

# Solinst®



 Get Quote

*High Quality Groundwater and  
Surface Water Monitoring Instrumentation*

Authorized Distributor:



Tel: +971 4 880 1252  
Email: [inquiries@gulfminitech.com](mailto:inquiries@gulfminitech.com)  
W: [www.gulfminitech.com](http://www.gulfminitech.com)

## Our Passion For Innovation & Technological Advancement



Started in 1975 in a small industrial unit in Burlington, Ontario, Solinst has been driven by passion, innovation and determination. Doug Belshaw built Solinst from the ground up, by first reselling geotechnical instruments in Canada. With great foresight, Doug saw the future for a sustainable market in groundwater monitoring equipment. He gradually changed the focus of the company, to one that designs, develops and manufactures a full range of groundwater monitoring instruments sold around the world.



Doug understood his customers' needs and in the early 1980's, provided the first flexible flat polyethylene tape that was marked in feet and tenths. Customers now had immediate access to the engineering scale. In 1982, the 101 Water Level Meter was launched. After many improvements and technological advancements, the 101 still remains as the most sought after Water Level Meter on the market.

In 1984, Jean Belshaw started the Marketing Department, while also teaching full-time as a Marketing Professor at Sheridan College. Jean became the Marketing Manager in 1987, and continued to build the Solinst brand, while cultivating worldwide distributor relationships.

From 1975 to 1988, Solinst operated in Burlington, Ontario. Sarah Belshaw joined the team in 1987 to develop and manage workflow processes and communication, increasing efficiencies and improving customer service.

In 1989, Solinst moved north to the Williams Mill in the village of Glen Williams, Ontario. This 5,000 sq ft facility offered room for expansion. In 1991, Solinst expanded again, adding another 2,000 sq ft. In 1992 and 1993, further expansion allowed for increased production demand.

Although Solinst had expanded its total capacity to 11,000 sq ft, the unique setup of using multiple buildings at the Williams Mill presented challenges for growth. In 1994, Solinst purchased a building and property at 35 Todd Rd, in Georgetown. The 24,000 sq ft facility offered a great deal of room for expansion. The land around the facility was also more than adequate for future building development.

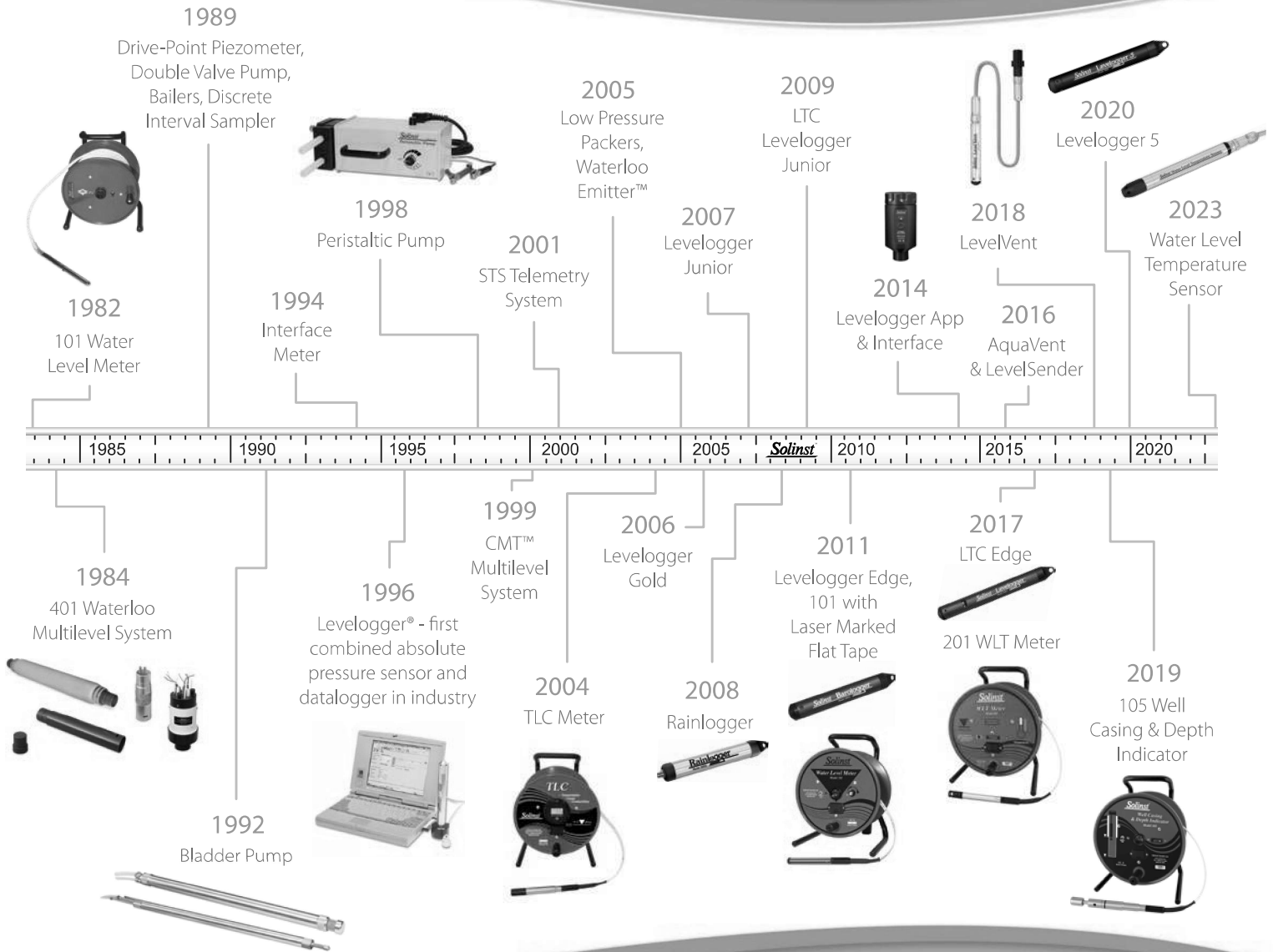
In 2003, Solinst expanded the building to 35,000 sq ft. This extra room allowed for increased office space, a separate research and development department, a climate controlled calibration room, as well as a large training and product testing area with indoor test well.

As President of Solinst from 2006 to 2016, Sarah Belshaw continued to drive the company forward, with continual improvements and innovations, as well as expansion of the building in Georgetown, and ongoing investments in R&D and Manufacturing Engineering, combined with in-house design and development of cutting edge technologies for the groundwater and surface water markets.

In 2016, Jim Pianosi became President of Solinst Canada Ltd., and has led the management team with continued growth, incorporating new manufacturing technologies and efficiencies, and increasing the Solinst product line while maintaining the Solinst history of quality and customer service. Jim started at Solinst in 1987 and continues to lead the company as a Belshaw family enterprise.



# High Quality Groundwater and Surface Water Monitoring Instrumentation





May 6, 2013

## Solinst Canada Ltd.

Today, hard work, listening to our customers, and thinking creatively enables Solinst to flourish. We offer a broad range of durable and practical equipment, used by hydrogeologists and hydrologists around the world. The range still features Water Level Meters, but has expanded to a full range of Level Measurement Devices, Dataloggers and Telemetry Systems, Groundwater Samplers, Multilevel Systems, Remediation Devices, and Drive-Point Piezometers.

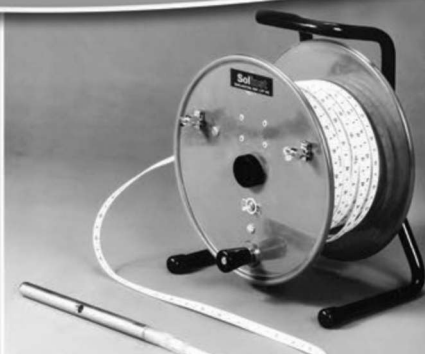
Solinst is dedicated to the manufacture of high quality instruments, designed for accuracy, ease-of-use and to give reliable results over the long-term. Behind our full range of instruments is the cumulative expertise of hydrogeologists,

engineers, geotechnical, manufacturing and electronic professionals and technicians.

We place great importance on a steady improvement in the product line and the continual development of up-to-date instrumentation. We have a careful quality control program for all of our manufacturing technologies, and ensure we always use the highest quality materials.

In-house technical sales representatives provide fast and friendly service with a high level of expertise and know-how. They are available to discuss your next project, and ensure you get the equipment best suited to your application.

This brochure briefly describes our product line. For more information please contact our office, or visit [www.solinst.com](http://www.solinst.com)



## **Our Product Lines**

### **Level Measurement Devices**

Solinst Level Measurement Devices feature durable, accurately marked cables and tapes, convenient and easy-to-use reels, and full unit reparability. The Meters are ideal for use in rugged environments, excellent for well drillers and environmental field studies for determining depth to static water level, oil/water interface, profiling temperature and conductivity, and for detecting metal well casing and measuring total well depth or top of backfill layers during well completion.

### **Dataloggers & Telemetry**

Solinst dataloggers are ideal for short or long-term hydrogeological studies, or continuous monitoring applications. The Levellogger Series features water level, temperature, conductivity, and rainfall event dataloggers and uses absolute pressure sensors. The LevelVent and AquaVent are water level and temperature dataloggers that use vented pressure sensors. Integrate Solinst dataloggers with SolSat, STS, RRL, and LevelSender Telemetry Systems for remote monitoring projects. Use the Solinst Cloud to simplify data management and LevelSender setup. The 301 Water Level Temperature Sensors offer absolute or vented sensors programmed with MODBUS, SDI-12, or 4-20mA protocols.

### **Groundwater Samplers**

Solinst offers a variety of groundwater sampling options that suit any environment or application, from Bladder and Double Valve Pumps that provide low flow capabilities, pumps suited to VOC sampling, inexpensive bailers, grab samplers and inertial pumps, to Discrete Interval Samplers and 12V Pumps. Accessories such as Control Units, 12V Compressors, Filters, and Packers are also available.

### **Multilevel Systems & Remediation**

Solinst Multilevel Groundwater Monitoring Systems are engineered to provide detailed, accurate subsurface data for high resolution site interpretation and assessments, resulting in more effective, and less expensive remediation. Solinst also offers an effective bioremediation enhancement option for cleaning up contaminated groundwater.

### **Drive-Point Piezometers**

Solinst Drive-Point Piezometers provide easy to install wells for long or short-term monitoring applications. Piezometers can be pushed into suitable sediments, or installed with a drill rig for accurate vertical profiling. Drive-Point Piezometers are ideal for initial site investigations and geotechnical studies, and help determine the optimum placement of permanent piezometers or remediation equipment.



# Level Measurement Devices



**The 101 Water Level Meters** are very sturdy and give easy-to-read, consistently accurate water level measurements in wells, tanks, and boreholes. The flat tape is permanently marked each millimeter or every 1/100 ft.

There are two versions to choose from. The Model 101 P7 Water Level Meter features a pressure-proof probe and laser marked flat tape. The Model 101 P2 Water Level Meter features an easy-to-repair probe and heat embossed polyethylene flat tape.



Each well balanced reel has a carrying handle, an easy-access battery drawer, and an excellent brake and tape guide. A 9V battery powers the buzzer and light, which activate when static water is reached.



**The Model 101D Water Level Draw Down Meter** shares the same qualities as the 101 P7 Water Level Meter, with the added feature of a drawdown mode. One simple toggle switches between static water level and drawdown measurements. The drawdown function is used to monitor falling hydraulic head during low flow sampling, well development, dewatering, pumping and other aquifer/well tests.

**Power Reels** are available for faster, less strenuous operation of longer tape lengths. There are 110V, and 12VDC motor options on request.



**The 101 Power Winder** is available for attachment to any model or size Solinst reel, to allow more effortless winding of longer lengths of tape. It uses a standard power drill to operate.



# Solinst®



**The 104 Sonic Water Level Meter** is a portable, acoustic ranging instrument designed to simply and quickly measure depth to static water level in a well, piezometer, sounding tube, or any pipe.

Depth to water level measurements are recorded without having to put any instruments down the well, eliminating the need for any decontamination.

The Solinst Sonic Water Level Meter works in straight or crooked pipes, and is ideal for wells with difficult access. Static water level measurements to 600 m (2000 ft) are possible. It is supplied with a plastic disc for covering well openings 8" in diameter and smaller, and a convenient Solinst Field Bag.



**The 102 Water Level Meter** uses the same electronics and reel as the 101, but has accurate, laser marked cable. It is ideal for use in narrow diameters or when snaking past down-well pumps.

The flexible cable has a heavy duty polyurethane jacket and markings permanently laser etched every millimeter or 1/100 ft. A stainless steel central conductor adds strength and limits stretch.

The narrow probes are stainless steel. The P4 Probe is 4 mm (0.157") in diameter, ideal for accessing narrow diameters, including the channels of a Solinst CMT System. The heavier P10 Probe is 10 mm (3/8") in diameter, with 10 segmented stainless steel weights for flexibility, ideal for greater depths.

**The Model 101B Water Level Meter** is a basic unit that features a durable, leak-proof 12 mm (1/2") diameter P1 Probe, and polyethylene flat tape heat embossed in centimeter increments. Length options are 30 m, 60 m, and 100 m.



**The 102M Mini Water Level Meter** is a very compact meter in 25 m and 80 ft lengths. The reel is light-weight and fits easily into a backpack or a mini carrying case. The cable is marked each millimeter or every 1/100 ft, with a choice of a P4 or P10 Probe.



# Level Measurement Devices



**The 201 Water Level Temperature Meter (WLT)** accurately measures static water level, as well as water temperature. Water levels are read using laser marked flat tape, each millimeter or every 1/100 ft in lengths up to 600 m (2000 ft). Temperature is displayed on an LCD readout from -20°C to +125°C; accuracy is  $\pm 0.1^\circ\text{C}$  from -5°C to +50°C and  $\pm 0.5^\circ\text{C}$  outside of that range.

A light and buzzer are triggered when the probe detects water. The buzzer is easily turned off using the push button, as you profile temperature to greater depths (the light remains active).

The WLT Meter is ideal for detecting runoff, points of inflow, or other sources of thermal pollution; early warning of changes in water quality; monitoring and predicting changes in aquatic environments; and geothermal studies.

**The 103 Tag Line** is used to measure backfill layers and total well depth during monitoring well construction. It uses laser marked cable or tape, with a stainless steel tag weight on the end. A narrow tag is also available. The weight can be clipped off, allowing the reel mounted, cable or tape to be used as a support (i.e. for bailer, pump and packer deployment).



**The 107 TLC Meter** (Temperature, Level, Conductivity) displays accurate measurements of conductivity and temperature on an accurate LCD screen. Water levels are read off the accurately laser marked Solinst flat tape when the light and buzzer are triggered.

It is ideal for profiling salt-water intrusion, road salt impairments, tracer tests and to give a general indication of chemical contamination levels. The TLC Meter uses a 'smart' conductivity sensor to read Specific Conductance (displayed as EC).

The tape is permanently laser marked to each millimeter or every 1/100 ft and is available in lengths up to 300 m (1000 ft).





**The 122 Interface Meter** measures water and product level and thickness, accurately to 1.0 millimeter or 1/200 ft. It measures floating and sinking hydrocarbon, non-aqueous product layers (LNAPL and DNAPL), using a 16 mm (5/8") diameter pressure-proof probe. The 122 is certified intrinsically safe, and is ATEX certified.

Readings are taken from accurate laser marked flat tape up to 300 m (1000 ft). The tape is very easy to clean. The 122 is rugged and simple-to-use.

**The 122M Mini Interface Meter** is a more portable version. It is small enough to fit in a backpack, yet rugged and reliable. It comes with laser marked cable in 25 m or 80 ft lengths. It shares the same probe, and certifications as the 122 Interface Meter.



**The 105 Well Casing & Depth Indicator** is used to detect metal well casing and measure total well depth. It offers both of these functions using one probe.

The probe has a strong internal magnetic assembly to detect well casing. When the probe is adjacent to magnetic metal (e.g. steel) a circuit is completed activating the buzzer and light. When the probe is no longer next to the casing, the signals stop.

A plunger at the bottom of the probe is used to measure total well depth. The light and buzzer activate when the plunger reaches the bottom of a well and is pushed into the probe body.

Well casing and well depths are read from durable Solinst laser marked flat tape; lengths to 600 m (2000 ft).



# Dataloggers & Telemetry

## Levellogger® 5

Model 3001



**The 3001 Levellogger® 5** is a highly accurate water level and temperature datalogger. It is ideal for recording water levels in monitoring and production wells, boreholes, lakes, rivers, tanks, etc.

It has an accuracy of 0.05% FS and memory for 150,000 sets of readings. The datalogger, 10-year battery, Hastelloy® pressure sensor and temperature sensor are factory-sealed in a 22 mm x 160 mm (7/8" x 6.3") housing with a corrosion-resistant coating baked on using polymerization technology. The sealed design makes maintenance and cleaning a snap, and offers protection from power surges caused by pumps or lightning.

User-defined schedule, linear, and event-based sampling are options. The Barologger 5 and the data wizard offer the most accurate and easy method to account for barometric pressure.



Programming data collection schedules, downloading and viewing data, and data compensation is quick and easy using intuitive Levellogger Software and high speed Desktop Reader 5

*\*Levellogger is a registered trademark of Solinst Canada Ltd.*

**The Levellogger** can be installed with a direct read cable for instant communications, or suspended on inexpensive wireline/cord from a lockable well cap. Levelloggers can also connect to an SDI-12 network using the Solinst SDI-12 Interface Cable. A Biofoul Screen provides additional protection.

**The 3001 Levellogger 5 LTC** (Level, Temperature, Conductivity) combines a datalogger that stores 100,000 sets of readings, 8-year battery, pressure transducer, and temperature and conductivity sensors within a sealed 22 mm x 208 mm (7/8" x 8.2") body with a corrosion-resistant coating. The 4-electrode platinum conductivity sensor autoranges from 0–100,000  $\mu\text{S}/\text{cm}$ , and the calibrated range is from 50–80,000  $\mu\text{S}/\text{cm}$ .

**The 3001 Levellogger 5 Junior** is an inexpensive alternative for measuring water levels. It features a memory capacity for 75,000 sets of water level and temperature data points. Accuracy is 0.1% FS. The 5-year battery life is based on 1 reading every minute.

**The 3002 Rainlogger 5** is used with Levellogger Software and most standard tipping-bucket rain gauges to log rainfall events. It is excellent for use alongside Levelloggers to measure the local precipitation.



Biofoul Screen



Locking Well Cap



## All-in-one Dataloggers

- Excellent for long-term water monitoring in wells, tanks, and coastal and surface water bodies
- Ideal for groundwater characterization studies
- Use for remote monitoring applications

### Level Vent 5

Model 3250



**The LevelVent 5** uses a vented pressure transducer to provide accurate datalogging (0.05% FS) of water levels that are automatically compensated for barometric effects. The LevelVent 5 logger contains a Hastelloy pressure sensor, temperature sensor, 10-year battery, and memory for 150,000 sets of readings within a 22 mm x 173 mm (7/8" x 6.8") corrosion-resistant housing. A Vented Cable connects the downhole logger to a compact Wellhead that seats inside a Solinst 2" Well Cap Assembly. Custom Vented Cables are available to 500 ft. For permanent moisture protection the Wellhead and logger contain built-in desiccants and hydrophobic filters. The Wellhead easily connects with Solinst software and accessories.

# 5

### AquaVent 5

Model 3500



**The AquaVent 5** uses the same vented pressure transducer and Vented Cable as the LevelVent 5; however, the batteries are user-replaceable and located in the AquaVent 5 Wellhead at surface. The AquaVent 5 Wellhead provides options to communicate with Solinst software and accessories as well as third party equipment using SDI-12 or MODBUS protocols. The Wellhead fits conveniently onto a 50 mm (2") well casing. Permanent desiccants and hydrophobic filters protect the AquaVent 5 from moisture.



# Dataloggers & Telemetry

# 5

 **Bluetooth®**

 Download on the  
**App Store**

GET IT ON  
 **Google play**



The **Solinst Levellogger App** and **Levellogger 5 App Interface** can be used to program, view, or download data from a **Bluetooth®** connected Solinst datalogger on your iOS or Android™ smart device. The Solinst Levellogger App is available free on the App Store™ and on Google Play™.

The App allows you to e-mail and share data logs right from your smart device. To communicate with the Solinst Levellogger App, dataloggers are connected to the Levellogger 5 App Interface, which provides a Bluetooth connection between your datalogger and smart device.

*Apple and the Apple logo are trademarks of Apple Inc., registered in the U.S. and other countries. App Store is a service mark of Apple Inc. iOS is a trademark or registered trademark of Cisco in the U.S. and other countries and is used under license. Android and Google Play are trademarks of Google Inc. The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by Solinst Canada Ltd. is under license.*

The **4001 Solinst Readout Unit (SRU)** is an in-field device designed to take and display instant water level readings from a deployed Solinst datalogger. You can start and save a real-time monitoring session independent of the datalogger's internal logging. It has a built-in barometer, which provides the option of barometrically compensating the real-time readings. The SRU also functions as a data download and storage device. Saved log files can be transferred to a PC and viewed using Levellogger Software. The SRU also displays the datalogger's status, including battery level, memory, serial number, and firmware version.

The **DataGrabber 5** is a simple, portable data transfer device for use in the field. With one push-button, all of the data stored in a connected Solinst datalogger is copied to a USB flash drive key.



## Versatile Submersible Water Level Transmitter

- Excellent for measuring hydrostatic liquid levels, long-term, in industrial, municipal and environmental applications
- Program for MODBUS, SDI-12, or 4-20mA interchangeably
- Absolute and vented pressure sensor options

**The 301 Water Level Temperature Sensor** is a compact, all-in-one submersible hydrostatic level transmitter that provides fast and accurate water level and temperature readings for a wide variety of applications.

The 301 Water Level Temperature Sensor works with digital and analog protocols – MODBUS, SDI-12, and 4-20mA (add-on adaptor) – which makes them easy to integrate into your existing SCADA or PLC systems.

The durable water level pressure sensor provides 0.05% FS accuracy with automatically temperature compensated readings. There are six pressure ranges to choose from (5-200 m), with options for absolute and gauge (vented) pressure sensor setups.

The Sensor features a slim, robust 22 mm x 192 mm (7/8" x 7.55") 316L stainless steel housing with a removable nose cone for optional use of the 1/4" NPTM threaded connection.

Simple PC software utilities are used to set up the sensor for the different protocols, perform simple diagnostics, and update sensor firmware if required.



# Dataloggers & Telemetry

# 5



The **9500 LevelSender 5** is a simple, low-cost telemetry system compact enough to fit inside a 50 mm (2") well casing. You can connect up to two dataloggers to one LevelSender 5. System set up is ideal for adding telemetry to existing Levellogger installations on Direct Read Cables.

A built-in barometer automatically compensates Levellogger water level data. The LevelSender 5 is also compatible with the LevelVent 5 vented dataloggers.

The LevelSender 5 uses 4G cellular communication to send data from connected dataloggers in the field to the Solinst Cloud or FTP server and a Home Station PC database; you can optionally send data to your smart device using email or text messaging.

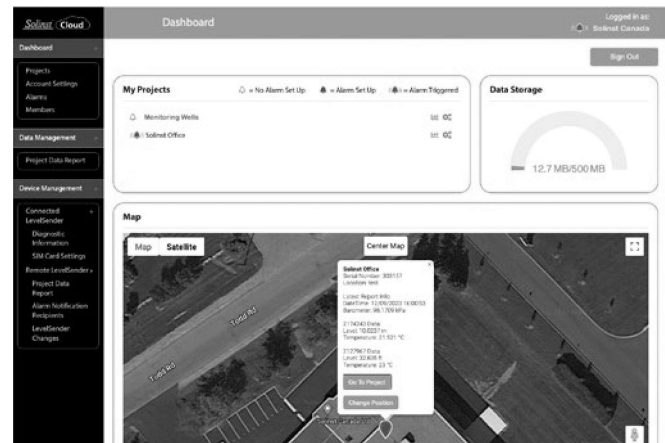
For increased simplicity and convenience, Solinst provides a plug-and-play option with a pre-programmed SIM card and competitive cellular service plan managed and billed directly through Solinst.

Initial set-up is done through the Solinst Cloud or a software wizard at the Home Station. There is two-way communication between remote dataloggers and the Solinst Cloud or Home Station, allowing remote updates as required. High and low-level alarms can be set for each connected datalogger.

In addition to water level, temperature, conductivity, barometric, or rainfall data, battery level and status updates from the remote LevelSender 5 are received with each data report.

## Solinst® Cloud

**Solinst Cloud** is a device and data-management web tool that provides quick and secure access to your crucial water monitoring projects. Effortlessly connect to your remote monitoring sites and Solinst devices using your browser. It is a total solution for maintaining projects and giving real-time access to your devices, data and alarms. Solinst Cloud provides an intuitive interface to configure your LevelSender telemetry systems and monitoring networks. It organizes your information into projects, making it easy to get to your data. The Dashboard view is simple to navigate to critical details, such as alarm triggers and the latest reports.



- Convenient access to monitoring projects using your web browser
- Low cost data storage plans managed through Solinst
- Organized Dashboard makes projects easy to view
- Simplified LevelSender 5 telemetry set up and remote management
- Quick access to data and alarms for efficient decision-making
- View, download, upload and share data across devices





**9700 SolSat 5 Satellite Telemetry** leverages Iridium satellite technology to provide global connectivity for your remote water monitoring projects.

The SolSat 5 is compact and features a robust weatherproof enclosure. A built-in solar panel extends the battery life, and you can easily add a second panel.

SolSat 5 Satellite Telemetry connects to one Solinst datalogger. The built-in barometric sensor allows for automatically compensated water level data reported from the field. The SolSat 5 is simple to set up with Solinst dataloggers using an integral, secure Wi-Fi App on your smartphone.

Data is transmitted using the TextAnywhere two-way global satellite messaging service. TextAnywhere also allows you to text or email through the Wi-Fi App, providing convenience and safety when at remote sites.

Data logs are sent to a secure website portal for storage, viewing or export; the website can also be used for project and alarm management.



## **9100 STS Telemetry Systems & 9200 RRL Radio Telemetry**

combine high quality dataloggers, intuitive software, and wireless communication to create a remote monitoring solution. Solinst Telemetry systems are designed to save costs by enabling the self-management of data, as well as remote collection of the water level data.

STS Systems use a 4G modem to send data from up to four Solinst dataloggers in the field. Excellent for larger monitoring networks.

The RRL uses short distance radio communication, making it ideal for creating small closed-loop monitoring networks.



# Groundwater Samplers



*Portable reel units and dedicated wellheads are available for Bladder Pumps and Double Valve Pumps.*

**The Solinst 407 Bladder Pump** has a durable PFAS-free Santoprene® bladder ideal for dedication, and ensures no air/water contact during groundwater sampling. The easy-to-replace bladder cartridges also make them convenient for short-term applications.

Solinst offers 316 stainless steel pumps in diameters of 1" and 1.66" (25 mm and 42 mm) and a 1.66" (42 mm) diameter PVC pump. They are ideal for low flow and VOC sampling. Maximum lift capability is 150 m (500 ft) for stainless steel pumps and 30 m (100 ft) for PVC pumps. Dedicated systems come complete with well caps and tubing. Portable tubing reel units are also an option.

**The 408 Double Valve Pump (DVP)** is a gas drive pump suitable for low flow and medium flow applications of almost any depth and narrow diameters. It is available in 316 stainless steel in 1.66" or 5/8" diameters (42 mm or 16 mm), or 1.66" (42 mm) diameter in PVC.

Compressed gas supplied through the Controller pushes down on the water column in the drive line, which is at static level, closing the check valve at the base of the pump, forcing water up the sample line. When operated properly, "drive gas" will never come in contact with the sample water, which produces high quality VOC samples.

**The 408M Micro Double Valve Pump** has a remarkably small and flexible design. It is a pneumatic pump which operates under the same principle as the standard DVP, but uses coaxial PFAS-free PTFE tubing with stainless steel valves and filter. Small enough to fit in 1/2" (13 mm) tubing and all channels of the Solinst CMT System, the Micro DVP is ideal for low flow sampling in narrow applications. A flow rate of 20 to 200 ml/min can be obtained to depths up to 73 m (240 ft).





**The 464 Electronic Pump Control Unit** regulates the supply of compressed gas to pneumatic Bladder Pumps and Double Valve Pumps. It uses 4 AA batteries and provides 125 psi (250 psi unit also available). Fully automatic preset sample mode options, and up to 99 unique user-created flow rates can be saved. The Controller can also be operated manually, and without batteries.



**The 12 Volt Compressor** is lightweight and compact, ideal for field use. It uses any 12 Volt DC power source, such as a car or truck vehicle battery. The compressor operates at 150 psi with a 2 US gallon (7.6 liter) air tank rated to 175 psi.



**The Solinst 415 12V Submersible Pump** provides an efficient means of purging and obtaining groundwater samples in a dedicated or portable setup from nominal 2" OD monitoring wells.

The 12V Submersible Pump and 12V Pump Controller are lightweight, portable, and easy to set up, deploy and operate. The Pump's sleek, short design ensures it fits easily down wells that may not be straight or plumb.

The 12V Submersible Pump cable connects to the 12V Pump Controller, which then clips to a 12V power source. Simply turn the dial on the 12V Pump Controller clockwise to increase the voltage to the Controller, which turns the Pump's motor faster and increases the flow rate. 3/8" (9.5 mm) ID LDPE sample tubing is required.

The Solinst 12V Submersible Pump is capable of pumping groundwater from 36.5 m (120 ft) below ground surface, with flow rates up to 13.5 L/min (3.6 US gpm) in shallow conditions.

The high purge and sampling rates make the 12V Submersible Pump ideal when sampling using three volume purge protocols or performing constant head tests in high K (hydraulic conductivity) environments.



# Groundwater Samplers



**The 410 Peristaltic Pump** operates to the suction lift limit, allowing vacuum pumping or pressure delivery of liquids or gases. It is ideal for vapor or water sampling from shallow wells and surface water. The pump has reversible flow, a variable pumping rate and allows the use of either 3/8" or 5/8" (10 mm or 16 mm) silicone tubing. The pump head design makes it easy to change or replace the tubing. The power cable clips to any 12 volt DC supply—for portability, add a 12V Battery Holder. The pump can deliver from 40 ml/min to 3.2 L/min. It is water resistant, very compact and simple to use, with a handle and one easy-access control.

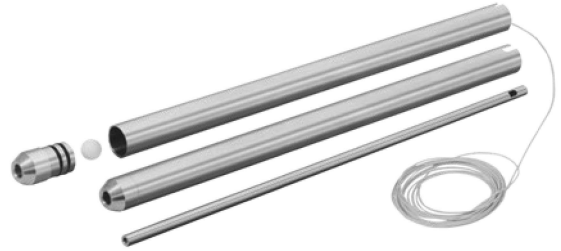


**425 Discrete Interval Samplers** are excellent for obtaining no purge groundwater samples from below product layers, within product layers, and for sampling at discrete depths in a well. The 425 is pressurized with a hand pump before entering the well. No water flows through the sampler on the way down the well. When the pressure is released, the sampler fills directly from the sampling zone. **The 425-D Deep Sampling Discrete Interval Sampler** is available for sampling from submerged depths of 1200 m (4000 ft). Its operation is based on the basic principles of hydraulics.

**404 Inertial Pumps** are ideal for dedication. The pump includes a simple footvalve and length of polyethylene tubing, which is very inexpensive. Sampling to depths of 30 m (100 ft) can be performed by hand.



**429 Stainless Steel Point Source Bailers** have an easy sample release device and dual check valves top and bottom. The check valves prevent water at other depths from mixing with the sample during retrieval. Point Source Bailers are available in 0.5", 1", 1.5" and 2" diameters (12.7, 25.4, 38.1, 50.8 mm), and lengths from 2 ft to 4 ft (610 mm and 1220 mm). The 103 Tag Line with marked cable and Power Winder can be used to facilitate the raising and lowering of the bailer.



**The 428 BioBailer™** is a low cost, disposable bailer made of biodegradable clear PVC. Larger bailers have a 1.5" x 3 ft. (38 mm x 91.5 cm) body to hold more than one litre of sample (1025 ml), while the 3/4" x 3 ft. (19 mm x 91.5 cm) bailers hold 200 ml. The transparent body allows a visual check of contents. A sample release device is included with each bailer.



**800 Low Pressure Packers** are simple, inexpensive and inflate with a hand pump. They come as single or straddle packers and can be lowered into the well from a rope tether or a rigid PVC pipe. The 103 Tag Line can be used as a marked safety line. Available in sizes to fit wells and boreholes from 1.9" – 5" (48.3 – 127 mm) to a maximum pressure of 50 psi (345 kPa) for the smaller packer and 30 psi (205 kPa) for the larger packer. Ideal for isolating discrete monitoring zones. **The 800M Mini Pneumatic Packer** is lightweight, 1 ft in length and is designed to easily connect to the Solinst 415 12V Submersible Pump. It is also ideal for conducting falling head K tests in nominal 2" OD wells. The 800M is available as a single or straddle packer.



™BioBailer is a trademark of Environmentally Suitable Products (ESP) Ltd.



# Multilevel Systems & Bioremediation



The 403 CMT® Multilevel System provides the simplicity and low cost of a bundle-type installation, with the benefits of backfilling or sealing around a single tube, with no joints.

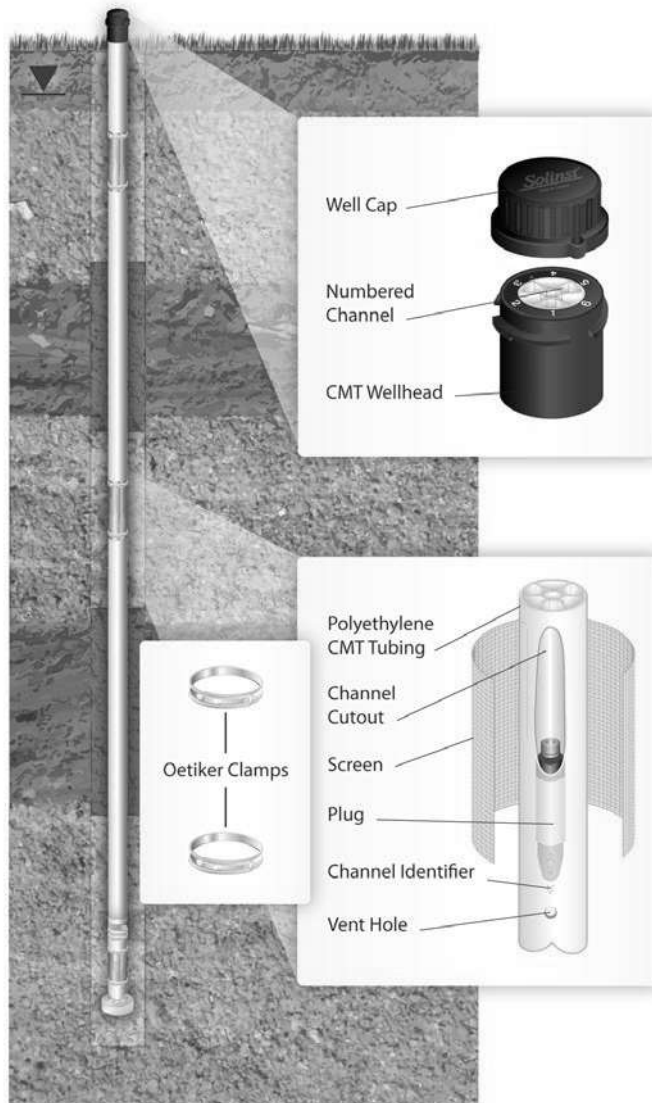
The CMT System uses continuous polyethylene multichannel tubing which is custom-built on site with screened intervals at desired sampling zones. CMT Systems are inexpensive and easy to install. In-field design flexibility allows the number of monitoring ports, port locations, and monitoring strategy to be finalized right on site.

Monitor up to 7 discrete zones in the 1.7" (43 mm) System and 3 zones in the narrow 1.1" (28 mm) System. Reliable seals and sand packs can be placed using standard backfill methods, or using sand and bentonite cartridges on the 3-Channel System.

Water levels can be accurately established and samples taken using small diameter portable equipment available from Solinst. Wellhead seals are also available to allow vapor sampling.

*Patented. ©CMT is a registered trademark of Solinst Canada Ltd*

Solinst offers no-charge virtual CMT training that provides both instruction and hands-on demonstration for CMT construction and installation. Individuals who participate and complete the course in person or online are "Trained CMT Contractors" and can be listed on the Solinst website.



Typical 3 or 7-Channel CMT Installation using layers of bentonite and sand backfilled from surface.



**Why Multilevels?** Multilevel systems provide groundwater samples from multiple depth-discrete levels (ports) optimizing the amount of information obtained in a single monitoring hole. A transect of Multilevel Systems across a site more clearly identifies the area of maximum concentration.



Standard Waterloo System Components, Including Packer, Port (Dual Stem), PVC Casing, PVC Base Plug, and Manifold



**The 401 Waterloo Multilevel System** allows detailed groundwater monitoring from many zones in one borehole. The System is modular to allow ports to be located accurately at desired monitoring zones. The zones are permanently isolated by packers or seals and each port is individually connected to the surface.

Ports can be fitted with dedicated Transducers, Bladder Pumps and/or Double Valve Pumps. Alternatively, a port may be fitted with a monitoring tube that is left open for use with narrow diameter portable equipment, such as the 102 or Mini 102 Water Level Meter and a narrow diameter Inertial Pump, a Peristaltic Pump or the Micro Double Valve Pump.

Ports, packers and casing lengths are assembled, as needed, into a water-tight PVC or stainless steel casing string. The modular Waterloo System allows complete customization to each application. Systems can be installed on an angle or vertically. A drilling rig is not necessarily required during installation. Monitoring is fast and efficient, especially if dedicated equipment is used.

*Patented.*



**The 703 Waterloo Emitter™** is a simple, low cost device for the controlled release of oxygen to encourage and sustain the growth of microorganisms, required for in-place bioremediation of contaminated groundwater.

Ideal for the diffusion of oxygen to enhance the bioremediation of BTEX and MTBE. Emitters provide immediate bioavailability of molecular oxygen for aerobic bio-degradation enhancement, with no loss of amendment gas due to bubbling.

Available to fit 2", 4" and 6" (50, 100 and 150 mm) wells and boreholes, the Emitters are easy to install and remove. They do not require constant monitoring and attention, or electricity.

*Patented.*



# Direct-Push Equipment



615  
Drive-Point  
Piezometers

601  
Standpipe  
Piezomete

**Drive-Point Piezometers** are ideal for initial site investigations. They provide a low cost, minimal disturbance approach for determining the existence of contaminants in temporary boreholes. Samples can be taken from multiple discrete depths across a site; providing high resolution data, quickly.

**The 615 Drive-Point Piezometers** are cost-effective for initial site investigations, plume delineations, and as low-cost mini well points. They are excellent for groundwater or soil gas sampling, underground storage tank monitoring, and as sparge points. The stainless steel piezometer point has a 50 mesh screen and a 3/4" NPT riser pipe. An inner sampling tube can be used if higher quality samples are required. Also available for multilevel monitoring for up to 6 zones in one drive, using 615 ML ports.

**The 601 Standpipe Piezometer** is excellent for taking water level measurements. The PVC tip is suitable for pushing into very loose sands at the base of a borehole, or for backfilling in place within test pits and pre-augered holes. It uses a porous polyethylene filter inside a perforated PVC tip which connects to the surface with 3/4" (19 mm) ID PVC extensions.



880  
Well-mount  
Field Table

## Field Accessories

**The 880 Field Tables** help keep your equipment organized. Solinst offers two types of convenient Field Tables. Both are compact and easy to transport and come with their own carry bag. The Field Tables are useful for keeping your instruments off the ground and provide a clean, dry, sturdy, and flat surface to deploy and store your field tools on.

Solinst offers a Well-mount Field Table as well as a Stand-alone Field Table to suit your different monitoring application needs. They are handy field accessories that can be added to any Solinst equipment order and shipped right to your site if needed.



## Connect With Us

- Browse our product brochures and data sheets for more information
- Download the latest Solinst **software** and **firmware** versions for **FREE**
- Access instructions, user guides, and product application tips
- View helpful technical bulletins, and interesting industry papers and articles
- Request a quote for Solinst products



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



### ON THE LEVEL

Read our blog  
and newsletters



### Webinars

Attend a product  
information or  
learning session



### Trade Shows

Come see us at our booth  
at industry events



### News and Updates

Subscribe to our RSS feed



### E-mail Notifications

Opt-in or register for  
our E-mail list



### Videos

Watch for product tips



### Contact Us

FREE Support  
+1 (905) 873-2255  
+1 (800) 661-2023  
[instruments@solinst.com](mailto:instruments@solinst.com)



### Visit Us

35 Todd Road  
Georgetown, ON  
Canada L7G 4R8



### Share Us

Connect with others  
in the industry





Authorized Distributor:



GULF  
MINETECH™

Tel: +971 4 880 1252  
Email: [inquiries@gulfminetech.com](mailto:inquiries@gulfminetech.com)  
W: [www.gulfminetech.com](http://www.gulfminetech.com)

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

Solinst Canada Ltd., 35 Todd Road, Georgetown, Ontario, Canada L7G 4R8

Tel: +1 (905) 873-2255; (800) 661-2023 Fax: +1 (905) 873-1992; (800) 516-9081 E-mail: [instruments@solinst.com](mailto:instruments@solinst.com)