



## TESTING AND MEASURING EQUIPMENT/ALLOWED SUBCONTRACTING

### Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCBs)

**IEC 61008-1:2002 Edition 2.1 (incl. A1:2002)**  
**IEC 61008-2-1:1990 and IEC 61008-2-2:1990**

R=Required by Lab

S=May be subcontracted

Clause	Measurement / testing	Testing / measuring equipment / material needed	Subcontracting
6	Marking and other product information	Not required	R
8.1.1	General	Not required	R
8.1.2	Mechanism	Not required	R
8.1.3	Clearances and creepage distances	Normally slide-gauge	R
9.3	Test of Indelibility of marking	Only chemicals	R
9.4	Test of reliability of screws, current-carrying parts and connections	screwdriver with torquemeter	R
9.5	Test of reliability of terminals for external conductors	Weights or spring scale, screwdriver with torquemeter	R
9.6	Test of protection against electric shock	Standard test finger, unjointed test finger, indicator, heating cabinet	R
9.7	Test of dielectric properties		
9.7.1	Resistance to humidity	Humidity cabinet	R
9.7.2	Insulation resistance of the main circuit	DC source (500V) and instruments (or combination)	R
9.7.3 to 9.7.5	Dielectric strength	Adjustable high voltage test equipment (AC) up to 2500V	R
9.7.6	Capability of control circuits connected to the main circuit in respect of withstanding high d.c. voltages due to insulation measurements	DC source (600V/12mA) and instruments (or combination)	R
9.8	Test of temperature-rise	AC source up to 125A, resistive loads, temperature- and current-measuring instruments	R
9.9	Verification of the operation characteristic	AC source up to 500A, resistive loads, heating cabinet, refrigerator,	R



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		temperature-, current- , voltage- and time-measuring instruments	
9.10	Verification of mechanical and electrical endurance	Test apparatus according to method of actuating the circuit-breaker, AC source up to 125A/440V, resistive and inductive loads, current- and voltage-measuring instruments	R



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9.11	Verification of the behaviour of the RCCB under short-circuit conditions	Test equipment for short-circuit tests, AC source up to 25000A/440V, resistive and inductive loads, current- and voltage-oscillating instruments	S
9.12	Resistance to mechanical shock and impact		
9.12.1	Mechanical shock	Specified test apparatus (figure 11)	R
9.12.2	Mechanical impact	Specified test apparatus (figure 12), weights or spring scale	R
9.13	Test of resistance to heat	Heating cabinet, standard test finger, apparatus for ball pressure test	R
9.14	Resistance to abnormal heat and to fire	Apparatus according to IEC60695-2-1	R
9.15	Verification of trip-free mechanism	AC source, measuring instruments	R
9.16	Verification of the operation of the test device at the limits of rated voltage	AC source, measuring instruments	R
9.17	Verification of the behaviour of RCCBs functionally dependent on line voltage, classified under 4.1.2.1, in case of failure of the line voltage	AC source, measuring instruments	R
9.18	Verification of limiting values of the non-operating current under overcurrent conditions	AC source up to 750A, measuring instruments	R
9.19	Verification of behaviour of RCCBs in case of current surges caused by impulse voltages	Surge generator: up to 200A (0,5µs/100 kHz – ring wave) Surge generator: up to 3000A (8/20 µs)	R
9.20	Verification of resistance of the insulation against high impulse voltages	Surge generator: up to 8kV (1,2/50µs)	R
9.21	Verification of the correct operation at residual currents with d.c. components	AC source, measuring instruments, Thyristor with control unit for current delay angles	R
9.22	Verification of reliability		
9.22.1	Climatic test	Climatic chamber according to IEC 68-2-28, Recording system for temperature, humidity, pH and resistivity	R
9.22.2	Test with temperature of 40 °C	Heating cabinet, AC source, measuring instruments	R
9.23	Verification of ageing of electronic components	Heating cabinet, AC source, measuring instruments	R
Annex E	List of tests, additional test sequences and numbers of samples for verification of compliance of RCBOs with the requirements of electromagnetic compatibility (EMC)	Test equipment according IEC 61543	S