

Resistive Impulse Divider Type R

Application

Resistive voltage dividers have very good response parameters. Therefore they are used for measurements for full and front chopped lightning impulses or impulses voltages with steep wave fronts.

The transformation ratio and transfer behaviour of R divider fulfils the IEC 60060-2 requirements, in particular those with respect to measuring accuracy and dynamic behaviour. The divider components are designed in such a way that the transfer errors are negligible for the lightning impulse shapes.

Resistive voltage dividers are generally used when an additional capacitance in the test circuit is not permissible due to the slowdown effect on the rise time. Therefore it can't be served as a load capacitor for the impulse generator.

Design

The high voltage resistors made of CrNi wire are anti-inductively wound. For dividers with a rated lightning impulse voltage above 200 kV the high voltage resistors are housed in cylinders made from glass fibre enforced epoxy resin. For these dividers the pure ohmic divider comprises also an external damping resistor.

Above 150 kV rated lightning impulse voltage the dividers are equipped with toroidal HV electrodes to guarantee corona-free operation.

The secondary unit is fitted with LEMO connector. It consists of resistors of low inductance arranged in a coaxial design. The unit is fixed at the bottom of the divider and can easily be disassembled.

The voltage divider is designed for indoor design. Dividers above a rated lightning voltage of 200 kV are erected on a four-arm base equipped with castors.

Technical Data

Type	Rated L.I. voltage 1.2/50 μ s kV	HV resistance approx. k Ω	Damping res. ext. approx. Ω	Exp. response time T_N typical value ns	Part. response time T_α typical value ns
R 50	50	2.5	--	10	12
R 100	100	2.5	--	10	12
R 150	150	2.5	--	10	12
R 200	200	5.0	200	10	12
R 300	300	5.0	200	15	17
R 400	400	5.0	200	20	23
R 500	500	7.5	200	25	28
R 600	600	7.5	200	30	35
R 800	800	7.5	200	35	40
R 1000	1000	7.5	200	40	46
R 1200	1020	9.0	200	45	50
R 1400	1400	10.5	200	50	55
R 1600	1600	12.0	200	55	60
R 1800	1800	13.5	200	60	65
R 2000	2000	15.0	200	65	70

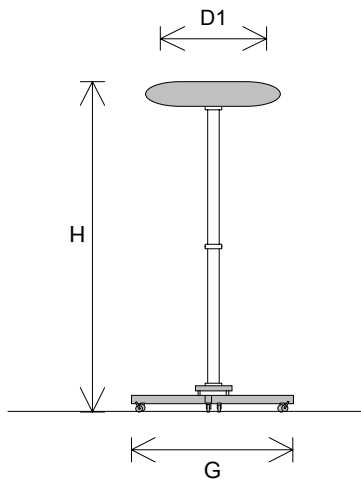
Other ratings on request. The type designation consists of the character R and one figure, e.g. R 1200.

The figure indicates the rated lightning voltage in kV.

Resistive Voltage Divider R 500

Dimensions & weights (approx. values)

Type	Height H cm	Base frame G cm	Net weight kg	Gross weight sea kg	Shipping volume m ³
R 50	60	20	30	120	1.4
R 50	60	20	30	120	1.4
R 150	60	20	30	120	1.4
R 200	145	50	60	170	2.0
R 300	145	50	60	180	2.0
R 400	180	50	80	220	2.2
R 500	240	50	90	240	2.5
R 600	240	50	90	250	2.5
R 800	270	70	100	270	3.0
R 1000	290	70	110	280	3.2
R 1200	350	85	120	350	3.2
R 1400	390	85	160	600	3.5
R 1600	430	120	220	650	6.0
R 1800	470	120	270	700	8.0
R 2000	510	120	300	700	9.0



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).



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Subject to technical modifications without notice.

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