TRAXLOGIX™

GPS/GSM/GPRS tracking unit for parcel identification, follow-up and tracking

FEATURES

- ○ Quad-band GSM/GPRS engine
- ○ Built-in GPS and GPRS antenna
- ○ SuperSense GPS sensitivity
- ○ Assisted GPS ready
- ○ Ultra-low power consumption
- ○ Multi-polygon security area
- ○ High performance communication Protocol
- ○ Multiple cell-ID geofencing
- ○ Field configurable
- ○ Compact design
- ○ No-wire installation
- ○ Splashproof after installation
- ○ No external power required
- ○ Maintenance-free
- ○ RoHS-compliant

APPLICATIONS

The TRX-200 is specially designed for identification of parcels and valuables, follow-up and tracking.

- ○ Real-time parcel tracking
- ○ Parcel itinerary monitoring
- ○ JIT (just in time) delivery control
- ○ Monitoring of temperature-sensitive goods
- ○ Management of lost parcels
- ○ and much more

DESCRIPTION

The **TRAXLOGIX** TRX-200 tracking base Unit provide cost-effective and high-performance passive protection against theft and loss and allow a full featured monitoring of a wide variety of parcels. The product is designed as a stand alone unit, energy is either supplied using a non rechargeable lithium/thionyl chloride battery pack allowing a battery life expectancy for up to one month or an li-ion rechargeable battery pack solution.The product enclosure contain a GPS receiver, a GSM/GPRS engine and a microcontroller. Installation requires no tools or special skills and takes only a few minutes. GSM and GPS antennas are fully integrated into the enclosure, reducing installation time even more. Using a full featured duplex communication protocol, the product become a versatile communicative platform, allowing field setup programming, geofencing configuration, and real- time parcel tracking. The GPS time to first fix can be greatly reduced by using the assisted GPS commands.

All **TRAXLOGIX** tracking products are designed to communicate in duplex with a centralized dedicated server through a highly efficient communication protocol.

HOW IT WORK

The **TRAXLOGIX** TRX-200 tracking base unit provides a full-featured solution to parcel tracking. It uses both GPS and GSM localization technologies. As the product can stay connected to the GSM network continuously, it allows real-time monitoring of multiple parameters. The geographical position of a parcel can be recorded at predefined intervals. The GPS log-memory content in the battery pack can either be remotely downloaded at any time using a GPRS connection or read through a PC USB port during the battery charging sequence should a rechargeable battery pack be used. Depending on the capacity of the embedded memory, up to 1,000 GPS positions can be recorded. A temperature sensor is included in the product enclosure; with this sensor, complete monitoring can either be recorded in the log memory or read in real time at regular intervals in order to check whether the temperature-storage conditions of the goods are being respected during transport.

PRODUCT INSTALLATION

The **TRAXLOGIX** TRX-200 tracking base unit provides a true technical advance over common hardwired systems. Installation can be summarized in four basic steps.
➲**Unpack**
➲**Activate**
➲**Affix**
➲**Register**
After the user sticks the battery pack on the tracking base unit, the product will automatically start, and the GSM engine will connect to the network. In order to activate the product in the server database, the user needs to dial a phone number provided with the instruction manual. The operator will introduce the required vehicle and owner details. The server then will activate the product.

GPS RECEIVER

Information on the geographic position of the vehicle is provided by a highly sensitive, 16-channel GPS receiver coupled with a passive ceramic patch antenna. SuperSense technology allows enhanced indoor tracking, thanks to the high sensitivity of the receiver. Time to first fix can also be seriously reduced if needed. In this case, an approximate position is first estimated using geofencing through the cell-IDs of the GSM network. The data are then sent to a dedicated server. A data file is formatted and resent to the GPS receiver of the product.

LED INDICATION

The **TRAXLOGIX** TRX-200 tracking base unit provides a visual indication of the product's status and battery condition through a tri-color LED.

FIELD CONFIGURATION

The **TRAXLOGIX** TRX-200 tracking base unit can be configured and reconfigured by the communication server after the product has been activated.

GSM-GPRS ENGINE

The **TRAXLOGIX** TRX-200 tracking base unit contains a quad-band GSM/GPRS engine covering the following frequencies : 850, 900, 1800, and 1900 Mhz. The module has been approved by the FTA, GCF, P TCRB and the FCC. Communication can be achieved using GPRS class 10, SMS, and MMS data transfer. An internal SIM card socket is included in the product enclosure.

MICROCONTROLLER

The **TRAXLOGIX** TRX-200 tracking base unit uses a 64-pin high-performance, 8-bit flash microcontroller. Program memory space can be increased for additional software source code if required for custom applications.

MULTI-POLYGON AREA

The multi-polygon area function provides the ability to check whether the vehicle is in a pre-defined geographical area. Up to 64 areas, each containing up to 4 position points, can be stored in the nonvolatile memory of the product. The position of the vehicle can be ascertained using GPS or GSM Cell ID. If the position is located outside one of the predefined areas, a text message is sent to the communication server, allowing further action to be taken. Every time the product is awakened, the analysis will be performed. The software embedded in the microcontroller will automatically calculate the position.

BATTERY MONITORING

The battery's condition is permanently monitored by the product. When the battery pack needs to be replaced, a text message is sent to the communication server, allowing further action to be taken.

VIBRATION/SHOCK SENSOR

The **TRAXLOGIX** TRX-200 tracking base unit includes a vibration/shock sensor. If the product will not be used and will not move for a long period of time, the communication server can disable it. When the vehicle is physically moved, the sensor will wake up the product and send an alert sms message to the communication server, allowing further action to be taken.

MEMORY LOG

The **TRAXLOGIX** TRX-200 tracking base unit can be configured to record the following parameters in the log memory: GPS data (latitude, north/south indicator, longitude, east/west indicator, signal quality, date, time, satellites used, altitude, speed, HDOP), GSM data (cell-ID, date, time), and temperature parameters. Please consult the datasheets of the available battery packs for memory capacity.

MECHANICAL

11.85

Dia 66.50
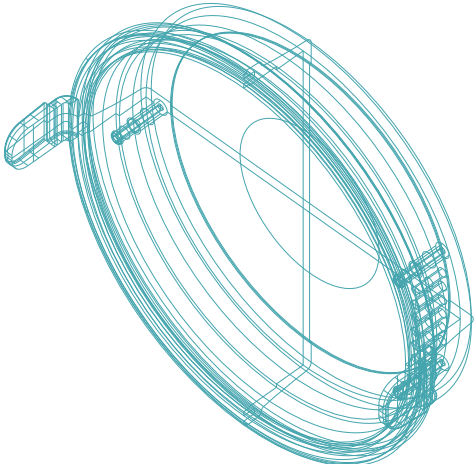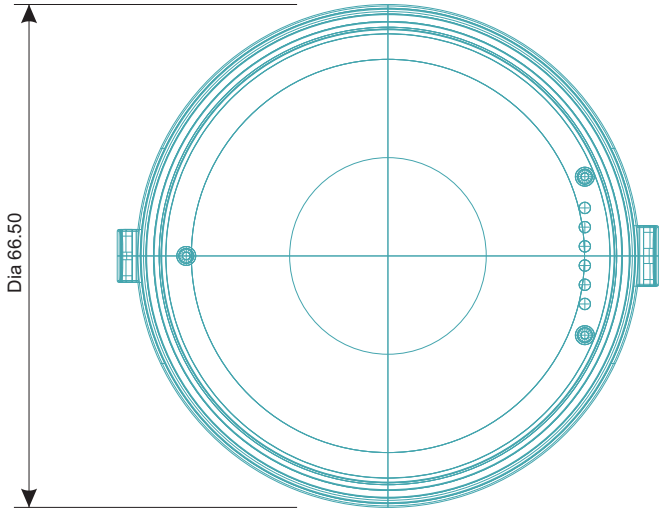
All dimensions are in millimeters

ELECTRICAL CHARACTERISTICS

CHARACTERISTICS	VALUE	UNIT
Nominal Supply Voltage:	3.6	Volt
Power consumption during Communication:	2200 max (During Tx Burst)	mA
Power consumption in Sleep Mode:	65	µA
Power consumption in Standby Mode	4.7 (Connected to GSM network)	mA

ENVIRONMENTAL CHARACTERISTICS

CHARACTERISTICS	VALUE	UNIT
Storage temperature range:	-20 to +85	°C
Normal operating temperature range:	-15 to +75 (see NOTE1)	°C
Extended operating temperature range:	-20 to +80 (see NOTE2)	°C
Long damp heat operating conditions:	Tested at +60°C,95% RH,500 hours	
Short damp heat storage & transportation conditions:	Tested at +40°C,95% RH,90 hours	

NOTE1: Inside this normal range, the GSM engine inside the Product guarantee full compliance with GSM standards. Certification tests reports applies to the GSM engine operating in this interval.
NOTE 2: Inside this extended range, the operability is guaranteed. However, there is not a full certification test report in this range. Practically, TRAXLOGIX performs non regression tests in this range in order to ensure that the GSM engine inside the Product can attach to the network and handle a data transfer. Some performances may remain under the normal GSM expectation (sensitivity reception level 1 or 2 dB lower, TX emitting power slightly weaker).

TRAXLOGIX™
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