

FMB209 General description

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FMB209 is a tracking terminal with GNSS and GSM connectivity, which is able to collect device coordinates and transfer them via GSM network to a server. This device is perfectly suitable for applications, which require the location acquirement of remote objects.



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Package contents

The FMB209 device is supplied to the customer in a cardboard box containing all the equipment that is necessary for operation. The package contains:

- FMB209 device with case and wires;
- USB cable (optional);
- Integrated Li-ion battery 3.75V, 800mAh for FMB209 device;

Basic characteristics

GSM / GPRS / GNSS features:

- Teltonika [TM2500](#) quad band module (GSM 850 / 900 / 1800 / 1900 MHz);
- GPRS Multi-Slot class 12 (Up to 85,6 kbps);
- SMS (text, data);
- Integrated GNSS receiver;
- Up to -162 dBm GNSS receiver sensitivity.
- GNSS Module - AG3335MN;

Hardware features:

- 128 MB internal Flash memory (422 400 Records);
- Built-in movement sensor;
- Integrated Li-ion battery 3.75V, 800mAh for FMB209 device;
- Internal High Gain GSM antenna;
- Internal High Gain GNSS antenna;

The Interface features:

- Power supply: 10 ... 30V;
- USB port;
- 2 digital inputs;
- 2 Analog/Digital inputs;
- 2 open collector digital outputs (connecting external relays, LED's, buzzers, Panic buttons, etc.);
- RS232 connection
- 2 LED's indicating device status.

Special features:

- High Quality track even in high density urban canyon;
- Ready for harsh environment;
- Any element event triggers (external sensor, input, speed, temperature, etc.);
- Highly configurable data acquisition and sending;
- Multiple Geo-fence areas;
- Sleep mode;
- Deep sleep mode;
- Configurable scenarios available;
- Real-time process monitoring;
- Authorized number list for remote access;
- Firmware update over GPRS or USB port;
- Configuration update over GPRS, SMS or USB port;
- TCP/IP or UDP/IP protocol support;
- >500000 record storing;
- Overvoltage protection.

| Description | Voltage | Duration |
|---------------------------------------|--------------|-----------|
| Normal operation | +10 ... 30 V | Unlimited |
| Protection turns on, device turns off | 34 V | Unlimited |
| Maximum voltage | < 70 V | Unlimited |
| Maximum voltage impulse | 120 V | 10 ms |

Technical features

| Part name | Physical specification |
|-----------------------|------------------------|
| Navigation indication | LED |
| Modem indication | LED |
| USB | Mini USB socket |
| GNSS | Internal GNSS antenna |

GSM

Internal GSM
antenna

Technical details

Power supply 10 ... 30V DC
1.5 W max. device consumption
Energy consumption at 12 V:

GPRS: average 59.13 mA
r.m.s;
Nominal: average 26.21
mA;
GPS Sleep: average 10.55
mA;
Online Sleep: average error
mA;
Deep Sleep: average 7.02
mA;
Ultra Sleep: average 4.55
mA

FMB20X Battery charge current

max. 207 mA

Operating temperature (without battery) -40..+85 °C

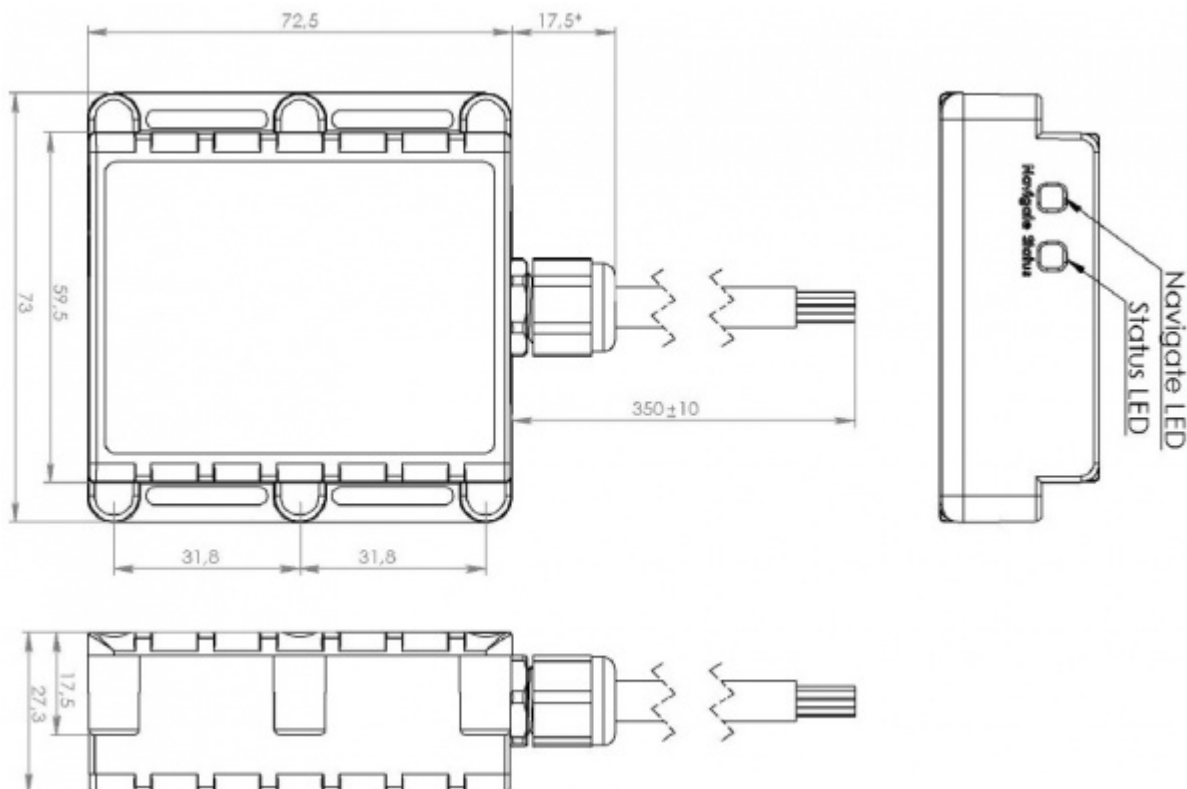
Storage temperature (without battery) -40..+85 °C

Storage relative humidity 5..95% (no condensation)

Device + case + battery weight

With 400 mAh bat. - 170 g
With 1800 mAh bat. - 210 g

Dimension drawing:




Technical information about internal battery

| Internal back-up battery | Battery voltage (V) | Nominal capacity (mAh) | Power (Wh) | Charging temperature (°C) |
|-----------------------------|---------------------|------------------------|------------|---------------------------|
| Li-ion rechargeable battery | 3.75~3.90 | 800 | 2.96 | 0 - 50 |

Batteries are covered by 6 month [warranty](#) support.

-  CAUTION: RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

Battery should not be disposed of into general household waste.

-  Bring damaged or worn-out batteries to your local recycling center or dispose them into a battery recycle bin commonly found in supermarkets.

Electrical characteristics

| Characteristic description | Value | | | |
|--|-------|-------|------|------|
| | Min. | Typ. | Max. | Unit |
| Supply Voltage: | | | | |
| Supply Voltage (Recommended Operating Conditions) | 10 | | 30 | V |
| Digital Output (Open Drain grade): | | | | |
| Drain current (Digital Output OFF) | | | 120 | μA |
| Drain current (Digital Output ON, Recommended Operating Conditions) | 0.1 | | 0.5 | A |
| Static Drain-Source resistance (Digital Output ON) | | | 120 | mΩ |
| Digital Input: | | | | |
| Input resistance (DIN1) | | 59.9 | | kΩ |
| Input resistance (DIN2, DIN3) | | 67.5 | | kΩ |
| Input voltage (Recommended Operating Conditions) | 0 | | 60 | V |
| Input Voltage threshold (DIN1) | 7.5 | 7.7 | 8 | V |
| Input Voltage threshold (DIN2, DIN3) | 2.5 | 2.7 | 3 | V |
| Analog Input: | | | | |
| Input voltage (Recommended Operating Conditions), Range 1 | 0 | | 10 | V |
| Input resistance, Range 1 | | 120 | | kΩ |
| Input voltage (Recommended Operating Conditions), Range 2 | 0 | | 30 | V |
| Input resistance, Range 2 | | 146.7 | | kΩ |
| Output inner resistance | 450 | | 600 | mΩ |
| Output current ($U_{out} > 3.0$ V) | | | 75 | mA |
| Short circuit current ($U_{out} = 0$) | | | 75 | mA |

 **Analog Input error margin can increase if temperature varies.**