

HCC XX-XX

Capacitor charger with control unit



The HCC consists essentially of a control unit, a capacitor charger, and other auxiliary means for operating the impulse generator.

It features a microprocessor controlled user interface and a 7" touch screen unit for ease of use. The microprocessor allows the user to execute either standard test routines or a "user defined" test sequence. A standard USB port provides the ability to print a summary of the test parameters as well as the results to a USB stick.

The software program HCC-REMOTE allows full remote control of the test generator via Ethernet light guide as well as documentation and evaluation of test results, accordingly to the IEC 17025. To record definite impulses, it is equipped with an Impulse Recording Function (IRF).

The control unit checks the connected charger and the pulse-forming network, PFN. The charging voltage, the number of pulses as well as their time interval can be set. The pulse current of the generator can be triggered in synchronism with the mains voltage.

The control signals for the charger are optically separated. The control signals for the pulse-forming network are transmitted via light conductors.

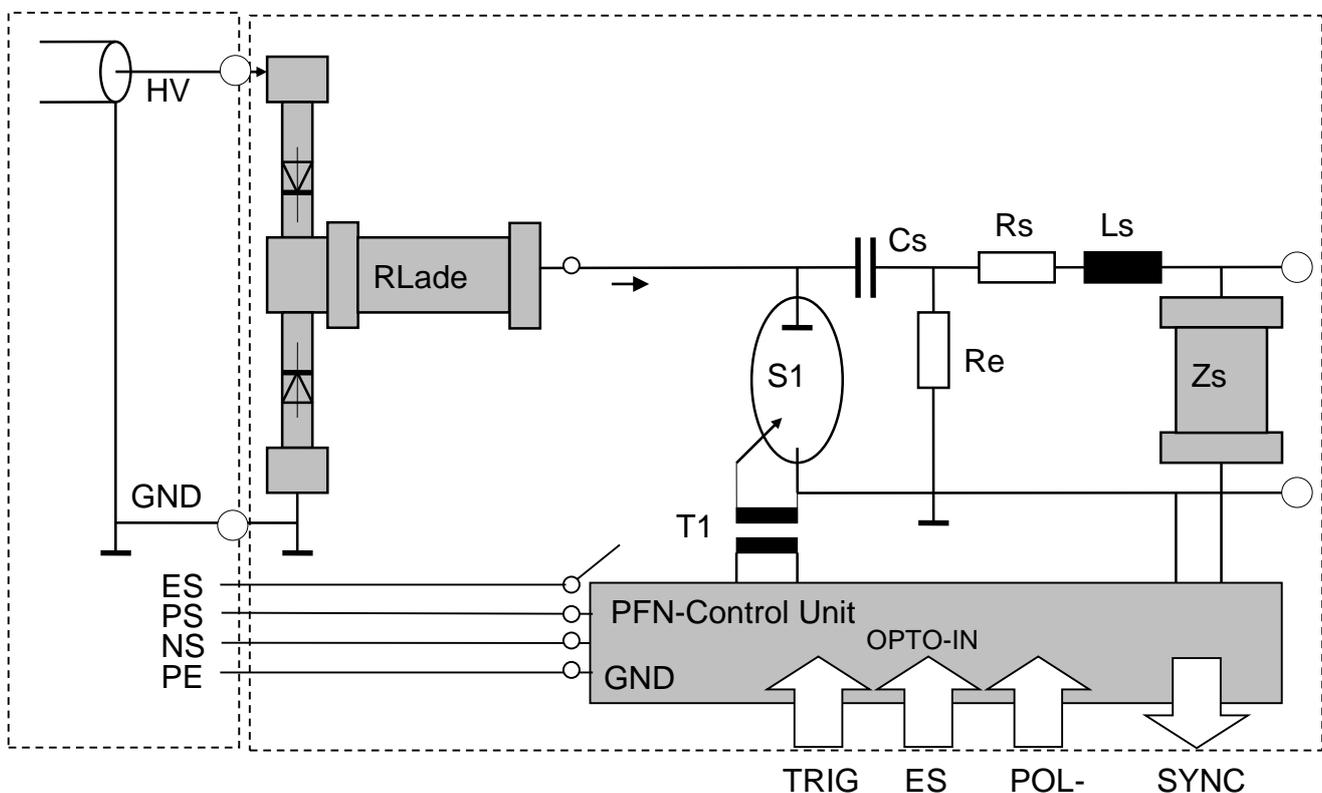
The HCC xx-xx is characterized by its compact design, simple handling and precise reproducibility of the test pulses.

Operation

Basic circuit

Charger

PFN - switch



The energy storage capacitor C is charged via the charging resistor. The diodes $D1$ and $D2$ are used to protect against reverse polarity of the charger. By triggering the switch $S1$ of the energy storage capacitor C_s is discharged via the discharge resistor R_e and the series impedance $R_s + L_s$. The desired HV pulse is generated.

To synchronize with the AC voltage connected to the device under test is a Sync-impedance connected to the output of the generator. The PFN generated in the sync signal is transmitted through an optical fibre to the control unit. If this synchronization is not connected, the trigger pulse is synchronous to the mains supply voltage of the control unit.

Optical fiber inputs and outputs (OPTO-OUT)

The control signals TRIG, ES, POL and SYNC are transmitted via optical fibre to and from the PFN.

TRIG	triggers the high voltage switch of the PFN	⇒ output
ES	controls the earthing switch in the PFN	⇒ output
POL-	switches the actuation of the trigger amplifier to the switch for inverted polarity (optional)	⇒ output
SYNC	signal from the PFN to synchronize the triggering	⇐ input

Available types

Capacitor charger, series HCC xx-xx:

Device type	Voltage [kV]	Charging current max. [mA]	Power [kW]	Dimensions W*H*D [mm ³]
HCC 10-20	0 – 10	0 – 20	0.2	450*330*500
HCC 20-10	0 – 20	0 – 10	0.2	450*330*500
HCC 10-200	0 – 10	0 – 200	2.0	450*180*500
HCC 20-100	0 – 20	0 – 100	2.0	550*600*800
HCC 30-60	0 – 30	0 – 60	1.8	550*600*800
HCC 40-50	0 – 40	0 – 50	2.0	550*600*800
HCC 60-30	0 – 60	0 – 30	1.8	550*600*800

Technical specification:

HCC xx-xx

Mainframe

Microprocessor controlled touch panel	7", capacitive
Optical Ethernet Interface for remote control of the generator	Optional
Interface for saving reports	USB
External trigger input/ output	switch/ 10 V
Connector for external safety interlock loop	24 V =
External red and green warning lamps	24 V =, 50mA
Mains power	90V - 264V, 50/60 Hz
Dimensions of desk top case W * H * D	see type
Weight	50 kg

Highvoltagegenerator

Charging voltage, adjustable	see type ± 10 %
Charging current max.	see type
Polarity (optional)	positive (pos./neg.)
Number of pulses, adjustable	1 – 1000
Repetition time, adjustable	40 – 1000 sec
Mains synchronous triggering:	
Phase shift, adjustable	0 – 360°

Options

HCC

Software HCC-REMOTE Test, for remote control

With Impulse Recording Function (IRF)
(XP, WIN7, WIN10) incl. 5 m fibre optic cable and PC Ethernet interface

Sync. Impedance

Sync. Impedance to the installation in the generator for power supply to 1000 V AC, Sync.
Transfer to the power supply via optical fibre