

INTERNATIONAL ELECTROTECHNICAL COMMISSION

IEC 61000-3-3
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ELECTROMAGNETIC COMPATIBILITY (EMC) –

Part 3-3: Limits – Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection

INTERPRETATION SHEET 1

This interpretation sheet has been prepared by subcommittee 77A: EMC – Low frequency phenomena, of IEC technical committee 77: Electromagnetic compatibility.

The text of this interpretation sheet is based on the following documents:

DISH	Report on voting
77A/1238/DISH	77A/1244A/RVDISH

Full information on the voting for the approval of this interpretation sheet can be found in the report on voting indicated in the above table.

Interpretation of the term “rated input current” for the applicability of the standards IEC 61000-3-3 and IEC 61000-3-11.

Introduction:

An incorrect use case of the standard was reported in SC77A/WG2, that was caused by a misunderstanding of the words “rated current” used in the Scope clauses of IEC 61000-3-3 and IEC 61000-3-11.

The standard IEC 61000-3-11 is considered to be applicable to a product that can operate continuously with an input current over 16 A, whatever term is applied to this current. The words “rated current for xxx” in this case are used for the input current when the products (heat pump systems) are tested and measured according to ISO 5151. For example, the current measured under the test of ISO 5151 for cooling is mentioned as “rated current for cooling: 13,89 A” on the name plate. Another value according to ISO 5151 has been specified as “rated current for heating: 10,34 A”. Also, the maximum input current where the product can operate continuously is mentioned as “Max. input current: 19 A” on the same nameplate.

A picture of the name plate:

		Cooling		Heating	
防触电保护类别	I 类	制冷时	制热时		
电源 (三相交流)	380V 3N~ 50Hz	额定能力	25000	27300	W
制冷剂	R410A 7.3 kg	室外机组额定输入功率	8690	6400	W
净质量	140 kg	室外机组额定电流	13.89	10.34	A
最高工作压力(高压/排气侧)	4.15 MPa	室外机组噪声	58	61	dB(A)
(低压/吸气侧)	2.30 MPa	室外机组总最大电流	19.00		A
热交换器最大工作压力	4.15 MPa	室外机组总最大输入功率		11880	W
保护等级	IPX4	APF	4.81		

IEC

This led to confusion, whether IEC 61000-3-3 or IEC 61000-3-11 is applicable for the evaluation of voltage changes, voltage fluctuations and flicker produced by this equipment.

After a thorough discussion together with 77A/WG1, 77A/WG2 concluded to answer this question as given below.

Question:

When in the technical documentation to a product more than one input current is specified, how to decide, whether IEC 61000-3-3 or IEC 61000-3-11 shall be applied?

Answer:

If the largest input current specified for the equipment that can flow continuously exceeds 16 A, IEC 61000-3-11 applies and not IEC 61000-3-3.

NOTE Typically, values for the input current are specified on the nameplate and in the instruction manual.