

RCZ 500 REF, R 500 REF

Reference Impulse Dividers

■ Reference dividers are used for comparative measurements for the calibration of measuring systems.

Reference dividers type RCZ are designed for the calibration of voltage dividers for AC, DC, full and tail chopped impulse voltages. Of course they can be used for normal measurements also.

Reference dividers type R are designed for the calibration of voltage dividers for full and front-chopped lightning impulse voltages. Also R dividers can be used for normal measurements.

Reference dividers by Haefely meet all requirements of IEC 60060-2 (1994), in particular those with respect to measuring accuracy and step response.



Reference dividers RCZ500REF and R500REF

Design

The active part of the high voltage unit of dividers type RCZ consists of one oil-filled capacitor that is housed in a cylinder made from glass fibre enforced epoxy resin. A series damping resistance is inserted between the capacitor elements of the unit and acts as distributed internal resistive element. A further resistor is arranged in parallel with these RC elements.

The active part of the high-voltage unit in the R 500 REF forms a low-inductance resistor consisting of CrNi wire wound on a core that is housed also in a glass fibre enforced epoxy resin cylinder.

The reference divider type R is equipped with a special HV electrode to guarantee corona-free operation.

The secondary unit consists of a damping resistor of low inductance and for the divider type RCZ an additional capacitor both arranged in a coaxial design. The unit is fixed at the bottom of the divider and can easily be disassembled.

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

Technical Data

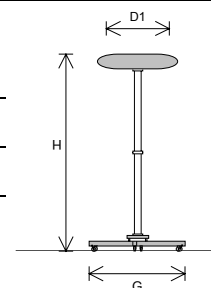
Type	Rated LI and SI impulse voltage	Rated AC voltage, 50/60 Hz, cont. duty	Rated DC voltage cont. duty	Primary capacitance	Primary resistor	Primary parallel resistor	Damping resistor
RCZ 500 REF	500 kV	180 kV RMS	180 kV	500 pF $\pm 10\%$	400 Ω	225 M Ω	300 Ω
R 500 REF	500 kV	--	--	--	5000 Ω	--	300 Ω

Front-chopped lightning impulse voltage	Measurement uncertainty $\leq \pm 3\%$
LI full, SI, AC, DC	Measurement uncertainty $\leq \pm 3\%$
Ratio for impulse voltages	500 : 1.4 *
Ratio of AC, DC voltages (RCZ type)	180 : 0.14 *
Stability of the ratio	$\leq \pm 1\%$
Relative humidity	<95% non-condensing
Reference temperature	+10°C ... +30°C
Storage temperature	-20°C ... +50°C
Step response	The unit step response of the dividers is adjusted to meet the requirements of IEC 60060-2 (1994).
Instrument impedance	Optimised for instrument impedances of 1M Ω / 30 pF.

* 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.

Dimensions, Weight & Clearance

Type	Height H	Base frame G	Electrode type d1/D1	Net weight	Gross weight	Shipping volume	Min. clearance to walls and ceiling
RCZ 500 REF	2 m	1.2 m	--	170 kg	400 kg	2.0 m ³	2.0 m
R 500 REF	1.9 m	0.8 m	R 40/890	100 kg	300 kg	2.0 m ³	1.9 m



Scope of Supply

R 500 REF

High voltage unit, Top electrode, HV connection of 2.7 m length, External damping resistor, Secondary part for impulse voltages, Mobile base frame, measuring cable, 75 Ω , 20 m (other lengths on request), Termination resistor 75 Ω , Record of performance

RCZ 500 REF

High voltage unit, External damping resistor, Secondary part for impulse, Secondary part for AC & DC, Mobile base frame, measuring cable, 20 m (other lengths on request), Adapter Lemo-BNC, HV connection 3.0 m, Record of performance

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