

# CR

## Damped Capacitive Impulse Divider

### APPLICATIONS

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

They meet all requirements of IEC 60060-2 in particular those with respect to measuring accuracy and step response. The divider can also serve as a base load for the impulse voltage generator.

They are designed for indoor operation.

### 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 fiber reinforced epoxy resin. A damping resistance is inserted between the capacitor elements of the unit and acts as a distributed internal resistive element. A second damping resistance is fitted externally at the beginning of the HV lead.

Above 1000 kV rated L. I. voltage the dividers are equipped with toroidal HV electrodes to guarantee corona-free operation. The electrode is designed depending on 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 co-ax design. The unit is fixed at the bottom of the divider and can easily be exchanged.



CR 2400-350

### TECHNICAL DATA

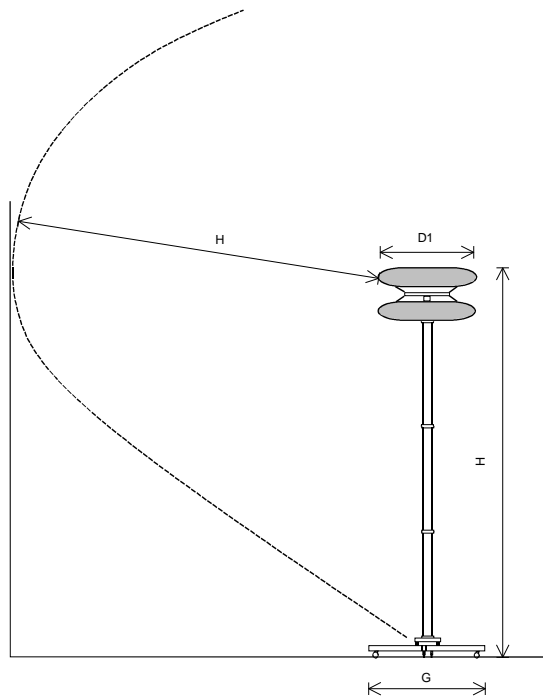
Type	Rated impulse voltage L.I. 1.2 / 50 $\mu$ s kV	Rated impulse voltage S.I. 250 / 2500 $\mu$ s neg. polarity kV	Rated AC RMS voltage, 50/60 Hz, cont. duty * kV	Capacitance approx. pF	Damping res. int. approx. $\Omega$	Damping res. ext. approx. $\Omega$	Clearance to walls and ceiling m
CR 600-1050	600	500	200	1050	120	--	2.5
CR 800-1050	800	650	200	1050	120	--	2.5
CR 1200-700	1200	850	300	700	180	200	4.3
CR 1600-525	1600	1300	400	525	240	150	5.8
CR 2000-420	2000	1650	500	420	300	200	6.8
CR 2400-350	2400	2000	600	350	360	300	8.1
CR 2800-300	2800	2300	700	300	420	150	8.9
CR 3200-263	3200	2650	800	263	480	150	10.0
CR 3600-400	3600	3000	900	400	360	350	11.5
CR 4000-360	4000	3300	1000	360	400	350	12.0

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

## DIMENSIONS, WEIGHTS (APPROX. VALUES)

Type	Height m	Base frame m	Net weight approx. kg	Gross weight approx. kg	Shipping volume approx. m <sup>3</sup>	Number of H.V. units**
CR 600-1050	2.5	1.2	180	300	1.8	1
CR 800-1050	2.5	1.2	180	300	1.8	1
CR 1200-700	4.3	1.5	260	400	2.0	1
CR 1600-525	5.8	2.0	450	700	4.0	2
CR 2000-420	6.8	3.1	650	900	6.5	2
CR 2400-350	8.2	3.1	760	1000	7.0	2
CR 2800-300	8.9	3.0	800	1200	7.5	3
CR 3200-263	10.0	3.0	880	1300	9.0	3
CR 3600-400	11.5	3.0	1050	1500	9.0	3
CR 4000-360	12.0	4.0	1270	1900	10.5	4

\*\*HV units can be configured in different sizes and capacitances



### 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.

### TOP ELECTRODES

Made of polished aluminium, the top electrodes are dimensioned according to the required L.I. and negative S.I. levels and the available clearances.

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