

MODEL 2G800 SERIES

AUTOMATED SAMPLE HANDLER SYSTEM

FEATURES

- Provides user-programmable sample translation and rotation
- Speeds up the measurement of rock remanence
- Smart computer interface over RS232 port
- When coupled with a 2G degaussing system, provides automatic degaussing and measurement cycles without removal of the sample from the holder or from the low-field region
- Optional sample flip capability

APPLICATIONS

- Paleomagnetic Research

The Model 2G800 Series Automated Sample Handler System automates the degaussing and measurement of the magnetic properties of rock samples in superconducting rock magnetometer systems. The Model 2G800 Series consists of the Model 2G810 Sample Handler Controller, the Model 2G820 Sample Handler Drive, Stepper Motors, and the Model 2G801-2G803 Sample Handlers. The Model 2G800 Series can be mounted to all 2G SRM rock magnetometers.

Sample Handler selection is determined by the degaussing system in use:

- Model 2G801 is for systems without an in-line degaussing system. Continuous rotation speeds of up to 5 Hz are possible to facilitate synchronous design schemes for the measurement of extremely weak rock magnetism (total moments less than 10^8 emu).
- Model 2G802 is for systems with an in-line 2-axis degaussing system. Three-axis degaussing is done by degaussing with the axial coil, translating to and degaussing with the transverse coil, rotating 90°, and degaussing again with the transverse coil.
- Model 2G810 is for single in-line transverse degaussing coil systems. Three-axis degaussing is possible with an optional flip mechanism.



The movements of the Sample Handler are controlled by the 2G810 Sample Handler Controller. This unit has an RS232 serial data link that communicates with an external computer. Sample translation and rotation are started by issuing high-level commands over the serial data link.

Sample movement parameters such as acceleration, velocity, and linear or rotational movement intervals are all user-programmable. The Sample Handler Controller also has two limit switches for translation (left and right) that stop the translation motor when activated, and a home sensor for both translation and rotation.

The output stepper motor signals from the Sample Handler Controller are fed to the 2G820 Sample Handler Drive. This unit contains two power drivers that send pulses to the stepper motors. The power supplies contain constant current drivers with a compliance of approximately 30 volts, which provides rapid and smooth acceleration of the Sample Handler. The stepper motors require 200 pulses per revolution. For translation, this produces a movement of 0.65 mm per pulse. For rotation, the angular displacement for one pulse is 3.6°.

2G810 SAMPLE HANDLER CONTROLLER

Dimensions	19" (482.6 mm) x 12" (304.8 mm) x 5" (127 mm)
Weight	5 lbs (2.2830 kg)
Power Requirements	115 V @ 1 A
Programmable Baud Rates	300, 1200, 9600
Maximum Acceleration	10 cm/sec ² (programmable)
Maximum Velocity	30 cm/sec (programmable)

2G820 SAMPLE HANDLER CONTROLLER

Dimensions	19" (482.6 mm) x 17" (431.8 mm) x 5" (127 mm)
Weight	20 lbs (9 kg)
Power Requirements	115 V @ 3 A; provides power supply to two stepper motors
Maximum Step Rate	1,000 pulses per second
Input/Output Signals	Input signals from Controller: step and direction (TTL compatible) Output Signal: constant current drive up to 1.5 Amp, current compliance 30 V; 4-phase unipolar stepper motor drive

STEPPER MOTORS

Translation	1.5 Amps @ 6 V nominal, 200 pulses per revolution Torque provided @ 550 pps, 60 N-cm Resolution: 1 step = 0.65 mm linear sample translation
Rotation	1.2 Amps @ 6 V nominal, 200 pulses per revolution Torque provided @ 500 pps, 40 N-cm Resolution: 1 step = 3.6° rotation of sample

SAMPLE HANDLERS

	2G801	2G802	2G810
Maximum Translation Length	1 meter	1 meters	2.8 meters
System Overall Length	1.2 meter	1.2 meters	3 meters
Weight	20 lbs (9.07 kg)	40 lbs (18.14 kg)	30 lbs (13.61 kg)

Specifications are subject to change without notice.