

# PROTECTION CLASSES FOR SOLAR MODULES

2022



# IEC 61730-1

IEC 61730 is the basic standard that describes the requirements for the safe operation of photovoltaic modules.

As photovoltaic modules are accessible and power generating devices, corresponding protection classes are specified.

The purpose of this classification is to classify electrical equipment by appropriate methods for protection against electric shock.




## IEC 61730-1:2018

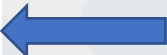
In the IEC 61730-1:2004 standard, the protection classes were previously specified as class A, B, C.

However,


with the update in June 2018 of the IEC 61730-1:2018 standard, it must be specified as Class 0, II, III.

- Basically, the classification is made according to the system voltage.
- As can be seen in the table, the protection class, which was previously defined as class A, is now defined as class II.

Application Class	System Voltage		Safety Class
	acc. IEC 61730	acc. EN 61730	
 <b>A:</b> General applications	$> 50 V_{DC}$	$> 120 V_{DC}$	II
<b>B:</b> Restricted access	$> 50 V_{DC}$	$> 50 V_{DC}$	0
<b>C:</b> Low voltage applications	$< 50 V_{DC}$	$< 120 V_{DC}$	III




- Including solar modules, the protection class of electrical appliances, is class II.
- A class II or double-insulated electrical appliance includes in addition to the basic insulation, reinforced protective insulation.

CLASS OF EQUIPMENT	EQUIPMENT MARKING OR INSTRUCTIONS	CONDITIONS FOR CONNECTION OF THE EQUIPMENT TO THE INSTALLATION	APPLICATION CLASS (IEC 61730-1:2004)	DESCRIPTION FROM IEC 61730-1:2016
<b>Class II</b>	Marking with symbol no. 5172 of IEC 60417 [13] 	No reliance on installation protective measures	A	Application in non-restricted access area



As shown in the table, the symbols for the corresponding protection classes must be defined on the labels.

PV module classification	Marking	Symbol
Class II	Marking according to IEC 60417-5172: Class II equipment	
Class 0	No marking	No symbol
Class III	Marking according to IEC 60417-5180: Class III equipment	