, and keep it available as long as you want.

SutronWIN Is Designed For...

- Users who absolutely must receive event-triggered alarms & vital hydrological data
- Any application where data from multiple sources needs to be seamlessly distributed to many users without interruption.
- Users who need a back-up server (not located in their geographical area), back-up data & back-up alarms
- Small Monitoring Systems Users who don’t want the hassle of data-collection, storage, decoding, analysis, etc.
- Any Users who want Sutron to simplify their data collection (which is complicated, expensive & time consuming)
- Users who want a complete, turn-key, end-to-end solution
MeteoStar Division
Economical, Tailored, Scalable Solutions

MeteoStar’s Data Synergy Enhances Decision Making

Sutron’s newest acquisition, MeteoStar, designs and delivers tailored, full-spectrum meteorological and environmental processing and distribution solutions. MeteoStar’s powerful toolkits provide fully integrated, turn-key solutions to support any organization’s operational and decision-making needs.

Diverse Applications & Solutions

- Meteorological Operations
- Aviation Weather Support
- Marine Forecasting
- Environmental Monitoring
- Agricultural Forecasting
- ATC Operations
- Flight Weather Briefings
- Media and Public Awareness
- Power and Utilities
- Hydrological Applications
- Scientific Research
- Emergency Management

The Most Robust Meteorological Toolkit Available Today

MeteoStar’s LEADS™ (Leading Environmental Analysis and Display System) software has become the most responsive, modern, and powerful weather software in the world, providing professional weather data integration and visualization.

- Scaleable System Architecture
- Supports Worldwide Data Sets and Formats
- Diverse Applications
- High Definition Graphics Creation
- Seamless Product Distribution
- Custom System Integration
- Data Services
- Mobile Device Support

LEADS® On-Line & LEADS iGM®

- Sensor Integration
- Vast Array of Hydro-Met Products
- User-Friendly Interfaces
- Real-Time Displays & Updates
- Role-Based Restrictions
- Resource & Asset Tracking
- Multi-Layer Looping
- Custom Alerting
- Flight Briefing Capabilities
- Point & Click Popup Windows
- Quick Pan/Zoom Functionality
- User Customized Product Layers

MeteoStar also provides LEADS® On-Line & LEADS iGM®, a complete web-based system that allows for the integration not only of standard hydro-met data sets but of unique customer data as well. Since these product lines are web-based, they can be easily accessed from multiple internal locations, as well as made available to a customer base through a simple internet connection.
Aviation Weather Systems

Features

- Real-Time Aircraft Operation Weather Data - Uninterrupted & Verified for Quality
- Open, Distributed Architecture for 1 to 100 Runways
- Each System Customized Precisely for Your Unique Airport Needs
- On-Demand Support for Maximum Longevity & Efficiency
- Hourly & Special Observations
- Meteorological Data for Forecasting & Climatology
- Unattended or Attended Operation 24-7-365
- Voice Transmission of Real Time Weather
- Integrates Data from Single or Multiple Runways
- Integrates with ATIS
- Follows ICAO, WMO & FAA Regulations

Real Time ATC Information

- Wind Speed & Direction, Variables, Gusts, Max & Min, Head/Tail, Crosswind, Squall (selectable discontinuity)
- RVR including Variable (max & min) & Tendency, Directional
- RVR Alerts & Alarms, Background Luminance, Runway Light Indicators
- Cloud Height, Sky Cover, Obscuration (Vertical Visibility), Multiple Ceilometers, 3 Layers plus CB, SKC, FEW, SCT, BKN, OVC
- Present Weather, Air Temperature, Dew Point Temperature, Relative Humidity

System Products

- METAR-SPECI-LOCAL, MET REPORT - Special Observations
- TAF/METAR/SYNOP Observation & Other Synoptic Data as required
- Aviation Bulletins, SIGMET, AIRMET, VOLASH
- Seamless integration with GTS or ATN/AFTN switch for transmission
- Sea Level Pressure, Barometric Pressure Tendency & Amount
- Precipitation Amount (Hourly & Synoptic): Last: minute, hour, 24 hours, total thus far current day, total daily
- Climatological Data as required
- Rain Rate (mm/minute & mm/hour)
- Humidity
- QNH, QFE (hPa, inches-Hg or both), QFF
- SigWX Charts (Washington & London Centers)
- High-Level (FL250-630)
- Mid-Level (FL100-450)
- Low-Level (US Only SFC-FL240)
- SIGMET/AIRMET
- Domestic & International
- PIREP/AIREP
- TAF/METAR/SYNOP
- NOTAM
- CCFP
- FD Winds (US Only)
- Weather-By-Route
- NWP Output
- Turbulence
- Icing
- Winds/Temperature
- Tropopause Heights
Extended-Life Weather Monitoring Systems Worldwide

Station & System Features
- WMO-Compliant
- Highly customizable accepting all sensors for
  - Airport Weather
  - Coastal Weather
  - Precipitation Measuring
  - Fire Weather
  - Air Quality
  - Synoptic
  - Climatic
  - Agricultural
  - Your Unique Application
- Portable & permanent, new, upgraded or integrated into existing systems
- Highest measurement accuracy available plus complex, advanced data processing/calculating, storage & transmission
- Extremely low power consumption
- Built by Sutron to last for decades - ruggedized & field-tested
- Open architecture - modular, expandable & easily integrates with 3rd party components
- Real-time data, images, alarms & reports delivered on-demand to your smart phone, PC, cell phone, land line, email

Integrated Weather Capabilities
- Meteorological Service
- Global Weather Data
- Climatology
- Environmental Monitoring—Air & Water Quality
- Aviation—Military & Commercial Weather Forecasting
- Satellite Services & Systems
- Launch Support—Weather Forecasting
- Marine Weather
- Tropical Weather
Tidal & Coastal Monitoring & Warning


We’ll design the Tide Station that’s right for you.

Tide stations range from a low-end datalogger & pressure transducer to a 100% NOAA-compliant stations, surveyed to exacting standards & installed to last a decade or more.

Stations can measure water level, currents, & water quality. Main stations connected to high-bandwidth communications (IP modems, Ethernet) & also support cameras.

Sutron now offers turn-key Tide Gages & Services including:

- Site Investigation
- Installation Design & Drawings
- Station Installation & Training
- Civil Works Design & Installation
- Tide Station Integration (including telemetry & base station)
- Surveying Arrangements (to relate measured water levels to known datum per NOS standard procedures)

No one, aside from NOAA/NOS’s own field operations divisions, has more in-depth knowledge of tide gages & ancillary weather/tides instrumentation than Sutron.

NOAA’s Tide Stations Since 1988

Since 1988, Sutron has been building the nation’s tide stations, providing over 300 NOAA stations for the Great Lakes, coastal USA, & worldwide.

Currently NOAA & Sutron are replacing NGWLMS with “Generation III” Tide Stations, based on Sutrons Xpert Datalogger family. The Sutron-designed G3 packages are available for:

- Primary Tide Gages, with or without all weather instrumentation
- Redundant (backup) Tide Gages
- Hydrographic Stations

These standard, NOAA/NOS-compliant communication packages add advanced communications & data handling capabilities:

- Iridium Global Satellite (long & short-burst modes)
- High Data Rate GOES Satellite
- Spread Spectrum Radio
- Ethernet on LAN or WAN
- All Available Types of Land-Line & Cellular Telephones
Sutron Automatic Weather Stations (AWS) & Agro-Met Systems are field proven—in every extreme environment & on every continent around the globe. We have integrated & installed systems in every climate from tropical to arctic, regardless of humidity, temperature or environmental dangers. Moreover, each Sutron System Integrator has a degree in Electrical Engineering, extensive training in Meteorological & Hydrological Systems, &/or professional training in Electronics & Communications Systems. Sutron Systems Work!

Sutron Stations are designed for unmanned, remote operation at sites requiring the highest reliability, the lowest power consumption & the lowest life cycle cost.

When designing systems, we always consider future system upgrades. We, therefore, take great care to design a system with commonality of components & a uniform interface. Modular, open, distributed architecture allows the same core system to provide excellent performance regardless of the number of new sensors, field stations or base stations that might be added.

Meteorological Sensors & Parameters

- **MET-SET 5-in-1 Sensor**
- Air Temperature & Relative Humidity Sensor (AT/RH) & Shield,
- Wind Speed & Wind Direction Sensor (WS/WD) & Atmospheric Pressure Sensor (Barometer).
- Soil Moisture
- Soil Temperature
- Evapotranspiration
- Solar Radiation
- Dew Point
- Precipitation (including Snowfall)
Integrated Water Resource Management

Strategic Real-Time Systems with 2-Way Communications & Web Access to Maximize Safety

Water Levels       Water Quality
Surface Water      Groundwater
Hydropower         Dam Safety
Reservoirs         Rivers
Streams            Lakes
Flood Warning      ADCP
Aquifers           Precipitation
Water Distribution

Field-Tested Flood Monitoring
- Storm Water Runoff & Sampling
- Extreme Flood Estimation
- Managing Rainfall/Evaporation
- Measurement & Analysis
- Water & Wastewater Systems
- Dams & Dambreak Analysis
- Flood Frequency Analysis
- Rainfall-Runoff Modeling
- Flood Plain: Delineating, Mapping, Mitigation Strategies
- Open channel hydraulics (i.e., unsteady flow)
- Flood Studies (flood control projects, flood plain definition, real time reservoir operations)

Hydro Station - Typical Features
- Web-based networks (with video camera)
- 100%-Reliable Automated Dial-Out Notification, Call-Out & Alarm Systems with user-selected parameters
- Remote Data Logger Access via Smart Phone, PC, PDA & the Internet
- Scaleable & integrates with existing station equipment
- Dynamic real-time web-reports (graphical & tabular) rainfall/water levels, alarm status, trending tables, diagnostics, etc.
- Complete System Remote Diagnostics & Configuration
- Multiple LOG files - data distribution among various agencies & users
- Base Station Software to automatically collect & process data, generate alarms, etc.

#1 with Federal Hydro Professionals for over 30 Years

That’s why we’ve designed our Station Setup & Data Processing Features specifically for Hydrologists & Hydraulics Engineers.

Sutron’s Integrated Systems Division (ISD) provides comprehensive engineering to design & manufacture the Hydrological Monitoring & Control Solution you need.
Floods: Real-Time Monitoring, Forecasting & Warning
Strategic Systems to Maximize Safety

Minimizing Loss of Life & Property Damage from Flooding Depends Upon:
- Early Event Detection
- Notification & Warning
- Real-Time High Hazard Dam Monitoring
- Floodplain Management
- Dam Early Warning
- “Eyes on the Dam” Camera Applications

Multi-Tasking Loggers Ensure You Get All the Data & Alarms
- Ethernet/USB Ports for highspeed downloads & networking
- Scaleable & easily integrated with existing equipment
- Dynamic real-time web-reports (graphical & tabular)
- Complete System Remote Diagnostics & Configuration
- Multiple LOG files to share data with different agencies
- Highly programmable to interface w/most hydro-level sensors
- Uses NOS algorithms to detect sudden surface drops (tsunamis), works with data from any type of water level sensor & is easily customized.
- True independent multi-tasking. Interface to water level & seismic instruments, or any device that detects ground/water motion.
- Sutron’s loggers allow data to be combined in multiple ways.

Automatic Alarms & Warnings from the Field to the Web to your PC & Smart Phone
- XPert Loggers “talk” simultaneously on multiple ports & most communications devices. i.e., NOS uses XPert with GOES & cellular or land-line phones or with cellular packets, LOS radio & hard-wire.
- XPert’s I2C industrial bus outputs digital data. its built-in programming allows XPert to “turn on” digital outputs if events trigger it & output to control sirens, warning signs, pumps, multiple emergency devices.

Sutron
Geotechnical Monitoring & Warning Systems

Dams, Mines, Bridges, Tunnels, Construction & Industrial Sites

Sutron Software maximizes options to collect, store, process, analyze & display DCP Data. Additionally, our Database Management & web hosting services provide true next-generation solutions to data handling problems, regardless of format, source or distribution.

Sutron Dataloggers range from basic to “Big Data” loggers used in complex, expandable systems capable of measuring hundreds of channels & interfacing with the following:

* Inputs, Measurements & Sensors*
  - FERC-compliant Instrumentation
  - Vibrating Wire Sensors
  - Piezometers
  - Multiplexers
  - Inclinometers
  - Tilt Meters
  - Joint Meters & Crack Meters
  - Strain Gages
  - Load Cells
  - Pressure Cells
  - Settlement Cells
  - Soil Extensometer
  - Surface Water & Groundwater
  - Weirs
  - Pore Water
  - Levels, Discharge & Flow
  - Valve Operations
  - Seepage
  - pH
  - Turbidity
  - Conductivity
  - Wind
  - Relative Humidity
  - Air & Water Temperatures
  - Web-Cams

* 2-Way Communications & Functionality, On-Demand, Scheduled or Threshold/Alarm-Triggered*
  - Actuate electrical devices & alarms, based on user-selected threshold values (magnitude of change, rate of change, etc.) or on-demand
  - Turn on or shut down equipment and/or systems; poll stations; test instrumentation
  - Send text & voice messages, reports, warnings, alarms, on-demand or triggered
  - Telemetry Options: Iridium Satellite, GPRS, GSM, CDMA, Geostationary Satellite, LOS Radio
  - SDI-Link Master/Slave System (SDI-12 V1.3) works with any compliant sensor and data recorder. The extended range of up to 1 mile LOS (line of sight) allows the user to get data from sensors that previously would have required a separate data recorder or long, expensive cables.

Multiple Sensors per Slave Station
Multiple Slave Stations per Master Station
#1 in Customer Service & Project Success

Fastest & Most Direct After-Sales Support, Customer Service & 30-Day Repairs

Sutron, a registered ISO 9001:2008 company, not a 3rd party, engineers, designs & manufactures to high quality standards all of the Dataloggers & Satellite Transmitters used in our stations. Therefore, we are able to provide the most expedient repair in the industry. Other providers who buy equipment from 3rd parties simply cannot match our average turn-around time for repairs, usually within 30 days for Sutron-manufactured instrumentation.

Our Customer Service Department’s goal is to maximize the flow of data from the Hydrological & Meteorological stations on which our customers rely. Our Telephone Support, (703)406-2800, provided to many customers who are responsible for station maintenance, is experienced & successful at resolving problems without having to remove any existing equipment.

Training

We offer many Training options:

- Directly assisting customers in the field with set-up & maintenance of their stations.
- Classroom training at our customers’ offices or regional locations
- Classroom training at our Sutron Corporate Headquarters in Sterling, Va.
Contacts for USA Customers...

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NORTHWESTERN REGION & ALASKA
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SOUTHWESTERN REGION & HAWAII
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LATIN AMERICA & FLORIDA
Ted Soto, Deltona, FL
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Email: tsoto@sutron.com

CUSTOMER SERVICE
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Email: cs@sutron.com

SALES ADMINISTRATION
Ms. Denise Tarr
(703) 406-2800, ext. 217
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HEADQUARTERS
Web: www.sutron.com
Email: sales@sutron.com
Tel: (703) 406-2800

Contacts for International Customers..

For the Following Regions Contact...

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Sutron Products are ISO-Quality Manufactured in the U.S.A.