

Temperature De-rating - Technical Note (North America)

All SolarEdge products operate at full power and full currents up to a certain temperature, above which they may operate with reduced ratings to prevent device damage. This technical note summarizes the de-rating properties of SolarEdge inverters and power optimizers.



NOTE

All temperatures in the document refer to ambient temperature.

Background

Inverters and power optimizers may reach high temperatures as a result of high temperatures in their vicinity, being subjected to direct sunlight, not having enough clearance around them or due to bad ventilation of the space in they are installed. Typically, when an inverter reaches high temperatures it gradually reduces its power output, by reducing the output current. This power reduction process is referred to as "de-rating". De-rating protects sensitive components and prolongs their lifetime. When the temperature drops, the inverter increases power output automatically.

Power Optimizers

SolarEdge power optimizer models P300, P320, P340, P370, P400, P405 and P505 operate at full power and full currents up to the maximum operating temperature of 185°F/85°C.

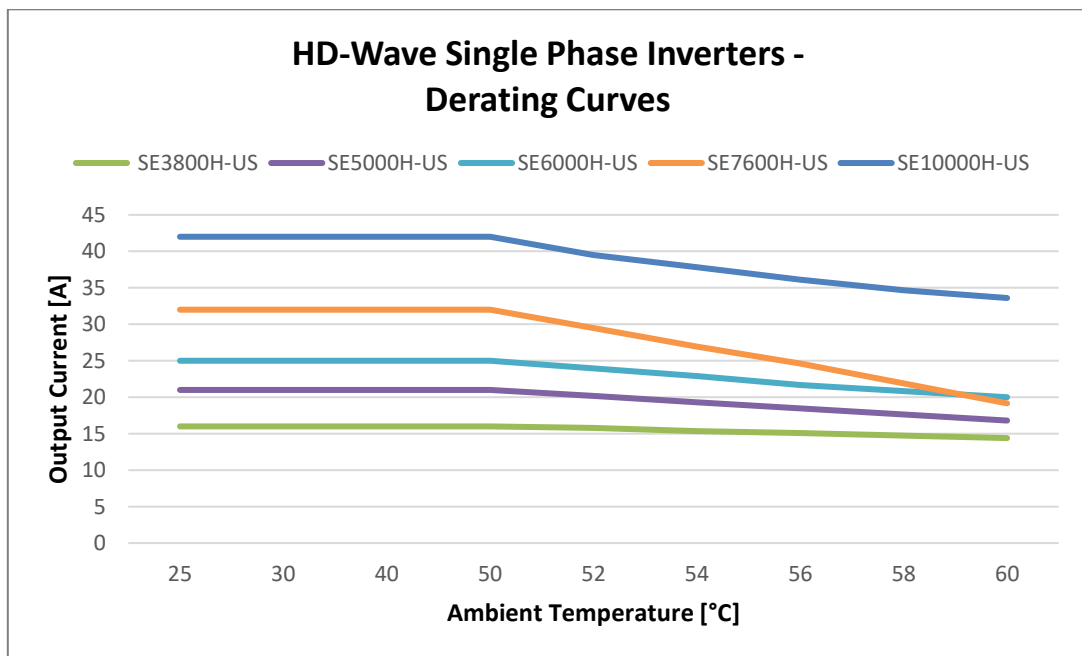
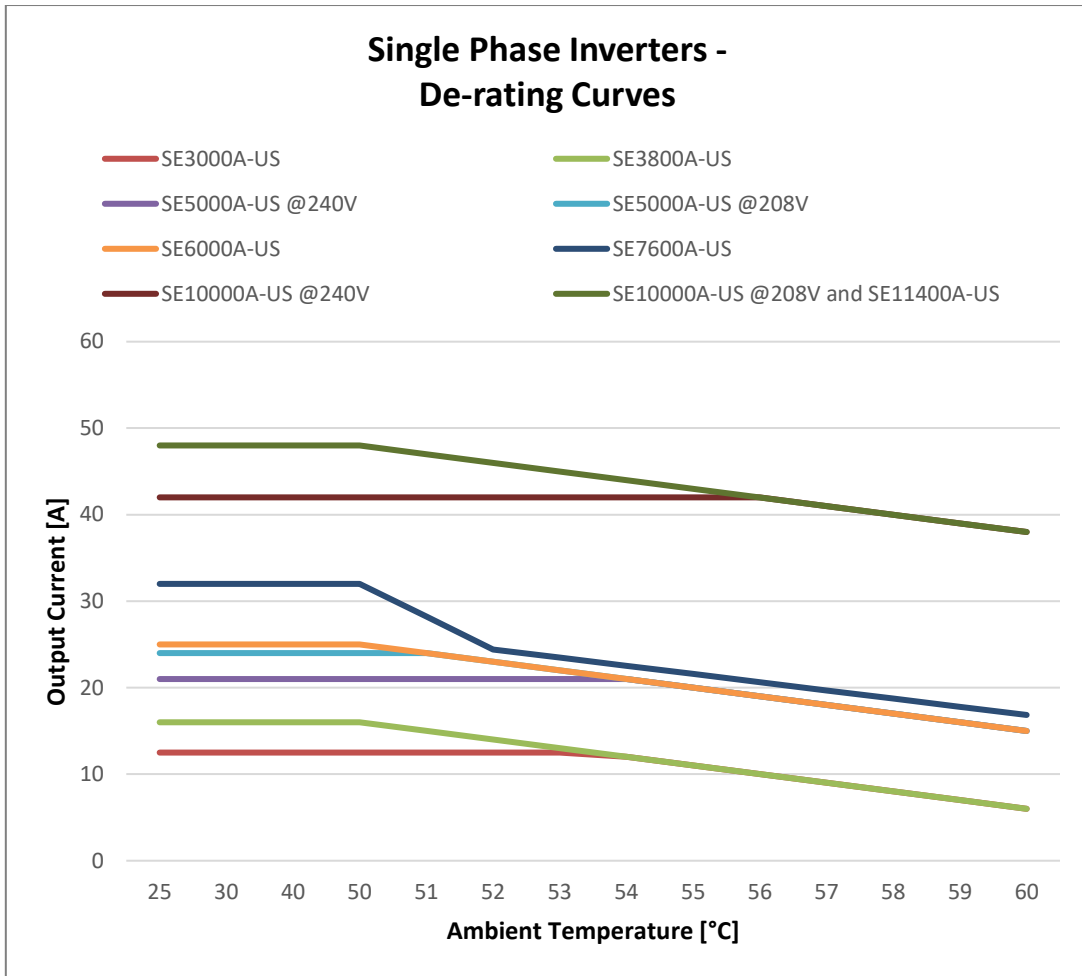
SolarEdge power optimizer models P600, P700, P730, P800s, P800p, P850 and P860 operate at full power and full currents up to a temperature of 158°F/70°C. The optimizers may be used up to 185°F/85°C with reduced ratings.

SolarEdge power optimizer models OP250-LV, OP300-MV, OP400-MV, OP400-EV and OP600-96V operate at full power and full currents up to the maximum operating temperature of 150°F/65°C.

Single Phase Inverters

The following inverter models operate at full power and full currents up to the temperatures listed in the table below, and operate with reduced ratings up to 140°F/60°C according to the graphs below. The graphs describe the reduction in current in relation to temperature. The actual output current will never be higher than the maximum current specified in the inverter datasheets, and might be lower than described in the graph below due to specific inverter model ratings per country and grid.

Inverter Model	Temperature
SE3000A-US, SE3800A-US, SE5000A-US, SE6000A-US, SE7600A-US, SE10000A-US, SE11400A-US, SE5000H-US, SE6000H-US, SE7600H-US, SE10000H-US	120°F/50°C
SE3000H-US, SE3800H-US	140°F/60°C



Three Phase Inverters

The following inverter models operate at full power and full currents up to the temperatures listed in the table below, and operate with reduced ratings up to 140°F/60°C according to the graphs below. The graphs describe the reduction in current in relation to temperature. The actual output current will never be higher than the maximum current specified in the inverter datasheets, and might be lower than described in the graph below due to specific inverter model ratings per country and grid.

Inverter Model	Temperature
SE9KUS (208V), SE10KUS (277/480V), SE14.4KUS (208V), SE20KUS (480V), SE30KUS (277/480V), SE33.3KUS (277/480V)	120°F/50°C
SE10KUS (480V), SE43.2KUS (208V), SE66.6KUS (277/480V), SE100KUS (277/480V),	140°F/60°C

