

FM3612 General description

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FM3612 is a terminal with GPS/GLONASS and GSM/3G connectivity with backup battery, which is able to collect device coordinates and other useful data and transfer them via the GSM/3G network. This device is perfectly suitable for applications where location acquirement of remote objects is needed. It is important to mention that FM3612 has additional inputs and outputs, which let you control and monitor other devices on remote objects. FM3612 also has a USB port for device status log output and configuration.

☒ Monitorable basic vehicle parameters depend on vehicle mark and model.

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Package contents

The FM3612 device is supplied to the customer in a cardboard box containing all the equipment that is necessary for operation. The package contains:

- FM3612 device;
- Input and output power supply cable with a 2x6 connection pins;
- USB cable;
- Li-Po battery 3.7V, 170mAh.

Basic characteristics

GSM / GPRS / 3G features:

- UMTS/HSPA+, GSM/GPRS/EDGE module:
 - UC20-G UMTS/HSPA+ bands 800/850/900/1900/2100MHz
 - UC20-G GSM/GPRS/EDGE bands 850/900/1800/1900MHz
- HSUPA rate up to 5.76 Mbps, HSDPA rates up to 14,4 Mbps;
- UMTS Uplink/Downlink up to 384 kbps;
- EDGE Uplink/Downlink up to 236.8 kbps;
- GPRS and EDGE class 12;
- SMS (text, data).

Hardware features:

- Cortex®-M3 processor;
- 8 Mbit internal Flash memory;
- Built-in accelerometer sensor.

Interface features:

- Power supply: 10 ÷ 30V;
- 2 digital inputs;
- 2 analog/digital input;
- 2 open collector Digital output;
- 1 Wire interface:
 - Temperature sensor
 - iButton
- Internal backup battery;
- 2 Status LEDs:
 - Navigate
 - Status
- Internal USB port;
- Internal GSM/GPRS/3G antenna;
- Internal GNSS antenna;
- Interface for LVCAN;

GNSS features:

- 33 channel GNSS receiver
- -165 dBm sensitivity
- Hot start <1s
- Warm Start < 25s
- Cold start < 35s
- NMEA-183 protocol
- GPS, GLONASS, GALILEO, BEIDOU, SBAS, QZSS, DGPS
- Accuracy < 3m

Special features:

- 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;
- Up to 3854 records storing;
- Radio frequency jamming detection.
- Records exporting using USB;
- Offline working mode;

Technical features

Part name	Physical specification
System LED	LED
Navigation LED	LED
Socket 2x6	Tyco Micro MATE-N-LOK™ 4-794628-0 or similar
USB	Micro USB socket

Technical details

2 W max.	GPRS: average 150 mA rms
Energy consumption at 12 V (Power supply 10...30 V DC)	Nominal: average 50 mA rms GPS sleep: average 18 mA Deep Sleep: average 5 mA
Battery charge current	max. 100 mA
Rated current	max. 250 mA
Operating temperature (without battery)	-40..+85 °C
Storage temperature (without battery)	-40..+85 °C
Storage relative humidity	5..95% (no condensation)
Internal fuse	3A, 125V

Dimension drawing:



Technical information about internal battery

Internal back-up battery	Battery voltage (V)	Nominal Capacity (mAh)	Power (Wh)	Charge temperature (°C)	Discharge temperature (°C)	Storage temperature (°C)
Li-ion rechargeable battery	3.75□3.90	170	0.64 - 0.66	0 to +45	-20 to +60	-20 to +45 for 1 month -20 to +35 for 6 months

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)			300	mΩ
Digital Input:				
Input resistance (DIN1)	15			kΩ
Input resistance (DIN2, DIN3)	20			kΩ
Input resistance (DIN4)	120			kΩ
Input voltage (Recommended Operating Conditions)	0		Supply voltage	V
Input Voltage threshold (DIN1)		7.5		V
Input Voltage threshold (DIN2, DIN3, DIN4)		2.5		V
Analog Input:				
Input voltage (Recommended Operating Conditions), Range 1	0		10	V
Input resistance, Range 1		120		kΩ
Measurement error		0.47		%
Additional error		±17.3		mV
Input Voltage (Recommended Operating Conditions), Range 2	0		30	V
Input resistance, Range 2		150		kΩ
Measurement error		1.01		%
Additional error		±139	0	mV

- ✖ Analog Input error margin can increase if temperature varies.