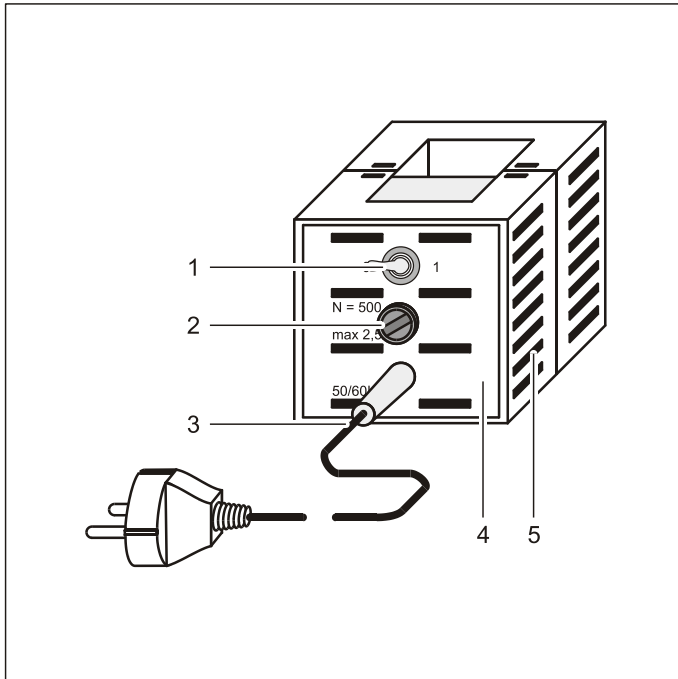


06/05-W97-Kem/Sel



Instruction sheet 562 21

Mains coil with 500 turns (562 21)

Mains coil with 250 turns (562 22)

- 1 On-off switch
- 2 Blowout fuse
- 3 Mains lead
- 4 Plastic housing
- 5 Vent slots

1 Description

The mains coils serve as primary coils for setting up experiment transformers on the U-core with yoke (562 11). The mains coil with 500 turns is used at a mains voltage of 230 V and the mains coil with 250 turns at a mains voltage of 115 V.

Safety notes

The mains coils are connected to the mains. Depending on the setup, there are hazardous-contact voltages in the secondary circuit as well, amounting to more than 25 V.

- Before exchanging the fuse, pull the mains plug out.
- When a measuring instrument, e.g. a slide rheostat, is connected to the primary circuit, use the measuring junction box (502 05).
- Switch the mains coil on only after having finished the setup and the connections.
- Change the connections only when the mains coil is switched off.
- For the electric connections use safety connection leads only.

The mains coils are strongly heated at the maximum permissible current.

- Do not cover the vent slots during operation.
- Do not exceed the maximum permissible current.

2 Technical data

Mains coil with 500 turns (562 21):

Number of turns:	500
Mains voltage:	230 V
Fuse:	TT 2.5 A (No.: 688 121)
Constant current:	max. 2.5 A
Short time (10 s):	max. 5 A
DC resistance:	about 2.5 Ω
Inductance without iron core:	9 mH
Wire gauge	1.0 mm

Mains coil with 250 turns (562 22):

Number of turns:	250
Mains voltage:	115 V
Fuse:	T 6.3 A
Constant current:	max. 5 A
Short time (10 s):	max. 10 A
DC resistance:	ca. 0.6 Ω
Inductance without iron core:	2.2 mH
Wire gauge:	1.5 mm

Data common to both coils:

Dimensions:	8 cm × 8.5 cm × 10 cm
Opening for iron core:	4 cm × 4 cm

3 Accessories

Setup of the experiment transformer:

U-core with yoke	562 11
Clamping device	562 22

Low voltage:

Coil with 250 turns (with centre tap)	562 13
Coil 500 turns (with centre tap)	562 14
Coil with 1000 turns (with centre tap)	562 15

High voltage:

Coil with 10 000 turns (with centre tap)	562 16
Coil with 23 000 turns (with two-pronged electrodes)	562 17

Low voltage up to 20 V, tapping in steps of 2 V:

Extra-low voltage coil, 50 turns	562 18
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Demonstration of spot welding:

Coil with 5 turns (secondary current: about 500 A)	562 19
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Principle of an induction furnace:

Ring-shaped melting ladle (secondary current: 750-1000 A)	562 20
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Thomson's ring experiment:

Metal ring	562 33
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4 Fuse

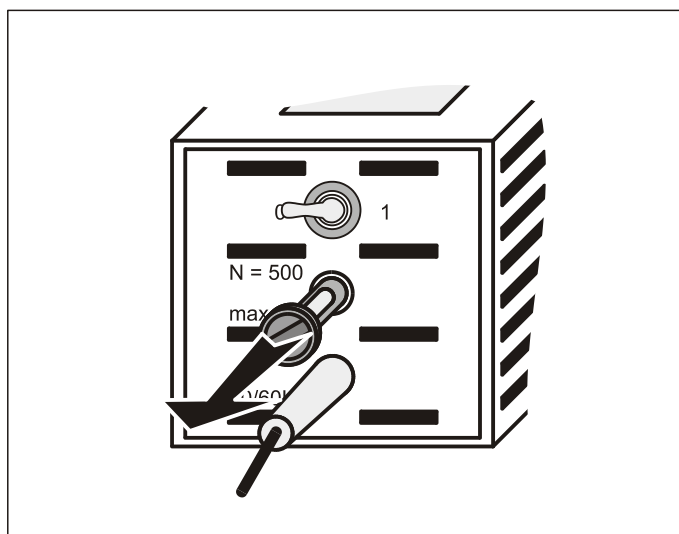
4.1 Remarks

The built-in fuse of the mains coils is designed so that neither the copper coils nor the plastic housing of the mains coils can be damaged by overheating.

If the experiment transformer is set up with the coil with 5 turns or for Thomson's ring experiment (U-core with extending yoke), the primary current through the mains coil 562 21 (562 22) amounts to about 5 A (10A). These experiments can, therefore, be carried out only for a short time (10 s).

If the mains coils are used with the U-core only or the yoke respectively, or if they are operated without core, the inductive reactance is so small that the current becomes too great (e.g. U-core only: about 10 A (20A)).

4.2 Exchanging the fuse



- Pull the mains plug out.
- Turn the fuse holder by a quarter revolution to the left and pull it out of the coil housing.
- Remove the defective blowout fuse and insert a new one.