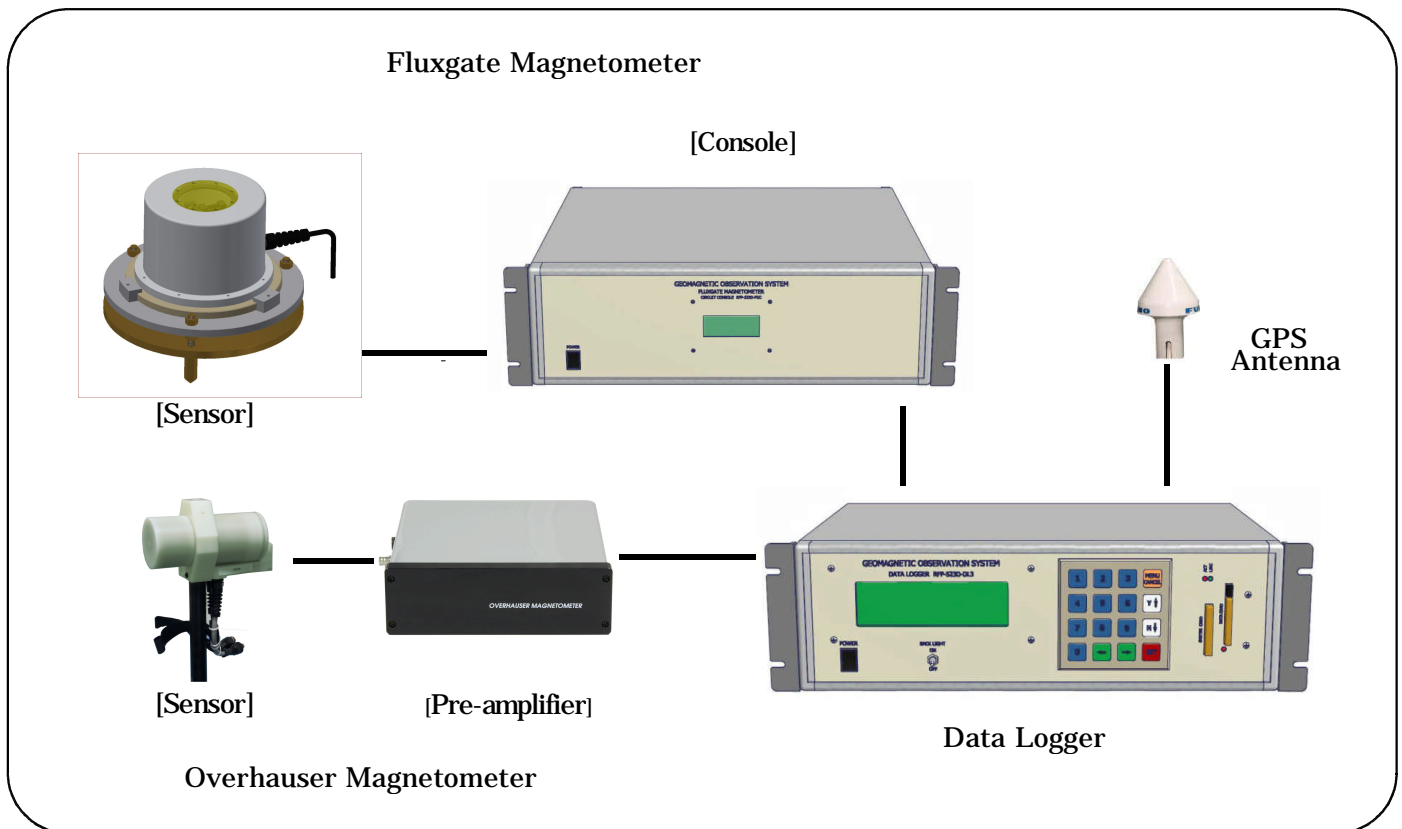


## Geomagnetic Observation System 【RFP-523F】



### 【SUMMARY】

The RFP-523F Geomagnetic Measuring System measures 3 component and total magnetic field on land. Three components fields are measured by the fluxgate magnetometer and converted to digital value with 0.01nT resolution over the measuring range of  $\pm 65500\text{nT}$ . Total fields are measured by the Overhauser magnetometer with 0.1nT resolution. 3 component field values (every second) and total field values (every minute) are store in a compact flush memory. This system has function of network with a LAN cable. Remote controls for the system and data gathering are possible using FTP and TELNET protocols.

### 【FEATURE】

#### **High Absolute Accuracy**

The fluxgate magnetometer has 0.01nT resolution each components. The sensor set is suspended by a gimbal using thin plate, it keep a vertical with 3 arc-sec accuracy. A different value between a calculated total field value which is measured by the fluxgate magnetometer and a true total field value which measured by Overhauser magnetometer, is less than 100nT. The Overhauser magnetometer has 0.3nT accuracy with 0.1nT resolution.

#### **Automatic Set Up**

The fluxgate magnetometer finds the compensation field automatically on "POWER ON". When a large magnetic field variation exceed 300nT is detected, it adjusts the compensation field in order to fit to the variation measuring range of  $\pm 300\text{nT}$  automatically.

#### **Network and Data Logging Function**

The data logger has a network function(TCP/IP) and supports protocols of SSH, RSYNSC and etc. The saved data in the data logger are transmitted by LAN network and remote controls for the system are possible. The data are saved in a compact flush memory in the data logger also. When 1 Gbyte memory card is used, the data logger saves more than 1 year data.

#### **System clock by GPS**

Time control for the system is performed by GPS. The total accuracy against an accurate time is less than 1 msec.

#### **Water Proof structure of Fluxgate Sensor**

The fluxgate sensor has a water proof structure and it is possible to set it in the ground. A laying sensor is reduced a temperature coefficient and a long term stability is kept less than 3nT per year.

#### **Battery Back Up**

The data logger has a floating charger. When a battery is connected, the measuring is continued in a power failure.

**【 SPECIFICATIONS 】**

**Fluxgate Magnetometer [RFP-523F-FG]**

**[Sensor] RFP-523F-FGS**

- Sensor type Ring core type fluxgate
- Components 3 components(XYZ) with one temperature
- Orthogonality ±0.1 degree
- Gimbal stability 3 arc-sec
- Cable length 5m+45m
- Operation temp. -20 ~ 50 ° C
- Water proof 48 hours in 20cm depth
- Size φ180×123H
- Weight 4.8kg (include 5m cable)

**[ Circuit console ] FRP-523F-FGC**

- Compensation field
  - Range ±65,000nT
  - Accuracy <100nT
  - Method Automatic Setting (at power on)  
Automatic tracking  
(±300nT Step at Scale Over)
- Range for variation field 300nT
- Noise 0.2nTp-p (1Hz sanpling)
- Temperature stability 0.2nT/ ° C
- Output rate 1 time/sec
- Filtering 16Hz sampling summing mean
- Resolution 0.01nT
- Temp. measure range -20 ~ 60
- Size 430W×133H×350D
- Weight 4kg
- Operation temp. -5 ~ 50 ° C

**Overhauser Magnetometer [RFP-523F-OH]**

**[ SENSOR ] RFP-523F-OHS**

- Sensor type Overhauser effect proton pecession
- Cable length 1m+5m
- Size & weight 190W×120H×105D 1.5kg  
(except connector)

**[ PRE-AMPLIFIER ] RFP-523F-OHP**

- Measuring range 30000nT ~ 70000nT
- Accuracy 0.3nT
- Resolution 0.01nT
- Measuring interval 1 second
- Size & weight 225W×70H×250D 1.4kg
- Data Cable 50m

**DATA LOGGER [RFP-523F-DL2]**

**Data save**

- Record format 50 byte binary/one measure
- Making file 1 day file & 1 hour file
- Media Compact flush memory card
- Record period 1 year (in 1Gbyte card)  
(Max. 32Gbyte)

**Network communication**

- Protocol TCP/IP
- Service SSH , RSYNC , etc
- Ether Connector RJ-45
- Serial communication RS232C(DSUB 9pin)

**GPS clock**

- Maximum count 2099Y12M31D 23h59m59s
- Accuracy ±2µsec
- Antenna Size φ71×127H
- Cable length 15m

**Manipulation**

- Key board 16 keys
- Display 8 lines X 30 column LCD

**Power part**

- Input voltage AC100 ~ 115V 50/60Hz  
(AC200 ~ 220V available)
- Output voltage DC13.6V (with temp. control)
- Output current Max. 2A
- Suitable battery 12V (20 ~ 40AH)
- Charge current Max. 0.2A
- Back up term 3 days (12V-40AH)

- Size & weight 450W×150H×330D 5.5kg
- Operation temp. 0 ~ 50 ° C

**ACCESSORY**

- Connection Box · RS232C cable
- Fuse · LAN cable
- Sample program · Manual

Specifications subject to change without notice.