

Damped-Capacitive Impulse Divider Type CR

Application

The damped-capacitive impulse voltage dividers series CR can be used to measure full lightning impulse voltages, tail chopped impulse voltages, switching impulses and AC voltages.

They meet all requirements of IEC 60060-2 (1994), in particular those with respect to measuring accuracy and step response. Furthermore, all HV tests are carried out in accordance to the applicable IEC 60060-2 requirements (up to the limits imposed by our test system & premises). They can be used as a basic load for impulse voltage generators.

The type designation consists of the characters CR and two figures, e.g. CR 1200-700. The first figure indicated the rated L.I. voltage in kV, the second the primary capacitance in pF.

Design

Depending on the voltage rating, the high voltage part of the dividers consists of one or several oil-filled capacitors which are housed in cylinders made from glass fibre reinforced epoxy resin. The damping resistance is inserted between the capacitor elements of the unit and acts as distributed internal resistive element. External damping resistances are used also above 1600 kV (included).

Above 1000 kV (included) the dividers are equipped with toroidal HV electrodes to guarantee discharge-free operation. The electrode is designed depending of the rated L.I. and negative S.I. levels.

The secondary unit consists of a capacitor and a damping resistor of low inductance both arranged in a coaxial design. The unit is fixed at the bottom of the divider and can easily be exchanged.

The voltage divider is erected on a four-arm base equipped with castors. It is designed for indoor design.

Technical Data



CR 4000-360 divider

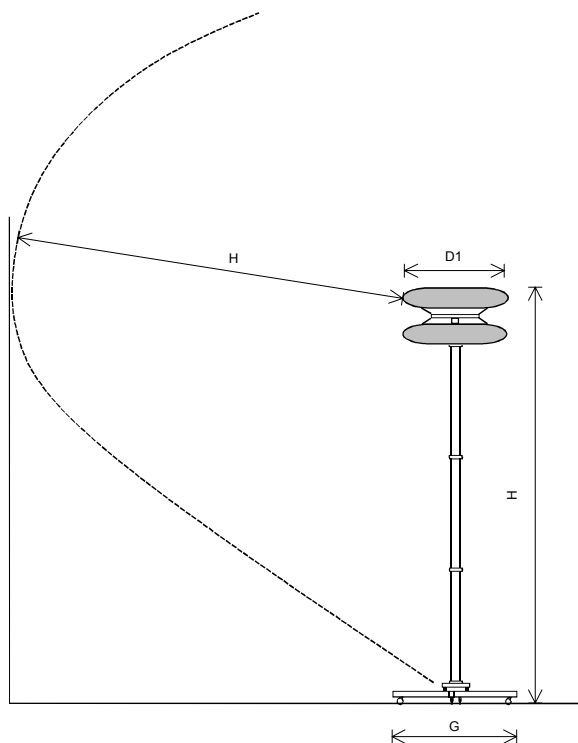
Type	Rated impulse voltage L.I. 1.2/50 μ s kV	Rated neg. impulse voltage S.I. 250/2500 μ s kV	Rated RMS AC voltage, 50/60 Hz, cont. duty * kV	Capacitance pF	Damping res. int. Ω	Damping res. ext. Ω
CR 600-1050	600	500	200	1050	120	--
CR 800-1050	800	650	200	1050	120	--
CR 1000-700	1000	850	300	700	180	--
CR 1200-700	1200	850	300	700	180	--
CR 1600-525	1600	1300	400	525	240	150
CR 2000-420	2000	1650	500	420	300	150
CR 2400-350	2400	2000	600	350	360	150
CR 2800-300	2800	2300	700	300	420	150
CR 3000-263	3000	2650	800	263	480	150
CR 3200-263	3200	2650	800	263	480	150
CR 3600-400	3600	3000	900	400	360	350
CR 4000-360	4000	3300	1000	360	400	350

* with adequate additional secondary part for AC voltage measurements type SEK W.

Other ratings & positive S.I. level on request. The top electrode can be designed to reach higher S.I. levels.

Dimensions, weights & clearance (approx. values)

Type	Height H m	Base frame G m	Net weight kg	Gross weight sea kg	Shipping volume m ³	Clearance to walls and ceiling m
CR 600-1050	2.5	1.2	180	300	1.8	2.5
CR 800-1050	2.5	1.2	180	300	1.8	2.5
CR 1000-700	3.7	1.5	250	400	2.0	3.7
CR 1200-700	3.7	1.5	250	400	2.0	3.7
CR 1600-525	5.5	2.0	450	700	4.0	5.5
CR 2000-420	6.8	2.0	500	900	6.5	6.8
CR 2400-350	7.8	3.0	700	1000	7.0	7.8
CR 2800-300	8.9	3.0	800	1200	7.5	8.9
CR 3000-263	10.0	3.0	880	1300	8.0	10.0
CR 3200-263	10.0	3.0	880	1300	9.0	10.0
CR 3600-400	11.5	3.0	1050	1500	9.0	11.5
CR 4000-360	12.0	4.0	1270	1900	10.5	12.0



Top electrodes

Made of polished aluminium, the top electrodes are designed in accordance to the required L.I. and neg. S.I. levels, and available clearances. The given data & type are therefore purely informative.

Divider Ratio

The divider ratio is designed to achieve an output voltage of approx. 1400 V at rated lightning impulse voltage. This value was chosen as the standard input voltage for impulse measuring systems from Haefely Test in order to reduce the influence of electromagnetic interferences. Upon request the dividers can be supplied with other ratios or with an attenuator to match the input voltage of other measuring devices.

Step Response

The unit step response of the dividers is adjusted to meet the requirements of IEC 60060-2 (1994).