AGICO Advanced Geoscience Instruments Company

KAPPABRIDGES

magnetic susceptibility - anisotropy systems

KLY-4S Spinner
KLY-4 Static

The world's most sensitive commercially available laboratory instruments For measuring anisotropy of magnetic susceptibility (AMS) as well as bulk susceptibility in weak variable magnetic fields.

General Description

The KLY-4/4S Kappabridge consists of the pick-up unit and control unit connected with PC computer via RS-232C.

In principle the instrument represents a super-precise fully automatic inductivity bridge. It is equipped with automatic zeroing system (in both real and imaginary components) and automatic compensation of the thermal drift of the bridge unbalance as well as automatic switching appropriate measuring range. The measuring coil is designed as 6th-order compensated solenoid with an outstanding field homogeneity. The digital part of the instrument is based on microelectronic components, with the microprocessor controlling all the Kappabridge functions.

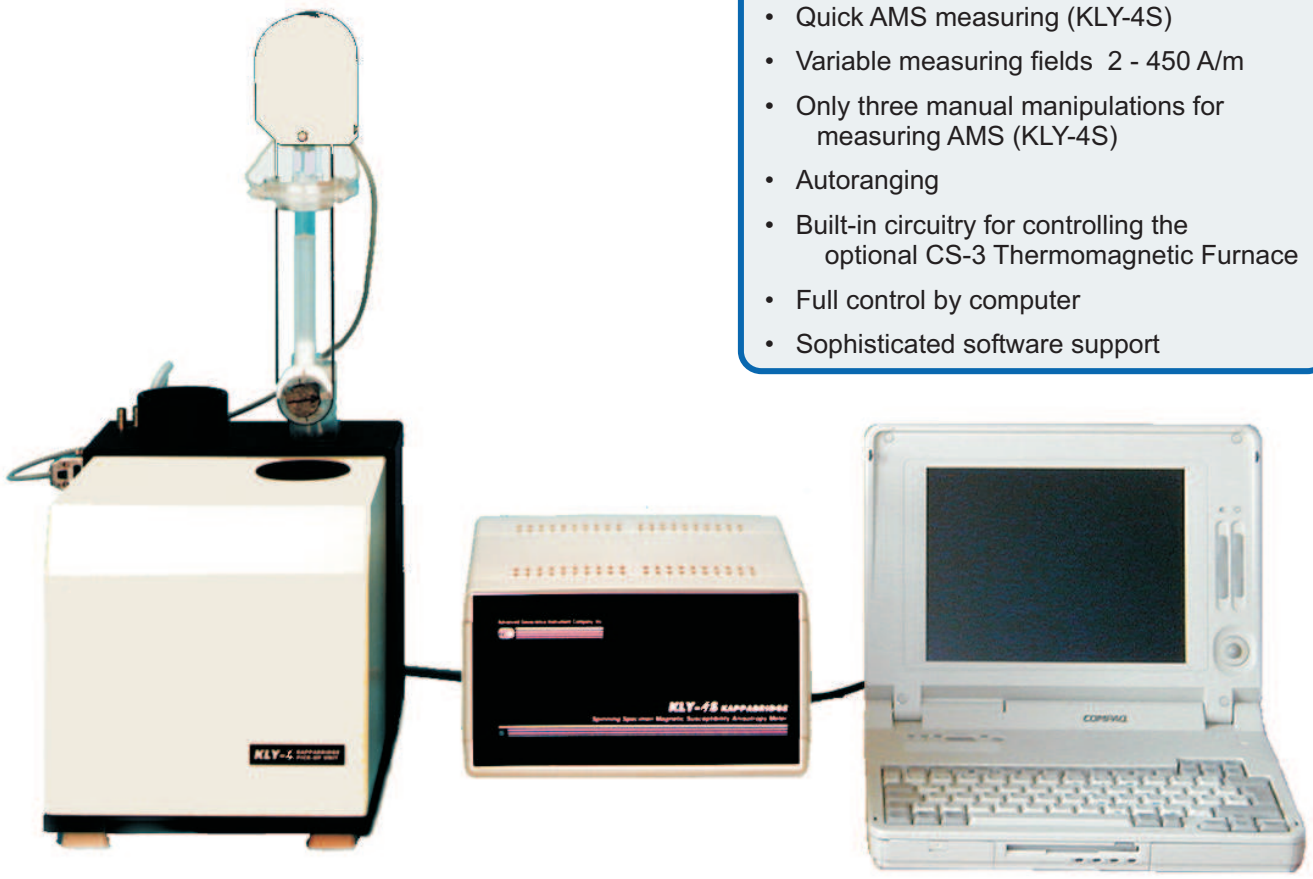
KLY-4S Kappabridge

Spinner/Static combination

The KLY-4S Spinner model measures the AMS of a slowly spinning specimen. One has to adjust the specimen only in the three perpendicular positions. The measurement is rapid (about 2 minutes per specimen) and precise, profiting from many susceptibility determinations in each plane perpendicular to the axis of specimen rotation. Special software SUFAR combines the measurements in three perpendicular planes to

Main Features

- High sensitivity 2 x 10^{-8} (SI)
- Fully automatic zeroing system
- Slowly spinning specimen (KLY-4S)
- Quick AMS measuring (KLY-4S)
- Variable measuring fields 2 - 450 A/m
- Only three manual manipulations for measuring AMS (KLY-4S)
- Autoranging
- Built-in circuitry for controlling the optional CS-3 Thermomagnetic Furnace
- Full control by computer
- Sophisticated software support



LABORATORY INSTRUMENTS FOR MEASUREMENT OF MAGNETIC PROPERTIES OF ROCKS

create a complete susceptibility tensor. The errors in determination of this tensor are estimated using a special method based on multivariate statistics principle.
The KLY-4S Spinner Kappabridge can measure, in the spinner mode, specimens 25.4 mm in diameter and 22 mm in height, or cubic specimens with an edge of 20 mm or smaller cylindrical or cubical samples that can be encapsulated into a perspex cylinder of the above dimensions.
However, to measure specimens with slightly different shapes (e.g. ODP type specimens), KLY-4S Kappabridge should be operated in the manual non-spinner static mode using the same static 15 position measurement technique as with the KLY-4 Kappabridge. This optional non-spinner static mode can also be used for measuring the bulk susceptibility of rock fragment specimens.

KLY-4 Kappabridge

Static only version

Laboratories under budgetary constraints may prefer the lower priced static only KLY-4 Kappabridge. In contrast to the KLY-4S spinner/static version, the KLY-4 measures the AMS of only a static specimen in exactly the same way as originally developed for the KLY-2 Kappabridge. The specimen susceptibility is measured in 15 different positions following rotatable design. The positions are changed manually and, by using the included special software package SUFAM, the susceptibility tensor is calculated including the statistical errors of its determination.

The restricted capability of the KLY-4 to make measurements only in the static mode can be upgraded later to incorporate the more rapid KLY-4S spinner technique.

Specimens to be measured

For spinning method:

Cylinder: (regularly shaped specimens)
Diameter: 25.4 mm
Length: 22 mm

Cube: 20x20x20 mm

For static method:

Cylinder: Diameter: 25.4 ± 1 mm
Length: 22 ± 1mm

Cube: 20x20x20 mm
23x23x23 mm

ODP type: 26x25x19.5 mm

Fragments: up to 40 cm^3 for bulk susceptibility

Specifications KLY-4S / KLY-4

Operating frequency: 875 Hz
Specimen spinning frequency: 0.5 Hz
Field intensity range: 2 A/m - 450 A/m
(RMS-values)

Field homogeneity: 0.2 %
Measuring range automatic: up to 0.2 (SI)

Sensitivity (in the	bulk	3×10^{-8} (SI)
field of 300 A/m)	aniso	2×10^{-8} (SI)

Accuracy within one range: ±0.1 %

Accuracy of absolute calibration: ±3 %

Pick-up coil inner diameter: 43 mm

Power: 100; 120; 230 V, 50/60 Hz, 40 VA

Operating temperature range: +15 to +35°C

Relative humidity: up to 80%

Dimensions, mass:

measuring unit: 260x160x250 mm / 4 kg
pick-up unit: 240x320x330 mm / 11 kg

Ordering Information

KLY-4S Spinner Kappabridge

comprising:

- KLY-4S Kappabridge Susceptibility / Anisotropy Meter
- KLY-4 Kappabridge Pick-up Unit with Up/Down Mechanism
- Rotator with Specimen Holder
- SUFAR and SUFAM Software
- ANISOFT Software Package
- Assortment of 6 Static Specimen Holders
- Set of Interconnecting Cables
- Set of AGICO Prints
- User's Manual

KLY-4 Kappabridge

comprising:

- KLY-4 Kappabridge Susceptibility / Anisotropy Meter
- KLY-4 Kappabridge Pick-up Unit
- SUFAM Software
- ANISOFT Software Package
- Assortment of 6 Static Specimen Holders
- Set of Interconnecting Cables
- Set of AGICO Prints
- User's Manual

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