



TESTING AND MEASURING EQUIPMENT/ALLOWED SUBCONTRACTING **PROVISIONAL**

IEC 61058-2-1:1992-06, Edition 1.0

Part 2-1: Particular requirements for cord switches

R=Required by Lab

S=May be subcontracted

W = Witness testing

3PPS=Three Phase Power Supply required

Clause	Measurement/testing	Testing / measuring equipment / material needed	Subcontracting
8	Marking and Documentation	Distilled water and petroleum spirit	R
9.1	Protection against electric shock	standard test finger of IEC 60 529 test pin according to figure 13	R
10.4	Provision for earthing	PE conductor tester, rated current not less than 25 A	R
11.1.2.4.5	Tab terminals	push forces – 120N pull forces – 110N	R
11.1.2.6.2	Solder terminals	solder bath 260°C soldering iron 350°C	R
12.3.107	Cord anchorages	- pull test apparatus shown in figure 101 – torque test apparatus shown in figure 104	R
12.3.110	Bending test	Flexing apparatus shown in figure 102	R



Clause	Measurement/testing	Testing / measuring equipment / material needed	Subcontracting
14.1 + 14.2 + 14.3	Protection against ingress of solid, dust and water (IP Code testing)	According to IEC 60529: Sphere 50 mm diameter Jointed test finger Test rod 2.5mm diameter Test wire 1.0mm diameter Sphere 12.5mm diameter Dust Chamber Drip box Drip box 15° Oscillating tube/ spray ± 60° or spray nozzle/spray ± 60° Oscillating tube/ spray ± 180° Oscillating tube/ spray ± 180° Water jet hose nozzle - nozzle 12.5mm diameter Immersion tank	R R R R R S S S S S S S
14.4	Protection against humid conditions	Humidity cabinet, with a relative humidity between 91% - 95%, temperature of the air 20-30°C	R
15.2	Insulation resistance	Insulation tester with DC 500 V; insulation resistance – 7MΩ	R
15.3	Dielectric strength	High-voltage transformer AC 50/60 Hz, -5000 V Output current is at least 200 mA, not trip when the output current is less than 100 mA	R



Clause	Measurement/testing	Testing / measuring equipment / material needed	Subcontracting
16	Heating	Heating or refrigerating cabinet without forced convection. the load circuit may be either ac or dc the voltage used up to and including 50 V rated voltage, test with rated voltage over 50 V, test with 50 V, the temperature rise, measured with fine wire thermocouples	R
17	Endurance	Environmental chambers – heat, freeze, humidity. Voltmeter, ammeter, power analyzer meter, oscilloscope, inductive loads, resistive loads, pilot duty loads, motor loads. Activation source and cycling mechanism as required.	R 3PPS
18.2	Mechanical strength	Spring-operated impact-test apparatus of IEC 60068-2-75 Steel pressure plate, value of about 250 N up to 750 N	R
18.2.1		-test device as shown in figure 11, for incorporated switches	R
18.101	Cord switches, other than foot-operated types	Tumbling barrel as shown in figure 103	R
18.102	Foot-operated type	50 mm diameter steel rod, steel pressure late, value of about 250 N up to 750 N.	R
19.2.4	Screwed connections	Torque screwdrivers	R
19.2.5	Screwed glands	Suitable torque wrench	R
20	Clearances, creepage distances, solid insulation and coating of rigid Pcb`s	Suitable measurements e.g. slide-gauge, High voltage pulse generator.	R
21	Resistance to heat and fire	Glow-wire test apparatus according to IEC 60695-2-11. Proof tracking test apparatus according to IEC 60112 Ball pressure test apparatus shown in figure 12 .	R
22	Resistance to rusting	Heating cabinet, 10% solution ammonium chloride in water, cleaning agent.	R



Clause	Measurement/testing	Testing / measuring equipment / material needed	Subcontracting
23.3	Abnormal operation	Non-inductive circuit in series with load impedance, device for limiting let-through I^2t (I^2t value shall be 15000A ² s), short circuit of the supply shall be 1500A rms., voltmeter, ammeter.	R
25	EMC requirements	Signal generator, Compact generator, ESD Generator, voltage dips and voltage interruptions apparatus, Anechoic Chamber, radiated EM field test apparatus.	S

Note: The presence of equipment alone does not indicate a satisfactory situation. Assessors must evaluate the equipment design, calibration, uncertainty and documentation to ensure compliance with the directions of the standard. The requirements of [ISO/IEC 17025](#) regarding validation are applicable, as the tests of this standard are not standardized tests.