

# GSR Quick User Manual



**User MUST follow all instructions under the WARNINGS AND SAFETY section in the user manual !**

## Foreword

This manual is provided as a brief guideline to perform the typical steps for a successful installation with typical accessories. It is not intended to cover all the different circumstances.

## Step 1. Unpacking

GSR is shipped in a standard packing box containing all the typical accessories. Some specific options (such as the external battery) may be supplied in a separate box.

The packing box must be inspected for any external damage and any damage should be immediately reported to the forwarder.



The contents of the packing box can be checked according to the order and the packing list. Verify that none of the items have physical damage. Keep the packing box for transportation to the final location of the GSR.

## Step 2. Installation Organisation

Before proceeding further please revise the figure at the end of this manual, which illustrates standard and optional connections of the GSR. This way you can familiarise yourself with the GSR and the options you have received for connectivity.

The following items are required for a typical installation:

- Drilling machine; tools and screws for mounting or levelling
- Compass or building references for the axis orientation
- Latest version of GeoDAS software and manual (check also on our web site [www.geosig.com](http://www.geosig.com))
- PC\* with a USB-Connector and serial (COM) port
- Any accessories delivered with the GSR (refer also to the figure at the end of this manual)

It is advisable to install GeoDAS (see Step 9) on the PC\* prior going to the final installation site. Also it is a good practice to perform a first test of the whole system in the office and to get familiar with it.

## Step 3. Site Preparation

The installation site should be selected away from mechanical and electrical noises and interference sources. The distances must be evaluated for AC power source, GPS location, phone line etc., in order to have sufficient cable lengths.

Make sure that:

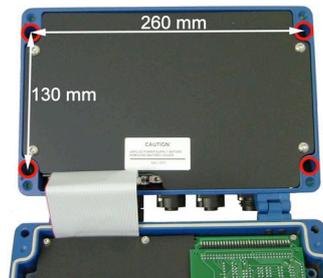
- There is AC power near the instrument (either for GSR operation or for drilling machine during installation).
- If no AC power is present, make sure you have required tools for installation accordingly.
- Clean and free spaces are available on the foundation.

## Step 4. Physical Installation

It is recommended to fix the GSR on the foundation firmly (especially in case of an internal sensor). For the standard housing, 4 holes are available **inside** the GSR housing, for screws up to 6 mm diameter.

For the large housing, 4 holes are available **outside** of the GSR housing, for screws up to 10 mm diameter.

Be sure to leave enough space at the front of the GSR for the connectors and for opening the cover.



Standard Housing



Large Housing

## Step 5. Sensor Setup

**Internal Sensor:** The level of the sensor should be adjusted using the sensor levelling screws. To do this, you should turn off the GSR, disconnect any cable connected to it and then remove the black battery cover. You should be able to see the sensor as in the below picture and level the sensor using the #5) Hex screwdriver.



**DO NOT overtighten the levelling screws**  
**DO NOT cause any short circuit on the battery poles**



**External Sensor:** Mount and level the sensor according to its manual and connect to the SENSOR connector of the GSR. If the sensor is delivered together with the GSR, its manual should be under the Manuals folder on the supplied.

## Step 6. Power Connection

The GSR needs a power source, which can be typically:

- Direct AC connection with internal AC/DC power supply.
- Connection to a DC power source (external DC power adapter, solar panel & battery, other DC power source)

When the GSR is configured at factory for direct AC connection or to an external DC power adapter, the power cable is delivered either without a plug or with a standard Swiss plug. Appropriate local power plug has to be furnished locally and should be wired by a qualified electrician as:

- Brown or Black wire → Phase
- Blue or White wire → Neutral
- Yellow-Green wire → Earth connection

It is recommended to connect the ⊕ M6 earthing screw on the GSR housing, to the local earth.

### Step 7. GPS Connection

The GPS module should be fixed at a location where satellite signals could easily be received. If the GSR is installed inside a building or a basement, the GPS module should be installed outside. Once fixed, the GPS can be connected to the OPTION connector of the GSR.

If the site is in an area where snowfall can occur, it is preferred to mount the GPS module on a wall rather than on the roof.

### Step 8. GSR Startup

Turn on the GSR via the Main Switch located next to the flat cable inside the housing. Observe the version of the firmware on the LCD, followed by the message "GSR startup". The progress is then shown with dots. Allow up to 1 minute for the startup, until the LCD switches to standard display mode. If not, please check connections and refer to the GSR manual under the Manuals folder on the supplied USB-Stick for troubleshooting.



**User MUST follow all instructions under the BATTERY (MAINTENANCE) AND SAFETY section in the user manual !**

The LEDs meanings are as follows:

- **AC** (Active Charge) illuminates when external power input is present at the POWER connector.
- **RUN** flashes when GSR is running.
- **EVENT** illuminates during recording and flashes when there are events recorded in the memory.
- **ERROR** flashes to indicate a warning condition and flashes faster to indicate an error condition.

### Step 9. Software Installation

To install GeoDAS, a PC\* running Microsoft Windows™ operating system (Windows XP™ is preferred) is needed. Insert the supplied USB-Stick in the PC\*. GeoSIG menu should appear shortly, from which you can select to install GeoDAS. If not, then launch setup.exe under the GeoDAS folder on the supplied USB-Stick.

Select the Normal mode installation at the prompt and enter the GeoDAS-DAP code when required, if DAP option has been purchased. If you do not have a DAP code, simply enter 0. In that case, the basic functions will be operational. You can later purchase and enter a valid DAP code to unlock the extra functions.

### Step 10. First Connection

Once GSR is correctly operating and the GeoDAS is installed, connect the communication cable to the PC on a serial port (COM port) and to the GSR on the RS-232 connector.

Launch GeoDAS on the PC\*. If it's the first time you launch GeoDAS, you should have a window asking if you would like to configure one or more stations -- just answer yes.

Then you have several options for the configuration of the station; the recommended one is the second choice:

I have the configuration file of my instrument provided by the manufacturer

Select the COM port where the GSR is connected. The Station Configuration file \*.gsc can be found under the Config folder. The file name is typically the serial number that can be found on the label of the GSR. For adding several stations, you can use the global \*.gsc file typically named after the GeoSIG job number.

Under the **Window** menu, after activating the **Stations: General Information** window, you can select the above-configured GSR and click the button on the GeoDAS toolbar to connect.

### Step 11. GSR Configuration

Now connected to the GSR, you can further configure it by clicking the button, which opens the **Instrument Setup Manager**.

Usually the most important settings that should be checked are:

- Sensor full scale under the **Channels** tab
- Trigger levels under the **Event Trigger** tab
- Pre and Post event times under the **Event Trigger** tab
- GPS operation under the **Date and Time** tab

Please note that you can always restore the factory configuration of the GSR using the Instrument Configuration file \*.ist that is under the Config folder and import it via the **Instrument Setup Manager** under the **Instrument** tab by clicking the **Import** button. The file name is either the serial or the job number.

### Step 12. Testing the Station

As a minimum, the zero level of the sensor must be checked in the **Sampling** tab for reasonable values. In the **Test** tab, all the tests must be executed and a Test Pulse must be recorded. After the tests, close the **Instrument Setup Manager** and click the button to open the **EventManager** window. After a while the recorded test file will be listed. Right click on the file and select **View Data**. This will download the file and plot it.



Further information can be found in the product manuals under the Manuals folder on digital media or on our website [www.geosig.com](http://www.geosig.com).

