FTS began in 1980 with a focus on the fire weather meteorological niche. Since then FTS has become a leading manufacturer of remote environmental monitoring solutions including systems, instrumentation and communications technology for the Hydrology, Fire Weather and Meteorology industries. Our equipment forms the backbone of some of the world's most sophisticated and demanding environment monitoring networks. Our mission is to make our customers successful in their efforts to monitor, record, and analyze changes in the natural environment.

**Critical data delivery**
We understand applications that require data from your remote stations no matter what.

**Remote deployment**
Partly by beginning in British Columbia, Canada, and partly from the nature of the industry and the need for massive spatial coverage, we have learned the challenges of continuously monitoring the weather in very remote locations. Lack of infrastructure and inaccessibility (or an extremely high cost of physically getting to stations) are obstacles that we have tremendous experience overcoming.

**Extreme environments**
We also know all about the hazards faced by high tech equipment for scientific data collection in the wilderness. We understand how to design products and systems for locations where grizzly bears, lightning strikes, hurricanes, extreme heat or extreme cold are realities.

**Scientific-grade accuracy**
Many decisions are made based on the quality of data that is measured. We understand the importance of accuracy as much as our customers, who make decisions daily that involve thousands or millions of dollars and affect public safety.

**Operational simplicity**
Our experience in environmental monitoring has taught us the importance of keeping systems simple to install, simple to operate and simple to maintain. We’ve come to realize that anyone who works with environmental monitoring equipment, no matter how skilled, wants complexity eliminated. Not only does it make their job safer, it saves money from reduced training costs and increases reliability, by eliminating errors.

**Technical Support**
FTS was founded on a single guiding principle: to make our customers successful in their efforts to monitor, record and analyze ongoing changes in the natural environment. This involves providing customers with exceptional service and support.

We understand that sometimes things don’t work as intended. When that happens, we’ve got your back. All our products are backed by our extensive documentation and technical support. You can reach us via email or phone, and you’ll always be speaking to a real person. Our dedication to customer service is at the heart of everything we do, and we stand by every one of our solutions.

**Technical Support**
FTS was founded on a single guiding principle: to make our customers successful in their efforts to monitor, record and analyze ongoing changes in the natural environment. This involves providing customers with exceptional service and support.

While you can always send in your equipment to us for service and repair, we offer several paid programs designed to minimize your downtime and make maintenance easier and simpler.

**Annual Onsite Maintenance**
A comprehensive maintenance program for your entire system that includes an annual visit by an FTS-trained technician, annual sensor exchange, field validation and calibration, full record-keeping, priority emergency support and more, all with one goal in mind - to keep you up and running.

**Factory Exchange Service**
Peace of mind for your sensors - FTS will send exchange sensors annually along with a host of benefits including priority emergency support to ensure that your sensors are always within desired specifications.

**Return to Factory**
Let us take care of your equipment for you. This program allows you to send your sensors to us for annual maintenance, which includes refurbishment and calibration as well as priority emergency support.
CONTENTS

Sensors
17 Air Temperature/Humidity
17 All-Weather Precipitation Gauge
17 Barometric Pressure
18 Fuel Temperature and Moisture
18 Heated Rain Gauge
19 Radar Stage Sensor
19 Rain Gauge
20 Snow Depth
20 Soil Moisture/_temperature
20 Solar Radiation
20 Solar Radiation - Extreme Accuracy
21 Submersible Pressure Transmitter
21 Turbidity
21 Water Temperature
22 Wind Speed and Direction - Alpine
22 Wind Speed and Direction - SDI-12
22 Wind Speed and Direction - Ultrasonic
23 Wind Speed Anemometer

Systems
2 Fixed RAWS
4 Quick Deploy (QD) Portable RAWS
5 Quick Deploy H-Series
6 Remote Automated Observation System™ (RAOS™)
7 SedEvent

Software
8 FTS360
9 AutoCaller / AutoCaller +

Logging Transceivers
10 LTI Cell / GOES

Axiom Dataloggers/DCPs and Accessories
11 Axiom F6
11 Axiom H1
12 Axiom H2
12 Axiom Analog Interface Module
12 SDI Expansion Cable
12 SDI Adapter Cable

Telemetry and Remote Communications
13 GOES Transmitter (G6)
14 GOES Antenna (EON2)
14 G6-CAL GOES/Meteosat Transmitter
15 AirTalk

Structures and Enclosures
24 Tri-leg Tower
24 Radar Enclosure
24 RAWS Enclosure
24 Small Equipment Enclosure
25 Water Quality Enclosure

Power and Accessories
26 Heavy Duty Battery and Cables
26 Solar Panels
26 DTS-12 Deployment Guide

For a complete list of products, specifications and further details, please visit our website:
www.ftsinc.com

Engage with us on social media
**FIXED REMOTE AUTOMATED WEATHER STATION (RAWS)**

**Tri-leg Tower Mast**
The folding mast provides fast, easy access to wind sensors. Masts are available in 20ft, 25ft and 32.8ft (10m). A winch kit is available to raise and lower the mast, allowing a single person to service and maintain the site without having to do any climbing.

**Solar Radiation Sensor (Pyranometer)**
The SDI-SR-PYR Solar Radiation sensor is a pyranometer that measures the amount of sunlight exposed to fuels. It is a digital sensor with SDI-12 digital interface output, and stores all calibration coefficients within the sensor. See page 20.

**Enclosure and Electronics**
Made from durable heavy-gauge aluminum, the enclosure houses the Axiom datalogger and a 6-cell, 12-volt heavy duty battery. See page 26.

**Three-leg Tower**
FTS’ Tri-leg tower provides a solid frame to mount sensors and other equipment. Anchored to the ground, it is able to withstand sustained 125 mph (201 km/h) winds without requiring setting in a concrete base. See page 24.

**Solar Panel**
Most stations operate on a battery, which is recharged by a solar panel. A 20W solar panel is most common, but 10W and 50W panels are available when needed by site-specific conditions. See page 26.

**Adjustable Legs**
The three legs of the Tri-leg tower are adjustable in length to permit the tower to be installed on uneven ground. The feet can be anchored with metal stakes, or rocks can be piled on top of the feet.

**Wind Speed and Direction Sensor**
The FTS SDI RM Young Wind Monitor is a mechanical dual wind sensor with an SDI output that accurately measures wind speed and direction. The SDI-12 interface avoids the complexity of measuring the AC wind speed signal or the potentiometer output. See page 22.

**Air Temperature and Humidity Sensor**
The THS-3 Air Temperature and Humidity Sensor is a high quality, precision temperature and humidity sensor housed in a durable solar radiation shield. An SDI version is also available. See page 17.

**Fuel Stick**
The optional FS-3 fuel stick measures fuel moisture and temperature. See page 19.

**EON2 CS2 GOES Antenna**
The EON2 CS2 requires no assembly, and no aiming in most locations. Rugged by design, it is completely sealed for marine environments and dome-shaped for superior ice/snow shedding. This one antenna replaces separate GOES and GPS antennas. See page 14.

**Tri-leg Tower**
FTS’ Tri-leg tower provides a solid frame to mount sensors and other equipment. Anchored to the ground, it is able to withstand sustained 125 mph (201 km/h) winds without requiring setting in a concrete base. See page 24.

**Zero Civil Works Cost Required**
No cement or special engineering required. The tower provides exceptional strength and stability as a free-standing structure assembled with only a few hand tools. No need to pour a concrete pad in your remote location!

**Technician Safety**
Doesn’t require climbing to service wind sensors. The mast can be lowered and raised by only one person, making it easy to access the wind sensor.

**Easy to Transport**
The entire structure can be shipped on a single 7’ x 4’ pallet. With or without the pallet, it can also fit in a pickup truck.

**Quick and Easy to Set Up**
Assembled and anchored in one hour by two people, with a minimum of tools. Adjustable legs permit installation on uneven terrain. Full setup instructions on only two laminated “Quick Start” sheets.

**Smart Design Ensures Data Integrity**
By aligning one side of the triangular tower to true east/west, all of the station components requiring alignment will automatically be aligned when installed. This ensures sensors are optimally positioned, even by novice technicians.

**Environmentally-Friendly**
Set-up and takedown is generally unobtrusive resulting in limited environmental damage.

**Two-way Telemetry Also Available**
Ubicom is a reliable 2-way remote communication system. Ubicom allows high frequency data to be pushed at chosen intervals by Iridium or Cellular to a gateway for retrieval. Not only can Ubicom be used to retrieve data, but it can also be used to remotely manage your Axiom Datalogger to update configuration files.
QUICK DEPLOY (QD) PORTABLE RAWS

The FTS Quick Deploy Portable Weather Station is the fire community’s most widely used weather station for prescribed burns and temporary monitoring applications. It offers the same sensors, telemetry and reliability as our full Fixed RAWS but in a portable form. It can be set up completely in 15 minutes by one person, with no tools and no technical training. Its portability means that several can be placed at the fire line and rapidly relocated as needed. It offers the same sensors and telemetry options as the Fixed RAWS, and all components are interchangeable with the Fixed RAWS.

Data on Demand and Alerts

The QD can be configured with AirTalk radio voice communication which provides real-time data to the fire crew at the burn site via any DF-capable radio (compatible with P25 digital radios). With a simple 3- or 4-digit code, AirTalk broadcasts up-to-the-minute current weather conditions via a clearly audible digitized voice. In addition, instant alerts will be broadcast if any weather parameter threshold is exceeded. This provides real-time decision-making, maximizing fire crew safety and helping prevent escaped burns.

QUICK DEPLOY H-SERIES

The FTS Quick Deploy H-Series is a portable weather station used for temporary event monitoring applications. The QD-HX model allows users to swap the Axiom H1RS and/or Axiom H2 Dataloggers already purchased using a keyway mount inside the enclosure; while a QD-H1RS and QD-H2 system are assembled with a built-in datalogger.

The FTS Quick Deploy offers scientific-grade accuracy and reliability in a portable form, which can be set up completely in 15 minutes by one person, with no tools and no technical training. Its portability means that one or more can be placed at the frontline and rapidly relocated as needed.

Because it was designed for emergency event management professionals, the Quick Deploy is not like any other portable weather station. It’s exceptionally durable—no plastic components—so it can take a beating. The Quick Deploy is also extremely simple to set up quickly, and can be preconfigured to your specifications without requiring a laptop or alignment of a GOES antenna.

ELECTRONICS

- Axiom H1RS or Axiom H2 Datalogger

SENSORS (OPTIONAL)

- Turbidity
- Water Temperature
- Stage
- Dual Analog Wind Speed/Direction
- Air Temperature/Humidity
- Rain Gauge
- Solar Radiation
- Fuel Temperature and Moisture
- DigiBP SDI-12 Barometric Pressure
- Water Quality
- SDI Soil Moisture/Temperature
- Compatible with Lufft WS sensors

POWER

- Solar Panel
- Three integrated 7.5 amp-hour heavy duty batteries

STRUCTURAL

- Enclosure and tripod

ANTENNAS

- EON2 GOES antenna
- Optional: Integrated GPS Antenna

ftsin.com
SEDEVENT

SedEvent is a turn-key system based around the effective Turbidity Threshold Sampling method for intelligent, automated sampling that measures suspended sediment concentrations (SSC) and requires no programming to install and maintain.

The ability to collect useful data about sediment transport and other pollutants has been dependent on the timing and frequency of manual grab samples during run-off events, if personnel, time and support are available for a site visit.

Other automatic samplers can trigger many unnecessary samples, potentially limiting the number of sample bottles before the critical point of a storm event.

The 24-bottle capacity of our SedEvent System, coupled with our threshold sampling algorithm, ensures only event samples are taken and in sufficient quantity to provide reliable data.

SedEvent eliminates the need for expensive manual grab samples during unpredictable storm events and minimizes lab analysis costs, as only storm events are analyzed.

<table>
<thead>
<tr>
<th>Turbidity (NTU)</th>
<th>Stage (ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,500</td>
<td>30</td>
</tr>
<tr>
<td>1,000</td>
<td>25</td>
</tr>
<tr>
<td>500</td>
<td>20</td>
</tr>
<tr>
<td>100</td>
<td>15</td>
</tr>
<tr>
<td>50</td>
<td>10</td>
</tr>
<tr>
<td>25</td>
<td>5</td>
</tr>
</tbody>
</table>

10:07am, May 19. Site visit, stage gauge observation and manual grab sample taken at non-SedEvent station. Virtually all event data is missed.
SOFTWARE

SOFTWARE SOLUTIONS TO SUIT YOUR NEEDS

FTS360 is a cloud-based platform that allows you to view data from stations supporting MQ Telemetry Transport (MQTT), such as the LT1, while offering full configuration capabilities no matter where you are.

Features and Benefits
- Connect supported MQTT-based stations to a powerful and smart Industrial Internet of Things (IoT) network
- Create alerts and actions within your network so it reacts automatically and intelligently
- Once a bi-directional station is installed, manage it from the comfort of your office, or on the road with your smartphone or tablet

An Intelligent Network for the Future
In addition to viewing and managing your stations from an intuitive and easy to understand web portal, FTS360 can be trained to act on your behalf, even if you aren’t watching. Alerts and actions allow you to receive weather data directly, in near real-time. Stations can act based off another station’s data – for example, if the temperature in a high snow area rapidly increases, another station using the LT1 and FTS Radar can start to take more frequent readings while sending you a notification. Once alerted, it’s easy to get back to FTS360 and view the whole picture.

AutoCaller
AutoCaller is a powerful yet intuitive software tool that greatly simplifies data collection from remote FTS monitoring networks. AutoCaller+ allows you to do even more features like interactive data graphing.

Features and Benefits
- Supports all FTS communication types
- Automates scheduled calling and data collection
- Greatly increases the speed of data retrieval from your remote network
- Optimizes air time with satellite communications
- Supports multi-user access to centralized database
- Runs automatically as a “Service”
- Automatic analytics with integrated US and Canadian fire code algorithms
- Real-time call status log

AutoCaller+ Features
- Graphing with interactive graphical editing data reconstruction
- Data alarms
- Audit logs
- Function-by-function security

FTS360 Config App
Easy setup and configuration, right on your mobile device. The FTS360 Config App allows you to access supported FTS products onsite through a wireless local connection. Convenient, simple and intuitive. Available on iOS or Android.

COMPATIBLE HARDWARE

LT1
RAOS
Axiom

More Coming Soon

Simple to setup station groups, calling technology, and call schedules
The LT1 is a compact logging transceiver for monitoring single or stacked sensors that measure environmental parameters.

Features and Benefits
- Local storage ensures data integrity
- Based on a widely-adopted protocol for easy, secure scalability
- Fits within existing enclosures
- Easy setup with Bluetooth or web-based software
- Cellular or GOES/EUMETSAT variants

LEAVE THE LAPTOP AT THE OFFICE.
- No more wind and rain damage, low battery or “where do I put the laptop?” hassles
- No complex software to install, configure, maintain or learn
- No interface cables to mess with

BUILT LIKE A TANK.
- Fully watertight
- 3 levels of lightning protection
- Waterproof military bayonet connectors
- IP67 aluminum case

REAL SIMPLE.
Clever integrated graphical interface makes configuration and troubleshooting easy, reducing the chance for things to go wrong.

AXIOM DATALOGGERS

AXIOM F6
Designed to be simple to use and maintain, the Axiom F6 Datalogger eliminates the need to take a laptop and cables into the field as it features an easy-to-operate touchscreen. With no laptop malfunctions, dead batteries, or forgotten cables, our customers make fewer on-site maintenance visits, saving both time and money.

The Axiom F6 can be configured with GOES/Meteosat and/or AirTalk radio voice communication to provide on-demand weather conditions and alerts via a digitized voice directly to a hand-held short-range radio.

MODELS
- F6-TLM-2: Axiom F6 (use with external telemetry)
- F6-G6-TLM: Axiom F6 with integrated GOES G6 Transmitter
- F6-TLM-RVT2: Axiom F6 with integrated AirTalk
- F6-G6-RVT2: Axiom F6 with integrated GOES G6 Transmitter and AirTalk

AXIOM H1
Like the H2, the Axiom H1 is a rugged data logger (DCP) designed for remote data collection and SDI-12 sensor applications. It features two independent, electrically isolated SDI-12 ports that can each handle up to 500mA, and an integrated solar regulator (H1RS model only).

MODELS
- H1R-TLM-2: Axiom H1 (use with external telemetry)
- H1RS-TLM-2: Axiom H1RS (use with external telemetry)
- H1R-G6-TLM: Axiom H1 with integrated GOES G6 Transmitter
- H1RS-G6-TLM: Axiom H1RS with integrated GOES G6 Transmitter

DIMENSIONS
- 135mm x 135mm x 40mm (5.3” x 5.3” x 1.6”)

OPERATING TEMPERATURE RANGE
- 40°C to 60°C (-40°F to 149°F)

SUPPLY VOLTAGE
- 5V to 28V

HUMIDITY RANGE
- 0-90% RH

LOCAL CONTROL
- Bluetooth Low Energy (BLE)

LOCAL I/O
- SDI-12, NMEA, Rain gauge counter

USER ACCESSIBLE SD CARD
- Card included for up to 2 years of data storage

CERTIFICATIONS
- CE, FCC, K

TELEMETRY VARIANTS
- GOES/EUMETSAT
- Satellite
- Cellular
- 3G/4G/LTE (Band 850, 900, 1700, 1900, 2100 MHz)
- 4G/LTE (version network only)

ENVIRONMENTAL PROTECTION
- IP66 (with enclosure)
**Axiom Dataloggers and Accessories**

**Axiom H2**

The Axiom H2 Datalogger is a rugged data logger (DCP) designed for remote data collection and complex SDI-12 sensor applications. It features four independent, electrically isolated SDI-12 ports that can each handle up to 500mA, and an integrated solar regulator.

**Models**

- **H2-TLM-2**: Axiom H2 with external battery
- **H2-G6-TLM**: Axiom H2 with integrated GOES G6 Transmitter

**Accessories**

**Axiom Analog Interface Module**

SDI-AM

- **3-port expansion cable for connecting 3 SDI-12 sensors to a single SDI-12 port.**
- **Adapter cable for connecting sensors with flying lead to Axiom Dataloggers.**

**SDI Expansion Cable**

CBL-SDI-EXP-3

- **Connector Type**: Military-style bayonet
- **Cable Length**: 1 ft. (36 in.)

**SDI Adapter Cable**

CBL-SDI-TERM

- **Connector Type**: Military-style bayonet
- **Cable Length**: 45 cm (18"")

**GOES Transmitter (G6)**

FTS is a worldwide leader in GOES communication. The CS2 G6 is the standard GOES Transmitter that is in all new weather stations for the U.S. National Interagency Fire Center (NIFC). FTS was the first company to introduce GPS into GOES communication, and the first to offer HDR GOES data. The GOES Transmitter has demonstrated industry-leading reliability with optimal operational characteristics for remote locations. In fact, FTS GOES technology forms the backbone of the National Climate Reference Station System.

The G6 is certified by NOAA and by EUMETSAT for use on the Meteosat system.

- **Extremely accurate timekeeping reliably transmits hourly data for up to 28 days without a GPS fix**
- **Extremely low power requirements extend operation in situations of low power or interrupted solar panel charging**
- **Automatically calculates GOES Antenna azimuth and inclination, speeding installation and eliminating errors**
- **Supports test transmissions on an alternate test channel with fixed text messages to ensure future data transmission reliability**
- **NEDIS ID testing is performed at the factory before each unit is shipped to further ensure that GOES transmissions will work perfectly.**

The G6 is available as an integrated option in the Axiom H2 Datalogger, or as a separate unit for use with older FTS data loggers.

**Technical Specifications**

- **Operating Supply Voltage**: 10.8 VDC to 16 VDC
- **Supported Baud Rates**: 300 bps, 1,200 bps
- **Supply Current (At 12 VDC)**:
  - **IDLE**: < 1 mA
  - **TRANSMITTING**: < 2.4 A
  - **GPS ON**: < 50 mA
- **GOES Antenna**:
  - **Power**: 5.5 W max
  - **Polarization**: Right hand circular
  - **Connector**: SMA female
- **Recommended Antenna**: FTS EON2 CS2 GOES Antenna option
- **Frequency Range**:
  - **GOES**: 401.301 MHz – 402.0985 MHz
  - **Meteosat**: 300.035 MHz – 402.4345 MHz
- **Frequency Stability**:
  - **Initial Accuracy**: ± 20Hz disciplined to GPS
  - **GPS Schedule**: 1 fix at power up, 1 fix per day thereafter
- **Channel Bandwidth**:
  - **100 bps**: 1.5 kHz
  - **300 bps**: 3 kHz
- **Time Keeping**:
  - < 10 microsecond initial accuracy, automatically synchronized to GPS
  - < 100 microsecond per day without GPS
- **Temperature Range**:
  - **Operating**: -40°C to +60°C (-40°F to 140°F)
  - **Storage**: -55°C to +85°C (-67°F to 185°F)

**GPS Antenna**

- **Type**: Passive
- **Connector**: SMA female
### EON2 CS2 GOES ANTENNA WITH GPS OPTION

The EON2 CS2 requires no assembly, and no aiming in most locations. Rugged by design, it is completely sealed for marine environments and dome-shaped for superior ice/snow shedding. Smaller, lighter and more durable than a Yagi.

- Increased reliability
- No assembly
- Lasts longer (better investment than Yagis)
- Does not need aiming in most locations
- Cabinet top mounting, eliminates exposed wiring
- Extremely rugged

**Optional:** Integrated GPS Antenna available

**Optional:** aim-able mount (if required)

### G6-CAL GOES/METEOSAT TRANSMITTER

This special OEM version of the G6 Transmitter can be integrated into your own data logger or environmental monitoring system.

- Operates on both North and South American GOES networks
- Operates on European/African Meteosat network. Certified for use with EUMETSAT
- Extremely accurate timekeeping reliably transmits hourly data for up to 28 days without a GPS fix
- Extremely low power requirements extend operation in situations of low power or interrupted solar panel charging
- Automatically calculates antenna azimuth and inclination, speeding installation and eliminating errors
- Supports test transmissions on an alternate test channel with fixed text messages to ensure future data transmission reliability

### TELEMETRY AND REMOTE COMMUNICATIONS

#### AIRTALK

Integrated into the Axiom F6 Datalogger, AirTalk gives fixed or portable Remote Automated Weather System (RAWS) the ability to “talk” with crews through their current hand-held radios, giving them access to all current weather conditions. What’s more, AirTalk provides unprecedented clarity by using the same technology used by air traffic controllers around the world.

- Instant voice alerts of exceeded weather parameter thresholds provide real-time decision-making, maximizing firefighter and public safety
- Access data via any DTMF-capable hand-held radio. Data is broadcast to all radios on the same channel
- Weather data is converted into a phrase of real human-recorded audio (not computer-synthesized). Our new “text-to-speech” engine is 50% louder and significantly clearer than previous generations
- Touchscreen user interface makes creation and modification of alerts and reports extremely simple
- Current weather conditions are available on-demand with a simple 3- or 4-digit numeric code keyed into the radio’s keypad.
  - Assign your own DTMF tones for different reports
- External option available

### PARAMETER

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>GOES</th>
<th>GPS OPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GAIN</strong></td>
<td>5.7 dBic minimum</td>
<td>50 dBic +/- 10 dB</td>
</tr>
<tr>
<td><strong>HALF POWER BEAMWIDTH</strong></td>
<td>99° Nominal</td>
<td>Hemispherical</td>
</tr>
<tr>
<td><strong>FREQUENCY</strong></td>
<td>398 MHz to 404 MHz</td>
<td>1575.42 MHz</td>
</tr>
<tr>
<td><strong>VSWR</strong></td>
<td>1.5:1 Nominal</td>
<td>2.0:1 Maximum</td>
</tr>
<tr>
<td><strong>DC INPUT VOLTAGE RANGE</strong></td>
<td>N/A</td>
<td>+3.0Vdc to +5.0Vdc</td>
</tr>
<tr>
<td><strong>DC CURRENT</strong></td>
<td>N/A</td>
<td>20mA Maximum</td>
</tr>
<tr>
<td><strong>CABLE CONNECTOR</strong></td>
<td>Type-N (female)</td>
<td>SMA Female bulkhead mount</td>
</tr>
<tr>
<td><strong>IMPEDANCE</strong></td>
<td>50 Ohms</td>
<td>50 Ohms</td>
</tr>
<tr>
<td><strong>POLARIZATION</strong></td>
<td>RHCP</td>
<td>RHCP</td>
</tr>
<tr>
<td><strong>CABLE LENGTH</strong></td>
<td>4.5m (15’)</td>
<td>4.5m (15’)</td>
</tr>
<tr>
<td><strong>MAX. DIAMETER OF MOUNTING STRUCTURE</strong></td>
<td>6.35 cm (2.5”)</td>
<td>5cm (2”)</td>
</tr>
<tr>
<td><strong>DIMENSIONS</strong></td>
<td>32 cm (12.7”) x 13 cm (5.2”) diameter at widest point</td>
<td>32 cm (12.7”) x 13 cm (5.2”) diameter at widest point</td>
</tr>
<tr>
<td><strong>WEIGHT</strong></td>
<td>396 g (less than 1 lb.)</td>
<td>396 g (less than 1 lb.)</td>
</tr>
<tr>
<td><strong>WIND LOADING</strong></td>
<td>40 km (25 mph)</td>
<td>40 km (25 mph)</td>
</tr>
<tr>
<td><strong>OPERATIONAL TEMPERATURE</strong></td>
<td>-40°C to +85°C (-40°F to 185°F)</td>
<td>-40°C to +85°C (-40°F to 185°F)</td>
</tr>
</tbody>
</table>
The THS-3 is a high quality, precision temperature and humidity sensor housed in a durable solar radiation shield. The solar radiation shield is comprised of six UV resistant louvers, providing effective protection from direct or reflected sunlight and rainfall, while ensuring good ambient air flow to the sensor. The sensor assembly mounts to an aluminum mounting arm that clamps directly to the weather station mast, providing a lightweight yet rugged support.

<table>
<thead>
<tr>
<th>OPERATING TEMPERATURE</th>
<th>-40°C to 60°C (-40°F to +140°F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEMPERATURE</td>
<td>ACCURACY: (0 to 60°C): ±0.1°C</td>
</tr>
<tr>
<td></td>
<td>ACCURACY: (-40°C to 0°C): ±0.2°C</td>
</tr>
<tr>
<td></td>
<td>RESOLUTION: 0.1°C</td>
</tr>
<tr>
<td>HUMIDITY</td>
<td>ACCURACY: (0 - 60°C): ±2% (0 - 100% RH)</td>
</tr>
<tr>
<td></td>
<td>RESOLUTION: 1%</td>
</tr>
</tbody>
</table>

The FTS All Weather Precipitation (AWP) Gauge measures all types of precipitation within a wide temperature range. It is designed to withstand harsh wind and snow conditions without sacrificing sensitivity and accuracy. The AWP Gauge boasts a combination of simple mechanical construction and sophisticated firmware, guaranteeing superior performance.

<table>
<thead>
<tr>
<th>MODEL NUMBER</th>
<th>SDI-AWP-200</th>
<th>SDI-AWP-400</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORIFICE AREA</td>
<td>200cm² (312&quot;)</td>
<td>400cm² (622&quot;)</td>
</tr>
<tr>
<td>RANGE OF PRECIPITATION</td>
<td>59.06in (1500mm)</td>
<td>29.53in (750mm)</td>
</tr>
<tr>
<td>ACCURACY</td>
<td>0.1%</td>
<td></td>
</tr>
<tr>
<td>DIMENSIONS</td>
<td>15.16x24in (Ø385×650mm)</td>
<td>15.16x25.60in (Ø385×610mm)</td>
</tr>
<tr>
<td>OPERATING TEMPERATURE RANGE</td>
<td>-40°C to 158°F (-40°C to 70°C)</td>
<td></td>
</tr>
</tbody>
</table>

The DigiBP SDI-12 barometric pressure sensor is a highly accurate, solid state pressure transducer with a normal operating range between the elevations of -1,200 and +13,000 feet. It offers SDI-12 output.

| INTERFACE | SDI-12 |
| RANGE | 50 to 1,100 hPa |
| RESOLUTION | 0.01 hPa |
| ACCURACY | ±0.3 hPa over full temperature range (-40°C to +60°C) |
**SENSORS**

**FUEL TEMPERATURE AND MOISTURE**  
**FS-3**  
The FTS FS-3 Electronic Fuel Stick Sensor is commonly deployed on-site near prescribed burn and wildfire operations. The sensor’s output tracks closely with 10-hour fuel moisture, an invaluable indicator of fire behaviour.

The FS-3 includes an armoured stainless steel cable and bayonet connector, providing fast and simple mating to the fuel stick port on the Axiom F6 Datalogger.

| TEMPERATURE | ACCURACY: ±0.1°C  
| RESOLUTION: ±0.1°C  
| RANGE: -40°C to +60°C (-40°F to 140°F)  
| OPERATING CURRENT | <1mA  
| HUMIDITY | TYPE: Capacitive sensor  
| OUTPUT: 0-10VDC  
| ACCURACY: ±0.2%  
| RESOLUTION: 0.1%  
| RANGE: 0-100%  

**HEATED RAIN GAUGE**  
**RG-E12-30**  
The RG-E12-30 Heated Rain Gauge is a high precision tipping bucket. Approved to CSA (Canadian Standards Association) special inspection standards and meeting U.S. Field evaluation requirements, the RG-E12-30 offers exceptional calibration retention.

Powered by 120VAC and dual thermostat controlled, the RG-E12-30 uses a 125W heater to enable sustained operation in temperatures as low as -30°C.

| RESOLUTION | ±0.2 mm (0.01")  
| ACCURACY | ±0.2%  
| OPERATING TEMPERATURE | -30°C to +60°C (-22°F to 140°F)  
| SUPPLY VOLTAGE | 120VAC @ 60Hz  
| CURRENT DRAW WITH HEATER ON | Approx. 1.1A  

**RADAR STAGE SENSOR**  
**SDI-RADAR**  
The FTS Radar Stage Sensor delivers fully digital best in class accuracy of +/-2mm (0.007ft) through its complete standard measurement range. With its unique ability to set running average through an SDI-12 command, and support for the NOAA measurement mode, the Radar customizes to your environment. Reliably designed and IP66-rated with a rugged aluminum housing, the Radar seamlessly connects with your existing DCP through SDI-12 and optional 4-20mA.

| INTERFACE | SDI-12  
| TEMPERATURE RANGE | STORAGE: -40°C to +60°C (-40°F to 140°F)  
| OPERATING: -40°C to +80°C (-40°F to 176°F)  
| MEASUREMENT RANGE | Up to 35m (114.83ft)  
| POWER CONSUMPTION | STANDBY: <0.5W  
| OPERATING: <9mA  
| ACCURACY | <±2mm (0.007ft)  

**RAIN GAUGE**  
**RG-T**  
The rugged, all metal RG-T is FTS’ take on a simple, proven, mature technology. It has earned tremendous loyalty over the years for its extreme accuracy, excellent calibration retention and easy deployment.

The RG-T tipping mechanism is injection-moulded engineered resin, resulting in extreme accuracy on every unit.

| RESOLUTION | ±0.254 mm (0.01") per tip (optional calibration to 0.2 mm)  
| ACCURACY | ±2% at 50 mm (2") per hour  
| CABLE | 6 m (20') metal clad armoured  

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SNOW DEPTH
SDI-SR50A

The SDI-SR50A is a rugged acoustic sensor for measuring the distance from the sensor to a target. Typically used to measure snow depth, it uses a multiple echo processing algorithm to help ensure measurement reliability.

INTERFACE
SDI-12

MEASUREMENT TIME
< 1.8s

MEASUREMENT RANGE
0.25 mm (0.01”)

RESOLUTION
0.25 mm (0.01”)

ACCURACY
± 1 cm (± 0.4”) or 0.4% of distance to target (whichever is greater), requires internal temperature compensation.

SOIL MOISTURE/ TEMPERATURE
S-HPII

The S-HPII SDI Soil Sensor offers a unique advantage over other soil probes by providing an all-in-one, in-situ system that can measure many different parameters simultaneously.

INTERFACE
SDI-12

SOIL MOISTURE FOR INORGANIC & MINERAL SOIL
RANGE: From completely dry to fully saturated
ACCURACY: ± 10% RH for minerals, ± 0.02”/in. for fine textured soils

DIELECTRIC CONSTANT
RANGE: 0 to 180
ACCURACY: ± 2.5% or 0.005 S/m whichever is typically greater

CONDUCTIVITY
RANGE: 0.01 to 15 mS
ACCURACY: ± 2% or 0.005 S/m whichever is typically greater

TEMPERATURE
RANGE: -20°C to +80°C (4°F to 176°F)
ACCURACY: ± 0.1°C

SUBMERSIBLE PRESSURE TRANSMITTER
SDI-PT

The FTS Submersible PT is a high accuracy submersible pressure transmitter, capable of a standard accuracy of 0.25% FS TEB or USGS OSW specification. The product can be manufactured in 316L stainless steel or titanium for increased resistance to corrosion, notably from seawater.

INTERFACE
SDI-12

RANGE
0 to 1000 mbar

ACCURACY
±0.25% FS

RESOLUTION
0.1 mbar

MEASUREMENT TIME
< 5ms

POWER
Operating: 10mA
Standby: < 0.1mA

TURBIDITY
DTS-12

The marine-capable DTS-12 is the World’s Best Instream Turbidity Sensor. Using true nephelometric geometry, along with a durable optical face and angled head that sheds bubbles, the sensor provides extremely clean, highly precise data with repeatable, long-term accuracy.

The DTS-12 exhibits less than 2% annual optical drift, providing an incredible 12-month recalibration interval. The unique self-cleaning wiper minimizes bio-fouling. These features can typically save 11 site visits per year.

The DTS-12 features 100% stainless-steel casing and hardware, protecting against corrosion in salt water. It is available with fixed or connectorized 18.3 m (60’) or 30.5 m (100’) cables.

INTERFACE
SDI-12

RANGE
0-274 m (0-900 ft)

ACCURACY (IP 22)*
2% of full scale + 2 mNTU (0-200 mNTU), 4 mNTU (200-1600 mNTU)

RESOLUTION
0.1 mNTU

CURRENT CONSUMPTION
(TYPICAL)
Operating: 30 mA
Motor Wiping: 70 mA

WATER TEMPERATURE
DigitTemp

The FTS DigiTemp submersible temperature sensor is a rugged SDI-12 sensor for measuring the temperature of soil, water or other liquids with scientific-grade accuracy and long-term reliability. It makes adding automatic temperature monitoring to existing stations incredibly easy and cost-effective. DigiTemp is small enough to easily deploy through standard 1” (2.5 cm) PVC conduit with an 8” (20.3 cm) factory bend.

INTERFACE
SDI-12

TEMPERATURE RANGE
-40°C to +60°C (4°F to 140°F) (readings returned in °C & °F)

ACCURACY
±0.2°C to +3°C or +4° (standard or IP 68 specification)

RESOLUTION
0.01°C

RESPONSIVENESS
Ranks 99% of full scale in 1.7 sec, 99.9% in 2.9 sec.

CURRENT CONSUMPTION
< 5 mA when active, 150 μA quiescent

CABLE LENGTH
18.3 m (60’)

*excluding formazin batch accuracy of ±5%
The FTS SDI RM Young Alpine Wind Monitor is the RM Young 05103-45 Wind Monitor with the addition of an SDI-12 interface. Additional measurements are provided by the SDI-12 interface including peaks, averages, and wind direction capture at peak.

Available in three standard cable configurations:
- 10.67 m (35') armoured cable with waterproof, positive-locking Bayonet connector
- 15.24 m (50') standard cable with waterproof, positive-locking Bayonet connector
- 15.24 m (50') standard cable with bare leads

### INTERFACE
- **SDI-12**

#### WIND DIRECTION
- **RANGE:** 0-360 degrees
- **ACCURACY:** ±3 degrees
- **THRESHOLD:** 1.1 m/s (2.4 mph)

#### WIND SPEED
- **RANGE:** 0-100 m/s (224 mph)
- **ACCURACY:** ±0.3 m/s (0.6 mph) or 1% of reading
- **THRESHOLD:** 1.0 m/s (2.2 mph)

WIND SPEED AND DIRECTION - ALPINE
SDI RM Young Alpine Wind Monitor (SDI-WS-RMY-A)

The FTS SDI RM Young Alpine Wind Monitor is the RM Young 05103 Wind Monitor with the addition of a SDI-12 interface. It is the only mechanical dual-wind sensor available that offers SDI output. The SDI-12 interface avoids the complexity of measuring the AC wind speed signal or the potentiometer output. Wind speed and wind direction are returned in engineering units when requested by SDI command.

Available in three standard cable configurations:
- 10.67 m (35') armoured cable with waterproof, positive-locking Bayonet connector
- 15.24 m (50') standard cable with waterproof, positive-locking Bayonet connector
- 15.24 m (50') standard cable with bare leads

### INTERFACE
- **SDI-12**

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- **THRESHOLD:** 1.0 m/s (2.2 mph)

WIND SPEED AND DIRECTION - SDI-12
SDI RM Young Wind Monitor (SDI-WS-RMY)

The FTS SDI RM Young Wind Monitor is the RM Young 05103 Wind Monitor with the addition of a SDI-12 interface. Additional measurements are provided by the SDI-12 interface including peaks, averages, and wind direction capture at peak.

Available in three standard cable configurations:
- 10.67 m (35') armoured cable with waterproof, positive-locking Bayonet connector
- 15.24 m (50') standard cable with waterproof, positive-locking Bayonet connector
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### INTERFACE
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Ultrasonic wind speed and direction sensors offer an alternative to conventional cup and vane or propeller type wind sensors. Robust and lightweight with no moving parts, they use an SDI-12 interface, offering several advantages over analog sensors. This sensor is suitable for land or marine applications.

### INTERFACE
- **SDI-12**

#### WIND SPEED
- **RANGE:** 0-134 mph (0-216 km/h)
- **ACCURACY:** ±2% @ 12 m/s
- **RESOLUTION:** 0.01 m/s (0.022 mph)
- **THRESHOLD:** 0.01 m/s (0.022 mph)

#### WIND DIRECTION
- **RANGE:** -17.778°C to 181.67°C (0°F to 359°F)
- **ACCURACY:** ±3° @ 12 m/s
- **THRESHOLD:** 1 degree

WIND SPEED AND DIRECTION - ULTRASONIC
Gill Windsonic (SDI-UWS-GILL)

The FT Technologies FT742 Anemometer measures wind speeds up to 75 m/s. Its innovative design delivers FT Technologies’ highest levels of accuracy yet. The Direct Mount (DM) is used in meteorological applications.

### WIND SPEED
- **Range:** 0-75m/s
- **Resolution:** 0.1 m/s
- **Accuracy:** ±0.3 m/s (0-16 m/s), ±2% (16-40 m/s), ±4% (40-75 m/s)

### WIND DIRECTION
- **Range:** 0 to 360°
- **Resolution:** 1°
- **Accuracy:** 4° RMS

### SENSOR PERFORMANCE
- **Measurement principle:** Acoustic Resonance (automatically compensates for variations in temperature, pressure & humidity).
- **Units of measure:** metres per second, kilometres per hour or knots
- **Altitude:** 0-4000m operating range
- **Temperature range:** -40° to +85°C (operating and storage)
- **Humidity:** 0-100%
- **Ingress protection:** IP66, IP67, EN 60529 (2000)
- **Heater settings:** 0° to 55°C. The heater set point can be configured.

FT742-DM (Direct Mount) ultrasonic anemometer is the latest addition to FT Technologies’ FT7 Series - the world’s toughest wind sensors. Measuring wind speeds up to 75 m/s, the FT742-DM has been specifically designed for use in meteorological applications and to meet the WMO standards for wind sensors.

Powered by Acu-Res® Technology the FT742-DM is unique in the market. Extremely small, with no moving parts to degrade, the FT742-DM is a very rugged wind sensor that is maintenance-free and delivers 99.9% data availability, for years on end, even in the harshest of conditions.
TRI-LEG TOWER

The FTS Tri-leg Tower is the standard for Fixed (permanent) RAWS in the U.S. It is impressively strong, durable and sturdy platform for remote monitoring equipment that will last for decades. Built from heavy aluminium pipe with welded gussets at all joints, the Tri-leg Tower is extremely robust.

The folding mast provides fast, easy access to wind sensors, which are positioned 20 feet (6.1m) and 25 feet (7.6m) above the ground. A 32.8 ft (10m) mast and winch are also available.

RAWS ENCLOSURE

The KW1 Enclosure provides secure and simple housing of equipment at Fixed RAWS (Remote Automated Weather Station) sites.

The enclosure is supplied with two adjustable galvanized steel horizontal mounting rails with stainless steel hardware. These rails are 3ft long and can be cut and drilled to match non-FTS towers, or the enclosure can be mounted to two vertical metal or wooden fence posts. The keyway system allows mounting of major components without tools—equipment simply clicks into place.

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RADAR ENCLOSURE

Protect your investment with the FTS Radar Enclosure. Fitted specifically for the FTS Radar Stage Sensor, the Enclosure ensures that your equipment is safe from external debris and environmental hazards. Made from lightweight yet sturdy steel, the Radar Enclosure is also lockable, providing the Radar with both security and anonymity.

SMALL EQUIPMENT ENCLOSURE

FTS’ Small Equipment Enclosure is the smallest in our series of rugged and purpose-built equipment enclosures. It is ideal for hydrology and meteorology monitoring applications, and will stand up to decades of use against the elements. Fabricated from powder-coated, high grade aluminum, it features a cold-pressed door flange and anti-drip rail, along with solid stainless steel hardware.

FTS’ standard keyway mounting plate allows simple and secure mounting of FTS components without tools—equipment simply clicks into place.

WATER QUALITY ENCLOSURE

The FTS Water Quality Enclosure is designed specifically for water quality stations utilizing an ISCO water autosampler, like our SedEvent event-driven, automatic grab sampling system. The enclosure simplifies changing auto-sampler bottles in the field, provides a ready-to-go, weather proof system for mounting equipment, and offers a practical security solution where vandalism is an issue.

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| DIMENSIONS | Height: 12" Width: 10" Depth: 6" |
| CONSTRUCTION | 14 gauge galvanized steel |
| WEIGHT | 11lb |

| DIMENSIONS | 120 cm x 90 cm x 60 cm (48" x 36" x 24") |
| CONSTRUCTION | 1/8th inch (2.54 cm), heavy gauge, marine-grade aluminum |
| WEIGHT | 36 kg (80 lb.) |
POWER AND ACCESSORIES

HEAVY DUTY BATTERY AND CABLES
S-HPII

FTS uses a starved electrolyte heavy-duty battery. This 6 Cell, 12 Volt valve-regulated lead-acid battery powers all our fixed RAWS, and was chosen for its tolerance of extreme environmental conditions. It’s safe—it won’t explode if punctured, it won’t leak, and being a “gel-cell” there’s nothing to spill when being carried. It’s also environmentally friendly, as it’s 100% recyclable.

Our smart battery cable connects the battery to the Axiom datalogger, and offers nickel-plated battery terminals, a 15A ATO integrated blade fuse and a built-in temperature sensor for charge regulation. The 2.4m (8ft) cable includes current sensing and recharge connections.

SOLAR PANELS
SPS-20W-F6H2
SPS-50W-F6H2

FTS Solar Panels are available in two sizes, all suitable for use with environmental monitoring stations. While a 20W panel is a standard component of all our systems, a 50W panel is also available.

The solar panels include a mounting bracket for securing to vertical 11/2” diameter poles and a cable with a bayonet connector for easy, quick-connect compatibility with Axiom Dataloggers. Because the Axiom contains a built-in power manager, there is no requirement for an external solar charge regulator.

| Cable Length | 8.14 m (25') |
| Voltage at Maximum Power | 17.3V (20W), 17.5V (50W) |
| Current at Maximum Power | 1.2A (20W), 2.9A (50W) |
| Dimensions | 56.4cm x 39.5cm x 3.4cm (21.8" x 15.35" x 1.3") (20W), 83.8cm x 53.3cm x 5cm (33" x 21" x 2") (50W) |

DTS-12 DEPLOYMENT GUIDE

The FTS DTS-12 Deployment Guide is comprised of two engineered resin mounting brackets designed to fit inside a standard 4 inch diameter PVC standpipe. It provides a convenient deployment and retrieval method that is suitable for many DTS-12 Turbidity Sensor installation applications. The brackets slide easily inside the standpipe and is positioned using a 3/4” PVC rod that is attached to a rear bracket on the deployment guide of similar length to the standpipe. Using a keyed notch position on the sidewall of the guide, the probe can be positioned in a specific orientation following probe removal for cleaning. As a result, probe deployment and servicing is made extremely easy.
OUR MISSION

To make our customers successful in their efforts to monitor, record, and analyze changes in the natural environment.