

## zappi Grid Limit Function

This information relates to the following products

ZAPPI-207UW	ZAPPI-222UW
ZAPPI-207UB	ZAPPI-222UB
ZAPPI-207TW	ZAPPI-222TW
ZAPPI-207TB	ZAPPI-222TB

In order to approve the use of the Grid Limit function in the zappi, some DNO's require that the "Customer load management scheme follows the principles of Standard Technique: SD1E (ENA ER G100)"

Zappi includes a built-in function to limit the output to the electric vehicle (EV) if the current measured by the grid CT exceeds the limit set in the zappi. This feature is available by default but to meet the specific requirements for Distribution Network Operators for Import Limitation Schemes it is important that the following additional requirements are met.

1. The firmware on the zappi must be version 2.130 or above
2. The Grid CT must be hardwired to the zappi.
3. The Grid Limit must be set to be less than or equal to the value specific by the DNO  
(Menu: Settings... -> Advanced... -> [Passcode] -> Supply Grid -> Grid Limit)
4. The CT failsafe protection (G100 option) is switched on  
(Menu: Settings... -> Advanced... -> [Passcode] -> CT Config... -> [Select Grid CT] -> G100)

### Operation

#### Grid Current Limit

Under normal conditions, where the current measured by the Grid CT is less than the limit set then the full output from the zappi is available to charge the EV (7.2kW on a single-phase installation, 22kW on a three-phase installation).

If the grid current measured by the zappi exceeds the set limit, then the PWM control signal to the EV is immediately reduced to bring the current at the grid CT back within the set limit. Zappi will continue to manage the charging current to EV to maintain the grid current below the set limit.

#### Grid CT Failsafe

If the grid CT is disconnected, then zappi detects this an error condition and will shut down the output until the CT is reconnected.

#### Power Supply Failure

In the event of a failure of the power supply to the zappi the unit will immediately switch off, isolating the supply to the EV

#### Internal Circuit Protection

Zappi carries out a check of the basic protection features before closing the contactors which supply the car. In the event of any problem being detected a warning message is shown on the display. A manual reset is required before zappi will attempt to start a new charge session with the EV.