güralp

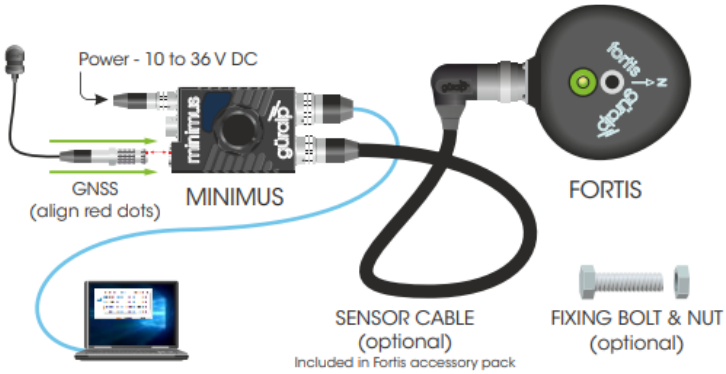
FORTIS

STRONG MOTION SEISMOMETER

QUICK START GUIDE

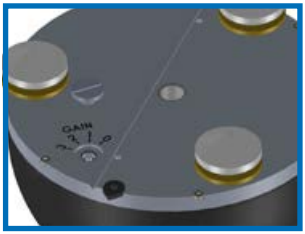
FORTIS

Initial Hardware Setup



Setting the Gain

The Fortis has user-selectable gain that can be switched remotely (via a Güralp Minimus digitiser) or locally via a rotary switch on the base of the instrument. Remove the cover screw using a large, flat-bladed screwdriver.



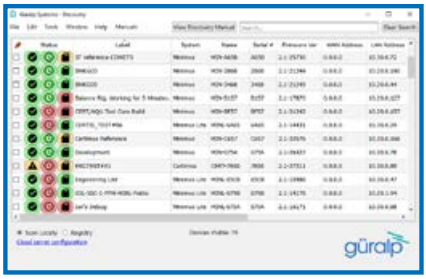
Rotary Switch

Using a small, flat-bladed screwdriver, turn the switch to one of the four marked positions, then reattach the cover screw.

Engraved switch position	Amplifier gain	Full-scale (g)
3	1	4
2	2	2
1	4	1
0	8	0.5

Remote Gain Control

1. To control the gain remotely, ensure that the switch is set to position '3', as described in the previous section.



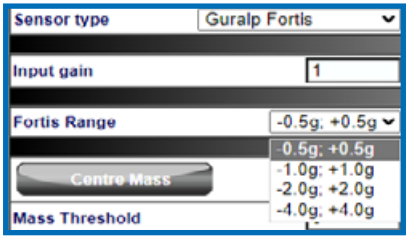
2. Launch Discovery software. The serial number (as shown on the base of the Minimus) should appear in the main window. If the instrument does not appear, check your Ethernet connection and press the **Scan Locally** button.

3. To configure the gain of the Fortis, right-click on the Minimus in Discovery's main window and select **View Web Page**.

   Click to the **Setup** tab.



4. Make sure that **Sensor Type** is set to **Fortis** in the Analogue Sensor section. You can then change the gain from the **Sesor Gain** drop-down menu (expressed in full scale).

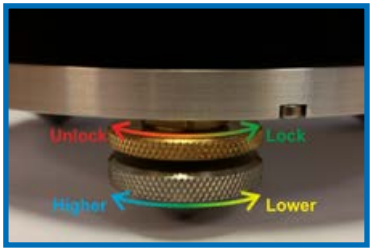


Permanent Installation

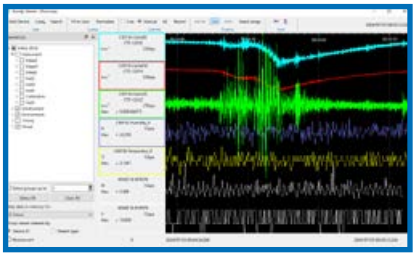
1. Unpack the equipment onto a clean surface. Check that you have all components and cables. You will need a suitable digitiser/data-logger that can provide a 10-36 V DC power supply, such as the Güralp Minimus.

2. Prepare a flat surface by scribing an accurate North-South line and drilling a suitable bolt-hole. Place the accelerator over the fixing bolt and line up the orientation line with pointers on the Fortis.

3. Level the sensor using its adjustable feet until the bubble level on the lid lies entirely within the inner circle of the level indicator. Secure the instrument using a nut. Do not over-tighten!



4. Connect a sensor cable between the Fortis and the digitiser, then power up the digitiser. If you are using Minimus, you can now view real-time waveforms from the Fortis using Güralp Discovery software.



Temporary Installation

The Fortis is ideal for monitoring vibrations at field sites. Dig a shallow pit, make a smooth base, level the sensor and then cover with a box or bucket, bringing the cable out from under the bottom. The pit can be covered and back-filled with soil, sand, or polystyrene beads.

Next Steps

For detailed information on usage, control and configuration of the Fortis, we highly recommend first reading the **Minimus Manual** followed by the **Fortis Manual.**

All manuals are available on the Güralp Technical Library:

https://www.guralp.com/technical-library

For further assistance please contact our technical support team on support@guralp.com.



Caution: Although the Fortis is a strong motion instrument, it contains sensitive mechanical components which can be damaged by mishandling. If you are at all unsure about the handling or installation of the device, you should contact Güralp Systems for assistance.

Güralp Systems Limited
Midas House
Calleva Park
Aldermaston
Reading
RG7 8EA
United Kingdom

T +44 1189 819056
F +44 1189 819943
E sales@guralp.com
E accounts@guralp.com
E admin@guralp.com
E support@guralp.com
www.guralp.com

Quality Certificate

It is hereby certified that the product identified below has been fully tested and calibrated in accordance with the Güralp Quality Assurance Program.

It is further certified that any product designed and manufactured by Güralp Systems Ltd is carried out in accordance with the applicable Original Manufacturer Approvals.

The Güralp Quality Management System has been assessed and is certified to meet the requirements of ISO 9001:2015 for the design and manufacture of low noise Broadband Seismometers, Accelerometers, Digitisers and associated networking equipment.

All our calibrated reference equipment is certified by an independent test laboratory, and in compliance with the international standard ISO/IEC 17025:2005.

Certificate Serial Number:	Product Serial / BatchNo:
Final Quality Approval:	Date of Issue:

EU Declaration of Conformity

We

Guralp Systems Ltd
Midas House, Calleva Park, Aldermaston
READING, RG7 8EA.

Tel: +44 118 981 9056
E-mail: technical@guralp.com

Declare under our sole responsibility that the following product

Equipment name: Fortis
Model Number: FOR-MAA101000G01L and appropriate variants
Serial Numbers: TF026 onwards

Is in conformity with the

Electromagnetic Compatibility Directive 2014/30/EU
Low Voltage Directive 2014/35/EU
Restriction of Hazardous Substances (RoHS) Directive 2011/65/EU

by applying the following harmonised standards and technical specifications:

EMC: EN 61000-4-2:2009 – Electrostatic Discharge Immunity
EN 61000-4-3:2006 +A1:2008 +A2:2010 – Radiated RF Immunity
EN 61000-4-4:2012 – Electrical Fast Transients Immunity
EN 61000-4-5:2014 – Voltage Surge Immunity
EN 61000-4-6:2014 – Conducted RF Immunity
EN 61000-4-8:2010 – Power Frequency Magnetic Field Immunity
EN 61000-4-11:2004 – Voltage Dips and Short Interruptions Immunity
EN 55011:2009 +A1:2010 – Radiated Emissions
EN 55011:2009 +A1:2010 – Conducted Emissions
EN 61000-3-2:2014 – Harmonic Current Emissions
EN 61000-3-3:2013 – Voltage Fluctuations and Flicker

LVD: IEC 61010-1 3rd Edition

RoHS: 2011/65/EU

Signed for and on behalf of: Guralp Systems Ltd
Place of issue: Aldermaston
Date of Issue: 15/11/2017
Position: Engineering Director
Signature:

Guralp Systems
Aldermaston
Berkshire
United Kingdom
Limited

CE

Notes

Güralp Systems
Limited
Midas House
Calleva Park
Aldermaston
Reading
RG7 8EA
United Kingdom

T +44 118 981 9056
F +44 118 981 9943
E sales@guralp.com

www.guralp.com

MSH-FOR-0001 Issue J

CE