

50 T Pilot Project

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Institut für Festkörper- und Werkstofforschung Dresden
Max-Planck-Institut für Physik komplexer Systeme
Max-Planck-Institut für Chemische Physik fester Stoffe
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Objective: Achieving experience and knowledge for the setup of a 50 MJ bank for the 100 T project,
Development of high strength conductors



Cryostat and coil inside armored box Capacitor bank: 4 modules, total energy 1 MJ at 10 kV

Main specifications of the Dresden High Magnetic Field Laboratory

Capacitor bank

Voltage 10 kV
Energy 1 MJ
Shortcut current 90 kA
4 modules, 250 kJ each
12 capacitors, 20 mF

Coils

50 T, 10 ms rise time, 24 mm bore (Tallahassee)
40 T, 80 ms rise time, 24 mm bore (Metis)
Variable crowbar resistance of $R1 = 0$ and 0.4 Ohms
Positive and negative pulses by means of industrial circuit breakers

Cryostat

Temperature range from 1.5 ... 300 K
Sample space 5 mm diameter, 5 mm height

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