KLY5-A / KLY5-B

IN-PHASE AND OUT-OF-PHASE SUSCEPTIBILITY KAPPABRIDGES

AGICO
ADVANCED GEOSCIENCE INSTRUMENTS COMPANY

Precise in-phase and out-of-phase magnetic susceptibility measurements.
In-phase and out-of-phase anisotropy of magnetic susceptibility (AMS).
Field variations of magnetic susceptibility and AMS.
Temperature variations of magnetic susceptibility in combination with CS4 and CS-L instruments.

General Description

The **KLY5 Kappabridges** are the most sensitive commercially available laboratory instruments for measuring magnetic susceptibility and anisotropy of magnetic susceptibility (AMS). KLY5 series brings precise measurement of both **in-phase** and **out-of phase** components of magnetic susceptibility and their anisotropies.

In principle the instrument is a super-precise fully automated inductivity bridge. Measurements of the susceptibility are quick, easy and very precise thanks to sophisticated autoranging function and other automated functions such as automatic zeroing (in both real and imaginary components), thermal drift compensation in the bridge unbalance.

Software Safyr

Safyr is a highly sophisticated user friendly software provided to control the data aquisition and the data processing. It brings full control over the instrument and the optional equipment including 3D rotator. Measured data are displayed and available for additional processing in real time.

Main Features

High sensitivity 2 x 10^{-8} (SI)

High sensitivity of phase determination 0.1°

Fully automatic zeroing system

In-phase and out-of-phase susceptibility

Automated measurement in variable fields

Quick AMS autorange

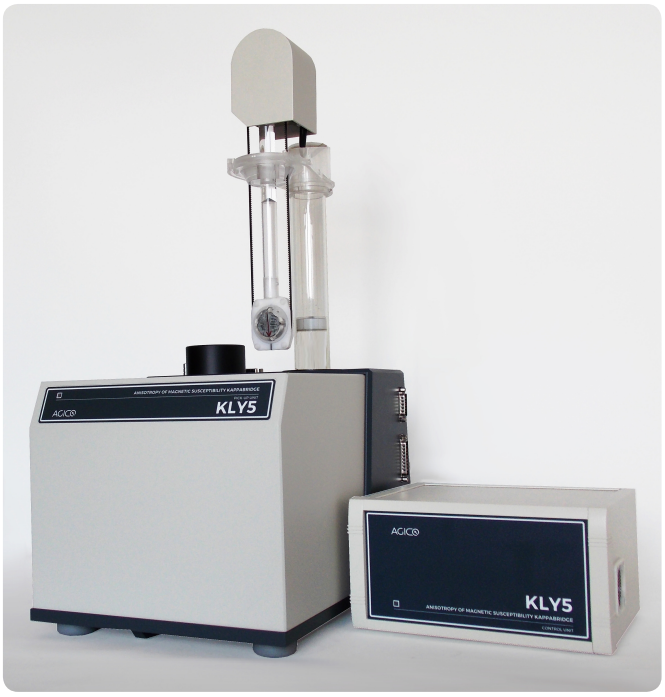
Enhanced resistance to power lines noise

Galvanically isolated USB connection

Sophisticated software support

Built-in circuitry for controlling optional CS4 Furnace and CS-L Cryostat

Optionally 3D rotator (KLY5-A)



LABORATORY INSTRUMENTS FOR MEASUREMENT OF MAGNETIC PROPERTIES OF ROCKS

KLY5-A / KLY5-B *IN-PHASE AND OUT-OF-PHASE KAPPABRIDGES*

New features

A new feature is precise measurement of **out-of-phase susceptibility** (in terms of phase angle) performed simultaneously and automatically with standard (in-phase) susceptibility measurement.

In loess/soil sequences and environmental materials, in which it is usually due to viscous relaxation, the out-of-phase susceptibility is able to substitute the more laborious frequency-dependent susceptibility routinely used in magnetic granulometry.

Another new feature is measurement of the **anisotropy of out-of-phase** magnetic susceptibility (**opAMS**), which is also performed simultaneously and automatically with standard AMS measurement. The opAMS enables the direct determination of the magnetic sub-fabrics of the minerals that show non-zero out-of-phase susceptibility either due to viscous relaxation (ultrafine grains of magnetite or maghemite in loess/soil sequences and environmental materials), or due to weak-field hysteresis (titanomagnetite, hematite, pyrrhotite), or due to eddy currents (in electrically conductive minerals).

Technical specifications

Operating frequency	1 220 Hz
Sensitivity	2 x 10^{-8} (SI)
Field intensity range	5 - 750 A/m (peak)
Field homogeneity	0.2 %
Measuring range	up to 0.5 (SI) at 750 A/m
	up to 1 (SI) at 400 A/m
Accuracy within one range	± 0.1 %
Accuracy of absolute calibration	± 3 %
Pick-up coil inner diameter	43 mm
Power requirements	100 - 240 V, 50/60 Hz, 40 VA

Specimens to be measured

For spinning method

Cylinder (regularly shaped specimens)

Diameter	25.4 mm
Length	22.0 mm
Cube	20 x 20 x 20 mm

For static method as for spinning method plus

Cube	23 x 23 x 23 mm
ODP type	26 x 25 x 19.5 mm

Fragments up to 40 cm^3 for bulk susceptibility

KLY5-A

Fully equipped with special Up/Down mechanism and rotator allowing to use spinning specimen method which uses 3D rotator or classic rotator for easy, rapid and precise AMS measurements. Automatic routines for investigation field variations of AMS as well as bulk susceptibility are incorporated for better user comfort. Optional attachments CS4 and CS-L enables measurements of temperature variation of bulk susceptibility from -192°C up to 700°C.

KLY5-B

Basic version of kappabridge for manual measurements of AMS, bulk susceptibility and field variations of magnetic susceptibility. Without Up/Down mechanism, rotator and CS4 or CS-L support. In the static method the specimen susceptibility is measured in 15 different orientations following rotatable design. The specimen positions are changed manually during measurement. Can be upgraded to KLY5-A version.

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