GeoSIG
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GMS-GPS

User Manual

Document Revision

Version	Date	Modification	Prepared	Checked	Released
1	05.12.2012	First issue	ANB	SER	TAB
2	20.12.2012	Pin out and config	MAE	JOG	TAB

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Switzerland

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Warnings and Safety

☞ ***The GPS system is operated by the government of the United States of America, which is solely responsible for its accuracy and maintenance.***

☞ ***GPS provides only UTC time at 0° Greenwich meridian without daylight saving time adjustment.***

Symbols and Abbreviations

Instrument	GeoSIG Recorder, Digitiser or Data Acquisition system
GPS	Global Positioning System
UTC	Universal Time Clock

1. Introduction

This document describes the principle of operation and installation instructions of the GMS-GPS GPS family.

GMS-GPS is used with GeoSIG Instruments to provide the global coordinates of the GPS antenna and accurate date and time to the Instruments. It's very useful for having one or several interconnected Instruments precisely synchronised.

GPS provides only UTC time at 0° Greenwich meridian without daylight saving time adjustment.

GMS-GPS is provided in a box with a cable length to be defined at the time of order or provided by the customer. Upto 70 m cable length is possible with the GMS-GPS.

GeoSIG standard cable type: XY DIN 5 x 0.25 mm2 gr UL style2464.

Figure 1. GMS-GPS assembled with 20 m of cable for an Instrument

2. Electrical Connection

2.1. GPS Main Connector Pin Assignment

The GMS-GPS is provided with an 8 pin main connector inside the box, supplied already connected.

Table 1. Electrical connections of the GMS-GPS connector

Pin	Signal	Standard cable colors	Comment
1	GPS_RXD	White	Reception signal from instrument
2	GPS_TXD	Brown	Transmit signal of GPS
3	GPS_1PPS	Green	1 PPS signal of GPS
4	V_MAIN	Yellow	12V power from instrument
5	GPS_STDBY	N/A	Usually not connected
6	GND	Grey	Ground from instrument
7	GND	N/A	Usually not connected
8	GND	N/A	Usually not connected

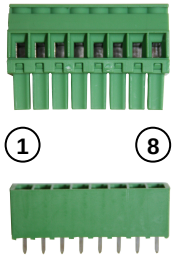

Figure 2. Connector pin out

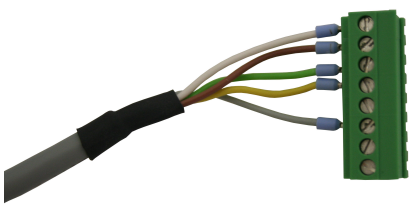

Figure 3. Connector wiring

2.2. Mating Connector at the Instrument Side

For connecting the GMS-GPS to an Instrument, a mating connector must be used. This connector is already assembled when the GPS is ordered together with the instrument.

Table 2. Electrical connections of the GMS-GPS input connector of an instrument

Pin	Signal	Standard Cable Colors	Comment
1	GPS_RXD	White	Reception signal from instrument
2	GPS_TXD	Brown	Transmit signal of GPS
3	GPS_STDBY	N/A	Not connected
4	GND	N/A	Not connected
5	GPS_1PPS	Green	1 PPS signal from GPS
6	V_MAIN	Yellow	12V power from instrument
7	GND	Grey	Ground from instrument

Figure 4. Binder connector

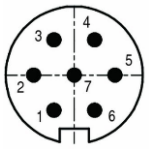

Figure 5. Connector pin out

Figure 6. Wiring inside the connector

2.3. Mounting the GPS Box

It is recommended to perform a check of the GPS function before mounting the box to its final location, as described in section 3.

The GMS-GPS box can be fixed to various locations. The position of the box should be defined according to a position where GPS antenna can easily get the satellite signals. Typically the box is fixed on an outside wall or on a roof. This is an important point since for the synchronisation of the instrument, the antenna should receive at least signals from 3 satellites.

Make sure that at least 75% of the sky is visible at all times over the GPS box.

Fixation of the housing should be done with M4 screws. With spacings and locations as shown in Figure 7 and Figure 8. Type of screws depends on the type of surface where box is going to be fixed.

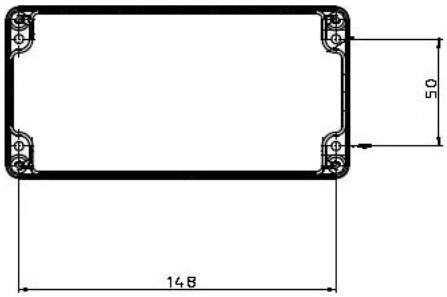

Figure 7. Mechanical fixation of housing

Figure 8. GMS-GPS internal view

3. Configuration and Checking

GPS configuration is explained in detail in the GMS-xx or GMSplus User Manual.