

712 Solar Photovoltaic (PV) power supply systems

BS 7671 section on guidance for installation and design of photovoltaics has undergone extensive changes

Key Information

- Expanded from 5 to 14 pages of guidance.
- More detailed and more prescriptive in its requirements, with the major changes covering:
 - design criteria
 - cable selection sizing
 - selection of overcurrent devices

1. Brief

ECA Members can expect to see an increase in demand for Solar Photovoltaic (PV) systems over the coming years. Several factors are driving this, namely the legal requirement for the UK to become Net Zero Carbon by 2050 and the recent dramatic rise in energy prices, leading to homeowners considering on-site generation to help in reducing their energy bills. Changes to the Building Regulations Approved Document part L (Energy Efficiency), which come into force 15 June 2022 also increase the requirement in the amount of solar PV that new buildings are required to have.

It is, therefore, quite timely that BS 7671:2018+A2:2022 has increased the guidance and requirements for solar photovoltaic (PV) installations.

2. Installations within the scope of BS 7671

Section 712 highlights that within BS 7671:2018+A2:2022 the following are covered:

- PV generators supplying an installation:
 - and not connected to the public electric distribution network
 - In parallel with the public electric distribution network
 - As an alternative to the public electric distribution network (read as selectable / automatically switched alternative)

This is not just buildings- this covers small solar farms.

3. Notation and terminology

At first glance, section 712 may seem overly confusing and there are some specific terms that installers outside of the realm of the solar industry may not be familiar with, but these are easily explained.

$I_{MOD_MAX_OCPR}$ for example is the (maximum) overcurrent protection rating of a module,

N_s are the number of strings in series

N_p are the number of strings in parallel

$I_{SC\ MAX}$ is the maximum short circuit current of a module.

U_{oc} is the open-circuit voltage

I_{sc} is the short circuit current

The method of circuit design is quite prescriptive throughout 712 but follows standard design criteria that installers already apply when selecting AC cables and equipment.

There are specific requirements for PV systems with 2 or more PV strings but these relate more to larger systems and most domestic installations will have a maximum of 2 strings.

Importantly, newer technologies such as Voltage optimisers which enable a safer default voltage under fault conditions and for strings of unequal length to be used, are now recognised within section 712.

For more detailed information on the changes within 712, Members are encouraged to look at the ECA Amendment 2 712 Solar Photovoltaic Guidance Note.



ECA, Rotherwick House, 3 Thomas More Street, St. Katharine's & Wapping, London E1W 1YZ

Tel: 020 7313 4800 **Email:** info@eca.co.uk www.eca.co.uk

Rev: 0422

ECA wishes to identify and inform the engineering services sector and ECA Members' decisions on what represents 'fair, reasonable and good contractual practice'. ECA remains committed to fair and open competition and this document is not designed to in any way dictate what may be an appropriate risk allocation, or act as a substitute for ECA Members obtaining project and context specific legal advice and making their own commercial decisions