



DATA LOGGERS

# FTS F6

ESPECIFICACIONES TÉCNICAS



## ESPECIFICACIONES TÉCNICAS

Diseñado para ser simple de usar y mantener, el registrador de datos F6 elimina la necesidad de llevar una computadora portátil y cables al campo porque incorpora una interfaz de usuario de pantalla táctil fácil de operar. Sin fallas en el funcionamiento de la computadora portátil, baterías agotadas ni cables olvidados, nuestros clientes realizan menos visitas de mantenimiento en el sitio, lo que ahorra una cantidad significativa de tiempo y dinero.



### CARACTERÍSTICAS

#### Hardware

##### Display / touchscreen

- Graphical color touch screen display, 3.65" (diagonal), QVGA (320x240 pixels).
- Display is transfective (readable in low light and outdoors in bright daylight)
- Displays system status, configuration, stored data (graphical and tabular) and provides system configuration and troubleshooting/diagnostics.
- Displays voltage and current separately for battery and solar panel and battery temperature.
- Supports troubleshooting, configuration and programming.
- Display is sealed from moisture penetration.

##### CPU

- (2) CPUs total, both low-power RISC.
- Main CPU is 200MHz 32-bit ARM.
- Sensor collector is 10MHz.

##### Memory/storage

- 64MB RAM
- 256MB fixed physical, non-volatile flash memory for data and program storage.
- Data is stored in a circular 10MB buffer (oldest data overwritten by newest when buffer full).
- Memory holds approximately 5.9 years of EMAS data prior to earliest data being overwritten.

##### Device ports

- 2 waterproof USB 2.0 host ports, 1.5Mbps and 12 Mbps, support for flash memory and other USB-compliant devices.
- 1 waterproof USB 2.0 12 Mbps device port with automatic PC detect.
- Support for USB bar code readers—meta data table, population and sample bottle logging.
- Supports USB keyboard and mouse.
- GOES RF output: N-type jack
- GPS RF input: SMA jack.

##### Sensor ports

- Waterproof, color-coded, military-style connectors
- Dedicated ports for:
  - wind speed (frequency input)
  - wind direction (potentiometer input)
  - rain gauge (counter)
  - temperature (thermistor, 0-20 mA)
  - humidity (thermistor, 0-1.0V)
  - fuel stick (thermistor, 0-1.0V)
- 2 independent SDI-12 V1.3 ports, expandable using external expansion modules to support up to 61 digital sensors.
- Optional, configurable analog-to-SDI expansion module to connect legacy analog sensors (terminal strips).

##### Serial ports:

- 1 external, waterproof, military style bayonet connector

##### Power supply:

- Internal, temperature compensated charge regulator
- Waterproof, military style bayonet connectors for solar panel and battery.
- Sensing of battery voltage, battery current, battery temp, solar voltage and solar current.
- 9.6VDC to 20VDC operating voltage.

##### Dimensions:

- 10" W x 8" H x 6" D

##### Weight:

- Weight: approx. 8 lbs.

#### Software

##### Programming:

- All programming done through intuitive graphical user interface (GUI) without writing code.
- No laptop required; GUI accessed through integrated touchscreen.
- Unlimited setup configurations are stored directly on the datalogger; different configurations can be selected or a new one created with the GUI.

##### Electronic service reports

- All of the data that must be recorded by field techs during a service call can be captured electronically in the Axiom and saved to a USB memory stick.
- Data includes:
  - a list of sensor serial numbers before and after the service trip.
  - audit log.
  - datalogger program version.

##### Datalogger performance verification:

- Graph sensor data and diagnostic parameters.
- Battery load tests; view voltage before and after (requires dummy load on battery).
- View current sensor readings.
- View historical data.

##### Rain count

- Rain GUI allows users to quickly test tipping buckets each year by viewing manual tip measurement in real-time and quickly removing the test tips from memory.
- User can select a rain reset date if desired and set the action on power failure (rain total can be set to return to previous values or reset to zero).

##### One-touch current conditions

- Users can customize the Current Conditions screen so that all of the sensors' real time data are viewable with one button press.
- This is extremely handy when validating wind quadrants or simply validating each sensor as it is replaced.
- The electronic service report automatically captures the current conditions at the start (pre swap) and after (post swap).



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## CARACTERÍSTICAS

- Data transfer via USB memory stick**
- Data, Programs and Firmware updates can be transferred to and from datalogger via a conventional USB memory stick.
  - Historical data download is fast: approximately 5 seconds for 1 year of data including logger and telemetry records).
  - Data downloaded in universal .CSV (comma-separated values) format; importable into Excel and many other software.

## GOES Transmitter

- Operating supply voltage:**
- 10.8 VDC to 16 VDC
- Supported baud rates:**
- 100 bps **EUMETSAT SRD**
  - 300 bps
  - 1,200 bps
- Supply current (at 12 VDC):**
- Idle: <3 mA
  - Transmitting: <2.6 A
  - GPS on: <50 mA
- Output power:**
- |                         |                     |
|-------------------------|---------------------|
| <b>GOES</b>             | <b>METEOSAT</b>     |
| • 300 bps: 6.3 W max    | • 100 bps: 14 W max |
| • 1,200 bps: 6.34 W max |                     |
- GOES antenna:**
- Power: 6.3 W max
  - Polarization: Right hand circular
  - Connector: N-Type Female
- Recommended antenna:**
- FTS Eon2 CS2 GOES Antenna Option
- Frequency range:**
- **GOES:** 401.701 MHz - 402.09850 MHz
  - **METEOSAT:** 402.0355 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: 3KHz
  - 300 bps: 750 Hz
  - 1,200 bps: 1.5 KHz
- Time-keeping:**
- < 100 microseconds initial accuracy, automatically synchronized to GPS
  - < 10ms per day drift without GPS
  - 28 day operation without GPS signal (after initial GPS synchronization)
- Temperature range:**
- Operating: -40°C to +60°C
  - Storage: -55°C to +70°C
- GPS antenna:**
- Type: 3 V active
  - Connector: SMA female

## Environmental Protection

- Operational moisture range:**
- 0-100% RH, condensing
- Corrosion resistance:**
- Components made of a combination of stainless steel, anodized or powder coated aluminum provide excellent corrosion resistance.
  - Connectors are bayonet-style and are corrosion-resistant.
  - Many FTS stations are deployed in coastal, desert and arctic locations.
- Operational temperature range:**
- Datalogger operation: -40°C to +60°C
  - Storage: -55°C to +70°C
- UV resistance:**
- Excellent, as minimal plastics are used.
- Environmental sealing:**
- Waterproof to IP67, O-ring sealed, cast aluminum & stainless steel hardware
- Lightning protection:**
- Three-stage protection circuit offers superior protection:
    - Stage 1: transient earth clamp.
    - Stage 2: series impedance.
    - Stage 3: high speed shunt diode.
- Electronics protection:**
- Core electronics sealed from moisture and dust in waterproof housings, completely isolated from environment and user
  - All non-telemetry data exchange (firmware upgrades, report downloads) performed through waterproof USB port.

## Power Consumption

- Datalogger current:**
- 2-3mA at idle.
  - 12mA average while collecting data.
  - 60mA while display backlight on.
  - 2.6A while transmitting.
  - <50 mA while GPS on.
- Power status:**
- Datalogger measures and logs solar panel voltage, solar panel current, battery voltage and battery current.
  - Status indicators (always visible) allow techs to identify if the system is charging correctly or not.
  - This data is also part of the Current Conditions screen call and are captured in the electronic service report.



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