

**TESTING AND MEASURING EQUIPMENT/ALLOWED SUBCONTRACTING**  
**IEC 61058-1:2016, Edition 4.0**  
**Switches for appliances – Part 1: General requirements**

“R”	Required
“S”	May be subcontracted, see OD 2012
“SPTL”	Specialized Facility, see IECEE 02-2
“W”	Witness testing in the categories “MED” and “MEAS”
“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	Probe B according to IEC 61032 jointed test finger Probe 11 according to IEC 61032 straight unjointed test finger Test pin Probe 13 according to IEC 61032 Probe C according to Figure 3 IEC 61032	R
9.2	Accessible metal part	Non-inductive resistor of 2 kΩ Current ≤ 0,7 mA (peak value) for AC up to 1 kHz or 2 mA for DC	R
10.4	Provision for earthing	PE conductor tester, rated current not less than 25 A	R
11.7	Solder terminals	Solder bath 260 °C Soldering iron 350 °C	R
11.8	Terminal displacement test	Pull forces – 135N	R
14.1+14.2+ 14.3	Protection against ingress of solid foreign objects, ingress of water and humid conditions	According to IEC 60529	R

Clause	Measurement/testing	Testing / measuring equipment / material needed	Subcontracting
		Sphere 50 mm diameter Jointed test finger Test rod 2,5 mm diameter Test wire 1,0 mm diameter Sphere 12,5 mm diameter	R
		Dust chamber Drip box Drip box 15° Oscillating tube / spray ±60° or spray nozzle / spray ±60° Oscillating tube / spray ±180° Water jet hose nozzle – nozzle 12,5 mm diameter Immersion tank	S
14.3	Protection against humid conditions	Humidity cabinet, relative humidity above 91 % temperature of the air 20-30°C	R
15.2	Insulation resistance	Insulation tester with DC 500 V, insulation resistance – 7MΩ	R
15.3	Insulation test voltage	High-voltage transformer AC 50/60 Hz, – 5000 V not trip when the output current is less than 100mA	R
16	Heating	Heating or refrigerating cabinet without forced convection Room temperature The load circuit may be either a.c. or d.c. The temperature rise is measured with fine wire thermocouples	R
17	Endurance	Environmental chambers – heat, freeze, voltmeter, ammeter, power analyzer meter, oscilloscope, inductive loads, resistive loads, pilot duty loads, motor loads. Activation source and cycling mechanism as required. Reference IEC 61058-1-1 for mechanical switch testing Reference IEC 61058-1-2 for electronic switch testing	R
18.2	Mechanical strength	Spring-operated impact-test apparatus of IEC 60068-2-75, 0,5 Nm ± 0,04 Nm, 1,0 Nm ± 0,05 Nm Environmental chambers – heat, freeze Test plate of Figure 11	R
18.3 / 18.4	Mechanical strength	Pull force – 50N/100N Push force – 30N	R

Clause	Measurement/testing	Testing / measuring equipment / material needed	Subcontracting
19.2.4	Screwed connections	Torque screwdrivers	R
19.2.5	Screwed glands	Suitable torquespanner	R
20	Clearances, creepage distances, solid insulation and coatings of rigid printed board assemblies	Suitable measurements, e.g. slide-gauge, impulse withstand test apparatus Printed board assemblies Rapid change of temperature Proof tracking test apparatus according to IEC 60112	R
21	Fire hazard	Heating cabinet Ball pressure test apparatus according to IEC 60695-10-2 Glow-wire test apparatus according to IEC 60695-2-11	R
22	Resistance to rusting	Heating cabinet, 10 % solution ammonium chloride in water, cleaning agent	R
23	Abnormal operation and fault conditions for switches	Reference IEC 61058-1-1 for mechanical switch testing Reference IEC 61058-1-2 for electronic switch testing	R
25	EMC requirements	Signal generator, Compact generator, ESD generator Voltage dips and voltage interruptions apparatus Anechoic chamber Radiated EM field test apparatus	S