

APPENDIX 2 : ROUTINE VERIFICATION

ROUTINE VERIFICATION of IEC 61439-1, Clause 11 , Edition 3.0 (2020.05)			Limitation of IEC 61439-1&2 (L) or Declaration of Original Manufacturer (D)	VERIFICATION
11.2	Degree of protection of assemblies (IP Code)	Degree of protection against contact with hazardous live parts, ingress of solid foreign bodies and water of enclosures. See at Appendix 3.	(D) Declerated	A visual inspection is necessary to confirm that the assembly meets the prescribed measures to achieve the designated degree of protection
11.3	Clearances and creepage distances	Protection distances of live conductors to unlive conductors an each other are verified. See at Appendix 4	(L)Limited	The prescribed measures with regard to creepage distances shall be subject to a visual inspection. Where it is not evident by visual inspection, verification shall be by physical measurement. If the values less than given or not posibile to check, an impulse voltage withstand test inaccordance with 10.9.3 shall be carried out
11.4	Protection against electric shock and integrity of protective circuits	It verified that the different exposed-conductive-parts of the assembly are effectively connected to the terminal for the incoming external protective conductor.	(L)Limited	The prescribed protective measures with regard to basic protection and fault protection shall be subject to a visual inspection. The protective circuits shall be checked by visual inspection to ascertain that the measures prescribed in the manufacturer's instructions are adhered to and verified. When it is not obvious by inspection that the earth continuity of the protective circuits meets the requirements, a continuity test shall be made. Screwed and bolted connections shall be checked for the correct tightness on a random basis.
11.5	Incorporation of built-in components	These are rules concerning the installationof devices included in the assembly, whether they are fixed or removable parts and compliance with the customer's wiring requirements. This also includes accessibility to adjustment and reset devices; and all types of indication (LEDs,dials, etc.).	(L)Limited	The installation and identification of built-in components shall be in accordance with theassembly's manufacturing instructions.
11.6	Internal electrical circuits and connections	This test consists of checking conformity of the power and control circuits with the design requirements. It includes correct sizing of the busbar and cables, earthing the control circuits, etc. It also includes identification of the various circuits using different colours.	(L)Limited	The connections, especially screwed and bolted connections, shall be checked for the correct tightness on a random basis. Conductors shall be checked in accordance with the assembly's manufacturing instructions.
11.7	Terminals for external conductors	This rule requires the terminal capacity and whether the terminals are suitable for aluminium or copper conductors to be specified to the end user. It also includes checking all the types of terminal that can be used for the cable entries and outlets (neutral, PEN, symbolic PE, etc.).	(L)Limited	The number, type and identification of terminals shall be checked in accordance with theassembly's manufacturing instructions.

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11.8	Mechanical operation	Movable parts like interlocks, locks , doors are tested	(L)Limited	The effectiveness of mechanical actuating elements, interlocks and locks, including those associated with removable parts, shall be checked. Where a device's operating handle is used to indicate the switching position of the device, and it detaches from the device when the door is open, it shall be confirmed that, when the door is closed, the handle provides positive and unambiguous indication of the device's open and closed positions.
11.9	Dielectric properties	The rated insulation voltage of a circuit of an assembly is the voltage value to which dielectric test voltages and creepage distances are referred. (Ui)	(L)Limited	A power-frequency withstand test shall be performed on all circuits in accordance with standards but for a duration of 1 s and with a tripping current not less than 3,5 mA.
11.10	Wiring, operational performance and function	Informations and markings , and electrical performances and mechanical functions shall be controlled	(D) Declerated	It shall be verified that the information and markings specified in Clause 6 are complete. Depending on the complexity of the assembly, it may be necessary to inspect the wiring and to carry out an electrical function test. The test procedure and the number of tests depend on whether or not the assembly includes complicated interlocks, sequence control facilities, etc. By agreement between the user and the assembly manufacturer, communicating devices that are included and connected in a system within the assembly may need to be checked for basic operation and functionality. NOTE In some cases, it may be necessary to make or repeat this test on site before putting the installation into operation.