

CB-L and CB-S Winding Adapter for the Connection of Stators



CB-L – Tester for the AC hysteresis measurements on large stator laminations

• Operating Principle

The winding adapters CB-L and CB-S, also called Stator Tester allows the fast connection of stator lamination and large ring samples. The measuring principle is related to the measurement of a toroidal core conforming to IEC 60404-6. To test the magnetic hysteresis curve (BH-loop) a magnetic field strength H needs to be applied to the sample and the induced flux density B in the sample needs to be measured. This is done with one tester cable that includes the primary turns $N1$ (for generation of H) and secondary turns $N2$ as a pick-up coil for B . The air flux between $N1$ and $N2$ can be compensated in the Comp Software of the Remacomp system. The tester cable is fed through the sample's inner diameter.

The Stator Tester works with high current densities for short durations. To handle high current densities safely the tester is designed with a temperature resistant cable, which is double temperature monitored and secured by safety loops. A protective cover makes the tester cable resistant against sharp edges of laminations.



CB-S – Tabletop Tester for the AC hysteresis measurements

The tester is used with the powerful Remacomp model C-2200 that supports the full device safety and drives the current with two amplifiers in parallel operation. With Remacomp C-2200 also the features overtemperature warning and the cooling fan are supported.

Typical measuring task is the determination of the core losses, peak polarization, amplitude permeability, remanence, coercive field strength etc. The measuring system allows a precise, powerful and highly repeatable test of laminations. The test of stators is not standard conforming, but it comes close absolute measurements on toroidal cores within a few percent (depending on sample geometry). Thus it is possible to check if the raw material for the laminations was as specified and if the material was processed properly to a stator.

A smart opening mechanism allows fast sample mounting and easy sample loading.

The cable of the tester is extralong, it can be fed through the sample one time for samples with small inner diameter and two times for samples with larger diameter. Larger stators need more turns to get high excitation, which can be increased by two turns with the tester cable. So the CB-S and CB-L can handle a wide range of sample sizes.

This allows to have excitation as high as possible also for larger samples. This flexibility also allows to test large samples at higher frequencies by just using one turn of the tester cable.



• Features

Compatible with Remacomp C - 1200, C - 1207, C - 2200 and C – 2207, best with C-2200

Frequency Range DC to 1000 Hz (depending on sample and excitation), 50 Hz optimized

H_{max} : Depending on samples size, mass, permeability and frequency

N1: 16 Turns

N2: 2 Turns

I_max: 65 A continuously, 100 A fast single shot measurements (with C-2200)

Min. A: Area cross section of sample 5cm²

CB-S

required free inside diameter: 35.5 mm

maximum outer diameter of the stator: 200 mm

maximum length of the stator: 250 mm

maximum mass of the stators: 20 kg

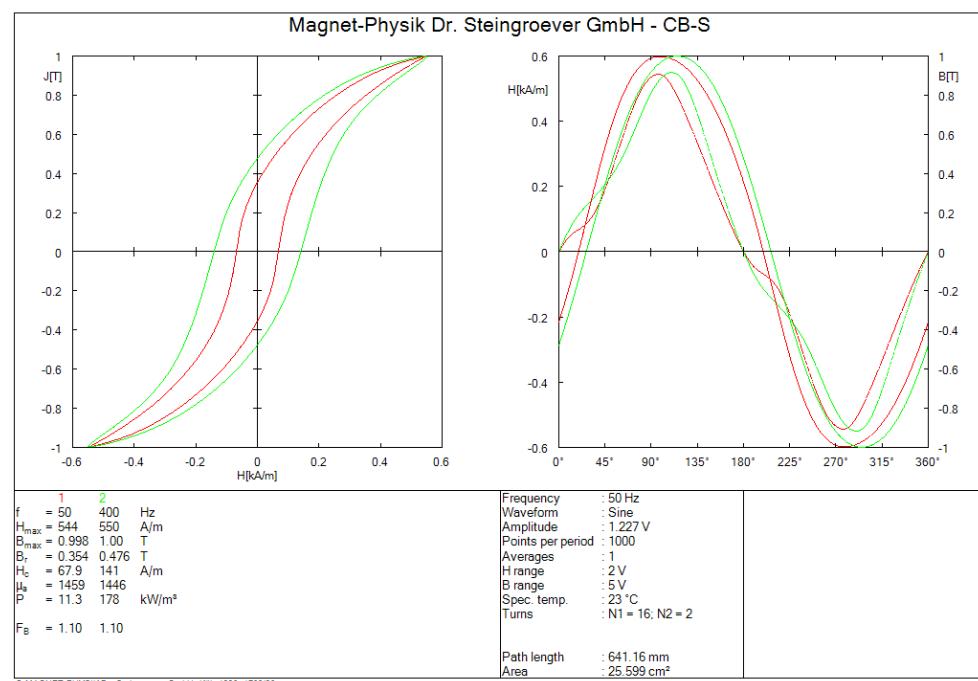
CB-L

required free inside diameter: 35.5 mm

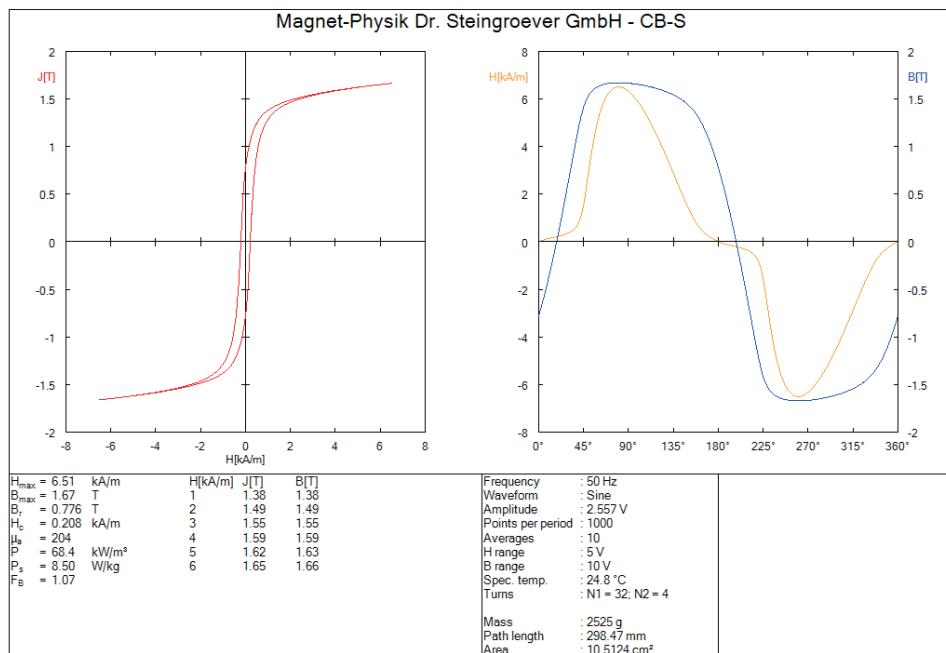
maximum outer diameter of the stator: 400 mm

maximum length of the stator: 400 mm

maximum mass of the stators: 100 kg

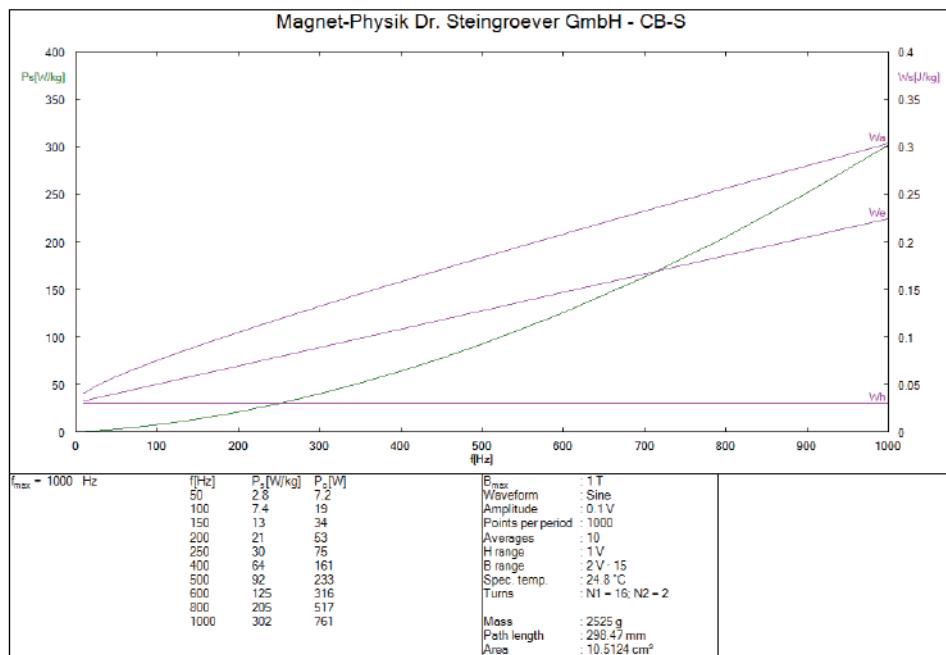


Large stator tested at 1.0 T flux density at 50 Hz and 400 Hz.



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Medium sized stator tested single shot measurement at high field strength of 6.5 kA/m and 50 Hz.



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Losses of medium sized stator tested at 1.0 T flux density in one sweep from 10 Hz to 1000 Hz. Loss separation was applied to slit the losses in hysteresis, eddy current and anomalous losses.

Due to continuous product improvement, specifications are subject to change without notice.