

Temperature De-rating - Technical Note (Europe & APAC)

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

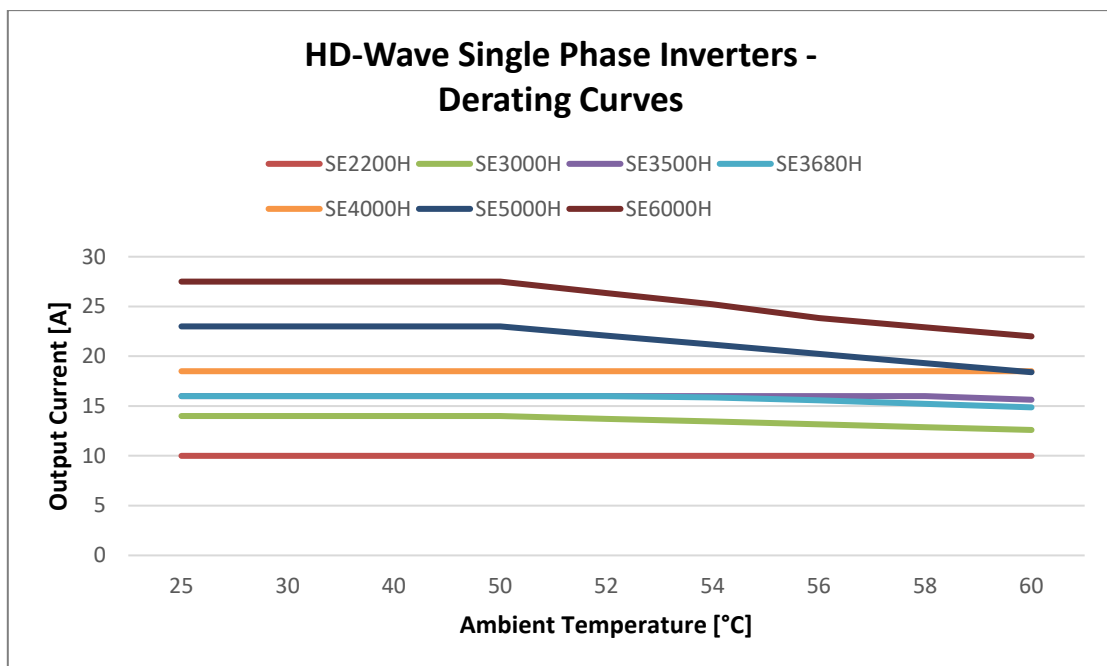
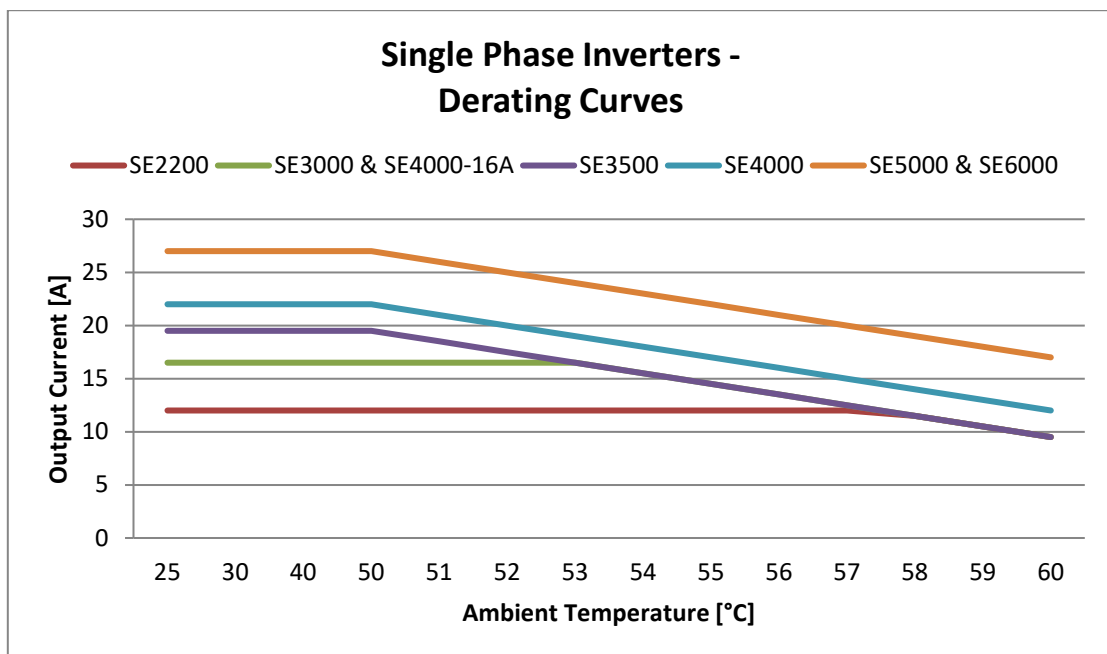
The following optimizer models operate at full power and full current up to the temperatures listed in the table below:

Optimizer Model	Temperature
OP250-LV, OP300-MV, OP400-MV, OP400-EV, OP600-96V	150°F/65°C
P404, P485, P505, P600, P650, P700, P701, P730, P800s, P800p, P801, P850, P950, P860, M1600	158°F/70°C
P400, P500	167°F/75°C
M2640, OP480	176°F/80°C
P300, P350, P370, P375/P395/P401, P405	185°F/85°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
SE2200, SE3000, SE3500, SE4000, SE4000-16A, SE5000, SE6000, SE3500H, SE3680H, SE4000H, SE5000H, SE6000H	120°F/50°C
SE2200H, SE3000H	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
SE3K, SE4K, SE5K, SE6K, SE7K, SE8K, SE9K, SE10K, SE12.5K	140°F/60°C
SE8K	135.5°F/57.5°C
SE9K, SE10K, SE15K, SE16K, SE17K, SE27.6K, SE33.3K, SE40K, SE55K, SE82.8K, SE66.6K, SE100K	120°F/50°C
SE25K, SE50K	127°F/53°C

