



# M200 Fleet Modem

## Data Communication Terminal

The M200 data communication terminal is a compact, satellite-based communications device designed to send and receive short binary or text messages between a central location and remote or mobile assets.

The M200 provides fast, secure, two-way data communications using a spread spectrum data transmission technology via proven and reliable geo-synchronous L-band satellites.

This low-cost device features an integrated antenna, L-band transceiver, and GPS receiver. It is powered by an available external power source or by a number of battery technologies. The M200's low power consumption is ideal for extended periods of operation in remote environments. It uses high-capacity, non-rechargeable lithium batteries or rechargeable batteries connected to any available power source.

The M200 is easily installed on any asset, including heavy equipment, compressors, generators, trucks, trailers, marine assets (boats, buoys, barges), and pipelines. It can also be used for environmental monitoring.

The M200 communicates data concerning the status and operation of a variety of remote and mobile assets. Environmentally sealed and fully tested, it will withstand shock, vibration, high-pressure wash, and other harsh environmental conditions.

### FEATURES

- Smallest, most powerful low-cost satellite communication product available
- Fast, secure two-way data communications
- Sends/receives messages between a central location and remote or mobile locations
- Secure spread spectrum data transmission
- Constructed with integrated antenna, L-band transceiver, GPS receiver
- External power source or battery-powered; low power consumption
- Remotely configurable
- Built-in applications such as Geo-fencing and service hour metering
- Flexible installation options
- Ideal for remote environments - environmentally sealed and fully tested
- Little or no maintenance costs

### PHYSICAL

- Dimensions: 6" x 4" x 1.5" (15.24 cm x 10.16 cm x 3.81 cm)
- Weight: <1 lb.
- Fully integrated omni-directional transmit, receive, and GPS antennas
- Rugged: manufactured from scratch resistant, non flammable, non galvanizing, nonporous materials
- FCC Part 15 class B and FCC 25.202(f), ETSI TBR26, Industry Canada approved

### Sensor Interface

- 1 RS-232 data port, 1 RS-485 port
- 4 Configurable discrete latching I/Os
- 2 Analog inputs (0V - 3V)
- 2 Dedicated analog inputs to report M200 temperature and battery voltage



#### **ENVIRONMENTAL**

- Operational temperature range: -40oF to +185oF (-40oC to +85oC)
- Operational humidity: Up to 95% no condensing at 100.4oF (38oC)
- Environmentally tested for:
  - Temperature
  - Humidity
  - Salt spray
  - Splash/immersion
  - Hot pressure wash
  - Dust and sand bombardment
  - Vibration and shock
  - ESD
  - EMC/EMI to applicable SAE J1455 standards

#### **POWER REQUIREMENTS**

- Battery input voltage: 4V - 9V DC
- Input voltage range for built-in battery charger: 12V - 32V DC
- Idle power consumption: <2mW
- Transmit power consumption: <10W
- Receive power consumption: <725mW
- GPS power consumption: <725mW
- Processing mode power consumption: <300mW
- Typical power consumption:
  - 190 mW (3 GPS reports/day)
- Battery- or external-powered
- Battery types:
  - Lithium - >3.5-year lifetime under typical operation
  - Lead acid - >60-day lifetime under typical operation

#### **COMMUNICATIONS Messaging**

- Pre-configured or remotely configured messaging schedules and parameters
- Three types of messaging:
  - Pre-scheduled (8 stages) – messaging based on user-defined parameters
  - Event-triggered - messaging based on exceeding user-defined limits or external device triggering
  - Polling - 2-way messaging based on a request for status
- Acknowledgment of all messages
- Real-time communication: typical message latency <45 seconds)
- Forward message to the terminal:
  - Up to 38 bytes at 1200 bps
  - Frequency: 1525 - 1559 MHz
- Return message from the terminal:
  - 11 bytes at 350 bps
  - Frequency: 1626.6 - 1660.5 MHz

#### **Network**

- Proven, reliable L-band geosynchronous satellite
- Secure data transmission - a spread spectrum technology
- 24 hour per day coverage
- Around-the-clock network operations
- Full system redundancy
- Connectivity:
  - Internet
  - Leased line or dial-up
  - Frame relay