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MB-GPS-1

GPS location transducer

5 902431 672533

Do not dispose of this device in the trash along with other waste!
According to the Law on Waste, electro coming from households free of charge and can give any amount to up to that end point of collection, as well as to store the occasion of the purchase of new equipment (in accordance with the principle of old-for-new, regardless of brand). Electro thrown in the trash or abandoned in nature, pose a threat to the environment and human health.

Purpose

Based on the received signal, the MB-GPS-1 transmitter provides current data for its location:

» geographical coordinates (longitude/latitude);
» date (year/month/day);
» time (hour/minutes/seconds).

Functioning

The device is equipped with the location module of the GPS (Global Positioning System) and the GLONASS system (Russian: ГЛОНАСС, Глобальная навигационная спутниковая система, Globalnaja nawigacionnaja sputnikowaja sistiema).
The device, based on one of these signals, provides current data for its location: geographical coordinates (length and width), date and time.
If the satellite signal is lost, the device continues the countdown in the internal clock. When the satellite signal is re-established, the internal clock time is synchronized to the received value.

This action allows devices to synchronise its time with GPS/ GLONASS master clocks and set the clock parameters precisely, eliminating the need for manual location input.

The MB-GPS-1 transmitter cannot be used in navigation systems.

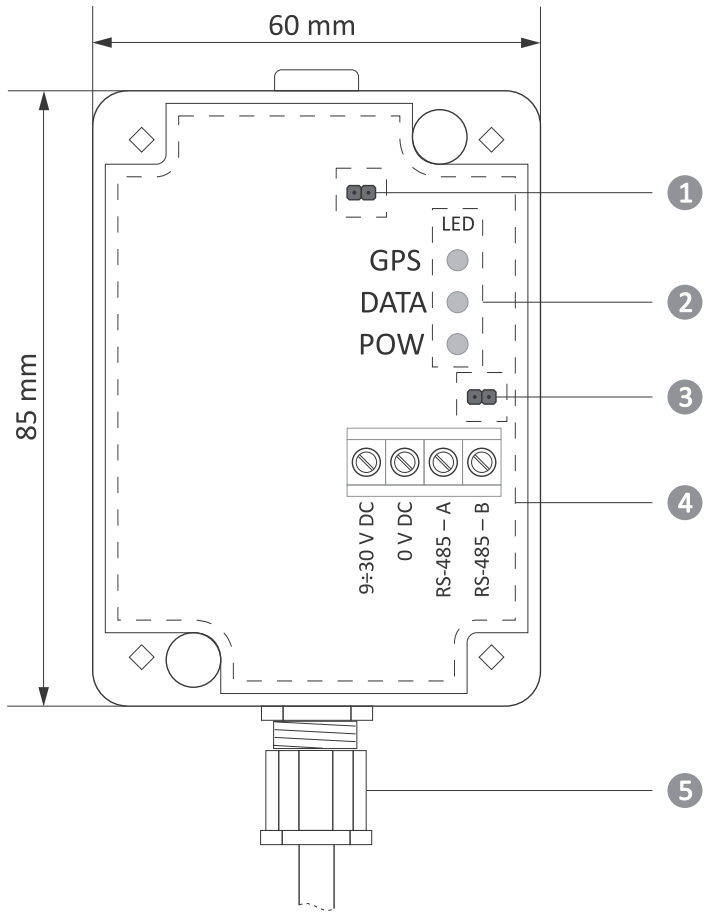
LED description

GPS	shine	GPS/GLONASS signal correctly received
	don’t shine	no GPS/GLONASS signal
DATA	flash	communication with the module
	don’t shine	no communication
POW	shine	power supply
	don’t shine	no power supply

All elements of the device’s visible after removing the top cover!

Transducer design

Transducer in special, compact-sized plastic box, connected through a PG7 cable gland with circular cables of any length, maximum diameter ø7. Box with a special sealing flange, fixed to the ground with 2 screws, closed with a cover with silicone gasket using 4 screws.



1. factory reset jumper
2. indicator leds
3. 120 Ω terminator jumper
4. internal sealing collar
5. PG7 gland

Mounting

1. Unscrew the screws securing the cover.
2. Pull the cable through the cable gland and screw it firmly in place so that the inner seal is tight against the cable.
3. If necessary, fix the module to the floor at the target location.
4. Connect the power supply leads to the 24 V and GND terminals.
5. Connect the A-B signal output (RS-485 port) to the Master device output.
6. Configure the connection – set the communication parameters (use jumpers if necessary to change them).
7. Screw the cover to the case.

Resetting to factory settings

To restore the factory settings:

1. Switch off the power to the device.
2. Replace the factory settings restore jumper.
3. Switch on the power supply of the device.
4. Remove the factory settings restore jumper.

Leaving the factory reset jumper in place will reset the settings every time the power is switched on!

Technical data

power supply	9÷30 V DC
maximum current consumption	40 mA
port	RS-485
communication protocole	Modbus RTU
working mode	Slave
communication parameters	
baud rate (adjustable)	1200÷115200 bit/s (9600*)
data bits	8
stop bits	1/1.5/2*
parity bits	EVEN/ODD/NONE*
address	1*÷247
power consumption	0.3 W
working temperature	-40÷70°C
terminal	2.5 mm² screw terminals
tightening torque	0.4 Nm
dimensions	60×85×35 mm)
mounting	surface
ingress protection	IP65

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* factory settings

Modbus registers

R only read
R/W read and write
R/PW read and protected write
(recording only possible in configuration mode)

Registers are read with 0x03 commands and written with 0x06 command.

Address	Mode	Command description
0x00	R	1 – GPS/GLONASS signal correctly received 0 – no signal
0x01	R	Time (seconds) since loss of GPS/GLONASS signal (LSW) (counts only if satellite signal has been acquired at least once)
0x02	R	Time (seconds) since loss of GPS/GLONASS signal (MSW) (counts only if satellite signal has been acquired at least once)
...	...	...
0x10	R	Current UTC time – hours (if no satellite signal, calculated from internal RTC clock)
0x11	R	Current UTC time – minutes (if no satellite signal, calculated from internal RTC clock)
0x12	R	Current UTC time – seconds (if no satellite signal, calculated from internal RTC clock)

Address	Mode	Command description
0x20	R	Current date – days (if no satellite signal, calculated from internal RTC clock)
0x21	R	Current date – months (if no satellite signal, calculated from internal RTC clock)
0x22	R	Current date – years (if no satellite signal, calculated from internal RTC clock)
0x23	R	Current date – day of the week [1-7] (if no satellite signal, calculated from internal RTC clock)
...	...	...
0x30	R	Last time received from GPS/GLONASS – hours (doesn't change if there is no satellite signal)
0x31	R	Last time received from GPS/GLONASS – minutes (doesn't change if there is no satellite signal)
0x32	R	Last time received from GPS/GLONASS – seconds (doesn't change if there is no satellite signal)
...	...	...
0x40	R	Last date received from GPS/GLONASS – days (does not change if no satellite signal)
0x41	R	Last date received from GPS/GLONASS – months (does not change if no satellite signal)
0x42	R	Last date received from GPS/GLONASS – years (does not change if no satellite signal)

Address	Mode	Command description
0x43	R	Last date received from GPS/GLONASS – day (does not change if no satellite signal)
...	...	...
0x50	R	Latitude [‚N' or ‚S']
0x51	R	Latitude – degrees
0x52	R	Latitude – minutes
0x53	R	Latitude – tenths of minutes (DDM format)
0x54	R	Latitude – decimal degrees [DD] (Float [LSW])
0x55	R	Latitude – decimal degrees [DD] (Float [MSW])
...	...	...
0x60	R	Longitude [‚E' or ‚W']
0x61	R	Longitude – degrees
0x62	R	Longitude – minutes
0x63	R	Longitude – tenths of minutes (DDM format)
0x64	R	Longitude – decimal degrees [DD] (Float [LSW])

Address	Mode	Command description
0x65	R	Longitude – decimal degrees [DD] (Float [MSW])
...	...	...
0x100	R/W	Modbus address (1÷247)
0x101	R/W	Baud rate: 0 – 1 200 bps 1 – 2 400 bps 2 – 4 800 bps 3 – 9 600 bps 4 – 19 200 bps 5 – 38 400 bps 6 – 57 600 bps 7 – 115 200 bps
0x102	R/W	Parity check: 0 – NONE 1 – EVEN 2 – ODD
0x103	R/W	Number of stop bits: 0 – 1 bit 1 – 1.5 bits 2 – 2 bits
0x104	R/W	Entering a value of 1 restores the default configuration
...	...	...
0x400	R	Working time - seconds [LSW]

Address	Mode	Command description
0x401	R	Working time – seconds [MSW]

Writing to registers 0x402, 0x403, 0x404 active for 5 minutes after power-on, configuration jumper must be in place and configuration mode enabled.

0x402	R/PW	Serial number (High)
0x403	R/PW	Serial namber (Low)
0x404	R/PW	Production date: 5 bits – day 4 bits – month 7 bits – year (without 2000)
0x405	R	Program version
0x406 ÷ 0x407	R	Device identifier – string „F&F_MB-GPS-1”
0x406	R	„F&”
0x407	R	„F_”
0x408	R	„MB”
0x408	R	„-G”
0x40A	R	„PS”

Address	Mode	Command description
0x40B	R	„-1”
...	...	...
0x40F	R	State of the jumper restoring the factory settings (1 – on, 0 – off)

Warranty

F&F products are covered by a 24-month warranty from the date of purchase. The warranty is only valid with proof of purchase. Contact your dealer or contact us directly.

CE declaration

F&F Filipowski sp. j. declares that the device is in conformity with the essential requirements of The Low Voltage Directive (LVD) 2014/35/EU and the Electromagnetic Compatibility (EMC) Directive 2014/30/UE.

The CE Declaration of Conformity, along with the references to the standards in relation to which conformity is declared, can be found at www.fif.com.pl on the product page: www.fif.com.pl from the product subpage.


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