

The solar storage module SUSE 4.11/5.11

Storage module with Goldcap Capacitor
3.3 F for the storage of electrical energy from solar cells or solar modules.
Maximum storage capacity of 10 Joule

The **solar storage module SUSE 4.11/SUSE 5.11** allows to store electrical energy that is obtained from sunlight by solar cells or solar modules.

The module **SUSE 4.11** or **SUSE 5.11** (for SEK II stand system) can be connected to 1-3 solar cells (in series connection) and charged by those. A **coldcap capacitor** stores the electrical energy.

The **maximum voltage is 2.5 V**, thereby the **maximum stored energy adds up to 10 J for C = 3.3 F** (according to the equation for the stored energy in a capacitor $W = \frac{1}{2} CU^2$).

The applied voltage must not exceed 2.5 V, otherwise the goldcap will be destroyed. For the operation with higher voltage storage modules may be connected in series.

If the charged module **SUSE 4.11 / SUSE 5.11** is connected to a solar motor with a propeller (e.g. SUSE 4.2 or 5.2 or SUSE 4.13/5.13), the **motor is spinning for several minutes** with the stored energy even in darkness.

The charging process through solar cells may take several minutes, it can be controlled with an amperemeter in the charging circuit.

That way electrical energy can be obtained by solar cells outside, the module SUSE 4.11/ SUSE 5.11 can be charged at it and the energy can be taken inside with the module and be used there at a solar motor. The students thereby learn that electrical energy from solar cells can be stored and transported.



Left: The solar storage module **SUSE 4.11**

The GoldCap capacitor 3.3 F is located behind the type plate. With the binding posts both lab wires as well as bell wires can be attached.

Right: Storage- module **SUSE 5.11** for the SUSE 5.xx experiment device



The technically identical device **SUSE 5.11** for stand systems with female connectors for 4mm lab wires

Variant SUSE 5.11 with 1 goldcap
Variant SUSE 5.12 with 2 goldcaps, these can be connected (with correct polarity) in series and in parallel, thus doubling the stored energy to 20 J max.