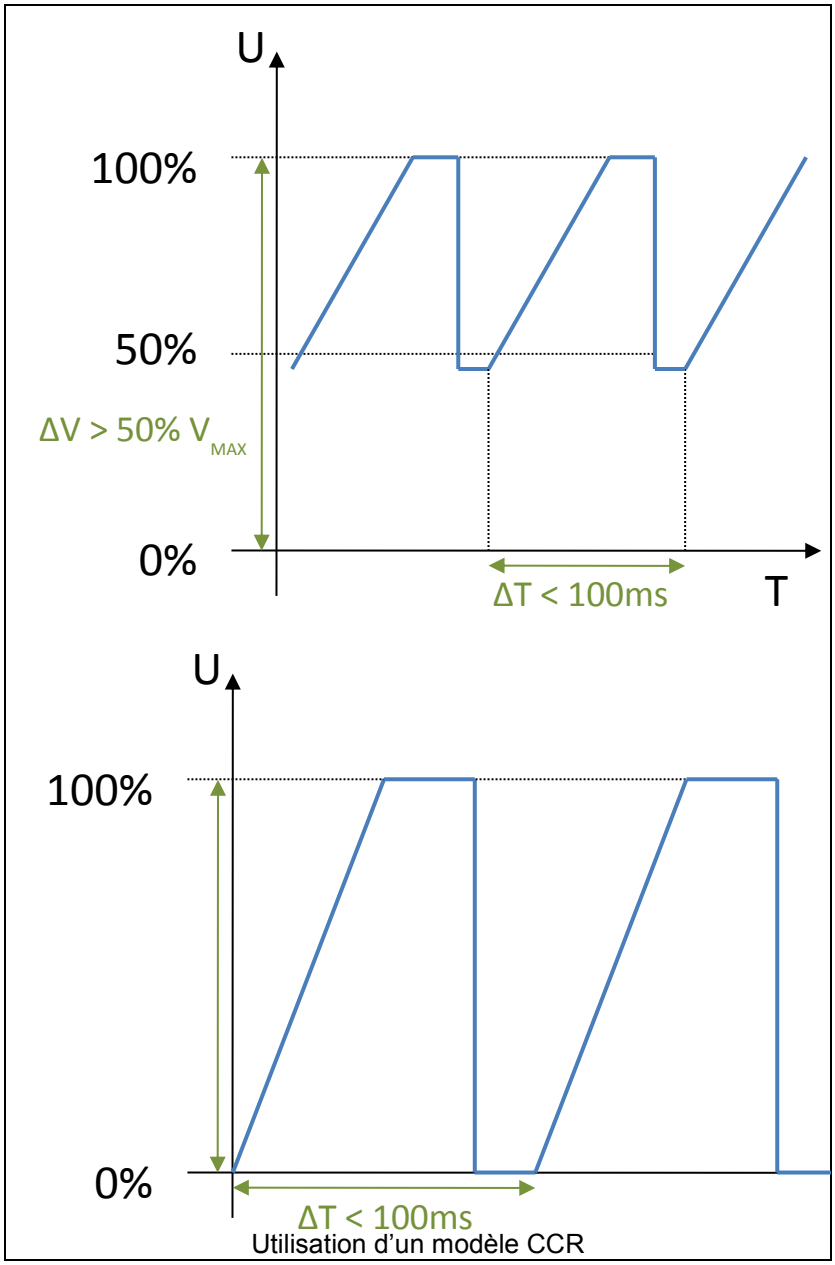
Application note

DIFFERENCE BETWEEN SR AND CCR

Technix offers two main models of generators. The Regulated power Supplies (SR) and the Capacitor Chargers (CCR).



Utilisation d'un modèle CCR

The Capacitor charger (CCR) can be considered as a current generator (Norton model). He's suitable for all applications that need very fast regulation with big voltage amplitudes and repeated charging and discharging (total or more than 50% of the max).

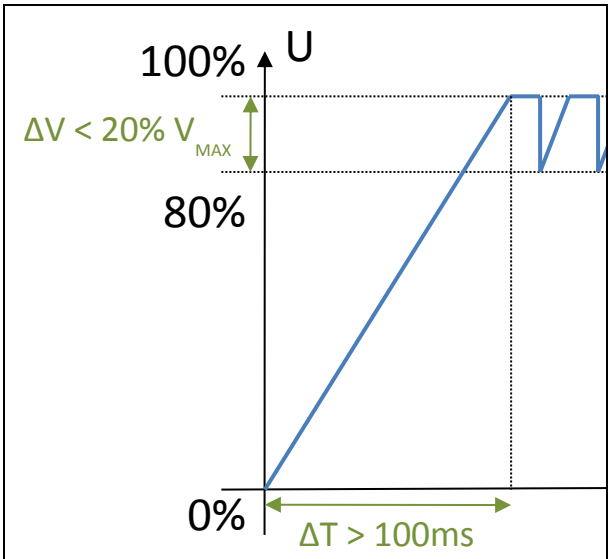
The CCR has a very low stored energy and may hold a shoting rate up to 1kHz*.

CCR machine must operate with an essentially capacitive load. Its regulation mode differs from a SR and prevent from any overshot.

Using a CCR as a Regulated power Supply is not recommended.

The Regulated power Supply (SR) can be considered as a voltage generator (Thevenin model). It is recommended for all types of loads. Using a SR is generally not recommended to operate with capacitors when the discharge is important.

Under certain conditions it can be used for partial discharge relatively low (20%) on storage capacitor (see graph next).



Utilisation du modèle SR pour décharge partielle de condensateurs

If in doubt, please consult our technical department before purchase to validate your application. Please systematically fullfil the attached form.

** standard up to 10Hz. Optional beyond 10Hz to 1kHz (Fast CCR)*

FAQ

Why a SR is not suitable for application where there are full discharges capacitor repeatedly?

The regulation mode allows a CCR to have shorter rise time. The low stored energy limits the overshot and reduces the discharge time.

Why use a CCR rather than with an SR with an external resistor?

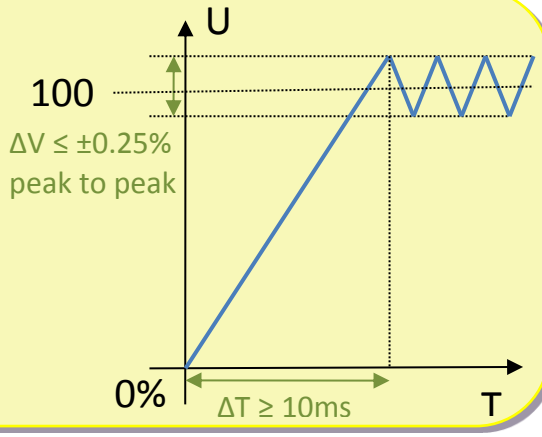
An external resistor will reduce the overshot without avoiding them totaly and allow a shorter discharge time. The rise time also increases.
Moreover, such a device consumes power and dissipates heat. So this is a temporary solution.

How to know the value of internal resistance in a CCR?

This value varies a lot from one CCR to another. For more information on the internal impedances of your CCR, please contact our technical support.

What is the shape of the output voltage of a CCR?

Voltage may vary by plus or minus 0.25% peak to peak.
Meaning, it may be from 99.875% to 100.125% of the nominal output voltage.



What is the maximum dV / dt may issue a CCR?

The maximum frequency of a standard CCR is 10Hz. It can be increased as an option.