

Declaration

Maximum input current (I_{DCmax}) and short-circuit current (I_{SC})

As the size of silicon wafers in solar modules increases, so does the output current of the modules. While earlier silicon wafers had a size of 125 mm, today's standard modules have wafer sizes of 166 mm (M6), 182 mm (M10) and 210 mm (G12).

The larger the area, the higher the output current of the module.

When selecting the inverter, in addition to the maximum permissible input voltage, the maximum input current I_{DCmax} (engl. *direct current max.*) and the short-circuit current I_{SC} (engl. *short circuit*). This information can be found on the type plate, data sheet and/or operating instructions of the respective inverter.

Short-circuit current (I_{SC}): The short-circuit current I_{SC} at the DC input of the inverter must not be exceeded under any circumstances. This is used for electrical safety and to comply with the warranty conditions, as all components (e.g. DC circuit breakers) are matched to it in the event of a generator short circuit. Care must be taken to ensure that the short-circuit current I_{SC} of the inverter is never exceeded, taking into account all external influences (irradiation, temperature, system orientation, etc.).

Maximum input current (I_{DCmax}): The maximum input current I_{DCmax} , on the other hand, is the maximum current that the inverter can absorb from the PV generator during regular operation.

If the maximum input current I_{DCmax} of the inverter is exceeded by a higher PV generator current I_{MPP} , the operating point is shifted with the help of the inverter MPP tracking, thereby limiting the current consumption. Due to MPP tracking to a new operating point with a higher input voltage, the losses in the yield balance remain low and can be almost negligible.

Result:

High-current modules can be used together with KATEK's Steca inverters at any time. Exceeding the maximum input current I_{DCmax} of the inverter is permissible and does not affect the safety and warranty conditions. The short-circuit current I_{SC} must not be exceeded.

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KATEK Memmingen GmbH



i.V. Dr. Peter Grabs

Director of Innovations, Research & Development



i.V. Stefan Oswald

Product Management