



## STS Telemetry Systems

Model 9100

Solinst STS Telemetry Systems are designed for use with Solinst high quality dataloggers. Using a 4G LTE cellular modem, the STS sends water level, temperature, conductivity and rainfall data from the field to a Home Station PC.

STS Remote Stations can be powered by a sealed lead-acid 12V battery, and optionally, solar trickle charging or direct AC power. Up to four Solinst dataloggers can be connected to one STS.

Two-way IP communication from your desktop allows added features such as alarm notification, remote diagnostic reporting, and remote updates, which makes it easy to maintain your system, while simplifying data collection.

STS Telemetry Systems are ideal for large networks. Hundreds of remote stations can report to a single Home Station computer.

### STS Applications

- Remote or difficult-to-access locations
- Hazardous or critically important sites
- Long-term groundwater monitoring applications
- Drought and water taking management
- Watershed management
- Landfill and mine water supervision
- Flood and stormwater management

## Solinst Low Cost Data Plan & STS Operation

Solinst provides the option of a 4G LTE Solinst SIM card. The Solinst SIM card scans multiple networks and connects to the strongest signal. Low cost, data only plans are billed directly through Solinst for convenience.

Initial setup for each STS is done using Solinst Telemetry PC Software at the Home Station. A sample rate is set at which the STS records a real-time reading from each attached datalogger. A report rate sets the frequency that the data is sent from the STS to the Home Station.

Dataloggers can be programmed to record independently of the STS and store the data in their own internal memory, providing reliable backup, if circumstances require it.

The STS Field Utility Software is used to initialize the STS via a USB connection. The Field Utility is also used to perform diagnostic checks on a connected STS, as well as control the modem and its settings. It is convenient to install on a laptop for use in the field.

Reported data is placed in a dynamically updated database on the Home Station computer.

Solinst Telemetry Software can be used for a quick check of the latest readings. You can also set up and view barometrically compensated water level data. Data can be exported for use in your preferred database or modelling package.

To ensure no data loss, the STS stores data in its memory until it has been successfully uploaded by the Home Station computer.

Changes to the reporting schedule or STS firmware updates can be done remotely using Solinst Telemetry Software, which will update the STS and dataloggers at the next scheduled report.

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## STS System Features

- Intuitive software for easy programming and setup
- IP communication for reliable data transfer
- Simplified, more reliable service provider connection using a Solinst SIM card
- Database to import to your own website or list
- Allows barometric compensation of remote water level data
- Remote schedule and firmware updates from the Home Station
- Battery level and status updates with each report
- GPS module in remote STS allows location mapping in Solinst Telemetry Software
- High or low level alarm notifications

STS Specifications	
Modem options:	Digi IX20 Cat 4 North America (LTE Bands B2, B4, B5, B12, B13, B14) or, Digi IX20 Cat 4 Global (EMEA/APAC LTE Bands B1, B2, B3, B4, B5, B7, B8, B12, B13, B18, B19, B20, B25, B26, B28, B39, B40, B41).
Communication:	Static IP at Home Station PC and Dynamic IP at remote STS, e-mail alarm notifications
Antennas:	700/850 MHz BLADE SMA Male
Data File Type:	.mdb (database), .xle, .lev or .csv (exported)
Sampling Interval:	10 seconds - 99 hours
Reporting Interval:	5 minutes - 1 week
Schedule Programming:	Initial setup and remote updates done through Solinst Telemetry Software at Home Station
Power Supply:	12V, 12-30 Ahr deep-cycle, rechargeable sealed lead-acid battery
Optional Power Input:	10V - 16V DC, 15W
Battery Life Example: (4 dataloggers)	1 year: based on hourly sampling and daily reporting
Memory Capacity: (Between Reports)	16 MB
Operating Temperature:	-30°C to 50°C
Optional Enclosure:	NEMA 4X (IP66: dust and water proof, can not be submerged)
Compatible Dataloggers:	Levellogger 5 Series dataloggers, LevelVent 5, as well as previous versions of the LevelVent and Levellogger Edge Series dataloggers
Number of Connected dataloggers:	4
Barometric Compensation:	Using a connected Barologger, automatically performed in Solinst Telemetry Software or by user in external database



## STS Alarms and Diagnostics

An e-mail alarm notification will be sent automatically to the Home Station if a low battery condition is detected. The Home Station then sends out email alerts, as set up in the software. High, low and percent change alarms can also be set for each datalogger (e.g. water level, temperature, rainfall, or conductivity). Along with water level, temperature, barometric, conductivity, and rainfall data, the Home Station is updated with battery level and status of the STS and dataloggers with each data report.