

# FM-Basic

(Currently this device is under development)

## Data Sheet v1.0

2016-11-28



- Small size: 64.5L x 61W x 22H (mm)
- Low power consumption
- Internal antennas

### Physical properties

Dimensions	64,5L x 61W x 22H (mm)
Connector	12 pin
Indication	3 LEDs
Housing	Plastic

### Product family

- FM-Basic
- FM-Plug4 / 4+
- FM-Eco4 / 4+
- FM-Eco4 light / light+
- FM-Eco4 light 3G / light+ 3G
- FM-Pro4 / Pro4 3G
- FM-Tco4 LCV / Tco4 LCV 3G
- FM-Tco4 HCV / Tco4 HCV 3G

### Contacts

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### Electrical specification

Power supply	12/24 V DC (range: 10 - 32 V DC)
Absolute maximum ratings	50 V @ 60 s 72 V @ 0,1 s

### <sup>1</sup>Power consumption @ 12 V

Idle mode, mA	33
Sending records, mA	300
Deep sleep mode, mA	11

### Storage

Internal storage	4 MB (min. 30000 records)
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### Protections

Short circuit protection  
Reverse polarity protection  
Unit provides internal protection F2 (1 A slow-blow 63 V fuse)

### I/O Characteristics

4 x DIN	Digital inputs
Threshold	4V
2 x AIN	Analog inputs
Range	0 - 30 V
Resolution	12 bit
2 x DOUT	Digital outputs
Max. load	Open collector 32 V, 1 A
Mini USB	Configuration interface

### Environmental data, reliability

Storage temperature, °C	-40 ~ +65
Operating temperature, °C	-30 ~ +60

### Certification

E mark	✓
CE	✓

### Telecommunication, Positioning

GPS\GLONASS module	Ublox EVA-M8M
Internal	
72 channel	
Sensitivity	-163 dBm (GPS) -164 dBm (GLONASS&GPS)
Cold start	30 s
Aided start	3 s
GPS antenna	Internal
Frequency	1575.0 ± 3 MHz
GSM modem	Quectel M95
Internal	
850/900/1800/1900 MHz @ GSM	
GSM antenna	Internal, Quad band
Accelerometer	3-axis; 2g/4g/8g/16g

### Peripherals

Available on digital outputs  
1 x Buzzer\nLED

<sup>1</sup>Firmware dependent; given values are valid when there are no peripheral devices attached.

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### Pin out (view from cable wires):

<b>1</b>	<b>3</b>	<b>5</b>	<b>7</b>	<b>9</b>	<b>11</b>
<b>2</b>	<b>4</b>	<b>6</b>	<b>8</b>	<b>10</b>	<b>12</b>

Pin no	Wire color	Description
1	Black	GND
2	Red	Power supply 12/24 V, range: 10-32 V
3	Green/yellow	Not used
4	Red/white	Not used
5	Orange	DOUT2
6	Purple	DOUT1
7	Green	AIN2
8	Gray	AIN1
9	Yellow	DIN4
10	White	DIN3
11	Blue	DIN2
12	Pink	DIN1

### Physical properties

Dimensions 64,5L x 61W  
x 22H (mm)  
Connector 12 pin  
Indication 3 LEDs  
Housing Plastic

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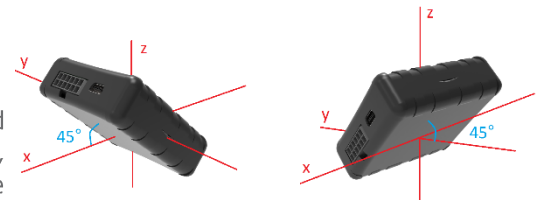
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### Explanations

SIM card can only be inserted after opening the case. Deep sleep mode - Power saving mode when GNSS and GSM modules and all peripheral devices are disabled, except DINs, AINs and DOUTs. Device wake up on state change of any Digital Input (DIN), Analog Input (AIN) or movement sensor.

Device can be installed within 45° angle in any axis, but its top surface must be facing up. Device should be installed tightly, it should not move or shake.



### Warning!

All internal components must be replaced only by manufacturer! Any self-willed attempt to repair or change any components will void any warranty.

Device must be installed in service access area (e.g. under dashboard, behind fuse box).



This crossed-out wheellie bin symbol means that waste equipment should not be disposed of with your other household waste. The product must be taken to separate collection points at the product's end-of life.

### Document application

Given parameter values and various characteristics contained within this document applies only to the most recent device hardware version.

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