FMB204 General description

FMB204 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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Contents

Package contents

The FMB204 device is supplied to the customer in a cardboard box containing all the equipment that is necessary for operation. The package contains:

- FMB204 device with case and wires;
- USB cable (optional);
- Integrated Li-ion battery 3.75V, 1800mAh for FMB204 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 -165 dBm GNSS receiver sensitivity.

Hardware features:

- 128 MB internal Flash memory (422 400 Records);
- Built-in movement sensor;
- Integrated Li-ion battery 3.75V, 1800mAh for FMB204 device;
- Internal High Gain GSM antenna;
- Internal High Gain GNSS antenna;

The Interface features:

- Power supply: 6 ... 30V;
- USB port;
- 3 digital inputs;
- 1 analog input;
- 2 open collector digital outputs (connecting external relays, LED's, buzzers etc.);
- 1Wire® temperature sensor;
- 1Wire® iButton;
- 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	+6 ... +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 6 … 30V DC 1.5 W max. device consumption Energy consumption at 12 V:	GPRS: average 40.1 mA r.m.s; Nominal: average 28.3 mA; GPS Sleep: average 15.7 mA; Online Sleep: average 4.2 mA; Deep Sleep: average 3.9 mA; Ultra Sleep: average 2.1 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:
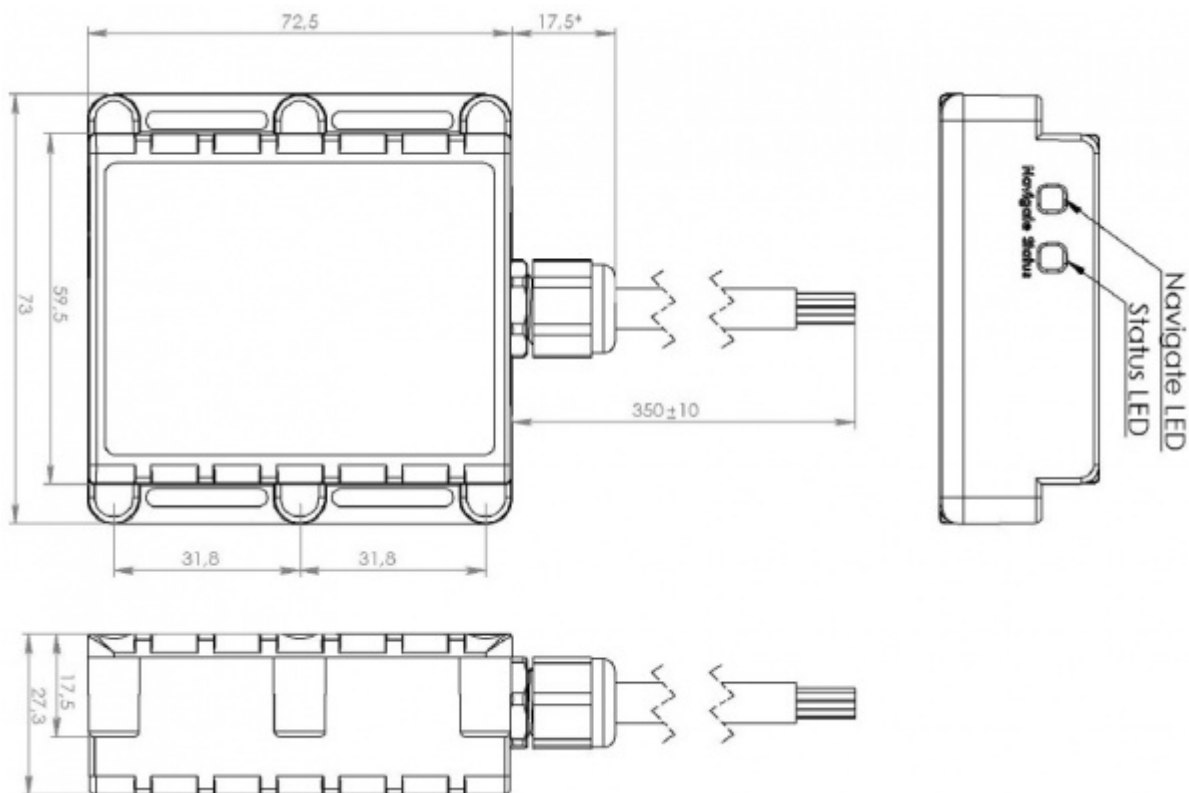
Technical information about internal battery

Internal back-up battery	Battery voltage (V)	Nominal capacity (mAh)	Power (Wh)	Charging temperature (°C)
Li-ion rechargeable battery	3.75⎵3.90	1800	6.75 - 7.02	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)	6		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)	4	4	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 Supply Voltage 1-Wire:				
Supply voltage		3.8		V
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.

Absolute maximum ratings

Characteristic description	Value			
	Min.	Typ.	Max.	Unit
Supply Voltage (Absolute Maximum Ratings)	-32		+32	V
Drain-Source clamp threshold voltage (Absolute Maximum Ratings), (I_{drain} = 2 mA)			+36	V
Digital Input Voltage (Absolute Maximum Ratings)	-32		+32	V
Analog Input Voltage (Absolute Maximum Ratings)	-32		+32	V