Derating Curve

3PH 15/24kTL - V3

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Revisione

Rev.	*Data*	*Autore*	*Descrizione delle modifiche*
00	27/02/2025	L. Aita	Prima emissione

1. Goal of the document

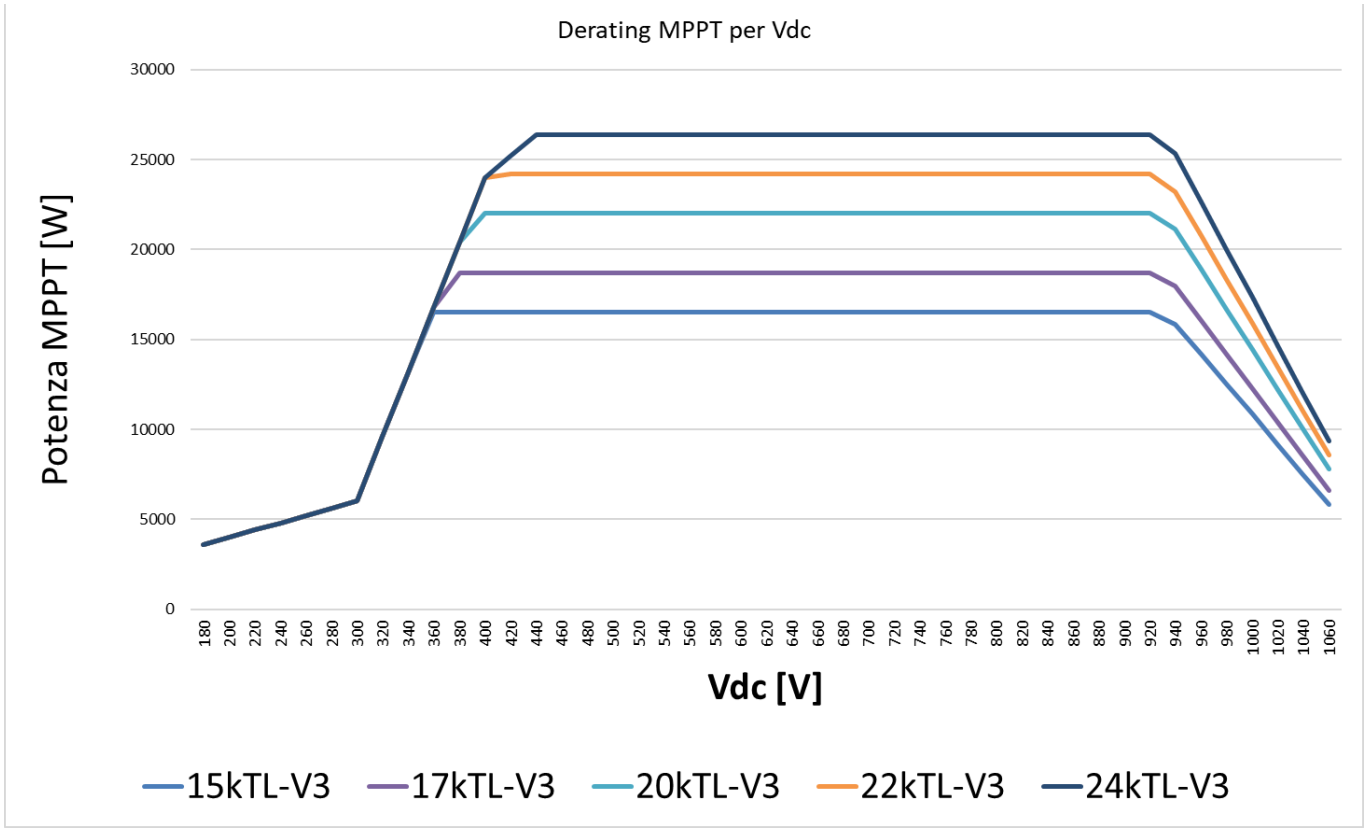
In this Document we report the derating of the divide in the title due:

- looking DC/AC Voltage
- temperature derating

Nota	**Please note: The various derating curves may change in subsequent FW releases after those tested during the drafting of this document.**

1.1. Derating due DC voltage

The follow curve is reporting the derating looking the DC voltage.



The values cannot be modified by sending commands and are intrinsic operating limits of the inverters.

1.2. Derating due AC voltage

The power limitation curve based on AC voltage follows the figure below:

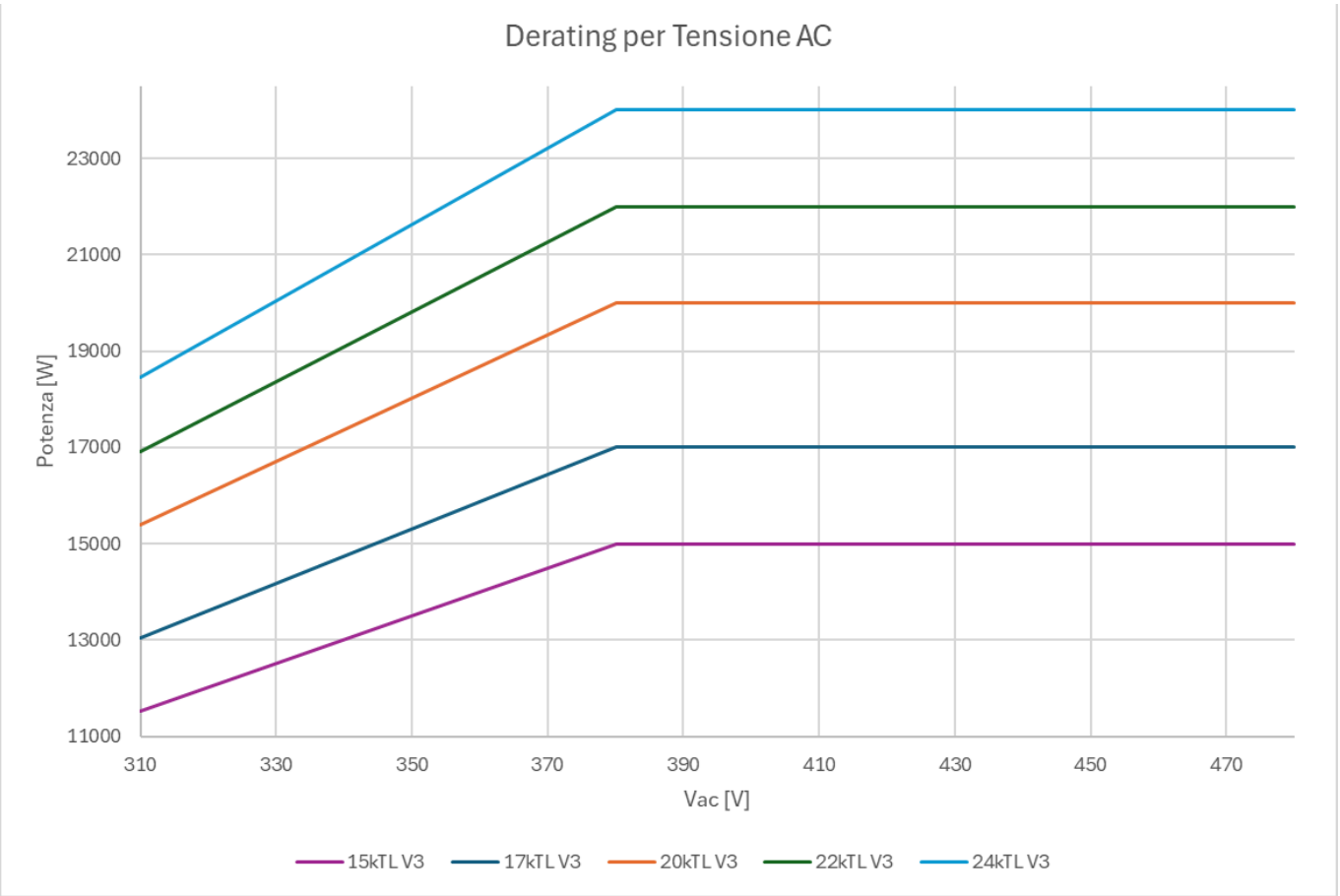


Figura 3 - limitazione della potenza di uscita in base alla tensione AC

The V1 and V2 values can be modified by sending specific commands to the inverter via the Azzurro Operators APP; please refer to the dedicated section.

1.3. Power limitation based on temperature

The power limitation curve based on temperature follows the two figures below:

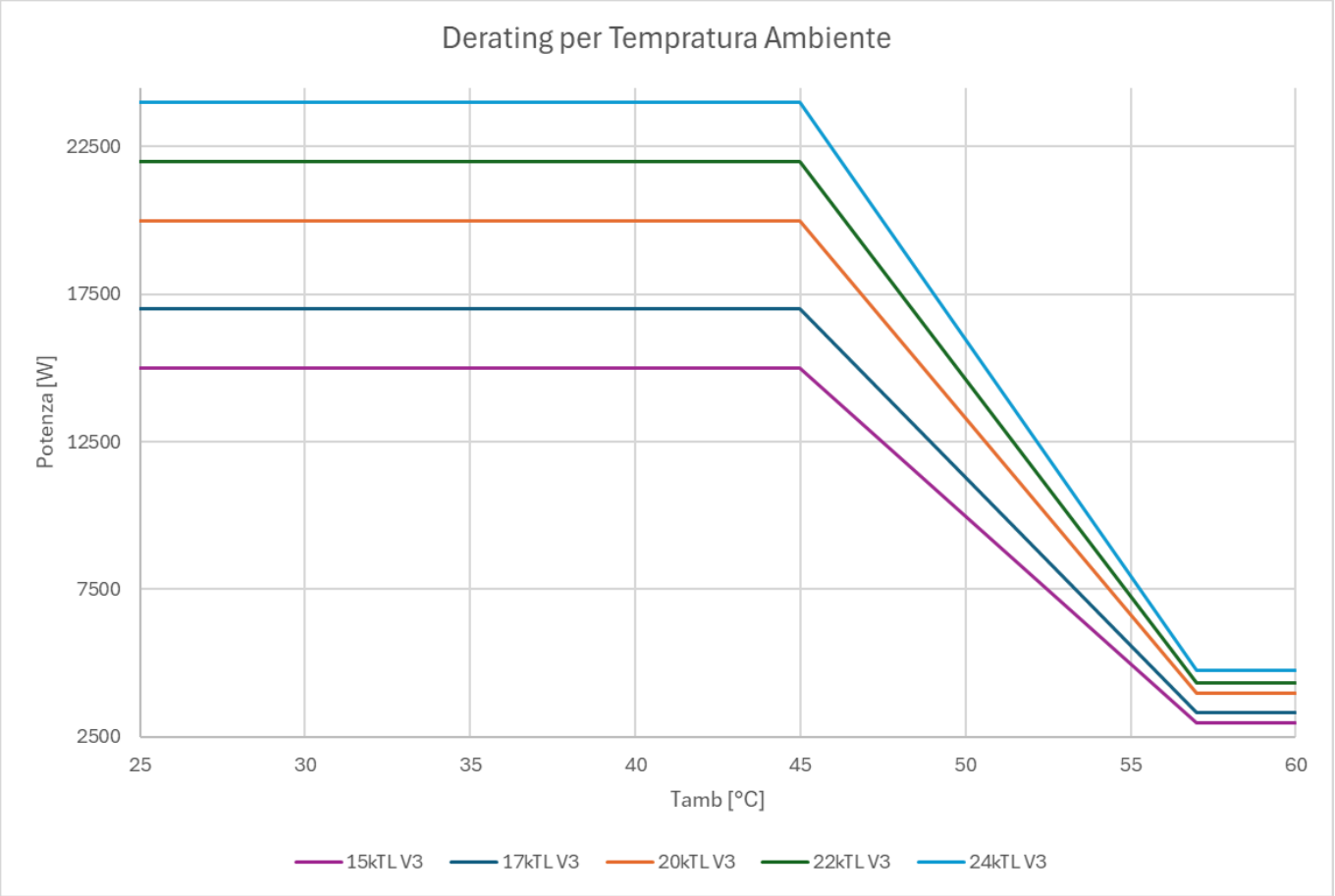


Figura 5 - limitazione della potenza attiva in base alla temperatura ambiente

Below is a table describing the values in the previous image related to room temperature:

models	P1(W)	P2(W)	T1(°C)	T2(°C)
15KTL-V3	15000	2970	45	60

17KTL-V3	17000	3330	45	60
20KTL-V3	20000	3960	45	60
22KTL-V3	22000	4320	45	60
24KTL-V3	24000	4770	45	60

where:

- T1 is the minimum temperature at which derating begins.
- T2 is the maximum temperature allowed for power delivery by the inverter.
- P1 is the nominal active power of the inverter.
- P2 is the minimum power allowed by thermal derating.

The values cannot be modified by sending commands and are intrinsic operating limits of the inverters.

Attention	**Warning: Temperature limitation is strongly influenced by installation. The inverter manual specifies the minimum distances and correct positioning of the inverter to avoid untimely temperature limitations.**

2. How to modify or apply power limitations

Modifiable power limitations can be enabled, disabled or modified in their values via local or remote access (if the inverter is connected via logger to ZCS Azzurro systems).

Local access is possible using:

- The **Azzurro Operators app** (available for download from the Play Store or iOS store)
- **Sending Modbus commands on RS485 or TCP via external loggers** (not all commands are available)
- **Inverter display** (not all commands are available)

Remote access is possible using:

- **The Azzurro Operators app** (available for download from the Play Store or iOS store)

The following document contains sample screenshots of the access and edit sections. These sections are for illustrative purposes only, as the app and portal are constantly changing and evolving, and the graphic details may differ from the versions currently in use.

2.1. How to apply a constant active power limitation

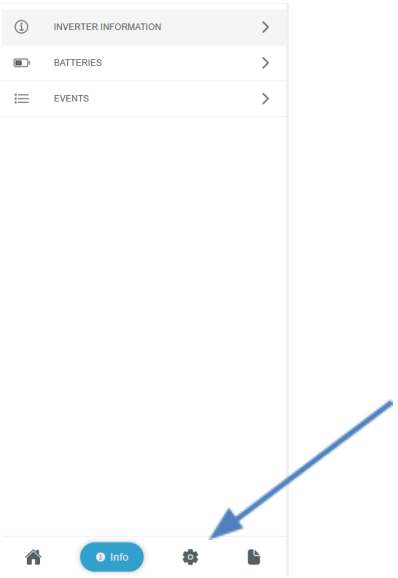
Where necessary, it is possible to apply a maximum power output value to the fixed inverter. This maximum limit value is added to all the limitation curves already highlighted above. The set limitation remains stored even if the inverter is switched off and restarted.

Application of the restriction via display

- Enter the inverter menu by selecting "Settings".
- Select the "Power limit" option.
- Set Enable
- Select the desired limitation percentage (100% = nominal power of the inverter; 0% = 0W)

Application of the restriction via the Azzurro Operator app

- After connecting to the inverter, select the settings.



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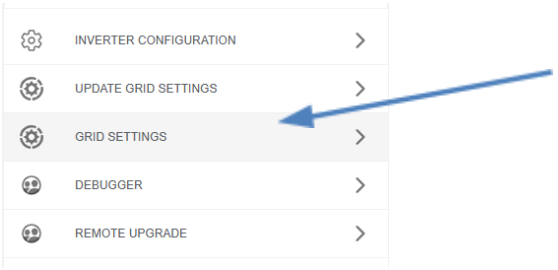
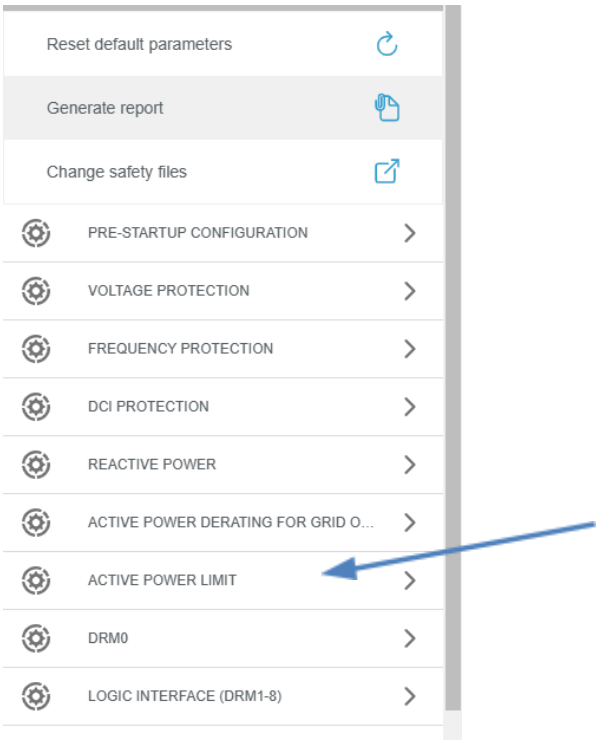
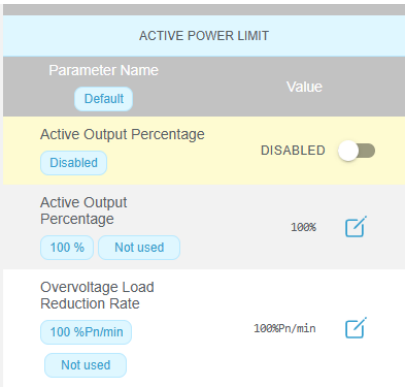
- Select the "Grid settings" menu.



- Select the "Active Power Limit" menu.



- Set the enable, % limitation and settling time values as desired.

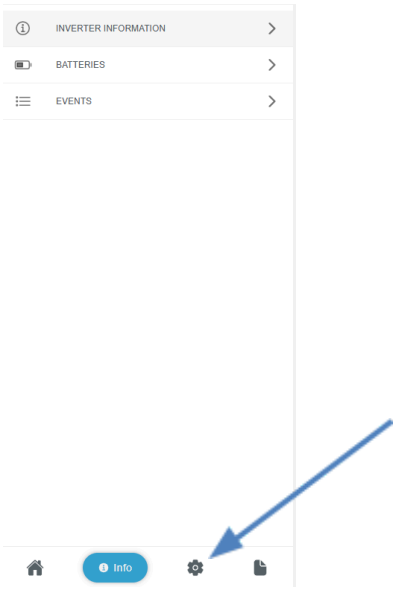


2.2. How to modify the power limitation curve based on mains voltage

Where necessary, the limitation curve can be modified according to the grid voltage. The new settings are stored even if the inverter is switched off and restarted.

Modification of the curve via the Azzurro Operator APP

- After connecting to the inverter, select the settings.



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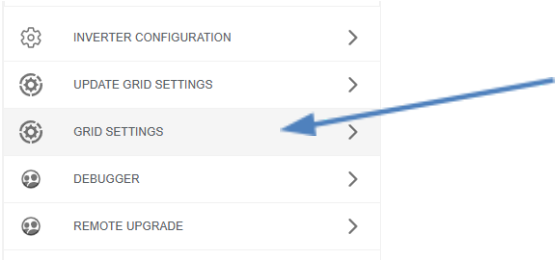
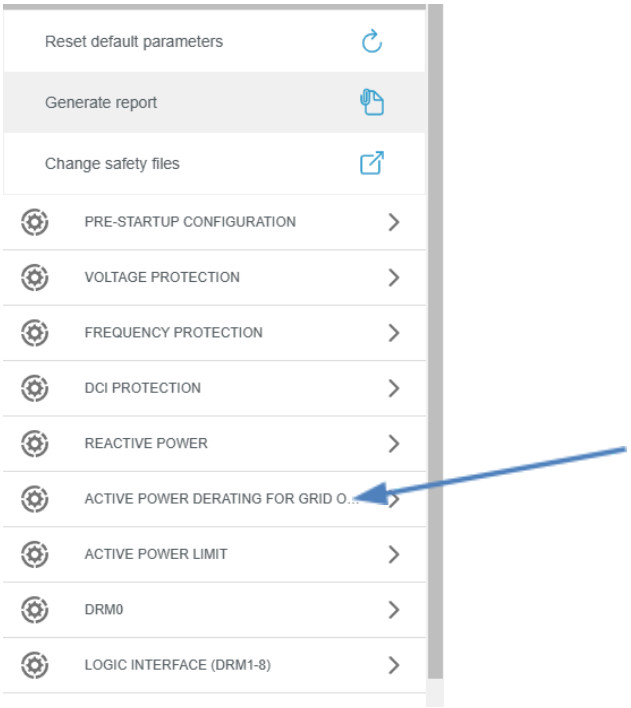
- Select the "Grid settings" menu.



- Select the "Active Power Derating for Grid Overvoltage" menu.



- Set the curve values as desired. The graph will show the actual curve set.