TESTING AND MEASURING EQUIPMENT/ALLOWED SUBCONTRACTING

Circuit-breakers for overcurrent protection for household and similar installations

IEC 60898-1:2003 Edition 1.2 (incl. A1:2002 + A2:2003)
resp. IEC 60898-2:2003 Edititon 1.1 (incl. A1:2003)

R=Required by Lab
S=May be subcontracted

Clause	Measurement / testing	Testing / measuring equipment / material needed	Subcontracting
6	Marking	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
8.1.6	Non-interchangeability	Not required	R
9.3	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 and isolating capability		
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	Verification of impulse withstand voltages and of leakage current	Surge generator: impedance 500Ω; up to 6,2 kV (1,2/50µs) AC (resp. DC) source up to 280V, mA-Meter, Voltmeter	R
9.8	Test of temperature-rise and measurement of power	AC (resp. DC) source up to 125A/30V, resistive loads, temperature-,	R

	loss	current- and voltage-measuring instruments	
9.9	28-day test	AC (resp. DC) source up to 185A/30V, resistive loads, temperature-, current- and voltage-measuring instruments	R
9.10	Test of tripping characteristic	AC (resp. DC) source up to 2500A, resistive loads, heating cabinet, refrigerator, temperature-, current- , voltage- and time-measuring instruments	R

Clause	Measurement / testing	Testing / measuring equipment / material needed	Subcontracting
9.11	Test of mechanical and electrical endurance	Test apparatus according to method of actuating the circuit-breaker, AC (resp. DC) source up to 125A/440V, resistive and inductive loads, current- and voltage-measuring instruments	R
9.12	Short-circuit tests	Test equipment for short-circuit tests, AC source up to 25000A/440V, (resp. DC source up to 10000A/440V) resistive and inductive loads, current- and voltage-oszillating instruments	S
9.13	Mechanical stresses		
9.13.1	Mechanical shock	Specified test apparatus (figure 8)	R
9.13.2	Resistance to mechanical stresses and impact	Specified test apparatus (figure 10), screwdriver with torquemeter, weights or spring scale	R
9.14	Test of resistance to heat	Heating cabinet, standard test finger, apparatus for ball pressure test	R
9.15	Resistance to abnormal heat and to fire	Apparatus according to IEC60695-2-1	R
9.16	Test of resistance to rusting	Chemicals, humidity cabinet, heating cabinet	R
Annex J	Particular requirements for circuit-breakers with screwless type terminals for external copper conductors		
J.6	Marking	Not required	R
J.9.1	Test of reliability of screwless terminals	Only adequate conductors	R
J.9.2	Test of reliability of terminals for external conductors	Weights or spring scale	R
J.9.3	Cycling test	Heating chamber (able to perform temperature-cycles), AC source, measuring instruments	R
Annex K	Particular requirements for circuit-breakers with flat quick-connect terminations		
K.6	Marking	Not required	R
K.8.2	Terminals for external conductors	Normally slide-gauge	R
K.9.1	Mechanical overload-force	Weights or spring scale	R
Annex L	Specific requirements for circuit-breakers with screw-type terminals for external untreated aluminium conductors and with aluminium screw-type terminals for use with copper or with aluminium conductors		
L.6	Marking	Not required	R
L.9.1	Test conditions	Al-conductors	R

L.9.2	Current cycling test	Test arrangement (according to figure L.1),AC source, measuring instruments	R